Citrix SCOM Management Pack for XenApp and XenDesktop

Nov 27, 2017

Citrix SCOM Management Pack 3.14 for XenApp and XenDesktop

Nov 27, 2017

Use Citrix SCOM Management Pack for XenApp and XenDesktop to monitor and manage XenApp and XenDesktop infrastructure with the Microsoft System Center Operations Manager (SCOM).

With the Citrix SCOM Management Pack for XenApp and XenDesktop, you can:

- Improve the XenApp and XenDesktop infrastructure availability and health The virtual application and desktop infrastructure availability is checked with rigorous connectivity probing and active service checks. It is important that users are able to connect to their virtual desktops and applications. This is a process that involves many Delivery Controller components (such as Broker Service or Machine Creation Services).
- Gain insight into the XenApp and XenDesktop performance and usage information
 It is critical to know how users are using the virtual infrastructure delivering desktops and applications in order to be able
 to tune it accordingly. With the Citrix SCOM Management Pack for XenApp and XenDesktop you will get more insight
 into which users are logging in to the virtual desktops and applications (identify slow logons and logon bursts), how many
 users are connecting to the Sites, if the infrastructure is able to handle all user requests accordingly, for example by
 maintaining the size of the idle pool defined by the desktop group power management policy, by ensuring enough
 resources for delivery of applications and desktops defined by the load management policy, and so on. Another aspect is
 the end-user resource usage (what is the resource usage for each user connection/session) and virtual infrastructure
 resource usage (what is the resource usage of my server OS machines). Detailed machine and session performance
 information helps in managing your infrastructure and enables better planning and decision making.

Citrix SCOM Management Pack for XenApp and XenDesktop fully integrates the topology, health, and performance data into SCOM.

It provides centralized monitoring in SCOM and covers the following key scenarios:

- Are Delivery Controller instances up and running?
- Is the infrastructure (for example, brokers, machine creation services, and so on) on the Site level operational?
- Do users have issues connecting to the virtual desktops and applications (for example, delivery group limit/capacity is reached, desktop OS or server OS machines cannot register, other infrastructure issues are present)?
- What is the availability of published applications?
- Are there any events that indicate a problem with the infrastructure?
- Have any performance thresholds been violated?
- What is my server OS machine performance?
- What is the user session resource usage on server OS or desktop OS machines?
- Are there any user logons with lengthy duration? Which logon phases are causing the delay?

Important: To collect machine and session performance data, the product's Machine Agent must be installed and configured in addition to its main agent (referred to simply as Agent). For a general overview of the machine and session monitoring concepts, see Machine and session performance monitoring.

Architecture

The following diagram shows how the Citrix SCOM Management Pack for XenApp and XenDesktop connects with the SCOM management platform and the XenApp and XenDesktop infrastructure.



What's new

Nov 27, 2017

Citrix SCOM Management Pack 3.14 for XenApp and XenDesktop introduces the following enhancements:

- Support for Citrix XenApp and XenDesktop 7.16. Citrix SCOM Management Pack for XenApp and XenDesktop now supports XenApp and XenDesktop Version 7.16.
- Support for Citrix zones. The product now supports the zones configuration. The Site topology displays all primary and secondary zones within the Site. Delivery Controllers and hypervisors are contained in zones. This feature works with XenApp and XenDesktop Version 7.7 and later.
- New reports on application usage. This release introduces two new reports.
 - Application usage report shows the application usage list for the selected Site. The report displays metrics depicting specific application usage such as the cumulative usage time, the number of launches, and the number of distinct users. Use this report to see most and least used, and unused applications in your Site. You can drill down from this report to the Application usage by user report.
 - Application usage by user report shows application usage metrics per user for the selected application.
- Site Database Availability. The topology now includes the Site Database object. Additionally, two monitors are introduced to monitor and report the Site database availability in regular and high availability database configurations.
 - Site Database Availability Monitor triggers an alert when the database is unavailable and specifies the reason for the lack of availability.
 - Site Database High Availability Monitor can be used if you have a high availability the database setup with mirroring. The monitor triggers a warning alert when one of the databases is unavailable.

Known issues

The following is a list of known issues in this product version:

• Issue ID: SCOM-502

Symptom: In the SCOM Operations console, when you attempt to run the *Start Citrix Director* task on a XenApp and XenDesktop alert that is not a session performance or logon alert, the invocation fails and SCOM reports the following error:

Citrix Director URL not configured. Please configure the Citrix Director URL by using XenDesktop MP Configuration tool. **Action**: None. The error message is incorrect, so you can safely ignore it. You can run the Start Citrix Director task only on session performance alerts and logon alerts.

• Issue ID: SCOM-143

Symptom: In the SCOM Operations console, the *ApplicationExcludeRegExtPattern* and *ApplicationIncludeRegExtPattern* parameters of application discoveries (*Application Discovery (n of 5)*) are ignored. You, therefore, cannot exclude applications from the discovery process or include them into it. **Action**: None. There is no workaround available.

• Issue ID: SCOM-86 (6297)

Symptom: After Citrix SCOM Management Pack for XenApp and XenDesktop (both its server-side and agent-side parts) is installed and configured on the computer for the first time (without being upgraded from an earlier product version),

© 1999-2017 Citrix Systems, Inc. All rights reserved.

and a valid XenApp and XenDesktop Platinum license cannot be retrieved, no license-related alerts are sent. Such alerts, therefore, cannot be monitored in the Monitoring view of the SCOM operations console. **Action**: None. There is no workaround available.

• Issue ID: SCOM-77 (6194)

Symptom: In the output of the *Check Requirements and Configuration for Citrix MPXAXD Agent* task in the SCOM Operations console, site names that contain non-ASCII characters are not displayed correctly. For example, Spanish characters $c\tilde{n}$ appear as $\frac{1}{4}r$ in the name of a XenApp and XenDesktop Site. No other symptoms exist. **Action**: None. Apart from the visual glitch, the functionality of the product is not affected in any way. You can therefore safely ignore the issue.

• Issue ID: SCOM-210 (5380)

Symptom: While a workflow is running, error messages (31551 and 31552) are logged into the Operations Manager event log on the management server. They contain the following description:

Failed to store data in the Data Warehouse...

This error occurs when the Default action account in SCOM does not have write permission on the data warehouse database and none of the XenDesktop controllers is discovered as *Site Data Collector*. This may happen when:

- The Site Data Collector object switches from one XenDesktop Delivery Controller to another.
- Collector object switches from one XenDesktop Delivery Controller to another.
- None of XenDesktop Delivery Controllers is operational.

This issue occurs only with some of the workflows, for example, *Comtrade.Citrix. XenDesktop.EndUser.Reports.PublishConnectionsLogonsDW.Rule* or *Comtrade. Citrix.XenDesktop.EndUser.Reports.PublishApplicationInstanceDW.Rule.*

Action: Ensure that at least one Delivery Controller is active at all times.

• **Issue ID**: SCOM-211 (5163)

Symptom: The *Delivery Group - Logon Details (Troubleshooting)* report does not function if the *Use business hours* option is selected.

Action: Clear the Use business hours option.

• Issue ID: SCOM-212 (5162)

Symptom: When launching Citrix Director by using the *Start Citrix Director* task in the Operations Manager Console for user logon or session alerts, Citrix Director is not opened for the users' context if the user is *anonymous*. Anonymous users were introduced in XenApp and XenDesktop 7.6.

Action: None. There is no workaround available.

• Issue ID: SCOM-1426

Symptom: The Object and Counter names in all Performance views on the SCOM Management Server are not localized, but appear in English.

Action: None. This issue does not impact product functionality.

Applies to French, German, Japanese, Simplified Chinese and Spanish languages.

• Issue ID: SCOM-78

Symptom: If the password of the Citrix SCOM Management Pack for XenApp and XenDesktop Monitoring user account contains non-English characters the **Check Requirements and Configuration for Citrix MPXAXD Agent** task reports an error in the Citrix XenApp/XenDesktop Powershell Interface section as follows: "Could not get data from Citrix PowerShell interface."

Action: Change the password of Citrix SCOM Management Pack for XenApp and XenDesktop Monitoring user account

to contain only English characters. Applies to French, German, Japanese, Simplified Chinese and Spanish languages.

• Issue ID: SCOM-1391, SCOM-1384

Symptom: In the SCOM Console, the output messages of all tasks are not localized, but appear in English. **Action:** None. This issue does not impact product functionality. Applies to French, German, Japanese, Simplified Chinese and Spanish languages.

• Issue ID: SCOM-1156

Symptom: Surrogate pair characters in the Citrix SCOM Management Pack for XenApp and XenDesktop reports appear incorrectly.

Action: None. This issue does not impact product functionality. Applies to Japanese and Simplified Chinese languages.

• Issue ID: SCOM-1222

Symptom: If the XenApp and XenDesktop Site name contains Japanese or Simple Chinese characters, an error might occur when running the **Check Requirements and Configuration for Citrix MPXAXD Agent** or **Check Requirements and Configuration for Citrix MPXAXD Machine Agent** task.

The Director URL for the Site is configured successfully, but the task might display the following error message: "Director URL is not configured for Site <sitename>. Please configure Director URL for this Site in 'XenApp and XenDesktop MP Configuration' tool and deploy new configuration using 'Update Configuration on Citrix MPXAXD Agent/Machine Agent' task in SCOM."

Action: Avoid Japanese and Simplified Chinese characters in the XenApp and XenDesktop Site name. Applies to Japanese and Simplified Chinese languages.

• Issue ID: SCOM-2100

Symptom: The reports - Delivery Group Server OS - Machine Performance, Server OS Machine - Performance (Plan and Manage), and Server OS Machine - Performance (Troubleshooting) can show incorrect load index values for certain Server OS Machines.

Action: None

• Issue ID: SCOM-2137

Symptom: Site level performance monitoring: Data collection for Sessions on Site, Connected Users on Site, and User Logon Performance might stop after running for a while.

Action: Restart the Microsoft Monitoring Agent service on the Delivery Controller that acts as the Site Data Collector.

• Issue ID: SCOM-2288

Symptom: When a machine running active sessions registers with a different Delivery Controller, the Machine Agent might not monitor some running sessions.

- Action: None
- Issue ID: SCOM-2359

Symptom: The Check Requirements task of the Machine Agent might report incorrect discovery times for Server and Desktop OS machine discovery.

Action: None. Ignore the machine discovery time values.

• **Issue ID:** SCOM-2510

Symptom: When you generate the Application usage report for multiple Sites with the scope set to top N or bottom

N, the application entries in the are listed only in the order of usage but not grouped by Site. The report might be inaccurate and difficult to comprehend.

Action: Select one Site at a time to get accurate ordering of the applications with the scope set to top N or bottom N entries.

• Issue ID: SCOM-2514

Symptom: The **Show only applications used by user** filter of the Application - Usage report lists unused applications also.

Action: Ignore applications with usage duration as zero.

Fixed issues

• Issue ID: SCOM-2421

Workflow error

Symptom: Failure of Site performance monitoring results in the following:

- a Citrix MPXAXD Agent Not Operational alert with workflow id site-performance is triggered.
- running the Check Requirements task shows the following error: 'site-performance' Not Operational

One or more errors occurred.

• the log file **ComTrade.MP.XenDesktop.Service.log** contains an entry, System.IO.FileNotFoundException: The network path was not found.

This might happen when VDA Service monitoring is on and one or more VDAs have been deleted.

- Issue ID: SCOM-2407
 Symptom: Discovery for Sites running Citrix XenApp and XenDesktop Version 7.6 with more than 2000 VDAs might fail.
- Issue ID: SCOM-2362

Symptom: The Citrix SCOM Management Pack Agent for XenApp and XenDesktop tries to monitor machines that are inactive (lifecycleState=1). When this happens, the Site-performance workflow fails.

Licensing

Licensing of Citrix SCOM Management Pack for XenApp and XenDesktop depends on licensing of the monitored product, XenApp and XenDesktop. For Citrix SCOM Management Pack for XenApp and XenDesktop to operate properly and remain fully functional, its licensing must be covered. During installation or upgrade, no further actions are necessary on either the SCOM management server or the computers that host the product's Agent and Machine Agent instances.

Covered licensing means that the following conditions are fulfilled:

- The XenApp and XenDesktop Site that you plan to monitor uses a *Platinum* license within either maintenance program: Subscription Advantage, Software Maintenance.
- Subscription Advantage Date (of the Platinum license) falls after the *Subscription Advantage Eligibility* date that is embedded into binary files of the current version of Citrix SCOM Management Pack for XenApp and XenDesktop. For instructions on how to check this, see Install and Configure. In Citrix product documentation, Subscription Advantage Eligibility date may also be referred to as *product burn-in date*.

Important: The Subscription Advantage Eligibility date of this product release is 2017.1101.

Example: If the Subscription Advantage Date of your Platinum license for XenApp and XenDesktop is *2016.0531* (meaning 31 May 2016), and the Subscription Advantage Eligibility date of Citrix SCOM Management Pack for XenApp and XenDesktop is *2016.0518* (meaning 18 May 2016), the product remains fully functional after 31 May 2016, provided your XenApp and XenDesktop license remains valid (unexpired). If you upgrade to a later version of Citrix SCOM Management Pack for XenApp and XenDesktop whose Subscription Advantage Eligibility date is, for example, *2016.0710* (meaning 10 July 2016), Citrix SCOM Management Pack for XenApp and XenDesktop stops gathering and reporting new data (topology updates, incoming alerts, newly discovered objects).

Renewal after expired XenApp and XenDesktop License

It may take up to 24 hours for the Citrix SCOM Management Pack Agent for XenApp and XenDesktop instances to detect renewal of an expired Platinum license in the XenApp and XenDesktop Site. After such license renewal, to restore licensing coverage of XenApp and XenDesktop on Delivery Controllers (agent-managed computers) immediately, do the following:

1. On a Delivery Controller, stop the Citrix MPXAXD Agent service by using an operating system tool.

2. From the *db* subfolder of the Agent's data files folder (*%ProgramData%\Citrix\XenDesktop MP Agent* by default), remove the *agent-license-info.json* file.

3. Start the Citrix MPXAXD Agent service again.

4. Repeat steps 1 to 3 on each additional Delivery Controller.

Upgrading

Note: Product versions earlier than 3.6 were released under the name **Comtrade Management Pack for Citrix XenApp** and XenDesktop.

Upgrade is available for versions 3.5 and later. During the upgrade process, the included management packs of an earlier product version are automatically upgraded; their prior removal is not required. Your management pack customization is preserved.

Caution:

- Before upgrading from an earlier product version, ensure that licensing of this version of Citrix SCOM Management Pack for XenApp and XenDesktop is covered. For instructions on how to verify licensing coverage, see Preparing for Installation in Install and Configure.
- Upgrading to an unlicensed version of Citrix SCOM Management Pack for XenApp and XenDesktop results in ceased process of gathering and reporting new data. The data already collected is preserved and remains available to SCOM. If this occurs, downgrading to the earlier (licensed) product version requires a complete uninstallation of the new product version (including removal of the included management packs from SCOM), followed by reinstallation of the earlier product version. The management pack removal from SCOM deletes all the operational data (alerts, events, performance data) while the reinstallation ensures continued availability of data in the SCOM data warehouse (reports).

For upgrade instructions, see Upgrade in Install and Configure.

System requirements

Nov 27, 2017

Before installing Citrix SCOM Management Pack for XenApp and XenDesktop, make sure that your environment meets the requirements listed in this topic.

Hardware requirements

Computers that will host Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop must meet the following minimum hardware requirements:

- One physical CPU with two cores (for physical systems), two virtual CPUs (for virtual systems); CPU clock speed of 2.3 GHz
- 4 GB of RAM (excluding the paging file size)
- 1 GB of free local storage space

For more information on the Machine Agent, see Install and Configure.

Software requirements

Citrix SCOM Management Pack for XenApp and XenDesktop requires a supported version of the following products that it integrates with:

- Citrix XenApp and XenDesktop
- Microsoft System Center Operations Manager

Additionally, Citrix SCOM Management Pack for XenApp and XenDesktop requires a supported version of Citrix Licensing in the XenApp and XenDesktop Site where it is deployed. Make sure that the following software is available on the Delivery Controllers:

In addition, make sure that the following software is available on the Delivery Controllers:

- Microsoft .NET Framework 4.5.2 or later
- Microsoft's Visual C++ Redistributable Packages for Visual Studio 2013

Supported versions of Citrix XenApp and XenDesktop

Citrix SCOM Management Pack for XenApp and XenDesktop is compatible with the following Citrix XenApp and XenDesktop versions:

Product version (Delivery Controller)	Supported
Citrix XenApp and XenDesktop 7.16	<i>v</i>
Citrix XenApp and XenDesktop 7.15 LTSR	1
Citrix XenApp and XenDesktop 7.14	•
Citrix XenApp and XenDesktop 7.13	1

Citrix XenApp and XenDesktop 7.12	•
Citrix XenApp and XenDesktop 7.11	•
Citrix XenApp and XenDesktop 7.9	1
Citrix XenApp and XenDesktop 7.8	•
Citrix XenApp and XenDesktop 7.7	•
Citrix XenApp and XenDesktop 7.6 LTSR	•
Citrix XenApp and XenDesktop 7.61	•
Citrix XenApp and XenDesktop 7.5	•
Citrix XenApp and XenDesktop 7.1	1
Citrix XenApp and XenDesktop 7.0	1

¹This entry covers the following configurations: 7.6, 7.6 + FP1 (Feature Pack 1), 7.6 + FP2, 7.6 + FP3.

Product version (Citrix Director)	Supported
versions included with the supported Delivery Controller versions	1

Supported Citrix Licensing versions

Citrix SCOM Management Pack for XenApp and XenDesktop can be deployed in environments where any of the following versions of Citrix Licensing is used:

Product version	Supported
Citrix Licensing 11.14 or later	•

Supported versions of SCOM

Citrix SCOM Management Pack for XenApp and XenDesktop is compatible with the following SCOM versions:

Microsoft System Center Operations Manager version	Supported
Microsoft System Center Operations Manager 2016	1
Microsoft System Center Operations Manager 2012 R2	1
Microsoft System Center Operations Manager 2012 ¹	•

¹ This entry covers the following configurations: base release, base release + SP1 (Service Pack 1).

Supported operating systems

Agent operating systems

Citrix SCOM Management Pack Agent for XenApp and XenDesktop is compatible with all operating systems that are supported by Delivery Controller of Citrix XenApp and XenDesktop.

Machine Agent operating systems

Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop is compatible with the following operating systems:

Operating system	Supported
Microsoft Windows Server 2016	J.
Microsoft Windows Server 2012 R2	<i>v</i>
Microsoft Windows Server 2012	<i>✓</i>

Regional settings support

The product can be deployed and operates correctly in environments with regional setting configured to use any of the following languages:

Language	Language code	Supported
English	en	1
Spanish	es	1

Performance overview

Nov 27, 2017

Generally speaking, Citrix SCOM Management Pack for XenApp and XenDesktop consists of three parts:

- The part installed on the SCOM management server (mandatory)
- Citrix SCOM Management Pack Agent for XenApp and XenDesktop (mandatory)
- Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop (optional)

The SCOM management server-side part

This part, a collection of management packs includes discoveries, monitors, rules, tasks, and reports. This part does not significantly add to the basic resource requirements (CPU and memory) of the SCOM management server. It is not resource-intensive in terms of storage requirements on the SCOM reporting data warehouse database. Hence, the SCOM management-server part does not require a specific configuration to monitor larger Citrix XenApp and XenDesktop environments.

Citrix SCOM Management Pack Agent for XenApp and XenDesktop

Performance and resource consumption of Citrix SCOM Management Pack Agent for XenApp and XenDesktop primarily depend on the size of your XenApp and XenDesktop environment, specifically on the number of resources within each Site. Furthermore, they are influenced by the load on the Delivery Controller instances. In contrast, the number of Sites in your XenApp and XenDesktop environment has no influence on the performance and resource consumption.

For scaling up Citrix SCOM Management Pack Agent for XenApp and XenDesktop, the hardware of the hosting Delivery Controller must be reconfigured. The Agent cannot be scaled out.

Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop

The product's Machine Agent can be scaled up without the need of altering XenApp and XenDesktop deployment, as no XenApp and XenDesktop component is installed on its proxy node. Machine Agent can also be scaled out; you can achieve this by installing multiple instances on multiple proxy nodes and configuring it such that each Machine Agent instance handles only a subset of all Delivery Controller instances.

Configuration specifications

All figures in this document are valid for environments that:

- Are monitored with the specified product version of Citrix SCOM Management Pack for XenApp and XenDesktop
- Match the documented configuration specifications for XenApp and XenDesktop and SCOM
- Use the default configuration of management packs in terms of which rules and monitors are enabled (this applies to management packs included in Citrix SCOM Management Pack for XenApp and XenDesktop and management packs bundled with SCOM). In addition:
 - Disable VDA service monitoring
 - Enable connectors when the environment contains more than 600 Server OS machines. For more information on configuring connectors, see Configuring SCOM Administrator.
 - Increase the monitoring interval of Citrix MPXAXD Machine Agent. For more information, see Increasing discovery

© 1999-2017 Citrix Systems, Inc. All rights reserved.

interval of Citrix MPXAXD Machine Agent in Configuration for large XenApp and XenDesktop environments.

• Use the default configuration of SCOM management server and SCOM agents, without fine-tuning or any special adjustment.

For the product to work with the scale of the environment documented here, it is recommended that you configure the SCOM agent on all controllers. For environments with approximately 15,000 VDAs and/or around 25,000 sessions (Desktop OS and Server OS) or more, follow the recommended configuration steps in <u>Configuration for monitoring large XenApp</u> and XenDesktop environments.

Validated Citrix SCOM Management Pack for XenApp and XenDesktop version

Validation of Citrix SCOM Management Pack for XenApp and XenDesktop was performed with the product version listed in the following table.

Product	Version
Citrix SCOM Management Pack for XenApp and XenDesktop	3.14

Citrix XenApp and XenDesktop configuration specification

With this configuration, the Site database server is deployed outside the Delivery Controller computer.

Computer: Delivery Controller	
Specification item	Value
Compute	four virtual CPUs; CPU clock speed of 2.67 GHz
Memory	16 GB of RAM
Software version	Citrix XenApp and XenDesktop 7.14.1

Computer: Site database server	
Specification item	Value
Compute	four virtual CPUs; CPU clock speed of 2.67 GHz
Memory	24 GB of RAM
Software version	Microsoft SQL Server 2014 R2

Microsoft System Center Operations Manager configuration specification

With this configuration, the SCOM database and data warehouse server is deployed outside the SCOM management server computer.

Computer: SCOM management server		
Specification item	Value	
Compute	eight virtual CPUs; CPU clock speed of 2.67 GHz	
Memory	16 GB of RAM	
Software version	Microsoft System Center Operations Manager 2012 R2	

Computer: SCOM database and operations management server		
Specification item	Value	
Compute	eight virtual CPUs; CPU clock speed of 2.67 GHz	
Memory	24 GB of RAM	
Software version	Microsoft SQL Server 2014	

Computer: SCOM database and data warehouse server		
Specification item	Value	
Compute	eight virtual CPUs; CPU clock speed of 2.67 GHz	
Memory	24 GB of RAM	
Software version	Microsoft SQL Server 2014	

Computer: SCOM reporting database		
Specification item	Value	
Compute	four virtual CPUs; CPU clock speed of 2.67 GHz	
Memory	8 GB of RAM	
Software version	Microsoft SQL Server 2014 R2	

Monitoring ability of Citrix MPXAXD Agent

The following table lists the maximum values at which the Citrix MPXAXD Agent part of Citrix SCOM Management Pack for XenApp and XenDesktop was successfully validated. The product might be able to monitor environments larger than stated below. However, this hasn't been tested.

Maximum number of monitored items (per Site)

ltem	Value
Delivery groups	300
Server OS machines	2000
Server OS machines in a delivery group	200
Desktop OS machines	36,000
Applications	2,500
Concurrent sessions	68,000 (36,000 Desktop OS sessions + 32,000 Server OS sessions)

Average resource consumption

Resource consumption was measured in a XenApp and XenDesktop Site with six Delivery Controller instances. The measurement was made on the Delivery Controller where Citrix SCOM Management Pack Agent for XenApp and XenDesktop did most data processing. Measuring spanned a period of 2.5 days. Windows Performance Monitor was used as the measuring tool.

Important: In XenApp and XenDesktop deployments with multiple Delivery Controller instances, the majority of data

© 1999-2017 Citrix Systems, Inc. All rights reserved.

processing is performed by a single instance of Citrix SCOM Management Pack Agent for XenApp and XenDesktop (on one Delivery Controller). Resource consumption is documented only for the primary controller, as the other controllers in the Site have minimal resource usage.

Average consumption on a Delivery Controller (for 38,000 VDIs)

Item	Value
MPXAXDAgent CPU usage ¹	10.62%
HealthService CPU usage	1.90%
MonitoringHost CPU usage	3.88%
MPXAXDAgent memory usage	1480 MB
HealthService memory usage	174 MB
MonitoringHost memory usage	240 MB

¹ CPU usage is calculated based on the *% Processor Time* counter and the number of processor cores or virtual CPUs.

The number of published applications has a negligible effect on the CPU usage of the *MPXAXDAgent* service.

The following figure shows changes in CPU usage of *MPXAXDAgent, HealthService and MonitoringHost* after these services had been started for the first time. Values are taken from the first part of the entire measurement time period (first four hours), when initial high data inflow loaded compute resource substantially. After first three hours, initial high load decreased significantly.



The following figure shows typical patterns of changes in CPU usage of *MPXAXDAgent*, *HealthService and MonitoringHost* through a major part of the measurement time period, after the initial high load had already subsided.



As the figure above shows, bursts of high CPU usage of *MPXAXDAgent* occured every five minutes, while spikes of high CPU usage of *HealthService and MonitoringHost* were not periodical.

The following figure shows the memory usage of *MPXAXDAgent*, and *HealthService*, and *MonitoringHost* through time, measured during the whole validation set.



As the figure above shows, on the Delivery Controller there should be approximately 4.2 GB of physical memory available for the joint needs of *MPXAXDAgent*, *HealthService and MonitoringHost*.

Monitoring ability of Citrix MPXAXD Agent and Citrix MPXAXD Machine Agent

This section contains details about a XenApp and XenDesktop Site with six Delivery Controllers and corresponding proxy nodes monitored by Citrix MPXAXD Agents.

Proxy node configuration specification

Computer: Proxy Node	
Specification item	Value
Compute	two virtual CPUs; CPU clock speed of 2.67 GHz
Memory	8 GB of RAM

For Citrix MPXAXD Machine Agent to monitor as per the documented scale it is recommended that you configure the agent as per steps in Increasing discovery interval of Citrix MPXAXD Machine Agent in Configuration for large XenApp and XenDesktop environments.

Maximum number of monitored items (per Site)

The following table lists the maximum values at which the Citrix SCOM Management Pack for XenApp and XenDesktop – the Citrix MPXAXD Agent and Citrix MPXAXD Machine Agent parts - was validated successfully.

Maximum number of monitored items (per Site)

ltem	Value
Delivery groups	300
Server OS machines	2000
Server OS machines in a delivery group	200
Desktop OS machines	26,000
Applications	2,500
Concurrent sessions	50,000 (26,000 Desktop OS sessions + 24,000 Server OS sessions)

Average resource consumption

Resource consumption was measured in a XenApp and XenDesktop Site with six Delivery Controller instances and corresponding proxy nodes. Measurement related to Citrix MPXAXD Agent was made on the Delivery Controller where Citrix SCOM Management Pack Agent for XenApp and XenDesktop did most data processing.

Measurement related to Citrix MPXAXD Machine Agent was made on the six proxy nodes, each connected to one specific Delivery Controller.

Measuring spanned a period of 3 days. Windows Performance Monitor was used as the measuring tool.

Important: Resource consumption is documented only for the primary controller, and the proxy node connected to it. The other proxy nodes processed a similar number of machines and sessions, with a similar resource consumption.

Average consumption

ltem	Value		
Citrix MPXAXD Agent (Average consumption on a Delivery Controller (for 28 000 VDIs)			
MPXAXDAgent CPU usage ¹	11.66%		
HealthService CPU usage	1.03%		
<i>MonitoringHost</i> CPU usage	5.93%		
MPXAXDAgent memory usage	1336 MB		
HealthService memory usage	180 MB		
<i>MonitoringHost</i> memory usage	390 MB		
Citrix MPXAXD Machine Agent (Average consumption on a proxy node (for 4,500 VDIs)			
MPXAXDMachineMonitorSvc ³ CPU usage ¹	11.94%		
HealthService ² CPU usage	0.36%		
MonitoringHost CPU usage	0.55%		
MPXAXDMachineMonitorSvc memory usage	169 MB		
HealthService memory usage	43 MB		
MonitoringHost memory usage	160 MB		

¹ CPU usage is calculated based on the *% Processor Time* counter and the number of processor cores or virtual CPUs

² On a monitored computer, the Operations Manager agent is listed as the System Center Management Health service. The System Center Management Health service collects performance data, executes tasks, and so on.

³ On a proxy node, MPXAXDMachineMonitorSvc is the main process for Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop.

The following figure shows changes in CPU usage of *MPXAXDAgent*, *HealthService and MonitoringHost* on the primary controller for the entire measurement period.

© 1999-2017 Citrix Systems, Inc. All rights reserved.



The following figure shows the memory usage of *MPXAXDAgent*, and *HealthService*, and *MonitoringHost* through time on the primary controller measured during the entire validation set.



The following figure shows typical patterns of changes in CPU usage of *MPXAXDMachineMonitorSvc, HealthService* and *MonitoringHost* on the proxy node where Citrix MPXAXD Machine Agent is installed. These services were started for the first time. Values were taken from the first day of the measurement time period.



The following figure shows the memory usage of *MPXAXDMachineMonitorSvc*, *HealthService* and *MonitoringHost* through time, measured during the first day of the measurement time period.



As the figure above shows, on the proxy there should be approximately 750 MB of physical memory available for the joint needs of the *MPXAXDMachineMonitorSvc*, *HealthService*, and *MonitoringHost*.

Configuration for large XenApp and XenDesktop environments

Nov 27, 2017

This article specifies the configuration updates recommended by Citrix for large XenApp and XenDesktop environments monitored by Citrix SCOM Management Pack for XenApp and XenDesktop. These configuration changes are also necessary if the Operations Manager Event Log contains events related to Citrix SCOM Management Pack for XenApp and XenDesktop with ID 21402 or 6024. This configuration change is optional though for smaller environments.

Citrix XenApp and XenDesktop configuration

Disabling monitoring of VDA Service

Citrix SCOM Management Pack for XenApp and XenDesktop monitors the VDA services (running state of Citrix services on VDA) by default. In large environments with 500+ Server OS machines, this monitoring can consume a large amount of system memory. As a result, Citrix recommends that you disable the monitoring of VDA services in Server OS machines in such environments.

To disable the monitoring of VDA services on Server OS machines, make the following registry changes on all Delivery Controllers.

Caution: Using Registry Editor incorrectly can cause serious problems that might require you to reinstall your operating system. Citrix cannot guarantee that problems resulting from the incorrect use of Registry Editor can be solved. Use Registry Editor at your own risk. Citrix recommends that you back up Windows Registry before changing it.

- 1. In the Start menu, type **regedit** in the Search text box, and then click **Search**.
- 2. In the results list, click **regedit** or **regedit.exe**.
- 3. In the User Account Control dialog box, click **Yes**.
- 4. In the Registry Editor, navigate to HKEY_LOCAL_MACHINE >SOFTWARE>ComTrade>XenDesktop MP Agent.
- 5. Right-click and select New>DWORD (32-bit) Value.
- 6. Name the new value **SkipVdaDiscovery.**
- 7. Right-click **SkipVdaDiscovery** and select **Modify**.
- 8. In the Value data text box, type the decimal value 1.
- 9. Click **OK**.

10. Using the Services administrative tool of the operating system, restart the Citrix MPXAXD Agent service.

Increasing the discovery interval of Citrix MPXAXD Machine Agent

Citrix SCOM Management Pack for XenApp and XenDesktop uses Citrix MPXAXD Machine Agent to monitor the machine and session performance. However, this monitoring could be performance intensive, and the time taken to collect information from all VDIs can increase depending on the response from each VDI. To avoid possible data loss, it is recommended that you increase the sampling interval of Citrix MPXAXD Machine Agent to 10 minutes (default 5 minutes) in large environments where a proxy monitors more than 2000 VDIs.

To increase the discovery interval of the Citrix MPXAXD Machine Agent, make the following changes in the registry on all proxy machines.

Caution: Using Registry Editor incorrectly can cause serious problems that might require you to reinstall your operating

© 1999-2017 Citrix Systems, Inc. All rights reserved.

system. Citrix cannot guarantee that problems resulting from the incorrect use of Registry Editor can be solved. Use Registry Editor at your own risk. Citrix recommends that you back up Windows Registry before changing it.

- 1. In the Start menu, type **regedit** in the Search text box, and then click **Search**.
- 2. In the results list, click **regedit** or **regedit.exe**.
- 3. In the User Account Control dialog box, click **Yes**.
- 4. In the Registry Editor, navigate to HKEY_LOCAL_MACHINE\SOFTWARE\Comtrade\XenDesktop MP Machine Agent.
- 5. Right-click and select **New>DWORD (32-bit) Value**.
- 6. Name the new value **SamplingInterval.**
- 7. Right-click **SamplingInterval** and select **Modify.**
- 8. In the Value data text box, type the decimal value **10**.
- 9. Click **OK**.

10. From the Services administrative tool of the operating system, restart the Citrix MPXAXD Machine Agent service.

In the SCOM Console, to increase the default interval values, set **IntervalSeconds** to 600 for all rules and monitors having the target as **Citrix MPXAXD Machine Agent Proxy Computer Role** and **Machine Agent Data Watcher**, basically for all monitors and rules related to Citrix MPXAXD Machine Agent monitoring.

Increasing the queue size of Microsoft Monitoring Agent

The Microsoft Monitoring Agent uses a queue to store data to be sent to the Management server. Typically, the queue is used to prevent data loss when the Management server is unavailable or the agent is unable to communicate with other available Management Servers. When the queue becomes full, the agent starts deleting the oldest data.

In a node monitoring a large XenApp and XenDesktop environment, the default agent queue size of 15,360 KB (15 MB) is not sufficient to accommodate the high amount of data flow. This results in data loss that leads to erroneous management of the environment.

To increase the queue size of the Microsoft Monitoring Agent, do the following on the Delivery Controllers and the Proxy nodes:

Caution: Using Registry Editor incorrectly can cause serious problems that might require you to reinstall your operating system. Citrix cannot guarantee that problems resulting from the incorrect use of Registry Editor can be solved. Use Registry Editor at your own risk.

- 1. In the Start menu, type **regedit** in the Search text box, and then click **Search**.
- 2. In the results list, click **regedit** or **regedit.exe**.
- 3. In the User Account Control dialog box, click Yes.
- 4. In the Registry Editor, navigate to HKEY_LOCAL_MACHINE > SYSTEM > CurrentControlSet > Services >

HealthService > **Parameters** > **Management Groups** > < *GroupName*>, where < *GroupName*> is the name of the SCOM Management group the agent belongs to.

5. Right-click **maximumQueueSizeKb** and select **Modify**.

Figure The maximumQueueSizeKb value in Registry Editor

Registry Editor				
Eile Edit Yiew Favorites Help Image: Security Image: Security Image: Security Image: Security Image: Security	Name (Default) (Default)	Type REG_SZ REG_SZ REG_DWORD REG_DWORD REG_DWORD REG_BINARY	Data (value not set) {534E71F9-7970-42D6 1095ef6a-9206-daf8-2 0x00000008 (8) 0x00019000 (102400) 0x00000000 (0) 01 00 04 80 30 00 00 0	
	< III	t Groups\scom1	7	
computer (intel_coche_midefinite(statein/currentcontrols	er/Services/ricalitiService/Farameters/ivianagement	coroups/sconn	1	

- 6. In the Value data text box, type a value in the range 15,360-3,07,200 (KB; 3,07,200 KB equals 300 MB).
- Caution: Citrix recommends that you back up Windows Registry before changing it.
- 7. Click OK.
- 8. Using the Services administrative tool of the operating system, restart the **Microsoft Monitoring Agent Service**.

Increasing the queue size of the version store

The Microsoft Monitoring Agent Service stores records of unfinished transactions in a version store. Version store enables the Extensible Storage Engine (ESE) to track and manage current transactions. It contains a list of operations performed by active transactions maintained by the Health Service. This list is an in-memory list of modifications made to the Health Service store database.

The default size of version store is 1,920 16-KB memory pages (30 MB) and is optimized for a typical installation of SCOM. A version store of this size is not sufficient to handle the high data flow in a large XenApp and XenDesktop environment.

To increase the queue size of the version store, do the following on the Delivery Controllers and the Proxy nodes

Caution: Using Registry Editor incorrectly can cause serious problems that might require you to reinstall your operating system. Citrix cannot guarantee that problems resulting from the incorrect use of Registry Editor can be solved. Use Registry Editor at your own risk.

- 1. In the Start menu, type **regedit** in the Search text box, and then click **Search**.
- 2. In the Results list, click **regedit** or **regedit.exe**.
- 3. In the User Account Control dialog box, click **Yes**.
- 4. In the Registry Editor window, navigate

to HKEY_LOCAL_MACHINE > SYSTEM > CurrentControlSet > Services > HealthService > Parameters.

5. Right-click the **Persistence Version Store Maximum** value and click **Modify**.

Figure The Persistence Version Store Maximum value in Registry Editor

₫	Registry Editor		_ □)	c
<u>F</u> ile <u>E</u> dit <u>V</u> iew F <u>a</u> vorites <u>H</u> elp				
Image: Contract of the second seco	Name (Default) Frror Reports Enabled Persistence Cache Maximum Persistence Checkpoint Depth Maximum Persistence Initial Database Page Count Persistence Maximum Sessions Persistence Page Hint Cache Size Persistence Version Store Maximum Queue Error Reports Runtime CLR Version UNIVERSITY OF CONSTRUCTION NUMBER OF CONSTRUCTION NUM	Type REG_SZ REG_DWORD REG_DWORD REG_DWORD REG_DWORD REG_DWORD REG_DWORD REG_DWORD REG_DWORD REG_SZ	Data (value not set) 0x00000000 (0) 0x00000000 (2621- 0x01400000 (2097) 0x00000000 (38400 0x00000000 (32) 0x00000000 (32) 0x00040000 (2621- 0x00000000 (1310) 0x00000000 (1310) 0x00000000 (0) v4.0.30319 0x0000000 (0) >	▲ 1 = C
Computer\HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlS	et\Services\HealthService\Parameters			

6. In the **Value** data text box, type a value in the range 1,920-19,200 (16-KB blocks, 19,200 16-KB blocks equals 300 MB). **Caution:** Citrix recommends that you back up Windows Registry before changing it.

- 7. Click OK.
- 8. Using the Services administrative tool of the operating system, restart the Microsoft Monitoring Agent Service.

Important: Any repair or reinstallation of the Microsoft Monitoring agent removes these changes.

Microsoft System Center Operations Manager configuration

Raising the memory utilization monitor threshold

SCOM constantly monitors the memory utilization of two crucial agent processes - the System Center Management Service Host Process and the Microsoft Monitoring Agent Service. When the memory utilization metric exceeds 300 MB, these two processes restart as a recovery means.

On a proxy agent computer, the threshold limit of memory utilization must be raised to 800 MB.

Caution: Using Registry Editor incorrectly can cause serious problems that might require you to reinstall your operating system. Citrix cannot guarantee that problems resulting from the incorrect use of Registry Editor can be solved. Use Registry Editor at your own risk.

To set the monitor utilization threshold, do the following:

- 1. Log on to the Management server.
- 2. Launch the SCOM Operations console.
- 3. In the Monitoring view, expand Operations Manager > Agent Details and click Agents By Version.
- 4. In the Results pane, in the Name column, right-click the line of the proxy computer, and select **Open** > **Health**

Explorer for <ProxyNodeFQDN>.

- 5. In the Health Explorer for <ProxyNodeFQDN> window, disable any filter that might be set.
- 6. Expand Entity Health > Performance > System Center Management Health Service Performance > System Center Management Health Service Memory Utilization.

7. Right-click Health Service Private Bytes Threshold and click Monitor Properties.

Figure The Health Service Private Bytes Threshold entry in Health Explorer

- 4 🕢 Entity Health qcxd18.tesmf.hsl (Object)
- Availability qcxd18.tesmf.hsl (Object)
- Configuration qcxd18.tesmf.hsl (Object)
- Performance qcxd18.tesmf.hsl (Object)
- 4 🕢 System Center Management Health Service Performance qcxd18.tesmf.hsl (Health Service)
 - Agent processor utilization qcxd18.tesmf.hsl (Health Service)
 - Send Queue % Used qcxd18.tesmf.hsl (Agent)
 - Send Queue % Used qcxd18.tesmf.hsl (Health Service)
- a 🕢 System Center Management Health Service Memory Utilization qcxd18.tesmf.hsl (Health Service)
 - W Health Service Handle Count Threshold qcxd18.tesmf.hsl (Health Service)
 - Health Service Private Bytes Threshold qcxd18.tesmf.hsl (Health Service)
 - 🕢 Monitoring Host Handle Count Threshold qcxd18.tesmf.hsl (Agent)
 - Monitoring Host Private Bytes Threshold qcxd18.tesmf.hsl (Agent)
 - O System Center Management Health Service Modules Performance Rollup qcxd18.tesmf.hsl (Health Service)
- WMI Memory Usage Monitor qcxd18.tesmf.hsl (Agent)
- Security qcxd18.tesmf.hsl (Object)

8. In the **Health Service Private Bytes Threshold Properties** window, in the **Overrides** tab, click **Override** and select **For the object: <ProxyNodeFQDN>**.

9. In the Override Properties window, under **Parameter Name** column, locate the **Agent Performance Monitor Type** (Consecutive Samples) - Threshold line.

- 10. In the same line, in the Override column, select the check box.
- 11. In the Override Value column, type 838,860,880 (bytes. This value equals 800 MB).
- 12. From the **Select destination management pack** drop-down list, select the management pack into which you want to save the customization. Click **New** to create a new management pack if needed.
- 13. Click **OK** to close the Override Properties window.
- 14. Click **Close** to close the Health Service Private Bytes Threshold Properties window.

15. In the left pane, right-click **Monitor Host Private Bytes Threshold** and select **Monitor Properties**. Repeat steps 8 - 13 to update the value for Monitor Host Private Bytes Threshold.

16. Click **Close** to close the Monitor Host Private Bytes Threshold Properties window.

Disabling or increasing threshold of the Citrix MPXAXD Agent recovery monitor

The Citrix SCOM Management Pack for XenApp and XenDesktop has a recovery monitor that runs a recovery task when the memory usage of the Citrix MPXAXD Agent exceeds beyond the threshold (by default 2,000 MB). The recovery task is implemented to prevent potential memory leaks. However, in large environments, the memory usage might exceed this threshold because of high activity in the XenApp and XenDesktop environment.

To avoid unnecessary Citrix MPXAXD Agent Service restarts and potential loss of data:

- Disable the monitor or
- Increase the memory usage threshold to a value greater than your highest recorded Citrix MPXAXD Agent memory consumption during typical operation.

To configure the Process Private Memory monitor, do the following:

- 1. Log on to the Management server.
- 2. Launch the SCOM Operations console.
- 3. In the Authoring view, expand Management Pack Objects > Monitors and search for Citrix MPXAXD Agent.
- 4. Expand Citrix MPXAXD Agent > Entity Health > Performance.
- Right-click the Process Private Memory (in MB) monitor and go to Overrides > Override the Monitor > For all objects of class: Citrix MPXAXD Agent.
 - 1. To increase the threshold, find the **Threshold** parameter and select the check box. Type the **Override Value** (greater than the Citrix MPXAXD Agent memory consumption in typical operation). For example, 5000.
 - 2. To disable the monitor, find the **Enabled** parameter and select the check box. From the drop-down menu, select **False**.
- 6. From the **Select destination management pack** drop-down list, select the management pack to save the customization for. If necessary, click **New** to create a new management pack.
- 7. Click **OK** to close the Override Properties window.
- 8. Click **Close** to close the Process Private Memory (in MB) Properties window.

Disabling or increasing threshold of the Citrix MPXAXD Agent recovery monitor

Install and configure

Nov 27, 2017

This topic contains instructions to install and configure the Citrix SCOM Management Pack for XenApp and XenDesktop. Perform all procedures in the documented order of precedence. Optional procedures are appropriately marked. Also covered are the instructions to uninstall and upgrade the product.

Note: Citrix recommends that you use the same versions of the Citrix SCOM Management Pack, the Citrix SCOM Management Pack Agent, and of the Citrix SCOM Management Pack Machine Agent to ensure that all features work correctly.

You can extend Citrix SCOM Management for XenApp and XenDesktop on-premises to monitor **VDAs deployed on Microsoft Azure** by configuring a Site-to-Site VPN connection from the on-premises Site to the cloud Site. See How to Leverage SCOM to Monitor Citrix VDAs on Microsoft Azure for steps to configure Microsoft Azure and the **Routing and Remote Access Service (RRAS)** Site-to-Site VPN service.

Preparing for the installation

Before installing the Citrix SCOM Management Pack for XenApp and XenDesktop, make sure the following general prerequisites are fulfilled:

- Your environment meets the hardware and software requirements. For hardware, software requirements and/or other requirements, see System Requirements.
- Licensing of Citrix SCOM Management Pack for XenApp and XenDesktop is covered. The licensing is covered when all conditions listed in Licensing are fulfilled.

To check if Subscription Advantage Date of the XenApp and XenDesktop Platinum license falls after the Subscription Advantage Eligibility date of Citrix SCOM Management Pack for XenApp and XenDesktop (one of the licensing conditions), do the following:

- 1. Take note of the Subscription Advantage Eligibility date of the current product release. For information, see Licensing.
- 2. Launch Citrix Studio.
- 3. In the left pane of Citrix Studio, expand Citrix Studio (<SiteName>) > Configuration, and then click Licensing.
- 4. In the Licensing Overview pane, under Licenses, search for the lines that have either value in the **Product** column: *Citrix XenApp Platinum*

Citrix XenDesktop Platinum

- 5. For each matching line from step 4, check if its **Subscription Advantage Date** value is bigger than the date (**Subscription Advantage Eligibility** date) from step 1.
- 6. If at least one value is bigger, the license **Subscription Advantage** period covers the current version of Citrix SCOM Management Pack for XenApp and XenDesktop.
- A computer is chosen on which a SCOM management server resides and where the server side of Citrix SCOM Management Pack for XenApp and XenDesktop will be installed. This computer is referred to as SCOM management server.
- SCOM agent is installed on all the computers that host XenApp and XenDesktop Delivery Controllers, and these computers are configured as agent-managed computers in the SCOM management group.

- The Action Account of SCOM agent has administrative privileges on all XenApp and XenDesktop Delivery Controllers.
- A domain user account is chosen that you will use for remote monitoring of server OS machines and desktop OS machines. For multiple XenApp and XenDesktop Sites, you might need to use different accounts. This depends on the domain configuration.

Tip: Citrix recommends that you create a new, dedicated user account for exclusive use for the above-mentioned purposes.

The user account must have the following properties:

- It has administrative privileges in all XenApp and XenDesktop Delivery Controllers and all server OS machines within the Site.
- It has the **Read Only Administrator** role (or a role with higher privileges) assigned in XenApp and XenDesktop with the scope set to **All**.

The following image shows the creation of an administrator account in Citrix Studio.

Studio	Administrator and Scope	
	Select an administrator:	
	EXAMPLEDOMAIN\MPXAXDAgentAccount	Browse
Administrator and Scope	Select a Scope:	
Kole Summary	Scopes are objects that represent something mean administrator is allowed to manage (for example, a team). Click a scope to see the objects in it.	ingful in an organization and that an set of Delivery Groups used by the Finance
	Scope name	
	All All	

The following image shows the editing of an administrator account in Citrix Studio.

Edit Administrator			
Administrator	Name and Details		
Name: EXA Details:	MPLEDOMAIN\MPXAXDAgentAccount		
Scope	Role		
All	Read Only Administrator		
	Edit		
Add	Edit Delete		
Enable admi	nistrator		
Save full permis	Clear check box to disable the administrator, no settings will be lost. Save full permissions report		
	OK Cancel		

This user account is referred to as *<MPXAXDAgentAccount>* in the remainder of this document.

- Windows Remote Management 2.0 (WinRM 2.0) is enabled on all server OS machines. To enable WinRM on the local computer, open a Command Prompt window and run the *winrm quickconfig* command.
- WinRM 2.0 is correctly configured. For instructions on how to verify that the WinRM 2.0 configuration is correct, see Verifying WinRM communication.

For Citrix SCOM MP Analytics Service to transmit anonymous usage data, make sure that the SCOM management server has internet access.

For XenApp and XenDesktop machine and session performance monitoring, make sure the following additional prerequisites are fulfilled as well:

• Computers are chosen where Citrix SCOM Management Pack for XenApp and XenDesktop Machine Agent will be installed. These computers are referred to as Citrix SCOM Management Pack for XenApp and XenDesktop proxy nodes (proxy nodes). The proxy nodes must meet minimum hardware requirements and must be running a supported operating system.

Important: For information on how to properly designate the proxy nodes and plan their configuration, see Machine and session performance monitoring.

- SCOM agent is installed on all the proxy nodes.
- The <MPXAXDAgentAccount> user account has administrative privileges in the desktop OS machines and on the proxy nodes.
- Windows Remote Management 2.0 (WinRM 2.0) is enabled on all desktop OS machines.
- Receiving Windows PowerShell remote commands is enabled on all the computers that host XenApp and XenDesktop Delivery Controllers. For more information, see the Enable-PSRemoting (for Windows Server 2012 R2) or Enable-PSRemoting (for Windows Server 2012) webpage on the Microsoft TechNet website.

https://docs.citrix.com

© 1999-2017 Citrix Systems, Inc. All rights reserved.

• Firewall is configured as required by WinRM: on desktop OS machine as well as on the Delivery Controllers, incoming traffic is enabled on the TCP port that WinRM is using. By default, WinRM is configured to use port 5985.

Installing the product on the SCOM management server

The server-side part of Citrix SCOM Management Pack for XenApp and XenDesktop must be installed on the SCOM management server.

To install Citrix SCOM Management Pack for XenApp and XenDesktop on the SCOM management server, do the following:

1. Log on to the management server. Use a user account that has local administrative privileges and SCOM administrative privileges.

2. In Windows Explorer, locate the *Citrix_SCOM_Management_Pack_for_XenAppXenDesktop_<Version>.exe* file (where *<Version>* is the current software version), and double-click it to invoke the installation process. Wait for the Setup Wizard to appear.

3. In the Welcome page of the Setup Wizard, click **Next**.



4. In the View Relevant Product Configuration page, click **Next**.

5. In the License Agreement page of the Setup Wizard, read the end user license agreement carefully. If you accept the terms of the agreement, click **Next**.

#	Citrix SCOM Management Pack for XenApp and XenDesktop 3.14.358	x
License A Please re	Agreement ad the following license agreement carefully.	
CITRIX LICE Use of this co (s) with whic (s) or service CTX_code Ef	NSE AGREEMENT omponent is subject to the Citrix license or terms of service covering the Citrix product(s) or service ch you will be using this component. This component is licensed for use only with such Citrix produc e(s). P_T_A124358	ə :t
🗹 I accept th	ne terms in the License Agreement	
	< Back Next > Cance	

6. In the Destination Folder page, define the Citrix SCOM Management Pack for XenApp and XenDesktop installation folder. Citrix recommends that you install Citrix SCOM Management Pack for XenApp and XenDesktop to the default folder.

Proceed as follows:

- To install the product to the default folder listed in the Setup Wizard, no special actions are required.
- To install the product to a different folder, follow the sub-steps:
 - Click Change.
 - In the Browse For Folder dialog box, browse to the desired installation folder, select it, and click **OK**.

7. In the Configure Post-Install Actions page of the Setup Wizard, decide whether the Setup Wizard should automatically import the included management packs into SCOM.

#	Citrix SCOM Management Pack for XenApp and XenDesktop 3.14.358	x
Configure Post-Install Actions Please select actions to be performed after the successful install.		
✓ Automati	ically import the Management Pack	
	< Back Install Cancel	

© 1999-2017 Citrix Systems, Inc. All rights reserved.
- Decide about the management pack import:
 - To let the Setup Wizard import the management packs, select the **Automatically import the Management Pack** option. Citrix recommends this choice.
 - To import the management packs into SCOM manually at a later time, leave the **Automatically import the Management Pack** option unselected. For instructions on how to import or reimport the management packs, see Manually importing included management packs into SCOM.

8. Click Install. The Setup Wizard displays the Installing the product page and starts copying the installation files.

9. After the installation completes, the installation completion page is displayed. Click **Next**.

10. In the Executing post-install actions page, attend the import process (if chosen earlier).

11. In the post-installation completion page, review the actions log, and click **Finish** to close the Setup Wizard.

😫 Citrix S	COM Management Pack for XenApp and XenDesktop 3.14.358	x
8	All post-install actions were successfully executed.	
	Actions log:	_
	INFO: Installing Citrix MP Analytics Service INFO: Analytics installation completed succesfully	^
CITPLY	< III >	= >
CIIKİN	Click the Finish button to exit the Setup Wizard.	
	K Back Finish Cance	:

Data collection by Google Analytics

Statistics related to Citrix SCOM Management Pack for XenApp and XenDesktop installations, uninstallations, and upgrades are sent automatically to Google Analytics. To disable sending this information, perform the installation, uninstallation, and upgrades manually with the command line parameter, -d:SkipGA set to true. For example:

Citrix_SCOM_Management_Pack_for_XenAppXenDesktop_<version>.exe -install -d:SkipGA=true

Also, the Citrix SCOM MP Analytics Service is installed automatically with the Citrix SCOM Management Pack for XenApp and XenDesktop. It collects analytics from the product anonymously when the installation completes. Statistics and usage information of all Citrix Management Packs installed in the environment, and details about the SCOM environment such as the Server OS version and the SCOM version are collected and sent to the Google Analytics service.

The Citrix SCOM MP Analytics Service is enabled by default when you install the Citrix SCOM Management Pack for XenApp and XenDesktop. The first upload of data occurs seven days after the date of installation.

© 1999-2017 Citrix Systems, Inc. All rights reserved.

To opt out of the Citrix SCOM MP Analytics Service data collection, edit the registry key HKEY_LOCAL_MACHINE\SOFTWARE\Citrix\ScomMPAnalytics and set the Enabled REG_DWORD value to 0. To opt back in, set the Enabled REG_DWORD value to 1.

Caution: Editing the registry incorrectly can cause serious problems that may require you to reinstall your operating system. Citrix cannot guarantee that problems resulting from the incorrect use of Registry Editor can be solved. Use the Registry Editor at your own risk. Be sure to back up the registry before you edit it.

Configuring the XenApp and XenDesktop monitoring accounts and profile in SCOM

To configure Run As accounts and the associated Run As profile in SCOM, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the Administration view, in the left pane, expand Run As Configuration, and then click Accounts.
- 3. In the Tasks pane, expand Actions, and then click Create Run As Account.
- 4. In the Create Run As Account Wizard window, click Next.
- 5. In the General Properties page, in the Run As account type drop-down menu, leave the default selection (Windows).
- 6. In the **Display name** text box, type a name that the SCOM Operations console will use to refer to the monitoring account. Click **Next**.
- 7. In the Credentials page, type user name, password, and domain of the *<MPXAXDAgentAccount>* user account in the respective text boxes. Click **Next**.
- In the Distribution Security page, select a distribution security option.
 Citrix recommends that you select the More secure option. In this case, you must subsequently edit the Run As account configuration so that its Selected Computers list includes the XenApp and XenDesktop Delivery Controllers.
- 9. Click **Create** to save the configuration data of the new account, then click **Close** to close the Create run As Account Wizard window.
- If you are configuring SCOM for multiple-site monitoring, repeat steps 3 to 9 for each XenApp and XenDesktop Site, each time specifying display name and credentials of the appropriate user account.
 Note: The XenApp and XenDesktop 7.6 configuration with space characters in Site names is not supported. This is due

to a recognized issue in the Citrix Monitoring Service with this kind of configuration. For more information, see the following webpage on the Citrix Support Knowledge Center website: http://support.citrix.com/article/CTX200325.

- 11. In the Administration view, in the left pane, expand **Run As Configuration**, and then click **Profiles**.
- 12. In the results pane, in the Name column, double-click **Citrix XenApp and XenDesktop Monitoring Account**.
- 13. In the Run As Profile Wizard window, click **Next** and then click **Next** again.
- 14. In the Run As Accounts page, click Add.
- 15. In the Add a Run as Account dialog box, from the **Run As account** drop-down list, select the display name of the Run As account.
- 16. Depending on whether you plan to monitor multiple XenApp and XenDesktop Sites and/or your security requirements, proceed as follows:
 - For monitoring multiple-site environments or for increased security, select the **A selected class, group, or object** option (more secure). Then follow the steps:
 - Click **Select** and then select **Object**.
 - In the Object Search dialog box, from the Look for drop-down list, select **Windows Computer** and then click **Search**.

- In the Available items list, select the XenApp and XenDesktop Delivery Controller, and then click Add.
- Click **OK** to close the dialog box.
- For monitoring single-Site environments and for ordinary security, select the All targeted objects option (less secure).
- 17. Click **OK** to close the Add a Run As Account dialog box.
- 18. If you are configuring SCOM for multiple-site monitoring, repeat steps 14 to 17 for each XenApp and XenDesktop Site, each time using the appropriate Run As account.

Run As accounts:				🛟 Add 🥖
Account Name	Association	Used For	Class	Path
 MPXAXD Account (boston site) MPXAXD Account (berlin site) MPXAXD Account (berlin site) 	Object Object Object	xdcontroller xdcontroller xdcontroller	D1 Windows Com D4 Windows Com D5 Windows Com	puter puter puter

19. Click **Save** to save the changes.

20. Click **Close** to close the Run As Profile Wizard window.

21. If you selected the **More secure** option in step 8, distribute the Run As accounts to the appropriate agent-managed computers: for each chosen account, do the following:

- a. In the Administration view, double-click the user account.
- b. In the Run As Account Properties dialog box, click the **Distribution** tab.

c. Click Add.

d. In the Computer Search dialog box, search for and add the computers. Click OK.

More secure - I want to manually select the computers to which the credentials will be distributed				
Selected computers:	🛟 Add 🔀 Remove			
Name	Name			
xdcontroller01.amsad.hsl	Health Service			

e. In the Run As Account Properties dialog box, click **Apply** and then click **OK**.

After saving the updated Run As profile, it may take some time for the updated configuration to become active on the targets. The required time depends on the state of the SCOM agent (HealthService) instances and overall load on the SCOM infrastructure.

Configuring access to the shared folder for agent installation

Note: Steps of this procedure must be followed only once on a SCOM management server. In case you have previously installed and configured any of the following Citrix Management Pack products on the same computer, you may not need to repeat the steps:

- Citrix SCOM Management Pack for Provisioning Services
- Citrix SCOM Management Pack for ShareFile
- Citrix SCOM Management Pack for StoreFront
- Citrix SCOM Management Pack for Web Interface
- Citrix SCOM Management Pack for XenApp

© 1999-2017 Citrix Systems, Inc. All rights reserved.

• Citrix SCOM Management Pack for XenMobile

To configure access to the shared folder for agent installation, do the following:

1. Log on to the SCOM management server. Use a user account that has local administrative privileges.

Choose a local user account (local to the computer with the shared folder) or a domain user account that will have access to the shared folder, for the purpose of agent deployment and configuration.
 Tip: Citrix recommends creating a new, dedicated user account that you will use only for deployment of the Citrix SCOM Management Pack for XenApp and XenDesktop agent to managed computers.

3. Using an operating system administrative tool, add the user account to the *CitrixMPShareUsers* user group.

- 4. Launch the SCOM Operations console and connect to the management server.
- 5. In the Administration view, in the left pane, expand Run As Configuration, and then click Accounts.
- 6. In the Tasks pane, expand Actions, and then click Create Run As Account.
- 7. In the Create Run As Account Wizard window, click $\ensuremath{\textbf{Next}}.$
- 8. In the Run As account type drop-down menu, leave the default selection (Windows).

麂	Create Run As Account Wizard
General Properties	
Introduction	
General Properties	Specify general properties for the Run As account
Credentials Distribution Security Completion	Select the type of Run As account that you want to create, and then provide a display name and description.
	Run As account type:
	Windows V
	Display name:
	MP Agent Installation User Account
	Dgscription(optional):
	×
	< <u>P</u> revious <u>N</u> ext > <u>Oreate</u> Cancel

9. In the **Display name** text box, type a name that the SCOM Operations console will use to refer to the newly created SCOM user account. Click **Next**.

10. In the User name text box, type the user name of the operating system user account that you chose in step 2.

佬	Create Run As Account Wizard
Credentials	
Introduction	
General Properties	Provide account credentials
Credentials Distribution Security Completion	Provide credentials for this Windows Run As account. User name:
Completion	mpagentinstallation
	Password:
	••••••
	Confirm password:
	••••••
	Domain:
	EXAMPLEDOMAIN Y
	< Previous Next > Greate Cancel

11. In the **Password** and **Confirm password** text boxes, type the valid password of the operating system user account.

12. In the **Domain** text box, update the value if needed. Click **Next**.

13. Depending on the effective security policy in your SCOM environment, select either the **Less secure** or **More secure** option.

Note: Selecting More secure requires manual steps to be performed in SCOM for each newly added managed computer.

14. Click Create.

15. After the message about successful account creation appears, click **Close**.



16. In the left pane, under Run As Configuration, click **Profiles**.

17. In the Profiles list, double-click Citrix Management Pack Network Share Account.

免	Run As Profile Wizard
Introduction General Properties Run As Accounts Completion	Introduction Run As profiles allow monitoring operations (monitors, rules, and tasks) to run as an account that has sufficient privileges to successfully monitor protected resources in the network. For example, you can use a Run As profile to read database properties or to log on to a mailbox. In addition, administrators can assign different Run As accounts to different monitored resources. This is useful when multiple resources are monitored by the same agent or management server, but each agent or server has a different security context. For example, a single SQL server might host multiple databases, but each database has a different owner. Use this wizard to assign a Run As account that has the necessary privileges to the Run As profile. To begin the Run As Profile Wizard, click Next. Do not show this page again
	< Previous Next > Save Cancel

18. In the Run As Profile Wizard window, in the Introductory page, click **Next**. In the General Properties page, click **Next**.

19. In the Run As Accounts page, click **Add**.

20. In the Add a Run As Account dialog box, in the Run as account list, select the newly created SCOM user account.

8		Run As Profile Wizard
Run As	Accounts	
Introduction General Properties		Add Run As accounts
Run As Accounts Completion		Add a Run As account to this Run As profile. Additional Run As accounts can be added to manage specific classes,
	Select a sufficien Run As : MP Age This Run O All tz O A se	Run As account to add to this profile. Choose an account that has privileges that are it to monitor the objects that you specify. account: In Installation User Account In As Account will be used to manage the following objects: argeted objects lected class, group, or object: Select
		OK Cancel

21. Select the A selected class, group, or object option.

22. Click **Select** and then select **Class**.

23. In the Class Search dialog box, in the Filter by (optional) text box, type Windows Computers.

24. Click **Search**.

25. In the Available items list, select **All Windows Computers**.

Class Sea	arch	?	x				
To add classes, search for the class by name and management pack and then add them to the selected objects list.							
Eilter by (optional):							
Windows Computers							
Management pack:			_				
(Any)			~				
		Search					
			_				
Available items							
Name 1	Management Pack						
All Windows Computers	System Center Core Library						
L			_				
	QK	Cance	si .				
			,11				

- 26. Click **OK** to close the Class Search dialog box.
- 27. Click **OK** to close the Add a Run As Account dialog box.
- 28. Click **Save** to update the profile. This may take a while.
- 29. Click **Close** to close the Run As Profile Wizard window.

Verifying the installation on the SCOM management server

To verify that the Citrix SCOM Management Pack for XenApp and XenDesktop installation on the management server is correct, do the following:

- 1. Log on to the management server.
- 2. Go to **Start > Control Panel** and click **Programs and Features** (actions of this step may differ on operating systems earlier than Windows Server 2016).
- 3. Check for the presence of the following entry in the Name column: *Citrix SCOM Management Pack for XenApp and XenDesktop*
- 4. To check if the *CitrixMPShare* shared folder is correctly configured, open a Command Prompt window and run the following commands in sequence (their outputs in case of success are also shown):

CO	and	COPY

net share | findstr -i CitrixMPShare

\sim		t	n		T.
U	u	L		u	L

CitrixMPShare

%ProgramData%\Citrix\CitrixMPShare

command

net use \\<ManagementServerHostName>\CitrixMPShare

/USER:<DomainName>\<UserName>

dir \\<ManagementServerHostName>\CitrixMPShare

output

<FolderContents>

In these instances, %ProgramData% refers to the actual value of this operating system variable.

© 1999-2017 Citrix Systems, Inc. All rights reserved.

COPY

COPY

COPY

AnagementServerHostName> is the name of the SCOM management server. *DomainName>* is the domain or computer name and *UserName>* is the name of the user account that you chose in step 2 of the procedure documented in Configuring access to the shared folder for agent installation. *FolderContents>* is the list of the contents of the *CitrixMPShare* folder.

The shared folder is vital for installation of the Citrix SCOM Management Pack Agent for XenApp and XenDesktop and deployment of its configuration to the managed computers.

5. Launch the SCOM Operations console.

6. In the Monitoring view, expand the items in the left pane until they match the following figures (combined).





7. In the **Administration** view, expand **Administration** > **Management Packs** and click **Installed Management Packs** (the navigation pane structure may differ in SCOM versions earlier than 2016).

