



VCE Vision™ Intelligent Operations Integration for Microsoft System Center Operations Manager Version 1 User Guide

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October 2014

Revision History

| Date | Document revision | Description of changes |
|--------------|-------------------|---|
| June 2014 | 0.5 | Initial version |
| October 2014 | 1 | Revised for final packaging and version numbering |

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Welcome

This document provides instructions for installing, configuring, and using the VCE Vision™ Intelligent Operations Integration for Microsoft System Center Operations Manager.

The audience for this document includes administrators and users of Microsoft Systems Center Operation Managers who would like to integrate with a VCE Vblock™ System through VCE Vision.

Supported Versions and Platforms

- Windows Operating systems Windows 2008, or higher.
- Microsoft Systems Center Operations Manager 2012 R2 and higher.
- Integration supports VCE Vision Intelligent Operations versions 2.1 and 2.5.

Prerequisites

Java Runtime Environment

The integration requires JVM 1.6. Please verify your Java version by following this link –

http://www.java.com/en/download/help/version_manual.xml

Operations Manager Health Service

The Microsoft System Operations Manager (SCOM) health service is often referred as agent or management server, which is a service that is installed on a MS SCOM computer. The health service collects data, compares sampled data to predefined values, creates alerts, and runs responses. The management server receives and distributes configurations to health service on monitored computers.

Note: When you install the Microsoft SCOM, the PowerShell module is installed as default. But if you choose to install the integration on an agent computer (which don't have MS-SCOM PowerShell modules by default), it is recommended to install the Microsoft SCOM Console and the PowerShell module on the agent.

User Rights on Management Agent

You need Administrator permission to install the Management Agent.

VCE Vision Software User Role Requirements

You need Administrator permission use to connect to the VCE Vision Intelligent Operations from VCE Proxy. Need to configure admin user credentials in Proxy Configurations file.

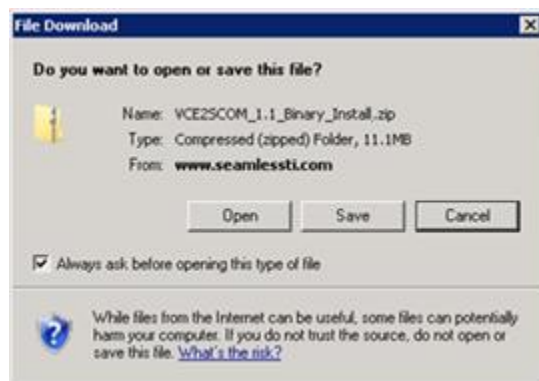
Installation and Deployment

Installing the VCE Vision Integration

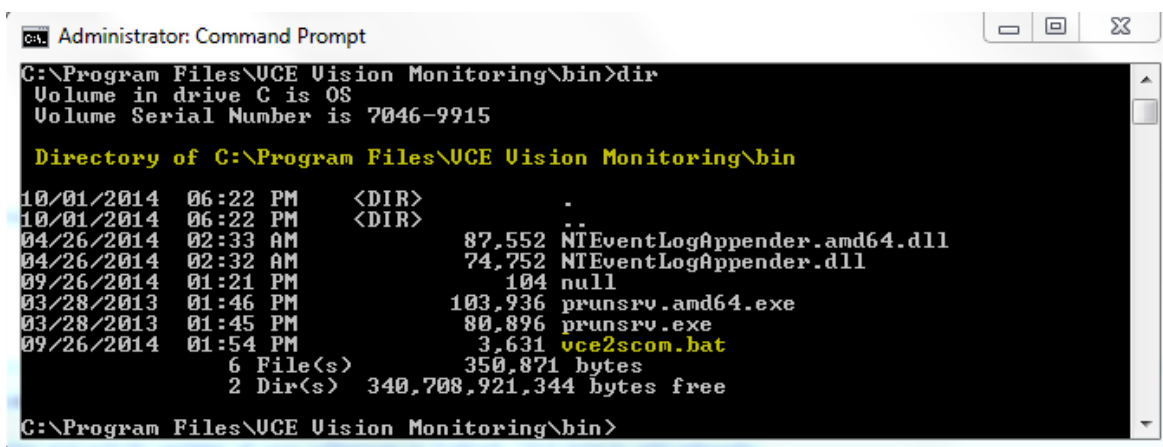
The VCE Vision Monitoring Integration installation is straightforward. The VCE Vision Integration can be run on any server as long as there is network connectivity to the Microsoft Operational Manager (SCOM).

The procedures listed below will install the integration product:

1. Download the VCE Vision Integration connector integration distribution to the server or agent where the integration will be installed.
2. Unzip the downloaded “runtime.zip” file to the directory where you group other programs to, such as C:\Program Files or C:\Program Files (x86).



3. Open a CMD window (Run as Administrator), go to the {Install Root}\bin\ directory and verify that the vce2scom.bat exists.



4. The Integration supports multiple instances. Each instance represents one Windows service and one configuration file in {Install Root}\conf\ directory. Each instance can connect to one Vision server. To

install an instance, you may run “vce2scom.bat install <instance_name>”, where the <instance_name> is a unique name without spaces or special characters.

```

Administrator: Command Prompt

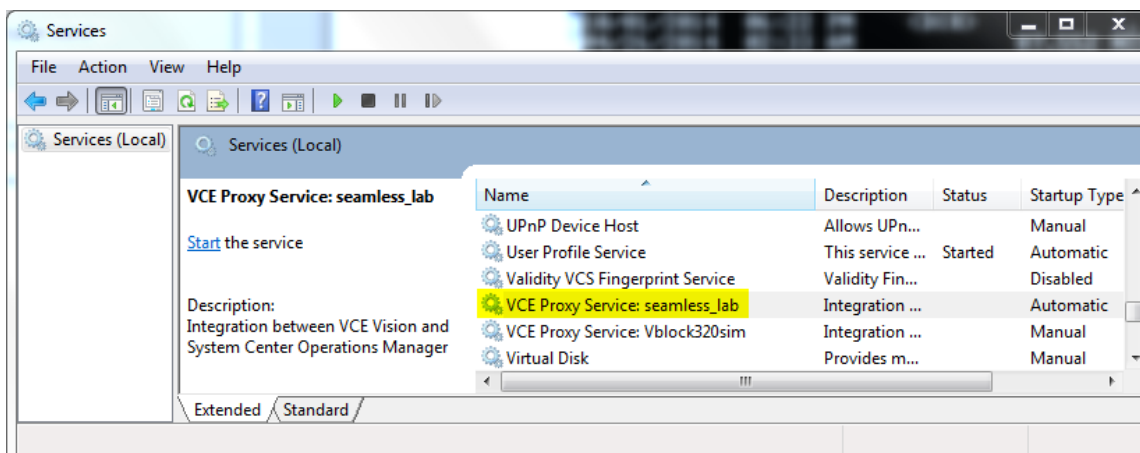
C:\Program Files\VCE Vision Monitoring\bin>vce2scom.bat install seamless_lab
CREATING seamless_lab.conf ...
      1 file(s) copied.
Install service succeeded

C:\Program Files\VCE Vision Monitoring\bin>dir
Volume in drive C is OS
Volume Serial Number is 7046-9915

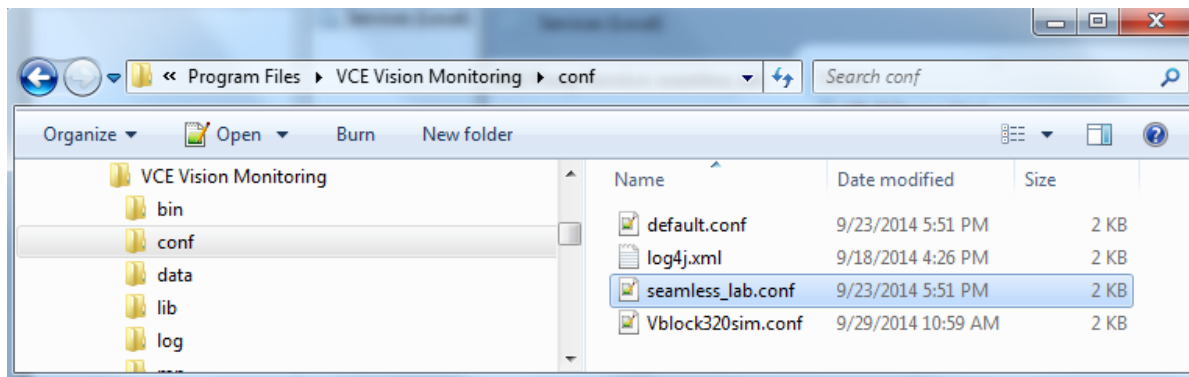
Directory of C:\Program Files\VCE Vision Monitoring\bin

10/01/2014  06:22 PM    <DIR>          .
10/01/2014  06:22 PM    <DIR>          ..
04/26/2014  02:33 AM             87,552  NTEventLogAppender.amd64.dll
04/26/2014  02:32 AM             74,752  NTEventLogAppender.dll
09/26/2014  01:21 PM              104    null
03/28/2013  01:46 PM          103,936  prunsrv.amd64.exe
  
```

- Open Windows **Services** console, and verify that the VCE Proxy Service: <instance_name> has installed. See below:



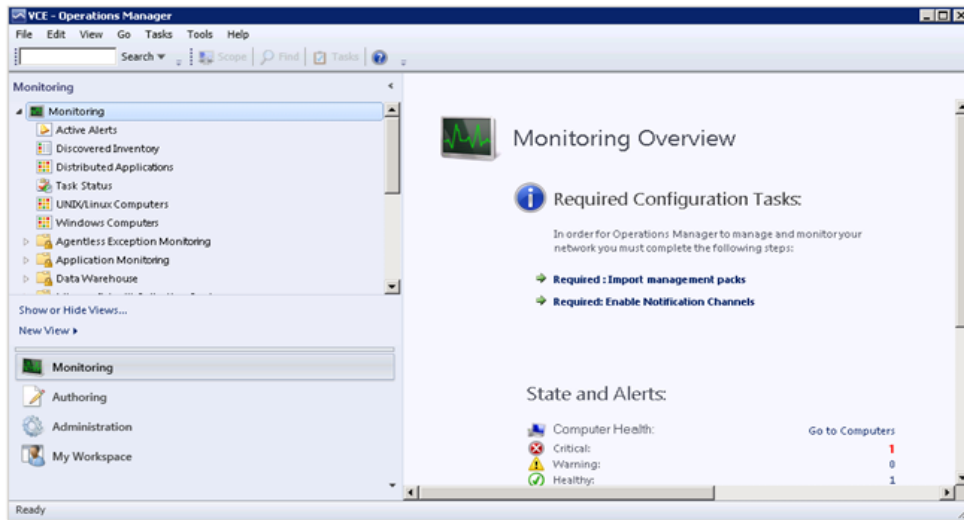
- Go to {Install Root}\conf\ directory, and verify that <instance_name>.conf is created.



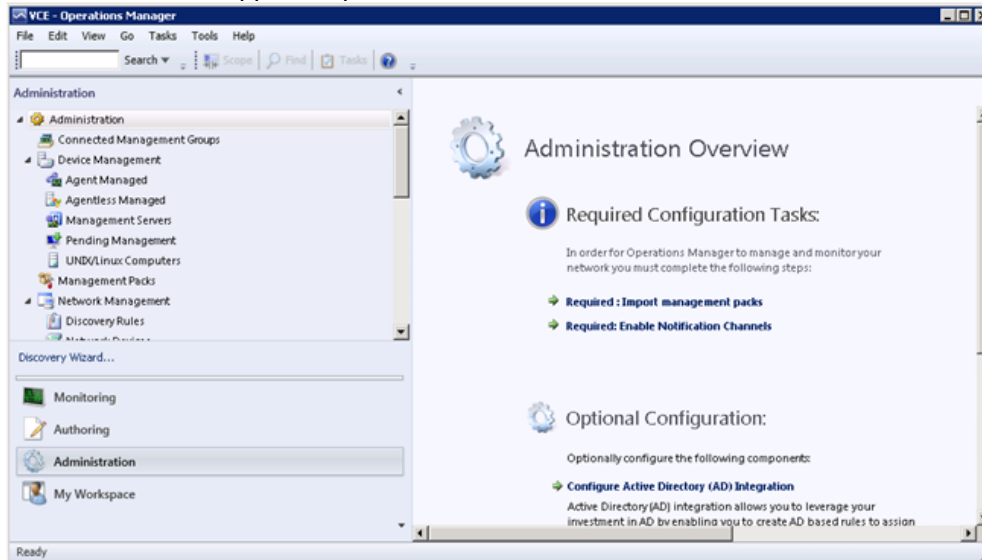
Deploying the Management Pack

After you installed the integration, you need to install the Management Pack manually. Please follow the steps listed below:

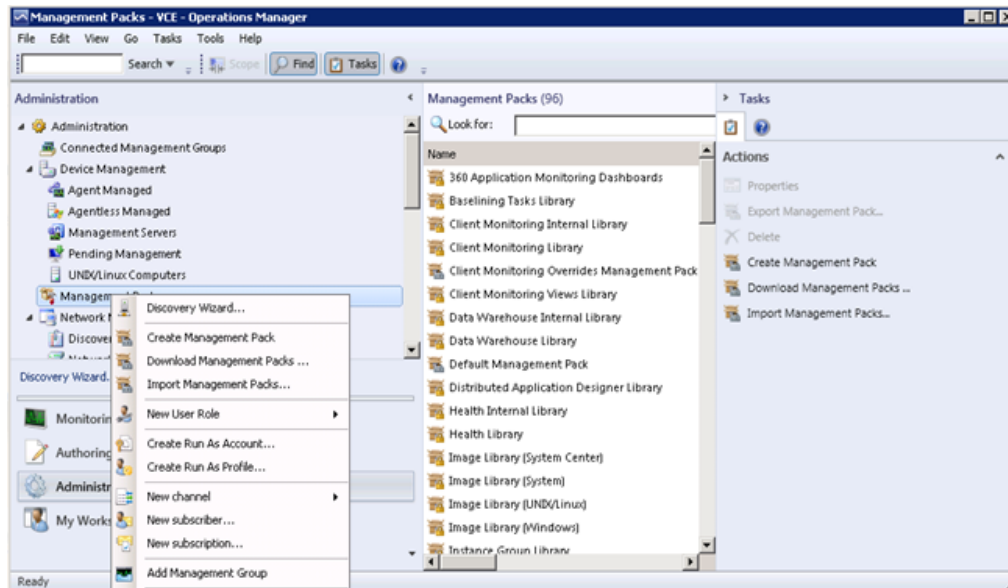
1. Login to the Windows server where SCOM is running and start the **Operations Manager Console**.



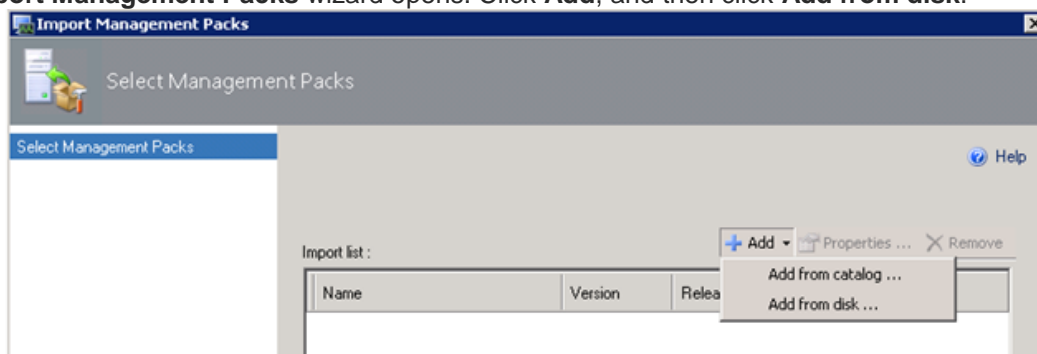
2. Click on the **“Administration”** button in the lower left pane of the window, and then click on **Management Packs** in the upper left pane of the window.



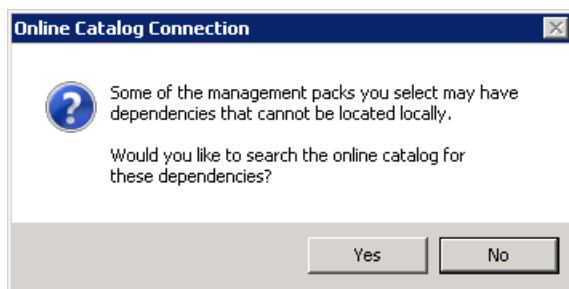
3. Right-click on the **Management Packs**, and then click **Import Management Packs**.



4. The **Import Management Packs** wizard opens. Click **Add**, and then click **Add from disk**.

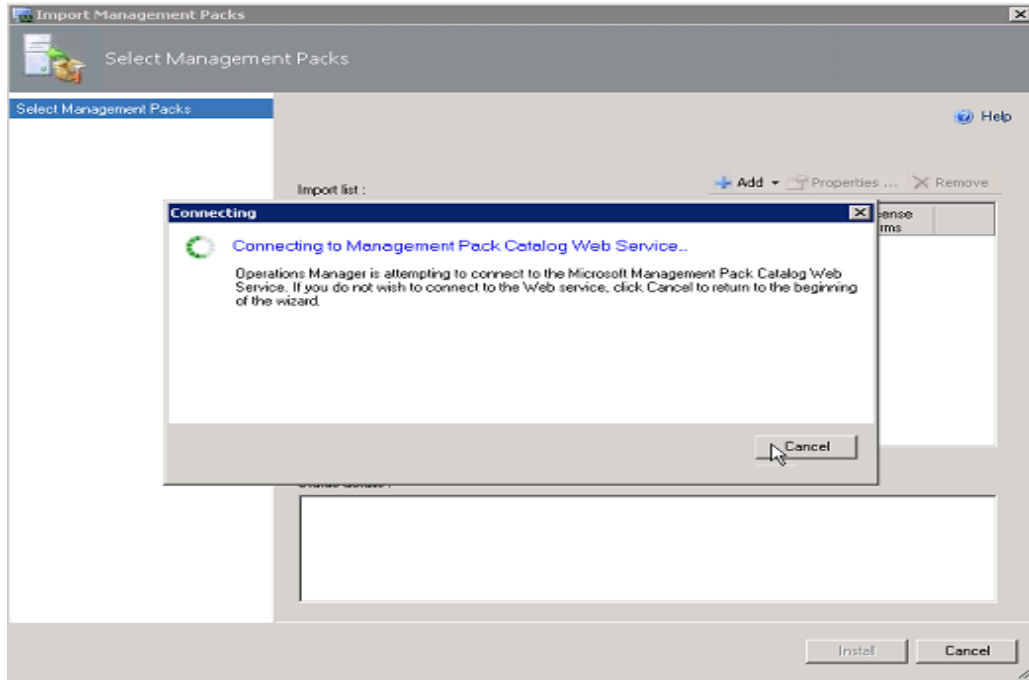


Click **No** on the Online Catalog Connection dialog box.

