Consulting

OpsMgr Health Sync Library Management Pack

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Feedback:

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Disclaimer:

- You are free to use this management pack to suit your environments.
- This document is provided "as-is". Information and views expressed in this document, including URL and other Internet Web site references, may change without notice

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Table of Contents

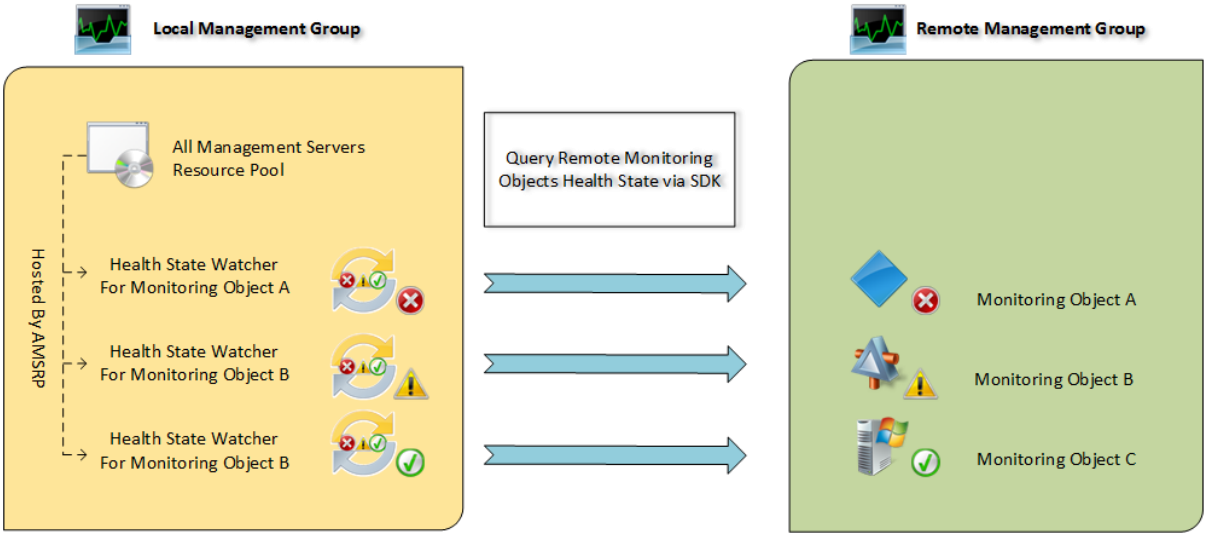
1 Version History

Release Date	Version	Comments
April, 2015	V1.0.0.0	Initial Release

2 Introduction

It is common to have multiple OpsMgr management groups in large organizations. When designing distributed application or creating custom dashboards, one of the limitations is that OpsMgr users can only select monitoring objects within the local management group to be a part of the Health Model. This becomes an issue when users want to design a Distributed Application or dashboard that include components monitored by different OpsMgr management groups.

The **OpsMgr Health Synchronization Library** management pack is designed to provide a workaround to this limitation. This management pack provides a template that enables OpsMgr users to create monitoring objects named "**Health State Watcher**" hosted by All Management Servers Resource Pool. Health State Watcher objects have monitors configured to query health state of monitoring objects located in a remote management group using OpsMgr SDK.



As shown in the diagram above, an instance of Health State Watcher can be created for each monitoring object of user's choice from a remote management group. Each Health State Watcher object will periodically update its own health state based on the health state of the remote monitoring object it is watching for (every 5 minutes by default). As shown above, the Health State Watcher can query health state of any monitoring objects from remote management group (i.e. a Windows Computer object, a Distributed Application or any other types monitoring objects).

This management pack provides 4 unit monitors to the Health State Watcher class. They are used to query the health state of the **Availability**, **Configuration**, **Performance** and **Security** aggregate monitors of the remote monitoring object respectively.

Once the Health State Watcher objects are created and correctly configured, it can be used to display the health state of the remote monitoring object in a dashboard or distributed application hosted by the local management group.

3 Pre-requisites

- Since the Health State Watcher objects are hosted by All Management Servers Resource Pool, the local management group must be at least OpsMgr 2012.

  Note: The author has only tested this management pack in OpsMgr 2012 R2 environments.

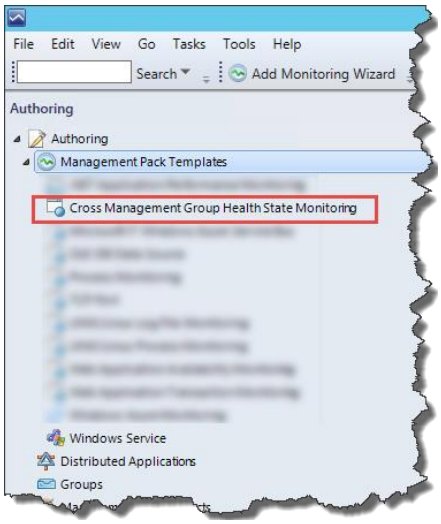
- All scripts used in the management pack are written in PowerShell, therefore, PowerShell execution policy needs to be configured to allow scripts execution on all management servers in the local management group.
- Management servers in the local management group use OpsMgr SDK to retrieve health state information from the remote management group. Therefore the local management servers must be able to communicate to management servers in the remote management group via TCP port 5723 and 5724.
- The local and remote management groups must be located within the same AD forest or trusted AD forests.