8. Verify the following management pack versions are listed in the results pane:

Citrix Management Pack for XenApp and XenDesktop	3.14.358.0
Citrix Management Pack for XenApp and XenDesktop (EndUser)	3.14.358.0
Citrix Management Pack for XenApp and XenDesktop (EndUser) Reports	3.14.358.0
Citrix Management Pack for XenApp and XenDesktop Reports	3.14.358.0
Citrix Management Pack Library	1.0.51.0

Configuring SCOM agent to act as proxy on Delivery Controllers

SCOM agent on each computer where XenApp and XenDesktop Delivery Controller is installed must be configured to act as

© 1999-2017 Citrix Systems, Inc. All rights reserved.

a proxy agent. This configuration enables the agent to relay or forward information from or about other computes and network devices to the SCOM management server.

To configure the SCOM agent instances to act as proxy agents, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the Administration view, expand Device Management, and then click Agent Managed.
- 3. For each XenApp and XenDesktop (Delivery Controller) computer, follow the steps:
- 1. Right-click the host name, and select **Properties**.
 - 2. Click the **Security** tab.
 - 3. Select the Allow this agent to act as proxy and discover managed objects on other computers option.
 - 4. Click **OK**.

Configuring Encryption password, SCOM Administrator, and Director URL

Use **XenApp and XenDesktop MP Configuration** to set and update configuration data - encryption password, SCOM Administrator credentials, and Director URL - on the SCOM server. To access the XenApp and XenDesktop MP Configuration tool:

- 1. Log on to the management server. Use a user account that has local administrative privileges.
- 2. Go to Start > All apps > Citrix (actions of this step may differ on operating systems earlier than Windows Server 2016).
- 3. Select XenApp and XenDesktop MP Configuration..

Configuring encryption password

Encryption password is required to generate a key that is used to encrypt the configuration data. Set the encryption password on the first run of the XenApp and XenDesktop MP Configuration tool.

To set the encryption password:

- 1. In the XenApp and XenDesktop MP Configuration tool, go to the **Configuration encryption** tab.
- 2. Click Set.
- 3. In the dialog for inserting the password, type the password and click Set.

Note: Setting the encryption password is a prerequisite to saving the configuration data. If the encryption password is not set, the configuration tool automatically starts on the Configuration encryption tab.

8		Citrix Manage	ment Pack Confi	guration	
	Director URL	Machine Monitoring	SCOM Administrator	Configuration encryption	
9-9	Set an encryp	tion password on this r	machine to ensure sec	urity of the stored configuration.	
	Only the encry encryption key	ption password that w with the configuration	as used for encryption t by using the install or	can decrypt the configuration. You must dis update configuration task.	tribute the
0-0		<u>6</u>	Set		
100			Set encryption	password	
		Encryption pass	word		
			Can	Cel Set	
CITRIX					
		[ок	Cancel	

The encryption password must be shared with the Citrix XenApp and XenDesktop Agents and the Citrix XenApp and XenDesktop Machine Agents to be used while decrypting the configuration data. See the Installing the product on the Delivery Controllers section.

To share the encryption password, while running the **Install Citrix MPXAXD Agent** task, override the **Encryption password** parameter with the password you set in Step 3. See the Installing the product on the Delivery Controllers section.

To update the encryption password:

- 1. In the XenApp and XenDesktop MP Configuration tool, go to the **Configuration encryption** tab.
- 2. Click Update.
- 3. In the dialog for inserting the password, type the password and click **Update**.

If you update or set the encryption password after the agent or machine agent are installed, run the **Update Configuration on Citrix MPXAXD Agent** or the **Update Configuration on Citrix MPXAXD Machine Agent** tasks respectively. Override the **Encryption password** parameter in these tasks with the updated password.

Configuring SCOM Administrator

To monitor large XenApp and XenDesktop environments, an SCOM Administrator account must be configured. This account is used by the SCOM Connector to collect data of the discovered objects from the XenApp and XenDesktop environment.

1. In the XenApp and XenDesktop MP Configuration tool, go to the **SCOM Administrator** tab.

						-		
	Director URL	Machine	Monitoring	SCO	M Administrator	Conf	iguration encryption	
	Management	t Group	User		Domain		SCOM Servers	Add
	GDCNJ-CLI-	2MG	Example	Jser	ExampleDomai	in	ScomServer	Modify
								Remove
	To monitor lan	ge <mark>enviro</mark> r	nments, set u	ip a SC	COM Administrato	oracci	ount.	
II KİX								
						-	. 1	
				(ОК	Ca	incel	

2. Click Add.

3. In the **Add SCOM Administrator** dialog box, type the credentials of a domain user. The user must be specifically created for this use, be present only in the Users local security group, and have an Operations Manager Administrator role.

	d.	Add SCOM Adminis	strator	
Domain: Username: Password: Confirm passw	Example Doma Example User •••••• vord: ••••••	in Type the - is specifi and - has an C To acces correspon of all SCO	credentials of a domain u ically created for this purp it only in the Users local s Operations Managed Adm s SCOM through a gatew iding check box and add M servers in the manage	ser that: ose ecurity group inistrator role. ay, select the the DNS names ment group.
SCOM server	hostname:	ScomServer		Add Remove
	ОК		Cancel	

- 4. To access the SCOM management server through a gateway, select the corresponding check box and add the DNS names of all SCOM servers in the management group.
- 5. Click **OK** to apply the configuration changes and close the window.

Enable rules related to SCOM Connector from the SCOM console:

- 1. Open the SCOM Operations console. In the Authoring view, expand Management Objects and then Rules.
- 2. Enable the **Applications Discovery** and **Delivery Groups and Hypervisor Connections Discovery** rules for the SCOM Connector to work. They are disabled by default.

Note: To stop using the SCOM Connector after its configuration:

- Delete the registry key HKEY_LOCAL_MACHINE\SOFTWARE\ComTrade\XenDesktop MP Agent\<Management Group> and all its subkeys.
- Disable the Applications Discovery and Delivery Groups and Hypervisor Connections Discovery rules.

Caution: Editing the registry incorrectly can cause serious problems that may require you to reinstall your operating system. Citrix cannot guarantee that problems resulting from the incorrect use of Registry Editor can be solved. Use the Registry Editor at your own risk. Be sure to back up the registry before you edit it.

Configuring Citrix Director URL

To enable opening Citrix Director in the user context from session alerts using the Start Citrix Director alert task, the URL of the Citrix Director web interface must be configured for each monitored Site.

To configure a Citrix Director URL, do the following:

1. In the Citrix Management Pack Configuration window, in the Director URL tab, click Add.

2. In the **Add Director URL** dialog box, type the following data in the respective text boxes:

- Name of the Site
- URL of the Citrix Director instance that is connected to and monitors this Site

	Director URI	Marking Marketer	CCOM Administration	Conferentian and a first	
	Director OnL	Machine Monitoring	SCOM Administrator	Configuration encryption	
	Sto Nama	Director	IDI		
	SiteExample	http://div	ectorhostname/Directo	or .	Add
		546			Modify
	e D	Ad	d Director URL	X	Remove
	Cito annual	Example Sit	eName	1	Move Up
	Die name.		endine]	Move down
İTR İX	For site nar ** to specif Director UF	ne besides entering ex y Director URL for all s 12 must be entered in "http://directo	act site name, you car ites. form like: rhostname/Director	n also use	

- 3. Click **OK**.
- 4. Repeat Step 2 for each additional XenApp and XenDesktop Site you want to monitor.
- 5. Click **OK** to apply the configuration changes and close the window.

To change the Citrix Director URL configuration, click **Modify**. In the **Modify Director URL** dialog box, modify the data as required, and then click **OK**.

To remove a Citrix Director URL configuration, click **Remove** and then click **Yes**. Click **OK** to apply the configuration changes and close the window.

Note: If you change a Citrix Director URL for a Site where the Citrix SCOM Management Pack Agent for XenApp and XenDesktop or the Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop is already installed on the Delivery Controllers, you must run the **Update Configuration on Citrix MPXAXD Agent** or **Update Configuration on Citrix MPXAXD Machine Agent task**.

Installing the product on the Delivery Controllers

On the XenApp and XenDesktop Delivery Controllers, only Citrix SCOM Management Pack Agent for XenApp and XenDesktop must be installed.

To install Citrix SCOM Management Pack Agent for XenApp and XenDesktop on a Delivery Controller, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the Monitoring view, in the left pane, expand Citrix Library, and then click XenApp/XenDesktop Delivery

© 1999-2017 Citrix Systems, Inc. All rights reserved.

Controller Computers.

- 3. In the XenApp/XenDesktop Delivery Controllers pane, select a Delivery Controller from the XenApp/XenDesktop Delivery Controllers list.
- 4. In the Tasks pane, expand MPXAXD Delivery Controller Computer Role Tasks, and then click Install Citrix MPXAXD Agent.
- 5. In the Run Task Install Citrix MPXAXD Agent dialog box, adjust the task parameters as follows. To override a parameter, select it and click **Override**.
 - **UpgradeAgent**: This option, when set to *true*, causes uninstallation of the existing Citrix SCOM Management Pack Agent for XenApp and XenDesktop from the agent-managed computer before the current version is installed. Before such uninstallation, SCOM agent must be put into maintenance mode. Default value: *false*
 - **IgnorePrereqCheck**: You may not alter this option. Default value: *false*
 - Encryption password: Override this parameter with the encryption password you set in Step 3 of the Configuring encryption password section.

Default value: (empty)

- AgentInstallationSource: This option defines the location of the Management Pack agent installation package and its configuration files. Specify the value according to the relationship between the agent-managed computer and the SCOM management server:
 - If SCOM agent on the agent-managed computer reports only to the management server where Citrix SCOM Management Pack for XenApp and XenDesktop is installed, leave the value empty. The location is then automatically determined based on data retrieved from the agent-managed computer. In most cases, the retrieved location host name matches the host name of the management server where the installation task is invoked.
 - If the agent-managed computer is managed by some other management server or the computer hosts a multihomed SCOM agent instance, specify the host name of the management server where Citrix SCOM Management Pack for XenApp and XenDesktop is installed.
 - If the agent-managed computer does not have access to the *CitrixMPShare* shared folder on the management server, specify the alternative location of the Management Pack agent installation package and its agent configuration files in the UNC format. A prerequisite is that these files are copied from the *CitrixMPShare* shared folder to a location the agent-managed computer has access to. Default value: (empty)
- AgentInstallationDestination: This option defines the Management Pack agent's program installation directory on the agent-managed computer. If no value is specified, the Management Pack agent is installed to the %ProgramFiles%\Citrix\XenDesktop MP Agent directory.
 Default value: (empty)
- 6. Click **Run** to invoke the installation process.
- 7. Observe the output the task generates. If the task reports no errors, the installation on the agent-managed computer is correct.

The task initially performs a prerequisite check. If any of the installation prerequisites are not fulfilled, the process is interrupted before the actual installation begins. In this case, invoke the **Check Installation Prerequisites for Citrix MPXAXD Agent task** to pinpoint the problematic prerequisite.

Tip: The Agent installation task can be run for multiple selected Delivery Controllers.

Configuring Citrix SCOM Management Pack for

XenApp and XenDesktop for monitoring VDA services on server OS machines

Important: This section is applicable only if WinRM is configured to use non-default ports.

The Citrix SCOM Management Pack Agent for XenApp and XenDesktop monitors VDA services on the server OS machines remotely and it therefore, connects to the server OS machines by using WinRM. By default, Citrix SCOM Management Pack Agent for XenApp and XenDesktop uses the default WinRM port (5985), and it does not utilize SSL. However, if this configuration changes on the server OS machines, you may need to manually update Windows Registry on the Citrix SCOM Management Pack Agent for XenApp and XenDesktop computer. Add or change the following values in the *HKEY_LOCAL_MACHINE\SOFTWARE\Comtrade\XenDesktop MP Agent* registry key:

- WinRMPort (string value): port number that WinRM uses
- WinRMUseSSL (string value): yes, no, true, or false

In case the listed values do not exist or are empty, Citrix SCOM Management Pack Agent for XenApp and XenDesktop follows its default behavior.

Note: In case of monitoring large environments, with 500+ Server OS machines, monitoring Citrix services on VDAs can consume a large amount of memory. It is recommended that monitoring on VDA be disabled in such environments. See the Disabling VDA Monitoring Service section in Configuration for large XenApp and XenDesktop environments.

Verifying the installation and configuration on the Delivery Controllers

To verify that the XenApp and XenDesktop Management Pack installation and configuration on a Delivery Controller are correct, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the **Monitoring** view, in the left pane, expand **Citrix Library**, and click **XenApp/XenDesktop Delivery Controller Computers**.
- 3. In the XenApp and XenDesktop Delivery Controller Computers pane, select a Delivery Controller from the XenApp and XenDesktop Delivery Controllers list.
- 4. In the Tasks pane, expand Actions, and then click Check Requirements and Configuration for Citrix MPXAXD Agent.
- 5. Observe the output the task generates. If all checks are denoted successful, the installation and configuration on the Delivery Controller are correct.

Installing the product on the proxy nodes

Important: Perform this procedure only if you plan to monitor performance of server OS machines, server OS sessions, or desktop OS sessions in your XenApp and XenDesktop environment.

For machine or session performance monitoring, Citrix SCOM Management Pack Agent for XenApp and XenDesktop must be installed on the proxy nodes.

To install Citrix SCOM Management Pack Agent for XenApp and XenDesktop on a proxy node, do the following:

- 1. Log on to the proxy node. Use a user account that has local administrative privileges.
- Copy the MPXAXDMachineAgent.exe, Support.exe and Support.exe.config files from the || <ManagementServeHostName>\CitrixMPShare\XenDesktop Machine MP shared folder to a location on the proxy node.
- 3. Run the following command to check if the prerequisites for machine agent installation are fulfilled:

command	COPY
Support /checkprereq	

4. If all prerequisites are denoted as fulfilled, run the following command to invoke the Machine Agent installation process:

command	СОРҮ
MPXAXDMachineAgent	

Wait for the Setup Wizard to appear.

5. Follow instructions of the Setup Wizard. During the process:

- In the Agent Service Account page, type the literal string of the *<MPXAXDAgentAccount>* user account into the corresponding text box.
- In the Delivery Controllers page, specify the Delivery Controllers that should be monitored by this proxy node.

Configuring Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop

To share the Encryption password with the Machine Agent, from the SCOM Console run the **Update Configuration on Citrix MPXAXD Machine Agent** task. Override the **Encryption password** parameter with the password you set in Step 3 of the Configuring encryption password section.

Important: Perform the following procedure only if you have installed the product's Machine Agent on the proxy nodes.

If WinRM is configured to use a non-default port (a port different from 5985) on your desktop OS machines, you must specify a port that will be used for VDI monitoring. To do this, update the Port value in the following keys in Windows

© 1999-2017 Citrix Systems, Inc. All rights reserved.

Registry:

- For OS machines: *HKEY_LOCAL_MACHINE\SOFTWARE\Comtrade\XenDesktop MP Machine Agent\WinRMProtocols*
- For Delivery Controllers: *HKEY_LOCAL_MACHINE\SOFTWARE\Comtrade\XenDesktop MP Machine Agent\ControllerWinRMProtocol*

Verifying the installation and configuration on the proxy nodes

Important: Perform this procedure only if you have installed the product's Machine Agent on the proxy nodes.

After the installation, the Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop computers are discovered in the Monitoring view of the SCOM Operations console as *XenApp/XenDesktop Machine Monitoring Proxy Computes* inside *Citrix Library*. To check if Machine Agent is fully operational, execute the *Check Requirements and Configuration for Citrix XAXD Machine Agent* task.

Verifying WinRM communication

Important: Perform this procedure only if you have installed the product's Machine Agent on the proxy nodes.

Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop communicates with Delivery Controllers and server OS machines by using WinRM protocol and Kerberos authentication. The following checks help you determine if WinRM is correctly configured.

• Proxy nodes:

On the proxy node, to check if Kerberos authentication on the WinRM client is enabled, run the following command:

command	COPY
winrm get winrm/config/Client	

Inspect the command output. If the value of the *Kerberos* parameter in the *Auth* group is not *true*, run the following command:



• Server OS machines or desktop OS machines:

On the proxy node, to verify if WinRM client on the computer can access the OS machine, log on by using the *<MPXAXDAgentAccount>* user account, and run the following command:

command COPY

In case of success, the command output should be similar to the following:

output	СОРҮ
IdentifyResponse	
ProtocolVersion = http://schemas.dmtf.org/wbem/wsman/1/wsman.xsd	
ProductVendor = Microsoft Corporation	
ProductVersion = OS: 6.1.7600 SP: 0.0 Stack: 2.0	

In case of failure, proceed as follows:

- If the command reports the *Access denied* error, it indicates that the *<MPXAXDAgentAccount>* user account does not have administrative privileges on the OS machine. Reconfigure the user account accordingly.
- On the OS machine, run the following command to check Kerberos authentication is enabled for WinRM:

command	СОРҮ
winrm get winrm/config/Service	

Inspect the command output. If the value of the *Kerberos* parameter in the *Auth* group is not *true*, run the following command:



• Delivery Controllers:

On the proxy node, log on by using the *<MPXAXDAgentAccount>* user account, and run the following command:

command

winrm identify -r:http://<DeliveryControllerHostName>:5985

-auth:Kerberos

In case of success, the command output should be similar to the following:

output	СОРҮ
IdentifyResponse	
ProtocolVersion = http://schemas.dmtf.org/wbem/wsman/1/wsman.xsd	
ProductVendor = Microsoft Corporation	
ProductVersion = OS: 6.1.7600 SP: 0.0 Stack: 2.0	

In case of failure, proceed as follows:

- If the command reports the *Access denied* error, it indicates that the *<MPXAXDAgentAccount>* user account does not have administrative privileges on the Delivery Controller. Reconfigure the user account accordingly.
- On the Delivery Controller, run the following command to check *Kerberos* authentication is enabled for WinRM:



Inspect the command output. If the value of the *Kerberos* parameter in the *Auth* group is not *true*, run the following command:



COPY

Uninstallation

This section contains instructions that you must follow to effectively uninstall Citrix SCOM Management Pack for XenApp and XenDesktop. Perform all procedures in the documented order of precedence. Optional procedures are appropriately marked.

Uninstalling the product from the Delivery Controllers

To uninstall XenApp/XenDesktop Management Pack Agent from a Delivery Controller (an agent-managed computer), do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the Monitoring view, expand Citrix Library, and then click XenApp/XenDesktop Delivery Controller Computers.
- 3. In the XenApp/XenDesktop Delivery Controller Computers pane, select a Delivery Controller from the XenApp/XenDesktop Delivery Controller Computers list.
- 4. In the Tasks pane, expand **Actions**, and then click **Uninstall Citrix MPXAXD Agent**.
- 5. In the Run Task Uninstall Citrix MPXAXD Agent dialog box, click **Run** to invoke the uninstallation process.
- 6. Repeat steps 3 to 5 for each additional Delivery Controller.

Tip: The Agent uninstallation task can be run for multiple selected Delivery Controllers.

Uninstalling the product from the proxy nodes

Important: Perform this procedure only if there is the product's Machine Agent is installed on the proxy nodes.

To determine which computers are the proxy nodes, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the Monitoring view, expand Citrix Library, and then click XenApp/XenDesktop Machine Monitoring Proxy Computers.
- 3. In the XenApp and XenDesktop Machine Monitoring Proxy Computers pane, find the list of proxy nodes under XenApp and XenDesktop Machine Monitoring Proxy Computers.

To uninstall Citrix SCOM Management Pack Agent for XenApp and XenDesktop from a proxy node (an agent-managed computer), do the following:

- 1. Log on to the proxy node. Use a user account that has local administrative privileges.
- 2. Make sure no product folders or files are in use by any user.
- 3. Go to **Start > Control Panel** and click **Programs and Features** (actions of this step may differ on operating systems earlier than Windows Server 2016).
- 4. Right-click Citrix SCOM Management Pack Agent for XenApp and XenDesktop and select Uninstall.
- 5. In the Programs and Features dialog box, click **Yes** to confirm uninstallation.

Removing dependent management packs (customizations)

Important: Perform this procedure only if you have customized the management packs included in the product.

To remove the customizations that you made to the management packs included in Citrix SCOM Management Pack for XenApp and XenDesktop, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the Administration view, expand Administration > Management Packs and click Installed Management Packs (the navigation pane structure may differ in SCOM versions earlier than 2016).
- 3. In the results pane, locate the management packs that depend on the management packs included in Citrix SCOM Management Pack Agent for XenApp and XenDesktop.
- 4. For each such dependent management pack (except for *Microsoft.SystemCenter.SecureReferenceOverride*), follow the steps:
 - 1. Right-click it and then click **Delete**.
 - 2. On the message stating that deleting the management pack might affect the scoping of some user roles, click **Yes**.

Removing included management packs

To remove the management packs included in Citrix SCOM Management Pack for XenApp and XenDesktop, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the Administration view, expand Administration > Management Packs and click Installed Management Packs (the navigation pane structure may differ in SCOM versions earlier than 2016).
- 3. Remove references to the included management packs from the *Microsoft.SystemCenter.SecureReferenceOverride* management pack. To do this, perform the following steps:
 - Identify which included management packs are referenced. In the Administration > Management Packs context of the SCOM Operations console, right-click Microsoft.SystemCenter.SecureReferenceOverride and select Properties. In the dialog box, click the Dependencies tab.
 - 2. For each such referenced management pack, find out its ID. Right-click the referenced management pack. In the dialog box, take note of the value in the ID text box on the General tab.
 - 3. Export the *Microsoft.SystemCenter.SecureReferenceOverride* management pack.
 - 4. Make a copy of the file you exported the management pack to.
 - Edit the originally exported file: use the IDs to find and remove all dependencies to the management packs from the Manifest > References context (the *Reference* elements) and the Monitoring > Overrides context (the SecureReferenceOverride elements), and then save the changes.

For better tracking, increase the management pack version by adjusting the value of the Version element within the Identity element.

- 6. Import back the altered *Microsoft.SystemCenter.SecureReferenceOverride* management pack from the modified file.
- 4. In the results pane, right-click Citrix Management Pack for XenApp and XenDesktop (EndUser) Reports, and then select Delete.
- 5. On the message stating that deleting the management pack might affect the scoping of some user roles, click **Yes**.
- 6. Repeat steps 4 and 5 with the following management packs (in the presented order of precedence):
 - 1. Citrix Management Pack for XenApp and XenDesktop (EndUser)
 - 2. Citrix Management Pack for XenApp and XenDesktop Reports
 - 3. Citrix Management Pack for XenApp and XenDesktop
- 7. Check if other Citrix SCOM Management Pack products are installed on the management server. If none of them is installed, repeat steps 4 and 5 with **Citrix Management Pack Library**.

Uninstalling the product from the SCOM management server

To uninstall Citrix SCOM Management Pack for XenApp and XenDesktop from the SCOM management server, do the following:

- 1. Log on to the management server. Use a user account that has local administrative privileges and SCOM administrative privileges.
- 2. Make sure no product folders or files are in use by any user.
- 3. Go to **Start > Control Panel** and click **Programs and Features** (actions of this step may differ on operating systems earlier than Windows Server 2016).
- 4. Right-click **Citrix SCOM Management Pack for XenApp and XenDesktop** and select **Uninstall**. Wait for the Setup Wizard to appear.
- 5. In the Welcome page of the Setup Wizard, click Uninstall.
- 6. In the Uninstalling the product page, the Setup Wizard reports the uninstallation progress.
- 7. In the Completion page of the Setup Wizard, click **Finish**.
- 8. Delete the *%ProgramData%\Citrix\CitrixMPShare\XenDesktop Machine MP* and *%ProgramData%\Citrix\CitrixMPShare\XenDesktop MP* folders.
- Caution: This action permanently deletes the Agent configuration data. You will be unable to reuse it at a later time.
- 9. Check if other Citrix SCOM Management Pack products are installed on the management server. If none of them is installed, follow the steps:
 - 1. Stop sharing the *CitrixMPShare* shared folder.
 - 2. Delete the *%ProgramData%\Citrix\CitrixMPShare* folder.
 - 3. Using an operating system administrative tool, delete the local CitrixMPShareUsers user group.

Upgrade

Upgrade from version 3.5

To upgrade Citrix SCOM Management Pack for XenApp and XenDesktop from version 3.5, do the following:

1. Prepare your environment for installation of the new product version. For instructions, see Preparing for the installation.

2. Install the product (its server-side part) on the SCOM management server. For instructions, see Installing the product on the SCOM management server. The installation process upgrades the product and preserves local configuration data.

3. Verify the installation of the product (its server-side part) on the SCOM management server. For instructions, see Verifying the installation on the SCOM management server.

4. On the SCOM management server, copy the mpxaxd_config.dat file from the %ProgramData%\ComTrade\MPShare\XenDesktop MP directory to the %ProgramData%\Citrix\CitrixMPShare\XenDesktop MP directory.

5. On the SCOM management server, move the mpxaxd_config.dat file from the %ProgramData%\ComTrade\MPShare\XenDesktop Machine MP directory to the %ProgramData%\Citrix\CitrixMPShare\XenDesktop Machine MP directory.

6. Configure access to the shared folder for agent installation. For instructions, see Configuring access to the shared folder for agent installation.

7. Install the product (one agent-side part) on the Delivery Controllers. For instructions, see Installing the product on the Delivery Controller.

Important: In the Run Task - Install Citrix MPXAXD Agent dialog box, set the UpgradeAgent task parameter to the true

© 1999-2017 Citrix Systems, Inc. All rights reserved.

value.

_			_
Target		Run Location	
	JISI	GCAD20.tesmi Jisi	
F <u>ask Parameter</u>	5	Value	
Upgrade Agent		false	
opgradovigorit		10/00	
IgnorePreregChec	k	false	
IgnorePrereqChec Encryption passwo Debug AgentInstallationS AgentInstallationD	k ord ource lestination	false false	
IgnorePrereqChecc Encryption passwer Debug AgentInstallationS AgentInstallationD	k ord ource lestination	false false	
IgnorePrereqChecc Encryption passwer Debug AgentInstallationS AgentInstallationD	k ource lestination	false false Task description	
IgnorePrereqChecc Encryption passwer Debug AgentInstallationS AgentInstallationD	k ord lestination	false false Task description Installs Citrix Management Pack Agent for XenApp and XenDesktop on the Citrix syster Parameters:	n.
IgnorePrereqChecc Encryption passwer Debug AgentInstallation D AgentInstallation D Qverride ask credentials Use the prede Other : User name :	k ord estination	Task description Installs Citrix Management Pack Agent for XenApp and XenDesktop on the Citrix system Parameters: - AgentInstallationSource: Agent installation	m.
Ignore PrereqChecc Encryption passwe Debug AgentInstallationS AgentInstallationD	k prd ource lestination fined Run As Account	Task description Installs Citrix Management Pack Agent for XenApp and XenDesktop on the Citrix system Parameters: - AgentInstallationSource: Agent installation and configuration source is specified as eith with the management server name where	m.
IgnorePrereqChecc Encryption passwer Debug AgentInstallationS AgentInstallationD	k prd ource lestination fined Run As Account TESTMF	Task description Installs Citrix Management Pack Agent for XenApp and XenDesktop on the Citrix system Parameters: - AgentInstallationSource: Agent installation and configuration source is specified as eith with the management server name where XenApp and XenDesktop MP was installed or with the UNC path where XenApp and YenDesktop MP Agent installation and configuration source is specified as eith with the management server name where XenApp and XenDesktop MP Agent installation and configuration source is specified as eith with the MNC path where XenApp and YenDesktop MP Agent installation and configuration an	m. Ier Ir

8. Verify the installation and configuration of the product (one agent-side part) on the Delivery Controllers. For instructions, see Verifying the installation and configuration on the Delivery Controllers.

9. (this step is applicable only when installed Machine Agent is part of the deployment of your earlier product version)

Install the product (the other agent-side part) on the proxy nodes. For instructions, see Installing the product on the proxy nodes. The installation process upgrades the product and preserves local configuration data.

10. (this step is applicable only when installed Machine Agent is part of the deployment of your earlier product version) Verify the installation and configuration of the product (the other agent-side part) on the proxy nodes. For instructions, see Verifying the installation and configuration on the proxy nodes.

Upgrade from version other than 3.5

To upgrade Citrix SCOM Management Pack for XenApp and XenDesktop from versions other than 3.5, do the following:

1. Prepare your environment for installation of the new product version. For instructions, see Preparing for the installation.

2. Install the product (its server-side part) on the SCOM management server. For instructions, see Installing the product on the SCOM management server.

Note: The installation process upgrades the product and preserves local configuration data.

3. Verify the installation of the product (its server-side part) on the SCOM management server. For instructions, see Verifying the installation on the SCOM management server.

4. Install the product (one agent-side part) on the Delivery Controllers. For instructions, see Installing the product on the Delivery Controllers.

Important: In the Run Task - Install Citrix MPXAXD Agent dialog box, set the **UpgradeAgent** task parameter to the *true* value.

Run the <u>t</u> ask or	n these targets		. Aler
Target ✔ QCXD28.tesn	nf.hsl	Run Location QCXD28.tesmf.hsl	
T <u>a</u> sk Paramete	rs		-
Name		Value	
Upgrade Agent		false	
IgnorePrereqChe	ck	false	
спотурногт развя	VOID		
Debug AgentInstallation AgentInstallation	Source Destination	false	
Debug AgentInstallation AgentInstallation	Source Destination	false	
Debug AgentInstallation AgentInstallation Qverride ask credentials	Source Destination	false Task description	
Debug AgentInstallation AgentInstallation Qverride ask credentials Use the pred Other	Source Destination	false Task description Installs Citrix Management Pack A XenApp and XenDesktop on the Ci Parameters:	gent for trix system.
Debug AgentInstallation: AgentInstallation Qverride ask credentials Ouse the pred Other: User name :	Source Destination	false Task description Installs Citrix Management Pack A XenApp and XenDesktop on the Ci Parameters: - AgentInstallationSource: Agent in and configuration source is specified	gent for trix system. stallation ed as either
Debug AgentInstallation AgentInstallation Qverride ask credentials Use the pred Other : User name : Password :	Source Destination	Task description Installs Citrix Management Pack A XenApp and XenDesktop on the Citrix Management Pack A Parameters: - AgentInstallationSource: Agent in and configuration source is specified with the management server name	gent for trix system. stallation ed as either where
Debug AgentInstallation AgentInstallation Qverride ask credentials Use the pred Use r name : User name : Domain :	Source Destination	Task description Installs Citrix Management Pack A XenApp and XenDesktop on the Citrix Parameters: - AgentInstallationSource: Agent in and configuration source is specified with the management server name XenApp and XenDesktop MP was is with the UNC path where XenApp as XenDesktop MP (name installation) ✓	gent for trix system. stallation ed as either where nstalled or and and
Debug AgentInstallation AgentInstallation Qverride ask credentials Use the pred Other: User name : Password : Domain : ask confirmatio	Source Destination	Task description Installs Citrix Management Pack A XenApp and XenDesktop on the Citrix Management Pack A Parameters: - AgentInstallationSource: Agent in and configuration source is specifiwith the management server name XenApp and XenDesktop MP was is with the UNC path where XenApp and XenDesktop MP Agent installation ✓	gent for trix system. stallation ed as either where nstalled or and configur

5. Verify the installation and configuration of the product (one agent-side part) on the Delivery Controllers. For instructions, see Verifying the installation and configuration on the Delivery Controllers.

6. (this step is applicable only when installed Machine Agent is part of the deployment of your earlier product version)

Install the product (the other agent-side part) on the proxy nodes. For instructions, see Installing the product on the proxy nodes.

Note: The installation process upgrades the product and preserves local configuration data.

7. (this step is applicable only when installed Machine Agent is part of the deployment of your earlier product version) Verify the installation and configuration of the product (the other agent-side part) on the proxy nodes. For instructions, see Verifying the installation and configuration on the proxy nodes.

Optimize

Optional configuration

Tuning thresholds for monitors and rules

Some monitors and rules have default thresholds that might need additional tuning to suit your environment. You should evaluate monitors and rules to determine whether the default thresholds are appropriate for your environment. If a default threshold is not appropriate for your environment, you should adjust the threshold by overriding it.

See the Reference Guide for a complete list of monitors and rules available in Citrix SCOM Management Pack for XenApp and XenDesktop

Adding optional SLA dashboards

For this purpose, you must import the optional *Citrix Management Pack for XenApp and XenDesktop SLA Dashboards* management pack into SCOM. It provides service level objectives (SLA and SLO objects) for XenApp and XenDesktop environment monitoring.

Installation

Management pack dependencies

The *Citrix Management Pack for XenApp and XenDesktop SLA Dashboards* management pack has the following dependencies:

- Citrix-specific management packs:
 - Citrix Management Pack for XenApp and XenDesktop
 - Citrix Management Pack for XenApp and XenDesktop (EndUser)
- Default management packs:
 - Health Library
 - Microsoft.SystemCenter.Visualization.Component.Library
 - *Microsoft.SystemCenter.Visualization.Library*
 - Microsoft.SystemCenter.Visualization.ServiceLevelComponents
 - System Library

Software requirements

The *Citrix Management Pack for XenApp and XenDesktop SLA Dashboards* management pack requires Microsoft System Center Operations Manager 2012 R2.

Importing the management pack

For instructions on how to import the unsealed management pack, see Manually importing included management packs

into SCOM. The management pack is located in the *%ProgramFiles%\Citrix\XenDesktop MP* folder in the *Comtrade.XenApp.And.XenDesktop.SLADashboards.xml* file.

Configuration and usage

Citrix Management Pack for XenApp and XenDesktop SLA Dashboards is an example of how SCOM 2012 SLA dashboards can be used together with the Citrix SCOM Management Pack for XenApp and XenDesktop which collects all the information needed to create useful and personalized service level objectives for your environment. This sample management pack includes the following pre-set definitions for service level objectives:

- Desktop OS Delivery Group SLOs:
 - Availability > 99.000 %
 - Max User Logon Duration < 50 seconds
 - Max Desktop OS Random Delivery Group Usage (%) < 90 %
- Server OS Delivery Group SLOs:
 - Availability > 99.000 %
 - Max User Logon Duration < 30 seconds
 - Min Load Available (%) > 10 %
- Site SLOs:
 - Availability > 99.000 %
 - Max Number of Concurrent Users < 300
 - Max Number of Active Sessions < 500
 - Max Logon Duration < 40 seconds

In real world scenarios, you would create different service level tracking rules for each Site and delivery group in your organization. You may also want to include other parameters for setting the service level objectives.

Note: The management pack also provides two service level views which report on service level objectives defined in service level tracking rules. For a complete list available monitors and performance collection rules that can be used to set service level objectives, see *Citrix SCOM Management Pack for XenApp and XenDesktop Reference Guide*, available from Tuning thresholds for monitors and rules.

Configure dashboards with default SLAs

Once the management pack is imported, locate the views in the Monitoring view in the SCOM Operations console as seen in the following figure.

a 🚰 Citrix Library
🗲 Citrix Management Topology
Main Market Market State And Antipart Controller Computers
Machine Monitoring Proxy Computers
A Citrix XenApp and XenDesktop
XenApp/XenDesktop Alerts
🔄 XenApp/XenDesktop Events
XenApp/XenDesktop Health State
😴 XenApp/XenDesktop Topology
Controllers
4 🚰 Dashboards
Delivery Group SLA Dashboard
📳 Site SLA Dashboard
Delivery Groups
Machines
E Sessions
D Carlos Sites
User Connections

The *Delivery Group SLA Dashboard* and *Site SLA Dashboard* views are not configured by default, so you must select one or more service level tracking rules for each of the views.

Delivery Group SLA Dashboard

To configure the Delivery Group SLA Dashboard view, do the following:

- 1. Launch the SCOM Operations console.
- 2. In the Monitoring view, in the left pane, expand **Citrix XenApp and XenDesktop** > **Dashboards**, and then click **Delivery Group SLA Dashboard**.
- 3. In the upper right corner of the dashboard view, click the settings icon and then select **Configure**.

Delivery Group SLA Dashboard		🔅 > Tasks
Service Levels	Service Level Objectives	Crofigure
	State Name Target Class Instances	

4. In the Update Configuration wizard window, click **Next**.

	Update Configuration	x
Senter a frier	ndly name and description	
General Properties Scope Completion	Name: Delivery Group SLA Dashboard Description:	
	< Previous Next > Save Cance	<u>ار</u>

5. In the Scope page, click **Add**.

	Update Configuration			
Specify the	Scope			
General Properties Scope	Select the SLA(s) to display:	d Add	Remove	
Completion	Service Level Management Pack Target			
	< Previous Next >	Finish	Cancel	

6. In the Add SLA dialog box, in the Service Level column, select **Desktop OS Group Health** and click **Add**.

Add SLA		
Search	×	
 Available items (4): 		
Service Level	Management Pack	
Site Health Citrix Management Pack for XenApp and XenDesktop SLA		
Desktop OS Delivery Group Health	Citrix Management Pack for XenApp and XenDesktop SLA Dashb	
Application Health SLA	Microsoft System Center Application Monitoring 360 SLA	
Server OS Delivery Group Health	Citrix Management Pack for XenApp and XenDesktop SLA Dashb	
 Selected items (2): 	Add Bemove	
Service Level Management Pack		
Convert OC Dellinear Convert Unable	Citize Management Dark for Van Ann and Van Darkters CLA Darkte	
Server OS Delivery Group Health	Citrix Management Pack for XenApp and XenDesktop SLA Dasho	
Desktop OS Delivery Group Health	Citrix Management Pack for XenApp and XenDesktop SLA Dashb Citrix Management Pack for XenApp and XenDesktop SLA Dashb	
enver OS Delivery Group Health Desktop OS Delivery Group Health	Citrix Management Pack for XenApp and XenDesktop SLA Dasho Citrix Management Pack for XenApp and XenDesktop SLA Dashb	

- 7. Repeat step 6 for Server OS Delivery Group Health.
- 8. Click **OK** to close the dialog box.
- 9. In the Scope page, adjust the time interval for the SLA.

	Update Con	figuration
Specify th	ne Scope	
General Properties Scope	Select the SLA(s) to display:	Add X Remove
Completion	Service Level	Management Pack
	Desktop OS Delivery Group Health	Citrix Management Pack for XenApp and XenDesktop SLA Das
	4	
	Last: 1 🖕 Days 💌	
		<pre>< @revious Next > Finish Cancel</pre>

10. Click **Finish** to close the wizard.

Once the view is refreshed, it shows the delivery group service level objective report for the time period selected, as shown in the figure that follows.

Delivery Group SL	LA Dashboard				
Service Lev	vels	Servic	e Level Objectives		
A Name: De	esktop OS Delivery Group Health (2)	State	Name	Target Class	Instances
🕢 Sal	lesDG	Ø	Availability	XenDesktop Random Assignment Delivery Group (Desktop OS)	1
🕢 Exe	ecutiveDesktop		Average Logon Duration	XenDesktop Random Assignment Delivery Group (Desktop OS)	1
 Aname: Se Q Q Q Ac Q Pu 	erver OS Delivery Group Health (3) eliveryDG countingDG irchasingDG	Ø	Delivery Group Usage ^k	XenDesktop Random Assignment Delivery Group (Desktop OS)	1

ExecutiveDesktop b64b535a-f277-415c-bd0e-aa7739f58404



Site SLA Dashboard

To configure the Site SLA Dashboard view, do the following:

- 1. Launch the SCOM Operations console.
- 2. In the Monitoring view, in the left pane, expand Citrix XenApp and XenDesktop > Dashboards, and then click Site SLA Dashboard.
- 3. In the upper right corner of the dashboard view, click the settings icon and then select **Configure**.



- 4. In the Update Configuration wizard window, click **Next**.
- 5. In the Scope page, click **Add**.
- 6. In the Add SLA dialog box, in the Service Level column, select **Site Health** and click **Add**.
- 7. Click **OK** to close the dialog box.
- 8. In the Scope page, adjust the time interval for the SLA.
- 9. Click Finish to close the wizard



Custom SLAs

Citrix Management Pack for XenApp and XenDesktop SLA Dashboards also includes some general service level target rules that may be used as an example. To make the SLA dashboards useful in practice, you must create your own SLAs that are tailored to your needs.

Following the steps below, a new SLA for a Site named "Boston" will be created, and it will check whether we are crossing maximum allowed number of concurrent users, since we only have 1,000 concurrent licenses available.

Perform the following:

- 1. Launch the SCOM Operations console.
- 2. In the Authoring view, expand **Authoring > Management Pack Objects**.
- 3. Right-click Service Level Tracking and then select Create.
- 4. In the Service Level Tracking wizard, type a display name in the **Name** text box. In our example, type *Boston Site SLA*.

2	Service Level Tracking
General	
General Objects to Track Service Level Objectives Summary	This wizard sets the parameters that track service levels for specified objects. You can run reports against this tracking data.
	< Previous Next > Finish Cancel

5. Click **Next**.

6. In the Objects to Track page, click **Select**.

7. In the Select a Target Class dialog box, from the **Search result filter** drop-down list, select **All**.

8. In the Target column, select **XAXD Site** and then click **OK** to close the dialog box.

9. In the Objects to Track page, from the **Select destination management pack** drown-down list, select a custom management pack where this SLA will be stored. If no such management pack exists, create a new one.
| Service Level Tracking | | | |
|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| Objects to Track | | | |
| General
Objects to Track
Service Level Objectives
Summary | Specify the class of objects for which you want to track service levels. If necessary, specify a group or object to reduce the scope of the tracking request. Targeted class Select a class of object to target XAXD Site Scope (optional) Specify objects within the class: All objects of the targeted class A group or object that contains objects of the targeted class Select Management pack Select destination management pack: | | |
| | < Previous Next > Finish Cancel | | |

10. Click Next.

11. In the Service Level Objectives page, click Add and select Collection rule SLO.

12. In the Service Level Objective (Collection Rule) dialog box, type a display name in the **Service level objective name** text box.

In our example, type Maximum Concurrent Users.

13. Under Targeted class, click **Select**. In the dialog box, in the Target column, select **XAXD Site Data Collector** and then click **OK** to close the dialog box.

14. Under Performance collection rule, click **Select**. In the dialog box, in the Name column, click **Number of Concurrent Users (Performance DB DW)** and then click **OK** to close the dialog box.

15. Under Aggregation method, click **Max**.

In our example, we do not want more users at any time.

16. From the Service level objective goal drop-down list, select Less Than and then type 1000 in the text box.

Select
Select
Select

17. Click **OK** to close the Service Level Objective (Collection Rule) dialog box.

18. In the Service Level Tracking wizard window, click **Next**.

19. In the Summary page, click **Finish**.

Once the new SLA is created, you can use it in the SLA dashboards as explained in Configure dashboards with default SLAs.

You can use the procedure in this section to create personalized SLAs for sites, delivery groups, or any other object that the Citrix SCOM Management Pack for XenApp and XenDesktop discovers. For a complete list of performance rules and availability monitors that can be used to configure service level objectives, see *Citrix SCOM Management Pack for XenApp and XenDesktop Reference Guide*, available from Tuning thresholds for monitors and rules.

Key monitoring scenarios

Monitoring large environments

To monitor large XenApp and XenDesktop environments, you can configure the SCOM Connector to be used for transferring data related to the discovered objects from the agent to the SCOM Management server. This includes the number of Delivery Groups, Server OS machines, applications, and application folders.

Note: Environments with more than 100 Delivery Groups, 600 Server OS machines, and 1,500 applications are considered large.

To configure the SCOM Connector, you must set up the SCOM Administrator account in the XenApp and XenDesktop MP Configuration tool and enable the **Applications Discovery** and **Delivery Groups and Hypervisor Connections Discovery** rules. For more information, see the Configuring SCOM Administrator section in Install and configure.

The credentials of this account are used by the SCOM Connector to connect to the SCOM server. The SCOM Connector uses SCOM's SDK service and the Operations Manager Connector Framework to fetch data related to discovered objects

from the XenApp and XenDesktop environment. This includes the number of Delivery Groups, Server OS machines, applications, and application folders. This enhancement increases the size of data that can be transferred from the agent to the SCOM server compared to earlier versions, significantly increasing the scale of the environment that can be discovered.

Failed registrations

Before any desktop or application can be brokered by XenApp and XenDesktop, Virtual Delivery Agent (VDA) installed on the desktop or server machine has to register with one of the Delivery Controllers in a XenApp and XenDesktop Site. This is done each time a machine is started. If the machine is not registered correctly, it cannot be used. Thus, these situations may have a big impact on the number of available machines in a delivery group.

There are many causes why a registration may fail, including no VDA being installed on a desktop or server machine, DNS problems, firewall configuration, time synchronization, and so on.

Citrix SCOM Management Pack for XenApp and XenDesktop monitors via the *Failed Registrations in Delivery Group* monitor if a certain machine in a delivery group could not register itself with the XenDesktop broker. If a failed registration is detected, the corresponding delivery group health status changes to *Warning* and alert is generated and displayed in the *Alerts* view and in the *Failed Registrations* view in *Machines* folder. Both views also contain alerts for each failed registration of a machine, with details on a machine name, a delivery group name, and a Site name. Additional details may also be found in the *Event* view, where all Citrix-related Windows events are logged.

Failed registrations are monitored only for the powered-managed virtual machines and not for managed physical machines.

Machine and session performance monitoring

Machine and session monitoring functionality enables an insight into performance of server OS machines, server OS sessions, and desktop OS sessions. You have the possibility to receive alerts when a specific machine or session metric crosses a threshold, and you can generate reports.

Note: Alerts based on performance thresholds are generated only when the product's Machine Agent is installed and configured.

The following reports are available:

- Server OS Machine Performance: This report shows server performance for selected server OS machines. Displayed metrics:
 - CPU utilization
 - Physical and virtual memory utilization
 - Citrix Load Index
 - Number of sessions
 - Virtual memory page fault rate
 - Disk metrics (read, write, and I/O operation rates, latency)
 - Network traffic
 - Average session latency
 - Average session ICA round-trip time (RTT)

This report is available only when Machine Agent is installed and configured.

Note: When you upgrade the product from version 3.9 or earlier, all discovered Server OS machines are deleted from SCOM and rediscovered with new IDs. If generated for a time range before the upgrade, the following reports of

Server OS Machine will contain repeated machine entries dated before and after upgrade: - Active Sessions, Active Sessions (TOP N), Performance (Plan and Manage), and Performance (Troubleshooting).

- User Desktop/Application Activity. This report shows application/desktop usage for selected user. With session monitoring, you can also see session performance data for the duration of the connection. Displayed metrics:
 - CPU utilization
 - Physical and virtual memory utilization
 - Virtual memory page fault rate
 - Session network traffic
 - Average session latency
 - Average session ICA round-trip time (RTT)
 - For desktop OS sessions, the report displays the following additional metrics:
 - Disk metrics (read, write, and I/O operation rates, latency)
 - Machine network traffic

Performance metrics of this report are available only when Machine Agent is installed and configured.

When Citrix SCOM Management Pack Agent for XenApp and XenDesktop is installed on one or more computers, referred to as proxy nodes, machine and session performance data can be collected. Data is collected remotely by using Windows Remote Management (WinRM). Machine Agent first communicates with a XenApp and XenDesktop Delivery Controller to get a list of the registered machines. It then utilizes WinRM to collect performance data from the machines.



Proxies use WinRM with Kerberos authentication to communicate with machines and Delivery Controllers. All WinRM communication is done in the context of an account that is configured for the *Citrix MPXAXD Machine Agent* service on the proxy node. For this communication to work all machines (server OS and desktop OS) must have WinRM 2.0 installed and enabled (default TCP port: 5985, enabled Kerberos authentication).

In advanced scenarios, you can use different accounts for WinRM communication for different machines. In the XenDesktop MP Configuration tool, you can specify machine hostname mask and account pairs. For any machine matching specific machine hostname mask, the corresponding user account is used for WinRM communication. For machines without matching hostname mask, the *Citrix MPXAXD Machine Agent* service user account is used.

Each instance of Citrix SCOM Management Pack Agent for XenApp and XenDesktop (each proxy node) can be configured to monitor machines for one or more Delivery Controller instances. However, every Delivery Controller can be monitored by no more than one Machine Agent instance.

Important: In a multi-Site environment, if a Machine Agent instance monitors multiple Delivery Controllers, these Controllers must belong to the same XenApp and XenDesktop Site.

Possible Machine Agent configurations (deployments) therefore are:

https://docs.citrix.com

- One Machine Agent for all Delivery Controller instances (within a Site)
- One Machine Agent per Delivery Controller
- One Machine Agent per subset of Delivery Controller instances (within a Site)

The deployments are depicted in the following figures:



Best practice is to configure Machine Agents (on proxy nodes) to monitor the performance of no more than 2,000 concurrently running Server OS or Desktop OS machines. In case of larger environments of up to 4,000 concurrently running Server OS or Desktop OS machines on one Delivery Controller, the discovery interval must be increased to 10 minutes. For more information, see the Increasing discovery interval of Citrix MPXAXD Machine Agent section in Configuration for large XenApp and XenDesktop environments.

In environments where the number of machines registered with each Delivery Controller is smaller, you can configure one proxy node to handle multiple Deliver Controller instances. As a general rule configuration with one proxy node per Delivery Controller is appropriate for any type of XenApp and XenDesktop environment.

For examples of proper Machine Agent deployment for Sites with a different number of concurrently running machines, see the following figures.

Proxy nodes sizing - for Site with 1,000 machines and two Controllers



Proxy nodes sizing - for Site with 3,500 machines and two Controllers



Proxy nodes sizing - for Site with 5,000 machines and three Controllers



Database sizing

Calculating Operations Manager operational database and data warehouse database sizes

Size of the Operations Manager database depends on the size of the XenApp and XenDesktop environment. Citrix SCOM Management Pack for XenApp and XenDesktop installs additional datasets to Operations Manager data warehouse database. It provides better, more comprehensive as well as more optimized data collection and data processing for better XenApp and XenDesktop architecture and end-user analysis, planning, and troubleshooting.

Users (approx	imate number)	500	2,000	10,000
Sit	tes	1	1	1
Delivery C	Controllers	2	3	4
Desktop OS d	lelivery groups	2	4	6
Server OS de	elivery groups	3	4	6
Server OS	i machines	10	50	500
Concurrent app	lication sessions	400	1,500	7,000
Concurrent de	sktop sessions	100	500	3,000
Sizes (in MB):	Working hours: 8x5	57 / 443 / 500	98 / 1405 / 1503	295 / 6956 / 7215
DB / DW / Total	Working hours: 24x7	57 / 1031 / 1088	98 / 3756 / 3854	295 / 18705 / 19000

The maximum database space consumption for a few sample environments with default database grooming is presented in the table that follows.

Grooming settings for MPXAXD datasets

Important: In large environments with numerous concurrent sessions, increasing the retention interval may have significant impact on the SCOM data warehouse database.

Citrix SCOM Management Pack for XenApp and XenDesktop consists of two custom datasets: Machine dataset and Session dataset. Each dataset provides tables for performance data and tables for stale or discovery data. Grooming for tables is specified in number of days and the default values are provided in table that follows.

Machine dataset grooming

Machine dataset		
Performance Raw	10	

Performance Hourly	400
Performance Daily	400
Machines	9,999

Session dataset grooming

Session dataset			
Performance Raw	10		
Performance Hourly	400		
Performance Daily	400		
Sessions	400		
Connections	400		
Logons	400		
Application Instances	400		
Applications	9,999		

To change grooming settings, do the following:

- 1. Open SQL Server Management Studio and connect to the data warehouse database.
- 2. In the Object Explorer pane, expand **Databases**, expand **OperationsManagerDW** database, and then expand **Tables**.
- 3. Right-click dbo.Dataset and then select Open Table.
- 4. Make a note of DatasetID GUID values for rows with *DatasetDefaultName* equal to each of the following values:
 - MPXAXD Machine DataSet
 - MPXAXD Session DataSet
- 5. In the Object Explorer pane, right-click **dbo.StandardDatasetAggregation** and then select **Open Table**.
- 6. In the DatasetID column, locate the dataset GUID noted in step 4.
- 7. Locate the MaxDataAgeDays column and edit the value to set the grooming interval.
- 8. Repeat steps 6 and 7 for the other GUID value.

Manually importing included management packs into SCOM

For general instructions about how to import management packs into SCOM, see the How to Import an Operations Manager Management Pack webpage on the Microsoft TechNet website.

To import the sealed Citrix SCOM Management Pack for XenApp and XenDesktop manually, do the following:

- 1. Log on to the management server.
- 2. Launch the SCOM Operations console.
- 3. In the Administration view, click **Management Packs**.
- 4. In the Tasks pane, expand Actions, and then click Import Management Packs.
- 5. In the Import Management Packs dialog box, click Add, and then select Add from disk.
- 6. In the Online Catalog Connection dialog box, click No.
- 7. In the Select Management Packs to import dialog box, browse to the folder that contains the following management pack files, select those files, and then click **Open**.
 - Comtrade.Citrix.Library.mp
 - Comtrade.Citrix.XenApp.And.XenDesktop.EndUser.mpb
 - Comtrade.Citrix.XenApp.And.XenDesktop.EndUser.Reports.mpb
 - Comtrade.Citrix.XenApp.And.XenDesktop.mpb
 - Comtrade.Citrix.XenApp.And.XenDesktop.Reports.mpb
- 8. Click Install.

Customizing sealed management packs

Customization of the sealed management packs that XenApp and XenDesktop Management Pack provides is similar to the default SCOM management pack customization. For details, see the Microsoft TechNet website:

- For general information about customization of management packs, see the Customizing Management Packs webpage.
- For instructions on how to customize a management pack, see the Create a New Management Pack for Customizations webpage.

Citrix SCOM Management Pack 3.13 for XenApp and XenDesktop

Nov 27, 2017

Use Citrix SCOM Management Pack for XenApp and XenDesktop to monitor and manage XenApp and XenDesktop infrastructure with the Microsoft System Center Operations Manager (SCOM).

With the Citrix SCOM Management Pack for XenApp and XenDesktop, you can:

- Improve the XenApp and XenDesktop infrastructure availability and health The virtual application and desktop infrastructure availability is checked with rigorous connectivity probing and active service checks. It is important that users are able to connect to their virtual desktops and applications. This is a process that involves many Delivery Controller components (such as Broker Service or Machine Creation Services).
- Gain insight into the XenApp and XenDesktop performance and usage information
 It is critical to know how users are using the virtual infrastructure delivering desktops and applications in order to be able
 to tune it accordingly. With the Citrix SCOM Management Pack for XenApp and XenDesktop you will get more insight
 into which users are logging in to the virtual desktops and applications (identify slow logons and logon bursts), how many
 users are connecting to the Sites, if the infrastructure is able to handle all user requests accordingly, for example by
 maintaining the size of the idle pool defined by the desktop group power management policy, by ensuring enough
 resources for delivery of applications and desktops defined by the load management policy, and so on. Another aspect is
 the end-user resource usage (what is the resource usage for each user connection/session) and virtual infrastructure
 resource usage (what is the resource usage of my server OS machines). Detailed machine and session performance
 information helps in managing your infrastructure and enables better planning and decision making.

Citrix SCOM Management Pack for XenApp and XenDesktop fully integrates the topology, health, and performance data into SCOM.

It provides centralized monitoring in SCOM and covers the following key scenarios:

- Are Delivery Controller instances up and running?
- Is the infrastructure (for example, brokers, machine creation services, and so on) on the Site level operational?
- Do users have issues connecting to the virtual desktops and applications (for example, delivery group limit/capacity is reached, desktop OS or server OS machines cannot register, other infrastructure issues are present)?
- What is the availability of published applications?
- Are there any events that indicate a problem with the infrastructure?
- Have any performance thresholds been violated?
- What is my server OS machine performance?
- What is the user session resource usage on server OS or desktop OS machines?
- Are there any user logons with lengthy duration? Which logon phases are causing the delay?

Important: To collect machine and session performance data, the product's Machine Agent must be installed and configured in addition to its main agent (referred to simply as Agent). For a general overview of the machine and session monitoring concepts, see Machine and session performance monitoring.

Architecture

The following diagram shows how the Citrix SCOM Management Pack for XenApp and XenDesktop connects with the SCOM management platform and the XenApp and XenDesktop infrastructure.



What's new

Nov 27, 2017

Citrix SCOM Management Pack 3.13 for XenApp and XenDesktop introduces the following enhancements:

- Support for Citrix XenApp and XenDesktop 7.15 LTSR. Citrix SCOM Management Pack for XenApp and XenDesktop now supports XenApp and XenDesktop version 7.15 LTSR.
- This release also includes fixes for improved product quality. For more information, see Fixed issues.

Known issues

The following is a list of known issues in this product version:

• Issue ID: SCOM-502

Symptom: In the SCOM Operations console, when you attempt to run the *Start Citrix Director* task on a XenApp and XenDesktop alert that is not a session performance or logon alert, the invocation fails and SCOM reports the following error:

Citrix Director URL not configured. Please configure the Citrix Director URL by using XenDesktop MP Configuration tool. **Action**: None. The error message is incorrect, so you can safely ignore it. You can run the Start Citrix Director task only on session performance alerts and logon alerts.

• Issue ID: SCOM-143

Symptom: In the SCOM Operations console, the *ApplicationExcludeRegExtPattern* and *ApplicationIncludeRegExtPattern* parameters of application discoveries (*Application Discovery (n of 5)*) are ignored. You, therefore, cannot exclude applications from the discovery process or include them into it. **Action**: None. There is no workaround available.

• Issue ID: SCOM-86 (6297)

Symptom: After Citrix SCOM Management Pack for XenApp and XenDesktop (both its server-side and agent-side parts) is installed and configured on the computer for the first time (without being upgraded from an earlier product version), and a valid XenApp and XenDesktop Platinum license cannot be retrieved, no license-related alerts are sent. Such alerts, therefore, cannot be monitored in the Monitoring view of the SCOM operations console. **Action**: None. There is no workaround available.

• Issue ID: SCOM-77 (6194)

Symptom: In the output of the *Check Requirements and Configuration for Citrix MPXAXD Agent* task in the SCOM Operations console, site names that contain non-ASCII characters are not displayed correctly. For example, Spanish characters $c\tilde{n}$ appear as $\frac{4}{4}\pi$ in the name of a XenApp and XenDesktop Site. No other symptoms exist. **Action**: None. Apart from the visual glitch, the functionality of the product is not affected in any way. You can therefore safely ignore the issue.

• Issue ID: SCOM-210 (5380)

Symptom: While a workflow is running, error messages (31551 and 31552) are logged into the Operations Manager event log on the management server. They contain the following description:

Failed to store data in the Data Warehouse...

This error occurs when the Default action account in SCOM does not have write permission on the data warehouse

database and none of the XenDesktop controllers is discovered as *Site Data Collector*. This may happen when:

- The Site Data Collector object switches from one XenDesktop Delivery Controller to another.
- Collector object switches from one XenDesktop Delivery Controller to another.
- None of XenDesktop Delivery Controllers is operational.

This issue occurs only with some of the workflows, for example, *Comtrade.Citrix. XenDesktop.EndUser.Reports.PublishConnectionsLogonsDW.Rule* or *Comtrade.*

Citrix.XenDesktop.EndUser.Reports.PublishApplicationInstanceDW.Rule.

Action: Ensure that at least one Delivery Controller is active at all times.

• Issue ID: SCOM-211 (5163)

Symptom: The *Delivery Group - Logon Details (Troubleshooting)* report does not function if the *Use business hours* option is selected.

Action: Clear the Use business hours option.

• Issue ID: SCOM-212 (5162)

Symptom: When launching Citrix Director by using the *Start Citrix Director* task in the Operations Manager Console for user logon or session alerts, Citrix Director is not opened for the users' context if the user is *anonymous*. Anonymous users were introduced in XenApp and XenDesktop 7.6.

Action: None. There is no workaround available.

• Issue ID: SCOM-1426

Symptom: The Object and Counter names in all Performance views on the SCOM Management Server are not localized, but appear in English.

Action: None. This issue does not impact product functionality.

Applies to French, German, Japanese, Simplified Chinese and Spanish languages.

• Issue ID: SCOM-78

Symptom: If the password of the Citrix SCOM Management Pack for XenApp and XenDesktop Monitoring user account contains non-English characters the **Check Requirements and Configuration for Citrix MPXAXD Agent** task reports an error in the Citrix XenApp/XenDesktop Powershell Interface section as follows:

"Could not get data from Citrix PowerShell interface."

Action: Change the password of Citrix SCOM Management Pack for XenApp and XenDesktop Monitoring user account to contain only English characters.

Applies to French, German, Japanese, Simplified Chinese and Spanish languages.

• **Issue ID:** SCOM-1391, SCOM-1384

Symptom: In the SCOM Console, the output messages of all tasks are not localized, but appear in English. **Action:** None. This issue does not impact product functionality. Applies to French, German, Japanese, Simplified Chinese and Spanish languages.

• Issue ID: SCOM-1156

Symptom: Surrogate pair characters in the Citrix SCOM Management Pack for XenApp and XenDesktop reports appear incorrectly.

Action: None. This issue does not impact product functionality. Applies to Japanese and Simplified Chinese languages.

• Issue ID: SCOM-1222

Symptom: If the XenApp and XenDesktop Site name contains Japanese or Simple Chinese characters, an error might occur when running the **Check Requirements and Configuration for Citrix MPXAXD Agent** or **Check Requirements**

and Configuration for Citrix MPXAXD Machine Agent task.

The Director URL for the Site is configured successfully, but the task might display the following error message: "Director URL is not configured for Site <sitename>. Please configure Director URL for this Site in 'XenApp and XenDesktop MP Configuration' tool and deploy new configuration using 'Update Configuration on Citrix MPXAXD Agent/Machine Agent' task in SCOM."

Action: Avoid Japanese and Simplified Chinese characters in the XenApp and XenDesktop Site name. Applies to Japanese and Simplified Chinese languages.

• Issue ID: SCOM-2100

Symptom: The reports - Delivery Group Server OS - Machine Performance, Server OS Machine - Performance (Plan and Manage), and Server OS Machine - Performance (Troubleshooting) can show incorrect load index values for certain Server OS Machines.

Action: None

• Issue ID: SCOM-2137

Symptom: Site level performance monitoring: Data collection for Sessions on Site, Connected Users on Site, and User Logon Performance might stop after running for a while.

Action: Restart the Microsoft Monitoring Agent service on the Delivery Controller that acts as the Site Data Collector.

• Issue ID: SCOM-2288

Symptom: When a machine running active sessions registers with a different Delivery Controller, the Machine Agent might not monitor some running sessions.

Action: None

• Issue ID: SCOM-2421

Symptom: Failure of Site performance monitoring results in the following:

- a Citrix MPXAXD Agent Not Operational alert with workflow id site-performance is triggered.
- running the **Check Requirements** task shows the following error:
- 'site-performance' Not Operational
- Workflow error One or more errors occurred.
- the log file **ComTrade.MP.XenDesktop.Service.log** contains an entry, System.IO.FileNotFoundException: The network path was not found.

This might happen when VDA Service monitoring is on and one or more VDAs have been deleted. Action: Disable the VDA monitoring service as described in the **Disabling monitoring of VDA Service** section in Configuration for large XenApp and XenDesktop environments.

• Issue ID: SCOM-2359

Symptom: The Check Requirements task of the Machine Agent might report incorrect discovery times for Server and Desktop OS machine discovery.

Action: None. Ignore the machine discovery time values.

Fixed issues

The following issues are fixed in this release:

• **Issue ID:** SCOM-1939

Symptom: The Server OS Machine Memory Hard Page Faults alert displays an incorrect rule description.

• Issue ID: SCOM-2279

Symptom: Microsoft MP for Exchange and some management packs from other vendors might not work when Citrix SCOM Management Pack for XenApp and XenDesktop Version 3.12 is installed on the same server.

• Issue ID: SCOM-2175

Symptom: Citrix SCOM Management Pack for XenApp and XenDesktop Agent might stop monitoring if the DNS name of any machine in the Citrix XenApp and XenDesktop environment it is monitoring is empty.

• Issue ID: SCOM-1617

Symptom: Citrix SCOM Management Pack for XenApp and XenDesktop Agent does not support monitoring of Citrix VDA Services on Sites containing more than 100 VDAs for Server OS.

• Issue ID: SCOM-2058

Symptom: The Server OS and Desktop OS Machine CPU Utilization alerts do not trigger in localized environments.

• Issue ID: SCOM- 2090

Symptom: The Citrix MPXAXD Agent Installation task run for upgrading to version 3.12 succeeds. However, it does not give any output sometimes. In addition, the upgraded Citrix MPXAXD Agent service could start incorrectly in slower environments, under the local system user.

• Issue ID: SCOM-2067

Symptom: Power managed Server OS machines that are powered off are not discovered. If a machine that is already discovered is powered off, the machine gets undiscovered.

• Issue ID: SCOM-1176

Symptom: The Citrix SCOM Management Pack Agent for XenApp and XenDesktop might not get upgraded during an upgrade invoked either locally on the XenApp and XenDesktop server or remotely from the SCOM Operations console. The upgrade procedure initially removes the Citrix SCOM Management Pack Agent for XenApp and XenDesktop Service. However, the previously installed agent package is not replaced and the earlier program version remains registered with the operating system.

Licensing

Licensing of Citrix SCOM Management Pack for XenApp and XenDesktop depends on licensing of the monitored product, XenApp and XenDesktop. For Citrix SCOM Management Pack for XenApp and XenDesktop to operate properly and remain fully functional, its licensing must be covered. During installation or upgrade, no further actions are necessary on either the SCOM management server or the computers that host the product's Agent and Machine Agent instances.

Covered licensing means that the following conditions are fulfilled:

- The XenApp and XenDesktop Site that you plan to monitor uses a *Platinum* license within either maintenance program: Subscription Advantage, Software Maintenance.
- Subscription Advantage Date (of the Platinum license) falls after the *Subscription Advantage Eligibility* date that is embedded into binary files of the current version of Citrix SCOM Management Pack for XenApp and XenDesktop. For instructions on how to check this, see Install and Configure. In Citrix product documentation, Subscription Advantage Eligibility date may also be referred to as *product burn-in date*.

Important: The Subscription Advantage Eligibility date of this product release is 2017.0801.

Example: If the Subscription Advantage Date of your Platinum license for XenApp and XenDesktop is *2016.0531* (meaning 31 May 2016), and the Subscription Advantage Eligibility date of Citrix SCOM Management Pack for XenApp and XenDesktop is *2016.0518* (meaning 18 May 2016), the product remains fully functional after 31 May 2016, provided your XenApp and XenDesktop license remains valid (unexpired). If you upgrade to a later version of Citrix SCOM Management Pack for XenApp and XenDesktop whose Subscription Advantage Eligibility date is, for example, *2016.0710* (meaning 10 July 2016), Citrix SCOM Management Pack for XenApp and XenDesktop stops gathering and reporting new data (topology updates, incoming alerts, newly discovered objects).

