Deployment Guide

Microsoft System Center Operations Manager (SCOM)

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1 INTRODUCTION

The A10 Microsoft System Center Operations Manager (SCOM) snap-in is a system monitoring snap-in for Microsoft SCOM. This offers a comprehensive set of tools that can be used to query components in near real-time from A10 Thunder and AX Series devices. The A10 SCOM snap-in integrates with Microsoft System Operations Manager and displays information in the SCOM Dashboard, thus allowing you to view to critical alerts, health state information, and performance information.

Diagram 1 below shows an A10 device with the MS SCOM integration. PowerShell cmdlet is used to pull updates from the A10 device and displays critical metrics within the SCOM Dashboard. This solution is based on a client/server model, with the A10 device acting as a client. The SCOM server runs on a dedicated server on top of Windows 2008 R2 SP1 or Windows 2012 Operating System (OS).

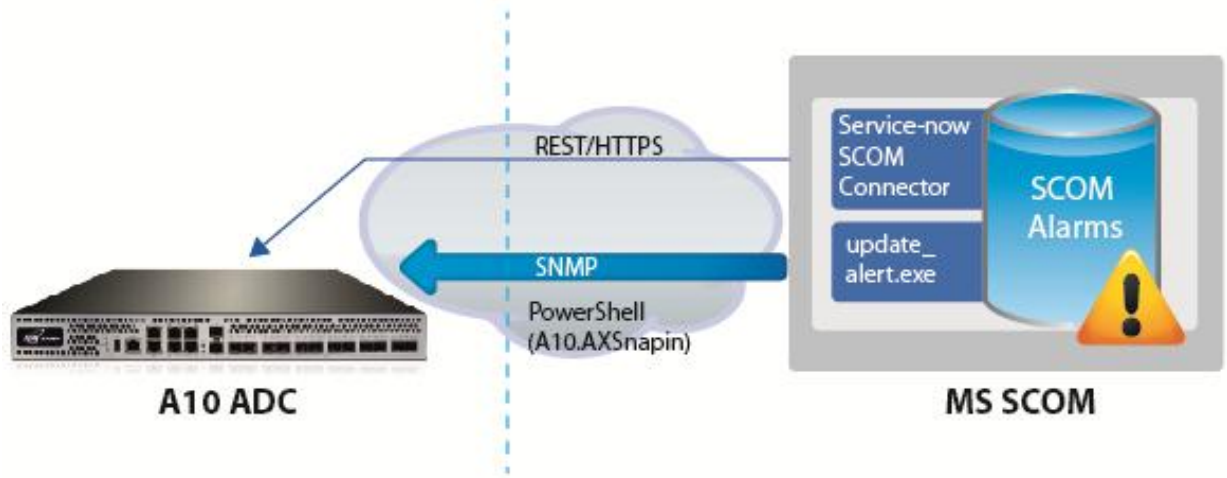

Diagram 1: A10 and SCOM integration

2 SYSTEM REQUIREMENTS

This guide used the following Microsoft SCOM configuration:

- CPU: Intel® (Itanium or x64 processors), AMD® series can be used
- RAM: 4 GB or Higher
- Hard Drive: 20 GB or more free space

Other software used:

- Microsoft Windows Server 2008 R2 SP1 or Windows Server 2012
- Microsoft .Net Framework 4.0 or later
- Windows SQL Server 2008
- Microsoft System Center Operations Manager (SCOM) 2012 SP1
- Windows PowerShell version 2.0
- For detailed software and feature requirements refer to:
  - http://technet.microsoft.com/en-us/library/jj656654.aspx

Note: *Administrator privileges are required to install the AX SCOM Management Pack and the installation file must be "Run as administrator" during installation.*

3 A10 SCOM MANAGEMENT PACK CLASS STRUCTURE REFERENCE

The list below provides a conceptual view of how the class structures are packaged within the A10 SCOM Management Pack.

- A10.Device
  - A10.System
    - A10.Disk
    - A10.Memory
    - A10.InterfaceList
      - A10.Interface
    - A10.FanGroup
      - A10.Fan
    - A10.Power
      - A10.PowerSupply
    - A10.Processor
      - A10.CPU
    - A10.Temperature
  - A10.Service
    - A10.SLB
      - A10.ServerList
        - A10.Server
          - A10.ServerPort
      - A10.VirtualServerList
        - A10.VirtualServer

        - A10.VirtualPort
    - A10.ServiceGroupList
        - A10.ServiceGroup
            - A10.ServiceGroupMember
- A10.HA
    - A10.HAGroup

4 OBJECTS MONITORED

The A10 SCOM Management Pack provides real-time performance monitoring for the following A10 device objects:

- Interface
- CPU
- Memory
- Disk
- Real-Server
- Real-Port
- Virtual-Server
- Virtual-Port
- Service Group
- Service Group Member

Note: *For additional information about these objects, refer to the "*A10 SCOM Management Pack Object Descriptions*" in Appendix 1 of this document.*

5 INSTALLATION PROCEDURES

Once the A10 SCOM snap-in is installed, you can configure the A10 SCOM snap-in.

Note: *Be aware during installation that there are two versions of A10 SCOM installers: Itanium or x64. Verify that the SCOM server you are using has the proper type of CPU before you begin the installation.*

SCOM A10 PowerShell 2.0 Pre-installation Requirements:

If your server is using PowerShell 2.0, look for the "PowerShell.exe.config" file in the PowerShell installation folder ("C:\WINDOWS\system32\WindowsPowerShell\V1.0"). This file is required because the A10 SCOM snap-in requires .NET 4.0 support and PowerShell 2.0 only supports .NET 2.0.

For more detailed information about this configuration file, please refer to http://msdn.microsoft.com/en-us/library/w4atty68.aspx on Microsoft TechNet.

Additional required configuration:

If the "PowerShell.exe.config" file already exists, then manually add the following context to "PowerShell.exe.config" file:

```
<configuration>
    <startup useLegacyV2RuntimeActivationPolicy="true">
        <supportedRuntime version="v4.0"/>
    </startup>
</configuration>
```

For detailed information on how to configure the .Net Framework 4 Runtime, refer to the URL below:

http://msdn.microsoft.com/en-us/library/vstudio/ff770241%28v=vs.100%29.aspx

SCOM Snap-in PowerShell Installation:

After the SCOM installation is complete, you can use the PowerShell command "[Environment]::Version" to check if PowerShell supports .NET 4.0.

Alternatively, you can use the following cmdlet to verify whether you can operate the A10 device using PowerShell. To do so, follow the procedure below:

1. Open PowerShell.

2. At the prompt, type **Get-PSSnapin -Registered**
   The following message appears, confirming you can operate the A10 device using PowerShell.

Diagram 2: PowerShell validation

   If you do not see this message, or if you receive an error message, this indicates the PowerShell installation failed. If this happens, try install it again by right-clicking PowerShell and selecting "Run as Administrator".