  Note: The local management servers use a designated Windows Run-As account to connect to the remote management group. Although the discovery and monitor workflows are not executed under the Run-As account, any Run-As accounts distributed to a system within OpsMgr must have logon locally rights to the target system. This means the Run-As account not only need to have at least be a member of OpsMgr Operators role in the remote management group, it also need to have logon locally rights to all local management servers. Therefore, the local and remote management groups must be located in trusted AD security boundaries.

4 Configurations

4.1 Overview

This management pack provides a management template for OpsMgr users to create the Health State Watcher instances from the OpsMgr operations console.



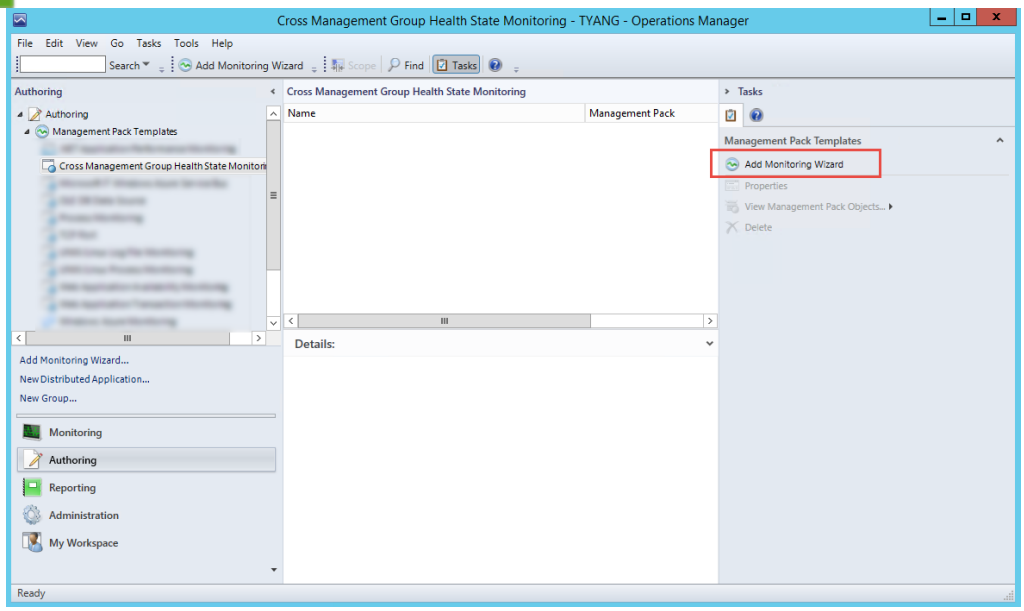
4.2 Detailed Configuration Steps

The following information must be provided when creating an instance using the management pack template:

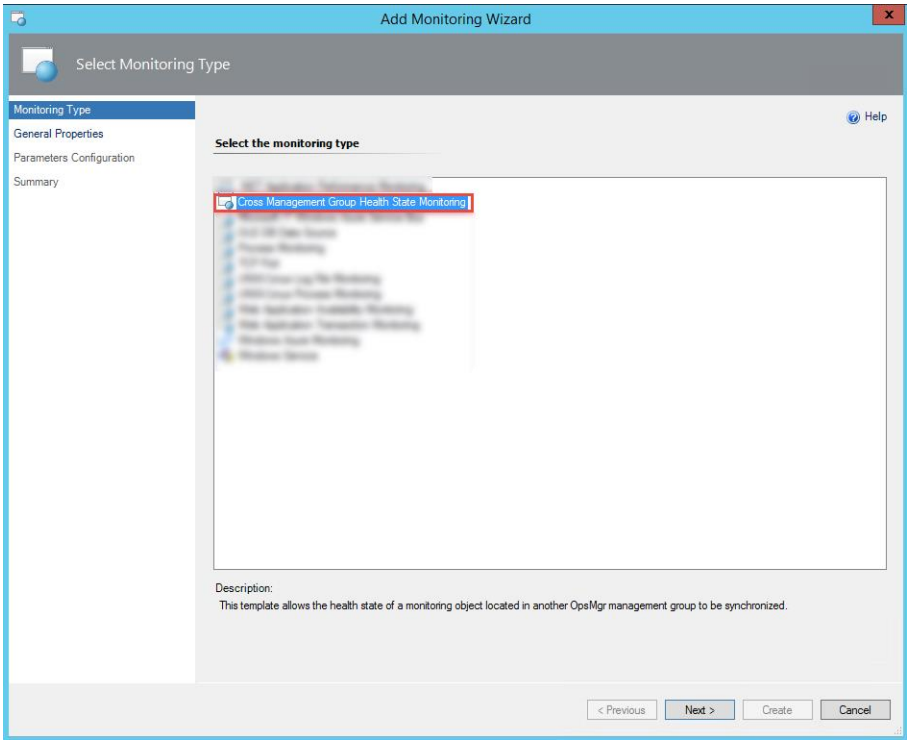
- Display Name
- Description (Optional)
- Unsealed Management Pack (where the MP elements will be saved)
- One of the management servers from the remote management group
- Monitoring Object ID of the monitoring object from the remote management group
- Run-As account for SDK connection to the remote management group

Please follow the steps listed below to create a template instance.