Renewal after expired XenApp and XenDesktop License

It may take up to 24 hours for the Citrix SCOM Management Pack Agent for XenApp and XenDesktop instances to detect renewal of an expired Platinum license in the XenApp and XenDesktop Site. After such license renewal, to restore licensing coverage of XenApp and XenDesktop on Delivery Controllers (agent-managed computers) immediately, do the following:

1. On a Delivery Controller, stop the Citrix MPXAXD Agent service by using an operating system tool.

2. From the *db* subfolder of the Agent's data files folder (*%ProgramData%\Citrix\XenDesktop MP Agent* by default), remove the *agent-license-info.json* file.

3. Start the Citrix MPXAXD Agent service again.

4. Repeat steps 1 to 3 on each additional Delivery Controller.

Upgrading

Note: Product versions earlier than 3.6 were released under the name **Comtrade Management Pack for Citrix XenApp** and XenDesktop.

Upgrade is available for versions 3.5 and later. During the upgrade process, the included management packs of an earlier product version are automatically upgraded; their prior removal is not required. Your management pack customization is preserved.

Caution:

- Before upgrading from an earlier product version, ensure that licensing of this version of Citrix SCOM Management Pack for XenApp and XenDesktop is covered. For instructions on how to verify licensing coverage, see Preparing for Installation in Install and Configure.
- Upgrading to an unlicensed version of Citrix SCOM Management Pack for XenApp and XenDesktop results in ceased process of gathering and reporting new data. The data already collected is preserved and remains available to SCOM. If this occurs, downgrading to the earlier (licensed) product version requires a complete uninstallation of the new product version (including removal of the included management packs from SCOM), followed by reinstallation of the earlier product version. The management pack removal from SCOM deletes all the operational data (alerts, events, performance data) while the reinstallation ensures continued availability of data in the SCOM data warehouse (reports).

For upgrade instructions, see Upgrade in Install and Configure.

System requirements

Nov 27, 2017

Before installing Citrix SCOM Management Pack for XenApp and XenDesktop, make sure that your environment meets the requirements listed in this topic.

Hardware requirements

Computers that will host Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop must meet the following minimum hardware requirements:

- One physical CPU with two cores (for physical systems), two virtual CPUs (for virtual systems); CPU clock speed of 2.3 GHz
- 4 GB of RAM (excluding the paging file size)
- 1 GB of free local storage space

For more information on the Machine Agent, see Install and Configure.

Software requirements

Citrix SCOM Management Pack for XenApp and XenDesktop requires a supported version of the following products that it integrates with:

- Citrix XenApp and XenDesktop
- Microsoft System Center Operations Manager

Additionally, Citrix SCOM Management Pack for XenApp and XenDesktop requires a supported version of Citrix Licensing in the XenApp and XenDesktop Site where it is deployed. Make sure that the following software is available on the Delivery Controllers:

In addition, make sure that the following software is available on the Delivery Controllers:

- Microsoft .NET Framework 4.5.2 or later
- Microsoft's Visual C++ Redistributable Packages for Visual Studio 2013

Supported versions of Citrix XenApp and XenDesktop

Citrix SCOM Management Pack for XenApp and XenDesktop is compatible with the following Citrix XenApp and XenDesktop versions:

Product version (Delivery Controller)	Supported
Citrix XenApp and XenDesktop 7.15 LTSR	1
Citrix XenApp and XenDesktop 7.14	1
Citrix XenApp and XenDesktop 7.13	•
Citrix XenApp and XenDesktop 7.12	1

Citrix XenApp and XenDesktop 7.11	<i>v</i>
Citrix XenApp and XenDesktop 7.9	•
Citrix XenApp and XenDesktop 7.8	•
Citrix XenApp and XenDesktop 7.7	•
Citrix XenApp and XenDesktop 7.6 LTSR	•
Citrix XenApp and XenDesktop 7.61	v
Citrix XenApp and XenDesktop 7.5	•
Citrix XenApp and XenDesktop 7.1	٠
Citrix XenApp and XenDesktop 7.0	<i>✓</i>

¹This entry covers the following configurations: 7.6, 7.6 + FP1 (Feature Pack 1), 7.6 + FP2, 7.6 + FP3.

Product version (Citrix Director)	Supported
versions included with the supported Delivery Controller versions	1

Supported Citrix Licensing versions

Citrix SCOM Management Pack for XenApp and XenDesktop can be deployed in environments where any of the following versions of Citrix Licensing is used:

Product version	Supported
Citrix Licensing 11.14 or later	1

Supported versions of SCOM

Citrix SCOM Management Pack for XenApp and XenDesktop is compatible with the following SCOM versions:

Microsoft System Center Operations Manager version	Supported
Microsoft System Center Operations Manager 2016	1

Microsoft System Center Operations Manager 2012 R2	1
Microsoft System Center Operations Manager 2012 ¹	•

¹ This entry covers the following configurations: base release, base release + SP1 (Service Pack 1).

Supported operating systems

Agent operating systems

Citrix SCOM Management Pack Agent for XenApp and XenDesktop is compatible with all operating systems that are supported by Delivery Controller of Citrix XenApp and XenDesktop.

Machine Agent operating systems

Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop is compatible with the following operating systems:

Operating system	Supported
Microsoft Windows Server 2016	•
Microsoft Windows Server 2012 R2	1
Microsoft Windows Server 2012	•

Regional settings support

The product can be deployed and operates correctly in environments with regional setting configured to use any of the following languages:

Language	Language code	Supported
English	en	1
Spanish	es	•

Performance overview

Nov 27, 2017

Generally speaking, Citrix SCOM Management Pack for XenApp and XenDesktop consists of three parts:

- The part installed on the SCOM management server (mandatory)
- Citrix SCOM Management Pack Agent for XenApp and XenDesktop (mandatory)
- Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop (optional)

The SCOM management server-side part

This part, a collection of management packs includes discoveries, monitors, rules, tasks, and reports. This part does not significantly add to the basic resource requirements (CPU and memory) of the SCOM management server. It is not resource-intensive in terms of storage requirements on the SCOM reporting data warehouse database. Hence, the SCOM management-server part does not require a specific configuration to monitor larger Citrix XenApp and XenDesktop environments.

Citrix SCOM Management Pack Agent for XenApp and XenDesktop

Performance and resource consumption of Citrix SCOM Management Pack Agent for XenApp and XenDesktop primarily depend on the size of your XenApp and XenDesktop environment, specifically on the number of resources within each Site. Furthermore, they are influenced by the load on the Delivery Controller instances. In contrast, the number of Sites in your XenApp and XenDesktop environment has no influence on the performance and resource consumption.

For scaling up Citrix SCOM Management Pack Agent for XenApp and XenDesktop, the hardware of the hosting Delivery Controller must be reconfigured. The Agent cannot be scaled out.

Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop

The product's Machine Agent can be scaled up without the need of altering XenApp and XenDesktop deployment, as no XenApp and XenDesktop component is installed on its proxy node. Machine Agent can also be scaled out; you can achieve this by installing multiple instances on multiple proxy nodes and configuring it such that each Machine Agent instance handles only a subset of all Delivery Controller instances.

Configuration specifications

All figures in this document are valid for environments that:

- Are monitored with the specified product version of Citrix SCOM Management Pack for XenApp and XenDesktop
- Match the documented configuration specifications for XenApp and XenDesktop and SCOM
- Use the default configuration of management packs in terms of which rules and monitors are enabled (this applies to management packs included in Citrix SCOM Management Pack for XenApp and XenDesktop and management packs bundled with SCOM). In addition:
 - Disable VDA service monitoring
 - Enable connectors when the environment contains more than 600 Server OS machines. For more information on configuring connectors, see Configuring SCOM Administrator.
 - Increase the monitoring interval of Citrix MPXAXD Machine Agent. For more information, see Increasing discovery

interval of Citrix MPXAXD Machine Agent in Configuration for large XenApp and XenDesktop environments.

• Use the default configuration of SCOM management server and SCOM agents, without fine-tuning or any special adjustment.

For the product to work with the scale of the environment documented here, it is recommended that you configure the SCOM agent on all controllers. For environments with approximately 15,000 VDAs and/or around 25,000 sessions (Desktop OS and Server OS) or more, follow the recommended configuration steps in <u>Configuration for monitoring large XenApp</u> and XenDesktop environments.

Validated Citrix SCOM Management Pack for XenApp and XenDesktop version

Validation of Citrix SCOM Management Pack for XenApp and XenDesktop was performed with the product version listed in the following table.

Product	Version
Citrix SCOM Management Pack for XenApp and XenDesktop	3.13

Citrix XenApp and XenDesktop configuration specification

With this configuration, the Site database server is deployed outside the Delivery Controller computer.

Computer: Delivery Controller	
Specification item	Value
Compute	four virtual CPUs; CPU clock speed of 2.67 GHz
Memory	16 GB of RAM
Software version	Citrix XenApp and XenDesktop 7.14.1

Computer: Site database server	
Specification item	Value
Compute	four virtual CPUs; CPU clock speed of 2.67 GHz
Memory	24 GB of RAM
Software version	Microsoft SQL Server 2014 R2

Microsoft System Center Operations Manager configuration specification

With this configuration, the SCOM database and data warehouse server is deployed outside the SCOM management server computer.

Computer: SCOM management server	
Specification item	Value
Compute	eight virtual CPUs; CPU clock speed of 2.67 GHz
Memory	16 GB of RAM
Software version	Microsoft System Center Operations Manager 2012 R2

Computer: SCOM database and operations management server	
Specification item	Value
Compute	eight virtual CPUs; CPU clock speed of 2.67 GHz
Memory	24 GB of RAM
Software version	Microsoft SQL Server 2014

Computer: SCOM database and data warehouse server	
Specification item	Value
Compute	eight virtual CPUs; CPU clock speed of 2.67 GHz
Memory	24 GB of RAM
Software version	Microsoft SQL Server 2014

Computer: SCOM reporting database	
Specification item	Value
Compute	four virtual CPUs; CPU clock speed of 2.67 GHz
Memory	8 GB of RAM
Software version	Microsoft SQL Server 2014 R2

Monitoring ability of Citrix MPXAXD Agent

The following table lists the maximum values at which the Citrix MPXAXD Agent part of Citrix SCOM Management Pack for XenApp and XenDesktop was successfully validated. The product might be able to monitor environments larger than stated below. However, this hasn't been tested.

Maximum number of monitored items (per Site)

ltem	Value
Delivery groups	300
Server OS machines	2000
Server OS machines in a delivery group	200
Desktop OS machines	36,000
Applications	2,500
Concurrent sessions	68,000 (36,000 Desktop OS sessions + 32,000 Server OS sessions)

Average resource consumption

Resource consumption was measured in a XenApp and XenDesktop Site with six Delivery Controller instances. The measurement was made on the Delivery Controller where Citrix SCOM Management Pack Agent for XenApp and XenDesktop did most data processing. Measuring spanned a period of 2.5 days. Windows Performance Monitor was used as the measuring tool.

Important: In XenApp and XenDesktop deployments with multiple Delivery Controller instances, the majority of data

processing is performed by a single instance of Citrix SCOM Management Pack Agent for XenApp and XenDesktop (on one Delivery Controller). Resource consumption is documented only for the primary controller, as the other controllers in the Site have minimal resource usage.

Average consumption on a Delivery Controller (for 38,000 VDIs)

Item	Value
MPXAXDAgent CPU usage ¹	10.62%
HealthService CPU usage	1.90%
MonitoringHost CPU usage	3.88%
MPXAXDAgent memory usage	1480 MB
HealthService memory usage	174 MB
MonitoringHost memory usage	240 MB

¹ CPU usage is calculated based on the *% Processor Time* counter and the number of processor cores or virtual CPUs.

The number of published applications has a negligible effect on the CPU usage of the *MPXAXDAgent* service.

The following figure shows changes in CPU usage of *MPXAXDAgent, HealthService and MonitoringHost* after these services had been started for the first time. Values are taken from the first part of the entire measurement time period (first four hours), when initial high data inflow loaded compute resource substantially. After first three hours, initial high load decreased significantly.



The following figure shows typical patterns of changes in CPU usage of *MPXAXDAgent*, *HealthService and MonitoringHost* through a major part of the measurement time period, after the initial high load had already subsided.



As the figure above shows, bursts of high CPU usage of *MPXAXDAgent* occured every five minutes, while spikes of high CPU usage of *HealthService and MonitoringHost* were not periodical.

The following figure shows the memory usage of *MPXAXDAgent*, and *HealthService*, and *MonitoringHost* through time, measured during the whole validation set.



As the figure above shows, on the Delivery Controller there should be approximately 4.2 GB of physical memory available for the joint needs of *MPXAXDAgent*, *HealthService and MonitoringHost*.

Monitoring ability of Citrix MPXAXD Agent and Citrix MPXAXD Machine Agent

This section contains details about a XenApp and XenDesktop Site with six Delivery Controllers and corresponding proxy nodes monitored by Citrix MPXAXD Agents.

Proxy node configuration specification

Computer: Proxy Node	
Specification item	Value
Compute	two virtual CPUs; CPU clock speed of 2.67 GHz
Memory	8 GB of RAM

For Citrix MPXAXD Machine Agent to monitor as per the documented scale it is recommended that you configure the agent as per steps in Increasing discovery interval of Citrix MPXAXD Machine Agent in Configuration for large XenApp and XenDesktop environments.

Maximum number of monitored items (per Site)

The following table lists the maximum values at which the Citrix SCOM Management Pack for XenApp and XenDesktop – the Citrix MPXAXD Agent and Citrix MPXAXD Machine Agent parts - was validated successfully.

Maximum number of monitored items (per Site)

ltem	Value
Delivery groups	300
Server OS machines	2000
Server OS machines in a delivery group	200
Desktop OS machines	26,000
Applications	2,500
Concurrent sessions	50,000 (26,000 Desktop OS sessions + 24,000 Server OS sessions)

Average resource consumption

Resource consumption was measured in a XenApp and XenDesktop Site with six Delivery Controller instances and corresponding proxy nodes. Measurement related to Citrix MPXAXD Agent was made on the Delivery Controller where Citrix SCOM Management Pack Agent for XenApp and XenDesktop did most data processing.

Measurement related to Citrix MPXAXD Machine Agent was made on the six proxy nodes, each connected to one specific Delivery Controller.

Measuring spanned a period of 3 days. Windows Performance Monitor was used as the measuring tool.

Important: Resource consumption is documented only for the primary controller, and the proxy node connected to it. The other proxy nodes processed a similar number of machines and sessions, with a similar resource consumption.

Average consumption

ltem	Value	
Citrix MPXAXD Agent (Average consumption on a Delivery Controller (for 28 000 VDIs)		
MPXAXDAgent CPU usage ¹	11.66%	
HealthService CPU usage	1.03%	
<i>MonitoringHost</i> CPU usage	5.93%	
MPXAXDAgent memory usage	1336 MB	
HealthService memory usage	180 MB	
<i>MonitoringHost</i> memory usage	390 MB	
Citrix MPXAXD Machine Agent (Average consumption on a proxy node (for 4,500 VDIs)		
<i>MPXAXDMachineMonitorSvc</i> ³ CPU usage ¹	11.94%	
HealthService ² CPU usage	0.36%	
<i>MonitoringHost</i> CPU usage	0.55%	
MPXAXDMachineMonitorSvc memory usage	169 MB	
HealthService memory usage	43 MB	
MonitoringHost memory usage	160 MB	

¹ CPU usage is calculated based on the *% Processor Time* counter and the number of processor cores or virtual CPUs

² On a monitored computer, the Operations Manager agent is listed as the System Center Management Health service. The System Center Management Health service collects performance data, executes tasks, and so on.

³ On a proxy node, MPXAXDMachineMonitorSvc is the main process for Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop.

The following figure shows changes in CPU usage of *MPXAXDAgent*, *HealthService and MonitoringHost* on the primary controller for the entire measurement period.



The following figure shows the memory usage of *MPXAXDAgent*, and *HealthService*, and *MonitoringHost* through time on the primary controller measured during the entire validation set.



The following figure shows typical patterns of changes in CPU usage of *MPXAXDMachineMonitorSvc, HealthService* and *MonitoringHost* on the proxy node where Citrix MPXAXD Machine Agent is installed. These services were started for the first time. Values were taken from the first day of the measurement time period.



The following figure shows the memory usage of *MPXAXDMachineMonitorSvc*, *HealthService* and *MonitoringHost* through time, measured during the first day of the measurement time period.



As the figure above shows, on the proxy there should be approximately 750 MB of physical memory available for the joint needs of the *MPXAXDMachineMonitorSvc*, *HealthService*, and *MonitoringHost*.

Configuration for large XenApp and XenDesktop environments

Nov 27, 2017

This article specifies the configuration updates recommended by Citrix for large XenApp and XenDesktop environments monitored by Citrix SCOM Management Pack for XenApp and XenDesktop. These configuration changes are also necessary if the Operations Manager Event Log contains events related to Citrix SCOM Management Pack for XenApp and XenDesktop with ID 21402 or 6024. This configuration change is optional though for smaller environments.

Citrix XenApp and XenDesktop configuration

Disabling monitoring of VDA Service

Citrix SCOM Management Pack for XenApp and XenDesktop monitors the VDA services (running state of Citrix services on VDA) by default. In large environments with 500+ Server OS machines, this monitoring can consume a large amount of system memory. As a result, Citrix recommends that you disable the monitoring of VDA services in Server OS machines in such environments.

To disable the monitoring of VDA services on Server OS machines, make the following registry changes on all Delivery Controllers.

Caution: Using Registry Editor incorrectly can cause serious problems that might require you to reinstall your operating system. Citrix cannot guarantee that problems resulting from the incorrect use of Registry Editor can be solved. Use Registry Editor at your own risk. Citrix recommends that you back up Windows Registry before changing it.

- 1. In the Start menu, type **regedit** in the Search text box, and then click **Search**.
- 2. In the results list, click **regedit** or **regedit.exe**.
- 3. In the User Account Control dialog box, click **Yes**.
- 4. In the Registry Editor, navigate to HKEY_LOCAL_MACHINE >SOFTWARE>ComTrade>XenDesktop MP Agent.
- 5. Right-click and select New>DWORD (32-bit) Value.
- 6. Name the new value SkipVdaDiscovery.
- 7. Right-click SkipVdaDiscovery and select Modify.
- 8. In the **Value** data text box, type the decimal value 1.
- 9. Click **OK**.

10. Using the Services administrative tool of the operating system, restart the Citrix MPXAXD Agent service.

Increasing the discovery interval of Citrix MPXAXD Machine Agent

Citrix SCOM Management Pack for XenApp and XenDesktop uses Citrix MPXAXD Machine Agent to monitor the machine and session performance. However, this monitoring could be performance intensive, and the time taken to collect information from all VDIs can increase depending on the response from each VDI. To avoid possible data loss, it is recommended that you increase the sampling interval of Citrix MPXAXD Machine Agent to 10 minutes (default 5 minutes) in large environments where a proxy monitors more than 2000 VDIs.

To increase the discovery interval of the Citrix MPXAXD Machine Agent, make the following changes in the registry on all proxy machines.

Caution: Using Registry Editor incorrectly can cause serious problems that might require you to reinstall your operating system. Citrix cannot guarantee that problems resulting from the incorrect use of Registry Editor can be solved. Use

Registry Editor at your own risk. Citrix recommends that you back up Windows Registry before changing it.

- 1. In the Start menu, type **regedit** in the Search text box, and then click **Search**.
- 2. In the results list, click **regedit** or **regedit.exe**.
- 3. In the User Account Control dialog box, click **Yes**.
- 4. In the Registry Editor, navigate to HKEY_LOCAL_MACHINE\SOFTWARE\Comtrade\XenDesktop MP Machine Agent.
- 5. Right-click and select **New>DWORD (32-bit) Value**.
- 6. Name the new value **SamplingInterval.**
- 7. Right-click SamplingInterval and select Modify.
- 8. In the Value data text box, type the decimal value **10**.
- 9. Click **OK**.

10. From the Services administrative tool of the operating system, restart the Citrix MPXAXD Machine Agent service.

In the SCOM Console, to increase the default interval values, set **IntervalSeconds** to 600 for all rules and monitors having the target as **Citrix MPXAXD Machine Agent Proxy Computer Role** and **Machine Agent Data Watcher**, basically for all monitors and rules related to Citrix MPXAXD Machine Agent monitoring.

Increasing the queue size of Microsoft Monitoring Agent

The Microsoft Monitoring Agent uses a queue to store data to be sent to the Management server. Typically, the queue is used to prevent data loss when the Management server is unavailable or the agent is unable to communicate with other available Management Servers. When the queue becomes full, the agent starts deleting the oldest data.

In a node monitoring a large XenApp and XenDesktop environment, the default agent queue size of 15,360 KB (15 MB) is not sufficient to accommodate the high amount of data flow. This results in data loss that leads to erroneous management of the environment.

To increase the queue size of the Microsoft Monitoring Agent, do the following on the Delivery Controllers and the Proxy nodes:

Caution: Using Registry Editor incorrectly can cause serious problems that might require you to reinstall your operating system. Citrix cannot guarantee that problems resulting from the incorrect use of Registry Editor can be solved. Use Registry Editor at your own risk.

- 1. In the Start menu, type **regedit** in the Search text box, and then click **Search**.
- 2. In the results list, click **regedit** or **regedit.exe**.
- 3. In the User Account Control dialog box, click **Yes**.
- 4. In the Registry Editor, navigate to HKEY_LOCAL_MACHINE > SYSTEM > Current ControlSet > Services >

HealthService > **Parameters** > **Management Groups** > < *GroupName*>, where < *GroupName*> is the name of the SCOM Management group the agent belongs to.

5. Right-click maximumQueueSizeKb and select Modify.

Figure The maximumQueueSizeKb value in Registry Editor
۵¢	Registry Editor		_ D X
Eile Edit View Favorites Help Image: A structure in the structure in	Name (Default) (Default)	Type REG_SZ REG_SZ REG_DWORD REG_DWORD REG_DWORD REG_DWORD REG_BINARY	Data (value not set) {534E71F9-7970-42D6 1095ef6a-9206-daf8-2 0x00000008 (8) 0x00019000 (102400) 0x00000000 (0) 01 00 04 80 30 00 00 0
Computer\HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSo	< III et\Services\HealthService\Parameters\Management	t Groups\scom1	7

- 6. In the Value data text box, type a value in the range 15,360-3,07,200 (KB; 3,07,200 KB equals 300 MB).
- Caution: Citrix recommends that you back up Windows Registry before changing it.
- 7. Click OK.
- 8. Using the Services administrative tool of the operating system, restart the **Microsoft Monitoring Agent Service**.

Increasing the queue size of the version store

The Microsoft Monitoring Agent Service stores records of unfinished transactions in a version store. Version store enables the Extensible Storage Engine (ESE) to track and manage current transactions. It contains a list of operations performed by active transactions maintained by the Health Service. This list is an in-memory list of modifications made to the Health Service store database.

The default size of version store is 1,920 16-KB memory pages (30 MB) and is optimized for a typical installation of SCOM. A version store of this size is not sufficient to handle the high data flow in a large XenApp and XenDesktop environment.

To increase the queue size of the version store, do the following on the Delivery Controllers and the Proxy nodes

Caution: Using Registry Editor incorrectly can cause serious problems that might require you to reinstall your operating system. Citrix cannot guarantee that problems resulting from the incorrect use of Registry Editor can be solved. Use Registry Editor at your own risk.

- 1. In the Start menu, type **regedit** in the Search text box, and then click **Search**.
- 2. In the Results list, click **regedit** or **regedit.exe**.
- 3. In the User Account Control dialog box, click **Yes**.
- 4. In the Registry Editor window, navigate

to HKEY_LOCAL_MACHINE > SYSTEM > CurrentControlSet > Services > HealthService > Parameters.

5. Right-click the **Persistence Version Store Maximum** value and click **Modify**.

Figure The Persistence Version Store Maximum value in Registry Editor

۵¢	Registry Editor		>	C
<u>F</u> ile <u>E</u> dit <u>V</u> iew F <u>a</u> vorites <u>H</u> elp				
Image: Contract of the second seco	Name (Default) Frror Reports Enabled Persistence Cache Maximum Persistence Checkpoint Depth Maximum Persistence Initial Database Page Count Persistence Maximum Sessions Persistence Page Hint Cache Size Persistence Version Store Maximum Queue Error Reports Runtime CLR Version In the Wester Constant of Const	Type REG_SZ REG_DWORD REG_DWORD REG_DWORD REG_DWORD REG_DWORD REG_DWORD REG_DWORD REG_SZ	Data (value not set) 0x00000000 (0) 0x00040000 (2621- 0x01400000 (2097 0x00000000 (38400 0x00000000 (32) 0x00000000 (32) 0x00040000 (2621- 0x00040000 (2621- 0x00040000 (2621- 0x00040000 (2621- 0x00020000 (1310) 0x00000000 (0) v4.0.30319 0x0000000 (0)	
Computer\HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlS	et\Services\HealthService\Parameters			

6. In the **Value** data text box, type a value in the range 1,920-19,200 (16-KB blocks, 19,200 16-KB blocks equals 300 MB). **Caution:** Citrix recommends that you back up Windows Registry before changing it.

- 7. Click OK.
- 8. Using the Services administrative tool of the operating system, restart the **Microsoft Monitoring Agent Service**.

Important: Any repair or reinstallation of the Microsoft Monitoring agent removes these changes.

Microsoft System Center Operations Manager configuration

Raising the memory utilization monitor threshold

SCOM constantly monitors the memory utilization of two crucial agent processes - the System Center Management Service Host Process and the Microsoft Monitoring Agent Service. When the memory utilization metric exceeds 300 MB, these two processes restart as a recovery means.

On a proxy agent computer, the threshold limit of memory utilization must be raised to 800 MB.

Caution: Using Registry Editor incorrectly can cause serious problems that might require you to reinstall your operating system. Citrix cannot guarantee that problems resulting from the incorrect use of Registry Editor can be solved. Use Registry Editor at your own risk.

To set the monitor utilization threshold, do the following:

- 1. Log on to the Management server.
- 2. Launch the SCOM Operations console.
- 3. In the Monitoring view, expand Operations Manager > Agent Details and click Agents By Version.
- 4. In the Results pane, in the Name column, right-click the line of the proxy computer, and select **Open > Health**

Explorer for <ProxyNodeFQDN>.

- 5. In the Health Explorer for <ProxyNodeFQDN> window, disable any filter that might be set.
- 6. Expand Entity Health > Performance > System Center Management Health Service Performance > System Center Management Health Service Memory Utilization.
- 7. Right-click Health Service Private Bytes Threshold and click Monitor Properties.

Figure The Health Service Private Bytes Threshold entry in Health Explorer

- Intity Health qcxd18.tesmf.hsl (Object)
- Availability qcxd18.tesmf.hsl (Object)
- Configuration qcxd18.tesmf.hsl (Object)
- ▲ 🕢 Performance qcxd18.tesmf.hsl (Object)
- 4 🕢 System Center Management Health Service Performance qcxd18.tesmf.hsl (Health Service)
 - Agent processor utilization qcxd18.tesmf.hsl (Health Service)
 - Send Queue % Used qcxd18.tesmf.hsl (Agent)
 - Send Queue % Used qcxd18.tesmf.hsl (Health Service)
- ▲ Ø System Center Management Health Service Memory Utilization qcxd18.tesmf.hsl (Health Service)
 - I Health Service Handle Count Threshold qcxd18.tesmf.hsl (Health Service)
 - log Health Service Private Bytes Threshold qcxd18.tesmf.hsl (Health Service)
 - Monitoring Host Handle Count Threshold qcxd18.tesmf.hsl (Agent)
 - Monitoring Host Private Bytes Threshold qcxd18.tesmf.hsl (Agent)
 - System Center Management Health Service Modules Performance Rollup qcxd18.tesmf.hsl (Health Service)
- WMI Memory Usage Monitor qcxd18.tesmf.hsl (Agent)
- Security qcxd18.tesmf.hsl (Object)

8. In the **Health Service Private Bytes Threshold Properties** window, in the **Overrides** tab, click **Override** and select **For the object: <ProxyNodeFQDN>**.

9. In the Override Properties window, under Parameter Name column, locate the Agent Performance Monitor Type

(Consecutive Samples) - Threshold line.

- 10. In the same line, in the Override column, select the check box.
- 11. In the Override Value column, type 838,860,880 (bytes. This value equals 800 MB).

12. From the **Select destination management pack** drop-down list, select the management pack into which you want to save the customization. Click **New** to create a new management pack if needed.

- 13. Click **OK** to close the Override Properties window.
- 14. Click **Close** to close the Health Service Private Bytes Threshold Properties window.
- 15. In the left pane, right-click Monitor Host Private Bytes Threshold and select Monitor Properties. Repeat steps 8 -
- 13 to update the value for Monitor Host Private Bytes Threshold.
- 16. Click **Close** to close the Monitor Host Private Bytes Threshold Properties window.

Install and configure

Nov 27, 2017

This topic contains instructions to install and configure the Citrix SCOM Management Pack for XenApp and XenDesktop. Perform all procedures in the documented order of precedence. Optional procedures are appropriately marked. Also covered are the instructions to uninstall and upgrade the product.

Note: Citrix recommends that you use the same versions of the Citrix SCOM Management Pack, the Citrix SCOM Management Pack Agent, and of the Citrix SCOM Management Pack Machine Agent to ensure that all features work correctly.

You can extend Citrix SCOM Management for XenApp and XenDesktop on-premises to monitor **VDAs deployed on Microsoft Azure** by configuring a Site-to-Site VPN connection from the on-premises Site to the cloud Site. See How to Leverage SCOM to Monitor Citrix VDAs on Microsoft Azure for steps to configure Microsoft Azure and the **Routing and Remote Access Service (RRAS)** Site-to-Site VPN service.

Preparing for the installation

Before installing the Citrix SCOM Management Pack for XenApp and XenDesktop, make sure the following general prerequisites are fulfilled:

- Your environment meets the hardware and software requirements. For hardware, software requirements and/or other requirements, see System Requirements.
- Licensing of Citrix SCOM Management Pack for XenApp and XenDesktop is covered. The licensing is covered when all conditions listed in Licensing are fulfilled.

To check if Subscription Advantage Date of the XenApp and XenDesktop Platinum license falls after the Subscription Advantage Eligibility date of Citrix SCOM Management Pack for XenApp and XenDesktop (one of the licensing conditions), do the following:

- 1. Take note of the Subscription Advantage Eligibility date of the current product release. For information, see Licensing.
- 2. Launch Citrix Studio.
- 3. In the left pane of Citrix Studio, expand Citrix Studio (<SiteName>) > Configuration, and then click Licensing.
- 4. In the Licensing Overview pane, under Licenses, search for the lines that have either value in the **Product** column: *Citrix XenApp Platinum*

Citrix XenDesktop Platinum

- 5. For each matching line from step 4, check if its **Subscription Advantage Date** value is bigger than the date (**Subscription Advantage Eligibility** date) from step 1.
- 6. If at least one value is bigger, the license **Subscription Advantage** period covers the current version of Citrix SCOM Management Pack for XenApp and XenDesktop.
- A computer is chosen on which a SCOM management server resides and where the server side of Citrix SCOM Management Pack for XenApp and XenDesktop will be installed. This computer is referred to as SCOM management server.
- SCOM agent is installed on all the computers that host XenApp and XenDesktop Delivery Controllers, and these computers are configured as agent-managed computers in the SCOM management group.

- The Action Account of SCOM agent has administrative privileges on all XenApp and XenDesktop Delivery Controllers.
- A domain user account is chosen that you will use for remote monitoring of server OS machines and desktop OS machines. For multiple XenApp and XenDesktop Sites, you might need to use different accounts. This depends on the domain configuration.

Tip: Citrix recommends that you create a new, dedicated user account for exclusive use for the above-mentioned purposes.

The user account must have the following properties:

- It has administrative privileges in all XenApp and XenDesktop Delivery Controllers and all server OS machines within the Site.
- It has the **Read Only Administrator** role (or a role with higher privileges) assigned in XenApp and XenDesktop with the scope set to **All**.

The following image shows the creation of an administrator account in Citrix Studio.

Studio	Administrator and Scope	
	Select an administrator:	
	EXAMPLEDOMAIN\MPXAXDAgentAccount	Browse
Administrator and Scope	Select a Scope:	
Summary	Scopes are objects that represent something mea administrator is allowed to manage (for example, team). Click a scope to see the objects in it.	ningful in an organization and that an a set of Delivery Groups used by the Finance
	Scope name	
	All All	
	Create scope	

The following image shows the editing of an administrator account in Citrix Studio.

	Edit Administrator	
Administrato Name: EX Details:	r Name and Details AMPLEDOMAIN\MPXAXDAgentAccount	
Scope	Role	
All	Read Only Administrator	
<u>A</u> dd	Edit	Delete
Enable adm	inistrator box to disable the administrator. No settings will be	lost.
Save full permi	ssions report	
	ОК	Cancel

This user account is referred to as *<MPXAXDAgentAccount>* in the remainder of this document.

- Windows Remote Management 2.0 (WinRM 2.0) is enabled on all server OS machines. To enable WinRM on the local computer, open a Command Prompt window and run the *winrm quickconfig* command.
- WinRM 2.0 is correctly configured. For instructions on how to verify that the WinRM 2.0 configuration is correct, see Verifying WinRM communication.

For Citrix SCOM MP Analytics Service to transmit anonymous usage data, make sure that the SCOM management server has internet access.

For XenApp and XenDesktop machine and session performance monitoring, make sure the following additional prerequisites are fulfilled as well:

• Computers are chosen where Citrix SCOM Management Pack for XenApp and XenDesktop Machine Agent will be installed. These computers are referred to as Citrix SCOM Management Pack for XenApp and XenDesktop proxy nodes (proxy nodes). The proxy nodes must meet minimum hardware requirements and must be running a supported operating system.

Important: For information on how to properly designate the proxy nodes and plan their configuration, see Machine and session performance monitoring.

- SCOM agent is installed on all the proxy nodes.
- The <MPXAXDAgentAccount> user account has administrative privileges in the desktop OS machines and on the proxy nodes.
- Windows Remote Management 2.0 (WinRM 2.0) is enabled on all desktop OS machines.
- Receiving Windows PowerShell remote commands is enabled on all the computers that host XenApp and XenDesktop Delivery Controllers. For more information, see the Enable-PSRemoting (for Windows Server 2012 R2) or Enable-PSRemoting (for Windows Server 2012) webpage on the Microsoft TechNet website.

https://docs.citrix.com

• Firewall is configured as required by WinRM: on desktop OS machine as well as on the Delivery Controllers, incoming traffic is enabled on the TCP port that WinRM is using. By default, WinRM is configured to use port 5985.

Installing the product on the SCOM management server

The server-side part of Citrix SCOM Management Pack for XenApp and XenDesktop must be installed on the SCOM management server.

To install Citrix SCOM Management Pack for XenApp and XenDesktop on the SCOM management server, do the following:

1. Log on to the management server. Use a user account that has local administrative privileges and SCOM administrative privileges.

2. In Windows Explorer, locate the *Citrix_SCOM_Management_Pack_for_XenAppXenDesktop_<Version>.exe* file (where *<Version>* is the current software version), and double-click it to invoke the installation process. Wait for the Setup Wizard to appear.

3. In the Welcome page of the Setup Wizard, click Next.



4. In the View Relevant Product Configuration page, click **Next**.

5. In the License Agreement page of the Setup Wizard, read the end user license agreement carefully. If you accept the terms of the agreement, click **Next**.

Citrix SCOM Management Pack for XenApp a	and XenDesktop 3.13.237	x
License Agreement Please read the following license agreement carefully.		
CITRIX LICENSE AGREEMENT Use of this component is subject to the Citrix license or terms of serv (s) with which you will be using this component. This component is li (s) or service(s). CTX_code EP_T_A124358	vice covering the Citrix product(s) or service icensed for use only with such Citrix product	-
${oldsymbol arPsi}$ I accept the terms in the License Agreement		
	< Back Next > Cancel	

6. In the Destination Folder page, define the Citrix SCOM Management Pack for XenApp and XenDesktop installation folder. Citrix recommends that you install Citrix SCOM Management Pack for XenApp and XenDesktop to the default folder.

Proceed as follows:

- To install the product to the default folder listed in the Setup Wizard, no special actions are required.
- To install the product to a different folder, follow the sub-steps:
 - Click Change.
 - In the Browse For Folder dialog box, browse to the desired installation folder, select it, and click **OK**.

7. In the Configure Post-Install Actions page of the Setup Wizard, decide whether the Setup Wizard should automatically import the included management packs into SCOM.

#	Citrix SCOM Management Pack for XenApp and XenDesktop 3.13.237	2
Configu Please s	re Post-Install Actions select actions to be performed after the successful install.	
☑ Automa	tically import the Management Pack	
	< Back Install Cancel	

- Decide about the management pack import:
 - To let the Setup Wizard import the management packs, select the **Automatically import the Management Pack** option. Citrix recommends this choice.
 - To import the management packs into SCOM manually at a later time, leave the **Automatically import the Management Pack** option unselected. For instructions on how to import or reimport the management packs, see Manually importing included management packs into SCOM.

8. Click Install. The Setup Wizard displays the Installing the product page and starts copying the installation files.

9. After the installation completes, the installation completion page is displayed. Click **Next**.

10. In the Executing post-install actions page, attend the import process (if chosen earlier).

11. In the post-installation completion page, review the actions log, and click **Finish** to close the Setup Wizard.

	Citrix SCOM Management Pack for XenAp	op and XenDesktop 3.13.237	X
22	All post-install a executed.	ctions were successfully	ſ
	Actions log:		
	INFO: Installing Citrix MP Analytics S INFO: Analytics installation complete	Service ed succesfully	
сіт	Click the Finish button to exit the S	etup Wizard.	
		K Back Finish	Cancel

Functioning of Citrix SCOM MP Analytics Service

Citrix SCOM MP Analytics Service is installed automatically with the Citrix SCOM Management Pack for XenApp and XenDesktop. It collects analytics from the product anonymously when the installation completes. Statistics and usage information of all Citrix Management Packs installed in the environment, and details about the SCOM environment such as the Server OS version and the SCOM version are collected and sent to the Google Analytics service. The Citrix SCOM MP Analytics Service is enabled by default when you install the Citrix SCOM Management Pack for XenApp and XenDesktop. The first upload of data occurs seven days after the date of installation. To opt out of the Citrix SCOM MP Analytics Service data collection, edit the registry key HKEY_LOCAL_MACHINE\SOFTWARE\Citrix\ScomMPAnalytics and set the Enabled REG_DWORD value to 0. To opt back in, set the Enabled REG_DWORD value to 1.

Caution: Editing the registry incorrectly can cause serious problems that may require you to reinstall your operating system. Citrix cannot guarantee that problems resulting from the incorrect use of Registry Editor can be solved. Use the Registry

Editor at your own risk. Be sure to back up the registry before you edit it.

Configuring the XenApp and XenDesktop monitoring accounts and profile in SCOM

To configure Run As accounts and the associated Run As profile in SCOM, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the Administration view, in the left pane, expand Run As Configuration, and then click Accounts.
- 3. In the Tasks pane, expand Actions, and then click Create Run As Account.
- 4. In the Create Run As Account Wizard window, click Next.
- 5. In the General Properties page, in the Run As account type drop-down menu, leave the default selection (Windows).
- 6. In the **Display name** text box, type a name that the SCOM Operations console will use to refer to the monitoring account. Click **Next**.
- 7. In the Credentials page, type user name, password, and domain of the *<MPXAXDAgentAccount>* user account in the respective text boxes. Click **Next**.
- 8. In the Distribution Security page, select a distribution security option. Citrix recommends that you select the **More secure** option. In this case, you must subsequently edit the Run As account configuration so that its Selected Computers list includes the XenApp and XenDesktop Delivery Controllers.
- 9. Click **Create** to save the configuration data of the new account, then click **Close** to close the Create run As Account Wizard window.
- If you are configuring SCOM for multiple-site monitoring, repeat steps 3 to 9 for each XenApp and XenDesktop Site, each time specifying display name and credentials of the appropriate user account.
 Note: The XenApp and XenDesktop 7.6 configuration with space characters in Site names is not supported. This is due to a recognized issue in the Citrix Monitoring Service with this kind of configuration. For more information, see the following webpage on the Citrix Support Knowledge Center website: http://support.citrix.com/article/CTX200325.
- 11. In the Administration view, in the left pane, expand Run As Configuration, and then click Profiles.
- 12. In the results pane, in the Name column, double-click **Citrix XenApp and XenDesktop Monitoring Account**.
- 13. In the Run As Profile Wizard window, click Next and then click Next again.
- 14. In the Run As Accounts page, click **Add**.
- 15. In the Add a Run as Account dialog box, from the **Run As account** drop-down list, select the display name of the Run As account.
- 16. Depending on whether you plan to monitor multiple XenApp and XenDesktop Sites and/or your security requirements, proceed as follows:
 - For monitoring multiple-site environments or for increased security, select the **A selected class**, group, or object option (more secure). Then follow the steps:
 - Click **Select** and then select **Object**.
 - In the Object Search dialog box, from the Look for drop-down list, select **Windows Computer** and then click **Search**.
 - In the Available items list, select the XenApp and XenDesktop Delivery Controller, and then click Add.
 - Click **OK** to close the dialog box.
 - For monitoring single-Site environments and for ordinary security, select the All targeted objects option (less secure).
- 17. Click **OK** to close the Add a Run As Account dialog box.
- 18. If you are configuring SCOM for multiple-site monitoring, repeat steps 14 to 17 for each XenApp and XenDesktop Site, each time using the appropriate Run As account.

Run As accounts:				💠 Add 🥖
Account Name	Association	Used For	Class	Path
 MPXAXD Account (boston site) MPXAXD Account (berlin site) MPXAXD Account (berlin site) 	Object Object Object	xdcontroller xdcontroller xdcontroller	01 Windows Com 04 Windows Com 05 Windows Com	puter puter puter

19. Click **Save** to save the changes.

20. Click **Close** to close the Run As Profile Wizard window.

21. If you selected the **More secure** option in step 8, distribute the Run As accounts to the appropriate agent-managed computers: for each chosen account, do the following:

a. In the Administration view, double-click the user account.

b. In the Run As Account Properties dialog box, click the **Distribution** tab.

c. Click Add.

d. In the Computer Search dialog box, search for and add the computers. Click **OK**.

 More secure - I want to manually select distributed 	the computers to which the credentials will be
Selected computers:	🛟 Add 🔀 Remove
Name	Name
xdcontroller01.amsad.hsl	Health Service

e. In the Run As Account Properties dialog box, click **Apply** and then click **OK**.

After saving the updated Run As profile, it may take some time for the updated configuration to become active on the targets. The required time depends on the state of the SCOM agent (HealthService) instances and overall load on the SCOM infrastructure.

Configuring access to the shared folder for agent installation

Note: Steps of this procedure must be followed only once on a SCOM management server. In case you have previously installed and configured any of the following Citrix Management Pack products on the same computer, you may not need to repeat the steps:

- Citrix SCOM Management Pack for Provisioning Services
- Citrix SCOM Management Pack for ShareFile
- Citrix SCOM Management Pack for StoreFront
- Citrix SCOM Management Pack for Web Interface
- Citrix SCOM Management Pack for XenApp
- Citrix SCOM Management Pack for XenMobile

To configure access to the shared folder for agent installation, do the following:

- 1. Log on to the SCOM management server. Use a user account that has local administrative privileges.
- 2. Choose a local user account (local to the computer with the shared folder) or a domain user account that will have access to the shared folder, for the purpose of agent deployment and configuration.

Tip: Citrix recommends creating a new, dedicated user account that you will use only for deployment of the Citrix SCOM

Management Pack for XenApp and XenDesktop agent to managed computers.

- 3. Using an operating system administrative tool, add the user account to the Citrix MPShareUsers user group.
- 4. Launch the SCOM Operations console and connect to the management server.
- 5. In the Administration view, in the left pane, expand Run As Configuration, and then click Accounts.
- 6. In the Tasks pane, expand **Actions**, and then click **Create Run As Account**.
- 7. In the Create Run As Account Wizard window, click **Next**.
- 8. In the Run As account type drop-down menu, leave the default selection (Windows).

免	Create Run As Account Wizard
General Properties	
Introduction	
General Properties	Specify general properties for the Run As account
Credentials Distribution Security Completion	Select the type of Run As account that you want to create, and then provide a display name and description.
	Run As account type:
	Windows ¥
	Display name:
	MP Agent Installation User Account
	Description(optional):
	×
	< Previous Next > Create Cancel

9. In the **Display name** text box, type a name that the SCOM Operations console will use to refer to the newly created SCOM user account. Click **Next**.

10. In the User name text box, type the user name of the operating system user account that you chose in step 2.

佬	Create Run As Account Wizard
Credentials	
Introduction	
General Properties	Provide account credentials
Credentials Distribution Security Completion	Provide credentials for this Windows Run As account. User name:
Completion	mpagentinstallation
	Password:
	••••••
	Confirm password:
	••••••
	Domain:
	EXAMPLEDOMAIN Y
	< Previous Next > Greate Cancel

11. In the **Password** and **Confirm password** text boxes, type the valid password of the operating system user account.

12. In the **Domain** text box, update the value if needed. Click **Next**.

13. Depending on the effective security policy in your SCOM environment, select either the **Less secure** or **More secure** option.

Note: Selecting More secure requires manual steps to be performed in SCOM for each newly added managed computer.

14. Click Create.

15. After the message about successful account creation appears, click **Close**.



16. In the left pane, under Run As Configuration, click **Profiles**.

17. In the Profiles list, double-click Citrix Management Pack Network Share Account.

免	Run As Profile Wizard
Introduction General Properties Run As Accounts Completion	Introduction Run As profiles allow monitoring operations (monitors, rules, and tasks) to run as an account that has sufficient privileges to successfully monitor protected resources in the network. For example, you can use a Run As profile to read database properties or to log on to a mailbox. In addition, administrators can assign different Run As accounts to different monitored resources. This is useful when multiple resources are monitored by the same agent or management server, but each agent or server has a different security context. For example, a single SQL server might host multiple databases, but each database has a different owner. Use this wizard to assign a Run As account that has the necessary privileges to the Run As profile. To begin the Run As Profile Wizard, click Next. Do not show this page again
	< Previous Next > Save Cancel

18. In the Run As Profile Wizard window, in the Introductory page, click **Next**. In the General Properties page, click **Next**.

19. In the Run As Accounts page, click **Add**.

20. In the Add a Run As Account dialog box, in the Run as account list, select the newly created SCOM user account.

8		Run As Profile Wizard
Run As	Accounts	
Introduction		
General Properties		Add Run As accounts
Run As Accounts	_	Add a Run As account to this Run As profile. Additional Run As accounts can be added to manage specific classes,
Completion	<i>🖗</i>	Add a Run As Account
	Select a sufficien Run As a MP Age This Run () All ta	Run As account to add to this profile. Choose an account that has privileges that are r gott Remove account: New Image: Select int Installation User Account New int Installation User Account New int Installation User Account interest objects <t< td=""></t<>
		< Previous Next > Save Cancel

- 21. Select the A selected class, group, or object option.
- 22. Click **Select** and then select **Class**.
- 23. In the Class Search dialog box, in the Filter by (optional) text box, type Windows Computers.

24. Click **Search**.

25. In the Available items list, select **All Windows Computers**.

Class Sea	arch	?	x
To add classes, search for the class by name and management	pack and then add them to the selected obje	cts list.	
Eilter by (optional):			
Windows Computers			
Management pack:			_
(Any)			~
		Search	
			_
Available items			
Name 1	Management Pack		
All Windows Computers	System Center Core Library		
L			_
	QK	Cance	si .
			,11

- 26. Click **OK** to close the Class Search dialog box.
- 27. Click **OK** to close the Add a Run As Account dialog box.
- 28. Click **Save** to update the profile. This may take a while.
- 29. Click **Close** to close the Run As Profile Wizard window.

Verifying the installation on the SCOM management server

To verify that the Citrix SCOM Management Pack for XenApp and XenDesktop installation on the management server is correct, do the following:

- 1. Log on to the management server.
- 2. Go to **Start > Control Panel** and click **Programs and Features** (actions of this step may differ on operating systems earlier than Windows Server 2016).
- 3. Check for the presence of the following entry in the Name column: *Citrix SCOM Management Pack for XenApp and XenDesktop*
- 4. To check if the *CitrixMPShare* shared folder is correctly configured, open a Command Prompt window and run the following commands in sequence (their outputs in case of success are also shown):

command	СОРҮ

net share | findstr -i CitrixMPShare

\sim		t	n		T.
U	u	L		u	L

CitrixMPShare

%ProgramData%\Citrix\CitrixMPShare

command

net use \\<ManagementServerHostName>\CitrixMPShare

/USER:<DomainName>\<UserName>

 output
 COPY

 The command completed successfully

 command
 COPY

dir \\<ManagementServerHostName>\CitrixMPShare

output

<FolderContents>

In these instances, *%ProgramData%* refers to the actual value of this operating system variable.

© 1999-2017 Citrix Systems, Inc. All rights reserved.

COPY

COPY

COPY

AnagementServerHostName> is the name of the SCOM management server. *DomainName>* is the domain or computer name and *UserName>* is the name of the user account that you chose in step 2 of the procedure documented in Configuring access to the shared folder for agent installation. *FolderContents>* is the list of the contents of the *CitrixMPShare* folder.

The shared folder is vital for installation of the Citrix SCOM Management Pack Agent for XenApp and XenDesktop and deployment of its configuration to the managed computers.

- 5. Launch the SCOM Operations console.
- 6. In the Monitoring view, expand the items in the left pane until they match the following figures (combined).





7. In the **Administration** view, expand **Administration** > **Management Packs** and click **Installed Management Packs** (the navigation pane structure may differ in SCOM versions earlier than 2016).

8. Verify the following management pack versions are listed in the results pane:

Citrix Management Pack for XenApp and XenDesktop	3.13.237.0
Citrix Management Pack for XenApp and XenDesktop (EndUser)	3.13.237.0
Citrix Management Pack for XenApp and XenDesktop (EndUser) Reports	3.13.237.0
Citrix Management Pack for XenApp and XenDesktop Reports	3.13.237.0
Citrix Management Pack Library	1.0.33.0

Configuring SCOM agent to act as proxy on Delivery Controllers

SCOM agent on each computer where XenApp and XenDesktop Delivery Controller is installed must be configured to act as

a proxy agent. This configuration enables the agent to relay or forward information from or about other computes and network devices to the SCOM management server.

To configure the SCOM agent instances to act as proxy agents, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the Administration view, expand Device Management, and then click Agent Managed.
- 3. For each XenApp and XenDesktop (Delivery Controller) computer, follow the steps:
- 1. Right-click the host name, and select **Properties**.
 - 2. Click the **Security** tab.
 - 3. Select the Allow this agent to act as proxy and discover managed objects on other computers option.
 - 4. Click **OK**.

Configuring Encryption password, SCOM Administrator, and Director URL

Use **XenApp and XenDesktop MP Configuration** to set and update configuration data - encryption password, SCOM Administrator credentials, and Director URL - on the SCOM server. To access the XenApp and XenDesktop MP Configuration tool:

- 1. Log on to the management server. Use a user account that has local administrative privileges.
- 2. Go to Start > All apps > Citrix (actions of this step may differ on operating systems earlier than Windows Server 2016).
- 3. Select XenApp and XenDesktop MP Configuration..

Configuring encryption password

Encryption password is required to generate a key that is used to encrypt the configuration data. Set the encryption password on the first run of the XenApp and XenDesktop MP Configuration tool.

To set the encryption password:

- 1. In the XenApp and XenDesktop MP Configuration tool, go to the **Configuration encryption** tab.
- 2. Click Set.
- 3. In the dialog for inserting the password, type the password and click Set.

Note: Setting the encryption password is a prerequisite to saving the configuration data. If the encryption password is not set, the configuration tool automatically starts on the Configuration encryption tab.

8		Citrix Manage	ment Pack Confi	guration	
	Director URL	Machine Monitoring	SCOM Administrator	Configuration encryption	
9-9	Set an encryp	tion password on this r	machine to ensure sec	urity of the stored configuration.	
	Only the encry encryption key	ption password that w with the configuration	as used for encryption t by using the install or	can decrypt the configuration. You must dis update configuration task.	tribute the
0-0		<u>6</u>	Set		
100			Set encryption	password	
		Encryption pass	word		
			Can	Cel Set	
CITRIX					
		[ок	Cancel	

The encryption password must be shared with the Citrix XenApp and XenDesktop Agents and the Citrix XenApp and XenDesktop Machine Agents to be used while decrypting the configuration data. See the Installing the product on the Delivery Controllers section.

To share the encryption password, while running the **Install Citrix MPXAXD Agent** task, override the **Encryption password** parameter with the password you set in Step 3. See the Installing the product on the Delivery Controllers section.

To update the encryption password:

- 1. In the XenApp and XenDesktop MP Configuration tool, go to the **Configuration encryption** tab.
- 2. Click Update.
- 3. In the dialog for inserting the password, type the password and click **Update**.

If you update or set the encryption password after the agent or machine agent are installed, run the **Update Configuration on Citrix MPXAXD Agent** or the **Update Configuration on Citrix MPXAXD Machine Agent** tasks respectively. Override the **Encryption password** parameter in these tasks with the updated password.

Configuring SCOM Administrator

To monitor large XenApp and XenDesktop environments, an SCOM Administrator account must be configured. This account is used by the SCOM Connector to collect data of the discovered objects from the XenApp and XenDesktop environment.

1. In the XenApp and XenDesktop MP Configuration tool, go to the **SCOM Administrator** tab.

8		Citrix	Managen	nent	Pack Config	urat	ion	_ X
	Director URL	Machine	Monitoring	SCO	M Administrator	Conf	figuration encryption	
						Jamesee		
	Managemen	t Group	User		Domain		SCOM Servers	Add
	GDCNJ-CLI-	2MG	Example	Jser	ExampleDoma	in	ScomServer	Modify
								Remove
CITRIX"	To monitor lar	ge enviror	nments, set u	ıp a S(COM Administrato	or acc	ount.	
				(ок	Ca	ancel	

2. Click Add.

3. In the **Add SCOM Administrator** dialog box, type the credentials of a domain user. The user must be specifically created for this use, be present only in the Users local security group, and have an Operations Manager Administrator role.

	1	Add SCON	Administrator		
Domain: Usemame: Password: Confirm passw	ExampleDomai ExampleUser end:	eway	Type the credentials of - is specifically creater - is present only in the and - has an Operations M To access SCOM thro corresponding check of all SCOM servers in	of a domain us d for this purpo Users local se lanaged Admir ough a gatewa box and add t the managem	er that: ise curity group nistrator role. y, select the he DNS names nent group.
SCOM server	nostname:	ScomSen	ver		Add Remove
	ОК		Cancel		

- 4. To access the SCOM management server through a gateway, select the corresponding check box and add the DNS names of all SCOM servers in the management group.
- 5. Click **OK** to apply the configuration changes and close the window.

Enable rules related to SCOM Connector from the SCOM console:

- 1. Open the SCOM Operations console. In the Authoring view, expand Management Objects and then Rules.
- 2. Enable the **Applications Discovery** and **Delivery Groups and Hypervisor Connections Discovery** rules for the SCOM Connector to work. They are disabled by default.

Note: To stop using the SCOM Connector after its configuration:

- Delete the registry key HKEY_LOCAL_MACHINE\SOFTWARE\ComTrade\XenDesktop MP Agent\<Management Group> and all its subkeys.
- Disable the Applications Discovery and Delivery Groups and Hypervisor Connections Discovery rules.

Caution: Editing the registry incorrectly can cause serious problems that may require you to reinstall your operating system. Citrix cannot guarantee that problems resulting from the incorrect use of Registry Editor can be solved. Use the Registry Editor at your own risk. Be sure to back up the registry before you edit it.

Configuring Citrix Director URL

To enable opening Citrix Director in the user context from session alerts using the Start Citrix Director alert task, the URL of the Citrix Director web interface must be configured for each monitored Site.

To configure a Citrix Director URL, do the following:

1. In the Citrix Management Pack Configuration window, in the Director URL tab, click Add.

2. In the **Add Director URL** dialog box, type the following data in the respective text boxes:

- Name of the Site
- URL of the Citrix Director instance that is connected to and monitors this Site

	Director URI	Marking Marketer	CCOM Administration	Conferentian and a first	
	Director OnL	Machine Monitoring	SCOM Administrator	Configuration encryption	
	Sto Nama	Director	IDI		
	SiteExample	http://div	ectorhostname/Directo	or .	Add
		546			Modify
	e D	Ad	d Director URL	X	Remove
	Cito annual	Example Sit	eName	1	Move Up
	Die name.		endine]	Move down
İTR İX	For site nar ** to specif Director UF	ne besides entering ex y Director URL for all s 12 must be entered in "http://directo	act site name, you car ites. form like: rhostname/Director	n also use	

- 3. Click **OK**.
- 4. Repeat Step 2 for each additional XenApp and XenDesktop Site you want to monitor.
- 5. Click **OK** to apply the configuration changes and close the window.

To change the Citrix Director URL configuration, click **Modify**. In the **Modify Director URL** dialog box, modify the data as required, and then click **OK**.

To remove a Citrix Director URL configuration, click **Remove** and then click **Yes**. Click **OK** to apply the configuration changes and close the window.

Note: If you change a Citrix Director URL for a Site where the Citrix SCOM Management Pack Agent for XenApp and XenDesktop or the Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop is already installed on the Delivery Controllers, you must run the **Update Configuration on Citrix MPXAXD Agent** or **Update Configuration on Citrix MPXAXD Machine Agent task**.

Installing the product on the Delivery Controllers

On the XenApp and XenDesktop Delivery Controllers, only Citrix SCOM Management Pack Agent for XenApp and XenDesktop must be installed.

To install Citrix SCOM Management Pack Agent for XenApp and XenDesktop on a Delivery Controller, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the Monitoring view, in the left pane, expand Citrix Library, and then click XenApp/XenDesktop Delivery

Controller Computers.

- 3. In the XenApp/XenDesktop Delivery Controllers pane, select a Delivery Controller from the XenApp/XenDesktop Delivery Controllers list.
- 4. In the Tasks pane, expand MPXAXD Delivery Controller Computer Role Tasks, and then click Install Citrix MPXAXD Agent.
- 5. In the Run Task Install Citrix MPXAXD Agent dialog box, adjust the task parameters as follows. To override a parameter, select it and click **Override**.
 - **UpgradeAgent**: This option, when set to *true*, causes uninstallation of the existing Citrix SCOM Management Pack Agent for XenApp and XenDesktop from the agent-managed computer before the current version is installed. Before such uninstallation, SCOM agent must be put into maintenance mode. Default value: *false*
 - **IgnorePrereqCheck**: You may not alter this option. Default value: *false*
 - Encryption password: Override this parameter with the encryption password you set in Step 3 of the Configuring encryption password section.

Default value: (empty)

- AgentInstallationSource: This option defines the location of the Management Pack agent installation package and its configuration files. Specify the value according to the relationship between the agent-managed computer and the SCOM management server:
 - If SCOM agent on the agent-managed computer reports only to the management server where Citrix SCOM Management Pack for XenApp and XenDesktop is installed, leave the value empty. The location is then automatically determined based on data retrieved from the agent-managed computer. In most cases, the retrieved location host name matches the host name of the management server where the installation task is invoked.
 - If the agent-managed computer is managed by some other management server or the computer hosts a multihomed SCOM agent instance, specify the host name of the management server where Citrix SCOM Management Pack for XenApp and XenDesktop is installed.
 - If the agent-managed computer does not have access to the *CitrixMPShare* shared folder on the management server, specify the alternative location of the Management Pack agent installation package and its agent configuration files in the UNC format. A prerequisite is that these files are copied from the *CitrixMPShare* shared folder to a location the agent-managed computer has access to. Default value: (empty)
- AgentInstallationDestination: This option defines the Management Pack agent's program installation directory on the agent-managed computer. If no value is specified, the Management Pack agent is installed to the %ProgramFiles%\Citrix\XenDesktop MP Agent directory.
 Default value: (empty)
- 6. Click **Run** to invoke the installation process.
- 7. Observe the output the task generates. If the task reports no errors, the installation on the agent-managed computer is correct.

The task initially performs a prerequisite check. If any of the installation prerequisites are not fulfilled, the process is interrupted before the actual installation begins. In this case, invoke the **Check Installation Prerequisites for Citrix MPXAXD Agent task** to pinpoint the problematic prerequisite.

Tip: The Agent installation task can be run for multiple selected Delivery Controllers.

Configuring Citrix SCOM Management Pack for

XenApp and XenDesktop for monitoring VDA services on server OS machines

Important: This section is applicable only if WinRM is configured to use non-default ports.

The Citrix SCOM Management Pack Agent for XenApp and XenDesktop monitors VDA services on the server OS machines remotely and it therefore, connects to the server OS machines by using WinRM. By default, Citrix SCOM Management Pack Agent for XenApp and XenDesktop uses the default WinRM port (5985), and it does not utilize SSL. However, if this configuration changes on the server OS machines, you may need to manually update Windows Registry on the Citrix SCOM Management Pack Agent for XenApp and XenDesktop computer. Add or change the following values in the *HKEY_LOCAL_MACHINE\SOFTWARE\Comtrade\XenDesktop MP Agent* registry key:

- WinRMPort (string value): port number that WinRM uses
- WinRMUseSSL (string value): yes, no, true, or false

In case the listed values do not exist or are empty, Citrix SCOM Management Pack Agent for XenApp and XenDesktop follows its default behavior.

Note: In case of monitoring large environments, with 500+ Server OS machines, monitoring Citrix services on VDAs can consume a large amount of memory. It is recommended that monitoring on VDA be disabled in such environments. See the Disabling VDA Monitoring Service section in Configuration for large XenApp and XenDesktop environments.

Verifying the installation and configuration on the Delivery Controllers

To verify that the XenApp and XenDesktop Management Pack installation and configuration on a Delivery Controller are correct, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the **Monitoring** view, in the left pane, expand **Citrix Library**, and click **XenApp/XenDesktop Delivery Controller Computers**.
- 3. In the XenApp and XenDesktop Delivery Controller Computers pane, select a Delivery Controller from the XenApp and XenDesktop Delivery Controllers list.
- 4. In the Tasks pane, expand Actions, and then click Check Requirements and Configuration for Citrix MPXAXD Agent.
- 5. Observe the output the task generates. If all checks are denoted successful, the installation and configuration on the Delivery Controller are correct.

Installing the product on the proxy nodes

Important: Perform this procedure only if you plan to monitor performance of server OS machines, server OS sessions, or desktop OS sessions in your XenApp and XenDesktop environment.

For machine or session performance monitoring, Citrix SCOM Management Pack Agent for XenApp and XenDesktop must be installed on the proxy nodes.

To install Citrix SCOM Management Pack Agent for XenApp and XenDesktop on a proxy node, do the following:

- 1. Log on to the proxy node. Use a user account that has local administrative privileges.
- Copy the MPXAXDMachineAgent.exe, Support.exe and Support.exe.config files from the || <ManagementServeHostName>\CitrixMPShare\XenDesktop Machine MP shared folder to a location on the proxy node.
- 3. Run the following command to check if the prerequisites for machine agent installation are fulfilled:

command	COPY
Support /checkprereq	

4. If all prerequisites are denoted as fulfilled, run the following command to invoke the Machine Agent installation process:

command	COPY
MPXAXDMachineAgent	

Wait for the Setup Wizard to appear.

5. Follow instructions of the Setup Wizard. During the process:

- In the Agent Service Account page, type the literal string of the *<MPXAXDAgentAccount>* user account into the corresponding text box.
- In the Delivery Controllers page, specify the Delivery Controllers that should be monitored by this proxy node.

Configuring Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop

To share the Encryption password with the Machine Agent, from the SCOM Console run the **Update Configuration on Citrix MPXAXD Machine Agent** task. Override the **Encryption password** parameter with the password you set in Step 3 of the Configuring encryption password section.

Important: Perform the following procedure only if you have installed the product's Machine Agent on the proxy nodes.

If WinRM is configured to use a non-default port (a port different from 5985) on your desktop OS machines, you must specify a port that will be used for VDI monitoring. To do this, update the Port value in the following keys in Windows

Registry:

- For OS machines: *HKEY_LOCAL_MACHINE\SOFTWARE\Comtrade\XenDesktop MP Machine Agent\WinRMProtocols*
- For Delivery Controllers: *HKEY_LOCAL_MACHINE\SOFTWARE\Comtrade\XenDesktop MP Machine Agent\ControllerWinRMProtocol*

Verifying the installation and configuration on the proxy nodes

Important: Perform this procedure only if you have installed the product's Machine Agent on the proxy nodes.

After the installation, the Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop computers are discovered in the Monitoring view of the SCOM Operations console as *XenApp/XenDesktop Machine Monitoring Proxy Computes* inside *Citrix Library*. To check if Machine Agent is fully operational, execute the *Check Requirements and Configuration for Citrix XAXD Machine Agent* task.

Verifying WinRM communication

Important: Perform this procedure only if you have installed the product's Machine Agent on the proxy nodes.

Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop communicates with Delivery Controllers and server OS machines by using WinRM protocol and Kerberos authentication. The following checks help you determine if WinRM is correctly configured.