3. Type **[Path of .NET 4.0 or above]\installutil.exe [Path of AXPSSnapin.dll]\AXPSSnapin.dll**

   For example:
   C:\WINDOWS\Microsoft.NET\Framework64\v4.0.30319\installutil.exe
   F:\C#Project\AXPSSnapin\bin\Release\AXPSSnapin.dll

6 A10 DEVICE DISCOVERY IN SCOM

This section provides instructions for configuring Microsoft SCOM so it can discover the A10 devices on your network.

1. Navigate to the Microsoft System Center Operation Manager Console by selecting **Administration** > **Network Management** > **Discovery Rules** and select **Discovery Wizard**. The "Computer and Management Wizard" page appears. Select **Network devices** from the menu, and click **Next**.

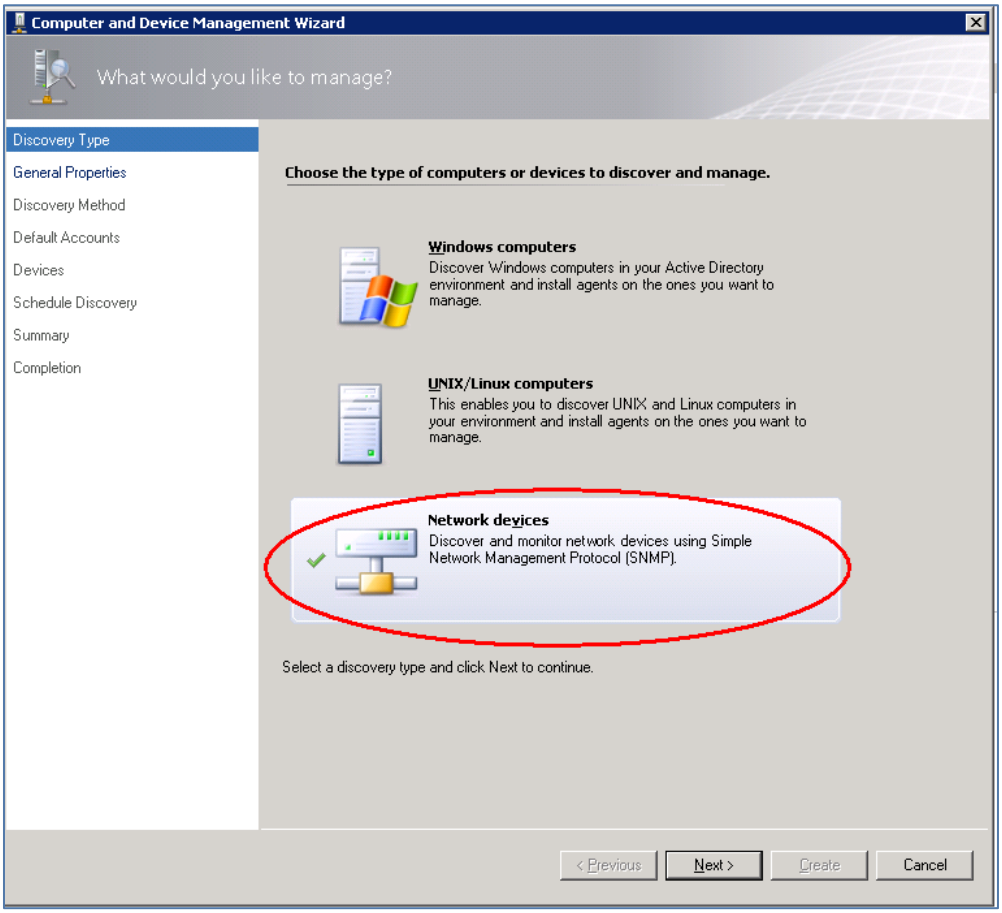

Diagram 3: Discovery options

2. Enter the A10 device that you are trying to discover in the **Device Name** field. The example below shows "AX Device".

3. Next, click the **Available servers** drop-down menu and select the name of the Operations Manager management server.

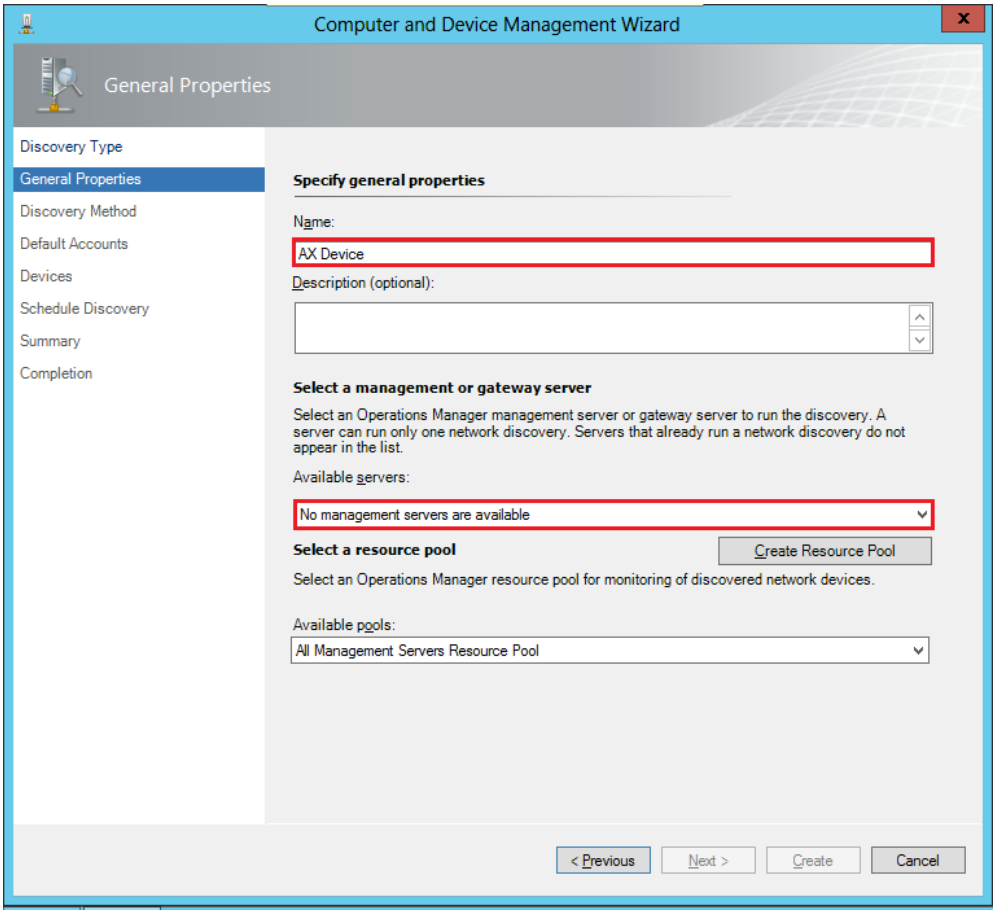

Diagram 4: General Properties

4. Once the management server has been selected from the drop-down menu, click the **Next** button to proceed to the next page.