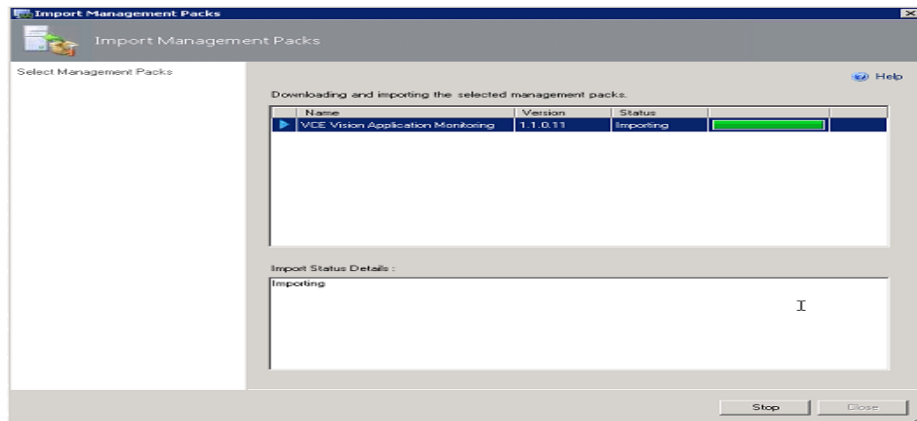


5. The **“Select Management Packs to import dialog”** box appears. Select the **“VCE.Vision.Monitoring.mpb”** file in the /mp folder then click Open. For example, C:\Program Files\VCE Vision Monitoring\VCE.Vision.Monitoring.mpb

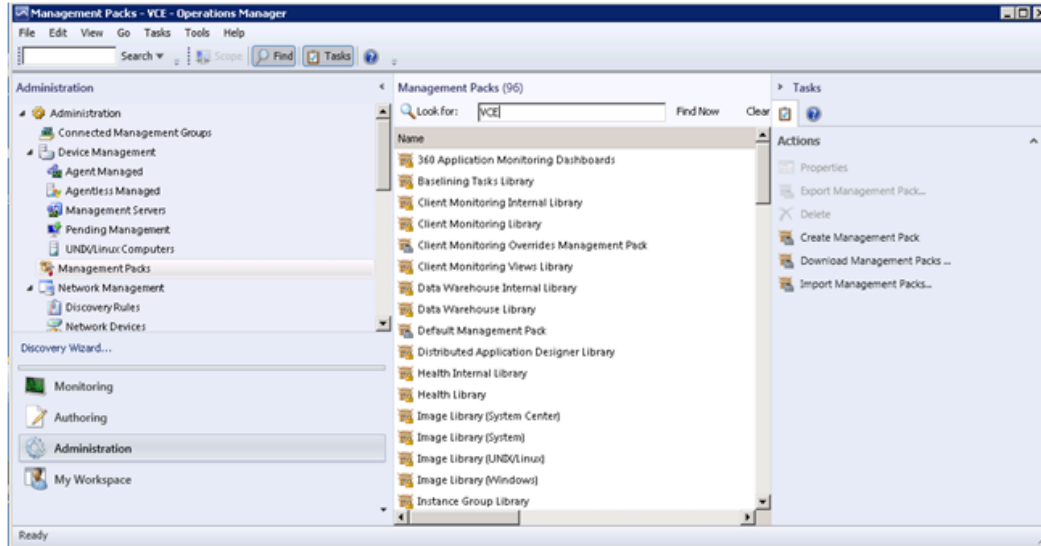
6. On the **Select Management Packs** page, select the “VCE Vision Application Monitoring” then click on the Install button. Click on the Cancel button on the Connecting dialog box.



- The management pack is being installed. See below:



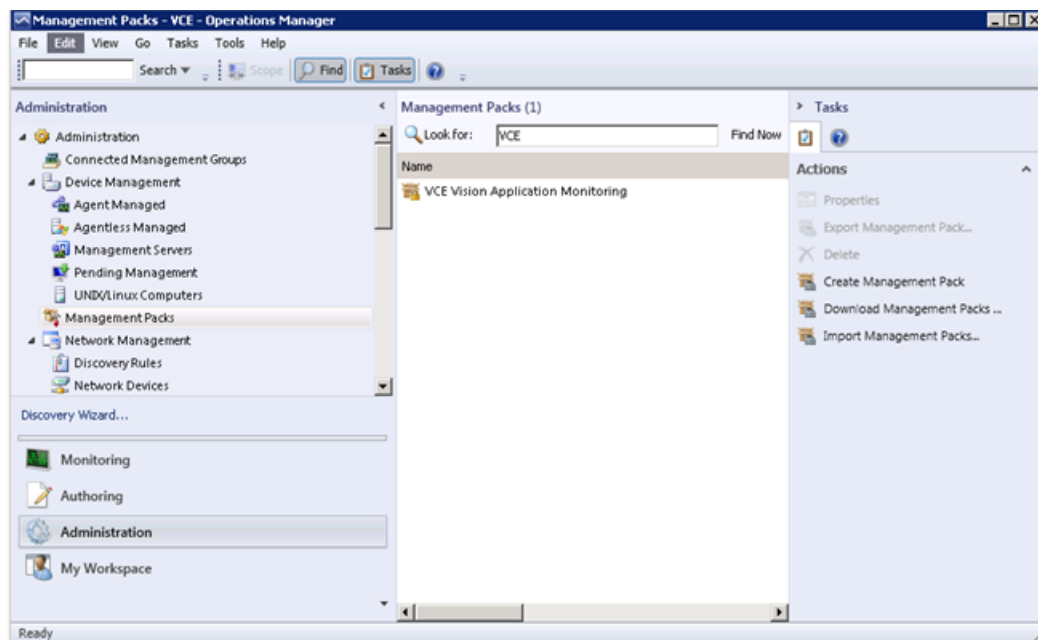
7. Then Click on the **Close** button.
8. Go back to the **Operational Manager Console**; select the **Management Pack** from the left navigation pane. On the right hand side of the pane go to **Look for:** field and enter the VCE and click on **Find Now** link. See the screenshot below:



9. The **VCE Vision Application Monitoring** shows under the **Name** field. See the screenshot below:

Note:

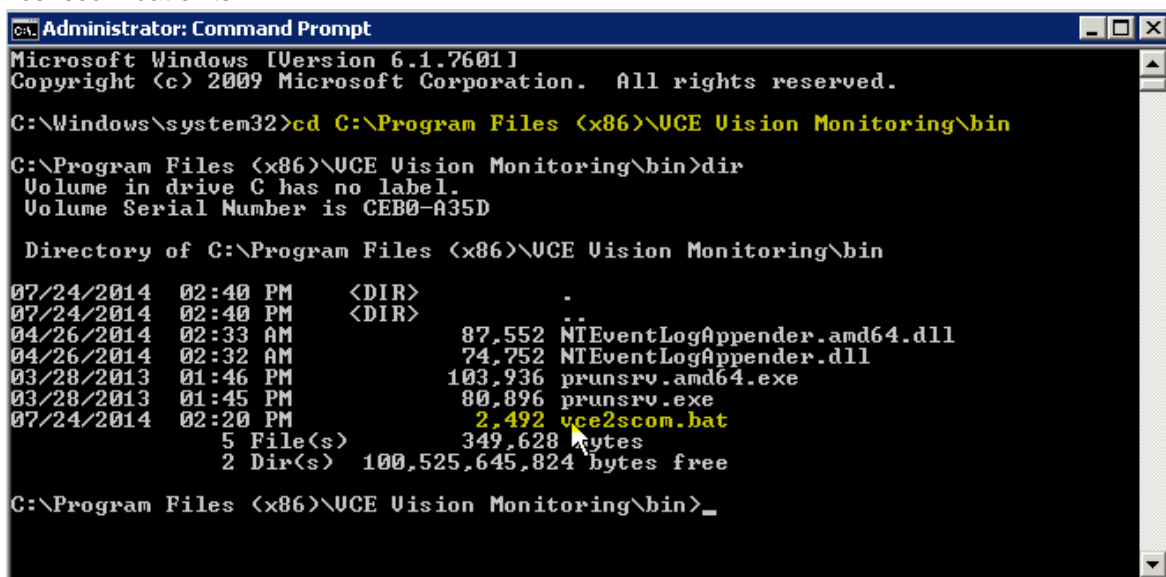
If you do not see the VCE Application Monitoring under name field then refresh the “Management Packs” until the VCE Vision Application Monitoring shows up.



