System Center 2012 R2 Lab 5: Application Management

Hands-On Lab | Step-by-Step Guide

For the VMs use the following credentials:

- Username: Contoso\Administrator
- Password: Passw0rd!

Version: 1.5.5

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Please share any feedback with the IT Camps Planning Team: ITCampPlan@Microsoft.com



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5 - Application Management

- 1. 100 minutes optional (1:40 total)
- 2. SCAC, SCOM & SCA: Application Management Components (25 mins)
- 3. SCAC: Manage Applications through Self-Service (10 mins)
- 4. SCOM: Monitor Applications (15 mins)
- 5. SCOM: Review Application Performance Monitoring (40 mins)
- 6. SCA: Monitor Applications with Advisor (10 mins)

5.1 - SCAC, SCOM & SCA: Application Management Components

5.1.1 - SCAC: Introduction to App Controller

In this exercise the user will learn about the different workspaces and functions of System Center 2012 R2 App Controller, including Clouds, Services, Virtual Machines, Library, Jobs and Settings. Internet Explorer will be used to connect to App Controller which provides a common self-service experience that can help easily configure, deploy, and manage virtual machines and services across private clouds (through SCVMM) and public clouds (through Azure).

Estimated time to complete: 5 minutes



Perform the following on SCVMM01

1. From **SCVMM01**, open **App Controller** by selecting the **Internet Explorer** icon from the taskbar.



2. If the site does not open, browse to https://SCVMM01.contoso.com.



3. If a notification appears about the certificate, click **Continue to this website (not recommended)**.



4. When prompted to sign in, enter **contoso\administrator** for the user name and **Passw0rd!** for the password. Click the **Sign In** button.

Microsoft System Center 2012 R2	App Controller
Enter your credentials to sign in	
User name:	
contoso\administrator	
Password:	
•••••	
	Sign In
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5. Navigate to the **Overview** workspace. This shows the overall status view of the clouds in the infrastructure. This is the location to add new clouds to monitor, these include clouds from VMM, Azure and other hosting providers.

E la https://scvmm01.contose.com	n/#/Shell/ProductOverview	P ▼ C ■ App Controller	×			- 0 × ≙ ★ ₽
Microsoft-System Center 2012	2 R2					App Controller Hi, Sign out Help
 Clouds Clouds Services Wrtual Machines Ubray Jobs Z Settings 	Overview Status Private Clouds 1 Virtual Machine Manager server 1 Virtual Machine Manager cloud 2 Virtual machines	et running winnted Virtual machines winnted Processors winnted Remory	Public Clouds	ption	CHOSTING Service Providers	Last refresh: 23524 AM
	Next Steps <u>Common Tasks</u> <u>Connect a Virtual Machine Manage</u> Connect a Windows Azure subscrip Add a network file share	er server and clouds		Online Help Chain a Windows Asses subscription Chain a Windows Asses subscription Manage privices Create service template Create service template to a cloud Add a service template to a cloud Moving from virtual machines to se	on is and resources invices	0
© 2013 Microsoft. All rights reserved.	System Center Blogs			Recent Forum Posts		• Re 198 de 242 AM

6. Navigate to the **Clouds** workspace. This page is used to connect to and manage public and private clouds, and to deploy services to them. Users who manage public and private clouds must be members of the **Administrator** user role.

C I Https://scvmm01.contose.com	N/FSMI/CloudsMangement D + C app Controller ×	- □ x • * □
Microsoft-System Center 201.	2 R2	App Controller Hi, Sign out Help
<	Clouds (1)	r keyword 🔎
Clouds	Connect 👻 Deploy 🛛 Manage Run As accounts 🔤 🗐 🖗 👔	Last refresh: 2:42:46 AM
Virtual Machines	Name Connection Name Description Subscription ID Virtual Machines CPU Memory Storage -Connection Name: SCVMM01.contoso.com <	
Jobs	Contoso-Cloud SCVMM01.controso.com 0 / Unlimited	
© 2013 Microsoft. All rights reserved.	Privacy Sand Teadback to Microsoft	242 AM
		• 🔞 🌆 🕲 11/11/2013

7. Navigate to the **Services** workspace. This workspace is used deploy new services to public and private clouds, or to change the properties of services already deployed.

E https://scvmm01.contose.com	n 9:5%d(SeniceShaugement D = C) 🗃 App Controller ×	- 6 × ∩ ★ 0
Microsoft System Center 2012	2 R2	App Controller Hi, Sign out Help
< 🐣 Overview	All Deployed Services (0)	Enter keyword
Clouds	Deploy	🗄 📄 🚱 🎁 🔂 Last refresh: 2:44:13 AM
Virtual Machines	Name P Status Virtual Machine Status Cloud Name Connection Name Release Environment Instances	
jobs ▶ ☑ Settings		
	There are no items to display	
	No items are selected	~
© 2013 Microsoft. All rights reserved.	Privacy Send Teedback to Microsoft	
		 Image: A market of the second s

8. Navigate to the **Virtual Machines** workspace. This is the location to deploy virtual machines to clouds, Azure or other hosting providers.