5. The *Discovery Method* page appears. Select the **Explicit discovery** radio button and then click **Next**.

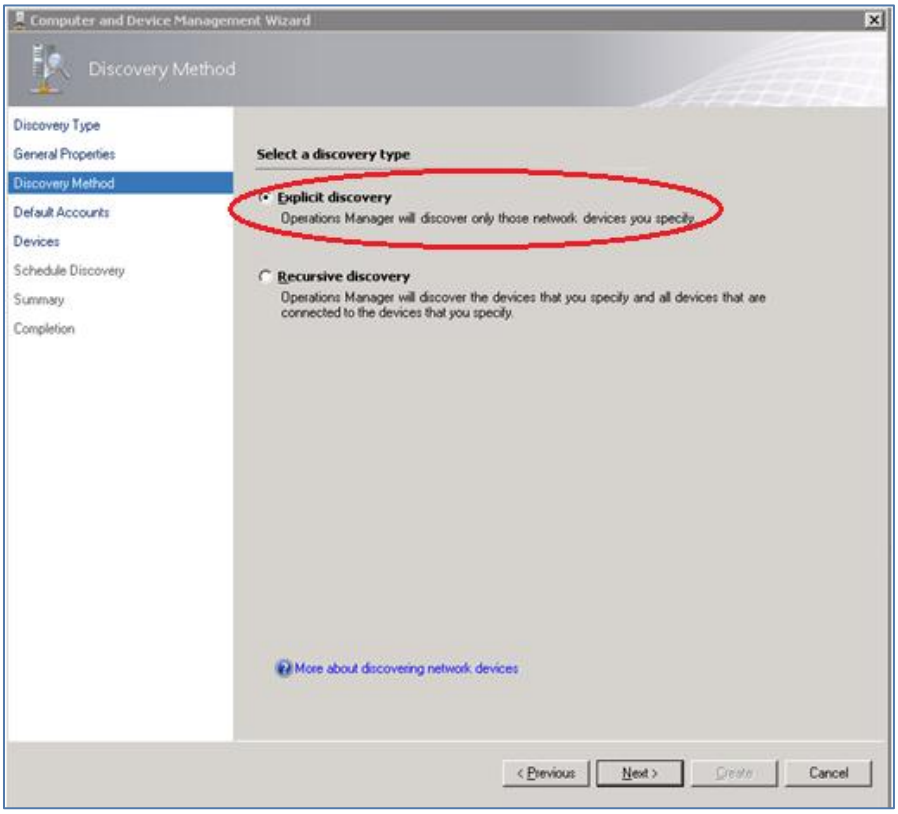

Diagram 5: Discovery Method

6. The Default Accounts page appears. In the *Specify the default Run As accounts for discovery* section of the window, click **Create Account**. Once the account has been created, it will appear in the *Run As accounts* section.

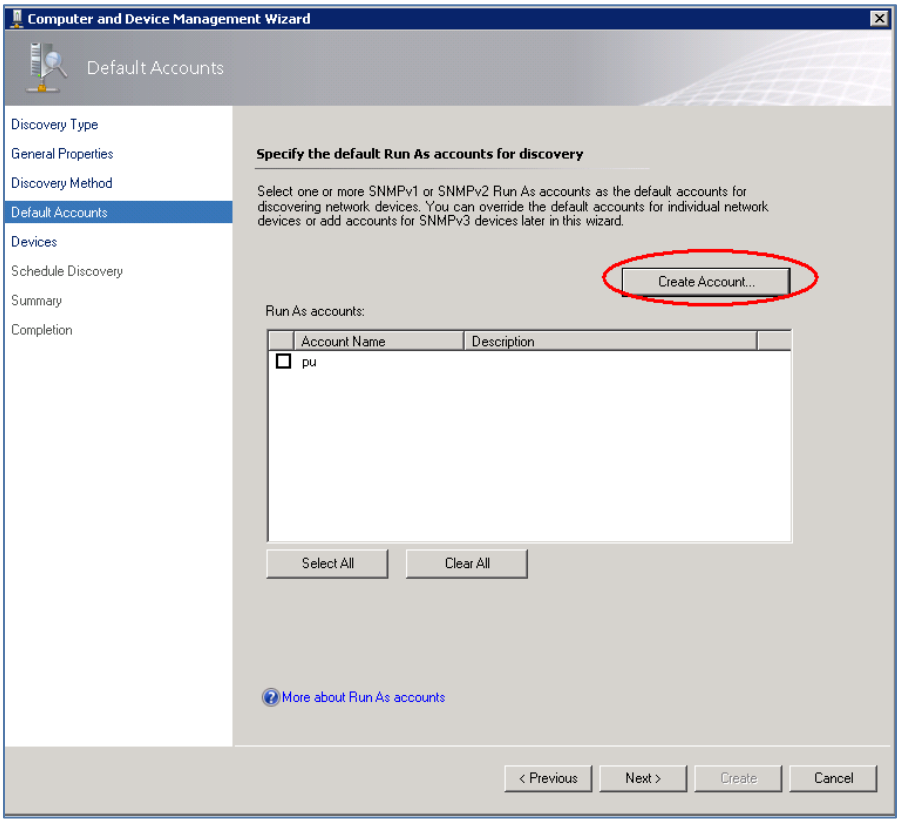

Diagram 6: Default Accounts – Create Account

7. Identify the account you would like to use as the “default Run As account”, and then select the checkbox next to the account to highlight it.