Uninstalling the VCE Vision Integration

To remove the product from the server hosting the VCE Vision Integration for SCOM, you may follow the following steps:

1. Open a CMD window (Run as Administrator), go to the {Install Root}\bin\ directory and verify that the vce2scom.bat exists.



```

Administrator: Command Prompt
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Windows\system32>cd C:\Program Files (x86)\UCE Vision Monitoring\bin
C:\Program Files (x86)\UCE Vision Monitoring\bin>dir
Volume in drive C has no label.
Volume Serial Number is CEB0-A35D

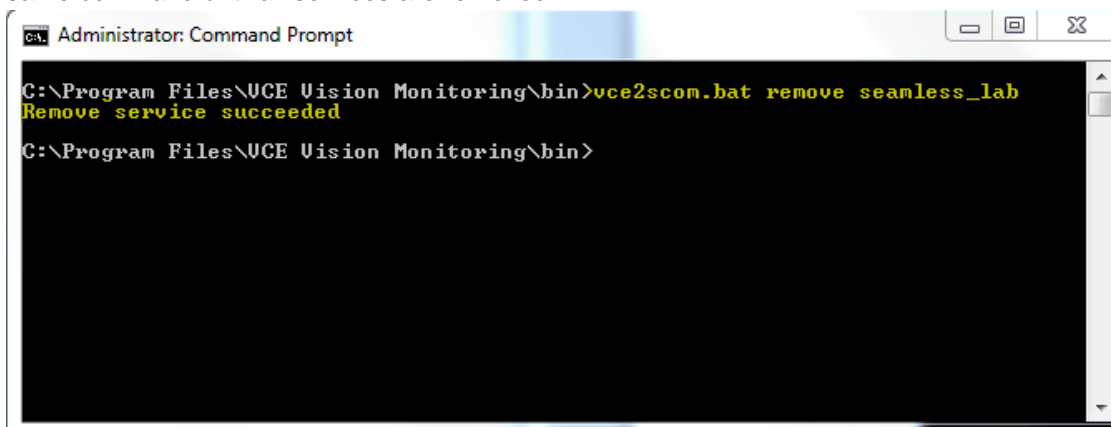
Directory of C:\Program Files (x86)\UCE Vision Monitoring\bin

07/24/2014  02:40 PM    <DIR>          .
07/24/2014  02:40 PM    <DIR>          ..
04/26/2014  02:33 AM           87,552 NTEventLogAppender.amd64.dll
04/26/2014  02:32 AM           74,752 NTEventLogAppender.dll
03/28/2013  01:46 PM       103,936 prunsvr.amd64.exe
03/28/2013  01:45 PM           80,896 prunsvr.exe
07/24/2014  02:20 PM           2,492 vce2scom.bat
           5 File(s)          349,628 bytes
           2 Dir(s)      100,525,645,824 bytes free

C:\Program Files (x86)\UCE Vision Monitoring\bin>_

```

2. Run “vce2scom.bat remove <instance_name>”, which removes “VCEProxy Service: <instance_name>” from Windows service manager. If multiple instances are installed, repeat the same command until all services are removed.



```

Administrator: Command Prompt

C:\Program Files\UCE Vision Monitoring\bin>vce2scom.bat remove seamless_lab
Remove service succeeded

C:\Program Files\UCE Vision Monitoring\bin>

```

3. Open Windows services console, and verify that there is no “VCE Proxy Service: *” there.
4. Now you may delete the entire “VCE Vision Monitoring” folder to finish the uninstallation.

Using the VCE Vision Integration

This chapter discusses the essential and optional configurations that need to be performed before running the integration service. Some integration specific operations from SCOM console are also discussed here.

Changing the VCE and System Center Endpoints

Each instance has a unique configuration file under the {Install_Root}\conf\ directory, which by default is named as “<instance_name>.conf”. The configuration file contains the connection settings for the source and the target. Any change to this file requires restarting the service to take effect.

To configure the source and the target serves settings, follow the steps listed below:

1. Open **<instance_name>.conf** file using your favorite text editor.
Note: the install program runs “**as administrator**”. To save the text file, you may either change the file’s security setting, or open it “as administrator”.
2. Edit the following lines:

```
app.Vision.ServerUri=https://vision-server.change-me.com:8443
app.Vision.Username=rest-api-user
app.Vision.Password=

app.VCenter.ServerUri=https://vcenter-server.change-me.com
app.VCenter.Username=vm-sdk-user
app.VCenter.Password=
```

Note: the passwords have to be encrypted. There are 2 ways to encrypt the password:

- i) You may enter the plain password in the text editor with the prefix of "ENCRYPT:" such as "ENCRYPT:mypassword". Upon the first restart of the service, the plain password will be overwritten by the encrypted password.
- ii) Leave the password field empty, close the file and run “vce2scom.bat password <instance_name>” from the command window to encrypt the password.

3. Save and close <instance_name>.conf file

Adjusting the Integration Polling Intervals

You can set the polling Interval in the configuration file. Follow the steps listed below:

1. Open the **<instance_name>.conf** file in text editor.

2. Under the Application Properties section, you can modify the polling time. Following are the default settings you can change this polling intervals according to your requirements.

```
app.Discovery.Vblocks.IntervalSeconds=1200
app.Discovery.Vcenter.IntervalSeconds=3600
app.Discovery.Compliance.IntervalSeconds=86400
```

Additional Configuration Details

1. Open the **<instance_name>.conf** file in text editor.
2. Under the Application Properties section, you can modify the below config parameters as per the application and system needs

app.MP.Heartbeat.IntervalSeconds=1800

This Config is used to specify the heart beat interval that we can have in case of Vision is not reachable. MS-SCOM Proxy will try to do the heart beat connect vision at the specified interval

app.Discovery.MaxDataFilesPerCategory=10

This Config is used to specify the number files that can be created in the /data folder. It's the data retention config that will provide the max the numbers files that can be present in /data for each type of file. We do have 3 set of files in data folder.

- First one is for capturing the Vblock data
- Second one is for capturing the Compliance Details, like matching benchmarks and profiles, which are used for MS-SCOM on demand scanning.
- Third one is for capturing the VM Inventory data from the EXSI host via configured vCenter details.

#app.Event.FilterKey=*. *

This Config is used by the VCE Proxy service to retrieve the AMQP messages based on the specified filters.

Applicable Filter Keys are:

```
FM_Internal
Vblock
Vblock_Network
Vblock_Compute
Vblock_Storage
*. * ( All Messages)
```

app.Event.AlertOnSeverity=minor

This Config is used by the MS-SCOM to filter the incoming AMQP messages based on the Severity of the message. All the messages having severity = > than configured will be displayed in the Alert View of MS-SCOM interface.

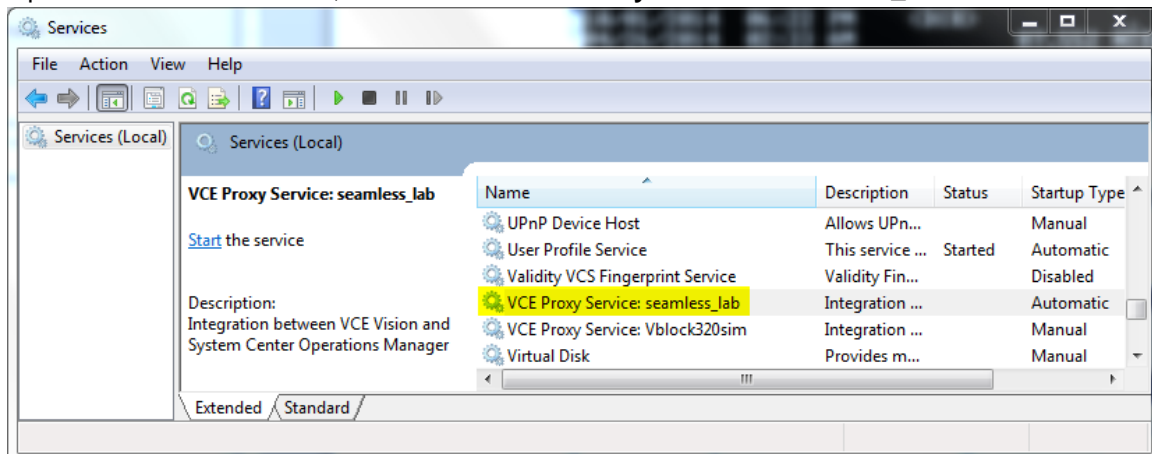
Applicable severity Levels are:

```
Info
Critical
Warning
Major
Minor
```

Starting the Integration Services

The integration, by default, is installed as a service by the installer. The service is installed as ‘Automatic’ type out-of-box. Use the start/stop menu from the service manager to start and stop the service.