• Proxy nodes:

On the proxy node, to check if Kerberos authentication on the WinRM client is enabled, run the following command:

command	COPY
winrm get winrm/config/Client	

Inspect the command output. If the value of the *Kerberos* parameter in the *Auth* group is not *true*, run the following command:



• Server OS machines or desktop OS machines:

On the proxy node, to verify if WinRM client on the computer can access the OS machine, log on by using the *<MPXAXDAgentAccount>* user account, and run the following command:

command COPY

In case of success, the command output should be similar to the following:

output	СОРҮ
IdentifyResponse	
ProtocolVersion = http://schemas.dmtf.org/wbem/wsman/1/wsman.xsd	
ProductVendor = Microsoft Corporation	
ProductVersion = OS: 6.1.7600 SP: 0.0 Stack: 2.0	

In case of failure, proceed as follows:

- If the command reports the *Access denied* error, it indicates that the *<MPXAXDAgentAccount>* user account does not have administrative privileges on the OS machine. Reconfigure the user account accordingly.
- On the OS machine, run the following command to check Kerberos authentication is enabled for WinRM:

command	СОРҮ
winrm get winrm/config/Service	

Inspect the command output. If the value of the *Kerberos* parameter in the *Auth* group is not *true*, run the following command:



• Delivery Controllers:

On the proxy node, log on by using the *<MPXAXDAgentAccount>* user account, and run the following command:

command

winrm identify -r:http://<DeliveryControllerHostName>:5985

-auth:Kerberos

In case of success, the command output should be similar to the following:

output	СОРҮ
IdentifyResponse	
ProtocolVersion = http://schemas.dmtf.org/wbem/wsman/1/wsman.xsd	
ProductVendor = Microsoft Corporation	
ProductVersion = OS: 6.1.7600 SP: 0.0 Stack: 2.0	

In case of failure, proceed as follows:

- If the command reports the *Access denied* error, it indicates that the *<MPXAXDAgentAccount>* user account does not have administrative privileges on the Delivery Controller. Reconfigure the user account accordingly.
- On the Delivery Controller, run the following command to check *Kerberos* authentication is enabled for WinRM:



Inspect the command output. If the value of the *Kerberos* parameter in the *Auth* group is not *true*, run the following command:



COPY

Uninstallation

This section contains instructions that you must follow to effectively uninstall Citrix SCOM Management Pack for XenApp and XenDesktop. Perform all procedures in the documented order of precedence. Optional procedures are appropriately marked.

Uninstalling the product from the Delivery Controllers

To uninstall XenApp/XenDesktop Management Pack Agent from a Delivery Controller (an agent-managed computer), do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the Monitoring view, expand Citrix Library, and then click XenApp/XenDesktop Delivery Controller Computers.
- 3. In the XenApp/XenDesktop Delivery Controller Computers pane, select a Delivery Controller from the XenApp/XenDesktop Delivery Controller Computers list.
- 4. In the Tasks pane, expand **Actions**, and then click **Uninstall Citrix MPXAXD Agent**.
- 5. In the Run Task Uninstall Citrix MPXAXD Agent dialog box, click **Run** to invoke the uninstallation process.
- 6. Repeat steps 3 to 5 for each additional Delivery Controller.

Tip: The Agent uninstallation task can be run for multiple selected Delivery Controllers.

Uninstalling the product from the proxy nodes

Important: Perform this procedure only if there is the product's Machine Agent is installed on the proxy nodes.

To determine which computers are the proxy nodes, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the Monitoring view, expand Citrix Library, and then click XenApp/XenDesktop Machine Monitoring Proxy Computers.
- 3. In the XenApp and XenDesktop Machine Monitoring Proxy Computers pane, find the list of proxy nodes under XenApp and XenDesktop Machine Monitoring Proxy Computers.

To uninstall Citrix SCOM Management Pack Agent for XenApp and XenDesktop from a proxy node (an agent-managed computer), do the following:

- 1. Log on to the proxy node. Use a user account that has local administrative privileges.
- 2. Make sure no product folders or files are in use by any user.
- 3. Go to **Start > Control Panel** and click **Programs and Features** (actions of this step may differ on operating systems earlier than Windows Server 2016).
- 4. Right-click Citrix SCOM Management Pack Agent for XenApp and XenDesktop and select Uninstall.
- 5. In the Programs and Features dialog box, click **Yes** to confirm uninstallation.

Removing dependent management packs (customizations)

Important: Perform this procedure only if you have customized the management packs included in the product.

To remove the customizations that you made to the management packs included in Citrix SCOM Management Pack for XenApp and XenDesktop, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the Administration view, expand Administration > Management Packs and click Installed Management Packs (the navigation pane structure may differ in SCOM versions earlier than 2016).
- 3. In the results pane, locate the management packs that depend on the management packs included in Citrix SCOM Management Pack Agent for XenApp and XenDesktop.
- 4. For each such dependent management pack (except for *Microsoft.SystemCenter.SecureReferenceOverride*), follow the steps:
 - 1. Right-click it and then click **Delete**.
 - 2. On the message stating that deleting the management pack might affect the scoping of some user roles, click **Yes**.

Removing included management packs

To remove the management packs included in Citrix SCOM Management Pack for XenApp and XenDesktop, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the Administration view, expand Administration > Management Packs and click Installed Management Packs (the navigation pane structure may differ in SCOM versions earlier than 2016).
- 3. Remove references to the included management packs from the *Microsoft.SystemCenter.SecureReferenceOverride* management pack. To do this, perform the following steps:
 - Identify which included management packs are referenced. In the Administration > Management Packs context of the SCOM Operations console, right-click Microsoft.SystemCenter.SecureReferenceOverride and select Properties. In the dialog box, click the Dependencies tab.
 - 2. For each such referenced management pack, find out its ID. Right-click the referenced management pack. In the dialog box, take note of the value in the ID text box on the General tab.
 - 3. Export the *Microsoft.SystemCenter.SecureReferenceOverride* management pack.
 - 4. Make a copy of the file you exported the management pack to.
 - Edit the originally exported file: use the IDs to find and remove all dependencies to the management packs from the Manifest > References context (the *Reference* elements) and the Monitoring > Overrides context (the SecureReferenceOverride elements), and then save the changes.

For better tracking, increase the management pack version by adjusting the value of the Version element within the Identity element.

- 6. Import back the altered *Microsoft.SystemCenter.SecureReferenceOverride* management pack from the modified file.
- 4. In the results pane, right-click Citrix Management Pack for XenApp and XenDesktop (EndUser) Reports, and then select Delete.
- 5. On the message stating that deleting the management pack might affect the scoping of some user roles, click **Yes**.
- 6. Repeat steps 4 and 5 with the following management packs (in the presented order of precedence):
 - 1. Citrix Management Pack for XenApp and XenDesktop (EndUser)
 - 2. Citrix Management Pack for XenApp and XenDesktop Reports
 - 3. Citrix Management Pack for XenApp and XenDesktop
- 7. Check if other Citrix SCOM Management Pack products are installed on the management server. If none of them is installed, repeat steps 4 and 5 with **Citrix Management Pack Library**.

Uninstalling the product from the SCOM management server

To uninstall Citrix SCOM Management Pack for XenApp and XenDesktop from the SCOM management server, do the following:

- 1. Log on to the management server. Use a user account that has local administrative privileges and SCOM administrative privileges.
- 2. Make sure no product folders or files are in use by any user.
- 3. Go to **Start > Control Panel** and click **Programs and Features** (actions of this step may differ on operating systems earlier than Windows Server 2016).
- 4. Right-click **Citrix SCOM Management Pack for XenApp and XenDesktop** and select **Uninstall**. Wait for the Setup Wizard to appear.
- 5. In the Welcome page of the Setup Wizard, click Uninstall.
- 6. In the Uninstalling the product page, the Setup Wizard reports the uninstallation progress.
- 7. In the Completion page of the Setup Wizard, click **Finish**.
- 8. Delete the *%ProgramData%\Citrix\CitrixMPShare\XenDesktop Machine MP* and *%ProgramData%\Citrix\CitrixMPShare\XenDesktop MP* folders.
- Caution: This action permanently deletes the Agent configuration data. You will be unable to reuse it at a later time.
- 9. Check if other Citrix SCOM Management Pack products are installed on the management server. If none of them is installed, follow the steps:
 - 1. Stop sharing the *CitrixMPShare* shared folder.
 - 2. Delete the *%ProgramData%\Citrix\CitrixMPShare* folder.
 - 3. Using an operating system administrative tool, delete the local CitrixMPShareUsers user group.

Upgrade

Upgrade from version 3.5

To upgrade Citrix SCOM Management Pack for XenApp and XenDesktop from version 3.5, do the following:

1. Prepare your environment for installation of the new product version. For instructions, see Preparing for the installation.

2. Install the product (its server-side part) on the SCOM management server. For instructions, see Installing the product on the SCOM management server. The installation process upgrades the product and preserves local configuration data.

3. Verify the installation of the product (its server-side part) on the SCOM management server. For instructions, see Verifying the installation on the SCOM management server.

4. On the SCOM management server, copy the mpxaxd_config.dat file from the %ProgramData%\ComTrade\MPShare\XenDesktop MP directory to the %ProgramData%\Citrix\CitrixMPShare\XenDesktop MP directory.

5. On the SCOM management server, move the mpxaxd_config.dat file from the %ProgramData%\ComTrade\MPShare\XenDesktop Machine MP directory to the %ProgramData%\Citrix\CitrixMPShare\XenDesktop Machine MP directory.

6. Configure access to the shared folder for agent installation. For instructions, see Configuring access to the shared folder for agent installation.

7. Install the product (one agent-side part) on the Delivery Controllers. For instructions, see Installing the product on the Delivery Controller.

Important: In the Run Task - Install Citrix MPXAXD Agent dialog box, set the UpgradeAgent task parameter to the true

value.

Target		Run Location
	JISI	
F <u>a</u> sk Parameter	5	
Name		Value
Upgrade Agent		false
IgnorePrereqChec Encryption passwo Debug AgentInstallationS AgentInstallationD	k ord ource lestination	false false
IgnorePrereqChec Encryption passwo Debug AgentInstallationS AgentInstallationD	k ord ource lestination	false
IgnorePrereqChec Encryption passwo Debug AgentInstallationS AgentInstallationD	k ord lestination	false false Task description
IgnorePrereqChec Encryption passwo Debug AgentInstallationS AgentInstallationD	k ord estination fined Run As Account	false false Task description Installs Citrix Management Pack Agent for XenApp and XenDesktop on the Citrix system Parameters:
IgnorePrereqChec Encryption passwo Debug AgentInstallationS AgentInstallationD	k ource lestination	false false false false Task description Installs Citrix Management Pack Agent for XenApp and XenDesktop on the Citrix system Parameters: - AgentInstallationSource: Agent installation
IgnorePrereqChec Encryption passwo Debug AgentInstallationS AgentInstallationD	k ord ource lestination	false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false false
IgnorePrereqChec Encryption passwo Debug AgentInstallationS AgentInstallationD Qverride ask credentials Uge the prede Other : User name : Password : Domain :	k ord ource lestination fined Run As Account TESTMF	false Task description Installs Citrix Management Pack Agent for XenApp and XenDesktop on the Citrix system Parameters: - AgentInstallationSource: Agent installation and configuration source is specified as eithe with the management server name where XenApp and XenDesktop MP was installed or with the UNC path where XenApp and YenDesktop MP Agent installation and configuration Source installation and configuration for the UNC path where XenApp and YenDesktop MP Agent installation and configuration and configuration source installation and configuration for the UNC path where XenApp and YenDesktop MP Agent installation and configuration

8. Verify the installation and configuration of the product (one agent-side part) on the Delivery Controllers. For instructions, see Verifying the installation and configuration on the Delivery Controllers.

9. (this step is applicable only when installed Machine Agent is part of the deployment of your earlier product version)

Install the product (the other agent-side part) on the proxy nodes. For instructions, see Installing the product on the proxy nodes. The installation process upgrades the product and preserves local configuration data.

10. (this step is applicable only when installed Machine Agent is part of the deployment of your earlier product version) Verify the installation and configuration of the product (the other agent-side part) on the proxy nodes. For instructions, see Verifying the installation and configuration on the proxy nodes.

Upgrade from version other than 3.5

To upgrade Citrix SCOM Management Pack for XenApp and XenDesktop from versions other than 3.5, do the following:

1. Prepare your environment for installation of the new product version. For instructions, see Preparing for the installation.

2. Install the product (its server-side part) on the SCOM management server. For instructions, see Installing the product on the SCOM management server.

Note: The installation process upgrades the product and preserves local configuration data.

3. Verify the installation of the product (its server-side part) on the SCOM management server. For instructions, see Verifying the installation on the SCOM management server.

4. Install the product (one agent-side part) on the Delivery Controllers. For instructions, see Installing the product on the Delivery Controllers.

Important: In the Run Task - Install Citrix MPXAXD Agent dialog box, set the **UpgradeAgent** task parameter to the *true* value.

Run the <u>t</u> ask or	n these targets		
Target ✔ QCXD28.tesn	nf.hsl	Run Location QCXD28.tesmf.hsl	
T <u>a</u> sk Paramete	rs		
Name		Value	
Upgrade Agent		false	
IgnorePrereqChe	ck	false	
AcentInstallation	Source		
AgentInstallation: AgentInstallation	Source Destination		
AgentInstallation AgentInstallation Qverride ask credentials	Source Destination	Task description	
AgentInstallation AgentInstallation Qverride ask credentials Use the pred Other : User name :	Source Destination	Task description Installs Citrix Management Pack Agent for XenApp and XenDesktop on the Citrix system Parameters: - AgentInstallationSource: Agent installation and configuration accurse in provided as offerences	em.
AgentInstallation AgentInstallation Qverride ask credentials Ouge the pred Other : User name : Password :	Source Destination	Task description Installs Citrix Management Pack Agent for XenApp and XenDesktop on the Citrix syste Parameters: - AgentInstallationSource: Agent installation and configuration source is specified as eit with the management server name where	em. 1 her
AgentInstallation AgentInstallation Qverride ask credentials Other : User name : Password : Domain :	Source Destination	Task description Installs Citrix Management Pack Agent for XenApp and XenDesktop on the Citrix syste Parameters: - AgentInstallationSource: Agent installation and configuration source is specified as eit with the management server name where XenApp and XenDesktop MP was installed with the UNC path where XenApp and XenDesktop MP Agent installation and configurations and configuration and XenDesktop MP Agent installation and configuration and configuration and configuration and XenDesktop MP Agent installation and configuration a	em. 1 her or
AgentInstallation AgentInstallation Qverride ask credentials Use the pred Other : User name : Password : Domain : ask confirmation	Source Destination	Task description Installs Citrix Management Pack Agent for XenApp and XenDesktop on the Citrix syste Parameters: - AgentInstallationSource: Agent installation and configuration source is specified as eit with the management server name where XenApp and XenDesktop MP was installed with the UNC path where XenApp and XenDesktop MP Agent installation and configuration and configuration and XenDesktop MP Agent installation Agent installation Agent installation Agent installation Agent installation Agent installation Agent installation Agent installation Agent installation Agent installation Agent installation Agent installation Agent installation Agent installation Agent installation Agent installation Agent installation Agent installation Agent installation Agent installation Agent installation Agent installatingent installation Agent installation Agent	em. I her or

5. Verify the installation and configuration of the product (one agent-side part) on the Delivery Controllers. For instructions, see Verifying the installation and configuration on the Delivery Controllers.

6. (this step is applicable only when installed Machine Agent is part of the deployment of your earlier product version)

Install the product (the other agent-side part) on the proxy nodes. For instructions, see Installing the product on the proxy nodes.

Note: The installation process upgrades the product and preserves local configuration data.

7. (this step is applicable only when installed Machine Agent is part of the deployment of your earlier product version) Verify the installation and configuration of the product (the other agent-side part) on the proxy nodes. For instructions, see Verifying the installation and configuration on the proxy nodes.
Optimize

Optional configuration

Tuning thresholds for monitors and rules

Some monitors and rules have default thresholds that might need additional tuning to suit your environment. You should evaluate monitors and rules to determine whether the default thresholds are appropriate for your environment. If a default threshold is not appropriate for your environment, you should adjust the threshold by overriding it.

See the Reference Guide for a complete list of monitors and rules available in Citrix SCOM Management Pack for XenApp and XenDesktop

Adding optional SLA dashboards

For this purpose, you must import the optional *Citrix Management Pack for XenApp and XenDesktop SLA Dashboards* management pack into SCOM. It provides service level objectives (SLA and SLO objects) for XenApp and XenDesktop environment monitoring.

Installation

Management pack dependencies

The *Citrix Management Pack for XenApp and XenDesktop SLA Dashboards* management pack has the following dependencies:

- Citrix-specific management packs:
 - Citrix Management Pack for XenApp and XenDesktop
 - Citrix Management Pack for XenApp and XenDesktop (EndUser)
- Default management packs:
 - Health Library
 - Microsoft.SystemCenter.Visualization.Component.Library
 - *Microsoft.SystemCenter.Visualization.Library*
 - Microsoft.SystemCenter.Visualization.ServiceLevelComponents
 - System Library

Software requirements

The *Citrix Management Pack for XenApp and XenDesktop SLA Dashboards* management pack requires Microsoft System Center Operations Manager 2012 R2.

Importing the management pack

For instructions on how to import the unsealed management pack, see Manually importing included management packs

into SCOM. The management pack is located in the *%ProgramFiles%\Citrix\XenDesktop MP* folder in the *Comtrade.XenApp.And.XenDesktop.SLADashboards.xml* file.

Configuration and usage

Citrix Management Pack for XenApp and XenDesktop SLA Dashboards is an example of how SCOM 2012 SLA dashboards can be used together with the Citrix SCOM Management Pack for XenApp and XenDesktop which collects all the information needed to create useful and personalized service level objectives for your environment. This sample management pack includes the following pre-set definitions for service level objectives:

- Desktop OS Delivery Group SLOs:
 - Availability > 99.000 %
 - Max User Logon Duration < 50 seconds
 - Max Desktop OS Random Delivery Group Usage (%) < 90 %
- Server OS Delivery Group SLOs:
 - Availability > 99.000 %
 - Max User Logon Duration < 30 seconds
 - Min Load Available (%) > 10 %
- Site SLOs:
 - Availability > 99.000 %
 - Max Number of Concurrent Users < 300
 - Max Number of Active Sessions < 500
 - Max Logon Duration < 40 seconds

In real world scenarios, you would create different service level tracking rules for each Site and delivery group in your organization. You may also want to include other parameters for setting the service level objectives.

Note: The management pack also provides two service level views which report on service level objectives defined in service level tracking rules. For a complete list available monitors and performance collection rules that can be used to set service level objectives, see *Citrix SCOM Management Pack for XenApp and XenDesktop Reference Guide*, available from Tuning thresholds for monitors and rules.

Configure dashboards with default SLAs

Once the management pack is imported, locate the views in the Monitoring view in the SCOM Operations console as seen in the following figure.

a 🚰 Citrix Library
🗲 Citrix Management Topology
XenApp/XenDesktop Delivery Controller Computers
XenApp/XenDesktop Machine Monitoring Proxy Computers
A Citrix XenApp and XenDesktop
XenApp/XenDesktop Alerts
🔄 XenApp/XenDesktop Events
XenApp/XenDesktop Health State
< XenApp/XenDesktop Topology
Controllers
4 🚰 Dashboards
Delivery Group SLA Dashboard
Site SLA Dashboard
Delivery Groups
D A Machines
E Sessions
D Galacian Sites
User Connections

The *Delivery Group SLA Dashboard* and *Site SLA Dashboard* views are not configured by default, so you must select one or more service level tracking rules for each of the views.

Delivery Group SLA Dashboard

To configure the Delivery Group SLA Dashboard view, do the following:

- 1. Launch the SCOM Operations console.
- 2. In the Monitoring view, in the left pane, expand **Citrix XenApp and XenDesktop** > **Dashboards**, and then click **Delivery Group SLA Dashboard**.
- 3. In the upper right corner of the dashboard view, click the settings icon and then select **Configure**.

Delivery Group SLA Dashboard		🔅 > Tasks
Service Levels	Service Level Objectives	Crofigure
	State Name Target Class Instances	

4. In the Update Configuration wizard window, click **Next**.

	Update Configuration	x
Senter a frier	ndly name and description	
General Properties Scope Completion	Name: Description:	
	< Previous Next > Save Cance	<u>ا</u> .

5. In the Scope page, click **Add**.

	Update Configuration			x
Specify the	Scope			
General Properties Scope	Select the SLA(s) to display:	Add	× Remove	
Completion	Service Level Management Pack Target			
	< Previous Next >	Finish	Cancel] i

6. In the Add SLA dialog box, in the Service Level column, select **Desktop OS Group Health** and click **Add**.

	×
Management Pack	
Citrix Management Pack for XenApp and Xen	Desktop SLA Dashb
Citrix Management Pack for XenApp and Xen	Desktop SLA Dashb
Microsoft System Center Application Monitor	ring 360 SLA
Citrix Management Pack for XenApp and Xer	Desktop SLA Dashb
Agd <u>R</u> emove	
Management Pack	
Citrix Management Pack for XenApp and Xer	Desktop SLA Dashb
Citrix Management Pack for XenApp and Xer	Desktop SLA Dashb
m	
	Management Pack Citrix Management Pack for XenApp and Xer Citrix Management Pack for XenApp and Xer Microsoft System Center Application Monito Citrix Management Pack for XenApp and Xer Management Pack Citrix Management Pack for XenApp and Xer Citrix Management Pack for XenApp and Xer

- 7. Repeat step 6 for Server OS Delivery Group Health.
- 8. Click **OK** to close the dialog box.
- 9. In the Scope page, adjust the time interval for the SLA.

	Update Con	figuration 🛛 🗙
Specify th	ne Scope	
General Properties	Select the SLA(s) to display:	
Scope	.	Add X Remove
Completion	Service Level	Management Pack
	Desktop OS Delivery Group Health	Citrix Management Pack for XenApp and XenDesktop SLA Dasi
	< [ш
	Last: 1 Days V	
		<pre></pre>

10. Click **Finish** to close the wizard.

Once the view is refreshed, it shows the delivery group service level objective report for the time period selected, as shown in the figure that follows.

Delivery Group SL	LA Dashboard				
Service Lev	vels	Servic	e Level Objectives		
A Name: D	esktop OS Delivery Group Health (2)	State	Name	Target Class	Instances
🕢 Sa	lesDG	\bigcirc	Availability	XenDesktop Random Assignment Delivery Group (Desktop OS)	1
Exe	ecutiveDesktop		Average Logon Duration	XenDesktop Random Assignment Delivery Group (Desktop OS)	1
 Aname: Se Q Q Ac Q Pu 	erver OS Delivery Group Health (3) eliveryDG scountingDG urchasingDG	Ø	Delivery Group Usage ^k	XenDesktop Random Assignment Delivery Group (Desktop OS)	1

ExecutiveDesktop b64b535a-f277-415c-bd0e-aa7739f58404



Site SLA Dashboard

To configure the Site SLA Dashboard view, do the following:

- 1. Launch the SCOM Operations console.
- 2. In the Monitoring view, in the left pane, expand Citrix XenApp and XenDesktop > Dashboards, and then click Site SLA Dashboard.
- 3. In the upper right corner of the dashboard view, click the settings icon and then select **Configure**.

SITE SLAS	2	
7	X	Clear Contents
	۱	Swap with next widget
)	Swap with previous widget
8	1	Configure

- 4. In the Update Configuration wizard window, click **Next**.
- 5. In the Scope page, click **Add**.
- 6. In the Add SLA dialog box, in the Service Level column, select **Site Health** and click **Add**.
- 7. Click **OK** to close the dialog box.
- 8. In the Scope page, adjust the time interval for the SLA.
- 9. Click Finish to close the wizard



Custom SLAs

Citrix Management Pack for XenApp and XenDesktop SLA Dashboards also includes some general service level target rules that may be used as an example. To make the SLA dashboards useful in practice, you must create your own SLAs that are tailored to your needs.

Following the steps below, a new SLA for a Site named "Boston" will be created, and it will check whether we are crossing maximum allowed number of concurrent users, since we only have 1,000 concurrent licenses available.

Perform the following:

- 1. Launch the SCOM Operations console.
- 2. In the Authoring view, expand **Authoring > Management Pack Objects**.
- 3. Right-click Service Level Tracking and then select Create.
- 4. In the Service Level Tracking wizard, type a display name in the **Name** text box. In our example, type *Boston Site SLA*.

2	Service Level Tracking
General	
General Objects to Track Service Level Objectives Summary	This wizard sets the parameters that track service levels for specified objects. You can run reports against this tracking data. Name: Boston Ste BLA Description (optional):
	< Previous Next > Finish Cancel

5. Click Next.

6. In the Objects to Track page, click **Select**.

7. In the Select a Target Class dialog box, from the **Search result filter** drop-down list, select **All**.

8. In the Target column, select **XAXD Site** and then click **OK** to close the dialog box.

9. In the Objects to Track page, from the **Select destination management pack** drown-down list, select a custom management pack where this SLA will be stored. If no such management pack exists, create a new one.

9	Service Level Tracking
Objects to Track	
General Objects to Track Service Level Objectives Summary	Specify the class of objects for which you want to track service levels. If necessary, specify a group or object to reduce the scope of the tracking request. Targeted class Select a class of object to target XAXD Site Scope (optional) Specify objects within the class: All objects of the targeted class A group or object that contains objects of the targeted class Select Management pack Select destination management pack:
	< Previous Next > Finish Cancel

10. Click Next.

11. In the Service Level Objectives page, click **Add** and select **Collection rule SLO**.

12. In the Service Level Objective (Collection Rule) dialog box, type a display name in the **Service level objective name** text box.

In our example, type Maximum Concurrent Users.

13. Under Targeted class, click **Select**. In the dialog box, in the Target column, select **XAXD Site Data Collector** and then click **OK** to close the dialog box.

14. Under Performance collection rule, click **Select**. In the dialog box, in the Name column, click **Number of Concurrent Users (Performance DB DW)** and then click **OK** to close the dialog box.

15. Under Aggregation method, click **Max**.

In our example, we do not want more users at any time.

16. From the Service level objective goal drop-down list, select **Less Than** and then type *1000* in the text box.

Maximum Concurrent Users		
Targeted class		
XAXD Site Data Collector		Select
Performance collection rule:		
Number of Concurrent Users (Performance DB DW)	Select
Aggregation method:		
O Min		
O Average		
Max		
Service level objective goal:		
Less Than	✓ 1000	

17. Click **OK** to close the Service Level Objective (Collection Rule) dialog box.

18. In the Service Level Tracking wizard window, click **Next**.

19. In the Summary page, click **Finish**.

Once the new SLA is created, you can use it in the SLA dashboards as explained in Configure dashboards with default SLAs.

You can use the procedure in this section to create personalized SLAs for sites, delivery groups, or any other object that the Citrix SCOM Management Pack for XenApp and XenDesktop discovers. For a complete list of performance rules and availability monitors that can be used to configure service level objectives, see *Citrix SCOM Management Pack for XenApp and XenDesktop Reference Guide*, available from Tuning thresholds for monitors and rules.

Key monitoring scenarios

Monitoring large environments

To monitor large XenApp and XenDesktop environments, you can configure the SCOM Connector to be used for transferring data related to the discovered objects from the agent to the SCOM Management server. This includes the number of Delivery Groups, Server OS machines, applications, and application folders.

Note: Environments with more than 100 Delivery Groups, 600 Server OS machines, and 1,500 applications are considered large.

To configure the SCOM Connector, you must set up the SCOM Administrator account in the XenApp and XenDesktop MP Configuration tool and enable the **Applications Discovery** and **Delivery Groups and Hypervisor Connections Discovery** rules. For more information, see the Configuring SCOM Administrator section in Install and configure.

The credentials of this account are used by the SCOM Connector to connect to the SCOM server. The SCOM Connector uses SCOM's SDK service and the Operations Manager Connector Framework to fetch data related to discovered objects

from the XenApp and XenDesktop environment. This includes the number of Delivery Groups, Server OS machines, applications, and application folders. This enhancement increases the size of data that can be transferred from the agent to the SCOM server compared to earlier versions, significantly increasing the scale of the environment that can be discovered.

Failed registrations

Before any desktop or application can be brokered by XenApp and XenDesktop, Virtual Delivery Agent (VDA) installed on the desktop or server machine has to register with one of the Delivery Controllers in a XenApp and XenDesktop Site. This is done each time a machine is started. If the machine is not registered correctly, it cannot be used. Thus, these situations may have a big impact on the number of available machines in a delivery group.

There are many causes why a registration may fail, including no VDA being installed on a desktop or server machine, DNS problems, firewall configuration, time synchronization, and so on.

Citrix SCOM Management Pack for XenApp and XenDesktop monitors via the *Failed Registrations in Delivery Group* monitor if a certain machine in a delivery group could not register itself with the XenDesktop broker. If a failed registration is detected, the corresponding delivery group health status changes to *Warning* and alert is generated and displayed in the *Alerts* view and in the *Failed Registrations* view in *Machines* folder. Both views also contain alerts for each failed registration of a machine, with details on a machine name, a delivery group name, and a Site name. Additional details may also be found in the *Event* view, where all Citrix-related Windows events are logged.

Failed registrations are monitored only for the powered-managed virtual machines and not for managed physical machines.

Machine and session performance monitoring

Machine and session monitoring functionality enables an insight into performance of server OS machines, server OS sessions, and desktop OS sessions. You have the possibility to receive alerts when a specific machine or session metric crosses a threshold, and you can generate reports.

Note: Alerts based on performance thresholds are generated only when the product's Machine Agent is installed and configured.

The following reports are available:

- Server OS Machine Performance: This report shows server performance for selected server OS machines. Displayed metrics:
 - CPU utilization
 - Physical and virtual memory utilization
 - Citrix Load Index
 - Number of sessions
 - Virtual memory page fault rate
 - Disk metrics (read, write, and I/O operation rates, latency)
 - Network traffic
 - Average session latency
 - Average session ICA round-trip time (RTT)

This report is available only when Machine Agent is installed and configured.

Note: When you upgrade the product from version 3.9 or earlier, all discovered Server OS machines are deleted from SCOM and rediscovered with new IDs. If generated for a time range before the upgrade, the following reports of

Server OS Machine will contain repeated machine entries dated before and after upgrade: - Active Sessions, Active Sessions (TOP N), Performance (Plan and Manage), and Performance (Troubleshooting).

- User Desktop/Application Activity. This report shows application/desktop usage for selected user. With session monitoring, you can also see session performance data for the duration of the connection. Displayed metrics:
 - CPU utilization
 - Physical and virtual memory utilization
 - Virtual memory page fault rate
 - Session network traffic
 - Average session latency
 - Average session ICA round-trip time (RTT)
 - For desktop OS sessions, the report displays the following additional metrics:
 - Disk metrics (read, write, and I/O operation rates, latency)
 - Machine network traffic

Performance metrics of this report are available only when Machine Agent is installed and configured.

When Citrix SCOM Management Pack Agent for XenApp and XenDesktop is installed on one or more computers, referred to as proxy nodes, machine and session performance data can be collected. Data is collected remotely by using Windows Remote Management (WinRM). Machine Agent first communicates with a XenApp and XenDesktop Delivery Controller to get a list of the registered machines. It then utilizes WinRM to collect performance data from the machines.



Proxies use WinRM with Kerberos authentication to communicate with machines and Delivery Controllers. All WinRM communication is done in the context of an account that is configured for the *Citrix MPXAXD Machine Agent* service on the proxy node. For this communication to work all machines (server OS and desktop OS) must have WinRM 2.0 installed and enabled (default TCP port: 5985, enabled Kerberos authentication).

In advanced scenarios, you can use different accounts for WinRM communication for different machines. In the XenDesktop MP Configuration tool, you can specify machine hostname mask and account pairs. For any machine matching specific machine hostname mask, the corresponding user account is used for WinRM communication. For machines without matching hostname mask, the *Citrix MPXAXD Machine Agent* service user account is used.

Each instance of Citrix SCOM Management Pack Agent for XenApp and XenDesktop (each proxy node) can be configured to monitor machines for one or more Delivery Controller instances. However, every Delivery Controller can be monitored by no more than one Machine Agent instance.

Important: In a multi-Site environment, if a Machine Agent instance monitors multiple Delivery Controllers, these Controllers must belong to the same XenApp and XenDesktop Site.

Possible Machine Agent configurations (deployments) therefore are:

https://docs.citrix.com

- One Machine Agent for all Delivery Controller instances (within a Site)
- One Machine Agent per Delivery Controller
- One Machine Agent per subset of Delivery Controller instances (within a Site)

The deployments are depicted in the following figures:



Best practice is to configure Machine Agents (on proxy nodes) to monitor the performance of no more than 2,000 concurrently running Server OS or Desktop OS machines. In case of larger environments of up to 4,000 concurrently running Server OS or Desktop OS machines on one Delivery Controller, the discovery interval must be increased to 10 minutes. For more information, see the Increasing discovery interval of Citrix MPXAXD Machine Agent section in Configuration for large XenApp and XenDesktop environments.

In environments where the number of machines registered with each Delivery Controller is smaller, you can configure one proxy node to handle multiple Deliver Controller instances. As a general rule configuration with one proxy node per Delivery Controller is appropriate for any type of XenApp and XenDesktop environment.

For examples of proper Machine Agent deployment for Sites with a different number of concurrently running machines, see the following figures.

Proxy nodes sizing - for Site with 1,000 machines and two Controllers



Proxy nodes sizing - for Site with 3,500 machines and two Controllers



Proxy nodes sizing - for Site with 5,000 machines and three Controllers



Database sizing

Calculating Operations Manager operational database and data warehouse database sizes

Size of the Operations Manager database depends on the size of the XenApp and XenDesktop environment. Citrix SCOM Management Pack for XenApp and XenDesktop installs additional datasets to Operations Manager data warehouse database. It provides better, more comprehensive as well as more optimized data collection and data processing for better XenApp and XenDesktop architecture and end-user analysis, planning, and troubleshooting.

Users (approximate number)		500	2,000	10,000
Sites		1	1	1
Delivery Controllers		2	3	4
Desktop OS d	lelivery groups	2	4	6
Server OS delivery groups		3	4	6
Server OS machines		10	50	500
Concurrent application sessions		400	1,500	7,000
Concurrent desktop sessions		100	500	3,000
Sizes (in MB): DB / DW / Total	Working hours: 8x5	57 / 443 / 500	98 / 1405 / 1503	295 / 6956 / 7215
	Working hours: 24x7	57 / 1031 / 1088	98 / 3756 / 3854	295 / 18705 / 19000

The maximum database space consumption for a few sample environments with default database grooming is presented in the table that follows.

Grooming settings for MPXAXD datasets

Important: In large environments with numerous concurrent sessions, increasing the retention interval may have significant impact on the SCOM data warehouse database.

Citrix SCOM Management Pack for XenApp and XenDesktop consists of two custom datasets: Machine dataset and Session dataset. Each dataset provides tables for performance data and tables for stale or discovery data. Grooming for tables is specified in number of days and the default values are provided in table that follows.

Machine dataset grooming

Machine dataset	
Performance Raw	10

Performance Hourly	400
Performance Daily	400
Machines	9,999

Session dataset grooming

Session dataset	
Performance Raw	10
Performance Hourly	400
Performance Daily	400
Sessions	400
Connections	Connections 400
Logons	400
Application Instances	400
Applications	9,999

To change grooming settings, do the following:

- 1. Open SQL Server Management Studio and connect to the data warehouse database.
- 2. In the Object Explorer pane, expand **Databases**, expand **OperationsManagerDW** database, and then expand **Tables**.
- 3. Right-click dbo.Dataset and then select Open Table.
- 4. Make a note of DatasetID GUID values for rows with *DatasetDefaultName* equal to each of the following values:
 - MPXAXD Machine DataSet
 - MPXAXD Session DataSet
- 5. In the Object Explorer pane, right-click **dbo.StandardDatasetAggregation** and then select **Open Table**.
- 6. In the DatasetID column, locate the dataset GUID noted in step 4.
- 7. Locate the MaxDataAgeDays column and edit the value to set the grooming interval.
- 8. Repeat steps 6 and 7 for the other GUID value.

Manually importing included management packs into SCOM

For general instructions about how to import management packs into SCOM, see the How to Import an Operations Manager Management Pack webpage on the Microsoft TechNet website.

To import the sealed Citrix SCOM Management Pack for XenApp and XenDesktop manually, do the following:

- 1. Log on to the management server.
- 2. Launch the SCOM Operations console.
- 3. In the Administration view, click **Management Packs**.
- 4. In the Tasks pane, expand Actions, and then click Import Management Packs.
- 5. In the Import Management Packs dialog box, click Add, and then select Add from disk.
- 6. In the Online Catalog Connection dialog box, click No.
- 7. In the Select Management Packs to import dialog box, browse to the folder that contains the following management pack files, select those files, and then click **Open**.
 - Comtrade.Citrix.Library.mp
 - Comtrade.Citrix.XenApp.And.XenDesktop.EndUser.mpb
 - Comtrade.Citrix.XenApp.And.XenDesktop.EndUser.Reports.mpb
 - Comtrade.Citrix.XenApp.And.XenDesktop.mpb
 - Comtrade.Citrix.XenApp.And.XenDesktop.Reports.mpb
- 8. Click Install.

Customizing sealed management packs

Customization of the sealed management packs that XenApp and XenDesktop Management Pack provides is similar to the default SCOM management pack customization. For details, see the Microsoft TechNet website:

- For general information about customization of management packs, see the Customizing Management Packs webpage.
- For instructions on how to customize a management pack, see the Create a New Management Pack for Customizations webpage.

Citrix SCOM Management Pack 3.12 for XenApp and XenDesktop

Nov 27, 2017

Use Citrix SCOM Management Pack for XenApp and XenDesktop to monitor and manage XenApp and XenDesktop infrastructure with the Microsoft System Center Operations Manager (SCOM).

With the Citrix SCOM Management Pack for XenApp and XenDesktop, you can:

- Improve the XenApp and XenDesktop infrastructure availability and health The virtual application and desktop infrastructure availability is checked with rigorous connectivity probing and active service checks. It is important that users are able to connect to their virtual desktops and applications. This is a process that involves many Delivery Controller components (such as Broker Service or Machine Creation Services).
- Gain insight into the XenApp and XenDesktop performance and usage information
 It is critical to know how users are using the virtual infrastructure delivering desktops and applications in order to be able
 to tune it accordingly. With the Citrix SCOM Management Pack for XenApp and XenDesktop you will get more insight
 into which users are logging in to the virtual desktops and applications (identify slow logons and logon bursts), how many
 users are connecting to the Sites, if the infrastructure is able to handle all user requests accordingly, for example by
 maintaining the size of the idle pool defined by the desktop group power management policy, by ensuring enough
 resources for delivery of applications and desktops defined by the load management policy, and so on. Another aspect is
 the end-user resource usage (what is the resource usage for each user connection/session) and virtual infrastructure
 resource usage (what is the resource usage of my server OS machines). Detailed machine and session performance
 information helps in managing your infrastructure and enables better planning and decision making.

Citrix SCOM Management Pack for XenApp and XenDesktop fully integrates the topology, health, and performance data into SCOM.

It provides centralized monitoring in SCOM and covers the following key scenarios:

- Are Delivery Controller instances up and running?
- Is the infrastructure (for example, brokers, machine creation services, and so on) on the Site level operational?
- Do users have issues connecting to the virtual desktops and applications (for example, delivery group limit/capacity is reached, desktop OS or server OS machines cannot register, other infrastructure issues are present)?
- What is the availability of published applications?
- Are there any events that indicate a problem with the infrastructure?
- Have any performance thresholds been violated?
- What is my server OS machine performance?
- What is the user session resource usage on server OS or desktop OS machines?
- Are there any user logons with lengthy duration? Which logon phases are causing the delay?

Important: To collect machine and session performance data, the product's Machine Agent must be installed and configured in addition to its main agent (referred to simply as Agent). For a general overview of the machine and session monitoring concepts, see Machine and session performance monitoring.

Architecture

The following diagram shows how the Citrix SCOM Management Pack for XenApp and XenDesktop connects with the SCOM management platform and the XenApp and XenDesktop infrastructure.



What's new

Nov 27, 2017

Citrix SCOM Management Pack 3.12 for XenApp and XenDesktop introduces the following enhancements:

- Support for Citrix XenApp and XenDesktop 7.14. Citrix SCOM Management Pack for XenApp and XenDesktop now supports XenApp and XenDesktop version 7.14.
- Performance improvements. The product design is upgraded to support significant performance improvements:
 - The product now uses the SCOM SDK service and the Operations Manager Connector Framework to fetch discovered objects data from the XenApp and XenDesktop environment. This design change eliminates restrictions on the size of data transferred from the agent to the SCOM Management Server, thus enabling the product to **monitor larger environments**. For more information, see the Key monitoring scenarios section in Optimize. For information on configuring the product to monitor large environments, see Configuring SCOM Administrator section in Install and configure.
 - The design enhancements in the product enable monitoring with reduced memory footprint.
 - The machine, session, and application usage data collection speed is increased, **improving the response times** of the management pack. This is seen as a ten-fold increase in the rate at which updates in the XenApp and XenDesktop environment are available in the management pack.

For more information on the improvements in the scale of XenApp and XenDesktop environment supported, see Performance overview.

- Enhanced handling of configuration data. Configuration data handling is now improved with encryption using a usersupplied key for improved security. For more information, see Configuring encryption password section in Install and configure.
- **TLS 1.2 support.** Citrix SCOM Management Pack for XenApp and XenDesktop is enhanced to monitor XenApp and XenDesktop environments that have TLS (Transport Layer Security) protocol version 1.2 enabled.

Known issues

The following is a list of known issues in this product version:

• Issue ID: SCOM-1176

Symptom: The Citrix SCOM Management Pack Agent for XenApp and XenDesktop might not get upgraded during an upgrade invoked either locally on the XenApp and XenDesktop server or remotely from the SCOM Operations console. The upgrade procedure initially removes the Citrix SCOM Management Pack Agent for XenApp and XenDesktop Service. However, the previously installed agent package is not replaced and the earlier program version remains registered with the operating system.

Action: Repeat the upgrade procedure.

• Issue ID: SCOM-502

Symptom: In the SCOM Operations console, when you attempt to run the *Start Citrix Director* task on a XenApp and XenDesktop alert that is not a session performance or logon alert, the invocation fails and SCOM reports the following error:

Citrix Director URL not configured. Please configure the Citrix Director URL by using XenDesktop MP Configuration tool.

Action: None. The error message is incorrect, so you can safely ignore it. You can run the Start Citrix Director task only on session performance alerts and logon alerts.

• Issue ID: SCOM-143

Symptom: In the SCOM Operations console, the ApplicationExcludeRegExtPattern and ApplicationIncludeRegExtPattern parameters of application discoveries (Application Discovery (n of 5)) are ignored. You therefore cannot exclude applications from the discovery process or include them into it. Action: None. There is no workaround available.

Issue ID: SCOM-86 (6297)

Symptom: After Citrix SCOM Management Pack for XenApp and XenDesktop (both its server-side and agent-side parts) is installed and configured on the computer for the first time (without being upgraded from an earlier product version), and a valid XenApp and XenDesktop Platinum license cannot be retrieved, no license-related alerts are sent. Such alerts therefore cannot be monitored in the Monitoring view of the SCOM operations console. Action: None. There is no workaround available.

• Issue ID: SCOM-77 (6194)

Symptom: In the output of the Check Requirements and Configuration for Citrix MPXAXD Agent task in the SCOM Operations console, site names that contain non-ASCII characters are not displayed correctly. For example, Spanish characters $c\tilde{n}$ appear as $\#^{\mu}$ in the name of a XenApp and XenDesktop Site. No other symptoms exist. Action: None. Apart from the visual glitch, the functionality of the product is not affected in any way. You can therefore safely ignore the issue.

• Issue ID: SCOM-210 (5380)

Symptom: While a workflow is running, error messages (31551 and 31552) are logged into the Operations Manager event log on the management server. They contain the following description: Failed to store data in the Data Warehouse...

This error occurs when the Default action account in SCOM does not have write permission on the data warehouse database and none of the XenDesktop controllers is discovered as Site Data Collector. This may happen when:

- The Site Data Collector object switches from one XenDesktop Delivery Controller to another.
- Collector object switches from one XenDesktop Delivery Controller to another.
- None of XenDesktop Delivery Controllers is operational.

This issue occurs only with some of the workflows, for example, Comtrade.Citrix. XenDesktop.EndUser.Reports.PublishConnectionsLogonsDW.Rule or Comtrade. Citrix.XenDesktop.EndUser.Reports.PublishApplicationInstanceDW.Rule. Action: Ensure that at least one Delivery Controller is active at all times.

• Issue ID: SCOM-211 (5163)

Symptom: The Delivery Group - Logon Details (Troubleshooting) report does not function if the Use business hours option is selected.

Action: Clear the Use business hours option.

• Issue ID: SCOM-212 (5162)

Symptom: When launching Citrix Director by using the Start Citrix Director task in the Operations Manager Console for user logon or session alerts, Citrix Director is not opened for the users' context if the user is anonymous. Anonymous users were introduced in XenApp and XenDesktop 7.6. Action: None. There is no workaround available.

• Issue ID: SCOM-1426

Symptom: The Object and Counter names in all Performance views on the SCOM Management Server are not localized, but appear in English.

Action: None. This issue does not impact product functionality. Applies to French, German, Japanese, Simplified Chinese and Spanish languages.

• Issue ID: SCOM-78

Symptom: If the password of the Citrix SCOM Management Pack for XenApp and XenDesktop Monitoring user account contains non-English characters the **Check Requirements and Configuration for Citrix MPXAXD Agent** task reports an error in the Citrix XenApp/XenDesktop Powershell Interface section as follows: "Could not get data from Citrix PowerShell interface."

Action: Change the password of Citrix SCOM Management Pack for XenApp and XenDesktop Monitoring user account to contain only English characters.

Applies to French, German, Japanese, Simplified Chinese and Spanish languages.

• Issue ID: SCOM-1391, SCOM-1384

Symptom: In the SCOM Console, the output messages of all tasks are not localized, but appear in English. **Action:** None. This issue does not impact product functionality.

Applies to French, German, Japanese, Simplified Chinese and Spanish languages.

• Issue ID: SCOM-1156

Symptom: Surrogate pair characters in the Citrix SCOM Management Pack for XenApp and XenDesktop reports appear incorrectly.

Action: None. This issue does not impact product functionality.

Applies to Japanese and Simplified Chinese languages.

• Issue ID: SCOM-1222

Symptom: If the XenApp and XenDesktop Site name contains Japanese or Simple Chinese characters, an error might occur when running the **Check Requirements and Configuration for Citrix MPXAXD Agent** or **Check Requirements and Configuration for Citrix MPXAXD Machine Agent** task.

The Director URL for the Site is configured successfully, but the task might display the following error message: "Director URL is not configured for Site <sitename>. Please configure Director URL for this Site in 'XenApp and XenDesktop MP Configuration' tool and deploy new configuration using 'Update Configuration on Citrix MPXAXD Agent/Machine Agent' task in SCOM."

Action: Avoid Japanese and Simplified Chinese characters in the XenApp and XenDesktop Site name. Applies to Japanese and Simplified Chinese languages.

• Issue ID: SCOM-1617

Symptom: Citrix SCOM Management Pack for XenApp and XenDesktop Agent does not support monitoring of Citrix VDA Services on Sites containing more than 100 VDAs for Server OS.

Action: None. Disable the VDA Service monitors in such environments to avoid errors in the Operations Manager event log.

• **Issue ID:** SCOM-1939

Symptom: The Server OS Machine Memory Hard Page Faults alert displays an incorrect rule description. **Workaround**: None.

• Issue ID: SCOM-2058

Symptom: The Server OS and Desktop OS Machine CPU Utilizations alerts do not trigger in localized environments. **Workaround**: Switch to the English environment.

https://docs.citrix.com

• Issue ID: SCOM-2067

Symptom: Power managed Server OS machines that are powered off are not discovered. If a machine that is already discovered is powered off, the machine gets undiscovered. **Workaround**: None.

• Issue ID: SCOM-2100

Symptom: The reports - Delivery Group Server OS - Machine Performance, Server OS Machine - Performance (Plan and Manage), and Server OS Machine - Performance (Troubleshooting) can show incorrect load index values for certain Server OS Machines.

Workaround: None

• Issue ID: SCOM- 2090

Symptom: The Citrix MPXAXD Agent Installation task run for upgrading to version 3.12 succeeds. However, it does not give any output sometimes. In addition, the upgraded Citrix MPXAXD Agent service could start incorrectly in slower environments, under the local system user.

Workaround: Manually upgrade the agent to version 3.12, instead of using the task. If the service is running under a local system user, run the **Update Configuration** task.

• Issue ID: SCOM-2137

Symptom: Site level performance monitoring: Data collection for Sessions on Site, Connected Users on Site, and User Logon Performance might stop after running for a while.

Workaround: Restart the **Microsoft Monitoring Agent** service on the Delivery Controller that acts as the Site Data Collector.

Fixed issues

The following issues are fixed in this release:

• Issue ID: SCOM-1611

Symptom: If multiple XenApp and XenDesktop Sites are monitored by SCOM Management servers in the same SCOM Management group, the Application-User Sessions reports might not be accurate. For every Site that is monitored, the report might contain duplicate entries for the selected applications. These entries might contain no data or incorrect data.

Licensing

Licensing of Citrix SCOM Management Pack for XenApp and XenDesktop depends on licensing of the monitored product, XenApp and XenDesktop. For Citrix SCOM Management Pack for XenApp and XenDesktop to operate properly and remain fully functional, its licensing must be covered. During installation or upgrade, no further actions are necessary on either the SCOM management server or the computers that host the product's Agent and Machine Agent instances.

Covered licensing means that the following conditions are fulfilled:

- The XenApp and XenDesktop Site that you plan to monitor uses a *Platinum* license within either maintenance program: Subscription Advantage, Software Maintenance.
- Subscription Advantage Date (of the Platinum license) falls after the Subscription Advantage Eligibility date that is

embedded into binary files of the current version of Citrix SCOM Management Pack for XenApp and XenDesktop. For instructions on how to check this, see Install and Configure. In Citrix product documentation, Subscription Advantage Eligibility date may also be referred to as *product burn-in date*.

Important: The Subscription Advantage Eligibility date of this product release is 2017.0517.

Example: If the Subscription Advantage Date of your Platinum license for XenApp and XenDesktop is *2016.0531* (meaning 31 May 2016), and the Subscription Advantage Eligibility date of Citrix SCOM Management Pack for XenApp and XenDesktop is *2016.0518* (meaning 18 May 2016), the product remains fully functional after 31 May 2016, provided your XenApp and XenDesktop license remains valid (unexpired). If you upgrade to a later version of Citrix SCOM Management Pack for XenApp and XenDesktop whose Subscription Advantage Eligibility date is, for example, *2016.0710* (meaning 10 July 2016), Citrix SCOM Management Pack for XenApp and XenDesktop stops gathering and reporting new data (topology updates, incoming alerts, newly discovered objects).

Renewal after expired XenApp and XenDesktop License

It may take up to 24 hours for the Citrix SCOM Management Pack Agent for XenApp and XenDesktop instances to detect renewal of an expired Platinum license in the XenApp and XenDesktop Site. After such license renewal, to restore licensing coverage of XenApp and XenDesktop on Delivery Controllers (agent-managed computers) immediately, do the following:

On a Delivery Controller, stop the *Citrix MPXAXD Agent* service by using an operating system tool.
 From the *db* subfolder of the Agent's data files folder (*%ProgramData%\Citrix\XenDesktop MP Agent* by default), remove the *agent-license-info.json* file.
 Start the *Citrix MPXAXD* Agent service again.

3. Start the Citrix MPXAXD Agent service again.

4. Repeat steps 1 to 3 on each additional Delivery Controller.

Upgrading

Note: Product versions earlier than 3.6 were released under the name Comtrade Management Pack for Citrix XenApp and XenDesktop.

Upgrade is available for versions 3.5 and later. During the upgrade process, the included management packs of an earlier product version are automatically upgraded; their prior removal is not required. Your management pack customization is preserved.

Caution:

- Before upgrading from an earlier product version, ensure that licensing of this version of Citrix SCOM Management Pack for XenApp and XenDesktop is covered. For instructions on how to verify licensing coverage, see Preparing for Installation in Install and Configure.
- Upgrading to an unlicensed version of Citrix SCOM Management Pack for XenApp and XenDesktop results in ceased process of gathering and reporting new data. The data already collected is preserved and remains available to SCOM. If this occurs, downgrading to the earlier (licensed) product version requires a complete uninstallation of the new product version (including removal of the included management packs from SCOM), followed by reinstallation of the earlier product version. The management pack removal from SCOM deletes all the operational data (alerts, events, performance data) while the reinstallation ensures continued availability of data in the SCOM data warehouse (reports).

For upgrade instructions, see Upgrade in Install and Configure.

System requirements

Nov 27, 2017

Before installing Citrix SCOM Management Pack for XenApp and XenDesktop, make sure that your environment meets the requirements listed in this topic.

Hardware requirements

Computers that will host Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop must meet the following minimum hardware requirements:

- One physical CPU with two cores (for physical systems), two virtual CPUs (for virtual systems); CPU clock speed of 2.3 GHz
- 4 GB of RAM (excluding the paging file size)
- 1 GB of free local storage space

For more information on the Machine Agent, see Install and Configure.

Software requirements

Citrix SCOM Management Pack for XenApp and XenDesktop requires a supported version of the following products that it integrates with:

- Citrix XenApp and XenDesktop
- Microsoft System Center Operations Manager

Additionally, Citrix SCOM Management Pack for XenApp and XenDesktop requires a supported version of Citrix Licensing in the XenApp and XenDesktop Site where it is deployed. Make sure that the following software is available on the Delivery Controllers:

In addition, make sure that the following software is available on the Delivery Controllers:

- Microsoft .NET Framework 4.5.2 or later
- Microsoft's Visual C++ Redistributable Packages for Visual Studio 2013

Supported versions of Citrix XenApp and XenDesktop

Citrix SCOM Management Pack for XenApp and XenDesktop is compatible with the following Citrix XenApp and XenDesktop versions:

Product version (Delivery Controller)	Supported
Citrix XenApp and XenDesktop 7.14	J.
Citrix XenApp and XenDesktop 7.13	<i>✓</i>
Citrix XenApp and XenDesktop 7.12	<i>、</i>
Citrix XenApp and XenDesktop 7.11	<i>、</i>

Citrix XenApp and XenDesktop 7.9	•
Citrix XenApp and XenDesktop 7.8	1
Citrix XenApp and XenDesktop 7.7	1
Citrix XenApp and XenDesktop 7.6 LTSR	1
Citrix XenApp and XenDesktop 7.6 ¹	•
Citrix XenApp and XenDesktop 7.5	•
Citrix XenApp and XenDesktop 7.1	•
Citrix XenApp and XenDesktop 7.0	1

¹This entry covers the following configurations: 7.6, 7.6 + FP1 (Feature Pack 1), 7.6 + FP2, 7.6 + FP3.

Product version (Citrix Director)	Supported
versions included with the supported Delivery Controller versions	1

Supported Citrix Licensing versions

Citrix SCOM Management Pack for XenApp and XenDesktop can be deployed in environments where any of the following versions of Citrix Licensing is used:

Product version	Supported
Citrix Licensing 11.14 or later	•

Supported versions of SCOM

Citrix SCOM Management Pack for XenApp and XenDesktop is compatible with the following SCOM versions:

Microsoft System Center Operations Manager version	Supported
Microsoft System Center Operations Manager 2016	•
Microsoft System Center Operations Manager 2012 R2	1

¹ This entry covers the following configurations: base release, base release + SP1 (Service Pack 1).

Supported operating systems

Agent operating systems

Citrix SCOM Management Pack Agent for XenApp and XenDesktop is compatible with all operating systems that are supported by Delivery Controller of Citrix XenApp and XenDesktop.

Machine Agent operating systems

Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop is compatible with the following operating systems:

Operating system	Supported
Microsoft Windows Server 2016	1
Microsoft Windows Server 2012 R2	1
Microsoft Windows Server 2012	•

Regional settings support

The product can be deployed and operates correctly in environments with regional setting configured to use any of the following languages:

Language	Language code	Supported
English	en	1
Spanish	es	1

Performance overview

Nov 27, 2017

Generally speaking, Citrix SCOM Management Pack for XenApp and XenDesktop consists of three parts:

- The part installed on the SCOM management server (mandatory)
- Citrix SCOM Management Pack Agent for XenApp and XenDesktop (mandatory)
- Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop (optional)

The SCOM management server-side part

This part is a collection of management packs include discoveries, monitors, rules, tasks, and reports. From the compute and memory perspective, this part does not significantly add to the basic resource requirements of SCOM management server itself. It is not resource-intensive in terms of storage requirements of the SCOM reporting data warehouse database. For these reasons, there are no special considerations related to the SCOM management-server part when monitoring larger Citrix XenApp and XenDesktop environments.

Citrix SCOM Management Pack Agent for XenApp and XenDesktop

Performance and resource consumption of Citrix SCOM Management Pack Agent for XenApp and XenDesktop primarily depend on the size of your XenApp and XenDesktop environment, specifically on the number of resources within each Site. Furthermore, they are influenced by the load on the Delivery Controller instances. In contrast, the number of Sites in your XenApp and XenDesktop environment has no influence on the performance and resource consumption.

For scaling up Citrix SCOM Management Pack Agent for XenApp and XenDesktop, hardware of the hosting Delivery Controller must be reconfigured. The Agent cannot be scaled out.

Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop

The product's Machine Agent can be scaled up without the need of altering XenApp and XenDesktop deployment, as no XenApp and XenDesktop component is installed on its proxy node. Machine Agent can also be scaled out; you can achieve this by installing multiple instances on multiple proxy nodes and configuring it such that each Machine Agent instance handles only a subset of all Delivery Controller instances.

Note: The machine agent is not tested for scale or performance.

Configuration specifications

All figures in this document are valid for environments that:

- Are monitored with the specified product version of Citrix SCOM Management Pack for XenApp and XenDesktop
- Match the documented configuration specifications for XenApp and XenDesktop and SCOM
- Use the default configuration of management packs in terms of which rules and monitors are enabled (this applies to management packs included in Citrix SCOM Management Pack for XenApp and XenDesktop and management packs bundled with SCOM). In addition:
 - Disable VDA service monitoring
 - Enable connectors when the environment contains more than 600 Server OS machines. For more information on configuring connectors, see Configuring SCOM Administrator.

• Use the default configuration of SCOM management server and SCOM agents, without fine-tuning or any special adjustment.

For the product to work with the scale of the environment documented here, it is recommended that you configure the SCOM agent on all controllers. For environments with approximately 15,000 VDAs and/or around 25,000 sessions (Desktop OS and Server OS) or more, follow the recommended configuration steps in <u>Configuration for monitoring large XenApp</u> and XenDesktop environments.

Validated Citrix SCOM Management Pack for XenApp and XenDesktop version

Validation of Citrix SCOM Management Pack for XenApp and XenDesktop was performed with the product version listed in the following table.

Product	Version
Citrix SCOM Management Pack for XenApp and XenDesktop	3.12

Citrix XenApp and XenDesktop configuration specification

With this configuration, the Site database server is deployed outside the Delivery Controller computer.

Computer: Delivery Controller	
Specification item	Value
Compute	four virtual CPUs; CPU clock speed of 2.67 GHz
Memory	16 GB of RAM
Software version	Citrix XenApp and XenDesktop 7.13

Computer: Site database server		
Specification item	Value	
Compute	four virtual CPUs; CPU clock speed of 2.67 GHz	
Memory	24 GB of RAM	
Software version	Microsoft SQL Server 2014 R2	

Microsoft System Center Operations Manager configuration specification

With this configuration, the SCOM database and data warehouse server is deployed outside the SCOM management server computer.

Computer: SCOM management server		
Specification item	Value	
Compute	eight virtual CPUs; CPU clock speed of 2.67 GHz	
Memory	16 GB of RAM	
Software version	Microsoft System Center Operations Manager 2012 R2	

Computer: SCOM database and data warehouse server		
Specification item	Value	
Compute	eight virtual CPUs; CPU clock speed of 2.67 GHz	
Memory	24 GB of RAM	
Software version	Microsoft SQL Server 2014 R2	

Computer: SCOM reporting database		
Specification item	Value	
Compute	four virtual CPUs; CPU clock speed of 2.67 GHz	
Memory	8 GB of RAM	
Software version	Microsoft SQL Server 2014 R2	

Monitoring ability

The following table lists the maximum values at which the Citrix SCOM Management Pack for XenApp and XenDesktop was successfully validated. The product might be able to monitor environments larger than stated below. However, this hasn't been tested.

Maximum number of monitored items (per Site)

ltem	Value
Delivery groups	300
Server OS machines	2000
Server OS machines in a delivery group	200
Desktop OS machines	36,000
Applications	2,500
Concurrent sessions	68,000 (36,000 Desktop OS sessions + 32,000 Server OS sessions)

Average resource consumption

Resource consumption was measured in a XenApp and XenDesktop Site with four Delivery Controller instances. Measurement was made on the Delivery Controller where Citrix SCOM Management Pack Agent for XenApp and XenDesktop did most data processing. Measuring spanned a period of 2.5 days. Windows Performance Monitor was used as the measuring tool.

Important: In XenApp and XenDesktop deployments with multiple Delivery Controller instances, the majority of data processing is performed by a single instance of Citrix SCOM Management Pack Agent for XenApp and XenDesktop (on one Delivery Controller). Resource consumption is documented only for the primary controller, as the other controllers in the site have minimal resource usage.

Average consumption on a Delivery Controller (for 20,600 VDIs)

Item	Value
MPXAXDAgent CPU usage ¹	10.62%
HealthService CPU usage	1.90%
MonitoringHost CPU usage	3.88%

MPXAXDAgent memory usage	1480 MB
HealthService memory usage	174 MB
MonitoringHost memory usage	240 MB

¹ CPU usage is calculated based on the *% Processor Time* counter and the number of processor cores or virtual CPUs.

The number of published applications has a negligible effect on the CPU usage of the *MPXAXDAgent* service.

The following figure shows changes in CPU usage of *MPXAXDAgent*, *HealthService and MonitoringHost* after these services had been started for the first time. Values are taken from the first part of the entire measurement time period (first four hours), when initial high data inflow loaded compute resource substantially. After first three hours, initial high load decreased significantly.



The following figure shows typical patterns of changes in CPU usage of *MPXAXDAgent*, *HealthService and MonitoringHost* through a major part of the measurement time period, after the initial high load had already subsided. The measurement was made in the validation set 2 (VS2; see figure for memory usage).



As the figure above shows, bursts of high CPU usage of *MPXAXDAgent* occured every five minutes, while spikes of high CPU usage of *HealthService and MonitoringHost* were not periodical.

The following figure shows the memory usage of *MPXAXDAgent*, and *HealthService*, and *MonitoringHost* through time, measured during the whole validation set.



As the figure above shows, on the Delivery Controller there should be approximately 4.2 GB of physical memory available for the joint needs of the *MPXAXDAgent*, *HealthService and MonitoringHost* services.

Configuration for large XenApp and XenDesktop environments

Nov 27, 2017

This article specifies the configuration updates recommended by Citrix for large XenApp and XenDesktop environments monitored by Citrix SCOM Management Pack for XenApp and XenDesktop. These configuration changes are also necessary if the Operations Manager Event Log contains events related to Citrix SCOM Management Pack for XenApp and XenDesktop with ID 21402 or 6024. This configuration change is optional though for smaller environments.

Citrix XenApp and XenDesktop configuration

Disabling monitoring of VDA Service

Citrix SCOM Management Pack for XenApp and XenDesktop monitors the VDA services (running state of Citrix services on VDA) by default. In large environments, with 500+ Server OS machines, this monitoring can consume a large amount of system memory. So, we recommend that the monitoring of VDA services in Server OS machines is disabled in such environments.

To disable the monitoring of VDA services on Server OS machines, do the following registry changes on all Delivery Controllers.

Caution: Using Registry Editor incorrectly can cause serious problems that might require you to reinstall your operating system. Citrix cannot guarantee that problems resulting from the incorrect use of Registry Editor can be solved. Use Registry Editor at your own risk. Citrix recommends that you back up Windows Registry before changing it.

- 1. In the Start menu, type **regedit** in the Search text box, and then click **Search**.
- 2. In the results list, click **regedit** or **regedit.exe**.
- 3. In the User Account Control dialog box, click **Yes**.
- 4. In the Registry Editor, navigate to **HKEY_LOCAL_MACHINE >SOFTWARE>ComTrade>XenDesktop MP Agent**
- 5. Right-click and select New>DWORD (32-bit) Value.
- 6. Name the new value SkipVdaDiscovery
- 7. Right-click SkipVdaDiscovery and select Modify
- 8. In the **Value** data text box, type a decimal value 1
- 9. Click **OK**.

10. Using the Services administrative tool of the operating system, restart the Citrix MPXAXD Agent service.

Increasing the queue size of the Microsoft Monitoring Agent

The Microsoft Monitoring Agent uses a queue to store data to be sent to the Management server. Typically, the queue is used to prevent data loss when the Management server is unavailable or the agent is unable to communicate with other available Management servers. When the queue becomes full, the agent starts deleting the oldest data.

In a node monitoring a large XenApp and XenDesktop environment, the default agent queue size of 15,360 KB (15 MB) is not sufficient to accommodate the high amount of data flow. This results in data loss that leads to erroneous management of the XenApp and XenDesktop environment.

To increase the queue size of the Microsoft Monitoring Agent, do the following on the Delivery Controllers and the Proxy nodes:
Caution: Using Registry Editor incorrectly can cause serious problems that might require you to reinstall your operating system. Citrix cannot guarantee that problems resulting from the incorrect use of Registry Editor can be solved. Use Registry Editor at your own risk.

- 1. In the Start menu, type **regedit** in the Search text box, and then click **Search**.
- 2. In the results list, click **regedit** or **regedit.exe**.
- 3. In the User Account Control dialog box, click **Yes**.
- 4. In the Registry Editor, navigate to HKEY_LOCAL_MACHINE > SYSTEM > CurrentControlSet > Services >

HealthService > **Parameters** > **Management Groups** > < *GroupName*>, where < *GroupName*> is the name of the SCOM Management group the agent belongs to.

5. Right-click maximumQueueSizeKb and select Modify.

Figure The maximumQueueSizeKb value in Registry Editor

| Eile Edit Yiew Favorites Help Image: Security set)
F9-7970-42D6
ia-9206-daf8-2
0008 (8)
0000 (102400)
0000 (0)
4 80 30 00 00 0 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Computer\HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\HealthService\Parameters\Management Groups\scom17 | <
 |

6. In the **Value** data text box, type a value in the range 15,360-3,07,200 (KB; 3,07,200 KB equals 300 MB).

Caution: Citrix recommends that you back up Windows Registry before changing it.