8. Click the **Next** button to proceed.

9. The *Introduction* page appears, as shown below.

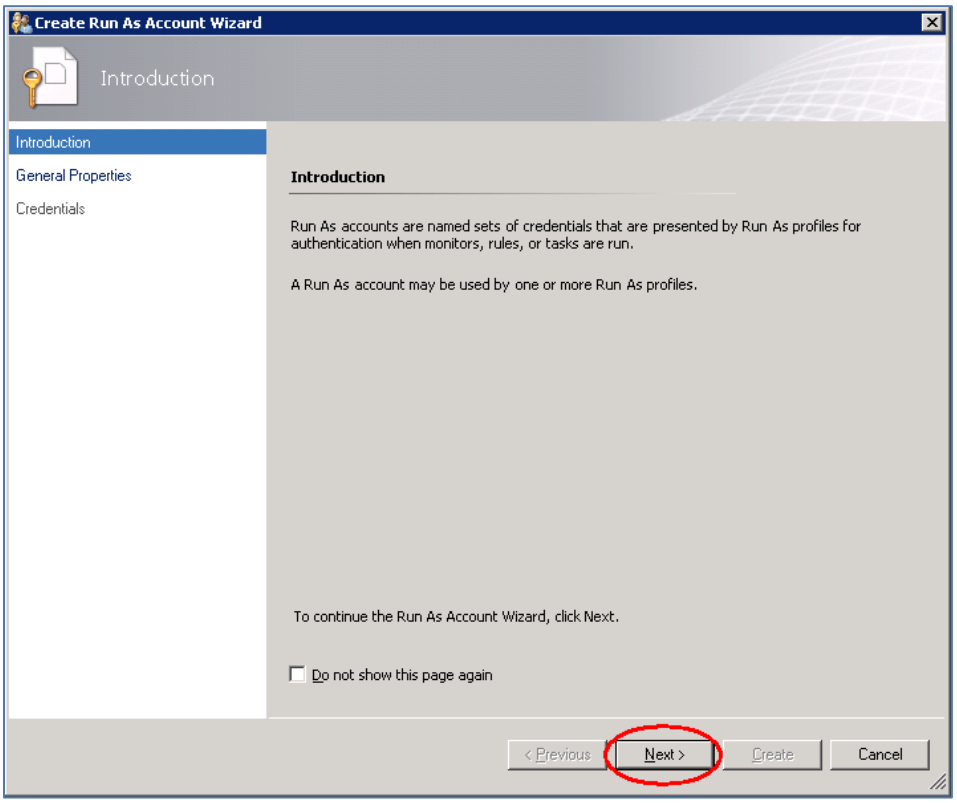

Diagram 7: Account Wizard Introduction page

10. Click the **Next** button to proceed.

11. The *General Properties* window appears.

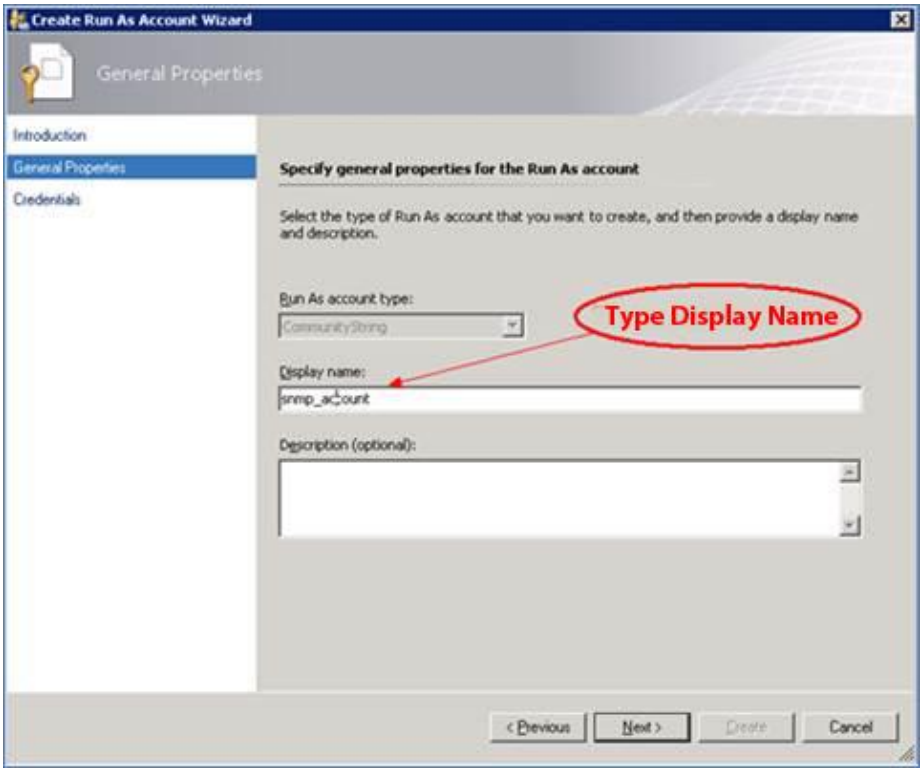

Diagram 8: Account Wizard Display Name

12. Enter a name in the **Display name** field, and then click the **Next** button.

13. The Credentials window appears.

14. Type a string in the **Community string** field.
    The community string you enter must be same as the community string configured on the A10 device that you are attempting to discover.

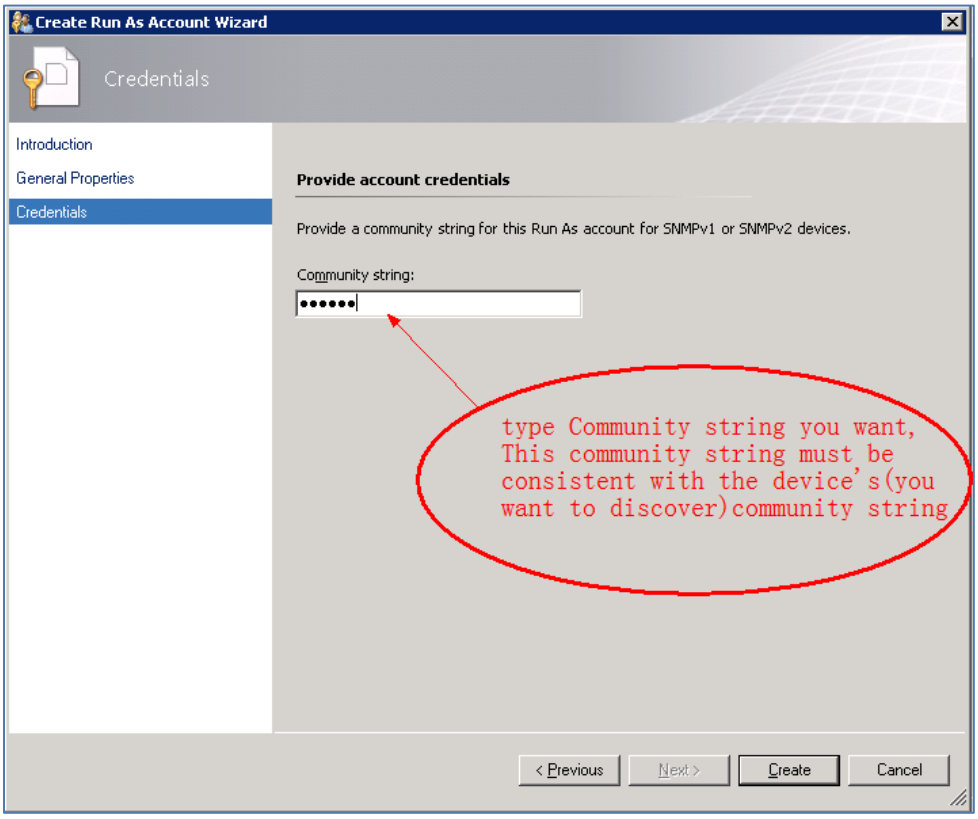

Diagram 9: Account Wizard Credentials

15. Click the **Create** button to proceed.

16. From the A10 GUI, navigate as follows:
    Config Mode > **System** > **SNMP** > **Community** > **SNMP Community**.

    Make the following changes:

    - Enable System SNMP Service
    - Enter System Name
    - Enter System Location
    - Enter System Contact
    - Under the *Community* section, enter the matching **SNMP community string**.