1. Open the **Services** console, and start the “**VCE Proxy Service: <instance_name>**”

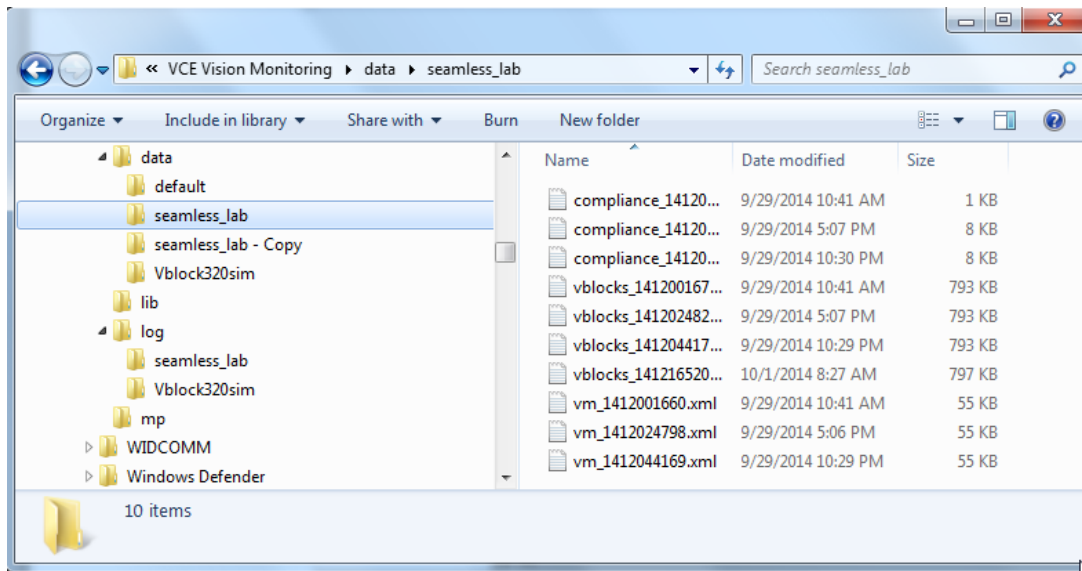


2. Check the {Install_Root}\log\<instance_name>\<instance_name>.log for the application output.

For example:

```
2014-09-23 17:57:00.541 INFO - VCE Vision Integration for Microsoft Operations Manager
2014-09-23 17:57:00.542 INFO - Version 1.1.00 build_07232014
2014-09-23 17:57:02.104 DEBUG - ticket=ST-36-EIVHgTafPhhkfoE5Yfnv-cas01.vce.com
2014-09-23 17:57:02.595 DEBUG - [version: 0][name: JSESSIONID][value:
+QavLC9kaNR55KJN3O6yGV22.undefined][domain: vcesim.seamlessti.com][path: /fm][expiry: null]
2014-09-23 17:57:02.598 DEBUG - starting exportXml
2014-09-23 17:57:03.597 DEBUG - ticket=ST-37-fpCeYSCGVbHljLHXRErc-cas01.vce.com
2014-09-23 17:57:04.520 DEBUG - [version: 0][name: JSESSIONID][value: 6oc5LKvFpxn-
Wc4kAXEBYLBL.undefined][domain: vcesim.seamlessti.com][path: /compliance][expiry: null]
2014-09-23 17:57:04.522 DEBUG - starting exportXml
2014-09-23 17:57:04.524 DEBUG - enter setupAMQPListener
2014-09-23 17:57:05.510 DEBUG - ticket=ST-38-IKwB3IZmX1raq7aghwgb-cas01.vce.com
2014-09-23 17:57:06.266 DEBUG - exit setupAMQPListener
2014-09-23 17:57:13.391 DEBUG - finished exportXml: vm_1411509433.xml
2014-09-23 17:57:13.395 INFO - created C:\Works\lcvroot\VCE-SCOMTEST\VCE Vision
Monitoring\data\seamless_lab\vm_1411509433.xml
2014-09-23 17:57:31.404 DEBUG - finished exportXml: vblocks_1411509451.xml
2014-09-23 17:57:34.481 DEBUG - finished status check: event count=6
2014-09-23 17:57:34.483 INFO - created C:\Works\lcvroot\VCE-SCOMTEST\VCE Vision
Monitoring\data\seamless_lab\vblocks_1411509451.xml
```

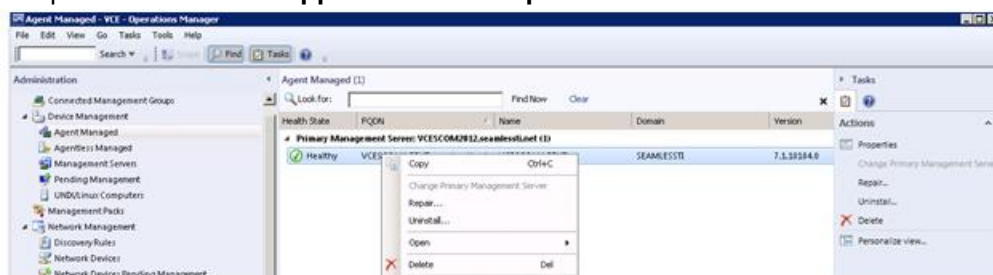
3. Go to the {Install_Root}\data\<instance_name> folder. The *.xml will be created. These xml files will be used by SCOM's management pack discovery. See below:



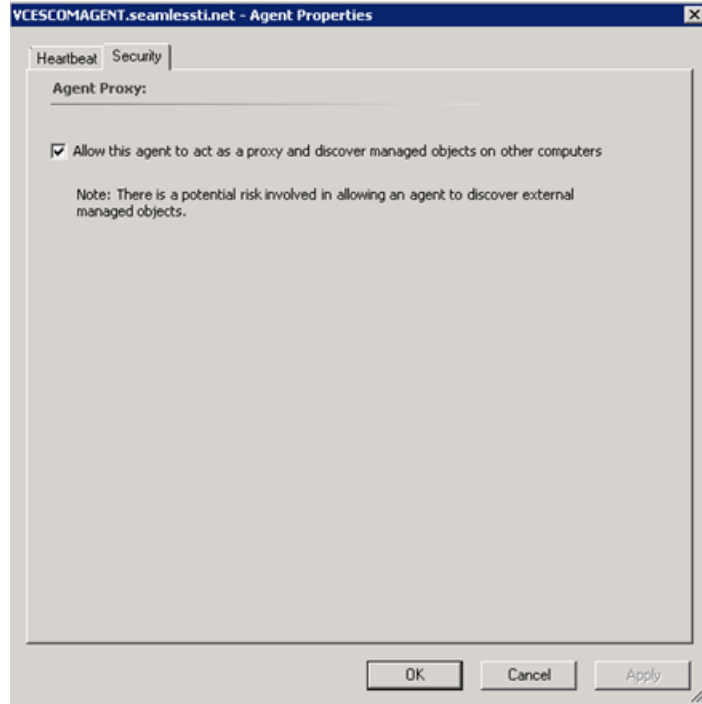
Operations Manager Prerequisites

To enable “Allow this agent to act as proxy and discover managed objects on other computer”, follow the steps listed below:

1. Start “**Operation Manager Console**”.
2. Go to **Administration** console.
3. Expand “**Device Management**”.
4. Select “**Agent Managed**”.
5. From the right side of the pane under the “**Primary Management Server:**” right click on the computer that hosts the **application** >> “**Properties**”. See below:



6. Go to “**Security**” tab, check the box for the “Allow ... act as proxy ...” See below:



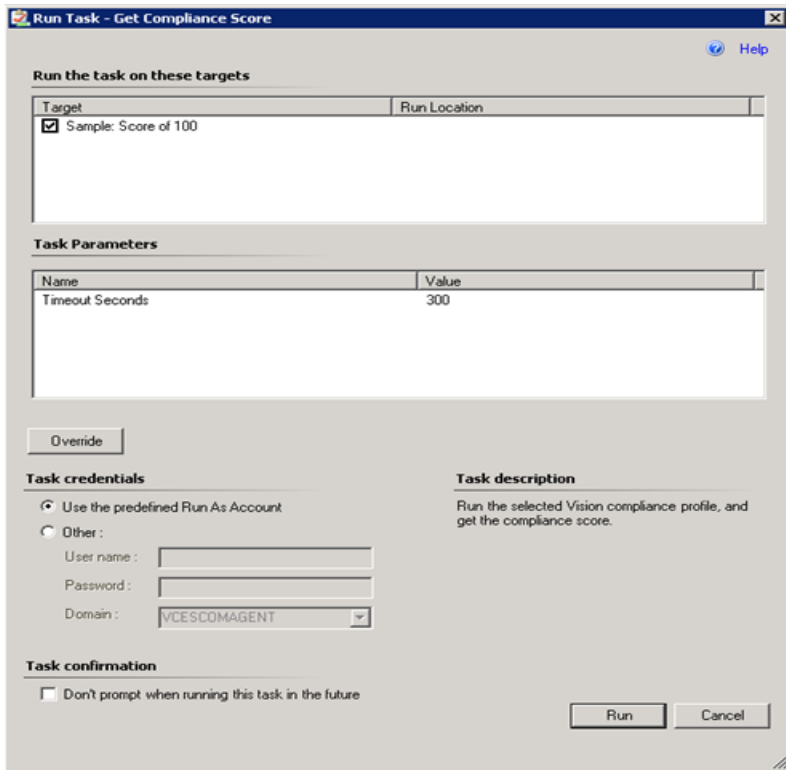
7. "Apply" or "OK".

Executing Compliance Scan

To get the compliance report for the target servers, follow the steps listed below:

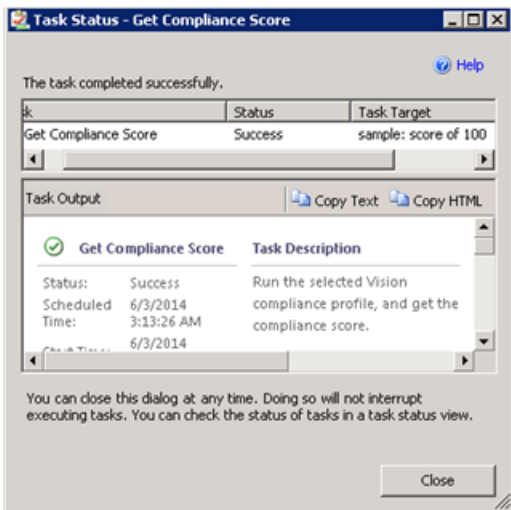
1. Start "Operations Manager Console".
2. Go to **Monitoring console**.
3. Expand "VCE Vision Monitoring".
4. Select "Compliance View" to view Compliance Benchmarks and Profiles.

- 5 Select compliance benchmark or profile, and then click on “**Get Compliance Score**” in Tasks panel (usually on the right). See below:



Note: only the benchmark with a default profile can perform this task.