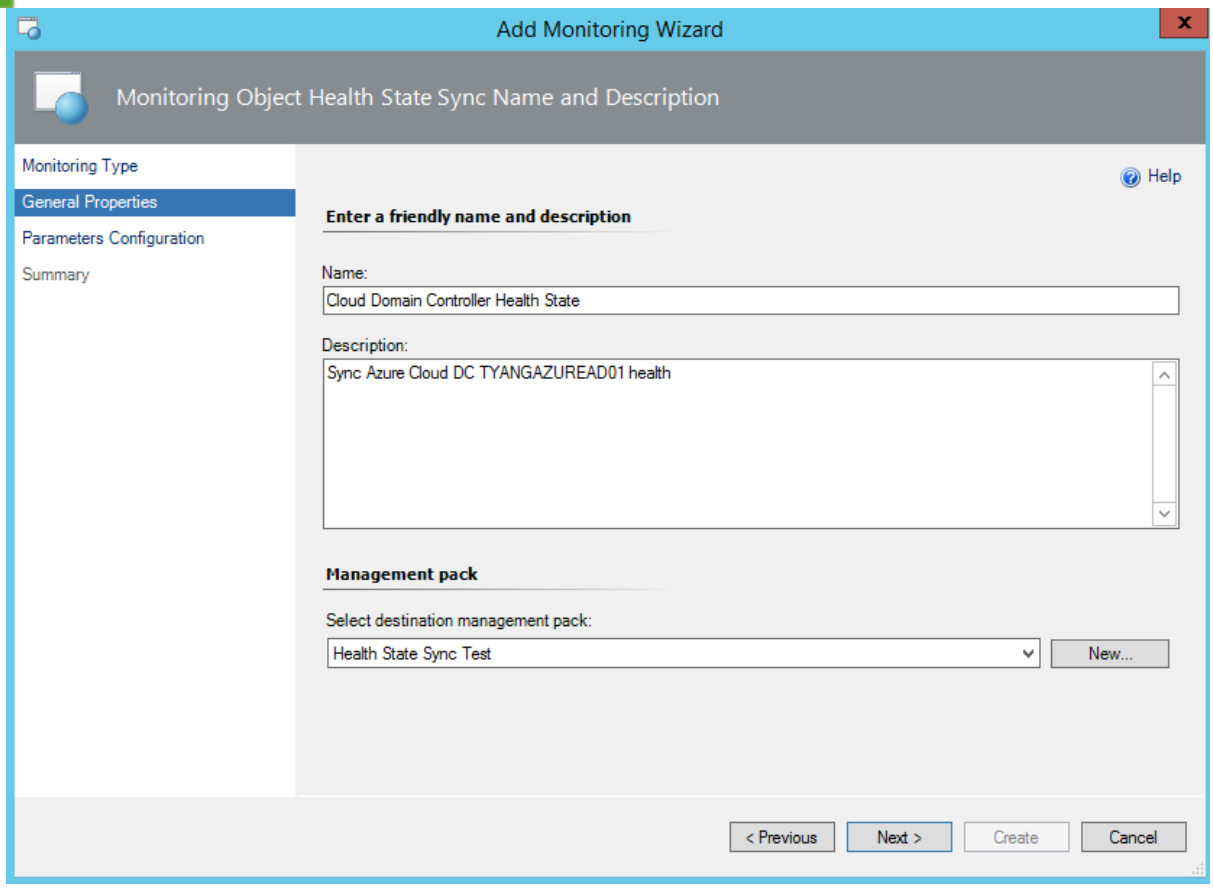
1. Click the “Add Monitoring Wizard” from the Authoring pane under “Management Pack Template”



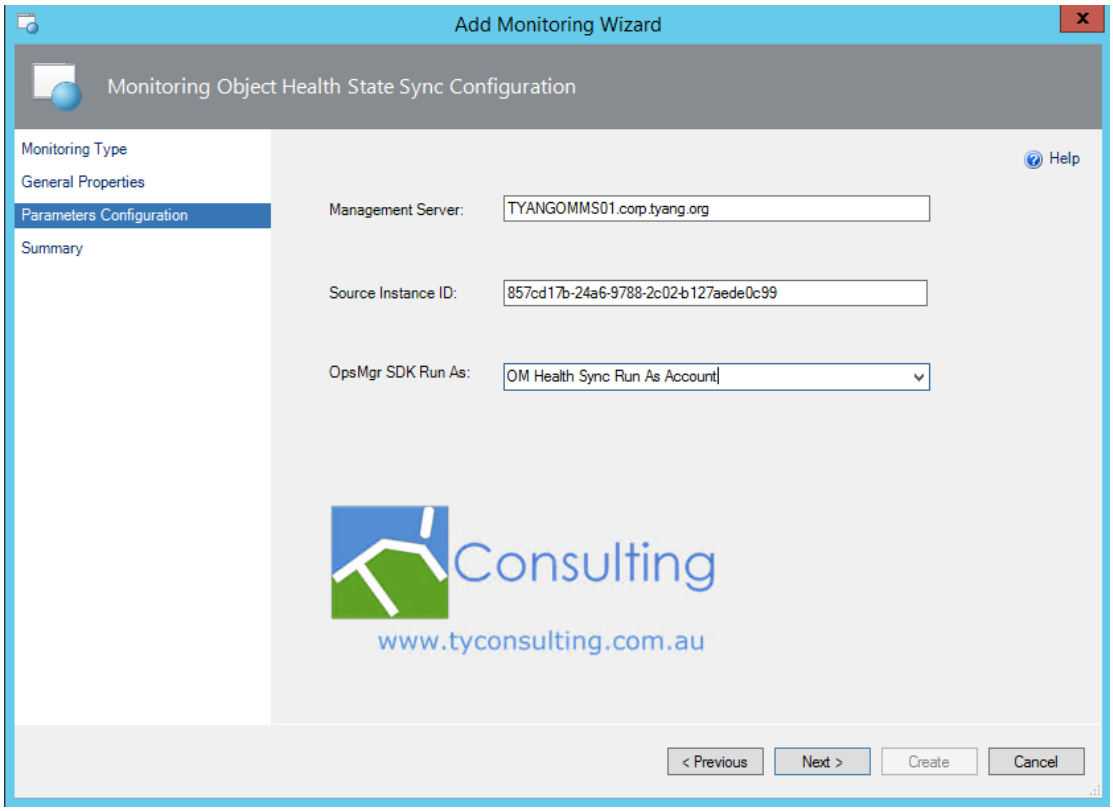
2. Choose “Cross Management Group Health State Monitoring” from the list