Note: *All A10 devices that will be monitored by the SCOM require the above configuration. The community string configured on the SCOM server must match the community string configured on the A10 devices.*

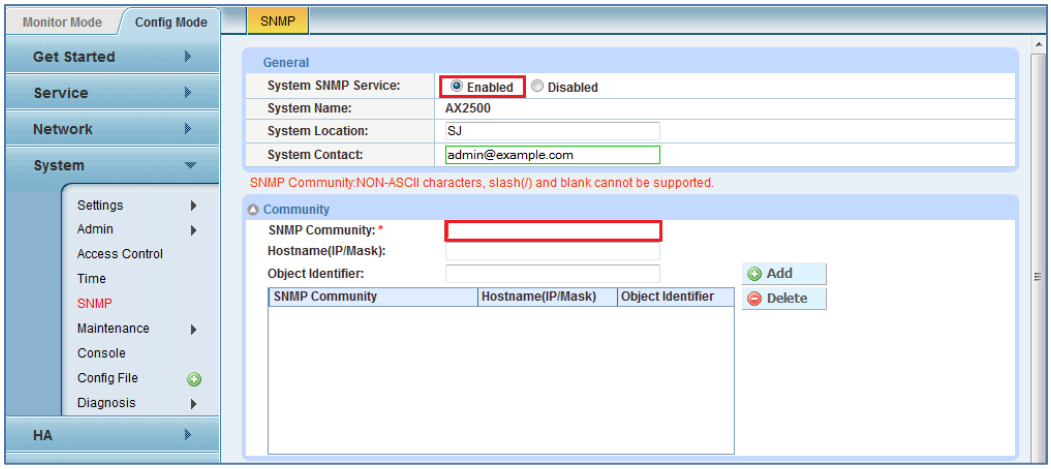

Diagram 10: A10 Device SNMP Configuration

17. Click **OK** and then click the flashing red **Save** button to store your changes to the startup-config file.

18. Return to the A10 SCOM installation page and in the S*pecify devices* window, click the **Add** button to add the device for discovery.

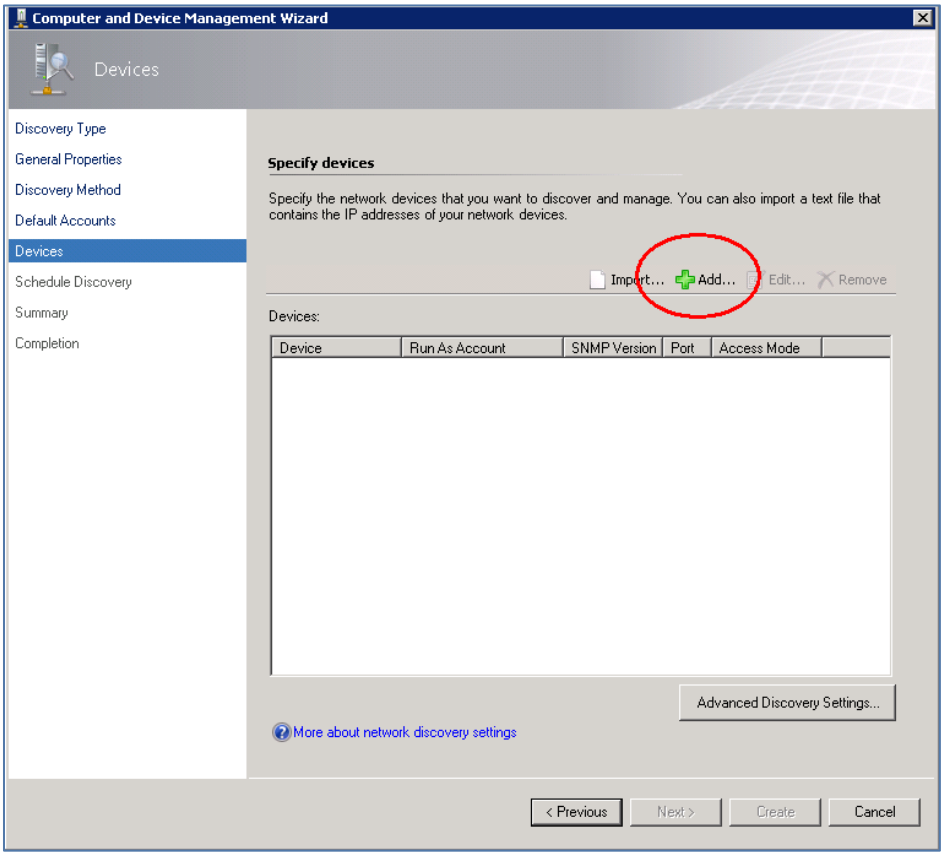

Diagram 11: Computer and Device Wizard

19. The *Add a Device* window appears. Type the IP address of the device you want to have discovered, click the "Access mode" drop-down menu and select SNMP. Then click the "SNMP version" drop-down menu and select v1 or v2. Then, click **OK** to proceed.