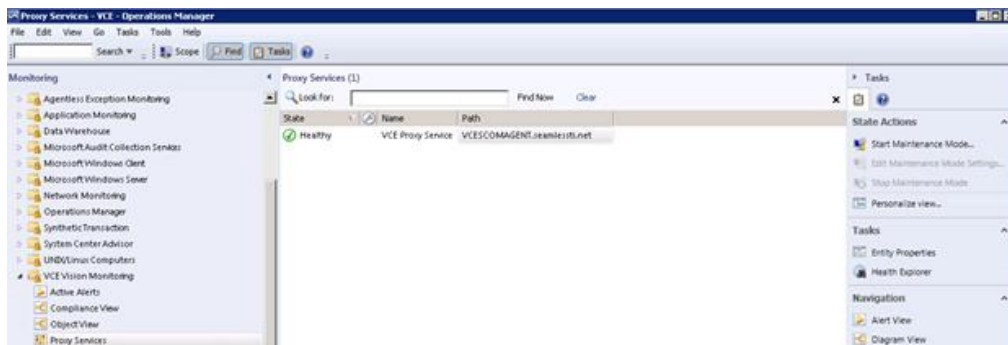
1. Run it and wait for the result. See the result under the **Task Target** column under the upper pane.



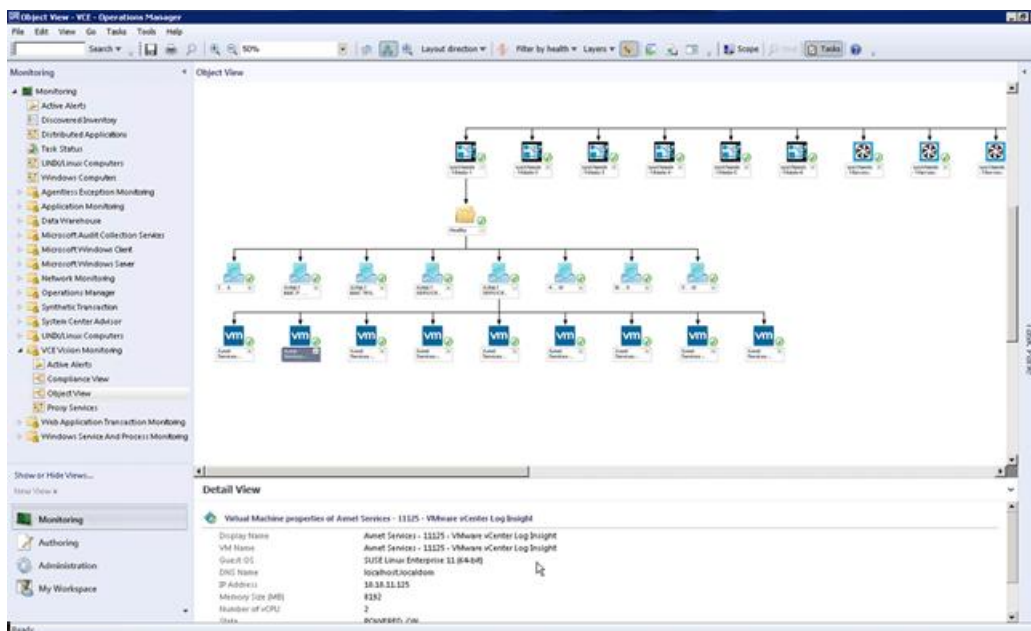
Navigating Vblock Object Hierarchy

To get the Vblock Object Hierarchy, follow the steps listed below:

1. Start “**Operations Manager Console**”.
2. Go to **Monitoring console**.
3. Expand “**VCE Vision Monitoring**”.
4. Select “**Proxy Services**”, this is always the first object to be discovered.
5. Verify the State to be Healthy. If this is in Healthy state, it shows in green. See below.



6. Select “**Vblock View**” to view Vblock objects.
Note: it may take 20mins to 1 hour for the initial full discovery.
7. On the right hand side of the pane, you see the Object Hierarchy. You can expand via clicking on the “+” sign on the Object or right click on the object and select the **Expand** from the list.



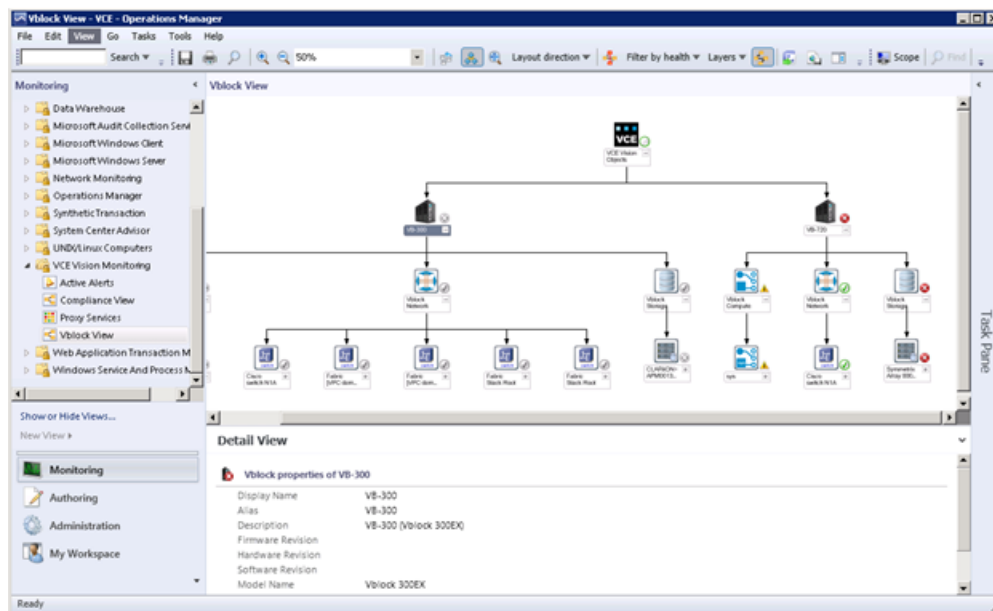
Note: The management Pack is installed on SCOM DB, it will take a while for the agent or management server to detect the changes and download to its local repository. Windows Event Log will be always the place for users to trace or debug what is going on in SCOM world.

Viewing Vblock Object Attributes

To get the Vblock Object Attributes, follow the steps listed below:

1. Start the **Operations Manager Console**.
2. Go to the **Monitoring console**.
3. Expand the **VCE Vision Monitoring**.
4. Click on the **Vblock View**.
5. On the right hand side of the pane, you see the Object Hierarchy.
6. Expand the **Vblock** Object. Select the object.

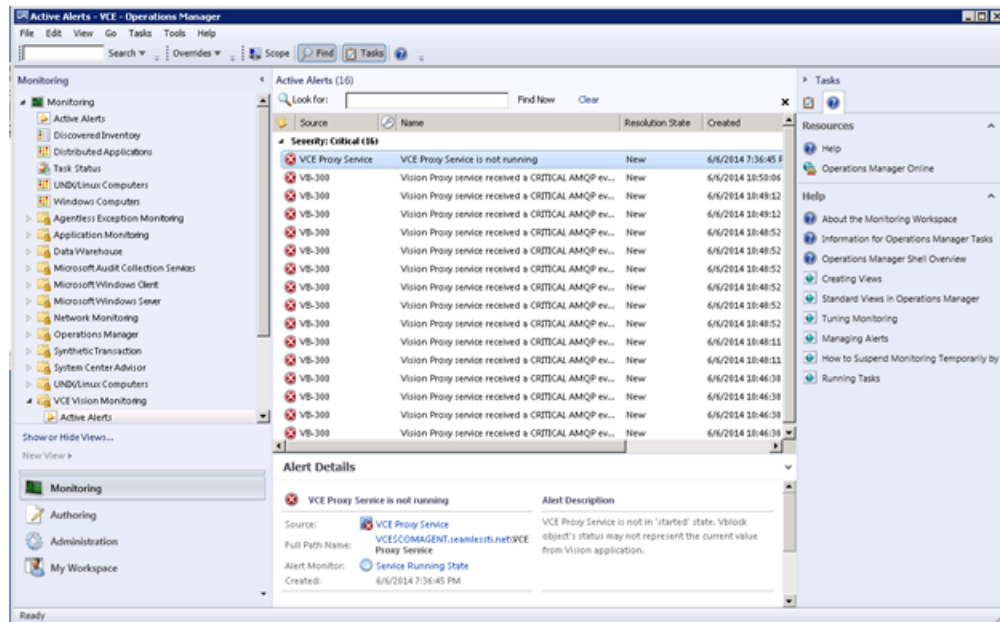
You see each object attributes and the Object status in the Detail View whenever you click on any Vblock Component as shown below
See below:



Understanding Vblock Alerts

There are three types of severity. They are Critical, Warning, and Normal (OK) from MS-SCOM. You can check the component severity details from the Active alerts.

From the Monitoring console click on the Active alert, this will populate all the active alerts on the right hand side of the pane. Select the alert and check the alert description under the Alert Detail pane. See the second screenshot below.



Representation of Component Health Status

Below displayed images conveys the status of health for each component with a circle next to each component below on the right side. This small circle conveys its health status as of now.