Microsoft-System Center 2012	22	App Controller Hi, Sign out Help
< 🙆 Overview	Virtual Machines (2)	Enter keyword
Clouds	Deploy Open Diagram Properties Start Store Mount image Console Delete	🚱 👔 🔚 Last refresh: 2:45:05 AM
Virtual Machines	Name Status Cloud Name Connection Name Service CPU Usage Memory VM Size Processors Operating System	
The Library	VM01 O % 128 MB 1 Unknown	
📋 Jobs	VM02 Oshut down Contoso SCVIMM01.contos 0 % 128 MB 1 Unknown	
Ē	VM01	
	Status: Status: Status: Shut down Computer name: Unknown Operating system: Unknown Processors: 128 MB Dyname: memory. 128 MB Dyname: Not Commetted Data modified: Unknown Not Commetted Processors:	

9. Navigate to the Library workspace. This page is used to manage file shares, templates, and resources for both System Center 2012 – Virtual Machine Manager (VMM) and Windows Azure.

	m/#/Shell/Ubrary	ρ - C ■ App Controller ×					App Controller
Microsoft System Center 201	12 K2						Hi, Sign out Help
<	VMMLibrary						Enter keyword
Clouds	Paste Copy Delete						🚱 🧌 庙 Last refresh: 2:46:00 AM
Virtual Machines	hares	Name	Туре	Status	Date Modified	Size	<u>.</u>
Library	A Windows Azure	CreateDBLoginMSPetShop4.sql	SQL Script	OK	11/8/2013 1:29 PM	186 Bytes	
📋 Jobs	 SCVMM01.contoso.com 	CreateDBLoginMSPetShop4Orders.sql	SQL Script	OK	11/8/2013 1:29 PM	81 Bytes	
Settings	Templates	CreateDBLoginMSPetShop4Profile.sql	SQL Script	OK	11/8/2013 1:29 PM	82 Bytes	
	 Contoso-Cloud 	CreateDBLoginMSPetShop4Services.sql	SQL Script	OK	11/8/2013 1:29 PM	81 Bytes	
	就 VMMLibrary	CreateDemoUsersMSPetShop4Profile.sql	SQL Script	OK	11/8/2013 1:29 PM	7 KB	
		DeployVM.ps1	Windows PowerShell Script	OK	11/10/2013 11:48 PM	3 KB	
		Linux_CentOS_6.4.vhdx	Virtual Hard Disk	OK	11/8/2013 1:29 PM	4 MB	
		Linux_Oracle_6.4.vhdx	Virtual Hard Disk	OK	11/8/2013 1:29 PM	4 MB	
		Linux_RHEL_6.4.vhdx	Virtual Hard Disk	OK	11/8/2013 1:29 PM	4 MB	
		Linux_SUSE_11.3.vhdx	Virtual Hard Disk	OK	11/8/2013 1:29 PM	4 MB	
		Linux_Ubuntu_13.10.vhdx	Virtual Hard Disk	OK	11/8/2013 1:29 PM	4 MB	
		LoadTablesMSPetShop4.sql	SQL Script	OK	11/8/2013 1:29 PM	19 KB	
		MSPetShop4.dacpac	SQL Server Data-Tier	OK	11/8/2013 1:29 PM	7 KB	
		MSPetShop4Orders.dacpac	SQL Server Data-Tier	OK	11/8/2013 1:29 PM	4 KB	
		MSPetShop4Profile.dacpac	SQL Server Data-Tier	OK	11/8/2013 1:29 PM	4 KB	
		MSPetShop4Services.dacpac	SQL Server Data-Tier	OK	11/8/2013 1:29 PM	33 KB	
		PerShopRegDB.cr	Custom Resource	OK	11/8/2013 1:29 PM	3 KB	
		petshop4WebApp.zip	Web Application Package	OK	11/8/2013 1:29 PM	3 MB	
		Petshop4webpkg.zip	Web Application Package	OK	11/8/2013 1:29 PM	2 MB	
		PetShopDTC.cr	Custom Resource	OK	11/8/2013 1:29 PM	1 KB	
		🛃 SAV_x64_en-US_4.9.37.2003.cr	Custom Resource	OK	11/8/2013 1:29 PM	134 MB	
		💕 SAV_x86_en-US_4.9.37.2003.cr	Custom Resource	ОК	11/8/2013 1:29 PM	66 MB	
© 2013 Microsoft. All rights reserved.	Privacy Send feedback to Microsoft						
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10. Navigate to the **Jobs** workspace. The Jobs page is used to view the status of all the jobs that have run in App Controller. For example, these jobs include changing user roles, adding or removing cloud connections and deploying services.