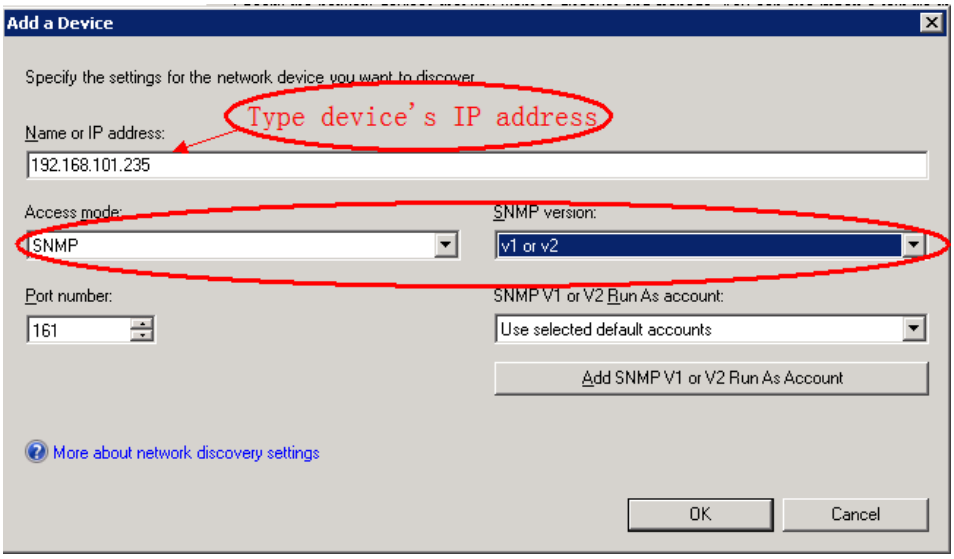

Diagram 12: Add Device

20. The device you added is added to the list. Click **Next**.

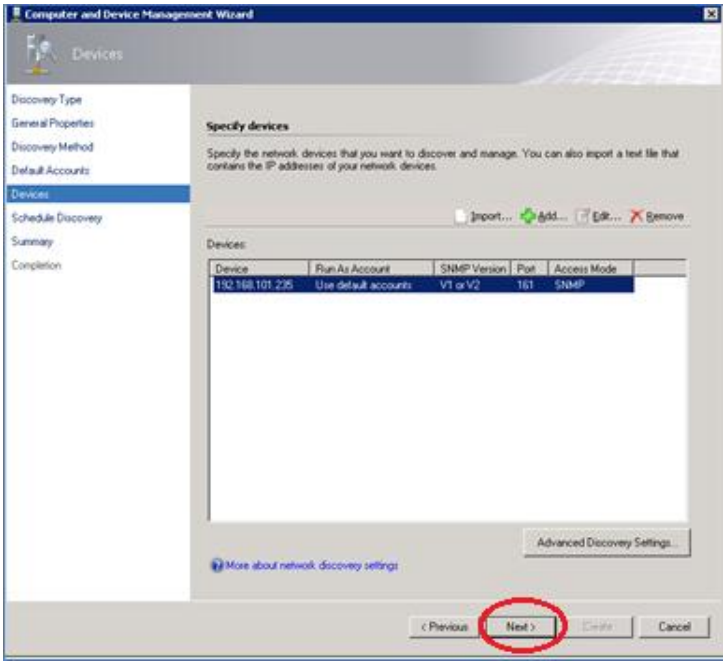

Diagram 13: Device Management

21. The *Schedule Discovery* page appears, as shown below.

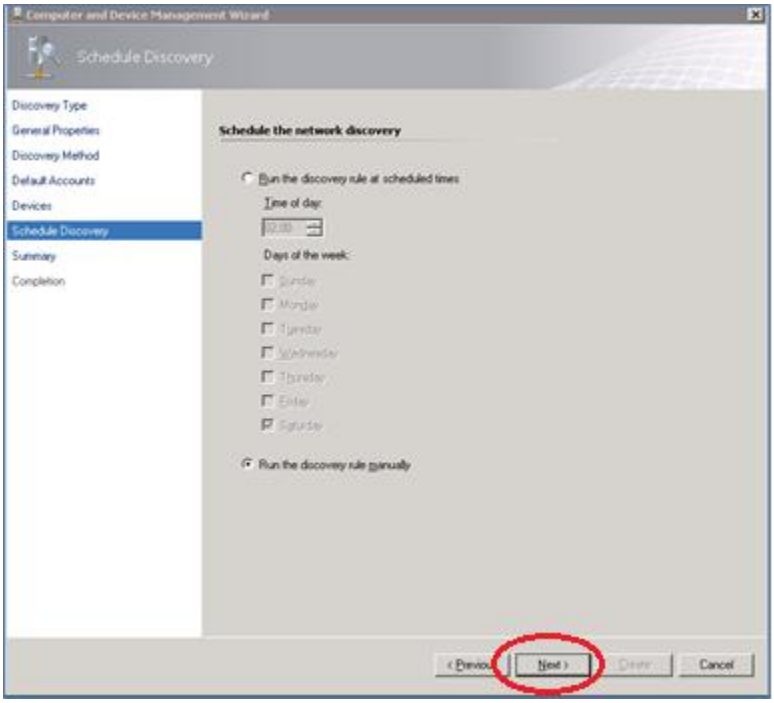

Diagram 14: Schedule Discovery

22. In the *Schedule the network discovery* section of this page, select a rule and then click **Next**.

23. The *Summary* page that appears, as shown below:

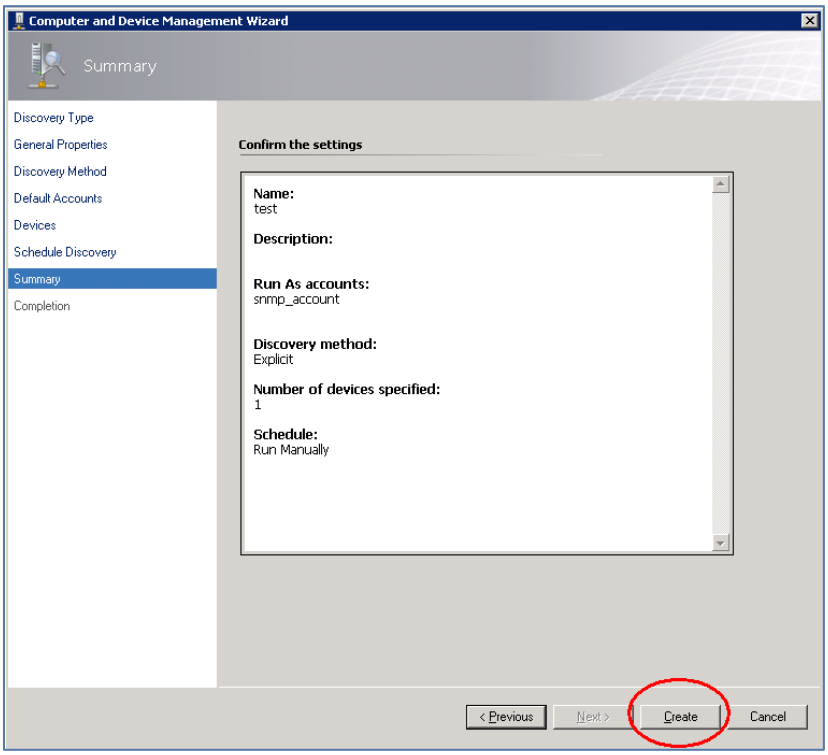

Diagram 15: Wizard Summary

24. Confirm that the information you have entered is correct, and then click the **Create** button.

25. The discovery rules should appear listed in the table.
    The discovery rules can be accessed by selecting **Administration** > **Network Management** > **Discovery Rules**. If the device was not found, then right-click the rules and select **Run**.