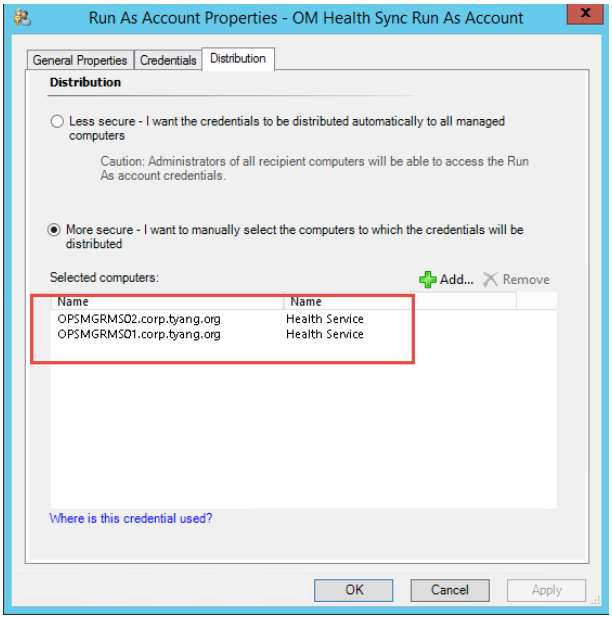
3. In General Property page, enter the display name, description and select an unsealed MP from the drop-down list:


Add Monitoring Wizard
Monitoring Object Health State Sync Name and Description
Monitoring Type
General Properties
Parameters Configuration
Summary
Help
Enter a friendly name and description
Name:
Cloud Domain Controller Health State
Description:
Sync Azure Cloud DC TYANGAZUREAD01 health
Management pack
Select destination management pack:
Health State Sync Test
New...
< Previous
Next >
Create
Cancel

4. In the Parameter Configuration Page, enter the following information:

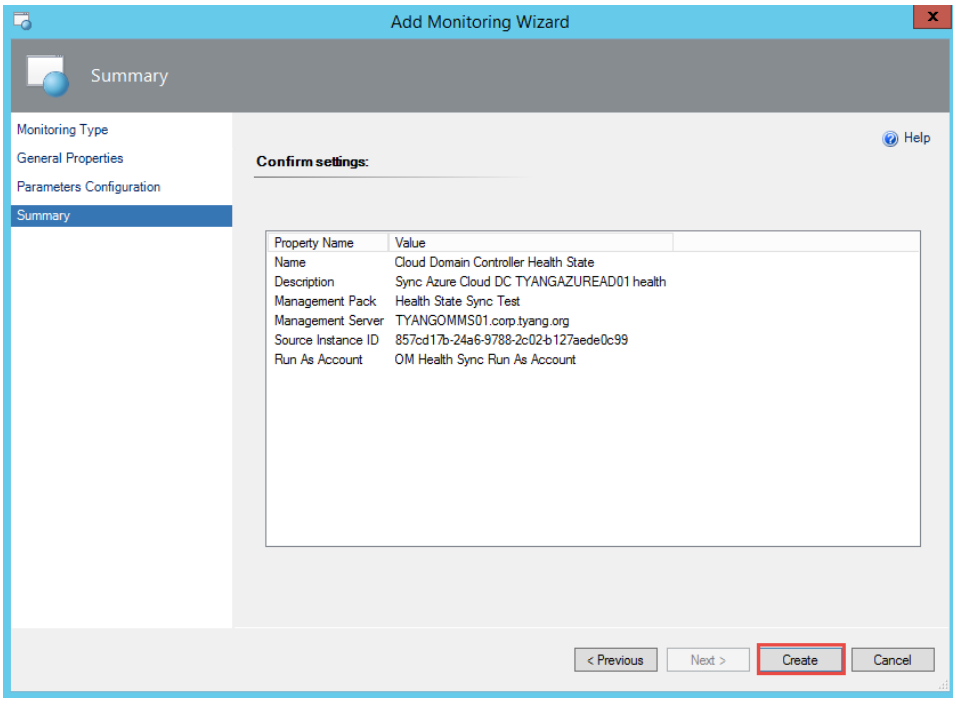


- Management server from the remote management group
- Source Instance ID (monitoring object ID) of the monitoring object from the remote management group
  Note: there are multiple ways to find the monitoring object ID in OpsMgr. Please refer to this article for possible ways to locate the ID: http://blog.tyang.org/2015/03/11/various-ways-to-find-the-id-of-a-monitoring-object-in-opsmgr/
- Select the Run-As account that was created prior to running this wizard.
  Note: The Run-As account must meet the following requirements:
  i. It must have at least Operator access in the remote management group
  ii. it must be distributed to all management servers