7. Click OK.

8. Using the Services administrative tool of the operating system, restart the **Microsoft Monitoring Agent Service**.

Increasing the queue size of the version store

The Microsoft Monitoring Agent Service stores records of unfinished transactions in a version store. Version store enables the Extensible Storage Engine (ESE) to track and manage current transactions. It contains a list of operations performed by active transactions maintained by the Health Service. This list is an in-memory list of modifications made to the Health Service store database.

The default size of version store is 1,920 16-KB memory pages (30 MB) and is optimized for a typical installation of SCOM. A version store of this size is not sufficient to handle the high data flow in a large XenApp and XenDesktop environment.

To increase the queue size of the version store, do the following on the Delivery Controllers and the Proxy nodes

Caution: Using Registry Editor incorrectly can cause serious problems that might require you to reinstall your operating system. Citrix cannot guarantee that problems resulting from the incorrect use of Registry Editor can be solved. Use Registry Editor at your own risk.

- 1. In the Start menu, type **regedit** in the Search text box, and then click **Search**.
- 2. In the Results list, click **regedit** or **regedit.exe**.
- 3. In the User Account Control dialog box, click **Yes**.
- 4. In the Registry Editor window, navigate

to HKEY_LOCAL_MACHINE > SYSTEM > CurrentControlSet > Services > HealthService > Parameters.

5. Right-click the **Persistence Version Store Maximum** value and click **Modify**.

Figure The Persistence Version Store Maximum value in Registry Editor

۵.	Registry Editor		_ 🗆 X	
<u>F</u> ile <u>E</u> dit <u>V</u> iew F <u>a</u> vorites <u>H</u> elp				
Elle Edit View Favorites Height Image: Parameters </td <td>Name (Default) Frror Reports Enabled Persistence Cache Maximum Persistence Checkpoint Depth Maximum Persistence Initial Database Page Count Persistence Maximum Sessions Persistence Page Hint Cache Size Persistence Version Store Maximum Queue Error Reports Runtime CLR Version</td> <td>Type REG_SZ REG_DWORD REG_DWORD REG_DWORD REG_DWORD REG_DWORD REG_DWORD REG_DWORD REG_SZ</td> <td>Data (value not set) 0x0000000 (0) 0x00040000 (26214 0x0140000 (20971 0x00009600 (38400 0x00000020 (32) 0x00040000 (26214 0x00000000 (13107 0x00000000 (0) v4.0.30319</td> <td>< III</td>	Name (Default) Frror Reports Enabled Persistence Cache Maximum Persistence Checkpoint Depth Maximum Persistence Initial Database Page Count Persistence Maximum Sessions Persistence Page Hint Cache Size Persistence Version Store Maximum Queue Error Reports Runtime CLR Version	Type REG_SZ REG_DWORD REG_DWORD REG_DWORD REG_DWORD REG_DWORD REG_DWORD REG_DWORD REG_SZ	Data (value not set) 0x0000000 (0) 0x00040000 (26214 0x0140000 (20971 0x00009600 (38400 0x00000020 (32) 0x00040000 (26214 0x00000000 (13107 0x00000000 (0) v4.0.30319	< III
Computer\HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\HealthService\Parameters				

6. In the **Value** data text box, type a value in the range 1,920-19,200 (16-KB blocks, 19,200 16-KB blocks equals 300 MB). **Caution:** Citrix recommends that you back up Windows Registry before changing it.

- 7. Click **OK**.
- 8. Using the Services administrative tool of the operating system, restart the Microsoft Monitoring Agent Service.

Important: Any repair or reinstallation of the Microsoft Monitoring agent removes these changes.

Microsoft System Center Operations Manager configuration

Raising the memory utilization monitor threshold

SCOM constantly monitors the memory utilization of two crucial agent processes - the System Center Management Service Host Process and the Microsoft Monitoring Agent Service. When the memory utilization metric exceeds 300 MB, these two processes restart as a recovery means.

On a proxy agent computer, the threshold limit of memory utilization must be raised to 800 MB.

Caution: Using Registry Editor incorrectly can cause serious problems that might require you to reinstall your operating system. Citrix cannot guarantee that problems resulting from the incorrect use of Registry Editor can be solved. Use Registry Editor at your own risk.

To set the monitor utilization threshold, do the following:

- 1. Log on to the Management server.
- 2. Launch the SCOM Operations console.
- 3. In the **Monitoring** view, expand **Operations Manager** > **Agent Details** and click **Agents By Version**.

- 4. In the Results pane, in the **Name** column, right-click the line of the proxy computer, and select **Open** > **Health Explorer for <ProxyNodeFQDN>**.
- 5. In the Health Explorer for <ProxyNodeFQDN> window, disable any filter that might be set.
- 6. Expand Entity Health > Performance > System Center Management Health Service Performance > System Center Management Health Service Memory Utilization.
- 7. Right-click Health Service Private Bytes Threshold and click Monitor Properties.

Figure The Health Service Private Bytes Threshold entry in Health Explorer

- 4 🕢 Entity Health qcxd18.tesmf.hsl (Object)
- Availability qcxd18.tesmf.hsl (Object)
- Configuration qcxd18.tesmf.hsl (Object)
- ▲ 🕢 Performance qcxd18.tesmf.hsl (Object)
- 4 🕢 System Center Management Health Service Performance qcxd18.tesmf.hsl (Health Service)
 - Agent processor utilization qcxd18.tesmf.hsl (Health Service)
 - Send Queue % Used qcxd18.tesmf.hsl (Agent)
 - Send Queue % Used qcxd18.tesmf.hsl (Health Service)
 - ▲ 🕢 System Center Management Health Service Memory Utilization qcxd18.tesmf.hsl (Health Service)
 - Itealth Service Handle Count Threshold qcxd18.tesmf.hsl (Health Service)
 - Health Service Private Bytes Threshold qcxd18.tesmf.hsl (Health Service)
 - Monitoring Host Handle Count Threshold qcxd18.tesmf.hsl (Agent)
 - Monitoring Host Private Bytes Threshold qcxd18.tesmf.hsl (Agent)
 - System Center Management Health Service Modules Performance Rollup qcxd18.tesmf.hsl (Health Service)
 - WMI Memory Usage Monitor qcxd18.tesmf.hsl (Agent)
- Security qcxd18.tesmf.hsl (Object)

8. In the **Health Service Private Bytes Threshold Properties** window, in the **Overrides** tab, click **Override** and select **For the object: <ProxyNodeFQDN>**.

9. In the Override Properties window, under **Parameter Name** column, locate the **Agent Performance Monitor Type** (Consecutive Samples) - Threshold line.

- 10. In the same line, in the Override column, select the check box.
- 11. In the Override Value column, type 838,860,880 (bytes. This value equals 800 MB).

12. From the **Select destination management pack** drop-down list, select the management pack into which you want to save the customization. Click **New** to create a new management pack if needed.

- 13. Click **OK** to close the Override Properties window.
- 14. Click **Close** to close the Health Service Private Bytes Threshold Properties window.
- 15. In the left pane, right-click Monitor Host Private Bytes Threshold and select Monitor Properties. Repeat steps 8 -
- 13 to update the value for Monitor Host Private Bytes Threshold.
- 16. Click **Close** to close the Monitor Host Private Bytes Threshold Properties window.

Install and configure

Nov 27, 2017

This topic contains instructions for installing and configuring the Citrix SCOM Management Pack for XenApp and XenDesktop. Perform all procedures in the documented order of precedence. Optional procedures are appropriately marked. Also covered are the instructions for uninstalling and upgrading the product.

You can extend the Citrix SCOM Management for XenApp and XenDesktop on-premises to monitor VDAs deployed on Microsoft Azure. To do so, configure a Site-to-Site VPN connection from the on-premises Site to the cloud Site. See How to Leverage SCOM to Monitor Citrix VDAs on Microsoft Azure for steps to configure Microsoft Azure and the Routing and Remote Access Service (RRAS) Site-to-Site VPN service.

Preparing for the installation

Before installing the Citrix SCOM Management Pack for XenApp and XenDesktop, make sure the following general prerequisites are fulfilled:

- Your environment meets the hardware and software requirements. For hardware, software requirements and/or other requirements, see System Requirements.
- Licensing of Citrix SCOM Management Pack for XenApp and XenDesktop is covered. The licensing is covered when all conditions listed in Licensing are fulfilled.

To check if Subscription Advantage Date of the XenApp and XenDesktop Platinum license falls after the Subscription Advantage Eligibility date of Citrix SCOM Management Pack for XenApp and XenDesktop (one of the licensing conditions), do the following:

- 1. Take note of the Subscription Advantage Eligibility date of the current product release. For information, see Licensing.
- 2. Launch Citrix Studio.
- 3. In the left pane of Citrix Studio, expand Citrix Studio (<SiteName>) > Configuration, and then click Licensing.
- 4. In the Licensing Overview pane, under Licenses, search for the lines that have either value in the Product column: *Citrix XenApp Platinum*

Citrix XenDesktop Platinum

- 5. For each matching line from step 4, check if its **Subscription Advantage Date** value is bigger than the date (**Subscription Advantage Eligibility** date) from step 1.
- 6. If at least one value is bigger, the license **Subscription Advantage** period covers the current version of Citrix SCOM Management Pack for XenApp and XenDesktop.
- A computer is chosen on which a SCOM management server resides and where the server side of Citrix SCOM Management Pack for XenApp and XenDesktop will be installed. This computer is referred to as SCOM management server.
- SCOM agent is installed on all the computers that host XenApp and XenDesktop Delivery Controllers, and these computers are configured as agent-managed computers in the SCOM management group.
- The Action Account of SCOM agent has administrative privileges on all XenApp and XenDesktop Delivery Controllers.
- A domain user account is chosen that you will use for remote monitoring of server OS machines and desktop OS machines. For multiple XenApp and XenDesktop Sites, you might need to use different accounts. This depends on the domain configuration.

Tip: Citrix recommends that you create a new, dedicated user account for exclusive use for the above-mentioned purposes.

The user account must have the following properties:

- It has administrative privileges in all XenApp and XenDesktop Delivery Controllers and all server OS machines within the Site.
- It has the **Read Only Administrator** role (or a role with higher privileges) assigned in XenApp and XenDesktop with the scope set to All.

The following image shows the creation of an administrator account in Citrix Studio.

Administrator and Scone
Select an administrator:
EXAMPLEDOMAIN\MPXAXDAgentAccount Browse
Select a Scope: Scopes are objects that represent something meaningful in an organization and that an administrator is allowed to manage (for example, a set of Delivery Groups used by the Finance team). Click a scope to see the objects in it.
Scope name
All All objects
Create scope
Back Next Cancel

The following image shows the editing of an administrator account in Citrix Studio.

	Edit Administrator
Administrato Name: EX	r Name and Details AMPLEDOMAIN\MPXAXDAgentAccount
Scope All	Role Read Only Administrator
Enable adm Clear check	Eait
Save full permi	
	Cancel

This user account is referred to as *<MPXAXDAgentAccount>* in the remainder of this document.

- Windows Remote Management 2.0 (WinRM 2.0) is enabled on all server OS machines. To enable WinRM on the local computer, open a Command Prompt window and run the *winrm quickconfig* command.
- WinRM 2.0 is correctly configured. For instructions on how to verify that the WinRM 2.0 configuration is correct, see Verifying WinRM communication.

For Citrix SCOM MP Analytics Service to transmit anonymous usage data, make sure that the SCOM management server has internet access.

For XenApp and XenDesktop machine and session performance monitoring, make sure the following additional prerequisites are fulfilled as well:

• Computers are chosen where Citrix SCOM Management Pack for XenApp and XenDesktop Machine Agent will be installed. These computers are referred to as Citrix SCOM Management Pack for XenApp and XenDesktop proxy nodes (proxy nodes). The proxy nodes must meet minimum hardware requirements and must be running a supported operating system.

Important: For information on how to properly designate the proxy nodes and plan their configuration, see Machine and session performance monitoring.

- SCOM agent is installed on all the proxy nodes.
- The <MPXAXDAgentAccount> user account has administrative privileges in the desktop OS machines and on the proxy nodes.
- Windows Remote Management 2.0 (WinRM 2.0) is enabled on all desktop OS machines.
- Receiving Windows PowerShell remote commands is enabled on all the computers that host XenApp and XenDesktop Delivery Controllers. For more information, see the Enable-PSRemoting (for Windows Server 2012 R2) or Enable-PSRemoting (for Windows Server 2012) webpage on the Microsoft TechNet website.

https://docs.citrix.com

• Firewall is configured as required by WinRM: on desktop OS machine as well as on the Delivery Controllers, incoming traffic is enabled on the TCP port that WinRM is using. By default, WinRM is configured to use port 5985.

Installing the product on the SCOM management server

The server-side part of Citrix SCOM Management Pack for XenApp and XenDesktop must be installed on the SCOM management server.

To install Citrix SCOM Management Pack for XenApp and XenDesktop on the SCOM management server, do the following:

1. Log on to the management server. Use a user account that has local administrative privileges and SCOM administrative privileges.

2. In Windows Explorer, locate the *Citrix_SCOM_Management_Pack_for_XenAppXenDesktop_<Version>.exe* file (where *<Version>* is the current software version), and double-click it to invoke the installation process. Wait for the Setup Wizard to appear.

3. In the Welcome page of the Setup Wizard, click Next.



4. In the View Relevant Product Configuration page, click **Next**.

5. In the License Agreement page of the Setup Wizard, read the end user license agreement carefully. If you accept the terms of the agreement, click **Next**.

3	Citrix SCOM Management Pack for XenApp and XenDesktop 3.12.342
Licens	e Agreement
Pleas	e read the following license agreement carefully.
CITRIX	ICENSE AGREEMENT
Use of th (s) with (s) or se	is component is subject to the Citrix license or terms of service covering the Citrix product(s) or service which you will be using this component. This component is licensed for use only with such Citrix product ervice(s).
CTX_coo	le EP_T_A124358
✓ I acce	pt the terms in the License Agreement
	< Back Next > Cancel

6. In the Destination Folder page, define the Citrix SCOM Management Pack for XenApp and XenDesktop installation folder. Citrix recommends that you install Citrix SCOM Management Pack for XenApp and XenDesktop to the default folder.

Proceed as follows:

- To install the product to the default folder listed in the Setup Wizard, no special actions are required.
- To install the product to a different folder, follow the sub-steps:
 - Click Change.
 - In the Browse For Folder dialog box, browse to the desired installation folder, select it, and click OK.

7. In the Configure Post-Install Actions page of the Setup Wizard, decide whether the Setup Wizard should automatically import the included management packs into SCOM.

#	Citrix SCOM Management Pack for XenApp and XenDesktop 3.12.342	x
Config Pleas	Jure Post-Install Actions e select actions to be performed after the successful install.	
✓ Autor	natically import the Management Pack	
	< Back Install Ca	ncel

- Decide about the management pack import:
 - To let the Setup Wizard import the management packs, select the Automatically import the Management Pack option. Citrix recommends this choice.
 - To import the management packs into SCOM manually at a later time, leave the **Automatically import the Management Pack** option unselected. For instructions on how to import or reimport the management packs, see Manually importing included management packs into SCOM.

8. Click Install. The Setup Wizard displays the Installing the product page and starts copying the installation files.

9. After the installation completes, the installation completion page is displayed. Click Next.

10. In the Executing post-install actions page, attend the import process (if chosen earlier).

11. In the post-installation completion page, review the actions log, and click Finish to close the Setup Wizard.

X Citri	All post-install actions were successfully	X
100 CC	executed.	
2	INFO: Installing Citrix MP Analytics Service INFO: Analytics installation completed succesfully	^
823		=
CITRIX	Click the Finish button to exit the Setup Wizard.	>
	< <u>Back</u> Can	cel

Functioning of Citrix SCOM MP Analytics Service

Citrix SCOM MP Analytics Service is installed automatically with the Citrix SCOM Management Pack for XenApp and XenDesktop. It collects analytics from the product anonymously when the installation completes. Statistics and usage information of all Citrix Management Packs installed in the environment, and details about the SCOM environment such as the Server OS version and the SCOM version are collected and sent to the Google Analytics service. The Citrix SCOM MP Analytics Service is enabled by default when you install the Citrix SCOM Management Pack for XenApp and XenDesktop. The first upload of data occurs seven days after the date of installation. To opt out of the Citrix SCOM MP Analytics Service data collection, edit the registry key HKEY_LOCAL_MACHINE\SOFT WARE\Citrix\ScomMPAnalytics and set the Enabled REG_DWORD value to 0. To opt back in, set the Enabled REG_DWORD value to 1.

Caution: Editing the registry incorrectly can cause serious problems that may require you to reinstall your operating system. Citrix cannot guarantee that problems resulting from the incorrect use of Registry Editor can be solved. Use the Registry

Editor at your own risk. Be sure to back up the registry before you edit it.

Configuring the XenApp and XenDesktop monitoring accounts and profile in SCOM

To configure Run As accounts and the associated Run As profile in SCOM, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the Administration view, in the left pane, expand Run As Configuration, and then click Accounts.
- 3. In the Tasks pane, expand Actions, and then click Create Run As Account.
- 4. In the Create Run As Account Wizard window, click Next.
- 5. In the General Properties page, in the Run As account type drop-down menu, leave the default selection (Windows).
- 6. In the **Display name** text box, type a name that the SCOM Operations console will use to refer to the monitoring account. Click **Next**.
- 7. In the Credentials page, type user name, password, and domain of the *<MPXAXDAgentAccount>* user account in the respective text boxes. Click **Next**.
- In the Distribution Security page, select a distribution security option.
 Citrix recommends that you select the More secure option. In this case, you must subsequently edit the Run As account configuration so that its Selected Computers list includes the XenApp and XenDesktop Delivery Controllers.
- 9. Click **Create** to save the configuration data of the new account, then click **Close** to close the Create run As Account Wizard window.
- If you are configuring SCOM for multiple-site monitoring, repeat steps 3 to 9 for each XenApp and XenDesktop Site, each time specifying display name and credentials of the appropriate user account.
 Note: The XenApp and XenDesktop 7.6 configuration with space characters in Site names is not supported. This is due to a recognized issue in the Citrix Monitoring Service with this kind of configuration. For more information, see the following webpage on the Citrix Support Knowledge Center website: http://support.citrix.com/article/CTX200325.
- 11. In the Administration view, in the left pane, expand Run As Configuration, and then click Profiles.
- 12. In the results pane, in the Name column, double-click Citrix XenApp and XenDesktop Monitoring Account.
- 13. In the Run As Profile Wizard window, click **Next** and then click **Next** again.
- 14. In the Run As Accounts page, click Add.
- 15. In the Add a Run as Account dialog box, from the **Run As account** drop-down list, select the display name of the Run As account.
- 16. Depending on whether you plan to monitor multiple XenApp and XenDesktop Sites and/or your security requirements, proceed as follows:
 - 1. For monitoring multiple-site environments or for increased security, select the **A selected class, group, or object** option (more secure). Then follow the steps:
 - 1. Click **Select** and then select **Object**.
 - 2. In the Object Search dialog box, from the Look for drop-down list, select **Windows Computer** and then click **Search**.
 - 3. In the Available items list, select the XenApp and XenDesktop Delivery Controller, and then click Add.
 - 4. Click **OK** to close the dialog box.
 - 2. For monitoring single-Site environments and for ordinary security, select the **All targeted objects** option (less secure).
- 17. Click **OK** to close the Add a Run As Account dialog box.
- 18. If you are configuring SCOM for multiple-site monitoring, repeat steps 14 to 17 for each XenApp and XenDesktop Site,

each time using the appropriate Run As account.

Run As accounts:				🛟 Add 🥖
Account Name	Association	Used For	Class	Path
MPXAXD Account (boston site) MPXAXD Account (berlin site) MPXAXD Account (berlin site)	Object Object Object	xdcontroller xdcontroller xdcontroller	01 Windows Com 04 Windows Com 05 Windows Com	puter puter puter

19. Click **Save** to save the changes.

20. Click **Close** to close the Run As Profile Wizard window.

21. If you selected the **More secure** option in step 8, distribute the Run As accounts to the appropriate agent-managed computers: for each chosen account, do the following:

- a. In the Administration view, double-click the user account.
- b. In the Run As Account Properties dialog box, click the Distribution tab.

c. Click Add.

d. In the Computer Search dialog box, search for and add the computers. Click OK.

 More secure - I want to manually select the computers to which the credentials will be distributed 		
Selected computers:	🛟 Add 🔀 Remove	
Name	Name	
xdcontroller01.amsad.hsl	Health Service	

e. In the Run As Account Properties dialog box, click **Apply** and then click **OK**.

After saving the updated Run As profile, it may take some time for the updated configuration to become active on the targets. The required time depends on the state of the SCOM agent (HealthService) instances and overall load on the SCOM infrastructure.

Configuring access to the shared folder for agent installation

Note: Steps of this procedure must be followed only once on a SCOM management server. In case you have previously installed and configured any of the following Citrix Management Pack products on the same computer, you may not need to repeat the steps:

- Citrix SCOM Management Pack for Provisioning Services
- Citrix SCOM Management Pack for ShareFile
- Citrix SCOM Management Pack for StoreFront
- Citrix SCOM Management Pack for Web Interface
- Citrix SCOM Management Pack for XenApp
- Citrix SCOM Management Pack for XenMobile

To configure access to the shared folder for agent installation, do the following:

- 1. Log on to the SCOM management server. Use a user account that has local administrative privileges.
- 2. Choose a local user account (local to the computer with the shared folder) or a domain user account that will have

access to the shared folder, for the purpose of agent deployment and configuration.

Tip: Citrix recommends creating a new, dedicated user account that you will use only for deployment of the Citrix SCOM Management Pack for XenApp and XenDesktop agent to managed computers.

- 3. Using an operating system administrative tool, add the user account to the *CitrixMPShareUsers* user group.
- 4. Launch the SCOM Operations console and connect to the management server.
- 5. In the Administration view, in the left pane, expand Run As Configuration, and then click Accounts.
- 6. In the Tasks pane, expand Actions, and then click Create Run As Account.
- 7. In the Create Run As Account Wizard window, click Next.
- 8. In the Run As account type drop-down menu, leave the default selection (Windows).

8	Create Run As Account Wizard
General Properties	
Introduction	
General Properties	Specify general properties for the Run As account
Credentials Distribution Security Completion	Select the type of Run As account that you want to create, and then provide a display name and description.
	Run As account type:
	Windows V
	<u>D</u> isplay name:
	MP Agent Installation User Account
	Dgscription(optional):
	×
	< Previous Next > Create Cancel

9. In the **Display name** text box, type a name that the SCOM Operations console will use to refer to the newly created SCOM user account. Click **Next**.

10. In the User name text box, type the user name of the operating system user account that you chose in step 2.

絶	Create Run As Account Wizard
Credentials	
Introduction	
General Properties	Provide account credentials
Credentials Distribution Security	Provide credentials for this Windows Run As account.
Completion	User name:
	December
	Pass <u>w</u> ord:
	Confirm password:
	••••••
	Domain:
	EXAMPLEDOMAIN V
	< Previous Next > Greate Cancel

In the Password and Confirm password text boxes, type the valid password of the operating system user account.
 In the Domain text box, update the value if needed. Click Next.

13. Depending on the effective security policy in your SCOM environment, select either the Less secure or More secure option.

Note: Selecting More secure requires manual steps to be performed in SCOM for each newly added managed computer.

14. Click Create.

15. After the message about successful account creation appears, click Close.



16. In the left pane, under Run As Configuration, click Profiles.

17. In the Profiles list, double-click Citrix Management Pack Network Share Account.

免	Run As Profile Wizard
Introduction General Properties Run As Accounts Completion	Introduction Run As profiles allow monitoring operations (monitors, rules, and tasks) to run as an account that has sufficient privileges to successfully monitor protected resources in the network. For example, you can use a Run As profile to read database properties or to log on to a mailbox. In addition, administrators can assign different Run As accounts to different monitored resources. This is useful when multiple resources are monitored by the same agent or management server, but each agent or server has a different security context. For example, a single SQL server might host multiple databases, but each database has a different owner. Use this wizard to assign a Run As account that has the necessary privileges to the Run As profile. To begin the Run As Profile Wizard, click Next. Do not show this page again
	< <u>P</u> revious <u>Next</u> > Save Cancel

18. In the Run As Profile Wizard window, in the Introductory page, click **Next**. In the General Properties page, click **Next**.

19. In the Run As Accounts page, click **Add**.

20. In the Add a Run As Account dialog box, in the Run as account list, select the newly created SCOM user account.

鬼		Run As Profile Wizard					
Run As	Accounts						
Introduction							
General Properties		Add Run As accounts					
Run As Accounts		Add a Run As account to this Run As profile. Additional Run As accounts can be added to manage specific classes,					
Completion	1	Add a Run As Account					
	Select a sufficien Run As a	Run As account to add to this profile. Choose an account that has privileges that are to monitor the objects that you specify.					
	MP Age	MP Agent Installation User Account					
	This Ru	This Run As Account will be used to manage the following objects:					
	O All ta	rgeted objects					
	• A se	lected class, group, or object:					
		Select					
		OK Cancel					
		< Previous Next > Save Cancel					

- 21. Select the A selected class, group, or object option.
- 22. Click **Select** and then select **Class**.
- 23. In the Class Search dialog box, in the Filter by (optional) text box, type Windows Computers.

24. Click Search.

25. In the Available items list, select All Windows Computers.

Class S	earch	?	x
To add classes, search for the class by name and management	nt pack and then add them to the selected obje	cts list.	
Eilter by (optional):			
Windows Computers			
Management pack:			_
(Any)			~
		Search	
			_
Available items			
Name	Management Pack		
All Windows Computers	System Center Core Library		
L			_
	<u>0</u> K	Cance	el
			.41

- 26. Click **OK** to close the Class Search dialog box.
- 27. Click OK to close the Add a Run As Account dialog box.
- 28. Click **Save** to update the profile. This may take a while.
- 29. Click **Close** to close the Run As Profile Wizard window.

Verifying the installation on the SCOM management server

To verify that the Citrix SCOM Management Pack for XenApp and XenDesktop installation on the management server is correct, do the following:

- 1. Log on to the management server.
- 2. Go to Start > Control Panel and click Programs and Features (actions of this step may differ on operating systems earlier than Windows Server 2016).
- 3. Check for the presence of the following entry in the Name column: *Citrix SCOM Management Pack for XenApp and XenDesktop*
- 4. To check if the *CitrixMPShare* shared folder is correctly configured, open a Command Prompt window and run the following commands in sequence (their outputs in case of success are also shown):

net share | findstr -i CitrixMPShare

CitrixMPShare

%ProgramData%\Citrix\CitrixMPShare

net use \\<ManagementServerHostName>\CitrixMPShare

/USER:<DomainName>\<UserName>

The command completed successfully

dir \\<ManagementServerHostName>\CitrixMPShare

<FolderContents>

In these instances, *%ProgramData%* refers to the actual value of this operating system variable.

AnagementServerHostName> is the name of the SCOM management server. *DomainName>* is the domain or computer name and *AuserName>* is the name of the user account that you chose in step 2 of the procedure documented in Configuring access to the shared folder for agent installation. *FolderContents>* is the list of the contents of the *CitrixMPShare* folder.

The shared folder is vital for installation of the Citrix SCOM Management Pack Agent for XenApp and XenDesktop and deployment of its configuration to the managed computers.

- 5. Launch the SCOM Operations console.
- 6. In the Monitoring view, expand the items in the left pane until they match the following figures (combined).





7. In the Administration view, expand Administration > Management Packs and click Installed Management Packs (the navigation pane structure may differ in SCOM versions earlier than 2016).

8. Verify the following management pack versions are listed in the results pane:

Citrix Management Pack for XenApp and XenDesktop	3.12.342.0
Citrix Management Pack for XenApp and XenDesktop (EndUser)	3.12.342.0
Citrix Management Pack for XenApp and XenDesktop (EndUser) Reports	3.12.342.0
Citrix Management Pack for XenApp and XenDesktop Reports	3.12.342.0
Citrix Management Pack Library	1.0.33.0

Configuring SCOM agent to act as proxy on Delivery Controllers

SCOM agent on each computer where XenApp and XenDesktop Delivery Controller is installed must be configured to act as

a proxy agent. This configuration enables the agent to relay or forward information from or about other computes and network devices to the SCOM management server.

To configure the SCOM agent instances to act as proxy agents, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the Administration view, expand Device Management, and then click Agent Managed.
- 3. For each XenApp and XenDesktop (Delivery Controller) computer, follow the steps:
- 1. Right-click the host name, and select **Properties**.
 - 2. Click the **Security** tab.
 - 3. Select the Allow this agent to act as proxy and discover managed objects on other computers option.
 - 4. Click OK.

Configuring Encryption password, SCOM Administrator, and Director URL

Use **XenApp and XenDesktop MP Configuration** to set and update configuration data - encryption password, SCOM Administrator credentials, and Director URL - on the SCOM server. To access the XenApp and XenDesktop MP Configuration tool:

- 1. Log on to the management server. Use a user account that has local administrative privileges.
- 2. Go to Start > All apps > Citrix (actions of this step may differ on operating systems earlier than Windows Server 2016).
- 3. Select XenApp and XenDesktop MP Configuration..

Encryption password is required to generate a key that is used to encrypt the configuration data. Set the encryption password on the first run of the XenApp and XenDesktop MP Configuration tool.

To set the encryption password:

- 1. In the XenApp and XenDesktop MP Configuration tool, go to the **Configuration encryption** tab.
- 2. Click Set.
- 3. In the dialog for inserting the password, type the password and click Set.

Note: Setting the encryption password is a prerequisite to saving the configuration data. If the encryption password is not set, the configuration tool automatically starts on the Configuration encryption tab.

\$		Citrix Manage	ment Pack Confi	guration	_ 0 X
	Director URL	Machine Monitoring	SCOM Administrator	Configuration encryption	
9-9	Set an encryp	tion password on this r	machine to ensure sec	urity of the stored configuration.	
640	Only the encry encryption key	ption password that w with the configuration	as used for encryption by using the install or	can decrypt the configuration. You update configuration task.	must distribute the
			Set		
6-6			Set encryption	password	
		Encryption pass	word		
			Can	cel Set	
CITRIX					
			ОК	Cancel	
					.::

The encryption password must be shared with the Citrix XenApp and XenDesktop Agents and the Citrix XenApp and XenDesktop Machine Agents to be used while decrypting the configuration data. See the Installing the product on the Delivery Controllers section.

To share the encryption password, while running the Install Citrix MPXAXD Agent task, override the Encryption password parameter with the password you set in Step 3. See the Installing the product on the Delivery Controllers section.

To update the encryption password:

- 1. In the XenApp and XenDesktop MP Configuration tool, go to the **Configuration encryption** tab.
- 2. Click Update.
- 3. In the dialog for inserting the password, type the password and click Update.

If you update or set the encryption password after the agent or machine agent are installed, run the Update Configuration on Citrix MPXAXD Agent or the Update Configuration on Citrix MPXAXD Machine Agent tasks respectively. Override the Encryption password parameter in these tasks with the updated password.

To monitor large XenApp and XenDesktop environments, an SCOM Administrator account must be configured. This account is used by the SCOM Connector to collect data of the discovered objects from the XenApp and XenDesktop environment.

1. In the XenApp and XenDesktop MP Configuration tool, go to the SCOM Administrator tab.

8		Citrix	Managen	nent	Pack Config	urati	ion	
	Director URL	Machine	e Monitoring	SCO	M Administrator	Confi	guration encryption	
	Managemen	t Group	User		Domain		SCOM Servers	Add
	GDCNJ-CLI-	2MG	Example	Jser	ExampleDomai	'n	ScomServer	Modify
								Remove
	To monitor lar	ge enviror	nments, set u	ip a S0	COM Administrato	or acco	punt.	
CITRIX					ок	Са	ncel	

- 2. Click Add.
- 3. In the Add SCOM Administrator dialog box, type the credentials of a domain user. The user must be specifically created for this use, be present only in the Users local security group, and have an Operations Manager Administrator role.

Domain: Usemame:	ExampleDomain ExampleUser	Type the credentials of a dor - is specifically created for thi - is present only in the Users and	Type the credentials of a domain user that: - is specifically created for this purpose - is present only in the Users local security group and		
Password: Confirm passwo		and - has an Operations Managed Administrato To access SCOM through a gateway, sele corresponding check box and add the DN of all SCOM servers in the management or			
SCOM acc COM server SCOM server h	essed trough a gateway iostname: Sc	comServer	Add		
			Hemove		

- 4. To access the SCOM management server through a gateway, select the corresponding check box and add the DNS names of all SCOM servers in the management group.
- 5. Click **OK** to apply the configuration changes and close the window.

Enable rules related to SCOM Connector from the SCOM console:

- 1. Open the SCOM Operations console. In the Authoring view, expand Management Objects and then Rules.
- 2. Enable the **Applications Discovery** and **Delivery Groups and Hypervisor Connections Discovery** rules for the SCOM Connector to work. They are disabled by default.

Note: To stop using the SCOM Connector after its configuration:

- Delete the registry key HKEY_LOCAL_MACHINE\SOFTWARE\ComTrade\XenDesktop MP Agent\<Management Group> and all its subkeys.
- Disable the Applications Discovery and Delivery Groups and Hypervisor Connections Discovery rules.

Caution: Editing the registry incorrectly can cause serious problems that may require you to reinstall your operating system. Citrix cannot guarantee that problems resulting from the incorrect use of Registry Editor can be solved. Use the Registry Editor at your own risk. Be sure to back up the registry before you edit it.

To enable opening Citrix Director in the user context from session alerts using the Start Citrix Director alert task, the URL of the Citrix Director web interface must be configured for each monitored Site.

To configure a Citrix Director URL, do the following:

- 1. In the Citrix Management Pack Configuration window, in the Director URL tab, click Add.
- 2. In the Add Director URL dialog box, type the following data in the respective text boxes:
 - Name of the Site
 - URL of the Citrix Director instance that is connected to and monitors this Site

		Citrix Managen	nent Pack Config	guration	X
-	Director URL	Machine Monitoring	SCOM Administrator	Configuration encryption	
	Site Name SiteExample	Director U	JRL ectorhostname/Directo	ır.	Add
	•2	Ad	d Director URL	X	Modify Remove
9-9	Site name:	ExampleSit	eName]	Move Up
0-0	Director UF	RL:]	
	For site par	ne besides entering ex	act site name, vou car	n also use	
CITRIX ®	To specify Director UF	/ Director URL for all s RL must be entered in f "http://directo	ites. form like: rhostname/Director		
		ОК	Cance	al	

- 3. Click OK.
- 4. Repeat Step 2 for each additional XenApp and XenDesktop Site you want to monitor.
- 5. Click **OK** to apply the configuration changes and close the window.

To change the Citrix Director URL configuration, click **Modify**. In the **Modify Director URL** dialog box, modify the data as required, and then click **OK**.

To remove a Citrix Director URL configuration, click **Remove** and then click **Yes**. Click **OK** to apply the configuration changes and close the window.

Note: If you change a Citrix Director URL for a Site where the Citrix SCOM Management Pack Agent for XenApp and XenDesktop or the Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop is already installed on the Delivery Controllers, you must run the Update Configuration on Citrix MPXAXD Agent or Update Configuration on Citrix MPXAXD Machine Agent task.

Installing the product on the Delivery Controllers

On the XenApp and XenDesktop Delivery Controllers, only Citrix SCOM Management Pack Agent for XenApp and XenDesktop must be installed.

To install Citrix SCOM Management Pack Agent for XenApp and XenDesktop on a Delivery Controller, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the **Monitoring** view, in the left pane, expand **Citrix Library**, and then click **XenApp/XenDesktop Delivery Controller Computers**.
- 3. In the XenApp/XenDesktop Delivery Controllers pane, select a Delivery Controller from the XenApp/XenDesktop Delivery Controllers list.
- 4. In the Tasks pane, expand MPXAXD Delivery Controller Computer Role Tasks, and then click Install Citrix MPXAXD Agent.
- 5. In the Run Task Install Citrix MPXAXD Agent dialog box, adjust the task parameters as follows. To override a parameter, select it and click **Override**.
 - UpgradeAgent: This option, when set to *true*, causes uninstallation of the existing Citrix SCOM Management Pack Agent for XenApp and XenDesktop from the agent-managed computer before the current version is installed. Before such uninstallation, SCOM agent must be put into maintenance mode. Default value: *false*
 - IgnorePrereqCheck: You may not alter this option. Default value: *false*
 - Encryption password: Override this parameter with the encryption password you set in Step 3 of the Configuring encryption password section.

Default value: (empty)

- AgentInstallationSource: This option defines the location of the Management Pack agent installation package and its configuration files. Specify the value according to the relationship between the agent-managed computer and the SCOM management server:
 - If SCOM agent on the agent-managed computer reports only to the management server where Citrix SCOM Management Pack for XenApp and XenDesktop is installed, leave the value empty. The location is then automatically determined based on data retrieved from the agent-managed computer. In most cases, the retrieved location host name matches the host name of the management server where the installation task is invoked.
 - If the agent-managed computer is managed by some other management server or the computer hosts a multihomed SCOM agent instance, specify the host name of the management server where Citrix SCOM Management Pack for XenApp and XenDesktop is installed.
 - If the agent-managed computer does not have access to the *CitrixMPShare* shared folder on the management server, specify the alternative location of the Management Pack agent installation package and its agent configuration files in the UNC format. A prerequisite is that these files are copied from the *CitrixMPShare* shared folder to a location the agent-managed computer has access to. Default value: (empty)
- AgentInstallationDestination: This option defines the Management Pack agent's program installation directory on the agent-managed computer. If no value is specified, the Management Pack agent is installed to the *%ProgramFiles%\Citrix\XenDesktop MP Agent* directory.
 Default value: (empty)

Click Run to invoke the installation process.

7. Observe the output the task generates. If the task reports no errors, the installation on the agent-managed computer is correct.

The task initially performs a prerequisite check. If any of the installation prerequisites are not fulfilled, the process is

interrupted before the actual installation begins. In this case, invoke the **Check Installation Prerequisites for Citrix MPXAXD Agent task** to pinpoint the problematic prerequisite.

Tip: The Agent installation task can be run for multiple selected Delivery Controllers.

Configuring Citrix SCOM Management Pack for XenApp and XenDesktop for monitoring VDA services on server OS machines

Important: This section is applicable only if WinRM is configured to use non-default ports.

The Citrix SCOM Management Pack Agent for XenApp and XenDesktop monitors VDA services on the server OS machines remotely and it therefore, connects to the server OS machines by using WinRM. By default, Citrix SCOM Management Pack Agent for XenApp and XenDesktop uses the default WinRM port (5985), and it does not utilize SSL. However, if this configuration changes on the server OS machines, you may need to manually update Windows Registry on the Citrix SCOM Management Pack Agent for XenApp and XenDesktop computer. Add or change the following values in the *HKEY_LOCAL_MACHINE\SOFTWARE\Comtrade\XenDesktop MP Agent* registry key:

- *WinRMPort* (string value): port number that WinRM uses
- WinRMUseSSL (string value): yes, no, true, or false

In case the listed values do not exist or are empty, Citrix SCOM Management Pack Agent for XenApp and XenDesktop follows its default behavior.

Note: In case of monitoring large environments, with 500+ Server OS machines, monitoring Citrix services on VDAs can consume a large amount of memory. It is recommended that monitoring on VDA be disabled in such environments. See the Disabling VDA Monitoring Service section in Configuration for large XenApp and XenDesktop environments.

Verifying the installation and configuration on the Delivery Controllers

To verify that the XenApp and XenDesktop Management Pack installation and configuration on a Delivery Controller are correct, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the **Monitoring** view, in the left pane, expand **Citrix Library**, and click **XenApp/XenDesktop Delivery Controller Computers**.
- 3. In the XenApp and XenDesktop Delivery Controller Computers pane, select a Delivery Controller from the XenApp and XenDesktop Delivery Controllers list.
- 4. In the Tasks pane, expand Actions, and then click Check Requirements and Configuration for Citrix MPXAXD Agent.
- 5. Observe the output the task generates. If all checks are denoted successful, the installation and configuration on the Delivery Controller are correct.

Installing the product on the proxy nodes

Important: Perform this procedure only if you plan to monitor performance of server OS machines, server OS sessions, or desktop OS sessions in your XenApp and XenDesktop environment.

For machine or session performance monitoring, Citrix SCOM Management Pack Agent for XenApp and XenDesktop must be installed on the proxy nodes.

To install Citrix SCOM Management Pack Agent for XenApp and XenDesktop on a proxy node, do the following:

- 1. Log on to the proxy node. Use a user account that has local administrative privileges.
- 2. Copy the *MPXAXDMachineAgent.exe*, *Support.exe* and *Support.exe.config* files from the || *<ManagementServeHostName>\CitrixMPShare\XenDesktop Machine MP* shared folder to a location on the proxy node.
- 3. Run the following command to check if the prerequisites for machine agent installation are fulfilled:



4. If all prerequisites are denoted as fulfilled, run the following command to invoke the Machine Agent installation process:

MPXAXDMachineAgent		

Wait for the Setup Wizard to appear.

5. Follow instructions of the Setup Wizard. During the process:

- In the Agent Service Account page, type the literal string of the *<MPXAXDAgentAccount>* user account into the corresponding text box.
- In the Delivery Controllers page, specify the Delivery Controllers that should be monitored by this proxy node.

Configuring Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop

To share the Encryption password with the Machine Agent, from the SCOM Console run the **Update Configuration on Citrix MPXAXD Machine Agent** task. Override the **Encryption password** parameter with the password you set in Step 3 of the Configuring encryption password section.

Important: Perform the following procedure only if you have installed the product's Machine Agent on the proxy nodes.

If WinRM is configured to use a non-default port (a port different from 5985) on your desktop OS machines, you must specify a port that will be used for VDI monitoring. To do this, update the Port value in the following keys in Windows Registry:

- For OS machines: *HKEY_LOCAL_MACHINE\SOFTWARE\Comtrade\XenDesktop MP Machine Agent\WinRMProtocols*
- For Delivery Controllers: *HKEY_LOCAL_MACHINE\SOFTWARE\Comtrade\XenDesktop MP Machine Agent\ControllerWinRMProtocol*

Important: Perform this procedure only if you have installed the product's Machine Agent on the proxy nodes.

After the installation, the Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop computers are discovered in the Monitoring view of the SCOM Operations console as *XenApp/XenDesktop Machine Monitoring Proxy Computes* inside *Citrix Library*. To check if Machine Agent is fully operational, execute the *Check Requirements and Configuration for Citrix XAXD Machine Agent* task.

Important: Perform this procedure only if you have installed the product's Machine Agent on the proxy nodes.

Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop communicates with Delivery Controllers and server OS machines by using WinRM protocol and Kerberos authentication. The following checks help you determine if WinRM is correctly configured.

• Proxy nodes:

On the proxy node, to check if Kerberos authentication on the WinRM client is enabled, run the following command:



Inspect the command output. If the value of the *Kerberos* parameter in the *Auth* group is not *true*, run the following command:

winrm set winrm/config/client/auth @{Kerberos="true"}

• Server OS machines or desktop OS machines:

On the proxy node, to verify if WinRM client on the computer can access the OS machine, log on by using the *<MPXAXDAgentAccount>* user account, and run the following command:



ProtocolVersion = http://schemas.dmtf.org/wbem/wsman/1/wsman.xsd

ProductVendor = Microsoft Corporation

ProductVersion = OS: 6.1.7600 SP: 0.0 Stack: 2.0

In case of failure, proceed as follows:

- If the command reports the *Access denied* error, it indicates that the *<MPXAXDAgentAccount>* user account does not have administrative privileges on the OS machine. Reconfigure the user account accordingly.
- On the OS machine, run the following command to check Kerberos authentication is enabled for WinRM:



Inspect the command output. If the value of the *Kerberos* parameter in the *Auth* group is not *true*, run the following command:

winrm set winrm/config/service/auth @{Kerberos="true"}

• Delivery Controllers:

On the proxy node, log on by using the *<MPXAXDAgentAccount>* user account, and run the following command:

winrm identify -r:http://<DeliveryControllerHostName>:5985

-auth:Kerberos

In case of success, the command output should be similar to the following:

IdentifyResponse

ProtocolVersion = http://schemas.dmtf.org/wbem/wsman/1/wsman.xsd

ProductVendor = Microsoft Corporation

ProductVersion = OS: 6.1.7600 SP: 0.0 Stack: 2.0

In case of failure, proceed as follows:

- If the command reports the *Access denied* error, it indicates that the *<MPXAXDAgentAccount>* user account does not have administrative privileges on the Delivery Controller. Reconfigure the user account accordingly.
- On the Delivery Controller, run the following command to check *Kerberos* authentication is enabled for WinRM:



Inspect the command output. If the value of the Kerberos parameter in the Auth group is not true, run the following

winrm set winrm/config/service/auth @{Kerberos="true"}

Uninstallation

This section contains instructions that you must follow to effectively uninstall Citrix SCOM Management Pack for XenApp and XenDesktop. Perform all procedures in the documented order of precedence. Optional procedures are appropriately marked.

Uninstalling the product from the Delivery Controllers

To uninstall XenApp/XenDesktop Management Pack Agent from a Delivery Controller (an agent-managed computer), do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the Monitoring view, expand Citrix Library, and then click XenApp/XenDesktop Delivery Controller Computers.
- 3. In the XenApp/XenDesktop Delivery Controller Computers pane, select a Delivery Controller from the XenApp/XenDesktop Delivery Controller Computers list.
- 4. In the Tasks pane, expand Actions, and then click Uninstall Citrix MPXAXD Agent.
- 5. In the Run Task Uninstall Citrix MPXAXD Agent dialog box, click Run to invoke the uninstallation process.
- 6. Repeat steps 3 to 5 for each additional Delivery Controller.

Tip: The Agent uninstallation task can be run for multiple selected Delivery Controllers.

Uninstalling the product from the proxy nodes

Important: Perform this procedure only if there is the product's Machine Agent is installed on the proxy nodes.

To determine which computers are the proxy nodes, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the Monitoring view, expand Citrix Library, and then click XenApp/XenDesktop Machine Monitoring Proxy Computers.
- 3. In the XenApp and XenDesktop Machine Monitoring Proxy Computers pane, find the list of proxy nodes under XenApp and XenDesktop Machine Monitoring Proxy Computers.

To uninstall Citrix SCOM Management Pack Agent for XenApp and XenDesktop from a proxy node (an agent-managed computer), do the following:

- 1. Log on to the proxy node. Use a user account that has local administrative privileges.
- 2. Make sure no product folders or files are in use by any user.
- 3. Go to Start > Control Panel and click Programs and Features (actions of this step may differ on operating systems

earlier than Windows Server 2016).

- 4. Right-click Citrix SCOM Management Pack Agent for XenApp and XenDesktop and select Uninstall.
- 5. In the Programs and Features dialog box, click **Yes** to confirm uninstallation.

Removing dependent management packs (customizations)

Important: Perform this procedure only if you have customized the management packs included in the product.

To remove the customizations that you made to the management packs included in Citrix SCOM Management Pack for XenApp and XenDesktop, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the Administration view, expand Administration > Management Packs and click Installed Management Packs (the navigation pane structure may differ in SCOM versions earlier than 2016).
- 3. In the results pane, locate the management packs that depend on the management packs included in Citrix SCOM Management Pack Agent for XenApp and XenDesktop.
- 4. For each such dependent management pack (except for *Microsoft.SystemCenter.SecureReferenceOverride*), follow the steps:
 - 1. Right-click it and then click **Delete**.
 - 2. On the message stating that deleting the management pack might affect the scoping of some user roles, click Yes.

Removing included management packs

To remove the management packs included in Citrix SCOM Management Pack for XenApp and XenDesktop, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the Administration view, expand Administration > Management Packs and click Installed Management Packs (the navigation pane structure may differ in SCOM versions earlier than 2016).
- 3. Remove references to the included management packs from the *Microsoft.SystemCenter.SecureReferenceOverride* management pack. To do this, perform the following steps:
 - Identify which included management packs are referenced. In the Administration > Management Packs context of the SCOM Operations console, right-click Microsoft.SystemCenter.SecureReferenceOverride and select Properties. In the dialog box, click the Dependencies tab.
 - 2. For each such referenced management pack, find out its ID. Right-click the referenced management pack. In the dialog box, take note of the value in the ID text box on the General tab.
 - 3. Export the *Microsoft.SystemCenter.SecureReferenceOverride* management pack.
 - 4. Make a copy of the file you exported the management pack to.
 - 5. Edit the originally exported file: use the IDs to find and remove all dependencies to the management packs from the Manifest > References context (the Reference elements) and the Monitoring > Overrides context (the SecureReferenceOverride elements), and then save the changes.
 For better tracking, increase the management pack version by adjusting the value of the Version element within the

For better tracking, increase the management pack version by adjusting the value of the Version element within the Identity element.

- 6. Import back the altered *Microsoft.SystemCenter.SecureReferenceOverride* management pack from the modified file.
- 4. In the results pane, right-click Citrix Management Pack for XenApp and XenDesktop (EndUser) Reports, and then select Delete.
- 5. On the message stating that deleting the management pack might affect the scoping of some user roles, click Yes.
- 6. Repeat steps 4 and 5 with the following management packs (in the presented order of precedence):

https://docs.citrix.com

- 1. Citrix Management Pack for XenApp and XenDesktop (EndUser)
- 2. Citrix Management Pack for XenApp and XenDesktop Reports
- 3. Citrix Management Pack for XenApp and XenDesktop
- 7. Check if other Citrix SCOM Management Pack products are installed on the management server. If none of them is installed, repeat steps 4 and 5 with Citrix Management Pack Library.

Uninstalling the product from the SCOM management server

To uninstall Citrix SCOM Management Pack for XenApp and XenDesktop from the SCOM management server, do the following:

- 1. Log on to the management server. Use a user account that has local administrative privileges and SCOM administrative privileges.
- 2. Make sure no product folders or files are in use by any user.
- 3. Go to Start > Control Panel and click Programs and Features (actions of this step may differ on operating systems earlier than Windows Server 2016).
- 4. Right-click Citrix SCOM Management Pack for XenApp and XenDesktop and select Uninstall. Wait for the Setup Wizard to appear.
- 5. In the Welcome page of the Setup Wizard, click Uninstall.
- 6. In the Uninstalling the product page, the Setup Wizard reports the uninstallation progress.
- 7. In the Completion page of the Setup Wizard, click Finish.
- 8. Delete the *%ProgramData%\Citrix\CitrixMPShare\XenDesktop Machine MP* and *%ProgramData%\Citrix\CitrixMPShare\XenDesktop MP* folders.

Caution: This action permanently deletes the Agent configuration data. You will be unable to reuse it at a later time.

- 9. Check if other Citrix SCOM Management Pack products are installed on the management server. If none of them is installed, follow the steps:
 - 1. Stop sharing the *CitrixMPShare* shared folder.
 - 2. Delete the *%ProgramData%\Citrix\CitrixMPShare* folder.
 - 3. Using an operating system administrative tool, delete the local CitrixMPShareUsers user group.

Upgrade

Upgrade from version 3.5

To upgrade Citrix SCOM Management Pack for XenApp and XenDesktop from version 3.5, do the following:

1. Prepare your environment for installation of the new product version. For instructions, see Preparing for the installation.

2. Install the product (its server-side part) on the SCOM management server. For instructions, see Installing the product on the SCOM management server. The installation process upgrades the product and preserves local configuration data.

3. Verify the installation of the product (its server-side part) on the SCOM management server. For instructions, see Verifying the installation on the SCOM management server.

4. On the SCOM management server, copy the mpxaxd_config.dat file from the %ProgramData%\ComTrade\MPShare\XenDesktop MP directory to the %ProgramData%\Citrix\CitrixMPShare\XenDesktop MP directory.

5. On the SCOM management server, move the mpxaxd_config.dat file from the %ProgramData%\ComTrade\MPShare\XenDesktop Machine MP directory to the %ProgramData%\Citrix\CitrixMPShare\XenDesktop Machine MP directory.

6. Configure access to the shared folder for agent installation. For instructions, see Configuring access to the shared folder for agent installation.

7. Install the product (one agent-side part) on the Delivery Controllers. For instructions, see Installing the product on the Delivery Controller.

Important: In the Run Task - Install Citrix MPXAXD Agent dialog box, set the UpgradeAgent task parameter to the *true* value.

Run the task on these targets	Weiler
Target QCXD28.tesmf.hsl	Run Location QCXD28.tesmf.hsl
r <u>a</u> sk Parameters	
Name	Value
UpgradeAgent	false
IgnorePrereqCheck	false
Encryption password	
AgentInstallationDestination	
AgentInstallationDestination	
AgentInstallationDestination Override ask credentials	Task description
AgentInstallationDestination Qverride ask credentials Image: Use the predefined Run As Account Other: User name : Password :	Task description Installs Citrix Management Pack Agent for XenApp and XenDesktop on the Citrix system. Parameters: - AgentInstallationSource: Agent installation and configuration source is specified as either with the management server name where XenApp and XenDesktop MP was installed or
AgentInstallationDestination Override ask credentials Image: Use the predefined Run As Account Other : User name : Password : Domain : TESTMF	Task description Installs Citrix Management Pack Agent for XenApp and XenDesktop on the Citrix system. Parameters: - AgentInstallationSource: Agent installation and configuration source is specified as either with the management server name where XenApp and XenDesktop MP was installed or with the UNC path where XenApp and YenDesktop MP Agent installation and configure

8. Verify the installation and configuration of the product (one agent-side part) on the Delivery Controllers. For instructions, see Verifying the installation and configuration on the Delivery Controllers.

9. (this step is applicable only when installed Machine Agent is part of the deployment of your earlier product version)

Install the product (the other agent-side part) on the proxy nodes. For instructions, see Installing the product on the proxy nodes. The installation process upgrades the product and preserves local configuration data.

10. (this step is applicable only when installed Machine Agent is part of the deployment of your earlier product version) Verify the installation and configuration of the product (the other agent-side part) on the proxy nodes. For instructions, see Verifying the installation and configuration on the proxy nodes.

Upgrade from version other than 3.5

To upgrade Citrix SCOM Management Pack for XenApp and XenDesktop from versions other than 3.5, do the following:

1. Prepare your environment for installation of the new product version. For instructions, see Preparing for the installation.

2. Install the product (its server-side part) on the SCOM management server. For instructions, see Installing the product on the SCOM management server.

Note: The installation process upgrades the product and preserves local configuration data.

3. Verify the installation of the product (its server-side part) on the SCOM management server. For instructions, see Verifying the installation on the SCOM management server.

4. Install the product (one agent-side part) on the Delivery Controllers. For instructions, see Installing the product on the Delivery Controllers.

Important: In the Run Task - Install Citrix MPXAXD Agent dialog box, set the UpgradeAgent task parameter to the *true* value.

	Run Task -	Install Citr	ix MPXAXD Agent
Run the <u>t</u> ask on	these targets		Hel
Target ☑ QCXD28.tesmf.hsl		Q	un Location CXD28.tesmf.hsl
T <u>a</u> sk Parameter	rs		
Name UpgradeAgent IgnorePreregCheck			Value false false
Debug AgentInstallationS AgentInstallationE	Source Destination		false
<u>O</u> verride ask credentials			Task description
Use the predefined Run As Account Other: User name : Password :			Installs Citrix Management Pack Agent for XenApp and XenDesktop on the Citrix system. Parameters: - AgentInstallationSource: Agent installation and configuration source is specified as either with the management server name where
<u>D</u> omain :	TESTMF	~	XenApp and XenDesktop MP was installed or with the UNC path where XenApp and XenDesktop MP Agent installation and configur
ask confirmatio	n when running this task in the	e future	Run Cancel

5. Verify the installation and configuration of the product (one agent-side part) on the Delivery Controllers. For instructions, see Verifying the installation and configuration on the Delivery Controllers.

6. (this step is applicable only when installed Machine Agent is part of the deployment of your earlier product version)

Install the product (the other agent-side part) on the proxy nodes. For instructions, see Installing the product on the proxy nodes.

Note: The installation process upgrades the product and preserves local configuration data.

7. (this step is applicable only when installed Machine Agent is part of the deployment of your earlier product version) Verify the installation and configuration of the product (the other agent-side part) on the proxy nodes. For instructions, see Verifying the installation and configuration on the proxy nodes.
Optimize

Optional configuration

Some monitors and rules have default thresholds that might need additional tuning to suit your environment. You should evaluate monitors and rules to determine whether the default thresholds are appropriate for your environment. If a default threshold is not appropriate for your environment, you should adjust the threshold by overriding it.

See the Reference Guide for a complete list of monitors and rules available in Citrix SCOM Management Pack for XenApp and XenDesktop.

Adding optional SLA dashboards

For this purpose, you must import the optional *Citrix Management Pack for XenApp and XenDesktop SLA Dashboards* management pack into SCOM. It provides service level objectives (SLA and SLO objects) for XenApp and XenDesktop environment monitoring.

Management pack dependencies

The *Citrix Management Pack for XenApp and XenDesktop SLA Dashboards* management pack has the following dependencies:

- Citrix-specific management packs:
 - Citrix Management Pack for XenApp and XenDesktop
 - Citrix Management Pack for XenApp and XenDesktop (EndUser)
- Default management packs:
 - Health Library
 - Microsoft.SystemCenter.Visualization.Component.Library
 - *Microsoft.SystemCenter.Visualization.Library*
 - Microsoft.SystemCenter.Visualization.ServiceLevelComponents
 - System Library

Software requirements

The *Citrix Management Pack for XenApp and XenDesktop SLA Dashboards* management pack requires Microsoft System Center Operations Manager 2012 R2.

Importing the management pack

For instructions on how to import the unsealed management pack, see Manually importing included management packs

into SCOM. The management pack is located in the *%ProgramFiles%\Citrix\XenDesktop MP* folder in the *Comtrade.XenApp.And.XenDesktop.SLADashboards.xml* file.

Citrix Management Pack for XenApp and XenDesktop SLA Dashboards is an example of how SCOM 2012 SLA dashboards can be used together with the Citrix SCOM Management Pack for XenApp and XenDesktop which collects all the information needed to create useful and personalized service level objectives for your environment. This sample management pack includes the following pre-set definitions for service level objectives:

- Desktop OS Delivery Group SLOs:
 - Availability > 99.000 %
 - Max User Logon Duration < 50 seconds
 - Max Desktop OS Random Delivery Group Usage (%) < 90 %
- Server OS Delivery Group SLOs:
 - Availability > 99.000 %
 - Max User Logon Duration < 30 seconds
 - Min Load Available (%) > 10 %
- Site SLOs:
 - Availability > 99.000 %
 - Max Number of Concurrent Users < 300
 - Max Number of Active Sessions < 500
 - Max Logon Duration < 40 seconds

In real world scenarios, you would create different service level tracking rules for each Site and delivery group in your organization. You may also want to include other parameters for setting the service level objectives.

Note: The management pack also provides two service level views which report on service level objectives defined in service level tracking rules. For a complete list available monitors and performance collection rules that can be used to set service level objectives, see *Citrix SCOM Management Pack for XenApp and XenDesktop Reference Guide*, available from Tuning thresholds for monitors and rules.

Configure dashboards with default SLAs

Once the management pack is imported, locate the views in the Monitoring view in the SCOM Operations console as seen in the following figure.

4 🚰 Citrix Library
🗲 Citrix Management Topology
XenApp/XenDesktop Delivery Controller Computers
XenApp/XenDesktop Machine Monitoring Proxy Computers
A Citrix XenApp and XenDesktop
XenApp/XenDesktop Alerts
🔄 XenApp/XenDesktop Events
XenApp/XenDesktop Health State
< XenApp/XenDesktop Topology
Controllers
4 🚰 Dashboards
Delivery Group SLA Dashboard
Site SLA Dashboard
Delivery Groups
Machines
E Sessions
D Galacian Sites
User Connections

The *Delivery Group SLA Dashboard* and *Site SLA Dashboard* views are not configured by default, so you must select one or more service level tracking rules for each of the views.

Delivery Group SLA Dashboard

To configure the Delivery Group SLA Dashboard view, do the following:

- 1. Launch the SCOM Operations console.
- 2. In the Monitoring view, in the left pane, expand Citrix XenApp and XenDesktop > Dashboards, and then click Delivery Group SLA Dashboard.
- 3. In the upper right corner of the dashboard view, click the settings icon and then select **Configure**.

Delivery Group SLA Dashboard		🔅 > Tasks
Service Levels	Service Level Objectives	Crofigure
	State Name Target Class Instances	

4. In the Update Configuration wizard window, click **Next**.

	Update Configuration	x
Senter a frier	ndly name and description	
General Properties Scope Completion	Name: Delivery Group SLA Dashboard Description:	
	< Previous Next > Save Cance	<u>ار</u>

5. In the Scope page, click **Add**.

	Update Configuration			x	
Specify the Scope					
General Properties Scope	Select the SLA(s) to display:	Add	× Remove		
Completion	Service Level Management Pack Target				
	< Previous Next >	Finish	Cancel] i	

6. In the Add SLA dialog box, in the Service Level column, select **Desktop OS Group Health** and click **Add**.

	×
Management Pack	
Citrix Management Pack for XenApp and Xen	Desktop SLA Dashb
Citrix Management Pack for XenApp and Xen	Desktop SLA Dashb
Microsoft System Center Application Monitor	ring 360 SLA
Citrix Management Pack for XenApp and Xer	Desktop SLA Dashb
Agd <u>R</u> emove	
Management Pack	
Citrix Management Pack for XenApp and Xer	Desktop SLA Dashb
Citrix Management Pack for XenApp and Xer	Desktop SLA Dashb
m	
	Management Pack Citrix Management Pack for XenApp and Xer Citrix Management Pack for XenApp and Xer Microsoft System Center Application Monito Citrix Management Pack for XenApp and Xer Management Pack Citrix Management Pack for XenApp and Xer Citrix Management Pack for XenApp and Xer

- 7. Repeat step 6 for Server OS Delivery Group Health.
- 8. Click **OK** to close the dialog box.
- 9. In the Scope page, adjust the time interval for the SLA.

	Update Con	figuration 🛛 🗶
Specify th	ne Scope	
General Properties	Select the SLA(s) to display:	
Scope	.	Add X Remove
Completion	Service Level	Management Pack
	Desktop OS Delivery Group Health	Citrix Management Pack for XenApp and XenDesktop SLA Dasi
	< [ш
	Last: 1 Days V	
		<pre></pre>

10. Click **Finish** to close the wizard.

Once the view is refreshed, it shows the delivery group service level objective report for the time period selected, as shown in the figure that follows.

Delivery Group S	SLA Dashboard				
Service Le	evels	Servic	e Level Objectives		
▲ Name: D	Desktop OS Delivery Group Health (2)	State	Name	Target Class	Instances
🕢 Sa	alesDG	Ø	Availability	XenDesktop Random Assignment Delivery Group (Desktop OS)	1
🕢 Ex	xecutiveDesktop		Average Logon Duration	XenDesktop Random Assignment Delivery Group (Desktop OS)	1
 ✓ Name: S Ø Ø A Ø P 	ierver OS Delivery Group Health (3) eliveryDG ccountingDG urchasingDG	Ø	Delivery Group Usage 🦓	XenDesktop Random Assignment Delivery Group (Desktop OS)	1

ExecutiveDesktop b64b535a-f277-415c-bd0e-aa7739f58404



Site SLA Dashboard

To configure the Site SLA Dashboard view, do the following:

- 1. Launch the SCOM Operations console.
- 2. In the Monitoring view, in the left pane, expand Citrix XenApp and XenDesktop > Dashboards, and then click Site SLA Dashboard.
- 3. In the upper right corner of the dashboard view, click the settings icon and then select **Configure**.



- 4. In the Update Configuration wizard window, click **Next**.
- 5. In the Scope page, click Add.
- 6. In the Add SLA dialog box, in the Service Level column, select Site Health and click Add.
- 7. Click **OK** to close the dialog box.
- 8. In the Scope page, adjust the time interval for the SLA.
- 9. Click Finish to close the wizard



Custom SLAs

Citrix Management Pack for XenApp and XenDesktop SLA Dashboards also includes some general service level target rules that may be used as an example. To make the SLA dashboards useful in practice, you must create your own SLAs that are tailored to your needs.

Following the steps below, a new SLA for a Site named "Boston" will be created, and it will check whether we are crossing maximum allowed number of concurrent users, since we only have 1,000 concurrent licenses available.

Perform the following:

- 1. Launch the SCOM Operations console.
- 2. In the Authoring view, expand Authoring > Management Pack Objects.
- 3. Right-click Service Level Tracking and then select Create.
- 4. In the Service Level Tracking wizard, type a display name in the **Name** text box. In our example, type *Boston Site SLA*.

2	Service Level Tracking
General	
General Objects to Track Service Level Objectives Summary	This wizard sets the parameters that track service levels for specified objects. You can run reports against this tracking data.
	< Previous Next > Finish Cancel

5. Click Next.

6. In the Objects to Track page, click Select.

7. In the Select a Target Class dialog box, from the **Search result filter** drop-down list, select **All**.

8. In the Target column, select XAXD Site and then click OK to close the dialog box.

9. In the Objects to Track page, from the **Select destination management pack** drown-down list, select a custom management pack where this SLA will be stored. If no such management pack exists, create a new one.

9	Service Level Tracking
Objects to Track	
General Objects to Track Service Level Objectives Summary	Specify the class of objects for which you want to track service levels. If necessary, specify a group or object to reduce the scope of the tracking request. Targeted class Select a class of object to target XAXD Ste Scope (optional) Specify objects within the class: All objects of the targeted class A group or object that contains objects of the targeted class Select Management pack Select destination management pack: Boston SLA MP New
	< Previous Next > Finish Cancel

10. Click Next.

11. In the Service Level Objectives page, click **Add** and select **Collection rule SLO**.

12. In the Service Level Objective (Collection Rule) dialog box, type a display name in the **Service level objective name** text box.

In our example, type Maximum Concurrent Users.

13. Under Targeted class, click **Select**. In the dialog box, in the Target column, select **XAXD Site Data Collector** and then click **OK** to close the dialog box.

14. Under Performance collection rule, click **Select**. In the dialog box, in the Name column, click **Number of Concurrent Users (Performance DB DW)** and then click **OK** to close the dialog box.