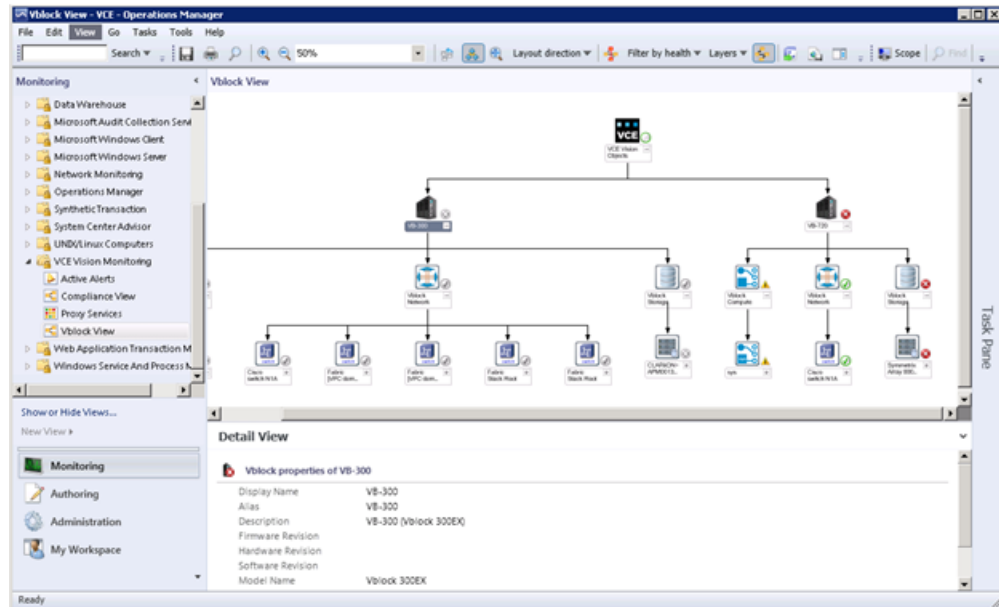
If the health status is healthy – circle will be green as displayed in the second image

If the health status is critical – circle will be in cross red, as displayed in the third image

If the health status is warning (Major/Minor/ Degraded) – circle will be yellow color as displayed in the first image.

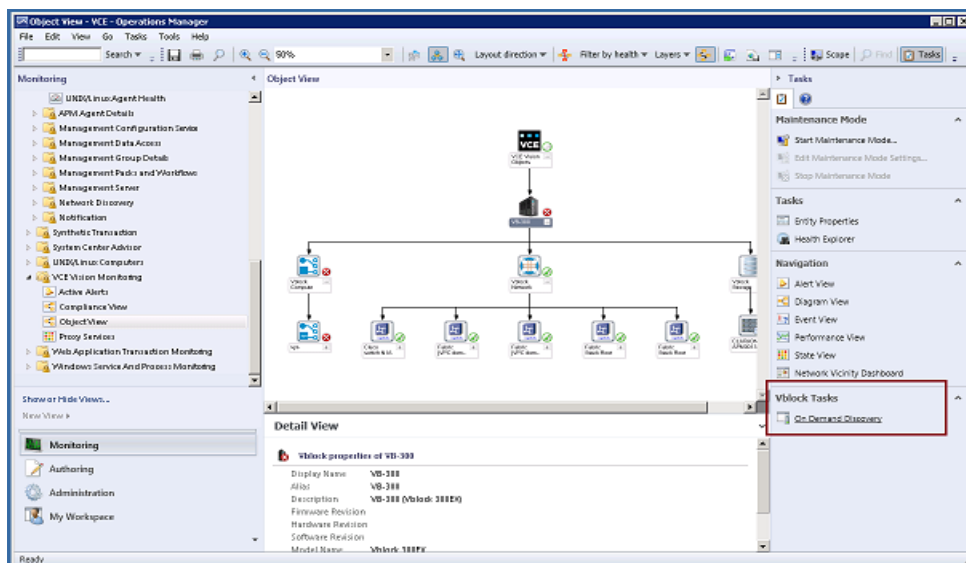


The health status can be determined either from the Alert View or from the Vblock view

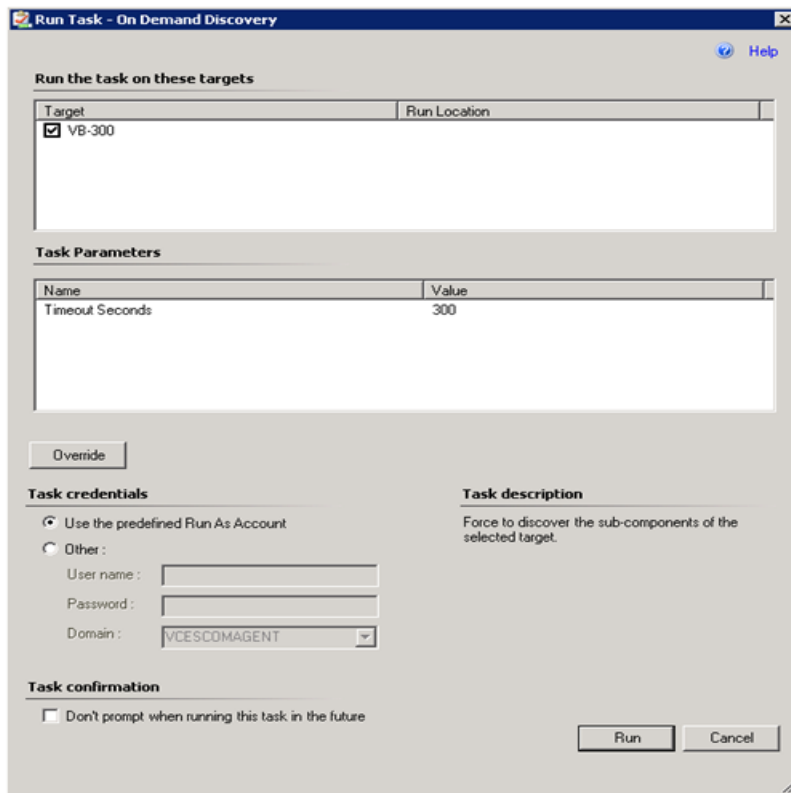


Forcing Discovery from System Center Interface

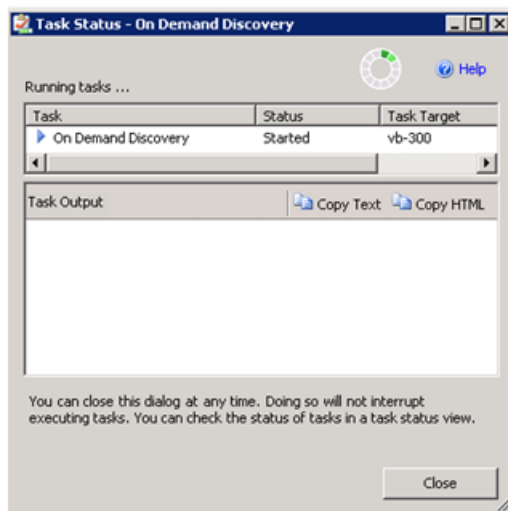
1. Start the “**Operations Manager Console**”.
2. Go to the **Monitoring console**.
3. Expand the “**VCE Vision Monitoring**”.
4. Click on the **Vblock View**.
 - a. **Vblock** Hierarchy View is displayed on the Middle pane of the SCOM console
5. For on Demand Discovery
 - a. Click on any **Object** within the **Vblock View** Hierarchy.
 - b. Go to Task pane, under the **Vblock Tasks** and click on the **On Demand Discovery** as shown below



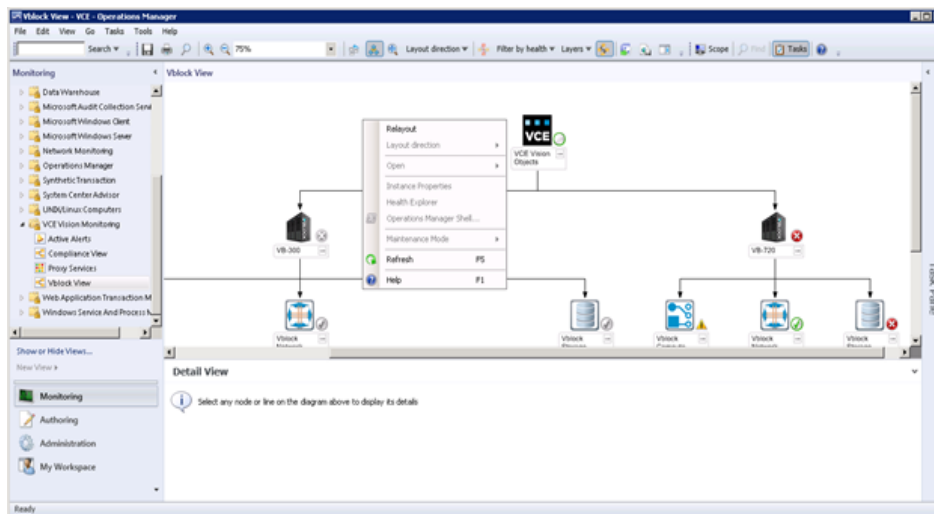
6. The **Run Task –On Demand Discovery** dialog box appears.



7. Click on the **Run** button. The **Task Status – On Demand Discovery** dialog box appears. After sometimes you see the status of the task under the **Task Output** pane.



8. Click on the **Close** button.
9. Go to SCOM console and right click, select the **Refresh** from the list as shown below.