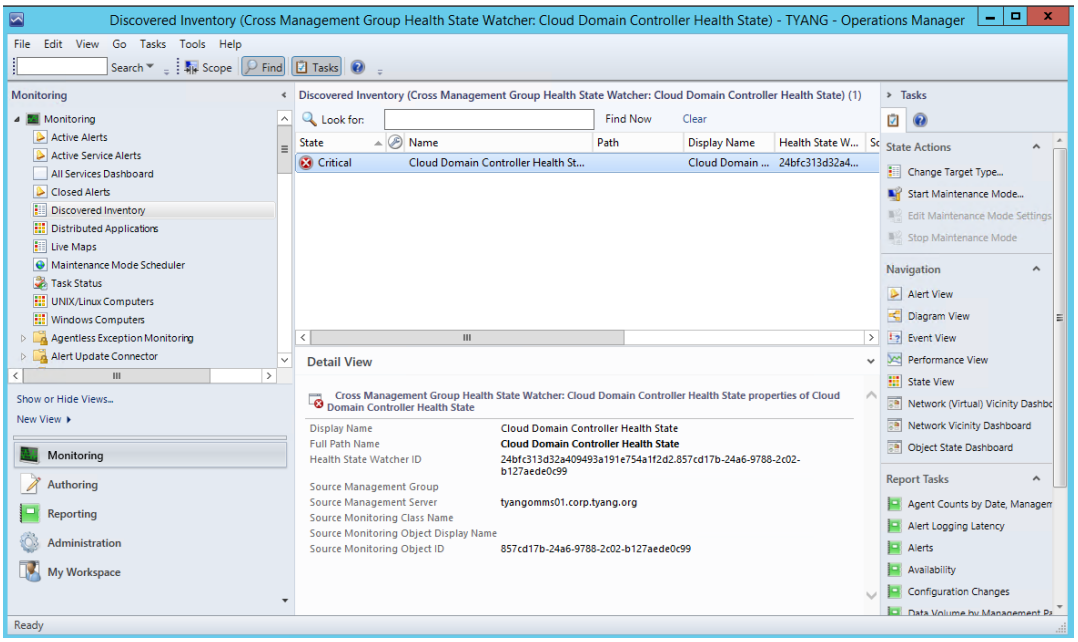


iii. It must have logon locally access on all management servers. – This is a general requirement for all Windows Run-As accounts in OpsMgr. Although it will never be used to logon locally on the management servers, without this right, the workflows that are using this Run-As account will not work.

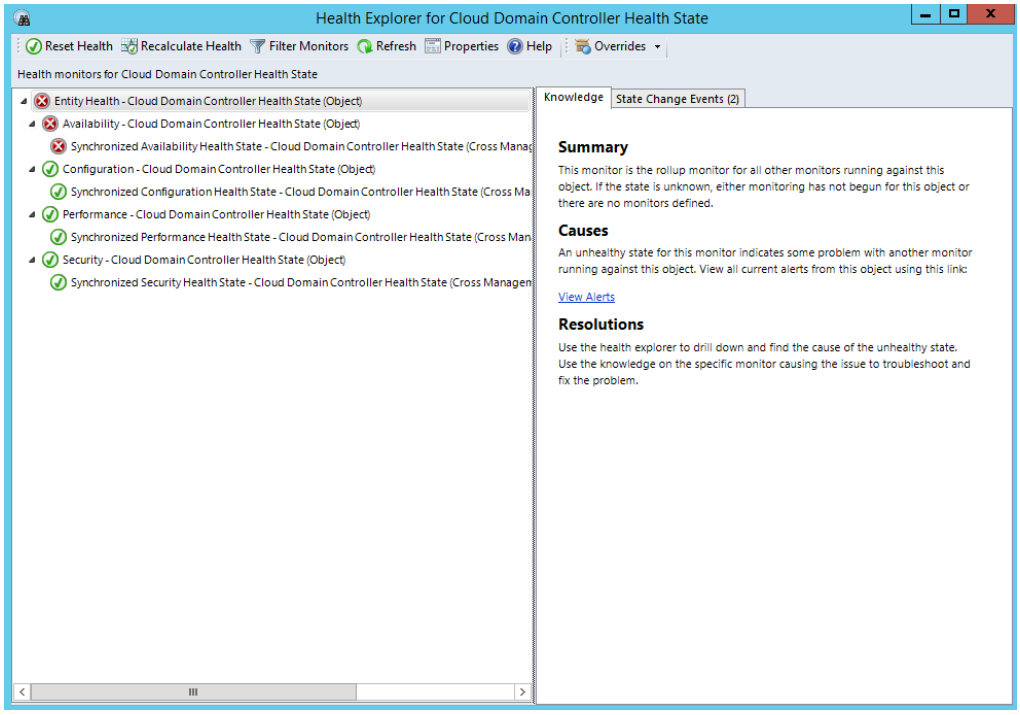
5. Confirm all information is correct in the Summary page, and click on “Create”.