15. Under Aggregation method, click Max.

In our example, we do not want more users at any time.

16. From the Service level objective goal drop-down list, select Less Than and then type 1000 in the text box.

Maximum Concurrent Users		
Targeted class		
XAXD Site Data Collector		Select
Performance collection rule:		
Number of Concurrent Users (Performance DB DW)	Select
Aggregation method:		
O Min		
O Average		
• Max		
Service level objective goal:		
Less Than	✓ 1000	

17. Click OK to close the Service Level Objective (Collection Rule) dialog box.

18. In the Service Level Tracking wizard window, click Next.

19. In the Summary page, click Finish.

Once the new SLA is created, you can use it in the SLA dashboards as explained in Configure dashboards with default SLAs.

You can use the procedure in this section to create personalized SLAs for sites, delivery groups, or any other object that the Citrix SCOM Management Pack for XenApp and XenDesktop discovers. For a complete list of performance rules and availability monitors that can be used to configure service level objectives, see *Citrix SCOM Management Pack for XenApp and XenDesktop Reference Guide*, available from Tuning thresholds for monitors and rules.

Key monitoring scenarios

To monitor large XenApp and XenDesktop environments, you can configure the SCOM Connector to be used for transferring data related to the discovered objects from the agent to the SCOM Management server. This includes the number of Delivery Groups, Server OS machines, applications, and application folders.

Note: Environments with more than 100 Delivery Groups, 600 Server OS machines, and 1,500 applications are considered large.

To configure the SCOM Connector, you must set up the SCOM Administrator account in the XenApp and XenDesktop MP Configuration tool and enable the **Applications Discovery** and **Delivery Groups and Hypervisor Connections Discovery** rules. For more information, see the Configuring SCOM Administrator section in Install and configure.

The credentials of this account are used by the SCOM Connector to connect to the SCOM server. The SCOM Connector uses SCOM's SDK service and the Operations Manager Connector Framework to fetch data related to discovered objects

from the XenApp and XenDesktop environment. This includes the number of Delivery Groups, Server OS machines, applications, and application folders. This enhancement increases the size of data that can be transferred from the agent to the SCOM server compared to earlier versions, significantly increasing the scale of the environment that can be discovered.

Before any desktop or application can be brokered by XenApp and XenDesktop, Virtual Delivery Agent (VDA) installed on the desktop or server machine has to register with one of the Delivery Controllers in a XenApp and XenDesktop Site. This is done each time a machine is started. If the machine is not registered correctly, it cannot be used. Thus, these situations may have a big impact on the number of available machines in a delivery group.

There are many causes why a registration may fail, including no VDA being installed on a desktop or server machine, DNS problems, firewall configuration, time synchronization, and so on.

Citrix SCOM Management Pack for XenApp and XenDesktop monitors via the *Failed Registrations in Delivery Group* monitor if a certain machine in a delivery group could not register itself with the XenDesktop broker. If a failed registration is detected, the corresponding delivery group health status changes to *Warning* and alert is generated and displayed in the *Alerts* view and in the *Failed Registrations* view in *Machines* folder. Both views also contain alerts for each failed registration of a machine, with details on a machine name, a delivery group name, and a Site name. Additional details may also be found in the *Event* view, where all Citrix-related Windows events are logged.

Failed registrations are monitored only for the powered-managed virtual machines and not for managed physical machines.

Machine and session monitoring functionality enables an insight into performance of server OS machines, server OS sessions, and desktop OS sessions. You have the possibility to receive alerts when a specific machine or session metric crosses a threshold, and you can generate reports.

Note: Alerts based on performance thresholds are generated only when the product's Machine Agent is installed and configured.

The following reports are available:

- Server OS Machine Performance: This report shows server performance for selected server OS machines. Displayed metrics:
 - CPU utilization
 - Physical and virtual memory utilization
 - Citrix Load Index
 - Number of sessions
 - Virtual memory page fault rate
 - Disk metrics (read, write, and I/O operation rates, latency)
 - Network traffic
 - Average session latency
 - Average session ICA round-trip time (RTT)

This report is available only when Machine Agent is installed and configured.

Note: When you upgrade the product from version 3.9 or earlier, all discovered Server OS machines are deleted from SCOM and rediscovered with new IDs. If generated for a time range before the upgrade, the following reports of

Server OS Machine will contain repeated machine entries dated before and after upgrade: - Active Sessions, Active Sessions (TOP N), Performance (Plan and Manage), and Performance (Troubleshooting).

- User Desktop/Application Activity. This report shows application/desktop usage for selected user. With session monitoring, you can also see session performance data for the duration of the connection. Displayed metrics:
 - CPU utilization
 - Physical and virtual memory utilization
 - Virtual memory page fault rate
 - Session network traffic
 - Average session latency
 - Average session ICA round-trip time (RTT)
 - For desktop OS sessions, the report displays the following additional metrics:
 - Disk metrics (read, write, and I/O operation rates, latency)
 - Machine network traffic

Performance metrics of this report are available only when Machine Agent is installed and configured.

When Citrix SCOM Management Pack Agent for XenApp and XenDesktop is installed on one or more computers, referred to as proxy nodes, machine and session performance data can be collected. Data is collected remotely by using Windows Remote Management (WinRM). Machine Agent first communicates with a XenApp and XenDesktop Delivery Controller to get a list of the registered machines. It then utilizes WinRM to collect performance data from the machines.



Proxies use WinRM with Kerberos authentication to communicate with machines and Delivery Controllers. All WinRM communication is done in the context of an account that is configured for the *Citrix MPXAXD Machine Agent* service on the proxy node. For this communication to work all machines (server OS and desktop OS) must have WinRM 2.0 installed and enabled (default TCP port: 5985, enabled Kerberos authentication).

In advanced scenarios, you can use different accounts for WinRM communication for different machines. In the XenDesktop MP Configuration tool, you can specify machine hostname mask and account pairs. For any machine matching specific machine hostname mask, the corresponding user account is used for WinRM communication. For machines without matching hostname mask, the *Citrix MPXAXD Machine Agent* service user account is used.

Each instance of Citrix SCOM Management Pack Agent for XenApp and XenDesktop (each proxy node) can be configured to monitor machines for one or more Delivery Controller instances. However, every Delivery Controller can be monitored by no more than one Machine Agent instance.

Important: In a multi-Site environment, if a Machine Agent instance monitors multiple Delivery Controllers, these Controllers must belong to the same XenApp and XenDesktop Site.

Possible Machine Agent configurations (deployments) therefore are:

https://docs.citrix.com

- One Machine Agent for all Delivery Controller instances (within a Site)
- One Machine Agent per Delivery Controller
- One Machine Agent per subset of Delivery Controller instances (within a Site)

The deployments are depicted in the following figures:



Best practice is to configure Machine Agents (on proxy nodes) to monitor performance of no more than 2,000 concurrently running server OS or desktop OS machines. In environments where the number of machines registered with each Delivery Controller is smaller, you can configure one proxy node to handle multiple Deliver Controller instances. As a general rule configuration with one proxy node per Delivery Controller is appropriate for any type of XenApp and XenDesktop environment.

For examples of proper Machine Agent deployment for Sites with different number of concurrently running machines, see the following figures.

Proxy nodes sizing - for Site with 1,000 machines and two Controllers



Proxy nodes sizing - for Site with 3,500 machines and two Controllers



Proxy nodes sizing - for Site with 5,000 machines and three Controllers



Database sizing

Size of the Operations Manager database depends on the size of the XenApp and XenDesktop environment. Citrix SCOM Management Pack for XenApp and XenDesktop installs additional datasets to Operations Manager data warehouse database. It provides better, more comprehensive as well as more optimized data collection and data processing for better XenApp and XenDesktop architecture and end-user analysis, planning, and troubleshooting.

The maximum database space consumption for a few sample environments with default database grooming is presented in the table that follows.

Users (approximate number)		500	2,000	10,000
Sites		1	1	1
Delivery Controllers		2	3	4
Desktop OS delivery groups		2	4	6
Server OS delivery groups		3	4	6
Server OS machines		10	50	500
Concurrent application sessions		400	1,500	7,000
Concurrent desktop sessions		100	500	3,000
Sizes (in MB): DB / DW / Total	Working hours: 8x5	57 / 443 / 500	98 / 1405 / 1503	295 / 6956 / 7215
	Working hours: 24x7	57 / 1031 / 1088	98 / 3756 / 3854	295 / 18705 / 19000

Important: In large environments with numerous concurrent sessions, increasing the retention interval may have significant impact on the SCOM data warehouse database.

Citrix SCOM Management Pack for XenApp and XenDesktop consists of two custom datasets: Machine dataset and Session dataset. Each dataset provides tables for performance data and tables for stale or discovery data. Grooming for tables is specified in number of days and the default values are provided in table that follows.

Machine dataset grooming

Machine dataset			
Performance Raw	10		
Performance Hourly	400		
Performance Daily	400		

				•		
м	а	C	h	ır	۱e	ς.
	ч	c	••	••		-

Session dataset grooming

Session dataset		
Performance Raw	10	
Performance Hourly	400	
Performance Daily	400	
Sessions	400	
Connections	400	
Logons	400	
Application Instances	400	
Applications	9,999	

To change grooming settings, do the following:

- 1. Open SQL Server Management Studio and connect to the data warehouse database.
- 2. In the Object Explorer pane, expand Databases, expand OperationsManagerDW database, and then expand Tables.
- 3. Right-click dbo.Dataset and then select Open Table.
- 4. Make a note of DatasetID GUID values for rows with *DatasetDefaultName* equal to each of the following values:
 - MPXAXD Machine DataSet
 - MPXAXD Session DataSet
- 5. In the Object Explorer pane, right-click dbo.StandardDatasetAggregation and then select Open Table.
- 6. In the DatasetID column, locate the dataset GUID noted in step 4.
- 7. Locate the MaxDataAgeDays column and edit the value to set the grooming interval.
- 8. Repeat steps 6 and 7 for the other GUID value.

Manually importing included management packs into SCOM

For general instructions about how to import management packs into SCOM, see the How to Import an Operations Manager Management Pack webpage on the Microsoft TechNet website. To import the sealed Citrix SCOM Management Pack for XenApp and XenDesktop manually, do the following:

- 1. Log on to the management server.
- 2. Launch the SCOM Operations console.
- 3. In the Administration view, click Management Packs.
- 4. In the Tasks pane, expand Actions, and then click Import Management Packs.
- 5. In the Import Management Packs dialog box, click Add, and then select Add from disk.
- 6. In the Online Catalog Connection dialog box, click No.
- 7. In the Select Management Packs to import dialog box, browse to the folder that contains the following management pack files, select those files, and then click **Open**.
 - Comtrade.Citrix.Library.mp
 - Comtrade.Citrix.XenApp.And.XenDesktop.EndUser.mpb
 - Comtrade.Citrix.XenApp.And.XenDesktop.EndUser.Reports.mpb
 - Comtrade.Citrix.XenApp.And.XenDesktop.mpb
 - Comtrade.Citrix.XenApp.And.XenDesktop.Reports.mpb
- 8. Click Install.

Customizing sealed management packs

Customization of the sealed management packs that XenApp and XenDesktop Management Pack provides is similar to the default SCOM management pack customization. For details, see the Microsoft TechNet website:

- For general information about customization of management packs, see the Customizing Management Packs webpage.
- For instructions on how to customize a management pack, see the Create a New Management Pack for Customizations webpage.

Citrix SCOM Management Pack 3.11 for XenApp and XenDesktop

Nov 27, 2017

Use Citrix SCOM Management Pack for XenApp and XenDesktop to monitor and manage XenApp and XenDesktop infrastructure with the Microsoft System Center Operations Manager (SCOM).

With the Citrix SCOM Management Pack for XenApp and XenDesktop, you can:

- Improve the XenApp and XenDesktop infrastructure availability and health The virtual application and desktop infrastructure availability is checked with rigorous connectivity probing and active service checks. It is important that users are able to connect to their virtual desktops and applications. This is a process that involves many Delivery Controller components (such as Broker Service or Machine Creation Services).
- Gain insight into the XenApp and XenDesktop performance and usage information
 It is critical to know how users are using the virtual infrastructure delivering desktops and applications in order to be able
 to tune it accordingly. With the Citrix SCOM Management Pack for XenApp and XenDesktop you will get more insight
 into which users are logging in to the virtual desktops and applications (identify slow logons and logon bursts), how many
 users are connecting to the Sites, if the infrastructure is able to handle all user requests accordingly, for example by
 maintaining the size of the idle pool defined by the desktop group power management policy, by ensuring enough
 resources for delivery of applications and desktops defined by the load management policy, and so on. Another aspect is
 the end-user resource usage (what is the resource usage for each user connection/session) and virtual infrastructure
 resource usage (what is the resource usage of my server OS machines). Detailed machine and session performance
 information helps in managing your infrastructure and enables better planning and decision making.

Citrix SCOM Management Pack for XenApp and XenDesktop fully integrates the topology, health, and performance data into SCOM.

It provides centralized monitoring in SCOM and covers the following key scenarios:

- Are Delivery Controller instances up and running?
- Is the infrastructure (for example, brokers, machine creation services, and so on) on the Site level operational?
- Do users have issues connecting to the virtual desktops and applications (for example, delivery group limit/capacity is reached, desktop OS or server OS machines cannot register, other infrastructure issues are present)?
- What is the availability of published applications?
- Are there any events that indicate a problem with the infrastructure?
- Have any performance thresholds been violated?
- What is my server OS machine performance?
- What is the user session resource usage on server OS or desktop OS machines?
- Are there any user logons with lengthy duration? Which logon phases are causing the delay?

Important: To collect machine and session performance data, the product's Machine Agent must be installed and configured in addition to its main agent (referred to simply as Agent). For a general overview of the machine and session monitoring concepts, see Machine and session performance monitoring.

Architecture

The following diagram shows how the Citrix SCOM Management Pack for XenApp and XenDesktop connects with the SCOM management platform and the XenApp and XenDesktop infrastructure.



What's new

Nov 27, 2017

Citrix SCOM Management Pack 3.11 for XenApp and XenDesktop introduces the following features:

- Support for Citrix XenApp and XenDesktop 7.13. Citrix SCOM Management Pack for XenApp and XenDesktop supports XenApp and XenDesktop version 7.13.
- Improved performance data retrieval from the XenApp and XenDesktop environment. The data intensive PowerShell SDK calls of the agent to retrieve machine and session data are now replaced by calls to the Monitoring Service. This change reduces the load on the XenApp and XenDesktop environment and optimizes the data retrieval process.
- Localized for availability in five languages. Citrix SCOM Management Pack for XenApp and XenDesktop is localized for the following languages: French, German, Japanese, Simplified Chinese and Spanish.

Known issues

The following is a list of known issues in this product version:

• Issue ID: SCOM-1176

Symptom: The Citrix SCOM Management Pack Agent for XenApp and XenDesktop might not get upgraded during an upgrade invoked either locally on the XenApp and XenDesktop server or remotely from the SCOM Operations console. The upgrade procedure initially removes the Citrix SCOM Management Pack Agent for XenApp and XenDesktop Service. However, the previously installed agent package is not replaced and the earlier program version remains registered with the operating system.

Action: Repeat the upgrade procedure.

• Issue ID: SCOM-513

Symptom: It may take up to 24 hours for the Citrix SCOM Management Pack Agent for XenApp and XenDesktop instances to detect renewal of an expired Platinum license in the XenApp and XenDesktop Site. Action: After such license renewal, to restore licensing coverage of XenApp and XenDesktop on Delivery Controllers (agent-managed computers) immediately, do the following:

On a Delivery Controller, stop the *Citrix MPXAXD Agent* service by using an operating system tool.
 From the *db* subfolder of the Agent's data files folder (*%ProgramData%\Citrix\XenDesktop MP Agent* by default), remove the *agent-license-info.json* file.

3. Start the *Citrix MPXAXD Agent* service again.

4. Repeat steps 1 to 3 on each additional Delivery Controller.

• Issue ID: SCOM-502

Symptom: In the SCOM Operations console, when you attempt to run the *Start Citrix Director* task on a XenApp and XenDesktop alert that is not a session performance or logon alert, the invocation fails and SCOM reports the following error:

Citrix Director URL not configured. Please configure the Citrix Director URL by using XenDesktop MP Configuration tool. **Action**: None. The error message is incorrect, so you can safely ignore it. You can run the *Start Citrix Director* task only on session performance alerts and logon alerts.

• Issue ID: SCOM-143

Symptom: In the SCOM Operations console, the *ApplicationExcludeRegExtPattern* and *ApplicationIncludeRegExtPattern* parameters of application discoveries (*Application Discovery (n of 5)*) are ignored. You therefore cannot exclude applications from the discovery process or include them into it. **Action**: None. There is no workaround available.

• Issue ID: SCOM-86 (6297)

Symptom: After Citrix SCOM Management Pack for XenApp and XenDesktop (both its server-side and agent-side parts) is installed and configured on the computer for the first time (without being upgraded from an earlier product version), and a valid XenApp and XenDesktop Platinum license cannot be retrieved, no license-related alerts are sent. Such alerts therefore cannot be monitored in the Monitoring view of the SCOM operations console. **Action**: None. There is no workaround available.

• Issue ID: SCOM-77 (6194)

Symptom: In the output of the *Check Requirements and Configuration for Citrix MPXAXD Agent* task in the SCOM Operations console, site names that contain non-ASCII characters are not displayed correctly. For example, Spanish characters $c\tilde{n}$ appear as $\frac{1}{4}\pi$ in the name of a XenApp and XenDesktop Site. No other symptoms exist. **Action**: None. Apart from the visual glitch, the functionality of the product is not affected in any way. You can therefore safely ignore the issue.

• Issue ID: SCOM-210 (5380)

Symptom: While a workflow is running, error messages (31551 and 31552) are logged into the Operations Manager event log on the management server. They contain the following description:

Failed to store data in the Data Warehouse...

This error occurs when the Default action account in SCOM does not have write permission on the data warehouse database and none of the XenDesktop controllers is discovered as *Site Data Collector*. This may happen when:

- The Site Data Collector object switches from one XenDesktop Delivery Controller to another.
- Collector object switches from one XenDesktop Delivery Controller to another.
- None of XenDesktop Delivery Controllers is operational.

This issue occurs only with some of the workflows, for example, *Comtrade.Citrix. XenDesktop.EndUser.Reports.PublishConnectionsLogonsDW.Rule* or *Comtrade. Citrix.XenDesktop.EndUser.Reports.PublishApplicationInstanceDW.Rule.* **Action:** Ensure that at least one Delivery Controller is active at all times.

• Issue ID: SCOM-211 (5163)

Symptom: The *Delivery Group - Logon Details (Troubleshooting)* report does not function if the *Use business hours* option is selected.

Action: Clear the Use business hours option.

• Issue ID: SCOM-212 (5162)

Symptom: When launching Citrix Director by using the *Start Citrix Director* task in the Operations Manager Console for user logon or session alerts, Citrix Director is not opened for the users' context if the user is *anonymous*. Anonymous users were introduced in XenApp and XenDesktop 7.6. Action: None. There is no workaround available.

• Issue ID: SCOM-213 (5161)

Symptom: The XenApp and XenDesktop 7.6 configuration with space characters in Site names is not supported. This is due to a recognized issue in the Citrix Monitoring Service with this kind of configuration. For more information, see the

following webpage on the Citrix Support Knowledge Center website: http://support.citrix.com/article/CTX200325. Action: None. There is no workaround available.

• Issue ID: SCOM-1426

Symptom: The Object and Counter names in all Performance views on the SCOM Management Server are not localized, but appear in English.

Action: None. This issue does not impact product functionality.

Applies to French, German, Japanese, Simplified Chinese and Spanish languages.

• Issue ID: SCOM-78

Symptom: If the password of the Citrix SCOM Management Pack for XenApp and XenDesktop Monitoring user account contains non-English characters the Check Requirements and Configuration for Citrix MPXAXD Agent task reports an error in the Citrix XenApp/XenDesktop Powershell Interface section as follows: "Could not get data from Citrix PowerShell interface."

Action: Change the password of Citrix SCOM Management Pack for XenApp and XenDesktop Monitoring user account to contain only English characters.

Applies to French, German, Japanese, Simplified Chinese and Spanish languages.

• Issue ID: SCOM-1391, SCOM-1384

Symptom: In the SCOM Console, the output messages of all tasks are not localized, but appear in English. **Action:** None. This issue does not impact product functionality.

Applies to French, German, Japanese, Simplified Chinese and Spanish languages.

• Issue ID: SCOM-1156

Symptom: Surrogate pair characters in the Citrix SCOM Management Pack for XenApp and XenDesktop reports appear incorrectly.

Action: None. This issue does not impact product functionality.

Applies to Japanese and Simplified Chinese languages.

• Issue ID: SCOM-1222

Symptom: If the XenApp and XenDesktop Site name contains Japanese or Simple Chinese characters, an error might occur when running the Check Requirements and Configuration for Citrix MPXAXD Agent task. The Director URL for the Site is configured successfully, but the task might display the following error message: "Director URL is not configured for Site <sitename>. Please configure Director URL for this Site in 'XenApp and XenDesktop MP Configuration' tool and deploy new configuration using 'Update Configuration on Citrix MPXAXD Agent' task in SCOM."

Action: Avoid Japanese and Simplified Chinese characters in the XenApp and XenDesktop Site name. Applies to Japanese and Simplified Chinese languages.

• Issue ID: SCOM-1611

Symptom: If multiple XenApp and XenDesktop Sites are monitored by SCOM Management servers in the same SCOM Management group, the Application-User Sessions reports might not be accurate. For every Site that is monitored, the report might contain duplicate entries for the selected applications. These entries might contain no data or incorrect data.

Action: None. For ease of use, run a separate Application - User Sessions report for each application. In the report, ignore duplicate entries that have identical application names but different Site names.

• Issue ID: SCOM-1617

Symptom: Citrix SCOM Management Pack for XenApp and XenDesktop Agent does not support monitoring of Citrix

VDA Services on Sites containing more than 100 VDAs for Server OS.

Action: None. Disable the VDA Service monitors in such environments to avoid errors in the Operations Manager event log.

• Issue ID: SCOM-1704

Symptom: When you upgrade the product from version 3.9 or earlier, all discovered Server OS machines are deleted from SCOM and rediscovered with new IDs. If generated for a time range before the upgrade, the following reports contain repeated machine entries dated before and after upgrade:

Server OS Machine - Active Sessions,

Server OS Machine - Active Sessions (TOP N),

Server OS Machine - Performance (Plan and Manage), and

Server OS Machine - Performance (Troubleshooting)).

Action: None

Fixed issues

None

Licensing

Licensing of Citrix SCOM Management Pack for XenApp and XenDesktop depends on licensing of the monitored product, XenApp and XenDesktop. For Citrix SCOM Management Pack for XenApp and XenDesktop to operate properly and remain fully functional, its licensing must be covered. During installation or upgrade, no further actions are necessary on either the SCOM management server or the computers that host the product's Agent and Machine Agent instances.

Covered licensing means that the following conditions are fulfilled:

- The XenApp and XenDesktop Site that you plan to monitor uses a *Platinum* license within either maintenance program: Subscription Advantage, Software Maintenance.
- Subscription Advantage Date (of the Platinum license) falls after the *Subscription Advantage Eligibility* date that is embedded into binary files of the current version of Citrix SCOM Management Pack for XenApp and XenDesktop. For instructions on how to check this, see Install and Configure. In Citrix product documentation, Subscription Advantage Eligibility date may also be referred to as *product burn-in date*.

Important: The Subscription Advantage Eligibility date of this product release is 2017.0215.

Example: If the Subscription Advantage Date of your Platinum license for XenApp and XenDesktop is *2016.0531* (meaning 31 May 2016), and the Subscription Advantage Eligibility date of Citrix SCOM Management Pack for XenApp and XenDesktop is *2016.0518* (meaning 18 May 2016), the product remains fully functional after 31 May 2016, provided your XenApp and XenDesktop license remains valid (unexpired). If you upgrade to a later version of Citrix SCOM Management Pack for XenApp and XenDesktop whose Subscription Advantage Eligibility date is, for example, *2016.0710* (meaning 10 July 2016), Citrix SCOM Management Pack for XenApp and XenDesktop stops gathering and reporting new data (topology updates, incoming alerts, newly discovered objects).

Upgrading

Note: Product versions earlier than 3.6 were released under the name Comtrade Management Pack for Citrix XenApp and XenDesktop.

Upgrade is available for versions 3.5 and later. During the upgrade process, the included management packs of an earlier product version are automatically upgraded; their prior removal is not required. Your management pack customization is preserved.

Caution:

- Before upgrading from an earlier product version, ensure that licensing of this version of Citrix SCOM Management Pack for XenApp and XenDesktop is covered. For instructions on how to verify licensing coverage, see Preparing for Installation in Install and Configure.
- Upgrading to an unlicensed version of Citrix SCOM Management Pack for XenApp and XenDesktop results in ceased process of gathering and reporting new data. The data already collected is preserved and remains available to SCOM. If this occurs, downgrading to the earlier (licensed) product version requires a complete uninstallation of the new product version (including removal of the included management packs from SCOM), followed by reinstallation of the earlier product version. The management pack removal from SCOM deletes all the operational data (alerts, events, performance data) while the reinstallation ensures continued availability of data in the SCOM data warehouse (reports).

For upgrade instructions, see Upgrade in Install and Configure.

System requirements

Nov 27, 2017

Before installing Citrix SCOM Management Pack for XenApp and XenDesktop, make sure that your environment meets the requirements listed in this topic.

Hardware requirements

Computers that will host Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop must meet the following minimum hardware requirements:

- One physical CPU with two cores (for physical systems), two virtual CPUs (for virtual systems); CPU clock speed of 2.3 GHz
- 4 GB of RAM (excluding the paging file size)
- 1 GB of free local storage space

For more information on the Machine Agent, see Install and Configure.

Software requirements

Citrix SCOM Management Pack for XenApp and XenDesktop requires a supported version of the following products that it integrates with:

- Citrix XenApp and XenDesktop
- Microsoft System Center Operations Manager

Additionally, Citrix SCOM Management Pack for XenApp and XenDesktop requires a supported version of Citrix Licensing in the XenApp and XenDesktop Site where it is deployed.

Citrix SCOM Management Pack for XenApp and XenDesktop is compatible with the following Citrix XenApp and XenDesktop versions:

Product version (Delivery Controller)	Supported
Citrix XenApp and XenDesktop 7.13	1
Citrix XenApp and XenDesktop 7.12	1
Citrix XenApp and XenDesktop 7.11	1
Citrix XenApp and XenDesktop 7.9	1
Citrix XenApp and XenDesktop 7.8	1
Citrix XenApp and XenDesktop 7.7	1

Citrix XenApp and XenDesktop 7.6 LTSR	<i>•</i>
Citrix XenApp and XenDesktop 7.6 ¹	1
Citrix XenApp and XenDesktop 7.5	•
Citrix XenApp and XenDesktop 7.1	•
Citrix XenApp and XenDesktop 7.0	•

¹ This entry covers the following configurations: 7.6, 7.6 + FP1 (Feature Pack 1), 7.6 + FP2, 7.6 + FP3.

Product version (Citrix Director)	Supported
versions included with the supported Delivery Controller versions	1

Citrix SCOM Management Pack for XenApp and XenDesktop can be deployed in environments where any of the following versions of Citrix Licensing is used:

Product version	Supported
Citrix Licensing 11.14 or later	•

Citrix SCOM Management Pack for XenApp and XenDesktop is compatible with the following SCOM versions:

Microsoft System Center Operations Manager version	Supported
Microsoft System Center Operations Manager 2016	J
Microsoft System Center Operations Manager 2012 R2	1
Microsoft System Center Operations Manager 2012 ¹	v

¹ This entry covers the following configurations: base release, base release + SP1 (Service Pack 1).

https://docs.citrix.com

Agent operating systems

Citrix SCOM Management Pack Agent for XenApp and XenDesktop is compatible with all operating systems that are supported by Delivery Controller of Citrix XenApp and XenDesktop.

Machine Agent operating systems

Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop is compatible with the following operating systems:

Operating system	Supported
Microsoft Windows Server 2016	•
Microsoft Windows Server 2012 R2	1
Microsoft Windows Server 2012	1

The product can be deployed and operates correctly in environments with regional setting configured to use any of the following languages:

Language	Language code	Supported
English	en	1
Spanish	es	1

Performance overview

Nov 27, 2017

Generally speaking, Citrix SCOM Management Pack for XenApp and XenDesktop consists of three parts:

- The part installed on the SCOM management server (mandatory)
- Citrix SCOM Management Pack Agent for XenApp and XenDesktop (mandatory)
- Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop (optional)

The SCOM management server-side part

This part is a collection of management packs include discoveries, monitors, rules, tasks, and reports. From the compute and memory perspective, this part does not significantly add to the basic resource requirements of SCOM management server itself. It is not resource-intensive in terms of storage requirements of the SCOM reporting data warehouse database. For these reasons, there are no special considerations related to the SCOM management-server part when monitoring larger Citrix XenApp and XenDesktop environments.

Citrix SCOM Management Pack Agent for XenApp and XenDesktop

Performance and resource consumption of Citrix SCOM Management Pack Agent for XenApp and XenDesktop primarily depend on the size of your XenApp and XenDesktop environment, specifically on the number of resources within each Site. Furthermore, they are influenced by the load on the Delivery Controller instances. In contrast, the number of Sites in your XenApp and XenDesktop environment has no influence on the performance and resource consumption.

For scaling up Citrix SCOM Management Pack Agent for XenApp and XenDesktop, hardware of the hosting Delivery Controller must be reconfigured. The Agent cannot be scaled out.

Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop

The product's Machine Agent can be scaled up without the need of altering XenApp and XenDesktop deployment, as no XenApp and XenDesktop component is installed on its proxy node. Machine Agent can also be scaled out; you can achieve this by installing multiple instances on multiple proxy nodes and configuring it such that each Machine Agent instance handles only a subset of all Delivery Controller instances.

Configuration specifications

All figures in this document are valid for environments that:

- Are monitored with the specified product version of Citrix SCOM Management Pack for XenApp and XenDesktop
- Match the documented configuration specifications for XenApp and XenDesktop and SCOM
- Use the default configuration of management packs in terms of which rules and monitors are enabled (this applies to management packs included in Citrix SCOM Management Pack for XenApp and XenDesktop and management packs bundled with SCOM)
- Use the default configuration of SCOM management server and SCOM agents, without fine-tuning or any special adjustments

Factors such as different hardware specifications and condition of your environment may cause divergence of your observed values from the documented values.

https://docs.citrix.com

Validated Citrix SCOM Management Pack for XenApp and XenDesktop version

Validation of Citrix SCOM Management Pack for XenApp and XenDesktop was performed with the product version listed in the following table.

Product	Version
Citrix SCOM Management Pack for XenApp and XenDesktop	3.11

Citrix XenApp and XenDesktop configuration specification

With this configuration, the Site database server is deployed outside the Delivery Controller computer.

Computer: Delivery Controller		
Specification item	Value	
Compute	four virtual CPUs; CPU clock speed of 2.67 GHz	
Memory	24 GB of RAM	
Software version	Citrix XenApp and XenDesktop 7.12	

Computer: Site database server		
Specification item	Value	
Compute	four virtual CPUs; CPU clock speed of 2.67 GHz	
Memory	24 GB of RAM	
Software version	Microsoft SQL Server 2014 R2	

For the product to work with the scale of the environment documented here, it is recommended that you configure the SCOM agent on all controllers. For environments with approximately 15,000 VDAs and/or around 25,000 sessions (Desktop OS and Server OS) or more, follow the recommended configuration steps in <u>Configuration for monitoring large XenApp and Xendesktop environments.</u>

Microsoft System Center Operations Manager configuration specification

With this configuration, the SCOM database and data warehouse server is deployed outside the SCOM management server computer.

Computer: SCOM management server		
Specification item	Value	
Compute	eight virtual CPUs; CPU clock speed of 2.67 GHz	
Memory	16 GB of RAM	
Software version	Microsoft System Center Operations Manager 2012 R2	

Computer: SCOM database and data warehouse server		
Specification item	Value	
Compute	eight virtual CPUs; CPU clock speed of 2.67 GHz	
Memory	24 GB of RAM	
Software version	Microsoft SQL Server 2014 R2	

Computer: SCOM reporting database		
Specification item	Value	
Compute	four virtual CPUs; CPU clock speed of 2.67 GHz	
Memory	8 GB of RAM	
Software version	Microsoft SQL Server 2014 R2	

Monitoring ability

The following table does not list the extreme limits; it lists the maximum values at which the Citrix SCOM Management

Pack for XenApp and XenDesktop was successfully validated.

Maximum number of monitored items (per Site)

Item	Value
Delivery groups	100
Server OS machines	600
Server OS machines in a delivery group	200
Desktop OS machines	20,000
Applications	1,500
Concurrent sessions	33,400

Average resource consumption

Resource consumption was measured in a XenApp and XenDesktop Site with four Delivery Controller instances. Measurement was made on the Delivery Controller where Citrix SCOM Management Pack Agent for XenApp and XenDesktop did most data processing. Measuring spanned a period of 2.5 days. Windows Performance Monitor was used as the measuring tool.

Important: In XenApp and XenDesktop deployments with multiple Delivery Controller instances, the majority of data processing is performed by a single instance of Citrix SCOM Management Pack Agent for XenApp and XenDesktop (on one Delivery Controller). Resource consumption is documented only for the primary controller, as the other controllers in the site have minimal resource usage.

Average consumption on a Delivery Controller (for 20,600 VDIs)

Item	Value
<i>MPXAXDAgent</i> CPU usage ¹	4.79%
HealthService CPU usage	0.36%
MPXAXDAgent memory usage	3,771 MB
HealthService memory usage	157 MB

¹ CPU usage is calculated based on the *% Processor Time* counter and the number of processor cores or virtual CPUs.

Number of published applications has negligible effect on the CPU usage of the MPXAXDAgent service.

The following figure shows changes in CPU usage of *MPXAXDAgent* and *HealthService* after these services had been started for the first time. Values are taken from the first part of the entire measurement time period (first four hours), when initial high data inflow loaded compute resource substantially. After first three hours, initial high load decreased significantly.



The following figure shows typical patterns of changes in CPU usage of *MPXAXDAgent* and *HealthService* through major part of the measurement time period, after the initial high load had already subsided. Measurement was made in validation set 2 (VS2; see figure for memory usage).



As the figure above shows, bursts of high CPU usage of *MPXAXDAgent* occured every five minutes, while spikes of high CPU usage of *HealthService* were twice that rare.

Additional tests (made in different validation sets, not depicted) also confirmed that adding VDI sessions (server OS sessions, desktop OS sessions) has no significant impact on the CPU usage of Citrix SCOM Management Pack Agent for XenApp and XenDesktop. Such additions also do not influence the CPU usage of the SCOM agent (Operations Manager Agent, Microsoft Monitoring Agent).

The following figure shows the memory usage of *MPXAXDAgent* and *HealthService* through time, measured in two different validation sets (VS1, VS2).



As the figure above shows, on the Delivery Controller there should be approximately 3.6 GB of physical memory available for the joint needs of the *MPXAXDAgent* and *HealthService* services.

Configuration for large XenApp and XenDesktop environments

Nov 27, 2017

This article specifies the configuration updates recommended by Citrix for large XenApp and XenDesktop environments monitored by Citrix SCOM Management Pack for XenApp and XenDesktop. These configuration changes are also necessary if the Operations Manager Event Log contains events related to Citrix SCOM Management Pack for XenApp and XenDesktop with ID 21402 or 6024. This configuration change is optional though for smaller environments.

Increasing the queue size of the agent

The Microsoft Monitoring Agent uses a queue to store data to be sent to the Management server. Typically, the queue is used to prevent data loss when the Management server is unavailable or the agent is unable to communicate with other available Management servers. When the queue becomes full, the agent starts deleting the oldest data.

If you plan to use a single proxy node to manage a large XenApp and XenDesktop environment, the default agent queue size of 15,360 KB (15 MB) is not sufficient to accommodate the high amount of data flow. This results in data loss that leads to erroneous management of the XenApp and XenDesktop environment.

To increase the queue size of the agent, do the following:

Caution: Using Registry Editor incorrectly can cause serious problems that might require you to reinstall your operating system. Citrix cannot guarantee that problems resulting from the incorrect use of Registry Editor can be solved. Use Registry Editor at your own risk.

- 1. In the Start menu, type **regedit** in the Search text box, and then click **Search**.
- 2. In the results list, click **regedit** or **regedit.exe**.
- 3. In the User Account Control dialog box, click Yes.

4. In the Registry Editor, navigate to HKEY_LOCAL_MACHINE > SYSTEM > CurrentControlSet > Services > HealthService > Parameters > Management Groups > < GroupName>, where < GroupName> is the name of the SCOM Management group the agent belongs to.

5. Right-click maximumQueueSizeKb and select Modify.

Figure The maximumQueueSizeKb value in Registry Editor
۵¢	Registry Editor		_ D X
Eile Edit View Favorites Help Image: I	Name	Type REG_SZ REG_SZ REG_DWORD REG_DWORD REG_DWORD REG_DWORD REG_BINARY	Data (value not set) {534E71F9-7970-42D6 1095ef6a-9206-daf8-2 0x00000008 (8) 0x00019000 (102400) 0x00000000 (0) 01 00 04 80 30 00 00 0
		<u> </u>	>
Computer\HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlS	t\Services\HealthService\Parameters\Management	Groups\scom	1

- 6. In the Value data text box, type a value in the range 15,360-3,07,200 (KB; 3,07,200 KB equals 300 MB).
- Caution: Citrix recommends that you back up Windows Registry before changing it.
- 7. Click OK.
- 8. Using the Services administrative tool of the operating system, restart the **Microsoft Monitoring Agent Service**.

Increasing the queue size of the version store

The Microsoft Monitoring Agent Service stores records of unfinished transactions in a version store. Version store enables the Extensible Storage Engine (ESE) to track and manage current transactions. It contains a list of operations performed by active transactions maintained by the Health Service. This list is an in-memory list of modifications made to the Health Service store database.

The default size of version store is 1,920 16-KB memory pages (30 MB) and is optimized for a typical installation of SCOM. A version store of this size is not sufficient to handle the high data flow in a large XenApp and XenDesktop environment.

To increase the queue size of the version store, do the following:

Caution: Using Registry Editor incorrectly can cause serious problems that might require you to reinstall your operating system. Citrix cannot guarantee that problems resulting from the incorrect use of Registry Editor can be solved. Use Registry Editor at your own risk.

- 1. In the Start menu, type **regedit** in the Search text box, and then click **Search**.
- 2. In the Results list, click **regedit** or **regedit.exe**.
- 3. In the User Account Control dialog box, click Yes.
- 4. In the Registry Editor window, navigate to HKEY_LOCAL_MACHINE > SYSTEM > CurrentControlSet > Services > HealthService > Parameters.
- 5. Right-click the Persistence Version Store Maximum value and click Modify.

Figure The Persistence Version Store Maximum value in Registry Editor

₫ [®]	Registry Editor		>	د ا
<u>F</u> ile <u>E</u> dit <u>V</u> iew F <u>a</u> vorites <u>H</u> elp				
File Edit View Favorites HealthService ^ Image: Parameters (Default) Frror Reports Enabled Persistence Cache Maximum Persistence Checkpoint Depth Maximum Persistence Initial Database Page Count Persistence Initial Database Page Count Persistence Maximum Sessions Persistence Page Hint Cache Size Persistence Version Store Maximum Queue Error Reports Runtime CLR Version III	Type REG_SZ REG_DWORD REG_DWORD REG_DWORD REG_DWORD REG_DWORD REG_DWORD REG_DWORD REG_SZ	Data (value not set) 0x00000000 (0) 0x00040000 (2621- 0x01400000 (2097 0x00009600 (38400 0x00000020 (32) 0x00000000 (2621- 0x00040000 (2621- 0x00040000 (2621- 0x00040000 (3100 0x0000000 (13100 0x00000000 (0) v4.0.30319 0x0000000 (0)	4 1 = C	
Computer\HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlS	et\Services\HealthService\Parameters			

6. In the Value data text box, type a value in the range 1,920-19,200 (16-KB blocks, 19,200 16-KB blocks equals 300 MB). Caution: Citrix recommends that you back up Windows Registry before changing it.

- 7. Click OK.
- 8. Using the Services administrative tool of the operating system, restart the Microsoft Monitoring Agent Service.

Important: Any repair or reinstallation of the Microsoft Monitoring agent removes these changes.

Raising the memory utilization monitor threshold

SCOM constantly monitors the memory utilization of two crucial agent processes - the System Center Management Service Host Process and the Microsoft Monitoring Agent Service. When the memory utilization metric exceeds 300 MB, these two processes restart as a recovery means.

On a proxy agent computer, the threshold limit of memory utilization must be raised to 800 MB.

Caution: Using Registry Editor incorrectly can cause serious problems that might require you to reinstall your operating system. Citrix cannot guarantee that problems resulting from the incorrect use of Registry Editor can be solved. Use Registry Editor at your own risk.

To set the monitor utilization threshold, do the following:

- 1. Log on to the Management server.
- 2. Launch the SCOM Operations console.
- 3. In the Monitoring view, expand Operations Manager > Agent Details and click Agents By Version.
- 4. In the Results pane, in the Name column, right-click the line of the proxy computer, and select Open > Health Explorer for <ProxyNodeFQDN>.
- 5. In the Health Explorer for <ProxyNodeFQDN> window, disable any filter that might be set.
- 6. Expand Entity Health > Performance > System Center Management Health Service Performance > System Center Management Health Service Memory Utilization.
- 7. Right-click Health Service Private Bytes Threshold and click Monitor Properties.

Figure The Health Service Private Bytes Threshold entry in Health Explorer

- Intity Health qcxd18.tesmf.hsl (Object)
- Availability qcxd18.tesmf.hsl (Object)
- Configuration qcxd18.tesmf.hsl (Object)
- Performance qcxd18.tesmf.hsl (Object)
- 4 🕢 System Center Management Health Service Performance qcxd18.tesmf.hsl (Health Service)
 - Agent processor utilization qcxd18.tesmf.hsl (Health Service)
 - Send Queue % Used qcxd18.tesmf.hsl (Agent)
 - Send Queue % Used qcxd18.tesmf.hsl (Health Service)
- ▲ Ø System Center Management Health Service Memory Utilization qcxd18.tesmf.hsl (Health Service)
 - I Health Service Handle Count Threshold qcxd18.tesmf.hsl (Health Service)
 - 🕢 Health Service Private Bytes Threshold qcxd18.tesmf.hsl (Health Service)
 - Monitoring Host Handle Count Threshold qcxd18.tesmf.hsl (Agent)
 - Monitoring Host Private Bytes Threshold qcxd18.tesmf.hsl (Agent)
 - System Center Management Health Service Modules Performance Rollup qcxd18.tesmf.hsl (Health Service)
- WMI Memory Usage Monitor qcxd18.tesmf.hsl (Agent)
- Security qcxd18.tesmf.hsl (Object)

8. In the **Health Service Private Bytes Threshold Properties** window, in the **Overrides** tab, click **Override** and select **For the object:** <**ProxyNodeFQDN**>.

9. In the Override Properties window, under **Parameter Name** column, locate the **Agent Performance Monitor Type** (Consecutive Samples) - Threshold line.

- 10. In the same line, in the Override column, select the check box.
- 11. In the Override Value column, type 838,860,880 (bytes. This value equals 800 MB).
- 12. From the **Select destination management pack** drop-down list, select the management pack into which you want to save the customization. Click **New** to create a new management pack if needed.
- 13. Click OK to close the Override Properties window.
- 14. Click **Close** to close the Health Service Private Bytes Threshold Properties window.
- 15. In the left pane, right-click Monitor Host Private Bytes Threshold and select Monitor Properties. Repeat steps
- 8 13 to update the value for Monitor Host Private Bytes Threshold.
- 16. Click **Close** to close the Monitor Host Private Bytes Threshold Properties window.

Install and configure

Nov 27, 2017

This topic contains instructions to install and configure the Citrix SCOM Management Pack for XenApp and XenDesktop. Perform all procedures in the documented order of precedence. Optional procedures are appropriately marked. Also covered are the instructions to uninstall and upgrade the product.

Preparing for the installation

Before installing the Citrix SCOM Management Pack for XenApp and XenDesktop, make sure the following general prerequisites are fulfilled:

- Your environment meets the hardware and software requirements. For hardware, software requirements and/or other requirements, see System Requirements.
- Licensing of Citrix SCOM Management Pack for XenApp and XenDesktop is covered. The licensing is covered when all conditions listed in Licensing are fulfilled.

To check if Subscription Advantage Date of the XenApp and XenDesktop Platinum license falls after the Subscription Advantage Eligibility date of Citrix SCOM Management Pack for XenApp and XenDesktop (one of the licensing conditions), do the following:

- 1. Take note of the Subscription Advantage Eligibility date of the current product release. For information, see Licensing.
- 2. Launch Citrix Studio.
- 3. In the left pane of Citrix Studio, expand Citrix Studio (<SiteName>) > Configuration, and then click Licensing.
- 4. In the Licensing Overview pane, under Licenses, search for the lines that have either value in the Product column: *Citrix XenApp Platinum*
 - Citrix XenDesktop Platinum
- 5. For each matching line from step 4, check if its **Subscription Advantage Date** value is bigger than the date (**Subscription Advantage Eligibility** date) from step 1.
- 6. If at least one value is bigger, the license **Subscription Advantage** period covers the current version of Citrix SCOM Management Pack for XenApp and XenDesktop.
- A computer is chosen on which a SCOM management server resides and where the server side of Citrix SCOM Management Pack for XenApp and XenDesktop will be installed. This computer is referred to as SCOM management server.
- SCOM agent is installed on all the computers that host XenApp and XenDesktop Delivery Controllers, and these computers are configured as agent-managed computers in the SCOM management group.
- The Action Account of SCOM agent has administrative privileges on all XenApp and XenDesktop Delivery Controllers.
- A domain user account is chosen that you will use for remote monitoring of server OS machines and desktop OS machines. For multiple XenApp and XenDesktop Sites, you might need to use different accounts. This depends on the domain configuration.

Tip: Citrix recommends that you create a new, dedicated user account for exclusive use for the above-mentioned purposes.

The user account must have the following properties:

https://docs.citrix.com

© 1999-2017 Citrix Systems, Inc. All rights reserved.

- It has administrative privileges in all XenApp and XenDesktop Delivery Controllers and all server OS machines within the Site.
- It has the **Read Only Administrator** role (or a role with higher privileges) assigned in XenApp and XenDesktop with the scope set to All.

The following image shows the creation of an administrator account in Citrix Studio.

studio	Administrator and Scope
	Select an administrator:
	EXAMPLEDOMAIN\MPXAXDAgentAccount Browse
Administrator and Scope	Select a Scope:
Role	Scopes are objects that represent something meaningful in an organization and that an
Summary	administrator is allowed to manage (for example, a set of Delivery Groups used by the Finance
	Score name
	• All
	All objects
	Create scope
	Contract open

The following image shows the editing of an administrator account in Citrix Studio.

	Edit Administrator
Administrato Name: EX	r Name and Details AMPLEDOMAIN\MPXAXDAgentAccount
Scope All	Role Read Only Administrator
Enable adm Clear check	Equit
Save full permi	
	Cancel

This user account is referred to as *<MPXAXDAgentAccount>* in the remainder of this document.

- Windows Remote Management 2.0 (WinRM 2.0) is enabled on all server OS machines. To enable WinRM on the local computer, open a Command Prompt window and run the *winrm quickconfig* command.
- WinRM 2.0 is correctly configured. For instructions on how to verify that the WinRM 2.0 configuration is correct, see Verifying WinRM communication.

For Citrix SCOM MP Analytics Service to transmit anonymous usage data, make sure that the SCOM management server has internet access.

For XenApp and XenDesktop machine and session performance monitoring, make sure the following additional prerequisites are fulfilled as well:

• Computers are chosen where Citrix SCOM Management Pack for XenApp and XenDesktop Machine Agent will be installed. These computers are referred to as Citrix SCOM Management Pack for XenApp and XenDesktop proxy nodes (proxy nodes). The proxy nodes must meet minimum hardware requirements and must be running a supported operating system.

Important: For information on how to properly designate the proxy nodes and plan their configuration, see Machine and session performance monitoring.

- SCOM agent is installed on all the proxy nodes.
- The <MPXAXDAgentAccount> user account has administrative privileges in the desktop OS machines and on the proxy nodes.
- Windows Remote Management 2.0 (WinRM 2.0) is enabled on all desktop OS machines.
- Receiving Windows PowerShell remote commands is enabled on all the computers that host XenApp and XenDesktop Delivery Controllers. For more information, see the Enable-PSRemoting (for Windows Server 2012 R2) or Enable-PSRemoting (for Windows Server 2012) webpage on the Microsoft TechNet website.

https://docs.citrix.com

© 1999-2017 Citrix Systems, Inc. All rights reserved.

• Firewall is configured as required by WinRM: on desktop OS machine as well as on the Delivery Controllers, incoming traffic is enabled on the TCP port that WinRM is using. By default, WinRM is configured to use port 5985.

Installing the product on the SCOM management server

The server-side part of Citrix SCOM Management Pack for XenApp and XenDesktop must be installed on the SCOM management server.

To install Citrix SCOM Management Pack for XenApp and XenDesktop on the SCOM management server, do the following:

1. Log on to the management server. Use a user account that has local administrative privileges and SCOM administrative privileges.

2. In Windows Explorer, locate the *Citrix_SCOM_Management_Pack_for_XenAppXenDesktop_<Version>.exe* file (where *<Version>* is the current software version), and double-click it to invoke the installation process. Wait for the Setup Wizard to appear.

3. In the Welcome page of the Setup Wizard, click Next.



4. In the View Relevant Product Configuration page, click Next.

5. In the License Agreement page of the Setup Wizard, read the end user license agreement carefully. If you accept the terms of the agreement, click **Next**.

#	Citrix SCOM Management Pack for XenApp and XenDesktop 3.11.80	x
License / Please re	Agreement ad the following license agreement carefully.	
CITRIX LICE Use of this c (s) with whi (s) or servic CTX_code E	NSE AGREEMENT omponent is subject to the Citrix license or terms of service covering the Citrix product(s) or service ch you will be using this component. This component is licensed for use only with such Citrix product e(s). P_T_A124358	t
✓ I accept t	he terms in the License Agreement	
	< Back Next > Cancel	

6. In the Destination Folder page, define the Citrix SCOM Management Pack for XenApp and XenDesktop installation folder. Citrix recommends that you install Citrix SCOM Management Pack for XenApp and XenDesktop to the default folder.

Proceed as follows:

- To install the product to the default folder listed in the Setup Wizard, no special actions are required.
- To install the product to a different folder, follow the sub-steps:

1. Click Change.

2. In the Browse For Folder dialog box, browse to a desired installation folder, select it, and click **OK**.

7. In the Configure Post-Install Actions page of the Setup Wizard, decide whether the Setup Wizard should automatically import the included management packs into SCOM and whether it should initially enable Analytics Service.

🗱 😓 Citrix SCOM Management Pack for XenApp and XenDesktop 3.11.80	x
Configure Post-Install Actions Please select actions to be performed after the successful install.	
 Automatically import the Management Pack Enable the product to send anonymous usage statistics to Citrix Citrix SCOM MP Analytics Service can periodically send anonymous statistics about usage of Citrix SCOM Management Packs to Citrix. Citrix uses this data to improve its product and services. Based on your preference, select or clear the option. 	
< Back Install Car	ncel

- Decide about the management pack import:
 - To let the Setup Wizard import the management packs, select the Automatically import the Management Pack option. Citrix recommends this choice.
 - To import the management packs into SCOM manually at a later time, leave the **Automatically import the Management Pack** option unselected. For instructions about how to import or reimport the management packs, see Manually importing included management packs into SCOM.
- To enable the Analytics Service to start transmitting usage statistics after the product is installed, select the Enable the product to send anonymous usage statistics to Citrix option.
- 8. Click Install. The Setup Wizard displays the Installing the product page and starts copying the installation files.
- 9. After the installation completes, the installation completion page is displayed. Click Next.

10. In the Executing post-install actions page, attend the import process (if chosen earlier) and the installation of Citrix SCOM MP Analytics.

11. In the post-installation completion page, review the actions log, and click Finish to close the Setup Wizard.

Citrix S	COM Management Pack for XenApp and XenDesktop 3.11.80	x
B B	All post-install actions were successfully executed.	
	Actions log:	_
	INFO: Enabled Analytics INFO: Analytics installation completed succesfully	^
	< III >	~
CITRIX	Click the Finish button to exit the Setup Wizard.	
	< Back Finish Cance	

Configuring the XenApp and XenDesktop monitoring accounts and profile in SCOM

To configure Run As accounts and the associated Run As profile in SCOM, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the Administration view, in the left pane, expand Run As Configuration, and then click Accounts.
- 3. In the Tasks pane, expand Actions, and then click Create Run As Account.
- 4. In the Create Run As Account Wizard window, click **Next**.

- 5. In the General Properties page, in the Run As account type drop-down menu, leave the default selection (Windows).
- 6. In the **Display name** text box, type a name that the SCOM Operations console will use to refer to the monitoring account. Click **Next**.
- 7. In the Credentials page, type user name, password, and domain of the *<MPXAXDAgentAccount>* user account in the respective text boxes. Click **Next**.
- In the Distribution Security page, select a distribution security option.
 Citrix recommends that you select the More secure option. In this case, you must subsequently edit the Run As account configuration so that its Selected Computers list includes the XenApp and XenDesktop Delivery Controllers.
- 9. Click **Create** to save the configuration data of the new account, then click **Close** to close the Create run As Account Wizard window.
- 10. If you are configuring SCOM for multiple-site monitoring, repeat steps 3 to 9 for each XenApp and XenDesktop Site, each time specifying display name and credentials of the appropriate user account.
- 11. In the Administration view, in the left pane, expand Run As Configuration, and then click Profiles.
- 12. In the results pane, in the Name column, double-click Citrix XenApp and XenDesktop Monitoring Account.
- 13. In the Run As Profile Wizard window, click \mathbf{Next} and then click \mathbf{Next} again.
- 14. In the Run As Accounts page, click Add.
- 15. In the Add a Run as Account dialog box, from the **Run As account** drop-down list, select the display name of the Run As account.
- 16. Depending on whether you plan to monitor multiple XenApp and XenDesktop Sites and/or your security requirements, proceed as follows:
 - 1. For monitoring multiple-site environments or for increased security, select the **A selected class**, group, or object option (more secure). Then follow the steps:
 - 1. Click Select and then select Object.
 - 2. In the Object Search dialog box, from the Look for drop-down list, select **Windows Computer** and then click **Search**.
 - 3. In the Available items list, select the XenApp and XenDesktop Delivery Controller, and then click Add.
 - 4. Click OK to close the dialog box.
 - 2. For monitoring single-Site environments and for ordinary security, select the **All targeted objects** option (less secure).
- 17. Click OK to close the Add a Run As Account dialog box.
- 18. If you are configuring SCOM for multiple-site monitoring, repeat steps 14 to 17 for each XenApp and XenDesktop Site, each time using the appropriate Run As account.

Run As accounts:				💠 Add 🥖
Account Name	Association	Used For	Class	Path
 MPXAXD Account (boston site) MPXAXD Account (berlin site) MPXAXD Account (berlin site) 	Object Object Object	xdcontroller xdcontroller xdcontroller	01 Windows Con 04 Windows Con 05 Windows Con	nputer nputer nputer

- 19. Click Save to save the changes.
- 20. Click Close to close the Run As Profile Wizard window.

21. If you selected the **More secure** option in step 8, distribute the Run As accounts to the appropriate agent-managed computers: for each chosen account, do the following:

- a. In the Administration view, double-click the user account.
- b. In the Run As Account Properties dialog box, click the **Distribution** tab.
- c. Click Add.
- d. In the Computer Search dialog box, search for and add the computers. Click **OK**.

© 1999-2017 Citrix Systems, Inc. All rights reserved.

 More secure - I want to manually select the computers to which the credentials will be distributed 	
Selected computers:	🛟 Add 🔀 Remove
Name	Name
xdcontroller01.amsad.hsl	Health Service

e. In the Run As Account Properties dialog box, click **Apply** and then click **OK**.

After saving the updated Run As profile, it may take some time for the updated configuration to become active on the targets. The required time depends on the state of the SCOM agent (HealthService) instances and overall load on the SCOM infrastructure.

Configuring access to the shared folder for agent installation

Note: Steps of this procedure must be followed only once on a SCOM management server. In case you have previously installed and configured any of the following Citrix Management Pack products on the same computer, you may not need to repeat the steps:

- Citrix SCOM Management Pack for Provisioning Services
- Citrix SCOM Management Pack for ShareFile
- Citrix SCOM Management Pack for StoreFront
- Citrix SCOM Management Pack for Web Interface
- Citrix SCOM Management Pack for XenApp
- Citrix SCOM Management Pack for XenMobile

To configure access to the shared folder for agent installation, do the following:

- 1. Log on to the SCOM management server. Use a user account that has local administrative privileges.
- Choose a local user account (local to the computer with the shared folder) or a domain user account that will have access to the shared folder, for the purpose of agent deployment and configuration.
 Tip: Citrix recommends creating a new, dedicated user account that you will use only for deployment of the Citrix SCOM Management Pack for XenApp and XenDesktop agent to managed computers.
- 3. Using an operating system administrative tool, add the user account to the *CitrixMPShareUsers* user group.
- 4. Launch the SCOM Operations console and connect to the management server.
- 5. In the Administration view, in the left pane, expand Run As Configuration, and then click Accounts.
- 6. In the Tasks pane, expand Actions, and then click Create Run As Account.
- 7. In the Create Run As Account Wizard window, click Next.
- 8. In the Run As account type drop-down menu, leave the default selection (Windows).

免	Create Run As Account Wizard
General Properties	
Introduction	
General Properties	Specify general properties for the Run As account
Credentials	
Distribution Security	select the type of Run As account that you want to create, and then provide a display name and description.
Completion	
	Run As account type:
	Windows V
	Display name:
	MP Agent Installation User Account
	Dgscription(optional):
	×
	< Previous Next > Greate Cancel

9. In the **Display name** text box, type a name that the SCOM Operations console will use to refer to the newly created SCOM user account. Click **Next**.

10. In the User name text box, type the user name of the operating system user account that you chose in step 2.

麂	Create Run As Account Wizard
Credentials	
Introduction	
General Properties	Provide account credentials
Credentials Distribution Security Completion	Provide credentials for this Windows Run As account. User name: mpagentinstallation
	Pass <u>w</u> ord: ••••••••••••••••••••••••••••••••••••
	Domain: EXAMPLEDOMAIN
	< Previous Next > Create Cancel

11. In the Password and Confirm password text boxes, type the valid password of the operating system user account.

12. In the ${\bf Domain}$ text box, update the value if needed. Click ${\bf Next}.$

13. Depending on the effective security policy in your SCOM environment, select either the Less secure or More secure option.

Note: Selecting More secure requires manual steps to be performed in SCOM for each newly added managed computer.

14. Click Create.

15. After the message about successful account creation appears, click Close.



16. In the left pane, under Run As Configuration, click **Profiles**.

17. In the Profiles list, double-click Citrix Management Pack Network Share Account.

発	Run As Profile Wizard	×
Introduction General Properties Run As Accounts Completion	Introduction Run As profiles allow monitoring operations (monitors, rules, and tasks) to run as an account that has sufficient privileges to successfully monitor protected resources in the network. For example, you can use a Run As profile to read database properties or to log on to a mailbox. In addition, administrators can assign different Run As accounts to different monitored resources. This is useful when multiple resources are monitored by the same agent or management server, but each agent or surver has a different security context. For example, a single SQL server might host multiple databases, but each database has a different owner. Use this wizard to assign a Run As account that has the necessary privileges to the Run As profile. To begin the Run As Profile Wizard, click Next. Do not show this page again	
	< Previous Next > Save Ca	ncel

18. In the Run As Profile Wizard window, in the Introductory page, click Next. In the General Properties page, click Next.19. In the Run As Accounts page, click Add.

20. In the Add a Run As Account dialog box, in the Run as account list, select the newly created SCOM user account.



21. Select the A selected class, group, or object option.

22. Click Select and then select Class.

23. In the Class Search dialog box, in the Filter by (optional) text box, type Windows Computers.

24. Click Search.

25. In the Available items list, select All Windows Computers.

Class S	earch	?	x
To add classes, search for the class by name and management	nt pack and then add them to the selected obje	cts list.	
Eilter by (optional):			
Windows Computers			
Management pack:			_
(Any)			~
		Search	
			_
Available items			
Name	Management Pack		
All Windows Computers	System Center Core Library		
L			_
	<u>0</u> K	Cance	el
			.41

- 26. Click **OK** to close the Class Search dialog box.
- 27. Click OK to close the Add a Run As Account dialog box.
- 28. Click **Save** to update the profile. This may take a while.
- 29. Click **Close** to close the Run As Profile Wizard window.

Verifying the installation on the SCOM management server

To verify that the Citrix SCOM Management Pack for XenApp and XenDesktop installation on the management server is correct, do the following:

- 1. Log on to the management server.
- 2. Go to Start > Control Panel and click Programs and Features (actions of this step may differ on operating systems earlier than Windows Server 2016).
- 3. Check for the presence of the following entry in the Name column: *Citrix SCOM Management Pack for XenApp and XenDesktop*
- 4. To check if the *CitrixMPShare* shared folder is correctly configured, open a Command Prompt window and run the following commands in sequence (their outputs in case of success are also shown):

net share | findstr -i CitrixMPShare

CitrixMPShare

%ProgramData%\Citrix\CitrixMPShare

net use \\<ManagementServerHostName>\CitrixMPShare

/USER:<DomainName>\<UserName>

The command completed successfully

dir \\<ManagementServerHostName>\CitrixMPShare

<FolderContents>

In these instances, *%ProgramData%* refers to the actual value of this operating system variable.

© 1999-2017 Citrix Systems, Inc. All rights reserved.

AnagementServerHostName> is the name of the SCOM management server. *DomainName>* is the domain or computer name and *UserName>* is the name of the user account that you chose in step 2 of the procedure documented in Configuring access to the shared folder for agent installation. *FolderContents>* is the list of the contents of the *CitrixMPShare* folder.

The shared folder is vital for installation of the Citrix SCOM Management Pack Agent for XenApp and XenDesktop and deployment of its configuration to the managed computers.

5. Launch the SCOM Operations console.

6. In the Monitoring view, expand the items in the left pane until they match the following figures (combined).





7. In the Administration view, expand Administration > Management Packs and click Installed Management Packs (the navigation pane structure may differ in SCOM versions earlier than 2016).

8. Verify the following management pack versions are listed in the results pane:

Citrix Management Pack for XenApp and XenDesktop	3.11.80.0
Citrix Management Pack for XenApp and XenDesktop (EndUser)	3.11.80.0
Citrix Management Pack for XenApp and XenDesktop (EndUser) Reports	3.11.80.0
Citrix Management Pack for XenApp and XenDesktop Reports	3.11.80.0
Citrix Management Pack Library	1.0.19.0

Configuring SCOM agent to act as proxy on Delivery Controllers

SCOM agent on each computer where XenApp and XenDesktop Delivery Controller is installed must be configured to act as

a proxy agent. This configuration enables the agent to relay or forward information from or about other computes and network devices to the SCOM management server.

To configure the SCOM agent instances to act as proxy agents, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the Administration view, expand Device Management, and then click Agent Managed.
- 3. For each XenApp and XenDesktop (Delivery Controller) computer, follow the steps:
- 1. Right-click the host name, and select **Properties**.
 - 2. Click the Security tab.
 - 3. Select the Allow this agent to act as proxy and discover managed objects on other computers option.
 - 4. Click OK.

Configuring Citrix Director URL

To enable opening Citrix Director in the user context from session alerts using the *Start Citrix Director* alert task, the URL of the Citrix Director web interface must be configured for each monitored Site.

To configure a Citrix Director URL, do the following:

- 1. Log on to the management server. Use a user account that has local administrative privileges.
- 2. Go to Start > All apps > Citrix (actions of this step may differ on operating systems earlier than Windows Server 2016).
- 3. Click XenApp and XenDesktop MP Configuration.
- 4. In the Citrix Management Pack Configuration window, in the Director URL tab, click Add.
- 5. In the Add Director URL dialog box, type the following data in the respective text boxes:
 - Name of the Site
 - URL of the Citrix Director instance that is connected to and monitors this Site



6. Click OK.

7. Repeat steps 4 to 6 for each additional XenApp and XenDesktop Site you want to monitor.

8. *Optional*. To modify the configuration data of an entry, click **Modify**. In the Modify Director URL dialog box, modify the data as required, and then click **OK**.

9. *Optional.* To remove a Citrix Director URL configuration, click **Remove** and then click **Yes**.

10. Click OK to apply the configuration changes and close the window.

Note: If you change a Citrix Director URL for the Site in which Citrix SCOM Management Pack Agent for XenApp and XenDesktop or Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop is already installed on the Delivery Controllers, you must run the *Update Configuration on Citrix MPXAXD Agent* or *Update Configuration on Citrix MPXAXD Agent* or *Update Configuration on Citrix MPXAXD Machine Agent* task.

Installing the product on the Delivery Controllers

On the XenApp and XenDesktop Delivery Controllers, only Citrix SCOM Management Pack Agent for XenApp and XenDesktop must be installed.