Troubleshooting the Integration Services

The VCE Proxy Service is a Java application. Application's troubleshooting message is written to `{Install_Root}\log<instance_name>.log` file. The level of details is controlled by `{Install_Root}\conf\log4j.xml`. The available values are "fatal", "error", "warn", "debug", "trace".

```
<log4j:configuration xmlns:log4j="http://jakarta.apache.org/log4j/">
  <appender name="console" class="org.apache.log4j.ConsoleAppender">
    <layout class="org.apache.log4j.PatternLayout">
      <param name="ConversionPattern" value="%d{yyyy-MM-dd HH:mm:ss.SSS} %-5p - %m%n"/>
    </layout>
  </appender>

  <appender name="vce2scom" class="org.apache.log4j.RollingFileAppender">
    <param name="file" value="./log/vce2scom.log"/>
    <param name="MaxFileSize" value="10MB"/>
    <param name="MaxBackupIndex" value="1"/>
    <layout class="org.apache.log4j.PatternLayout">
      <param name="ConversionPattern" value="%d{yyyy-MM-dd HH:mm:ss.SSS} %-5p - %m%n"/>
    </layout>
  </appender>

  <logger name="com.vce.vision.integration.scom">
    <level value="debug"/>
  </logger>

  <root>
    <level value="fatal" />
    <appender-ref ref="console" />
    <appender-ref ref="vce2scom" />
  </root>
</log4j:configuration>
```

Troubleshooting the Management Pack

The management pack's troubleshooting message is written to Windows Event Log. Some messages are SCOM's generic troubleshooting messages. Some messages are output from VCE Vision Application Monitoring.

1. To turn on the integration-specific troubleshooting message, you may use text editor to modify the following line in {Install_Root}\conf\<instance_name>.conf,

app.MP.Script.Debug=true

Note: Any changes to **conf\<instance_name>.conf** requires restarting the service to take effect.

2. To filter the integration-specific troubleshooting message in Windows Event Viewer,
 - a. Go to “Applications and Services Logs” >> “Operations Manager” and look for “Event ID = 1002”.
 - b. Go to “Windows Log” >> “Application” and look for “Event ID within 4096 – 5010”.

Appendix A:

How to troubleshoot Java:

If you get error “java: command not found” or “Java is not recognized...” or “Windows could not start the VCE Proxy Service on Local Computer...” it means the java path is not set up. How to troubleshoot the java, please see the example below:

1. First check the java version. Open the cmd prompt and enter the following command for example:
 C:\Users\Administrator>java -version
 “Java is not recognized as internal or external command, operable program or batch file.”
Note: This doesn’t return any version. It means there is no environment variable set up with java.
2. Check the java home. Open the cmd prompt and enter the following command, for example
 C:\Users\Administrator>echo %JAVA_HOME%
 %JAVA_HOME%
 C:\Users\Administrator>
Note: This doesn’t return the value. It means there is no environment variable set up with JAVA HOME. To find out the java home, go to the C:\Program File or C:\Program Files (86) directory and find the installed JAVA Path.
3. Then set up the JAVA HOME. From the cmd prompt, enter the following command for example:
 C:\Users\Administrator>setx -m C:\Program Files\Java\jdk1.6.X(\Version number of Java that is installed)
 SUCCESS: Specified value was saved.
 C:\Users\Administrator>
Note: The “setx” key word command save the java home permanently even after you close the cmd prompt window. The “-m” stands for I want this to be in environment variable. If you do not use this, this will save it to a system variable.
4. Then set the PATH. From the cmd prompt, enter the following command for example:
 C:\Users\Administrator>setx -m PATH “%PATH%”; C:\Program Files\Java\jre6\bin
 SUCCESS: Specified value was saved.
 C:\Users\Administrator>

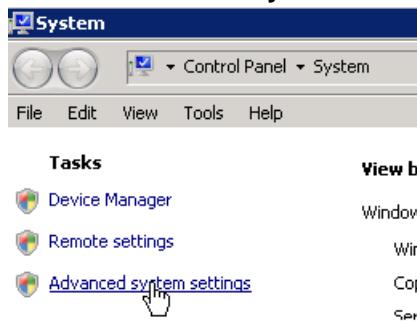
Now check the java environmental variable, open a new cmd prompt window and execute the following command. You will see the java path at the end of the string. For example:

```
C:\Users\Administrator>echo %PATH%
C:\app\Administrator\product\11.2.0\client_2\bin;C:\app\Administrator\product\11.2.0\client_1;
C:\Windows\system32;C:\Windows;C:\Windows\System32\Wbem; C:\Program
Files\Java\jre6\bin
C:\Users\Administrator>
```

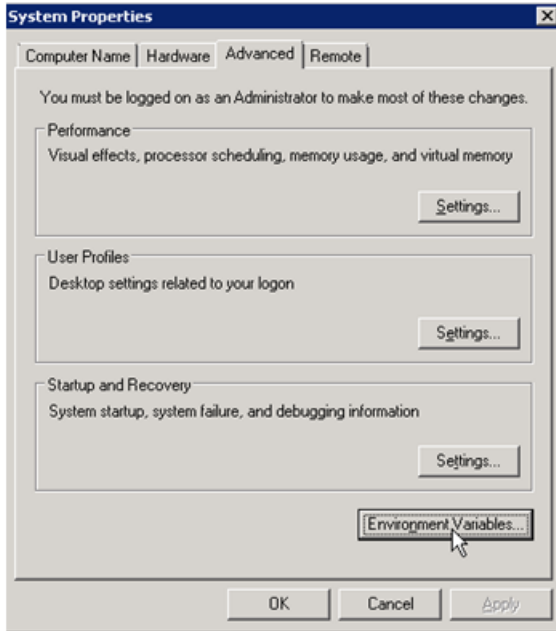
5. Check the JAVA HOME. From the cmd prompt, execute the following command. You will see the java home path for example:
C:\Users\Administrator>echo %JAVA_HOME%
C:\Program Files\Java\jdk1.6.X (Version number of Java that is installed)
6. Check the java version. From the cmd prompt, execute the following command. You will see the java version for example:
C:\Users\Administrator>java -version
java version "1.6.X"
Java(TM) SE Runtime Environment (build 1.6.X)
Java HotSpot(TM) 64-Bit Server VM (build 17.0-b17, mixed mode)

You can also use the **My Computer-> Properties** for setting up the java environment variables. Please see the steps below:

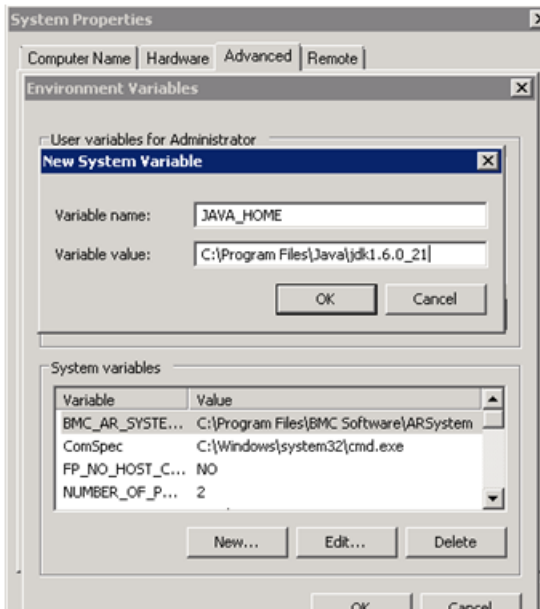
1. Right-click the **MY Computer** icon on your desktop and select **Properties**.
2. Click the **Advanced system settings** on the left side.



3. Click the **Environment Variable** button.



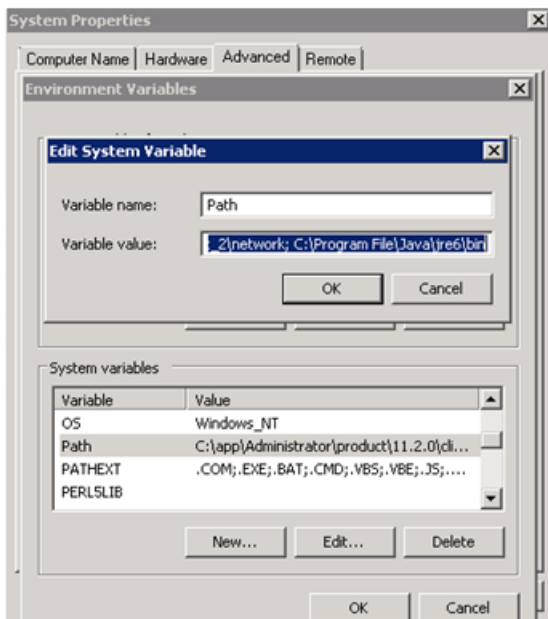
4. Under **System Variable**, click **New**.
5. Enter the variable name as JAVA_HOME
6. Enter the variable value as the installation path for the Java Development Kit. For example C:\Program Files\Java\jdk1.6.X



7. Click OK on the **New System Variable** dialog box.



- Then find PATH and click on Edit button. Enter the JAVA JRE path at the end of the string. See below:



- Click on the OK button on the **Edit System Variable** dialog box.
- Click on the OK button on the Environment Variables dialog box.



ABOUT VCE

VCE, formed by Cisco and EMC with investments from VMware and Intel, accelerates the adoption of converged infrastructure and cloud-based computing models that dramatically reduce the cost of IT while improving time to market for our customers. VCE, through Vblock Systems, delivers the industry's only fully integrated and fully virtualized cloud infrastructure system. VCE solutions are available through an extensive partner network, and cover horizontal applications, vertical industry offerings, and application development environments, allowing customers to focus on business innovation instead of integrating, validating, and managing IT infrastructure.

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