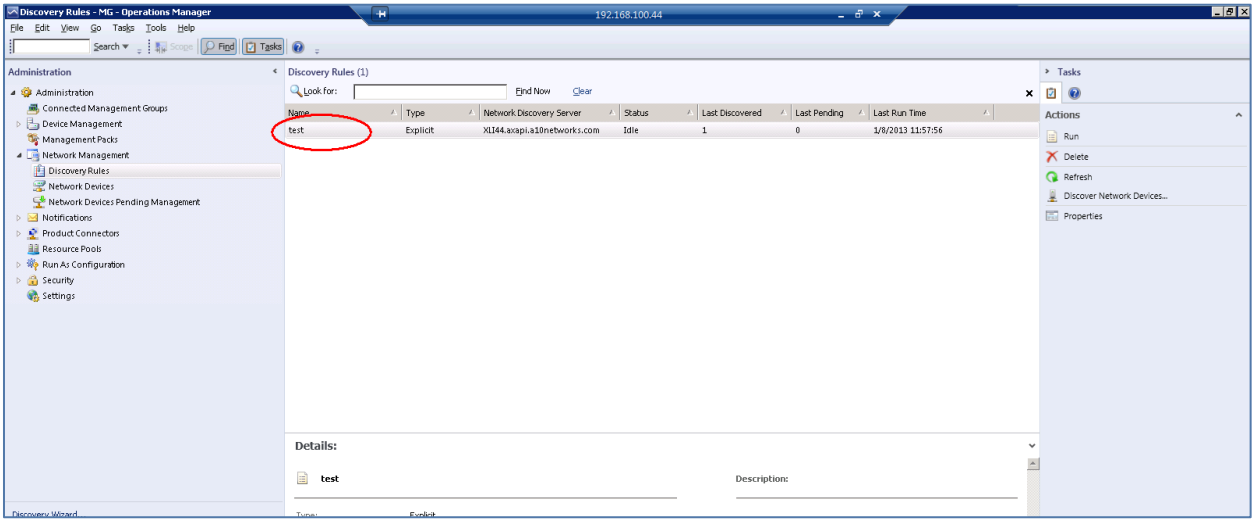

Diagram 16: SCOM Integration

7 MONITOR A10 DEVICES WITH SCOM MANAGEMENT PACK

This section of the deployment guide provides an overview on how A10 devices are monitored once the A10 SCOM management pack is installed. The example below shows how to use the A10 Management Pack in SCOM 2012, (although Windows 2008 R2 SP1 is also supported).

1. After the A10 device has been discovered, it will appear in the *Monitoring mode* section in SCOM Operations Manager GUI.