To install Citrix SCOM Management Pack Agent for XenApp and XenDesktop on a Delivery Controller, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the **Monitoring** view, in the left pane, expand **Citrix Library**, and then click **XenApp/XenDesktop Delivery Controller Computers**.
- 3. In the XenApp/XenDesktop Delivery Controllers pane, select a Delivery Controller from the XenApp/XenDesktop Delivery Controllers list.
- 4. In the Tasks pane, expand MPXAXD Delivery Controller Computer Role Tasks, and then click Install Citrix MPXAXD Agent.
- 5. In the Run Task Install Citrix MPXAXD Agent dialog box, adjust the task parameters as follows:
 - UpgradeAgent: This option, when set to *true*, causes uninstallation of the existing Citrix SCOM Management Pack Agent for XenApp and XenDesktop from the agent-managed computer before the current version is installed. Before such uninstallation, SCOM agent must be put into maintenance mode. Default value: *false*
 - IgnorePrereqCheck: You may not alter this option. Default value: *false*
 - AgentInstallationSource: This option defines location of the Management Pack agent installation package and its configuration files. Specify the value according to relationship between the agent-managed computer and the SCOM management server:
 - If SCOM agent on the agent-managed computer reports only to the management server where Citrix SCOM Management Pack for XenApp and XenDesktop is installed, leave the value empty. The location is then automatically determined based on data retrieved from the agent-managed computer. In most cases, the retrieved location host name matches the host name of the management server where the installation task is invoked.
 - If the agent-managed computer is managed by some other management server or the computer hosts a multihomed SCOM agent instance, specify the host name of the management server where Citrix SCOM Management Pack for XenApp and XenDesktop is installed.
 - If the agent-managed computer does not have access to the *CitrixMPShare* shared folder on the management server, specify the alternative location of the Management Pack agent installation package and its agent configuration files in the UNC format. A prerequisite is that these files are copied from the *CitrixMPShare* shared folder to a location the agent-managed computer has access to.

Default value: (empty)

- AgentInstallationDestination: This option defines the Management Pack agent's program installation directory on the agent-managed computer. If no value is specified, the Management Pack agent is installed to the *%ProgramFiles%\Citrix\XenDesktop MP Agent* directory.
 Default value: (empty)
- 6. Click **Run** to invoke the installation process.
- 7. Observe the output the task generates. If the task reports no errors, the installation on the agent-managed computer is correct.

The task initially performs a prerequisite check. If any of the installation prerequisites are not fulfilled, the process is interrupted before the actual installation begins. In this case, invoke the **Check Installation Prerequisites for Citrix MPXAXD Agent task** to pinpoint the problematic prerequisite.

Tip: The Agent installation task can be run for multiple selected Delivery Controllers.

Configuring Citrix SCOM Management Pack for XenApp and XenDesktop for monitoring VDA services on server OS machines

Important: This section is applicable only if WinRM is configured to use non-default ports.

The Citrix SCOM Management Pack Agent for XenApp and XenDesktop monitors VDA services on the server OS machines remotely and it therefore connects to the server OS machines by using WinRM. By default, Citrix SCOM Management Pack Agent for XenApp and XenDesktop uses the default WinRM port (5985), and it does not utilize SSL. However, if this configuration changes on the server OS machines, you may need to manually update Windows Registry on the Citrix SCOM Management Pack Agent for XenApp and XenDesktop computer. Add or change the following values in the *HKEY_LOCAL_MACHINE\SOFTWARE\Comtrade\XenDesktop MP Agent* registry key:

- WinRMPort (string value): port number that WinRM uses
- WinRMUseSSL (string value): yes, no, true, or false

In case the listed values do not exist or are empty, Citrix SCOM Management Pack Agent for XenApp and XenDesktop follows its default behavior.

Verifying the installation and configuration on the Delivery Controllers

To verify that the XenApp and XenDesktop Management Pack installation and configuration on a Delivery Controller are correct, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the Monitoring view, in the left pane, expand Citrix Library, and click XenApp/XenDesktop Delivery Controller Computers.

- 3. In the XenApp and XenDesktop Delivery Controller Computers pane, select a Delivery Controller from the XenApp and XenDesktop Delivery Controllers list.
- 4. In the Tasks pane, expand Actions, and then click Check Requirements and Configuration for Citrix MPXAXD Agent.
- 5. Observe the output the task generates. If all checks are denoted successful, the installation and configuration on the Delivery Controller are correct.

Installing the product on the proxy nodes

Important: Perform this procedure only if you plan to monitor performance of server OS machines, server OS sessions, or desktop OS sessions in your XenApp and XenDesktop environment.

For machine or session performance monitoring, Citrix SCOM Management Pack Agent for XenApp and XenDesktop must be installed on the proxy nodes.

To install Citrix SCOM Management Pack Agent for XenApp and XenDesktop on a proxy node, do the following:

- 1. Log on to the proxy node. Use a user account that has local administrative privileges.
- Copy the MPXAXDMachineAgent.exe, Support.exe and Support.exe.config files from the || <ManagementServeHostName>\CitrixMPShare\XenDesktop Machine MP shared folder to a location on the proxy node.
- 3. Run the following command to check if the prerequisites for machine agent installation are fulfilled:

Support /checkprereq		

4. If all prerequisites are denoted as fulfilled, run the following command to invoke the Machine Agent installation process:



Wait for the Setup Wizard to appear.

5. Follow instructions of the Setup Wizard. During the process:

- In the Agent Service Account page, type the literal string of the *<MPXAXDAgentAccount>* user account into the corresponding text box.
- In the Delivery Controllers page, specify the Delivery Controllers that should be monitored by this proxy node.

© 1999-2017 Citrix Systems, Inc. All rights reserved.

Configuring Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop

Important: Perform this procedure only if you have installed the product's Machine Agent on the proxy nodes.

If WinRM is configured to use a non-default port (a port different from 5985) on your desktop OS machines, you must specify a port that will be used for VDI monitoring. To do this, update the Port value in the following keys in Windows Registry:

- For OS machines: *HKEY_LOCAL_MACHINE\SOFTWARE\Comtrade\XenDesktop MP Machine Agent\WinRMProtocols*
- For Delivery Controllers:
 HKEY_LOCAL_MACHINE\SOFTWARE\Comtrade\XenDesktop MP Machine Agent\ControllerWinRMProtocol

Important: Perform this procedure only if you have installed the product's Machine Agent on the proxy nodes.

After the installation, the Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop computers are discovered in the Monitoring view of the SCOM Operations console as *XenApp/XenDesktop Machine Monitoring Proxy Computes* inside *Citrix Library*. To check if Machine Agent is fully operational, execute the *Check Requirements and Configuration for Citrix XAXD Machine Agent* task.

Important: Perform this procedure only if you have installed the product's Machine Agent on the proxy nodes.

Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop communicates with Delivery Controllers and server OS machines by using WinRM protocol and Kerberos authentication. The following checks help you determine if WinRM is correctly configured.

• Proxy nodes:

On the proxy node, to check if Kerberos authentication on the WinRM client is enabled, run the following command:



Inspect the command output. If the value of the *Kerberos* parameter in the *Auth* group is not *true*, run the following command:

winrm set winrm/config/client/auth @{Kerberos="true"}

• Server OS machines or desktop OS machines:

On the proxy node, to verify if WinRM client on the computer can access the OS machine, log on by using the *<MPXAXDAgentAccount>* user account, and run the following command:

winrm identify -r:http://<OSmachineHostName>:5985 -auth:Kerberos

In case of success, the command output should be similar to the following:

IdentifyResponse

ProtocolVersion = http://schemas.dmtf.org/wbem/wsman/1/wsman.xsd

ProductVendor = Microsoft Corporation

ProductVersion = OS: 6.1.7600 SP: 0.0 Stack: 2.0

In case of failure, proceed as follows:

- If the command reports the *Access denied* error, it indicates that the *<MPXAXDAgentAccount>* user account does not have administrative privileges on the OS machine. Reconfigure the user account accordingly.
- On the OS machine, run the following command to check Kerberos authentication is enabled for WinRM:



© 1999-2017 Citrix Systems, Inc. All rights reserved.

command:

winrm set winrm/config/service/auth @{Kerberos="true"}

• Delivery Controllers:

On the proxy node, log on by using the *<MPXAXDAgentAccount>* user account, and run the following command:



In case of success, the command output should be similar to the following:

IdentifyResponse	
ProtocolVersion = http://schemas.dmtf.org/wbem/wsman/1/wsman.xsd	
ProductVendor = Microsoft Corporation	
ProductVersion = OS: 6.1.7600 SP: 0.0 Stack: 2.0	

In case of failure, proceed as follows:

- If the command reports the *Access denied* error, it indicates that the *<MPXAXDAgentAccount>* user account does not have administrative privileges on the Delivery Controller. Reconfigure the user account accordingly.
- On the Delivery Controller, run the following command to check *Kerberos* authentication is enabled for WinRM:

winrm get winrm/config/Service

Inspect the command output. If the value of the *Kerberos* parameter in the *Auth* group is not *true*, run the following command:

winrm set winrm/config/service/auth @{Kerberos="true"}

Transmission of product usage data using the Citrix SCOM MP Analytics Service can be reconfigured anytime.

Note: Reconfiguring the Citrix SCOM MP Analytics Service affects the collection of data for all Citrix SCOM Management Pack products that are installed on the same SCOM management server.

To reconfigure the analytics service, do the following:

- 1. Log on to the management server. Use a user account that has local administrative privileges.
- 2. Go to Start > All apps > Citrix (actions of this step may differ on operating systems earlier than Windows Server 2016).
- 3. Click Citrix SCOM MP Analytics Service Configuration.
- 4. In the Citrix SCOM MP Analytics Service Configuration window, select or clear the **Enable the product to send anonymous usage statistics to Citrix** option.
- 5. Click Close to apply configuration changes and close the window.

Uninstallation

This section contains instructions that you must follow to effectively uninstall Citrix SCOM Management Pack for XenApp and XenDesktop. Perform all procedures in the documented order of precedence. Optional procedures are appropriately marked.

Uninstalling the product from the Delivery Controllers

To uninstall XenApp/XenDesktop Management Pack Agent from a Delivery Controller (an agent-managed computer), do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the Monitoring view, expand Citrix Library, and then click XenApp/XenDesktop Delivery Controller Computers.
- 3. In the XenApp/XenDesktop Delivery Controller Computers pane, select a Delivery Controller from the XenApp/XenDesktop Delivery Controller Computers list.

- 4. In the Tasks pane, expand Actions, and then click Uninstall Citrix MPXAXD Agent.
- 5. In the Run Task Uninstall Citrix MPXAXD Agent dialog box, click Run to invoke the uninstallation process.
- 6. Repeat steps 3 to 5 for each additional Delivery Controller.

Tip: The Agent uninstallation task can be run for multiple selected Delivery Controllers.

Uninstalling the product from the proxy nodes

Important: Perform this procedure only if there is the product's Machine Agent is installed on the proxy nodes.

To determine which computers are the proxy nodes, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the Monitoring view, expand Citrix Library, and then click XenApp/XenDesktop Machine Monitoring Proxy Computers.
- 3. In the XenApp and XenDesktop Machine Monitoring Proxy Computers pane, find the list of proxy nodes under XenApp and XenDesktop Machine Monitoring Proxy Computers.

To uninstall Citrix SCOM Management Pack Agent for XenApp and XenDesktop from a proxy node (an agent-managed computer), do the following:

- 1. Log on to the proxy node. Use a user account that has local administrative privileges.
- 2. Make sure no product folders or files are in use by any user.
- 3. Go to Start > Control Panel and click Programs and Features (actions of this step may differ on operating systems earlier than Windows Server 2016).
- 4. Right-click Citrix SCOM Management Pack Agent for XenApp and XenDesktop and select Uninstall.
- 5. In the Programs and Features dialog box, click **Yes** to confirm uninstallation.

Removing dependent management packs (customizations)

Important: Perform this procedure only if you have customized the management packs included in the product.

To remove the customizations that you made to the management packs included in Citrix SCOM Management Pack for XenApp and XenDesktop, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the Administration view, expand Administration > Management Packs and click Installed Management Packs (the navigation pane structure may differ in SCOM versions earlier than 2016).
- 3. In the results pane, locate the management packs that depend on the management packs included in Citrix SCOM Management Pack Agent for XenApp and XenDesktop.
- 4. For each such dependent management pack (except for *Microsoft.SystemCenter.SecureReferenceOverride*), follow the steps:
 - 1. Right-click it and then click **Delete**.
 - 2. On the message stating that deleting the management pack might affect the scoping of some user roles, click Yes.

Removing included management packs

To remove the management packs included in Citrix SCOM Management Pack for XenApp and XenDesktop, do the following:

1. Launch the SCOM Operations console and connect to the management server.

- 2. In the Administration view, expand Administration > Management Packs and click Installed Management Packs (the navigation pane structure may differ in SCOM versions earlier than 2016).
- 3. Remove references to the included management packs from the *Microsoft.SystemCenter.SecureReferenceOverride* management pack. To do this, perform the following steps:
 - Identify which included management packs are referenced. In the Administration > Management Packs context of the SCOM Operations console, right-click Microsoft.SystemCenter.SecureReferenceOverride and select Properties. In the dialog box, click the Dependencies tab.
 - 2. For each such referenced management pack, find out its ID. Right-click the referenced management pack. In the dialog box, take note of the value in the ID text box on the General tab.
 - 3. Export the *Microsoft.SystemCenter.SecureReferenceOverride* management pack.
 - 4. Make a copy of the file you exported the management pack to.
 - Edit the originally exported file: use the IDs to find and remove all dependencies to the management packs from the Manifest > References context (the *Reference* elements) and the Monitoring > Overrides context (the SecureReferenceOverride elements), and then save the changes.
 For better tracking, increase the management pack version by adjusting the value of the Version element within the Identity element.
 - 6. Import back the altered *Microsoft.SystemCenter.SecureReferenceOverride* management pack from the modified file.
- 4. In the results pane, right-click Citrix Management Pack for XenApp and XenDesktop (EndUser) Reports, and then select Delete.
- 5. On the message stating that deleting the management pack might affect the scoping of some user roles, click Yes.
- 6. Repeat steps 4 and 5 with the following management packs (in the presented order of precedence):
 - 1. Citrix Management Pack for XenApp and XenDesktop (EndUser)
 - 2. Citrix Management Pack for XenApp and XenDesktop Reports
 - 3. Citrix Management Pack for XenApp and XenDesktop
- 7. Check if other Citrix SCOM Management Pack products are installed on the management server. If none of them is installed, repeat steps 4 and 5 with Citrix Management Pack Library.

Uninstalling the product from the SCOM management server

To uninstall Citrix SCOM Management Pack for XenApp and XenDesktop from the SCOM management server, do the following:

- 1. Log on to the management server. Use a user account that has local administrative privileges and SCOM administrative privileges.
- 2. Make sure no product folders or files are in use by any user.
- 3. Go to Start > Control Panel and click Programs and Features (actions of this step may differ on operating systems earlier than Windows Server 2016).
- 4. Right-click Citrix SCOM Management Pack for XenApp and XenDesktop and select Uninstall. Wait for the Setup Wizard to appear.
- 5. In the Welcome page of the Setup Wizard, click Uninstall.
- 6. In the Uninstalling the product page, the Setup Wizard reports the uninstallation progress.
- 7. In the Completion page of the Setup Wizard, click Finish.
- Delete the %ProgramData%\Citrix\CitrixMPShare\XenDesktop Machine MP and %ProgramData%\Citrix\CitrixMPShare\XenDesktop MP folders.
 Caution: This action permanently deletes the Agent configuration data. You will be accepted as a second s
 - Caution: This action permanently deletes the Agent configuration data. You will be unable to reuse it at a later time.
- 9. Check if other Citrix SCOM Management Pack products are installed on the management server. If none of them is installed, follow the steps:

- 1. Stop sharing the *CitrixMPShare* shared folder.
- 2. Delete the *%ProgramData%\Citrix\CitrixMPShare* folder.
- 3. Using an operating system administrative tool, delete the local CitrixMPShareUsers user group.

Uninstalling Citrix SCOM MP Analytics from the SCOM management server

Note: Uninstalling the Citrix SCOM MP Analytics Service stops collection of analytics data from all Citrix Management Pack products installed on the system.

To uninstall Citrix SCOM MP Analytics from the SCOM management server, do the following:

- 1. Log on to the management server. Use a user account that has local administrative privileges.
- 2. Make sure no product folders or files are in use by any user.
- 3. Go to Start > Control Panel and click Programs and Features (actions of this step may differ on operating systems earlier than Windows Server 2016).
- 4. Right-click Citrix SCOM MP Analytics and select Uninstall.
- 5. In the **Programs and Features** dialog box, click **Yes** to confirm uninstallation.

Upgrade

Upgrade from version 3.5

To upgrade Citrix SCOM Management Pack for XenApp and XenDesktop from version 3.5, do the following:

1. Prepare your environment for installation of the new product version. For instructions, see Preparing for the installation.

2. Install the product (its server-side part) on the SCOM management server. For instructions, see Installing the product on the SCOM management server. The installation process upgrades the product and preserves local configuration data.

3. Verify the installation of the product (its server-side part) on the SCOM management server. For instructions, see Verifying the installation on the SCOM management server.

4. On the SCOM management server, copy the mpxaxd_config.dat file from the %ProgramData%\ComTrade\MPShare\XenDesktop MP directory to the %ProgramData%\Citrix\CitrixMPShare\XenDesktop MP directory.

5. On the SCOM management server, move the mpxaxd_config.dat file from the %ProgramData%\ComTrade\MPShare\XenDesktop Machine MP directory to the %ProgramData%\Citrix\CitrixMPShare\XenDesktop Machine MP directory.

6. Configure access to the shared folder for agent installation. For instructions, see Configuring access to the shared folder for agent installation.

7. Install the product (one agent-side part) on the Delivery Controllers. For instructions, see Installing the product on the Delivery Controller.

Important: In the Run Task - Install Citrix MPXAXD Agent dialog box, set the UpgradeAgent task parameter to the *true* value.

-			-
Target		Hun Location	
ask Paramete	rs		
Name		Value	
Upgrade Agent		true	
Income Descent of	-la		
IgnorePrereqChec Debug AgentInstallationS AgentInstallationS	ource Destination	false false	
ignore rrereqUied Debug Agent Installation S Agent Installation I Qverride	ck Source Destination	false Task description	
IgnorerrereqChec Debug AgentInstallation Qverride ask credentials © Use the prede O Othgr :	Source Destination	talse false Task description Installs Citrix Management Pack Agent fr XenApp and XenDesktop on the Citrix sy	or istem.
IgnorerrereqChei Debug AgentInstallation AgentInstallation Qverride osk credentials Uge the prede Othgr : User name :	ek Source Destination	talse false Task description Installs Citrix Management Pack Agent fr XenApp and XenDesktop on the Citrix sy Parameters: - AgentinstallationSource: Agent installat	or stem.
IgnorerrereqChei Debug AgentInstallation AgentInstallation Querride ask credentials © Uge the prede O Othgr : User name : Password :	ck Source Destination	Task description Task description Installs Citrix Management Pack Agent fn XenApp and XenDesktop on the Citrix sy Parameters:	or istem.
gnorenrerequise Debug AgentInstallation AgentInstallation AgentInstallation Qverride ssk credentials © Uge the prede O Othgr : User name : Password : Domain :	ExampleDomAin	Task description Task description Installs Citrix Management Pack Agent fr XenApp and XenDesktop on the Citrix sy Parameters: - AgentinstallationSource: Agent installat and configuration source is specified as with the management server name where XenApp and XenDesktop MP was installed with the UNC path where XenApp and YenDesktop MP Agent installation and A	or istem. either ed or

8. Verify the installation and configuration of the product (one agent-side part) on the Delivery Controllers. For instructions, see Verifying the installation and configuration on the Delivery Controllers.

9. (this step is applicable only when installed Machine Agent is part of the deployment of your earlier product version)

Install the product (the other agent-side part) on the proxy nodes. For instructions, see Installing the product on the proxy nodes. The installation process upgrades the product and preserves local configuration data.

10. (this step is applicable only when installed Machine Agent is part of the deployment of your earlier product version) Verify the installation and configuration of the product (the other agent-side part) on the proxy nodes. For instructions, see Verifying the installation and configuration on the proxy nodes.

Upgrade from version other than 3.5

To upgrade Citrix SCOM Management Pack for XenApp and XenDesktop from versions other than 3.5, do the following:

1. Prepare your environment for installation of the new product version. For instructions, see Preparing for the installation.

2. Install the product (its server-side part) on the SCOM management server. For instructions, see Installing the product on the SCOM management server.

Note: The installation process upgrades the product and preserves local configuration data.

3. Verify the installation of the product (its server-side part) on the SCOM management server. For instructions, see Verifying the installation on the SCOM management server.

4. Install the product (one agent-side part) on the Delivery Controllers. For instructions, see Installing the product on the Delivery Controllers.

Important: In the Run Task - Install Citrix MPXAXD Agent dialog box, set the UpgradeAgent task parameter to the *true* value.

Tarnet		Run Location	
✓ xaxd-dc-system	m.company.com	xaxd-dc-system.company.com	
ask Paramete	rs		
Name		Value	
UpgradeAgent IgnorePrereqChec	ck	true false	
Debug AgentInstallationS AgentInstallationE	Source Destination	false	
Debug AgentInstallations AgentInstallations Qverride sk credentials	Source Destination	faise Task description	
Debug AgentInstallationS AgentInstallationI Qverride sk credentials © Uge the prede	Source Destination	False Task description Installs Citrix Management Pack Agent for XenApp and XenDesktop on the Citrix syst	em.
Debug Agenthistallations Agenthistallations Qverride sk credentials Use the prede Other : User name :	Source Destination	Task description Installs Citrix Management Pack Agent for XenApp and XenDesktop on the Citrix syst Parameters: - AgentInstallationSource: Agent installation and configuration source is specified as eiter the second sec	em.
Debug Agenthistallations Agenthistallations Qverride sk credentials Uge the prede Othgr : User name : Password :	Source Destination	Task description Installs Citrix Management Pack Agent for XenApp and XenDesktop on the Citrix syst Parameters: - AgentInstallationSource: Agent installation and configuration source is specified as eil with the management server name where XenApp and XenDesktop MP was installed	em. n ther
Debug Agent Installations Agent Installations Qverride sk credentials Studentials Use the prede Othgr : User name : Password : Domain :	Source Destination	Task description Installs Citrix Management Pack Agent for XenApp and XenDesktop on the Citrix syst Parameters: - AgentInstallationSource: Agent installation and configuration source is specified as eit with the management server name where XenApp and XenDesktop MP was installed with the UNC path where XenApp and XenDesktop MP was installed with the UNC path where XenApp and XenDesktop MP was installed with the UNC path where XenApp and XenDesktop MP. Vacet installation and configurations with the UNC path where XenApp and XenDesktop MP. Vacet installation and configurations with the UNC path where XenApp and XenDesktop MP. Vacet installation and configurations with the UNC path where XenApp and XenDesktop MP. Vacet installation and configurations with the UNC path where XenApp and XenDesktop MP. Vacet installation and configurations with the UNC path where XenApp and XenDesktop MP. Vacet installation and configurations with the UNC path where XenApp and XenDesktop MP. Vacet installation and configurations with the UNC path where XenApp and XenDesktop MP. Vacet installation and configurations with the UNC path where XenApp and XenDesktop MP. Vacet installation and configurations with the UNC path where XenApp and XenDesktop MP. Vacet installation and configurations with the UNC path where XenApp and XenDesktop MP. Vacet installation and configurations with the UNC path where XenApp and XenDesktop MP. Vacet installations and configurations with the UNC path where XenApp and XenDesktop MP. Vacet installations and configurations with the UNC path where XenApp and XenDesktop MP. Vacet installations and configurations with the Vacet installations and configurations with the Vacet installations and configurations with the Vacet installations and configurations with the Vacet installations and configurations with the Vacet installatins and conthesktop MP. Vacet installations and configu	em. n ther or

8. Verify the installation and configuration of the product (one agent-side part) on the Delivery Controllers. For instructions, see Verifying the installation and configuration on the Delivery Controllers.

9. (this step is applicable only when installed Machine Agent is part of the deployment of your earlier product version)

Install the product (the other agent-side part) on the proxy nodes. For instructions, see Installing the product on the proxy nodes.

Note: The installation process upgrades the product and preserves local configuration data.

10. (this step is applicable only when installed Machine Agent is part of the deployment of your earlier product version) Verify the installation and configuration of the product (the other agent-side part) on the proxy nodes. For instructions, see Verifying the installation and configuration on the proxy nodes.

Optimize

Optional configuration

Some monitors and rules have default thresholds that might need additional tuning to suit your environment. You should evaluate monitors and rules to determine whether the default thresholds are appropriate for your environment. If a default threshold is not appropriate for your environment, you should adjust the threshold by overriding it.

Citrix SCOM Management Pack for XenApp and XenDesktop Reference Guide A complete list of monitors and rules available in Citrix SCOM Management Pack for XenApp and XenDesktop.

Adding optional SLA dashboards

For this purpose, you must import the optional *Citrix Management Pack for XenApp and XenDesktop SLA Dashboards* management pack into SCOM. It provides service level objectives (SLA and SLO objects) for XenApp and XenDesktop environment monitoring.

Management pack dependencies

The *Citrix Management Pack for XenApp and XenDesktop SLA Dashboards* management pack has the following dependencies:

- Citrix-specific management packs:
 - Citrix Management Pack for XenApp and XenDesktop
 - Citrix Management Pack for XenApp and XenDesktop (EndUser)
- Default management packs:
 - Health Library
 - Microsoft.SystemCenter.Visualization.Component.Library
 - *Microsoft.SystemCenter.Visualization.Library*
 - Microsoft.SystemCenter.Visualization.ServiceLevelComponents
 - System Library

Software requirements

The *Citrix Management Pack for XenApp and XenDesktop SLA Dashboards* management pack requires Microsoft System Center Operations Manager 2012 R2.

Importing the management pack

For instructions on how to import the unsealed management pack, see Manually importing included management packs

into SCOM. The management pack is located in the *%ProgramFiles%\Citrix\XenDesktop MP* folder in the *Comtrade.XenApp.And.XenDesktop.SLADashboards.xml* file.

Citrix Management Pack for XenApp and XenDesktop SLA Dashboards is an example of how SCOM 2012 SLA dashboards can be used together with the Citrix SCOM Management Pack for XenApp and XenDesktop which collects all the information needed to create useful and personalized service level objectives for your environment. This sample management pack includes the following pre-set definitions for service level objectives:

- Desktop OS Delivery Group SLOs:
 - Availability > 99.000 %
 - Max User Logon Duration < 50 seconds
 - Max Desktop OS Random Delivery Group Usage (%) < 90 %
- Server OS Delivery Group SLOs:
 - Availability > 99.000 %
 - Max User Logon Duration < 30 seconds
 - Min Load Available (%) > 10 %
- Site SLOs:
 - Availability > 99.000 %
 - Max Number of Concurrent Users < 300
 - Max Number of Active Sessions < 500
 - Max Logon Duration < 40 seconds

In real world scenarios, you would create different service level tracking rules for each Site and delivery group in your organization. You may also want to include other parameters for setting the service level objectives.

Note: The management pack also provides two service level views which report on service level objectives defined in service level tracking rules. For a complete list available monitors and performance collection rules that can be used to set service level objectives, see *Citrix SCOM Management Pack for XenApp and XenDesktop Reference Guide*, available from Tuning thresholds for monitors and rules.

Configure dashboards with default SLAs

Once the management pack is imported, locate the views in the Monitoring view in the SCOM Operations console as seen in the following figure.

a 🚰 Citrix Library
🗲 Citrix Management Topology
XenApp/XenDesktop Delivery Controller Computers
XenApp/XenDesktop Machine Monitoring Proxy Computers
A Citrix XenApp and XenDesktop
XenApp/XenDesktop Alerts
🔄 XenApp/XenDesktop Events
Main XenApp/XenDesktop Health State
< XenApp/XenDesktop Topology
Controllers
4 🚰 Dashboards
Delivery Group SLA Dashboard
Site SLA Dashboard
Delivery Groups
Machines
E Sessions
D Galacian Sites
User Connections

The *Delivery Group SLA Dashboard* and *Site SLA Dashboard* views are not configured by default, so you must select one or more service level tracking rules for each of the views.

Delivery Group SLA Dashboard

To configure the Delivery Group SLA Dashboard view, do the following:

- 1. Launch the SCOM Operations console.
- 2. In the Monitoring view, in the left pane, expand Citrix XenApp and XenDesktop > Dashboards, and then click Delivery Group SLA Dashboard.
- 3. In the upper right corner of the dashboard view, click the settings icon and then select **Configure**.

Delivery Group SLA Dashboard		🔅 > Tasks
Service Levels	Service Level Objectives	Crofigure
	State Name Target Class Instances	

4. In the Update Configuration wizard window, click **Next**.

	Update Configuration	x
Senter a frier	ndly name and description	
General Properties Scope Completion	Name: Description:	
	< Previous Next > Save Cance	

5. In the Scope page, click Add.

	Update Configuration			x
Specify the	Scope			
General Properties Scope	Select the SLA(s) to display:	👍 Add	× Remove	
Completion	Service Level Management Pack Target			
	< Previous Next >	Finish	Cancel]

6. In the Add SLA dialog box, in the Service Level column, select **Desktop OS Group Health** and click **Add**.
| | × |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | |
| Management Pack | |
| Citrix Management Pack for XenApp and Xen | Desktop SLA Dashb |
| Citrix Management Pack for XenApp and Xen | Desktop SLA Dashb |
| Microsoft System Center Application Monitor | ring 360 SLA |
| Citrix Management Pack for XenApp and Xer | Desktop SLA Dashb |
| Agd <u>R</u> emove | |
| Management Pack | |
| Citrix Management Pack for XenApp and Xer | Desktop SLA Dashb |
| Citrix Management Pack for XenApp and Xer | Desktop SLA Dashb |
| m | |
| | Management Pack
Citrix Management Pack for XenApp and Xer
Citrix Management Pack for XenApp and Xer
Microsoft System Center Application Monito
Citrix Management Pack for XenApp and Xer
Management Pack
Citrix Management Pack for XenApp and Xer
Citrix Management Pack for XenApp and Xer |

- 7. Repeat step 6 for Server OS Delivery Group Health.
- 8. Click **OK** to close the dialog box.
- 9. In the Scope page, adjust the time interval for the SLA.

	Update Con	figuration 🛛 🗶
Specify th	ne Scope	
General Properties	Select the SLA(s) to display:	
Scope	.	Add X Remove
Completion	Service Level	Management Pack
	Desktop OS Delivery Group Health	Citrix Management Pack for XenApp and XenDesktop SLA Dasi
	< [ш
	Last: 1 Days V	
		<pre></pre>

10. Click **Finish** to close the wizard.

Once the view is refreshed, it shows the delivery group service level objective report for the time period selected, as shown in the figure that follows.

Delivery Group S	SLA Dashboard				
Service Le	evels	Servic	e Level Objectives		
▲ Name: D	Desktop OS Delivery Group Health (2)	State	Name	Target Class	Instances
🕢 Sa	alesDG	Ø	Availability	XenDesktop Random Assignment Delivery Group (Desktop OS)	1
🕢 Ex	xecutiveDesktop		Average Logon Duration	XenDesktop Random Assignment Delivery Group (Desktop OS)	1
 ✓ Name: S Ø Ø A Ø P 	ierver OS Delivery Group Health (3) eliveryDG ccountingDG urchasingDG	Ø	Delivery Group Usage 🦓	XenDesktop Random Assignment Delivery Group (Desktop OS)	1

ExecutiveDesktop b64b535a-f277-415c-bd0e-aa7739f58404



Site SLA Dashboard

To configure the Site SLA Dashboard view, do the following:

- 1. Launch the SCOM Operations console.
- 2. In the Monitoring view, in the left pane, expand Citrix XenApp and XenDesktop > Dashboards, and then click Site SLA Dashboard.
- 3. In the upper right corner of the dashboard view, click the settings icon and then select **Configure**.



p.290

- 4. In the Update Configuration wizard window, click **Next**.
- 5. In the Scope page, click Add.
- 6. In the Add SLA dialog box, in the Service Level column, select Site Health and click Add.
- 7. Click **OK** to close the dialog box.
- 8. In the Scope page, adjust the time interval for the SLA.
- 9. Click Finish to close the wizard



Custom SLAs

Citrix Management Pack for XenApp and XenDesktop SLA Dashboards also includes some general service level target rules that may be used as an example. To make the SLA dashboards useful in practice, you must create your own SLAs that are tailored to your needs.

Following the steps below, a new SLA for a Site named "Boston" will be created, and it will check whether we are crossing maximum allowed number of concurrent users, since we only have 1,000 concurrent licenses available.

Perform the following:

- 1. Launch the SCOM Operations console.
- 2. In the Authoring view, expand Authoring > Management Pack Objects.
- 3. Right-click Service Level Tracking and then select Create.
- 4. In the Service Level Tracking wizard, type a display name in the **Name** text box. In our example, type *Boston Site SLA*.

2	Service Level Tracking
General	
General Objects to Track Service Level Objectives Summary	This wizard sets the parameters that track service levels for specified objects. You can run reports against this tracking data.
	< Previous Next > Finish Cancel

5. Click Next.

6. In the Objects to Track page, click Select.

7. In the Select a Target Class dialog box, from the Search result filter drop-down list, select All.

8. In the Target column, select XAXD Site and then click OK to close the dialog box.

9. In the Objects to Track page, from the **Select destination management pack** drown-down list, select a custom management pack where this SLA will be stored. If no such management pack exists, create a new one.

3	Service Level Tracking
Objects to Track	
General Objects to Track Service Level Objectives Summary	Specify the class of objects for which you want to track service levels. If necessary, specify a group or object to reduce the scope of the tracking request. Targeted class Select a class of object to target XAXD Ste Scope (optional) Specify objects within the class: All objects of the targeted class Agroup or object that contains objects of the targeted class Select Management pack Select destination management pack: Boston SLA MP New
	Previous Next > Finish Cancel

10. Click Next.

11. In the Service Level Objectives page, click Add and select Collection rule SLO.

12. In the Service Level Objective (Collection Rule) dialog box, type a display name in the **Service level objective name** text box.

In our example, type Maximum Concurrent Users.

13. Under Targeted class, click **Select**. In the dialog box, in the Target column, select **XAXD Site Data Collector** and then click **OK** to close the dialog box.

14. Under Performance collection rule, click **Select**. In the dialog box, in the Name column, click **Number of Concurrent Users (Performance DB DW)** and then click **OK** to close the dialog box.

15. Under Aggregation method, click Max.

In our example, we do not want more users at any time.

16. From the Service level objective goal drop-down list, select Less Than and then type 1000 in the text box.

Maximum Concurrent Users		
Targeted class		
XAXD Site Data Collector		Select
Performance collection rule	к.	
Number of Concurrent Users	(Performance DB DW)	Select
Aggregation method:		
O Min		
Average		
Max		
Service level objective goal	l:	
Less Than	✓ 1000	

17. Click OK to close the Service Level Objective (Collection Rule) dialog box.

18. In the Service Level Tracking wizard window, click ${\bf Next}.$

19. In the Summary page, click Finish.

Once the new SLA is created, you can use it in the SLA dashboards as explained in Configure dashboards with default SLAs.

You can use the procedure in this section to create personalized SLAs for sites, delivery groups, or any other object that the Citrix SCOM Management Pack for XenApp and XenDesktop discovers. For a complete list of performance rules and availability monitors that can be used to configure service level objectives, see *Citrix SCOM Management Pack for XenApp and XenDesktop Reference Guide*, available from Tuning thresholds for monitors and rules.

Key monitoring scenarios

Before any desktop or application can be brokered by XenApp and XenDesktop, Virtual Delivery Agent (VDA) installed on the desktop or server machine has to register with one of the Delivery Controllers in a XenApp and XenDesktop Site. This is done each time a machine is started. If the machine is not registered correctly, it cannot be used. Thus, these situations may have a big impact on the number of available machines in a delivery group.

There are many causes why a registration may fail, including no VDA being installed on a desktop or server machine, DNS problems, firewall configuration, time synchronization, and so on.

Citrix SCOM Management Pack for XenApp and XenDesktop monitors via the *Failed Registrations in Delivery Group* monitor if a certain machine in a delivery group could not register itself with the XenDesktop broker. If a failed registration is detected, the corresponding delivery group health status changes to *Warning* and alert is generated and displayed in the *Alerts* view and in the *Failed Registrations* view in *Machines* folder. Both views also contain alerts for each failed registration

of a machine, with details on a machine name, a delivery group name, and a Site name. Additional details may also be found in the *Event* view, where all Citrix-related Windows events are logged.

Failed registrations are monitored only for the powered-managed virtual machines and not for managed physical machines.

Machine and session monitoring functionality enables an insight into performance of server OS machines, server OS sessions, and desktop OS sessions. You have the possibility to receive alerts when a specific machine or session metric crosses a threshold, and you can generate reports.

Note: Alerts based on performance thresholds are generated only when the product's Machine Agent is installed and configured.

The following reports are available:

- Server OS Machine Performance: This report shows server performance for selected server OS machines. Displayed metrics:
 - CPU utilization
 - Physical and virtual memory utilization
 - Citrix Load Index
 - Number of sessions
 - Virtual memory page fault rate
 - Disk metrics (read, write, and I/O operation rates, latency)
 - Network traffic
 - Average session latency
 - Average session ICA round-trip time (RTT)

This report is available only when Machine Agent is installed and configured.

- User Desktop/Application Activity. This report shows application/desktop usage for selected user. With session monitoring you can also see session performance data for the duration of connection. Displayed metrics:
 - CPU utilization
 - Physical and virtual memory utilization
 - Virtual memory page fault rate
 - Session network traffic
 - Average session latency
 - Average session ICA round-trip time (RTT)
 - For desktop OS sessions, the report displays the following additional metrics:
 - Disk metrics (read, write, and I/O operation rates, latency)
 - Machine network traffic

Performance metrics of this report are available only when Machine Agent is installed and configured.

When Citrix SCOM Management Pack Agent for XenApp and XenDesktop is installed on one or more computers, referred to as proxy nodes, machine and session performance data can be collected. Data is collected remotely by using Windows Remote Management (WinRM). Machine Agent first communicates with a XenApp and XenDesktop Delivery Controller to get a list of the registered machines. It then utilizes WinRM to collect performance data from the machines.



Proxies use WinRM with Kerberos authentication to communicate with machines and Delivery Controllers. All WinRM communication is done in the context of an account that is configured for the *Citrix MPXAXD Machine Agent* service on the proxy node. For this communication to work all machines (server OS and desktop OS) must have WinRM 2.0 installed and enabled (default TCP port: 5985, enabled Kerberos authentication).

In advanced scenarios, you can use different accounts for WinRM communication for different machines. In the XenDesktop MP Configuration tool, you can specify machine hostname mask and account pairs. For any machine matching specific machine hostname mask, the corresponding user account is used for WinRM communication. For machines without matching hostname mask, the *Citrix MPXAXD Machine Agent* service user account is used.

Each instance of Citrix SCOM Management Pack Agent for XenApp and XenDesktop (each proxy node) can be configured to monitor machines for one or more Delivery Controller instances. However, every Delivery Controller can be monitored by no more than one Machine Agent instance.

Important: In a multi-Site environment, if a Machine Agent instance monitors multiple Delivery Controllers, these Controllers must belong to the same XenApp and XenDesktop Site.

Possible Machine Agent configurations (deployments) therefore are:

- One Machine Agent for all Delivery Controller instances (within a Site)
- One Machine Agent per Delivery Controller

https://docs.citrix.com

• One Machine Agent per subset of Delivery Controller instances (within a Site)

The deployments are depicted in the following figures:







Best practice is to configure Machine Agents (on proxy nodes) to monitor performance of no more than 2,000 concurrently running server OS or desktop OS machines. In environments where the number of machines registered with each Delivery Controller is smaller, you can configure one proxy node to handle multiple Deliver Controller instances. As a general rule configuration with one proxy node per Delivery Controller is appropriate for any type of XenApp and XenDesktop environment.

For examples of proper Machine Agent deployment for Sites with different number of concurrently running machines, see the following figures.

https://docs.citrix.com

Proxy nodes sizing - for Site with 1,000 machines and two Controllers



Proxy nodes sizing - for Site with 3,500 machines and two Controllers



Proxy nodes sizing - for Site with 5,000 machines and three Controllers



Database sizing

Size of the Operations Manager database depends on the size of the XenApp and XenDesktop environment. Citrix SCOM Management Pack for XenApp and XenDesktop installs additional datasets to Operations Manager data warehouse database. It provides better, more comprehensive as well as more optimized data collection and data processing for better XenApp and XenDesktop architecture and end-user analysis, planning, and troubleshooting.

The maximum database space consumption for a few sample environments with default database grooming is presented in the table that follows.

Users (approx	imate number)	500	2,000	10,000
Sites		1	1	1
Delivery Controllers		2	3	4
Desktop OS d	lelivery groups	2	4	6
Server OS de	elivery groups	3	4	6
Server OS	machines	10	50	500
Concurrent app	lication sessions	400	1,500	7,000
Concurrent de	sktop sessions	100	500	3,000
Sizes (in MB): DB / DW / Total	Working hours: 8x5	57 / 443 / 500	98 / 1405 / 1503	295 / 6956 / 7215
	Working hours: 24x7	57 / 1031 / 1088	98 / 3756 / 3854	295 / 18705 / 19000

Important: In large environments with numerous concurrent sessions, increasing the retention interval may have significant impact on the SCOM data warehouse database.

Citrix SCOM Management Pack for XenApp and XenDesktop consists of two custom datasets: Machine dataset and Session dataset. Each dataset provides tables for performance data and tables for stale or discovery data. Grooming for tables is specified in number of days and the default values are provided in table that follows.

Machine dataset grooming

Machine dataset		
Performance Raw	10	
Performance Hourly	400	
Performance Daily	400	
Machines	9,999	

Session dataset		
Performance Raw	10	
Performance Hourly	400	
Performance Daily	400	
Sessions	400	
Connections	400	
Logons	400	
Application Instances	400	
Applications	9,999	

To change grooming settings, do the following:

- 1. Open SQL Server Management Studio and connect to the data warehouse database.
- 2. In the Object Explorer pane, expand Databases, expand OperationsManagerDW database, and then expand Tables.
- 3. Right-click dbo.Dataset and then select Open Table.
- 4. Make a note of DatasetID GUID values for rows with *DatasetDefaultName* equal to each of the following values:
 - MPXAXD Machine DataSet
 - MPXAXD Session DataSet
- 5. In the Object Explorer pane, right-click **dbo.StandardDatasetAggregation** and then select **Open Table**.
- 6. In the DatasetID column, locate the dataset GUID noted in step 4.
- 7. Locate the MaxDataAgeDays column and edit the value to set the grooming interval.
- 8. Repeat steps 6 and 7 for the other GUID value.

Manually importing included management packs into SCOM

For general instructions about how to import management packs into SCOM, see the How to Import an Operations Manager Management Pack webpage on the Microsoft TechNet website.

To import the sealed Citrix SCOM Management Pack for XenApp and XenDesktop manually, do the following:

1. Log on to the management server.

- 2. Launch the SCOM Operations console.
- 3. In the Administration view, click $\ensuremath{\textbf{Management Packs}}$.
- 4. In the Tasks pane, expand Actions, and then click Import Management Packs.
- 5. In the Import Management Packs dialog box, click Add, and then select Add from disk.
- 6. In the Online Catalog Connection dialog box, click ${\bf No}.$
- 7. In the Select Management Packs to import dialog box, browse to the folder that contains the following management pack files, select those files, and then click **Open**.
 - Comtrade.Citrix.Library.mp
 - Comtrade.Citrix.XenApp.And.XenDesktop.EndUser.mpb
 - Comtrade.Citrix.XenApp.And.XenDesktop.EndUser.Reports.mpb
 - Comtrade.Citrix.XenApp.And.XenDesktop.mpb
 - Comtrade.Citrix.XenApp.And.XenDesktop.Reports.mpb
- 8. Click Install.

Customizing sealed management packs

Customization of the sealed management packs that XenApp and XenDesktop Management Pack provides is similar to the default SCOM management pack customization. For details, see the Microsoft TechNet website:

- For general information about customization of management packs, see the Customizing Management Packs webpage.
- For instructions on how to customize a management pack, see the Create a New Management Pack for Customizations webpage.

Citrix SCOM Management Pack 3.9 for XenApp and XenDesktop

Nov 27, 2017

Use Citrix SCOM Management Pack for XenApp and XenDesktop to monitor and manage XenApp and XenDesktop infrastructure with the Microsoft System Center Operations Manager (SCOM).

With Citrix SCOM Management Pack for XenApp and XenDesktop, you can:

- Improve the XenApp and XenDesktop infrastructure availability and health The virtual application and desktop infrastructure availability is checked with rigorous connectivity probing and active service checks. It is important that users are able to connect to their virtual desktops and applications. This is a process that involves many Delivery Controller components (such as Broker Service or Machine Creation Services).
- Gain insight into the XenApp and XenDesktop performance and usage information
 It is critical to know how users are using the virtual infrastructure delivering desktops and applications in order to be able
 to tune it accordingly. With Citrix SCOM Management Pack for XenApp and XenDesktop you will get more insight into
 which users are logging in to the virtual desktops and applications (identify slow logons and logon bursts), how many
 users are connecting to the Sites, if the infrastructure is able to handle all user requests accordingly, for example by
 maintaining the size of the idle pool defined by the desktop group power management policy, by ensuring enough
 resources for delivery of applications and desktops defined by the load management policy, and so on. Another aspect is
 the end-user resource usage (what is the resource usage for each user connection/session) and virtual infrastructure
 resource usage (what is the resource usage of my server OS machines). Detailed machine and session performance
 information helps in managing your infrastructure and enables better planning and decision making.

Citrix SCOM Management Pack for XenApp and XenDesktop fully integrates the topology, health, and performance data into SCOM.

It provides centralized monitoring in SCOM and covers the following key scenarios:

- Are Delivery Controller instances up and running?
- Is the infrastructure (for example, brokers, machine creation services, and so on) on the Site level operational?
- Do users have issues connecting to the virtual desktops and applications (for example, delivery group limit/capacity is reached, desktop OS or server OS machines cannot register, other infrastructure issues are present)?
- What is the availability of published applications?
- Are there any events that indicate a problem with the infrastructure?
- Have any performance thresholds been violated?
- What is my server OS machine performance?
- What is the user session resource usage on server OS or desktop OS machines?
- Are there any user logons with lengthy duration? Which logon phases are causing the delay?

Important: To collect machine and session performance data, the product's Machine Agent must be installed and configured in addition to its main agent (referred to simply as Agent). For a general overview of the machine and session monitoring concepts, see Machine and session performance monitoring.

Architecture

The following diagram shows how Citrix SCOM Management Pack for XenApp and XenDesktop connects with the SCOM management platform and the XenApp and XenDesktop infrastructure.



What's new

Nov 27, 2017

Citrix SCOM Management Pack version 3.9 for XenApp and XenDesktop introduces the following features:

- Documentation in HTML format. The documentation for the Citrix SCOM Management Pack version 3.9 for XenApp and XenDesktop is available in HTML format. To access the documentation of earlier versions, see Citrix SCOM Management Pack for XenApp and XenDesktop.
- Support for Citrix XenApp and XenDesktop 7.12. Citrix SCOM Management Pack for XenApp and XenDesktop supports XenApp and XenDesktop Version 7.12.
- Citrix MP Analytics Service. Citrix SCOM Management Pack for XenApp and XenDesktop uses Citrix MP Analytics Service to track and report product usage. The analytics service captures anonymous information regarding the overall usage of all Citrix SCOM Management Packs on the SCOM management server. For instructions on changing this setting after installation, see Reconfiguring Citrix SCOM MP Analytics.
- New reports on Delivery Group and Site availability. Citrix SCOM Management Pack for XenApp and XenDesktop introduces new reports for monitoring availability of individual Delivery Groups and Sites. You can access the reports from Citrix Management Pack for XenApp and XenDesktop Reports. The reports are as follows:
 - Delivery Group Availability : This report shows the availability of the selected Delivery Group in the XenApp and XenDesktop Site during the selected report duration. A Delivery group is available if it contains at least one machine that can provide a published resource (application or desktop).
 - Site Infrastructure Availability: This report shows the availability of the XenApp and XenDesktop Site infrastructure during the selected report duration. The Site is available when the important Citrix Services are operational at Site level and all the configured Hypervisor connections are available.

For report details and parameter descriptions, see *Citrix SCOM Management Pack for XenApp and XenDesktop Reference Guide*, available from Optimize.

• New monitor on number of available machines in the Server OS Delivery Group. Citrix SCOM Management Pack for XenApp and XenDesktop introduces a new monitor, **% of Available Machines**. It shows the number of available servers in Server OS Delivery Group. Available servers are machines that are running, registered with the Delivery Controller, and have a Load Evaluator Index less than 100%.

For monitor details and parameter descriptions, see *Citrix SCOM Management Pack for XenApp and XenDesktop Reference Guide*, available from Optimize.

• Improved CPU utilization. Citrix SCOM Management Pack Agent for XenApp and XenDesktop is improved to reduce CPU utilization considerably. For details, see Performance Overview.

Known issues

The following is a list of known issues in this product version:

• Issue ID: SCOM-1176

Symptom: The Citrix SCOM Management Pack Agent for XenApp and XenDesktop might not get upgraded during an upgrade invoked either locally on the XenApp and XenDesktop server or remotely from the SCOM Operations console. The upgrade procedure initially removes the Citrix SCOM Management Pack Agent for XenApp and XenDesktop Service. However, the previously installed agent package is not replaced and the earlier program version remains registered with the operating system.

Action: Repeat the upgrade procedure.

• Issue ID: SCOM-513

Symptom: It may take up to 24 hours for the Citrix SCOM Management Pack Agent for XenApp and XenDesktop instances to detect renewal of an expired Platinum license in the XenApp and XenDesktop Site. Action: After such license renewal, to restore licensing coverage of XenApp and XenDesktop on Delivery Controllers (agent-managed computers) immediately, do the following:

1. On a Delivery Controller, stop the Citrix MPXAXD Agent service by using an operating system tool.

2. From the *db* subfolder of the Agent's data files folder(*%ProgramData%\Citrix\XenDesktop MP Agent* by default), remove the *agent-license-info.json* file.

3. Start the Citrix MPXAXD Agent service again.

4. Repeat steps 1 to 3 on each additional Delivery Controller.

• Issue ID: SCOM-502

Symptom: In the SCOM Operations console, when you attempt to run the *Start Citrix Director* task on a XenApp and XenDesktop alert that is not a session performance or logon alert, the invocation fails and SCOM reports the following error:

Citrix Director URL not configured. Please configure the Citrix Director URL by using XenDesktop MP Configuration tool. **Action**: None. The error message is incorrect, so you can safely ignore it. You can run the *Start Citrix Director* task only on session performance alerts and logon alerts.

• Issue ID: SCOM-430

Symptom: After upgrading the product from version 3.6 or 3.5, the *%ProgramData%\Comtrade* folder is left on the local system. This issue occurs on the SCOM management server, on the Delivery Controllers (agent-managed), as well as on the proxy nodes.

Action: Manually remove the residuary folder by using an operating system tool.

• Issue ID: SCOM-143

Symptom: In the SCOM Operations console, the *ApplicationExcludeRegExtPattern* and *ApplicationIncludeRegExtPattern* parameters of application discoveries (*Application Discovery (n of 5)*) are ignored. You therefore cannot exclude applications from the discovery process or include them into it. **Action**: None. There is no workaround available.

• Issue ID: SCOM-86 (6297)

Symptom: After Citrix SCOM Management Pack for XenApp and XenDesktop (both its server-side and agent-side parts) is installed and configured on the computer for the first time (without being upgraded from an earlier product version), and a valid XenApp and XenDesktop Platinum license cannot be retrieved, no license-related alerts are sent. Such alerts therefore cannot be monitored in the Monitoring view of the SCOM operations console. **Action**: None. There is no workaround available.

• Issue ID: SCOM-78 (6204)

Symptom: The Check Requirements and Configuration for Citrix MPXAXD Agent SCOM task and the Support /user </br/>

PowerShell interface. Inspection of the password of the effective XenApp and XenDesktop monitoring account reveals non-ASCII characters in it.

Action: Change the password of the problematic monitoring account so that it only contains ASCII characters.

• Issue ID: SCOM-77 (6194)

Symptom: In the output of the *Check Requirements and Configuration for Citrix MPXAXD Agent* task in the SCOM Operations console, site names that contain non-ASCII characters are not displayed correctly. For example, Spanish characters $c\tilde{n}$ appear as $\frac{1}{4}r$ in the name of a XenApp and XenDesktop Site. No other symptoms exist. **Action**: None. Apart from the visual glitch, the functionality of the product is not affected in any way. You can therefore safely ignore the issue.

• Issue ID: SCOM-210 (5380)

Symptom: While a workflow is running, error messages (31551 and 31552) are logged into the Operations Manager event log on the management server. They contain the following description: *Failed to store data in the Data Warehouse...*

This error occurs when the Default action account in SCOM does not have write permission on the data warehouse database and none of the XenDesktop controllers is discovered as *Site Data Collector*. This may happen when:

- The Site Data Collector object switches from one XenDesktop Delivery Controller to another.
- Collector object switches from one XenDesktop Delivery Controller to another.
- None of XenDesktop Delivery Controllers is operational.

This issue occurs only with some of the workflows, for example, *Comtrade.Citrix. XenDesktop.EndUser.Reports.PublishConnectionsLogonsDW.Rule* or *Comtrade. Citrix.XenDesktop.EndUser.Reports.PublishApplicationInstanceDW.Rule.* **Action:** Ensure that at least one Delivery Controller is active at all times.

• Issue ID: SCOM-211 (5163)

Symptom: The *Delivery Group - Logon Details (Troubleshooting)* report does not function if the *Use business hours* option is selected.

Action: Clear the Use business hours option.

• Issue ID: SCOM-212 (5162)

Symptom: When launching Citrix Director by using the *Start Citrix Director* task in the Operations Manager Console for user logon or session alerts, Citrix Director is not opened for the users context if the user is *anonymous*. Anonymous users were introduced in XenApp and XenDesktop 7.6. **Action**: None. There is no workaround available.

• Issue ID: SCOM-213 (5161)

Symptom: The XenApp and XenDesktop 7.6 configuration with space characters in Site names is not supported. This is due to a recognized issue in the Citrix Monitoring Service with this kind of configuration. For more information, see the following webpage on the Citrix Support Knowledge Center website: http://support.citrix.com/article/CTX200325. Action: None. There is no workaround available.

Fixed issues

The following issue has been fixed in product version 3.9:

• Restarting the Citrix SCOM Management Pack Agent for XenApp and XenDesktop while Citrix License Server is unavailable causes the agent to appear licensed though it is not functioning fully. The agent presents the data collected when the License Server was last running. The complete functionality of the agent is restored once the License Server is available.

[SCOM-942]

Licensing

Licensing of Citrix SCOM Management Pack for XenApp and XenDesktop depends on licensing of the monitored product, XenApp and XenDesktop. For Citrix SCOM Management Pack for XenApp and XenDesktop to operate properly and remain fully functional, its licensing must be covered. During installataion or upgrade, no further actions are necessary on either the SCOM management server or the computers that host the product's Agent and Machine Agent instances.

Covered licensing means that the following conditions are fulfilled:

- The XenApp and XenDesktop Site that you plan to monitor uses a *Platinum* license within either maintenance program: Subscription Advantage, Software Maintenance.
- Subscription Advantage Date (of the Platinum license) falls after the *Subscription Advantage Eligibility* date that is embedded into binary files of the current version of Citrix SCOM Management Pack for XenApp and XenDesktop. For instructions on how to check this, see Install and Configure. In Citrix product documentation, Subscription Advantage Eligibility date may also be referred to as *product burn-in date*.

Important: The Subscription Advantage Eligibility date of this product release is 2016.1117.

Example: If the Subscription Advantage Date of your Platinum license for XenApp and XenDesktop is *2016.0531* (meaning 31 May 2016), and the Subscription Advantage Eligibility date of Citrix SCOM Management Pack for XenApp and XenDesktop is *2016.0518* (meaning 18 May 2016), the product remains fully functional after 31 May 2016, provided your XenApp and XenDesktop license remains valid (unexpired). If you upgrade to a later version of Citrix SCOM Management Pack for XenApp and XenDesktop whose Subscription Advantage Eligibility date is, for example, *2016.0710* (meaning 10 July 2016), Citrix SCOM Management Pack for XenApp and XenDesktop stops gathering and reporting new data (topology updates, incoming alerts, newly discovered objects).

Upgrading

Note: Product versions earlier than 3.6 were released under the name Comtrade Management Pack for Citrix XenApp and XenDesktop.

Upgrade is available for versions 3.5 and later. During the upgrade process, the included management packs of an earlier product version are automatically upgraded; their prior removal is not required. Your management pack customization is preserved.

Caution:

- Before upgrading from an earlier product version, ensure that licensing of this version of Citrix SCOM Management Pack for XenApp and XenDesktop is covered. For instructions on how to verify licensing coverage, see Preparing for Installation in Install and Configure.
- Upgrading to an unlicensed version of Citrix SCOM Management Pack for XenApp and XenDesktop results in ceased

process of gathering and reporting new data. The data already collected is preserved and remains available to SCOM. If this occurs, downgrading to the earlier (licensed) product version requires a complete uninstallation of the new product version (including removal of the included management packs from SCOM), followed by reinstallation of the earlier product version. The management pack removal from SCOM deletes all the operational data (alerts, events, performance data) while the reinstallation ensures continued availability of data in the SCOM data warehouse (reports).

For upgrade instructions, see Upgrade in Install and Configure.

System requirements

Nov 27, 2017

Before installing Citrix SCOM Management Pack for XenApp and XenDesktop, make sure that your environment meets the requirements listed in this topic.

Hardware requirements

Computers that will host Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop must meet the following minimum hardware requirements:

- One physical CPU with two cores (for physical systems), two virtual CPUs (for virtual systems); CPU clock speed of 2.3 GHz
- 4 GB of RAM (excluding the paging file size)
- 1 GB of free local storage space

For more information on the Machine Agent, see Install and Configure.

Software requirements

Citrix SCOM Management Pack for XenApp and XenDesktop requires a supported version of the following products that it integrates with:

- Citrix XenApp and XenDesktop
- Microsoft System Center Operations Manager

Additionally, Citrix SCOM Management Pack for XenApp and XenDesktop requires a supported version of Citrix Licensing in the XenApp and XenDesktop Site where it is deployed.

Citrix SCOM Management Pack for XenApp and XenDesktop is compatible with the following Citrix XenApp and XenDesktop versions:

Product version (Delivery Controller)	Supported
Citrix XenApp and XenDesktop 7.12	1
Citrix XenApp and XenDesktop 7.11	1
Citrix XenApp and XenDesktop 7.9	1
Citrix XenApp and XenDesktop 7.8	1
Citrix XenApp and XenDesktop 7.7	1
Citrix XenApp and XenDesktop 7.6 LTSR	1

Citrix XenApp and XenDesktop 7.6 ¹	<i>v</i>
Citrix XenApp and XenDesktop 7.5	v
Citrix XenApp and XenDesktop 7.1	•
Citrix XenApp and XenDesktop 7.0	•

¹ This entry covers the following configurations: 7.6, 7.6 + FP1 (Feature Pack 1), 7.6 + FP2, 7.6 + FP3.

Product version (Citrix Director)	Supported
versions included with the supported Delivery Controller versions	J

Citrix SCOM Management Pack for XenApp and XenDesktop can be deployed in environments where any of the following versions of Citrix Licensing is used:

Product version	Supported
Citrix Licensing 11.14 or later	•

Citrix SCOM Management Pack for XenApp and XenDesktop is compatible with the following SCOM versions:

Microsoft System Center Operations Manager version	Supported
Microsoft System Center Operations Manager 2016	1
Microsoft System Center Operations Manager 2012 R2	1
Microsoft System Center Operations Manager 2012 ¹	1

¹ This entry covers the following configurations: base release, base release + SP1 (Service Pack 1).

Agent operating systems

Citrix SCOM Management Pack Agent for XenApp and XenDesktop is compatible with all operating systems that are

https://docs.citrix.com

supported by Delivery Controller of Citrix XenApp and XenDesktop.

Machine Agent operating systems

Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop is compatible with the following operating systems:

Operating system	Supported
Microsoft Windows Server 2016	1
Microsoft Windows Server 2012 R2	1
Microsoft Windows Server 2012	•

The product can be deployed and operates correctly in environments with regional setting configured to use any of the following languages:

Language	Language code	Supported
English	en	1
Spanish	es	1

Performance overview

Nov 27, 2017

Generally speaking, Citrix SCOM Management Pack for XenApp and XenDesktop consists of three parts:

- The part installed on the SCOM management server (mandatory)
- Citrix SCOM Management Pack Agent for XenApp and XenDesktop (mandatory)
- Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop (optional)

The SCOM management server-side part

This part is a collection of management packs include discoveries, monitors, rules, tasks, and reports. From the compute and memory perspective, this part does not significantly add to the basic resource requirements of SCOM management server itself. It is not resource-intensive in terms of storage requirements of the SCOM reporting data warehouse database. For these reasons, there are no special considerations related to the SCOM management-server part when monitoring larger Citrix XenApp and XenDesktop environments.

Citrix SCOM Management Pack Agent for XenApp and XenDesktop

Performance and resource consumption of Citrix SCOM Management Pack Agent for XenApp and XenDesktop primarily depend on the size of your XenApp and XenDesktop environment, specifically on the number of resources within each Site. Furthermore, they are influenced by the load on the Delivery Controller instances. In contrast, the number of Sites in your XenApp and XenDesktop environment has no influence on the performance and resource consumption.

For scaling up Citrix SCOM Management Pack Agent for XenApp and XenDesktop, hardware of the hosting Delivery Controller must be reconfigured. The Agent cannot be scaled out.

Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop

The product's Machine Agent can be scaled up without the need of altering XenApp and XenDesktop deployment, as no XenApp and XenDesktop component is installed on its proxy node. Machine Agent can also be scaled out; you can achieve this by installing multiple instances on multiple proxy nodes and configuring it such that each Machine Agent instance handles only a subset of all Delivery Controller instances.

Configuration specifications

All figures in this document are valid for environments that:

- Are monitored with the specified product version of Citrix SCOM Management Pack for XenApp and XenDesktop
- Match the documented configuration specifications for XenApp and XenDesktop and SCOM
- Use the default configuration of management packs in terms of which rules and monitors are enabled (this applies to management packs included in Citrix SCOM Management Pack for XenApp and XenDesktop and management packs bundled with SCOM)
- Use the default configuration of SCOM management server and SCOM agents, without fine-tuning or any special adjustments

Factors such as different hardware specifications and condition of your environment may cause divergence of your observed values from the documented values.

https://docs.citrix.com

Validated Citrix SCOM Management Pack for XenApp and XenDesktop version

Validation of Citrix SCOM Management Pack for XenApp and XenDesktop was performed with the product version listed in the following table.

Product	Version
Citrix SCOM Management Pack for XenApp and XenDesktop	3.9

Citrix XenApp and XenDesktop configuration specification

With this configuration, the Site database server is deployed outside the Delivery Controller computer.

Computer: Delivery Controller	
Specification item	Value
Compute	four virtual CPUs; CPU clock speed of 2.67 GHz
Memory	24 GB of RAM
Software version	Citrix XenApp and XenDesktop 7.9

Computer: Site database server	
Specification item	Value
Compute	four virtual CPUs; CPU clock speed of 2.67 GHz
Memory	16 GB of RAM
Software version	Microsoft SQL Server 2014 R2

Microsoft System Center Operations Manager configuration specification

With this configuration, the SCOM database and data warehouse server is deployed outside the SCOM management server computer.

Computer: SCOM management	server
Specification item	Value
Compute	four virtual CPUs; CPU clock speed of 2.67 GHz
Memory	16 GB of RAM
Software version	Microsoft System Center Operations Manager 2012 R2

Computer: SCOM database and da	ta warehouse server
Specification item	Value
Compute	four virtual CPUs; CPU clock speed of 2.67 GHz
Memory	16 GB of RAM
Software version	Microsoft SQL Server 2014 R2

Monitoring ability

The following table does not list the extreme limits; it lists the maximum values at which the Citrix SCOM Management Pack for XenApp and XenDesktop was successfully validated.

Maximum number of monitored items (per Site)

Item	Value
Delivery groups	60
Server OS machines	600
Server OS machines in a delivery group	200
Desktop OS machines	7,050
Applications	1,000

Average resource consumption

Resource consumption was measured in a XenApp and XenDesktop Site with four Delivery Controller instances. Measurement was made on the Delivery Controller where Citrix SCOM Management Pack Agent for XenApp and XenDesktop did most data processing. Measuring spanned a period of 1.5 days. Windows Performance Monitor was used as the measuring tool.

Important: In XenApp and XenDesktop deployments with multiple Delivery Controller instances, the majority of data processing is performed by a single instance of Citrix SCOM Management Pack Agent for XenApp and XenDesktop (on one Delivery Controller).

Average consumption on a Delivery Controller (for 7,650 VDIs)

Item	Value
<i>MPXAXDAgent</i> CPU usage ¹	3.42%
HealthService CPU usage	0.5%
MPXAXDAgent memory usage	2,728 MB
HealthService memory usage	147 MB

¹ CPU usage is calculated based on the *% Processor Time* counter and the number of processor cores or virtual CPUs.

Number of published applications has negligible effect on the CPU usage of the *MPXAXDAgent* service.

The following figure shows changes in CPU usage of *MPXAXDAgent* and *HealthService* after these services had been started for the first time. Values are taken from the first part of the entire measurement time period, when initial high data inflow loaded compute resource substantially. Measurement was made in validation set 2 (VS2; see figure for memory usage).



The following figure shows typical patterns of changes in CPU usage of *MPXAXDAgent* and *HealthService* through major part of the measurement time period, after the initial high load had already subsided. Measurement was made in validation set 2 (VS2; see figure for memory usage).



As the figure above shows, bursts of high CPU usage of *MPXAXDAgent* occured every five minutes, while spikes of high CPU usage of *HealthService* were twice that rare.

Additional tests (made in different validation sets, not depicted) also confirmed that adding VDI sessions (server OS sessions, desktop OS sessions) has no significant impact on the CPU usage of Citrix SCOM Management Pack Agent for XenApp and XenDesktop. Such additions also do not influence the CPU usage of the SCOM agent (Operations Manager Agent, Microsoft Monitoring Agent).

The following figure shows the memory usage of *MPXAXDAgent* and *HealthService* through time, measured in two different validation sets (VS1, VS2).



As the figure above shows, on the Delivery Controller there should be approximately 3.6 GB of physical memory available for the joint needs of the *MPXAXDAgent* and *HealthService* services.