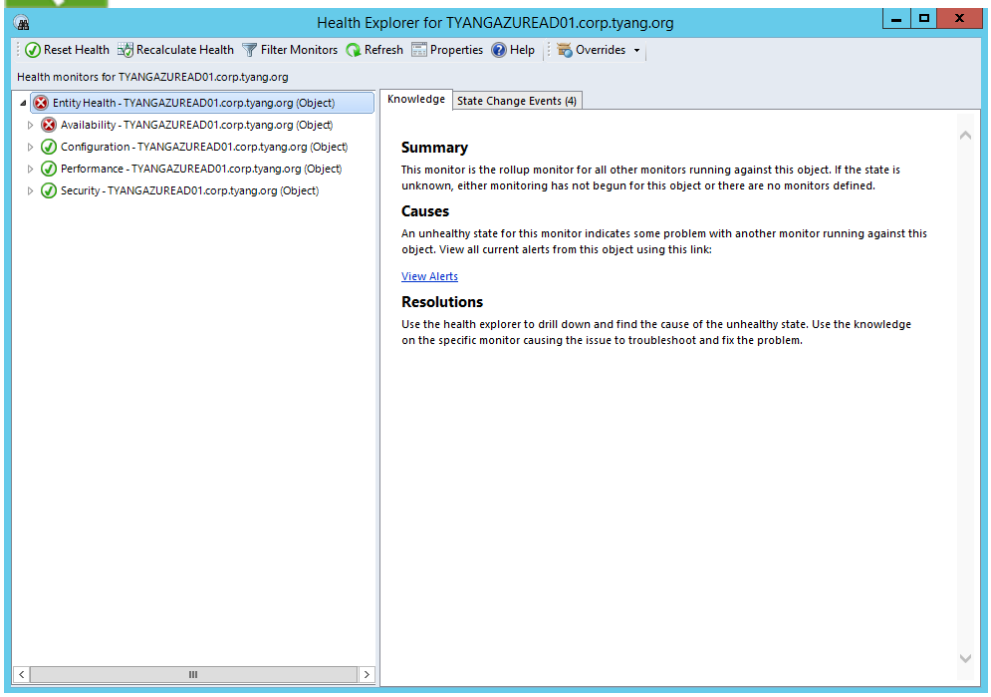
6. After few minutes, the health state of the Health State Watcher instance should be synchronized from the remote monitoring object:
   Overall state:



   Health Explorer:

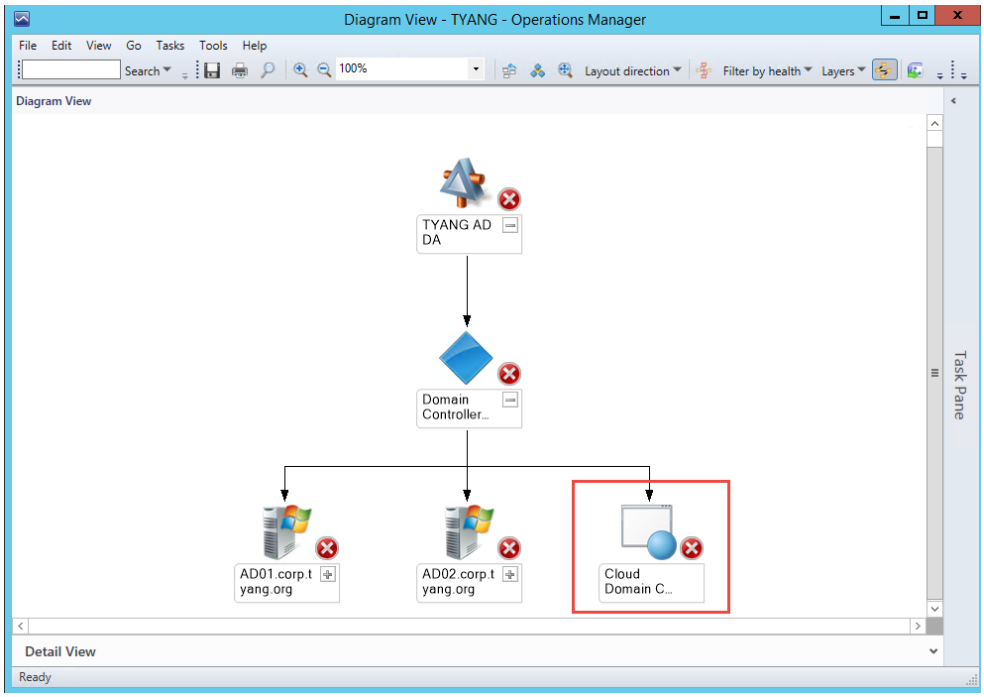


Source monitoring object (from remote MG):