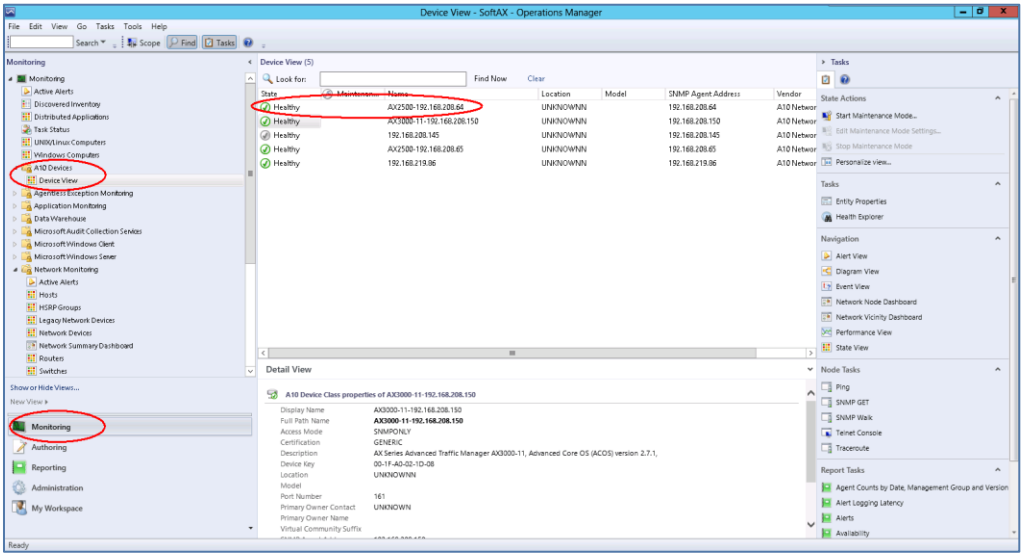

Diagram 17: SCOM Monitoring

2. Right-click an A10 device, and select **Open** > **Device View**.

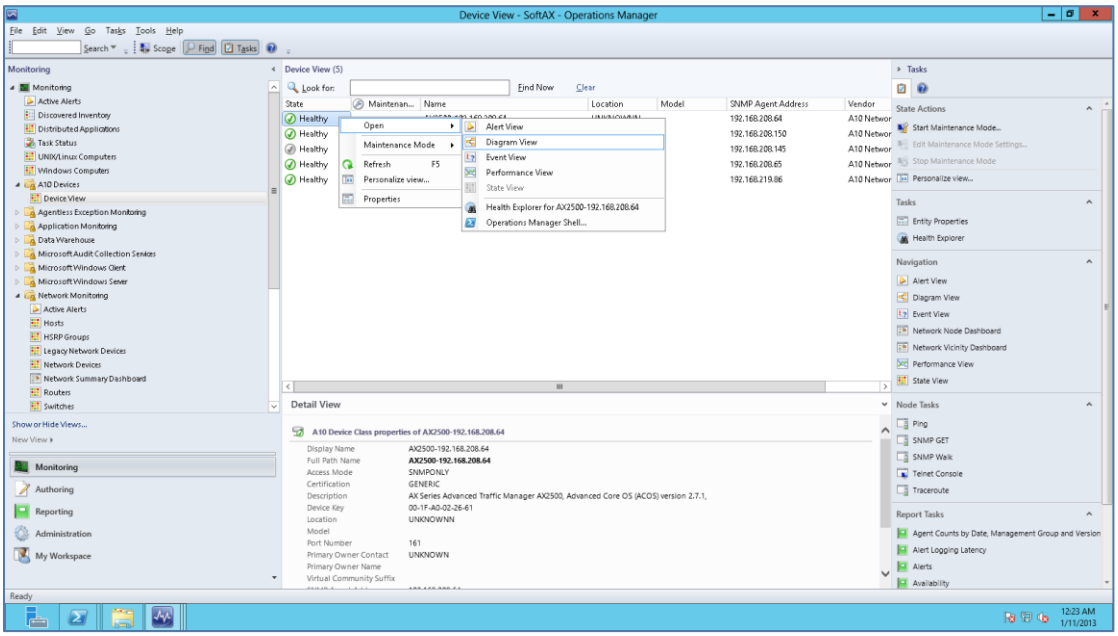

Diagram 18: SCOM Device View

3. The A10 Device Map appears, as shown below in Diagram 19.

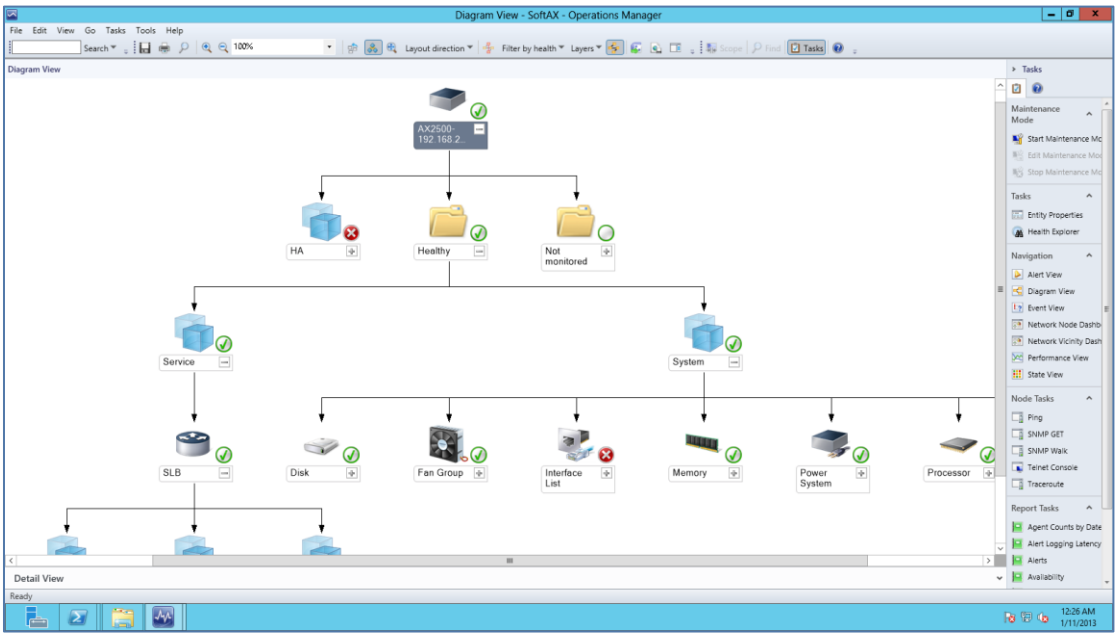

Diagram 19: SCOM Diagram View

4. SCOM offers different topology views. The diagram above is the "Diagram View" that provides component status information within the A10 device. Right-click one of the objects, such as Disk, and then select **Open** > **Performance View**. The performance line chart appears, as shown below.

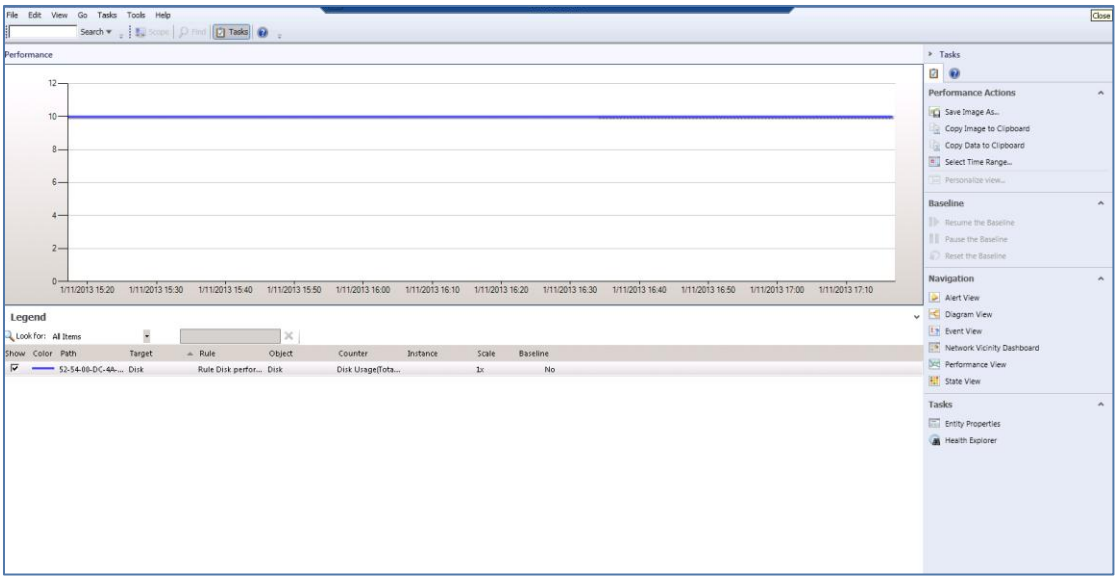

Diagram 20: Performance View

5. Right-click one of the objects, such as Server, and select Health Explorer.

6. In the Health Explorer window, you can see the server's health status. You can also use this window to recalculate Health, Reset Health, and to perform Overrides, which is a way to configure health status alert thresholds.

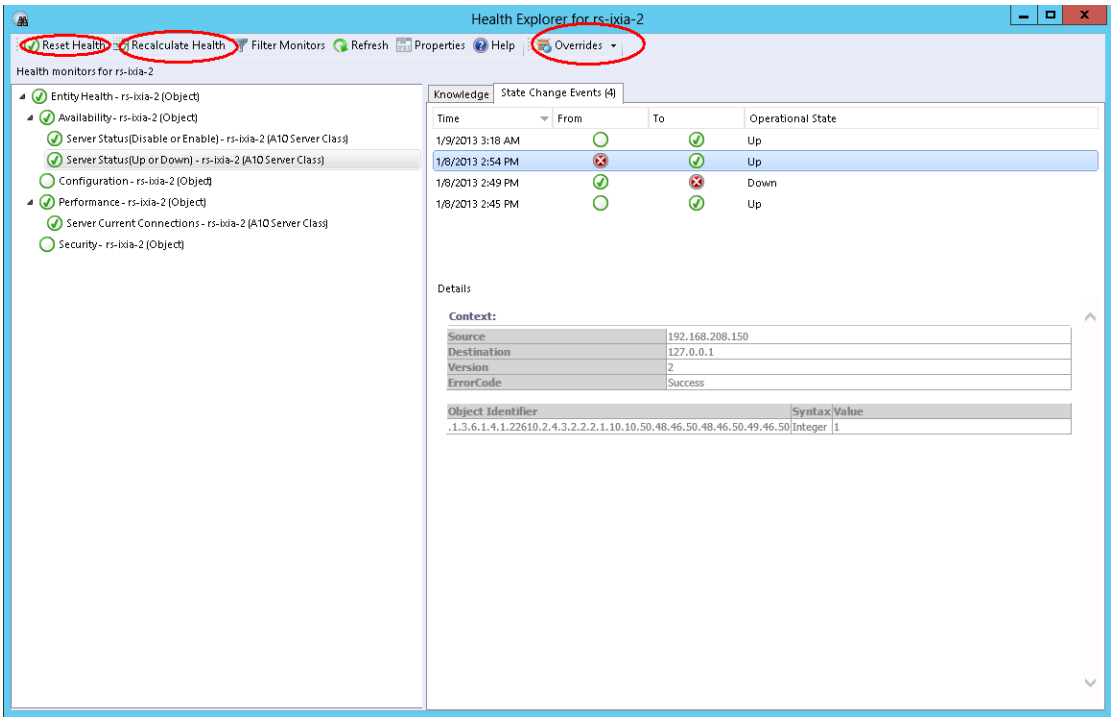

Diagram 21: SCOM Health Explorer

8 SUMMARY

The A10 Series SCOM Management Pack provides significant benefits for managing and gathering information for the A10 Series devices deployed within your network. The A10 SCOM snap-in offers a quick and easy installation process, and its full-feature integration with SCOM makes it easy to manage and monitor A10 device components and services.

9 APPENDIX 1

A10 Management Pack Object Descriptions

A10.Server-class represents Real-Server objects in the A10 device.

A10.ServerPort-class represents Real-Port objects in the A10 device.

A10.VirtualServer-class represents Virtual-Server objects in the A10 device.

A10.VirtualServerPort-class represents V-Port objects in the A10 device.

A10.ServiceGroup-class represents Service Group objects in the A10 device.

A10.ServiceGroupMember-class represents Service Group Member objects in the A10 device.