Install and configure

Nov 27, 2017

This topic contains instructions to install and configure the Citrix SCOM Management Pack for XenApp and XenDesktop. Perform all procedures in the documented order of precedence. Optional procedures are appropriately marked. Also covered are the instructions to uninstall and upgrade the product.

Preparing for the installation

Before installing the Citrix SCOM Management Pack for XenApp and XenDesktop, make sure the following general prerequisites are fulfilled:

- Your environment meets the hardware and software requirements. For hardware, software requirements and/or other requirements, see System Requirements.
- Licensing of Citrix SCOM Management Pack for XenApp and XenDesktop is covered. The licensing is covered when all conditions listed in Licensing are fulfilled.

To check if Subscription Advantage Date of the XenApp and XenDesktop Platinum license falls after the Subscription Advantage Eligibility date of Citrix SCOM Management Pack for XenApp and XenDesktop (one of the licensing conditions), do the following:

- 1. Take note of the Subscription Advantage Eligibility date of the current product release. For information, see Licensing.
- 2. Launch Citrix Studio.
- 3. In the left pane of Citrix Studio, expand Citrix Studio (<SiteName>) > Configuration, and then click Licensing.
- 4. In the Licensing Overview pane, under Licenses, search for the lines that have either value in the Product column: *Citrix XenApp Platinum*
 - Citrix XenDesktop Platinum
- 5. For each matching line from step 4, check if its **Subscription Advantage Date** value is bigger than the date (**Subscription Advantage Eligibility** date) from step 1.
- 6. If at least one value is bigger, the license **Subscription Advantage** period covers the current version of Citrix SCOM Management Pack for XenApp and XenDesktop.
- A computer is chosen on which a SCOM management server resides and where the server side of Citrix SCOM Management Pack for XenApp and XenDesktop will be installed. This computer is referred to as SCOM management server.
- SCOM agent is installed on all the computers that host XenApp and XenDesktop Delivery Controllers, and these computers are configured as agent-managed computers in the SCOM management group.
- The Action Account of SCOM agent has administrative privileges on all XenApp and XenDesktop Delivery Controllers.
- A domain user account is chosen that you will use for remote monitoring of server OS machines and desktop OS machines. For multiple XenApp and XenDesktop Sites, you might need to use different accounts. This depends on the domain configuration.

Tip: Citrix recommends that you create a new, dedicated user account for exclusive use for the above-mentioned purposes.

The user account must have the following properties:

https://docs.citrix.com

- It has administrative privileges in all XenApp and XenDesktop Delivery Controllers and all server OS machines within the Site.
- It has the **Read Only Administrator** role (or a role with higher privileges) assigned in XenApp and XenDesktop with the scope set to All.

The following image shows the creation of an administrator account in Citrix Studio.

studio	Administrator and Scope
	Select an administrator:
	EXAMPLEDOMAIN\MPXAXDAgentAccount Browse
Administrator and Scope Role	Select a Scope:
	Scopes are objects that represent something meaningful in an organization and that an
Summary	administrator is allowed to manage (for example, a set of Delivery Groups used by the Finance
	Score name
	• All
	All objects
	Create scope
	Contract open

The following image shows the editing of an administrator account in Citrix Studio.

	Edit Administrator			
Administrato Name: EX	r Name and Details			
Scope All	Role Read Only Administrator			
Enable adm Clear check	Edit Delete			
Save full permi	isions report			
	OK Cancel			

This user account is referred to as *<MPXAXDAgentAccount>* in the remainder of this document.

- Windows Remote Management 2.0 (WinRM 2.0) is enabled on all server OS machines. To enable WinRM on the local computer, open a Command Prompt window and run the *winrm quickconfig* command.
- WinRM 2.0 is correctly configured. For instructions on how to verify that the WinRM 2.0 configuration is correct, see Verifying WinRM communication.

For Citrix SCOM MP Analytics Service to transmit anonymous usage data, make sure that the SCOM management server has internet access.

For XenApp and XenDesktop machine and session performance monitoring, make sure the following additional prerequisites are fulfilled as well:

• Computers are chosen where Citrix SCOM Management Pack for XenApp and XenDesktop Machine Agent will be installed. These computers are referred to as Citrix SCOM Management Pack for XenApp and XenDesktop proxy nodes (proxy nodes). The proxy nodes must meet minimum hardware requirements and must be running a supported operating system.

Important: For information on how to properly designate the proxy nodes and plan their configuration, see Machine and session performance monitoring.

- SCOM agent is installed on all the proxy nodes.
- The <MPXAXDAgentAccount> user account has administrative privileges in the desktop OS machines and on the proxy nodes.
- Windows Remote Management 2.0 (WinRM 2.0) is enabled on all desktop OS machines.
- Receiving Windows PowerShell remote commands is enabled on all the computers that host XenApp and XenDesktop Delivery Controllers. For more information, see the Enable-PSRemoting (for Windows Server 2012 R2) or Enable-PSRemoting (for Windows Server 2012) webpage on the Microsoft TechNet website.

https://docs.citrix.com

• Firewall is configured as required by WinRM: on desktop OS machine as well as on the Delivery Controllers, incoming traffic is enabled on the TCP port that WinRM is using. By default, WinRM is configured to use port 5985.

Installing the product on the SCOM management server

The server-side part of Citrix SCOM Management Pack for XenApp and XenDesktop must be installed on the SCOM management server.

To install Citrix SCOM Management Pack for XenApp and XenDesktop on the SCOM management server, do the following:

1. Log on to the management server. Use a user account that has local administrative privileges and SCOM administrative privileges.

2. In Windows Explorer, locate the *Citrix_SCOM_Management_Pack_for_XenAppXenDesktop_<Version>.exe* file (where *<Version>* is the current software version), and double-click it to invoke the installation process. Wait for the Setup Wizard to appear.

3. In the Welcome page of the Setup Wizard, click Next.



4. In the View Relevant Product Configuration page, click Next.

5. In the License Agreement page of the Setup Wizard, read the end user license agreement carefully. If you accept the terms of the agreement, click **Next**.

strape	Citrix SCOM Management Pack for XenApp and XenDesktop 3.9.49	x
Lice	ense Agreement lease read the following license agreement carefully.	
CITR	IX LICENSE AGREEMENT	-
Use (s) w (s) o	of this component is subject to the Citrix license or terms of service covering the Citrix product(s) or service ith which you will be using this component. This component is licensed for use only with such Citrix product r service(s).) xt
СТХ	_code EP_T_A124358	
	ccept the terms in the License Agreement	
	< <u>B</u> ack <u>N</u> ext > Cancel	

6. In the Destination Folder page, define the Citrix SCOM Management Pack for XenApp and XenDesktop installation folder. Citrix recommends that you install Citrix SCOM Management Pack for XenApp and XenDesktop to the default folder.

Proceed as follows:

- To install the product to the default folder listed in the Setup Wizard, no special actions are required.
- To install the product to a different folder, follow the substeps:
 - 1. Click Change.
 - 2. In the Browse For Folder dialog box, browse to a desired installation folder, select it, and click OK.

7. In the Configure Post-Install Actions page of the Setup Wizard, decide whether the Setup Wizard should automatically import the included management packs into SCOM and whether it should initially enable Analytics Service.

dinge	Citrix SCOM Management Pack for XenApp and XenDesktop 3.9.49	x
Config Plea	gure Post-Install Actions se select actions to be performed after the successful install.	
✓ <u>A</u> uto	matically import the Management Pack	
🗹 Enat	le the product to send anonymous usage statistics to Citrix	
Citrix S Manage Citrix u option.	COM MP Analytics Service can periodically send anonymous statistics about usage of Citrix SCOM ment Packs to Citrix. ses this data to improve its product and services. Based on your preference, select or clear the	
	< <u>B</u> ack <u>I</u> nstall Cance	4

- Decide about the management pack import:
 - To let the Setup Wizard import the management packs, select the Automatically import the Management Pack option. Citrix recommends this choice.
 - To import the management packs into SCOM manually at a later time, leave the **Automatically import the Management Pack** option unselected. For instructions about how to import or reimport the management packs,

see Manually importing included management packs into SCOM.

- To enable the Analytics Service to start transmitting usage statistics after the product is installed, select the Enable the product to send anonymous usage statistics to Citrix option.
- 8. Click Install. The Setup Wizard displays the Installing the product page and starts copying the installation files.

9. After the installation completes, the installation completion page is displayed. Click Next.

10. In the Executing post-install actions page, attend the import process (if chosen earlier) and the installation of Citrix SCOM MP Analytics.

11. In the post-installation completion page, review the actions log, and click Finish to close the Setup Wizard.

diage Citrix	SCOM Management Pack for XenApp and XenDesktop 3.9.49	x
a O	All post-install actions were successfully executed.	
	Actions log:	
	INFO: Analytics installation completed succesfully	<
		~
CITDIX	< III	>
CIIRİX	Click the Finish button to exit the Setup Wizard.	cel

Configuring the XenApp and XenDesktop monitoring accounts and profile in SCOM

To configure Run As accounts and the associated Run As profile in SCOM, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the Administration view, in the left pane, expand Run As Configuration, and then click Accounts.
- 3. In the Tasks pane, expand Actions, and then click Create Run As Account.
- 4. In the Create Run As Account Wizard window, click **Next**.
- 5. In the General Properties page, in the Run As account type drop-down menu, leave the default selection (Windows).
- 6. In the **Display name** text box, type a name that the SCOM Operations console will use to refer to the monitoring account. Click **Next**.
- 7. In the Credentials page, type user name, password, and domain of the *<MPXAXDAgentAccount>* user account in the respective text boxes. Click **Next**.
- In the Distribution Security page, select a distribution security option.
 Citrix recommends that you select the More secure option. In this case, you must subsequently edit the Run As account configuration so that its Selected Computers list includes the XenApp and XenDesktop Delivery Controllers.
- 9. Click Create to save the configuration data of the new account, then click Close to close the Create run As Account
Wizard window.

- 10. If you are configuring SCOM for multiple-site monitoring, repeat steps 3 to 9 for each XenApp and XenDesktop Site, each time specifying display name and credentials of the appropriate user account.
- 11. In the Administration view, in the left pane, expand Run As Configuration, and then click Profiles.
- 12. In the results pane, in the Name column, double-click Citrix XenApp and XenDesktop Monitoring Account.
- 13. In the Run As Profile Wizard window, click Next and then click Next again.
- 14. In the Run As Accounts page, click Add.
- 15. In the Add a Run as Account dialog box, from the **Run As account** drop-down list, select the display name of the Run As account.
- 16. Depending on whether you plan to monitor multiple XenApp and XenDesktop Sites and/or your security requirements, proceed as follows:
 - 1. For monitoring multiple-site environments or for increased security, select the **A selected class**, group, or object option (more secure). Then follow the steps:
 - 1. Click Select and then select Object.
 - 2. In the Object Search dialog box, from the Look for drop-down list, select **Windows Computer** and then click **Search**.
 - 3. In the Available items list, select the XenApp and XenDesktop Delivery Controller, and then click Add.
 - 4. Click **OK** to close the dialog box.
 - 2. For monitoring single-Site environments and for ordinary security, select the **All targeted objects** option (less secure).
- 17. Click **OK** to close the Add a Run As Account dialog box.
- 18. If you are configuring SCOM for multiple-site monitoring, repeat steps 14 to 17 for each XenApp and XenDesktop Site, each time using the appropriate Run As account.

Run As accounts:				Add 🥖
Account Name	Association	Used For	Class	Path
MPXAXD Account (boston site) MPXAXD Account (berlin site) MPXAXD Account (berlin site)	Object Object Object	xdcontroller xdcontroller xdcontroller	01 Windows Compu 04 Windows Compu 05 Windows Compu	ter ter ter

19. Click **Save** to save the changes.

20. Click **Close** to close the Run As Profile Wizard window.

21. If you selected the **More secure** option in step 8, distribute the Run As accounts to the appropriate agent-managed computers: for each chosen account, do the following:

- a. In the Administration view, double-click the user account.
- b. In the Run As Account Properties dialog box, click the Distribution tab.
- c. Click Add.

d. In the Computer Search dialog box, search for and add the computers. Click OK.

 More secure - I want to manually distributed 	select the computers to which the credentials will be	
Selected computers:	📲 Add 🔀 Remov	/e
Name	Name	
xdcontroller01.amsad.hsl	Health Service	

e. In the Run As Account Properties dialog box, click **Apply** and then click **OK**.

After saving the updated Run As profile, it may take some time for the updated configuration to become active on the

targets. The required time depends on the state of the SCOM agent (HealthService) instances and overall load on the SCOM infrastructure.

Configuring access to the shared folder for agent installation

Note: Steps of this procedure must be followed only once on a SCOM management server. In case you have previously installed and configured any of the following Citrix Management Pack products on the same computer, you may not need to repeat the steps:

- Provisioning Services Management Pack
- ShareFile Management Pack
- StoreFront Management Pack
- Web Interface Management Pack
- XenApp Management Pack
- XenMobile Management Pack

To configure access to the shared folder for agent installation, do the following:

- 1. Log on to the SCOM management server. Use a user account that has local administrative privileges.
- Choose a local user account (local to the computer with the shared folder) or a domain user account that will have access to the shared folder, for the purpose of agent deployment and configuration.
 Tip: Citrix recommends creating a new, dedicated user account that you will use only for deployment of the Citrix
- SCOM Management Pack for XenApp and XenDesktop agent to managed computers.
- 3. Using an operating system administrative tool, add the user account to the Citrix MPShareUsers user group.
- 4. Launch the SCOM Operations console and connect to the management server.
- 5. In the Administration view, in the left pane, expand Run As Configuration, and then click Accounts.
- 6. In the Tasks pane, expand Actions, and then click Create Run As Account.
- 7. In the Create Run As Account Wizard window, click Next.
- 8. In the Run As account type drop-down menu, leave the default selection (Windows).

免	Create Run As Account Wizard
General Properties	
Introduction	
General Properties	Specify general properties for the Run As account
Credentials	
Distribution Security	select the type of Run As account that you want to create, and then provide a display name and description.
Completion	
	Run As account type:
	Windows V
	Display name:
	MP Agent Installation User Account
	Dgscription(optional):
	×
	< Previous Next > Greate Cancel

9. In the **Display name** text box, type a name that the SCOM Operations console will use to refer to the newly created SCOM user account. Click **Next**.

10. In the User name text box, type the user name of the operating system user account that you chose in step 2.

麂	Create Run As Account Wizard
Credentials	
Introduction	
General Properties	Provide account credentials
Credentials Distribution Security Completion	Provide credentials for this Windows Run As account. User name: mpagentinstallation
	Pass <u>w</u> ord: ••••••••••••••••••••••••••••••••••••
	Domain: EXAMPLEDOMAIN
	< Previous Next > Create Cancel

11. In the Password and Confirm password text boxes, type the valid password of the operating system user account.

12. In the ${\bf Domain}$ text box, update the value if needed. Click ${\bf Next}.$

13. Depending on the effective security policy in your SCOM environment, select either the Less secure or More secure option.

Note: Selecting More secure requires manual steps to be performed in SCOM for each newly added managed computer.

14. Click Create.

15. After the message about successful account creation appears, click Close.



16. In the left pane, under Run As Configuration, click **Profiles**.

17. In the Profiles list, double-click Citrix Management Pack Network Share Account.

麂	Run As Profile Wizard	×
Introduction General Properties Run As Accounts Completion	Introduction Run As profiles allow monitoring operations (monitors, rules, and tasks) to run as an account that has sufficient privileges to successfully monitor protected resources in the network. For example, you can use a Run As profile to read database properties or to log on to a mailbox. In addition, administrators can assign different Run As accounts to different monitored resources. This is useful when multiple resources are monitored by the same agent or management server, but each agent or each database has a different security context. For example, a single SQL server might host multiple databases, but each database has a different owner. Use this wizard to assign a Run As account that has the necessary privileges to the Run As profile. To begin the Run As Profile Wizard, click Next.	
	< Previous Next > Save C	ancel

18. In the Run As Profile Wizard window, in the Introductory page, click Next. In the General Properties page, click Next.19. In the Run As Accounts page, click Add.

20. In the Add a Run As Account dialog box, in the Run as account list, select the newly created SCOM user account.



21. Select the A selected class, group, or object option.

22. Click Select and then select Class.

23. In the Class Search dialog box, in the Filter by (optional) text box, type Windows Computers.

24. Click Search.

25. In the Available items list, select All Windows Computers.

Class Sea	arch	?	x
To add classes, search for the class by name and management	pack and then add them to the selected obje	cts list.	
Eilter by (optional):			
Windows Computers			
Management pack:			_
(Any)			~
		Search	
			_
Available items			
Name 1	Management Pack		
All Windows Computers	System Center Core Library		
L			_
	QK	Cance	si .
			,11

- 26. Click **OK** to close the Class Search dialog box.
- 27. Click OK to close the Add a Run As Account dialog box.
- 28. Click **Save** to update the profile. This may take a while.
- 29. Click **Close** to close the Run As Profile Wizard window.

Verifying the installation on the SCOM management server

To verify that the Citrix SCOM Management Pack for XenApp and XenDesktop installation on the management server is correct, do the following:

- 1. Log on to the management server.
- 2. Go to Start > Control Panel and click Programs and Features (actions of this step may differ on operating systems earlier than Windows Server 2016).
- 3. Check for the presence of the following entry in the Name column: *Citrix SCOM Management Pack for XenApp and XenDesktop*
- 4. To check if the *CitrixMPShare* shared folder is correctly configured, open a Command Prompt window and run the following commands in sequence (their outputs in case of success are also shown):

net share | findstr -i CitrixMPShare

CitrixMPShare

%ProgramData%\Citrix\CitrixMPShare

net use \\<ManagementServerHostName>\CitrixMPShare

/USER:<DomainName>\<UserName>

The command completed successfully

dir \\<ManagementServerHostName>\CitrixMPShare

<FolderContents>

In these instances, *%ProgramData%* refers to the actual value of this operating system variable.

© 1999-2017 Citrix Systems, Inc. All rights reserved.

AnagementServerHostName> is the name of the SCOM management server. *DomainName>* is the domain or computer name and *UserName>* is the name of the user account that you chose in step 2 of the procedure documented in Configuring access to the shared folder for agent installation. *FolderContents>* is the list of the contents of the *CitrixMPShare* folder.

The shared folder is vital for installation of the Citrix SCOM Management Pack Agent for XenApp and XenDesktop and deployment of its configuration to the managed computers.

5. Launch the SCOM Operations console.

6. In the Monitoring view, expand the items in the left pane until they match the following figures (combined).





7. In the Administration view, expand Administration > Management Packs and click Installed Management Packs (the navigation pane structure may differ in SCOM versions earlier than 2016).

8. Verify the following management pack versions are listed in the results pane:

Citrix Management Pack for XenApp and XenDesktop	3.9.49.0
Citrix Management Pack for XenApp and XenDesktop (EndUser)	3.9.49.0
Citrix Management Pack for XenApp and XenDesktop (EndUser) Reports	3.9.49.0
Citrix Management Pack for XenApp and XenDesktop Reports	3.9.49.0
Citrix Management Pack Library	1.0.17.0

Configuring SCOM agent to act as proxy on Delivery Controllers

SCOM agent on each computer where XenApp and XenDesktop Delivery Controller is installed must be configured to act as

a proxy agent. This configuration enables the agent to relay or forward information from or about other computes and network devices to the SCOM management server.

To configure the SCOM agent instances to act as proxy agents, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the Administration view, expand Device Management, and then click Agent Managed.
- 3. For each XenApp and XenDesktop (Delivery Controller) computer, follow the steps:
- 1. Right-click the host name, and select **Properties**.
 - 2. Click the Security tab.
 - 3. Select the Allow this agent to act as proxy and discover managed objects on other computers option.
 - 4. Click OK.

Configuring Citrix Director URL

To enable opening Citrix Director in the user context from session alerts using the *Start Citrix Director* alert task, the URL of the Citrix Director web interface must be configured for each monitored Site.

To configure a Citrix Director URL, do the following:

- 1. Log on to the management server. Use a user account that has local administrative privileges.
- 2. Go to Start > All apps > Citrix (actions of this step may differ on operating systems earlier than Windows Server 2016).
- 3. Click XenApp and XenDesktop MP Configuration.
- 4. In the Citrix Management Pack Configuration window, in the Director URL tab, click Add.
- 5. In the Add Director URL dialog box, type the following data in the respective text boxes:
 - Name of the Site
 - URL of the Citrix Director instance that is connected to and monitors this Site



6. Click OK.

7. Repeat steps 4 to 6 for each additional XenApp and XenDesktop Site you want to monitor.

8. *Optional*. To modify the configuration data of an entry, click **Modify**. In the Modify Director URL dialog box, modify the data as required, and then click **OK**.

9. *Optional.* To remove a Citrix Director URL configuration, click **Remove** and then click **Yes**.

10. Click OK to apply the configuration changes and close the window.

Note: If you change a Citrix Director URL for the Site in which Citrix SCOM Management Pack Agent for XenApp and XenDesktop or Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop is already installed on the Delivery Controllers, you must run the *Update Configuration on Citrix MPXAXD Agent* or *Update Configuration on Citrix MPXAXD Agent* or *Update Configuration on Citrix MPXAXD Machine Agent* task.

Installing the product on the Delivery Controllers

On the XenApp and XenDesktop Delivery Controllers, only Citrix SCOM Management Pack Agent for XenApp and XenDesktop must be installed.

To install Citrix SCOM Management Pack Agent for XenApp and XenDesktop on a Delivery Controller, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the **Monitoring** view, in the left pane, expand **Citrix Library**, and then click **XenApp/XenDesktop Delivery Controller Computers**.
- 3. In the XenApp/XenDesktop Delivery Controllers pane, select a Delivery Controller from the XenApp/XenDesktop Delivery Controllers list.
- 4. In the Tasks pane, expand MPXAXD Delivery Controller Computer Role Tasks, and then click Install Citrix MPXAXD Agent.
- 5. In the Run Task Install Citrix MPXAXD Agent dialog box, adjust the task parameters as follows:
 - UpgradeAgent: This option, when set to *true*, causes uninstallation of the existing Citrix SCOM Management Pack Agent for XenApp and XenDesktop from the agent-managed computer before the current version is installed. Before such uninstallation, SCOM agent must be put into maintenance mode. Default value: *false*
 - IgnorePrereqCheck: You may not alter this option. Default value: *false*
 - AgentInstallationSource: This option defines location of the Management Pack agent installation package and its configuration files. Specify the value according to relationship between the agent-managed computer and the SCOM management server:
 - If SCOM agent on the agent-managed computer reports only to the management server where Citrix SCOM Management Pack for XenApp and XenDesktop is installed, leave the value empty. The location is then automatically determined based on data retrieved from the agent-managed computer. In most cases, the retrieved location host name matches the host name of the management server where the installation task is invoked.
 - If the agent-managed computer is managed by some other management server or the computer hosts a multihomed SCOM agent instance, specify the host name of the management server where Citrix SCOM Management Pack for XenApp and XenDesktop is installed.
 - If the agent-managed computer does not have access to the *CitrixMPShare* shared folder on the management server, specify the alternative location of the Management Pack agent installation package and its agent configuration files in the UNC format. A prerequisite is that these files are copied from the *CitrixMPShare* shared folder to a location the agent-managed computer has access to.

Default value: (empty)

- AgentInstallationDestination: This option defines the Management Pack agent's program installation directory on the agent-managed computer. If no value is specified, the Management Pack agent is installed to the *%ProgramFiles%\Citrix\XenDesktop MP Agent* directory.
 Default value: (empty)
- 6. Click **Run** to invoke the installation process.
- 7. Observe the output the task generates. If the task reports no errors, the installation on the agent-managed computer is correct.

The task initially performs a prerequisite check. If any of the installation prerequisites are not fulfilled, the process is interrupted before the actual installation begins. In this case, invoke the **Check Installation Prerequisites for Citrix MPXAXD Agent task** to pinpoint the problematic prerequisite.

Tip: The Agent installation task can be run for multiple selected Delivery Controllers.

Configuring Citrix SCOM Management Pack for XenApp and XenDesktop for monitoring VDA services on server OS machines

Important: This section is applicable only if WinRM is configured to use non-default ports.

The Citrix SCOM Management Pack Agent for XenApp and XenDesktop monitors VDA services on the server OS machines remotely and it therefore connects to the server OS machines by using WinRM. By default, Citrix SCOM Management Pack Agent for XenApp and XenDesktop uses the default WinRM port (5985), and it does not utilize SSL. However, if this configuration changes on the server OS machines, you may need to manually update Windows Registry on the Citrix SCOM Management Pack Agent for XenApp and XenDesktop computer. Add or change the following values in the *HKEY_LOCAL_MACHINE\SOFTWARE\Comtrade\XenDesktop MP Agent* registry key:

- WinRMPort (string value): port number that WinRM uses
- WinRMUseSSL (string value): yes, no, true, or false

In case the listed values do not exist or are empty, Citrix SCOM Management Pack Agent for XenApp and XenDesktop follows its default behavior.

Verifying the installation and configuration on the Delivery Controllers

To verify that the XenApp and XenDesktop Management Pack installation and configuration on a Delivery Controller are correct, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the **Monitoring** view, in the left pane, expand **Citrix Library**, and click **XenApp/XenDesktop Delivery Controller Computers**.

- 3. In the XenApp and XenDesktop Delivery Controller Computers pane, select a Delivery Controller from the XenApp and XenDesktop Delivery Controllers list.
- 4. In the Tasks pane, expand Actions, and then click Check Requirements and Configuration for Citrix MPXAXD Agent.
- 5. Observe the output the task generates. If all checks are denoted successful, the installation and configuration on the Delivery Controller are correct.

Installing the product on the proxy nodes

Important: Perform this procedure only if you plan to monitor performance of server OS machines, server OS sessions, or desktop OS sessions in your XenApp and XenDesktop environment.

For machine or session performance monitoring, Citrix SCOM Management Pack Agent for XenApp and XenDesktop must be installed on the proxy nodes.

To install Citrix SCOM Management Pack Agent for XenApp and XenDesktop on a proxy node, do the following:

- 1. Log on to the proxy node. Use a user account that has local administrative privileges.
- Copy the MPXAXDMachineAgent.exe, Support.exe and Support.exe.config files from the || <ManagementServeHostName>\CitrixMPShare\XenDesktop Machine MP shared folder to a location on the proxy node.
- 3. Run the following command to check if the prerequisites for machine agent installation are fulfilled:

Support /checkprereq		

4. If all prerequisites are denoted as fulfilled, run the following command to invoke the Machine Agent installation process:



Wait for the Setup Wizard to appear.

5. Follow instructions of the Setup Wizard. During the process:

- In the Agent Service Account page, type the literal string of the *<MPXAXDAgentAccount>* user account into the corresponding text box.
- In the Delivery Controllers page, specify the Delivery Controllers that should be monitored by this proxy node.

© 1999-2017 Citrix Systems, Inc. All rights reserved.

Configuring Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop

Important: Perform this procedure only if you have installed the product's Machine Agent on the proxy nodes.

If WinRM is configured to use a non-default port (a port different from 5985) on your desktop OS machines, you must specify a port that will be used for VDI monitoring. To do this, update the Port value in the following keys in Windows Registry:

- For OS machines: *HKEY_LOCAL_MACHINE\SOFTWARE\Comtrade\XenDesktop MP Machine Agent\WinRMProtocols*
- For Delivery Controllers:
 HKEY_LOCAL_MACHINE\SOFTWARE\Comtrade\XenDesktop MP Machine Agent\ControllerWinRMProtocol

Important: Perform this procedure only if you have installed the product's Machine Agent on the proxy nodes.

After the installation, the Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop computers are discovered in the Monitoring view of the SCOM Operations console as *XenApp/XenDesktop Machine Monitoring Proxy Computes* inside *Citrix Library*. To check if Machine Agent is fully operational, execute the *Check Requirements and Configuration for Citrix XAXD Machine Agent* task.

Important: Perform this procedure only if you have installed the product's Machine Agent on the proxy nodes.

Citrix SCOM Management Pack Machine Agent for XenApp and XenDesktop communicates with Delivery Controllers and server OS machines by using WinRM protocol and Kerberos authentication. The following checks help you determine if WinRM is correctly configured.

• Proxy nodes:

On the proxy node, to check if Kerberos authentication on the WinRM client is enabled, run the following command:

winrm get winrm/config/Client

Inspect the command output. If the value of the *Kerberos* parameter in the *Auth* group is not *true*, run the following command:

winrm set winrm/config/client/auth @{Kerberos="true"}

• Server OS machines or desktop OS machines:

On the proxy node, to verify if WinRM client on the computer can access the OS machine, log on by using the *<MPXAXDAgentAccount>* user account, and run the following command:

winrm identify -r:http://<OSmachineHostName>:5985 -auth:Kerberos

In case of success, the command output should be similar to the following:

IdentifyResponse

ProtocolVersion = http://schemas.dmtf.org/wbem/wsman/1/wsman.xsd

ProductVendor = Microsoft Corporation

ProductVersion = OS: 6.1.7600 SP: 0.0 Stack: 2.0

In case of failure, proceed as follows:

- If the command reports the *Access denied* error, it indicates that the *<MPXAXDAgentAccount>* user account does not have administrative privileges on the OS machine. Reconfigure the user account accordingly.
- On the OS machine, run the following command to check Kerberos authentication is enabled for WinRM:



© 1999-2017 Citrix Systems, Inc. All rights reserved.

command:

winrm set winrm/config/service/auth @{Kerberos="true"}

• Delivery Controllers:

On the proxy node, log on by using the *<MPXAXDAgentAccount>* user account, and run the following command:



In case of success, the command output should be similar to the following:

IdentifyResponse	
ProtocolVersion = http://schemas.dmtf.org/wbem/wsman/1/wsman.xsd	
ProductVendor = Microsoft Corporation	
ProductVersion = OS: 6.1.7600 SP: 0.0 Stack: 2.0	

In case of failure, proceed as follows:

- If the command reports the *Access denied* error, it indicates that the *<MPXAXDAgentAccount>* user account does not have administrative privileges on the Delivery Controller. Reconfigure the user account accordingly.
- On the Delivery Controller, run the following command to check *Kerberos* authentication is enabled for WinRM:

winrm get winrm/config/Service

Inspect the command output. If the value of the *Kerberos* parameter in the *Auth* group is not *true*, run the following command:

winrm set winrm/config/service/auth @{Kerberos="true"}

Transmission of product usage data using the Citrix SCOM MP Analytics Service can be reconfigured anytime.

Note: Reconfiguring the Citrix SCOM MP Analytics Service affects the collection of data for all Citrix SCOM Management Pack products that are installed on the same SCOM management server.

To reconfigure the analytics service, do the following:

- 1. Log on to the management server. Use a user account that has local administrative privileges.
- 2. Go to Start > All apps > Citrix (actions of this step may differ on operating systems earlier than Windows Server 2016).
- 3. Click Citrix SCOM MP Analytics Service Configuration.
- 4. In the Citrix SCOM MP Analytics Service Configuration window, select or clear the **Enable the product to send anonymous usage statistics to Citrix** option.
- 5. Click **Close** to apply configuration changes and close the window.

Uninstallation

This section contains instructions that you must follow to effectively uninstall Citrix SCOM Management Pack for XenApp and XenDesktop. Perform all procedures in the documented order of precedence. Optional procedures are appropriately marked.

Uninstalling the product from the Delivery Controllers

To uninstall XenApp/XenDesktop Management Pack Agent from a Delivery Controller(an agent-managed computer), do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the Monitoring view, expand Citrix Library, and then click XenApp/XenDesktop Delivery Controller Computers.
- 3. In the XenApp/XenDesktop Delivery Controller Computers pane, select a Delivery Controller from the XenApp/XenDesktop Delivery Controller Computers list.

- 4. In the Tasks pane, expand Actions, and then click Uninstall Citrix MPXAXD Agent.
- 5. In the Run Task Uninstall Citrix MPXAXD Agent dialog box, click Run to invoke the uninstallation process.
- 6. Repeat steps 3 to 5 for each additional Delivery Controller.

Tip: The Agent uninstallation task can be run for multiple selected Delivery Controllers.

Uninstalling the product from the proxy nodes

Important: Perform this procedure only if there is the product's Machine Agent is installed on the proxy nodes.

To determine which computers are the proxy nodes, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the Monitoring view, expand Citrix Library, and then click XenApp/XenDesktop Machine Monitoring Proxy Computers.
- 3. In the XenApp and XenDesktop Machine Monitoring Proxy Computers pane, find the list of proxy nodes under XenApp and XenDesktop Machine Monitoring Proxy Computers.

To uninstall Citrix SCOM Management Pack Agent for XenApp and XenDesktop from a proxy node (an agent-managed computer), do the following:

- 1. Log on to the proxy node. Use a user account that has local administrative privileges.
- 2. Make sure no product folders or files are in use by any user.
- 3. Go to Start > Control Panel and click Programs and Features (actions of this step may differ on operating systems earlier than Windows Server 2016).
- 4. Right-click Citrix SCOM Management Pack Agent for XenApp and XenDesktop and select Uninstall.
- 5. In the Programs and Features dialog box, click **Yes** to confirm uninstallation.

Removing dependent management packs (customizations)

Important: Perform this procedure only if you have customized the management packs included in the product.

To remove the customizations that you made to the management packs included in Citrix SCOM Management Pack for XenApp and XenDesktop, do the following:

- 1. Launch the SCOM Operations console and connect to the management server.
- 2. In the Administration view, expand Administration > Management Packs and click Installed Management Packs (the navigation pane structure may differ in SCOM versions earlier than 2016).
- 3. In the results pane, locate the management packs that depend on the management packs included in Citrix SCOM Management Pack Agent for XenApp and XenDesktop.
- 4. For each such dependent management pack (except for *Microsoft.SystemCenter.SecureReferenceOverride*), follow the steps:
 - 1. Right-click it and then click **Delete**.
 - 2. On the message stating that deleting the management pack might affect the scoping of some user roles, click Yes.

Removing included management packs

To remove the management packs included in Citrix SCOM Management Pack for XenApp and XenDesktop, do the following:

1. Launch the SCOM Operations console and connect to the management server.

- 2. In the Administration view, expand Administration > Management Packs and click Installed Management Packs (the navigation pane structure may differ in SCOM versions earlier than 2016).
- 3. Remove references to the included management packs from the *Microsoft.SystemCenter.SecureReferenceOverride* management pack. To do this, perform the following steps:
 - Identify which included management packs are referenced. In the Administration > Management Packs context of the SCOM Operations console, right-click Microsoft.SystemCenter.SecureReferenceOverride and select Properties. In the dialog box, click the Dependencies tab.
 - 2. For each such referenced management pack, find out its ID. Right-click the referenced management pack. In the dialog box, take note of the value in the ID text box on the General tab.
 - 3. Export the *Microsoft.SystemCenter.SecureReferenceOverride* management pack.
 - 4. Make a copy of the file you exported the management pack to.
 - Edit the originally exported file: use the IDs to find and remove all dependencies to the management packs from the Manifest > References context (the *Reference* elements) and the Monitoring > Overrides context (the SecureReferenceOverride elements), and then save the changes.
 For better tracking, increase the management pack version by adjusting the value of the Version element within the Identity element.
 - 6. Import back the altered *Microsoft.SystemCenter.SecureReferenceOverride* management pack from the modified file.
- 4. In the results pane, right-click Citrix Management Pack for XenApp and XenDesktop (EndUser) Reports, and then select Delete.
- 5. On the message stating that deleting the management pack might affect the scoping of some user roles, click Yes.
- 6. Repeat steps 4 and 5 with the following management packs (in the presented order of precedence):
 - 1. Citrix Management Pack for XenApp and XenDesktop (EndUser)
 - 2. Citrix Management Pack for XenApp and XenDesktop Reports
 - 3. Citrix Management Pack for XenApp and XenDesktop
- 7. Check if other Citrix SCOM Management Pack products are installed on the management server. If none of them is installed, repeat steps 4 and 5 with Citrix Management Pack Library.

Uninstalling the product from the SCOM management server

To uninstall Citrix SCOM Management Pack for XenApp and XenDesktop from the SCOM management server, do the following:

- 1. Log on to the management server. Use a user account that has local administrative privileges and SCOM administrative privileges.
- 2. Make sure no product folders or files are in use by any user.
- 3. Go to Start > Control Panel and click Programs and Features (actions of this step may differ on operating systems earlier than Windows Server 2016).
- 4. Right-click Citrix SCOM Management Pack for XenApp and XenDesktop and select Uninstall. Wait for the Setup Wizard to appear.
- 5. In the Welcome page of the Setup Wizard, click Uninstall.
- 6. In the Uninstalling the product page, the Setup Wizard reports the uninstallation progress.
- 7. In the Completion page of the Setup Wizard, click Finish.
- 8. Delete the *%ProgramData%\Citrix\CitrixMPShare\XenDesktop Machine MP* and *%ProgramData%\Citrix\CitrixMPShare\XenDesktop MP* folders.
 - Caution: This action permanently deletes the Agent configuration data. You will be unable to reuse it at a later time.
- 9. Check if other Citrix SCOM Management Pack products are installed on the management server. If none of them is installed, follow the steps:

- 1. Stop sharing the *CitrixMPShare* shared folder.
- 2. Delete the *%ProgramData%\Citrix\CitrixMPShare* folder.
- 3. Using an operating system administrative tool, delete the local CitrixMPShareUsers user group.

Uninstalling Citrix SCOM MP Analytics from the SCOM management server

Note: Uninstalling the Citrix SCOM MP Analytics Service stops collection of analytics data from all Citrix Management Pack products installed on the system.

To uninstall Citrix SCOM MP Analytics from the SCOM management server, do the following:

- 1. Log on to the management server. Use a user account that has local administrative privileges.
- 2. Make sure no product folders or files are in use by any user.
- 3. Go to Start > Control Panel and click Programs and Features (actions of this step may differ on operating systems earlier than Windows Server 2016).
- 4. Right-click Citrix SCOM MP Analytics and select Uninstall.
- 5. In the **Programs and Features** dialog box, click **Yes** to confirm uninstallation.

Upgrade

Upgrade from version 3.5

To upgrade Citrix SCOM Management Pack for XenApp and XenDesktop from version 3.5, do the following:

1. Prepare your environment for installation of the new product version. For instructions, see Preparing for the installation.

2. Install the product (its server-side part) on the SCOM management server. For instructions, see Installing the product on the SCOM management server. The installation process upgrades the product and preserves local configuration data.

3. Verify the installation of the product (its server-side part) on the SCOM management server. For instructions, see Verifying the installation on the SCOM management server.

4. On the SCOM management server, copy the mpxaxd_config.dat file from the %ProgramData%\ComTrade\MPShare\XenDesktop MP directory to the %ProgramData%\Citrix\CitrixMPShare\XenDesktop MP directory.

5. On the SCOM management server, move the mpxaxd_config.dat file from the %ProgramData%\ComTrade\MPShare\XenDesktop Machine MP directory to the %ProgramData%\Citrix\CitrixMPShare\XenDesktop Machine MP directory.

6. Configure access to the shared folder for agent installation. For instructions, see Configuring access to the shared folder for agent installation.

7. Install the product (one agent-side part) on the Delivery Controllers. For instructions, see Installing the product on the Delivery Controller.

Important: In the Run Task - Install Citrix MPXAXD Agent dialog box, set the **UpgradeAgent** task parameter to the *true* value.

-			
Target	m company com	Hun Location	
ask Paramete	rs		
Name		Value	
Upgrade Agent		true	
Inners Draws a Char	ala	follow.	
Debug AgentInstallations	Source	rase false	
gnore rerequited Debug Agent Installations Agent Installations Qverride	Source Destination	false Task description	
AgentInstallations Qverride ask credentials Uge the prede Othgr :	Source Destination	Tase false Task description Installs Citrix Management Pack Agent XenApp and XenDesktop on the Citrix s	for ystem.
AgentInstallations AgentInstallations AgentInstallations AgentInstallations Qverride override override usek credentials Use the prede Other : User name :	Source Destination	Talse False Task description Installs Citrix Management Pack Agent XenApp and XenDesktop on the Citrix s Parameters: - AgentInstallationSource: Agent installa	for ystem.
gniterinerective Debug Debug Agent installation 1 Qverride isk credentials Isk credentials Isk credentials Othgr : User name : Password :	Source Destination	Taise False Task description Installs Citrix Management Pack Agent XenApp and XenDesktop on the Citrix s Parameters: - AgentInstallationSource: Agent install and configuration source is specified at with the management server name when XenApp and XenDesktop MP was install	for ystem. seither re
groternerequise Debug AgentinstallationΩ AgentinstallationΩ Qverride sk credentials © Uge the prede ○ Othgr : User name : Password : Qomain :	Source Destination	Task description Installs Citrix Management Pack Agent XenDesktop on the Citrix s Parameters: - AgentInstallationSource: Agent installs and configuration source is specified at with the management server name when XenApp and XenDesktop MP was install with the UNC path where XenApp and YanDesktop MP Agent installation and YanDesktop MP Agent installation and v	for ystem. seither re led or

8. Verify the installation and configuration of the product (one agent-side part) on the Delivery Controllers. For instructions, see Verifying the installation and configuration on the Delivery Controllers.

9. (this step is applicable only when installed Machine Agent is part of the deployment of your earlier product version)

Install the product (the other agent-side part) on the proxy nodes. For instructions, see Installing the product on the proxy nodes. The installation process upgrades the product and preserves local configuration data.

10. (this step is applicable only when installed Machine Agent is part of the deployment of your earlier product version) Verify the installation and configuration of the product (the other agent-side part) on the proxy nodes. For instructions, see Verifying the installation and configuration on the proxy nodes.

Upgrade from version other than 3.5

To upgrade Citrix SCOM Management Pack for XenApp and XenDesktop from versions other than 3.5, do the following:

1. Prepare your environment for installation of the new product version. For instructions, see Preparing for the installation.

2. Install the product (its server-side part) on the SCOM management server. For instructions, see Installing the product on the SCOM management server.

Note: The installation process upgrades the product and preserves local configuration data.

3. Verify the installation of the product (its server-side part) on the SCOM management server. For instructions, see Verifying the installation on the SCOM management server.

4. Install the product (one agent-side part) on the Delivery Controllers. For instructions, see Installing the product on the Delivery Controllers.

Important: In the Run Task - Install Citrix MPXAXD Agent dialog box, set the **UpgradeAgent** task parameter to the *true* value.

-			-
larget	0.0000300 0000	Hun Location	
<u>a</u> sk Parameter	rs		
Name		Value	
Inorada Agent		true	
opyrauenyeni			
gnorePrereqChec	×	false	
IgnorePrereqChec Debug	*	false false	
Ignore PrereqChec Debug Agent Installation S Agent Installation E	sk iource Jestination	false False	
oppreduces generations Ignore PrereqChec Debug Agent Installation S Agent Installation E Qverride	sk Source Destination	false false Task description	
Organourregent IgnorePrereqCheco Debug AgentInstallationS AgentInstallationE Qverride sk credentials O Use the prede	sk iource Destination	false false Task description Installs Citrix Management Pack Agent for	
ygraduergent IgnorePrereqChec Debug AgentInstallationΩ Qverride sk credentials ● Uge the prede ○ Othgr :	sk Jource Jestination	False False Task description Installs Citrix Management Pack Agent for XenApp and XenDesktop on the Citrix syste Baseasters:	ım.
Qverride Qverride Sk credentials Use the prede Other : User name :	sk Boestination	false false Task description Installs Citrix Management Pack Agent for XenApp and XenDesktop on the Citrix syste Parameters: - AgentInstallationSource: Agent installation and configuration source is specified as ail	em.
organdersgefit (gnore PrereqChec Debug Agent Installation S Agent Installation S Qverride sk credentials ● Uge the prede ○ Othgr : User name : Eassword :	sk iource Destination	False False Task description Installs Citrix Management Pack Agent for XenApp and XenDesktop on the Citrix syste Parameters: - AgentInstallationSource: Agent installation and configuration source is specified as eit with the management server name where XenApp and XenDesktop MP was installation	em. her
Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverride Qverri	sk iource Destination	False False Task description Installs Citrix Management Pack Agent for XenApp and XenDesktop on the Citrix syste Parameters: - AgentInstallationSource: Agent installation and configuration source is specified as eth with the management server name where XenApp and XenDesktop MP was installed visit the UNC path where XenApp and YenDesktop MP Agent installation and configurations of the XenApp and YenDesktop MP Agent installation and configurations of the XenApp and YenDesktop MP Agent installation and configurations of the XenApp and YenDesktop MP Agent installation and configurations of the XenApp and YenDesktop MP Agent installation and configurations of the XenApp and YenDesktop MP Agent installation and configurations of the XenApp and YenDesktop MP Agent installation and configurations of the XenApp and YenDesktop MP Agent installation and configurations of the XenApp and YenDesktop MP Agent installation and configurations of the XenApp and YenDesktop MP Agent installation and configurations of the XenApp and YenDesktop MP Agent installation and configurations of the XenApp and YenDesktop MP Agent installation and configurations of the XenApp and YenDesktop MP Agent installations and configurations of the XenApp and YenDesktop MP Agent installations and configurations of the XenApp and YenDesktop MP Agent installations and configurations of the XenApp and YenDesktop MP Agent installations and configurations of the XenApp and YenDesktop MP Agent installations and configurations of the XenApp and YenDesktop MP Agent installations of the XenApp and YenApp Agent installations of the XenApp and YenApp Agent installations of the XenApp and YenApp Agent installations of the XenApp and YenApp Agent installations of the XenApp and YenApp Agent installatinstallatinsthe XenApp and YenApp Agent installatinsthe XenApp and	em. her or

8. Verify the installation and configuration of the product (one agent-side part) on the Delivery Controllers. For instructions, see Verifying the installation and configuration on the Delivery Controllers.

9. (this step is applicable only when installed Machine Agent is part of the deployment of your earlier product version)

Install the product (the other agent-side part) on the proxy nodes. For instructions, see Installing the product on the proxy nodes.

Note: The installation process upgrades the product and preserves local configuration data.

10. (this step is applicable only when installed Machine Agent is part of the deployment of your earlier product version) Verify the installation and configuration of the product (the other agent-side part) on the proxy nodes. For instructions, see Verifying the installation and configuration on the proxy nodes.

Optimize

Optional configuration

Some monitors and rules have default thresholds that might need additional tuning to suit your environment. You should evaluate monitors and rules to determine whether the default thresholds are appropriate for your environment. If a default threshold is not appropriate for your environment, you should adjust the threshold by overriding it.

[_____

Citrix SCOM Management Pack for XenApp and XenDesktop Reference Guide

A complete list of the monitors and rules available in Citrix SCOM Management Pack for XenApp and XenDesktop.

Adding optional SLA dashboards

For this purpose, you must import the optional *Citrix Management Pack for XenApp and XenDesktop SLA Dashboards* management pack into SCOM. It provides service level objectives (SLA and SLO objects) for XenApp and XenDesktop environment monitoring.

Management pack dependencies

The *Citrix Management Pack for XenApp and XenDesktop SLA Dashboards* management pack has the following dependencies:

- Citrix-specific management packs:
 - Citrix Management Pack for XenApp and XenDesktop
 - Citrix Management Pack for XenApp and XenDesktop (EndUser)
- Default management packs:
 - Health Library
 - Microsoft.SystemCenter.Visualization.Component.Library
 - Microsoft.SystemCenter.Visualization.Library
 - Microsoft.SystemCenter.Visualization.ServiceLevelComponents
 - System Library

Software requirements

The *Citrix Management Pack for XenApp and XenDesktop SLA Dashboards* management pack requires Microsoft System Center Operations Manager 2012 R2.

Importing the management pack

For instructions on how to import the unsealed management pack, see Manually importing included management packs into SCOM. The management pack is located in the *%ProgramFiles%\Citrix\XenDesktop MP* folder in the *Comtrade.XenApp.And.XenDesktop.SLADashboards.xm*/file.

Citrix Management Pack for XenApp and XenDesktop SLA Dashboards is an example of how SCOM 2012 SLA dashboards can be used together with the Citrix SCOM Management Pack for XenApp and XenDesktop which collects all the information needed to create useful and personalized service level objectives for your environment. This sample management pack includes the following pre-set definitions for service level objectives:

- Desktop OS Delivery Group SLOs:
 - Availability > 99.000 %
 - Max User Logon Duration < 50 seconds
 - Max Desktop OS Random Delivery Group Usage (%) < 90 %
- Server OS Delivery Group SLOs:
 - Availability > 99.000 %
 - Max User Logon Duration < 30 seconds
 - Min Load Available (%) > 10 %
- Site SLOs:
 - Availability > 99.000 %
 - Max Number of Concurrent Users < 300
 - Max Number of Active Sessions < 500
 - Max Logon Duration < 40 seconds

In real world scenarios, you would create different service level tracking rules for each Site and delivery group in your organization. You may also want to include other parameters for setting the service level objectives.

Note: The management pack also provides two service level views which report on service level objectives defined in service level tracking rules. For a complete list available monitors and performance collection rules that can be used to set service level objectives, see *Citrix SCOM Management Pack for XenApp and XenDesktop Reference Guide*, available from Tuning thresholds for monitors and rules.

Configure dashboards with default SLAs

Once the management pack is imported, locate the views in the Monitoring view in the SCOM Operations console as seen in the following figure.

a 🚰 Citrix Library
🗲 Citrix Management Topology
XenApp/XenDesktop Delivery Controller Computers
XenApp/XenDesktop Machine Monitoring Proxy Computers
A Citrix XenApp and XenDesktop
XenApp/XenDesktop Alerts
🔄 XenApp/XenDesktop Events
XenApp/XenDesktop Health State
< XenApp/XenDesktop Topology
Controllers
4 🚰 Dashboards
Delivery Group SLA Dashboard
Site SLA Dashboard
Delivery Groups
D A Machines
E Sessions
D Galacian Sites
User Connections

The *Delivery Group SLA Dashboard* and *Site SLA Dashboard* views are not configured by default, so you must select one or more service level tracking rules for each of the views.

Delivery Group SLA Dashboard

To configure the Delivery Group SLA Dashboard view, do the following:

- 1. Launch the SCOM Operations console.
- 2. In the Monitoring view, in the left pane, expand Citrix XenApp and XenDesktop > Dashboards, and then click Delivery Group SLA Dashboard.
- 3. In the upper right corner of the dashboard view, click the settings icon and then select **Configure**.

Delivery Group SLA Dashboard		🔅 > Tasks
Service Levels	Service Level Objectives	Configure
	State Name Target Class Instances	

4. In the Update Configuration wizard window, click **Next**.

	Update Configuration	x
Senter a frier	ndly name and description	
General Properties Scope Completion	Name: Delivery Group SLA Dashboard Description:	
	< Previous Next > Save Cance	۱

5. In the Scope page, click **Add**.

	Update Configuration			x
Specify the	Scope			
General Properties Scope	Select the SLA(s) to display:	👍 Add	× Remove	
Completion	Service Level Management Pack Target			
	< Previous Next >	Finish	Cancel]

6. In the Add SLA dialog box, in the Service Level column, select **Desktop OS Group Health** and click **Add**.

	×
Management Pack	
Citrix Management Pack for XenApp and Xer	Desktop SLA Dashb
Citrix Management Pack for XenApp and Xer	Desktop SLA Dashb
Microsoft System Center Application Monito	ring 360 SLA
Citrix Management Pack for XenApp and Xer	Desktop SLA Dashb
Agd	
Management Pack	
Citrix Management Pack for XenApp and Xer	nDesktop SLA Dashb
Citrix Management Pack for XenApp and Xer	Desktop SLA Dashb
m	
	Management Pack Citrix Management Pack for XenApp and Xer Citrix Management Pack for XenApp and Xer Microsoft System Center Application Monito Citrix Management Pack for XenApp and Xer Management Pack Citrix Management Pack for XenApp and Xer Citrix Management Pack for XenApp and Xer

- 7. Repeat step 6 for Server OS Delivery Group Health.
- 8. Click **OK** to close the dialog box.
- 9. In the Scope page, adjust the time interval for the SLA.

	Update Con	figuration
Specify th	ne Scope	
General Properties Scope	Select the SLA(s) to display:	
Completion	Service Level	Management Park
	Desktop OS Delivery Group Health	Citrix Management Pack for XenApp and XenDesktop SLA Dasi
	Server OS Delivery Group Health	Citrix Management Pack for XenApp and XenDesktop SLA Dasi
	Last: 1 🖕 Days 🔻	< Previous Next > Finish Qancel

10. Click **Finish** to close the wizard.

Once the view is refreshed, it shows the delivery group service level objective report for the time period selected, as shown in the figure that follows.

Delivery Group	SLA Dashboard				
Service L	evels	Servic	e Level Objectives		
A Name:	Desktop OS Delivery Group Health (2)	State	Name	Target Class	Instances
	SalesDG	Ø	Availability	XenDesktop Random Assignment Delivery Group (Desktop OS)	1
	ExecutiveDesktop		Average Logon Duration	XenDesktop Random Assignment Delivery Group (Desktop OS)	1
✓ Name: ⊘ ⊘ ⊘	Server OS Delivery Group Health (3) DeliveryDG AccountingDG PurchasingDG		Delivery Group Usage 🖓	XenDesktop Random Assignment Delivery Group (Desktop OS)	1

ExecutiveDesktop b64b535a-f277-415c-bd0e-aa7739f58404



Site SLA Dashboard

To configure the Site SLA Dashboard view, do the following:

- 1. Launch the SCOM Operations console.
- 2. In the Monitoring view, in the left pane, expand Citrix XenApp and XenDesktop > Dashboards, and then click Site SLA Dashboard.
- 3. In the upper right corner of the dashboard view, click the settings icon and then select **Configure**.



- 4. In the Update Configuration wizard window, click **Next**.
- 5. In the Scope page, click Add.
- 6. In the Add SLA dialog box, in the Service Level column, select Site Health and click Add.
- 7. Click **OK** to close the dialog box.
- 8. In the Scope page, adjust the time interval for the SLA.
- 9. Click Finish to close the wizard



Custom SLAs

Citrix Management Pack for XenApp and XenDesktop SLA Dashboards also includes some general service level target rules that may be used as an example. To make the SLA dashboards useful in practice, you must create your own SLAs that are tailored to your needs.

Following the steps below, a new SLA for a Site named "Boston" will be created, and it will check whether we are crossing maximum allowed number of concurrent users, since we only have 1,000 concurrent licenses available.

Perform the following:

- 1. Launch the SCOM Operations console.
- 2. In the Authoring view, expand Authoring > Management Pack Objects.
- 3. Right-click Service Level Tracking and then select Create.
- 4. In the Service Level Tracking wizard, type a display name in the **Name** text box. In our example, type *Boston Site SLA*.

2	Service Level Tracking
General	
General Objects to Track Service Level Objectives Summary	This wizard sets the parameters that track service levels for specified objects. You can run reports against this tracking data.
	< Previous Next > Finish Cancel

5. Click Next.

6. In the Objects to Track page, click Select.

7. In the Select a Target Class dialog box, from the **Search result filter** drop-down list, select **All**.

8. In the Target column, select XAXD Site and then click OK to close the dialog box.

9. In the Objects to Track page, from the **Select destination management pack** drown-down list, select a custom management pack where this SLA will be stored. If no such management pack exists, create a new one.

3	Service Level Tracking
Objects to Track	
General Objects to Track Service Level Objectives Summary	Specify the class of objects for which you want to track service levels. If necessary, specify a group or object to reduce the scope of the tracking request. Targeted class Select a class of object to target XAXD Ste Scope (optional) Specify objects within the class: All objects of the targeted class Agroup or object that contains objects of the targeted class Select Management pack Select destination management pack: Boston SLA MP New
	Previous Next > Finish Cancel

10. Click Next.

11. In the Service Level Objectives page, click Add and select Collection rule SLO.

12. In the Service Level Objective (Collection Rule) dialog box, type a display name in the **Service level objective name** text box.

In our example, type Maximum Concurrent Users.

13. Under Targeted class, click **Select**. In the dialog box, in the Target column, select **XAXD Site Data Collector** and then click **OK** to close the dialog box.

14. Under Performance collection rule, click **Select**. In the dialog box, in the Name column, click **Number of Concurrent Users (Performance DB DW)** and then click **OK** to close the dialog box.

15. Under Aggregation method, click Max.

In our example, we do not want more users at any time.

16. From the Service level objective goal drop-down list, select Less Than and then type 1000 in the text box.

Maximum Concurrent Users	·	
Targeted class		
XAXD Site Data Collector		Select
Performance collection rule:		
Number of Concurrent Users (Performance DB DW)	Select
Aggregation method:		
O Min		
O Average		
• Max		
Service level objective goal:		
Less Than	✓ 1000	

17. Click OK to close the Service Level Objective (Collection Rule) dialog box.

18. In the Service Level Tracking wizard window, click Next.

19. In the Summary page, click Finish.

Once the new SLA is created, you can use it in the SLA dashboards as explained in Configure dashboards with default SLAs.

You can use the procedure in this section to create personalized SLAs for sites, delivery groups, or any other object that the Citrix SCOM Management Pack for XenApp and XenDesktop discovers. For a complete list of performance rules and availability monitors that can be used to configure service level objectives, see *Citrix SCOM Management Pack for XenApp and XenDesktop Reference Guide*, available from Tuning thresholds for monitors and rules.

Key monitoring scenarios

Before any desktop or application can be brokered by XenApp and XenDesktop, Virtual Delivery Agent (VDA) installed on the desktop or server machine has to register with one of the Delivery Controllers in a XenApp and XenDesktop Site. This is done each time a machine is started. If the machine is not registered correctly, it cannot be used. Thus, these situations may have a big impact on the number of available machines in a delivery group.

There are many causes why a registration may fail, including no VDA being installed on a desktop or server machine, DNS problems, firewall configuration, time synchronization, and so on.

Citrix SCOM Management Pack for XenApp and XenDesktop monitors via the *Failed Registrations in Delivery Group* monitor if a certain machine in a delivery group could not register itself with the XenDesktop broker. If a failed registration is detected, the corresponding delivery group health status changes to *Warning* and alert is generated and displayed in the *Alerts* view and in the *Failed Registrations* view in *Machines* folder. Both views also contain alerts for each failed registration

© 1999-2017 Citrix Systems, Inc. All rights reserved.

of a machine, with details on a machine name, a delivery group name, and a Site name. Additional details may also be found in the *Event* view, where all Citrix-related Windows events are logged.

Failed registrations are monitored only for the powered-managed virtual machines and not for managed physical machines.

Machine and session monitoring functionality enables an insight into performance of server OS machines, server OS sessions, and desktop OS sessions. You have the possibility to receive alerts when a specific machine or session metric crosses a threshold, and you can generate reports.

Note: Alerts based on performance thresholds are generated only when the product's Machine Agent is installed and configured.

The following reports are available:

- Server OS Machine Performance: This report shows server performance for selected server OS machines. Displayed metrics:
 - CPU utilization
 - Physical and virtual memory utilization
 - Citrix Load Index
 - Number of sessions
 - Virtual memory page fault rate
 - Disk metrics (read, write, and I/O operation rates, latency)
 - Network traffic
 - Average session latency
 - Average session ICA round-trip time (RTT)

This report is available only when Machine Agent is installed and configured.

- User Desktop/Application Activity. This report shows application/desktop usage for selected user. With session monitoring you can also see session performance data for the duration of connection. Displayed metrics:
 - CPU utilization
 - Physical and virtual memory utilization
 - Virtual memory page fault rate
 - Session network traffic
 - Average session latency
 - Average session ICA round-trip time (RTT)
 - For desktop OS sessions, the report displays the following additional metrics:
 - Disk metrics (read, write, and I/O operation rates, latency)
 - Machine network traffic

Performance metrics of this report are available only when Machine Agent is installed and configured.

When Citrix SCOM Management Pack Agent for XenApp and XenDesktop is installed on one or more computers, referred to as proxy nodes, machine and session performance data can be collected. Data is collected remotely by using Windows Remote Management (WinRM). Machine Agent first communicates with a XenApp and XenDesktop Delivery Controller to get a list of the registered machines. It then utilizes WinRM to collect performance data from the machines.



Proxies use WinRM with Kerberos authentication to communicate with machines and Delivery Controllers. All WinRM communication is done in the context of an account that is configured for the *Citrix MPXAXD Machine Agent* service on the proxy node. For this communication to work all machines (server OS and desktop OS) must have WinRM 2.0 installed and enabled (default TCP port: 5985, enabled Kerberos authentication).

In advanced scenarios, you can use different accounts for WinRM communication for different machines. In the XenDesktop MP Configuration tool, you can specify machine hostname mask and account pairs. For any machine matching specific machine hostname mask, the corresponding user account is used for WinRM communication. For machines without matching hostname mask, the *Citrix MPXAXD Machine Agent* service user account is used.

Each instance of Citrix SCOM Management Pack Agent for XenApp and XenDesktop (each proxy node) can be configured to monitor machines for one or more Delivery Controller instances. However, every Delivery Controller can be monitored by no more than one Machine Agent instance.

Important: In a multi-Site environment, if a Machine Agent instance monitors multiple Delivery Controllers, these Controllers must belong to the same XenApp and XenDesktop Site.

Possible Machine Agent configurations (deployments) therefore are:

- One Machine Agent for all Delivery Controller instances (within a Site)
- One Machine Agent per Delivery Controller

https://docs.citrix.com

© 1999-2017 Citrix Systems, Inc. All rights reserved.

• One Machine Agent per subset of Delivery Controller instances (within a Site)

The deployments are depicted in the following figures:







Best practice is to configure Machine Agents (on proxy nodes) to monitor performance of no more than 2,000 concurrently running server OS or desktop OS machines. In environments where the number of machines registered with each Delivery Controller is smaller, you can configure one proxy node to handle multiple Deliver Controller instances. As a general rule configuration with one proxy node per Delivery Controller is appropriate for any type of XenApp and XenDesktop environment.

For examples of proper Machine Agent deployment for Sites with different number of concurrently running machines, see the following figures.

https://docs.citrix.com

© 1999-2017 Citrix Systems, Inc. All rights reserved.
Proxy nodes sizing - for Site with 1,000 machines and two Controllers



Proxy nodes sizing - for Site with 3,500 machines and two Controllers



Proxy nodes sizing - for Site with 5,000 machines and three Controllers



Database sizing

Size of the Operations Manager database depends on the size of the XenApp and XenDesktop environment. Citrix SCOM Management Pack for XenApp and XenDesktop installs additional datasets to Operations Manager data warehouse database. It provides better, more comprehensive as well as more optimized data collection and data processing for better XenApp and XenDesktop architecture and end-user analysis, planning, and troubleshooting.

The maximum database space consumption for a few sample environments with default database grooming is presented in the table that follows.

© 1999-2017 Citrix Systems, Inc. All rights reserved.

Users (approximate number)		500	2,000	10,000
Sites		1	1	1
Delivery Controllers		2	3	4
Desktop OS delivery groups		2	4	6
Server OS delivery groups		3	4	6
Server OS machines		10	50	500
Concurrent application sessions		400	1,500	7,000
Concurrent desktop sessions		100	500	3,000
Sizes (in MB): DB / DW / Total	Working hours: 8x5	57 / 443 / 500	98 / 1405 / 1503	295 / 6956 / 7215
	Working hours: 24x7	57 / 1031 / 1088	98 / 3756 / 3854	295 / 18705 / 19000

Important: In large environments with numerous concurrent sessions, increasing the retention interval may have significant impact on the SCOM data warehouse database.

Citrix SCOM Management Pack for XenApp and XenDesktop consists of two custom datasets: Machine dataset and Session dataset. Each dataset provides tables for performance data and tables for stale or discovery data. Grooming for tables is specified in number of days and the default values are provided in table that follows.

Machine dataset grooming

Machine dataset				
Performance Raw	10			
Performance Hourly	400			
Performance Daily	400			
Machines	9,999			

Session dataset			
Performance Raw	10		
Performance Hourly	400		
Performance Daily	400		
Sessions	400		
Connections	400		
Logons	400		
Application Instances	400		
Applications	9,999		

To change grooming settings, do the following:

- 1. Open SQL Server Management Studio and connect to the data warehouse database.
- 2. In the Object Explorer pane, expand Databases, expand OperationsManagerDW database, and then expand Tables.
- 3. Right-click dbo.Dataset and then select Open Table.
- 4. Make a note of DatasetID GUID values for rows with *DatasetDefaultName* equal to each of the following values:
 - MPXAXD Machine DataSet
 - MPXAXD Session DataSet
- 5. In the Object Explorer pane, right-click **dbo.StandardDatasetAggregation** and then select **Open Table**.
- 6. In the DatasetID column, locate the dataset GUID noted in step 4.
- 7. Locate the MaxDataAgeDays column and edit the value to set the grooming interval.
- 8. Repeat steps 6 and 7 for the other GUID value.

Manually importing included management packs into SCOM

For general instructions about how to import management packs into SCOM, see the How to Import an Operations Manager Management Pack webpage on the Microsoft TechNet website.

To import the sealed Citrix SCOM Management Pack for XenApp and XenDesktop manually, do the following:

1. Log on to the management server.

© 1999-2017 Citrix Systems, Inc. All rights reserved.

- 2. Launch the SCOM Operations console.
- 3. In the Administration view, click $\ensuremath{\textbf{Management}}\xspace$ Packs.
- 4. In the Tasks pane, expand Actions, and then click Import Management Packs.
- 5. In the Import Management Packs dialog box, click Add, and then select Add from disk.
- 6. In the Online Catalog Connection dialog box, click ${\bf No}.$
- 7. In the Select Management Packs to import dialog box, browse to the folder that contains the following management pack files, select those files, and then click **Open**.
 - Comtrade.Citrix.Library.mp
 - Comtrade.Citrix.XenApp.And.XenDesktop.EndUser.mpb
 - Comtrade.Citrix.XenApp.And.XenDesktop.EndUser.Reports.mpb
 - Comtrade.Citrix.XenApp.And.XenDesktop.mpb
 - Comtrade.Citrix.XenApp.And.XenDesktop.Reports.mpb
- 8. Click Install.

Customizing sealed management packs

Customization of the sealed management packs that XenApp and XenDesktop Management Pack provides is similar to the default SCOM management pack customization. For details, see the Microsoft TechNet website:

- For general information about customization of management packs, see the Customizing Management Packs webpage.
- For instructions on how to customize a management pack, see the Create a New Management Pack for Customizations webpage.