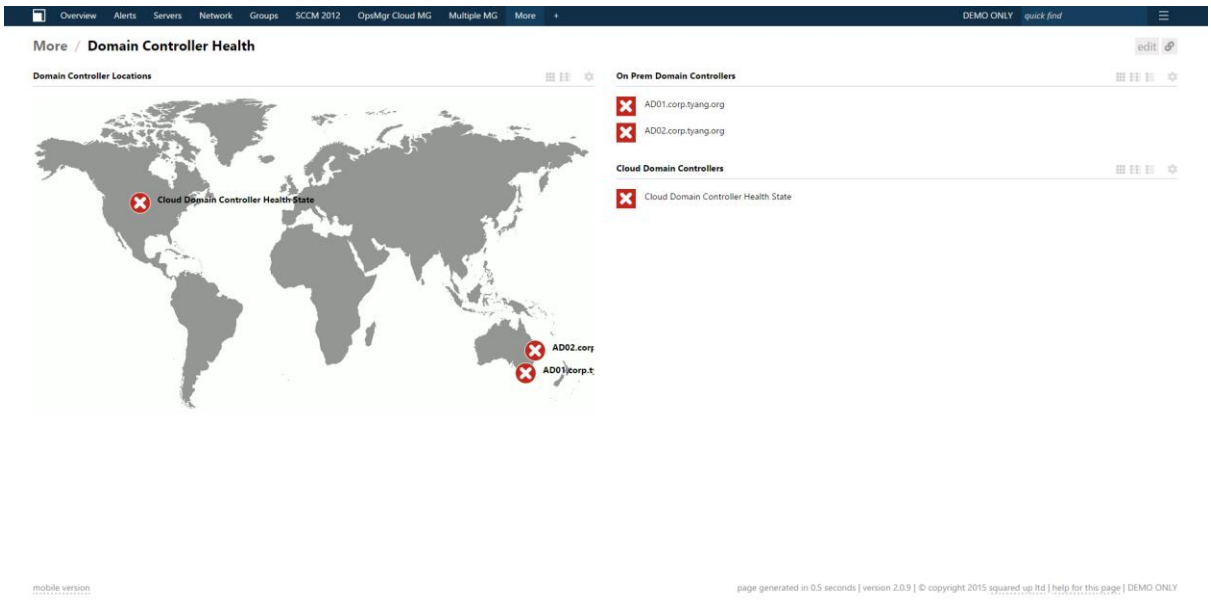
5 Sample Distributed Application

The diagram below demonstrates how to utilize the health state watcher in a Distributed Application:



In the demo environment, the 2 domain controllers (AD01 and AD02) are being monitored by a management group located in the On-Prem network. There is another domain controller located in Microsoft Azure IaaS, and it is being monitored by a separate management group in Azure. A Health State Watcher object was created previously to synchronize the health state of the Azure DC Windows computer health.

6 Sample Dashboards Using SquaredUp

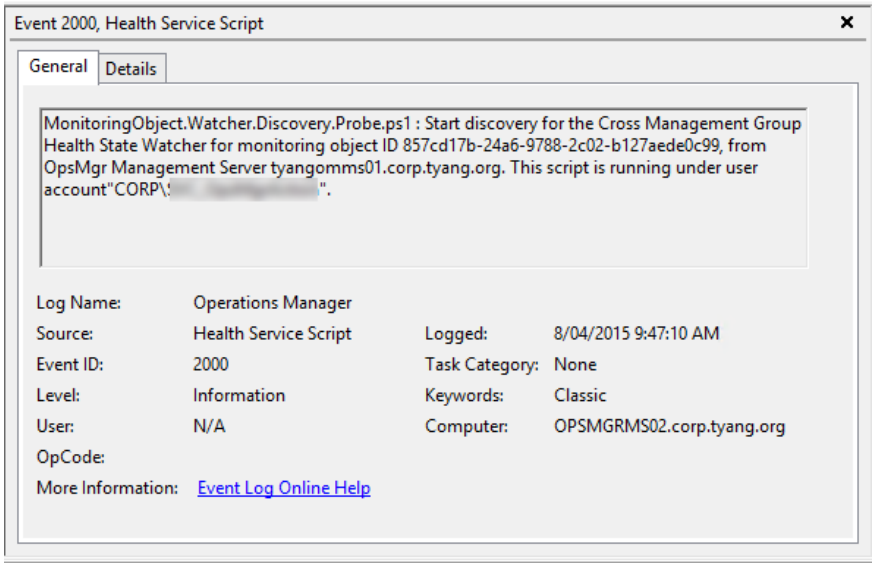


As shown above, on the left section, the Health State Watcher object for the Azure based domain controller is pinned on the correct location of a World Map dashboard. The health state of individual domain controllers are also listed on the right.

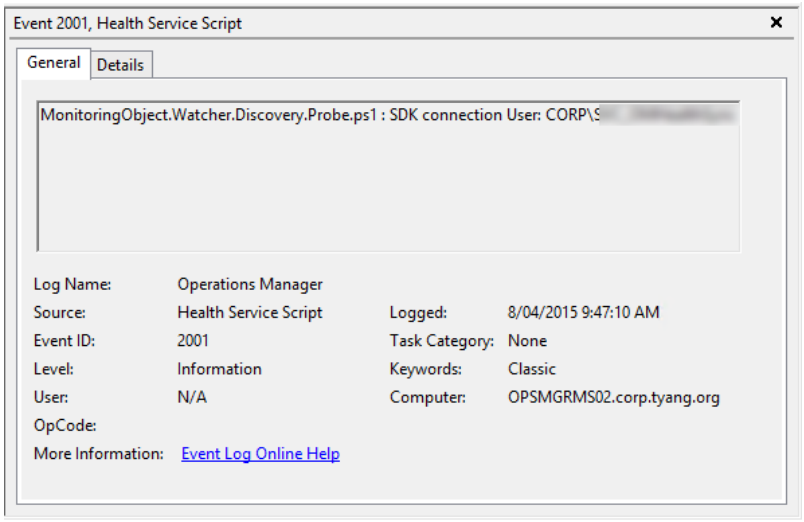
7 Troubleshooting

The PowerShell scripts used in this management pack log various events to the Operations Manager event log of the active node of the All Management Servers Resource Pool during the execution. The events IDs are ranged from 2000 to 2006.

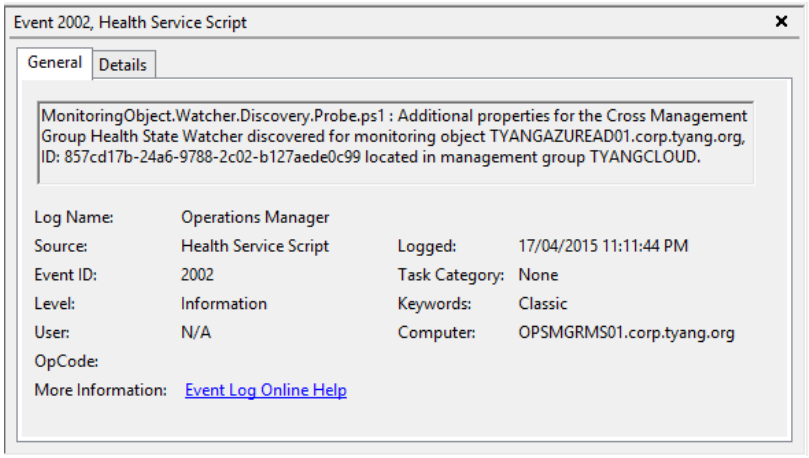
Event ID 2000 (Start Health State Watcher properties discovery):



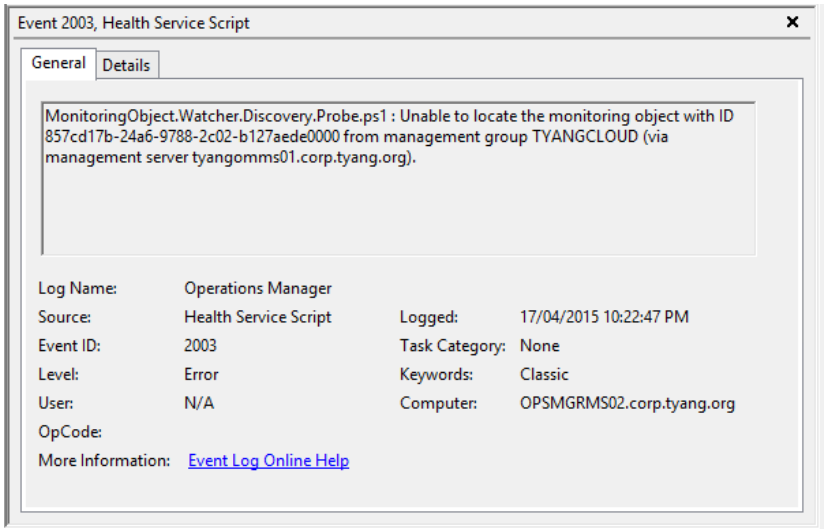
Event ID 2001 (Run-As account used in the property discovery):



Event ID 2002 (Health State Watcher property discovery):

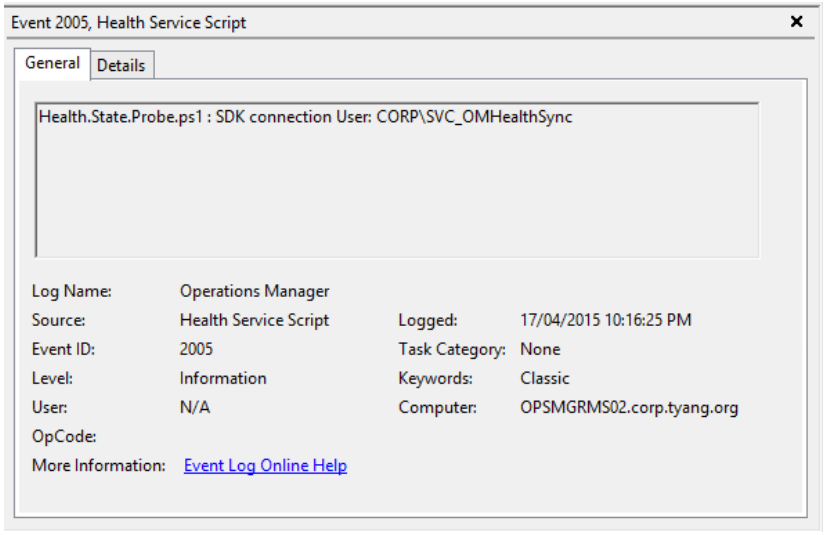


Event ID 2003 (Unable to locate monitoring object from the remote MG):



Event ID 2004 (Start probing health state of the remote monitoring object):

Event ID 2005 (Run-As account used in the unit monitors):



Event ID 2006 (Unit monitors failed to connect to remote MG):