Microsoft System Center 2012	R2					App Controller Hi, Sign out Help
< Overview	Jobs (3)				Enter keyw	ord 🔎
Clouds	Show all				Q 🕯 🔤	Last refresh: 1:49:18 PM
Virtual Machines	Job		Target	Status	Owner	Start Time
Tibrary	Modify user role		Administrators	Completed	contoso\Administrator	10/30/2013 10:45 AM
Jobs	Add connection		SCVMM01.contoso.com	Completed	contoso\Administrator	10/30/2013 1:43 AM
Settings	Modify user role		Administrators	Completed	contoso\Administrator	10/30/2013 1:42 AM
	•					
	Modify user role					
	Copy Job Details to Cli	pboard				
	Status:	Completed		Command Para	ameters (2)	~
	Sub status:					
	Duration:	00 hrs 00 mins 01	secs			
	Owner:	contoso\Administ	rator			

11. Navigate to the **Settings** workspace and click **Connections**. This manages the connection settings to different clouds. This provides the options to connect to a server running System Center

Virtual Machine Manager, Windows Azure, or a service provider. This is also the location to import certificates or set specify proxy settings.

Microsoft System Center 2012	2 R2					App Hi, Sig	Control gn out He	ler elp
< Overview	Connection	ns (3)		Ente	er keyw	ord		٩
louds 🗠	Connect • Remo	ove Properties	5			Last refres	sh: 4:09:20	PM
🕸 Services		•						
Virtual Machines	Connection Name	System Type	Description					
🧮 Library	引 Proxy	Proxy	Edit connection properties to specify internet proxy settings. This conn	ection	cannot	be remove	d or renan	ned.
🗈 Jobs	SCVMM01.cont.	SCVMM						
Settings	🔊 Windows Azure	Windows Azure	Built-in connection for accessing Windows Azure. Edit connection prop	erties	to spec	ify Internet	proxy sett	ings. '
a Connections								
Subscriptions								
🎎 User Roles								
 Services Virtual Machines Library Jobs Settings Connections Subscriptions User Roles 	Connection Name	System Type Proxy SCVMM Windows Azure	Description Edit connection properties to specify internet proxy settings. This conn Built-in connection for accessing Windows Azure. Edit connection prop	ection erties	cannot to spec	be remove	d or renan proxy sett	ned.

5.1.2 - SCOM: Introduction to Operations Manager

In this exercise the user will learn about the different workspaces and functions of System Center 2012 R2 Operations Manager, including Monitoring, Authoring, Reporting, and Administration.

Estimated time to complete: 15 minutes



Perform the following on SCOM01

1. From **SCOM01**, open the **Operations Manager Console** by clicking the icon in the taskbar.



2. Navigate to the **Monitoring** workspace.



- 3. This workspace is used to see what is going in the monitoring environment and is the primary workspace for operators. It contains views, diagrams, and dashboard views that compile and present useful information that Operations Manager has gathered.
- 4. Click the Active Alerts view. This view shows all alerts that are active (not closed).
- 5. In this view, select an alert to view its details, such as the rule or monitor that generated the alert and the managed object that has the problem.
- 6. Double-click an alert to open its properties.
- 7. Select an alert and click Health Explorer in the Tasks pane to open Health Explorer in the context of this alert.
- 8. When appropriate, the user can close the alert from this view by clicking Close Alert in the Tasks pane.
- 9. Click **Discovered Inventory**. This view shows all objects that have been discovered and their states.
- 10. Click **Change Target Type** in the Tasks pane to filter the discovered inventory list to a single type of object. The target type determines the type of information that will be displayed in the details pane for a selected object.
- 11. Click Cancel.

	Select Item	ns to Target	x
Select the class, group, or obje items easier to find.	ect that you want to target from	the list below. You can also filter or sort the list to make	
Look for:			
		Clear	
View common targets			
 View all targets 			
			_
larget	Management Pack	Description	<u> </u>
INET Application Monitoring	Operations Manager APM Int	INET Application Monitoring Agent	
Access 2013 Page Instance	Microsoft SharePoint Server	Access 2013 Page Instance	
Access 2013 Service Instanc	Microsoft SharePoint Server	Access 2013 Service Instance	
Access Page Instance 2013	Microsoft SharePoint Server	Access Page Instance	
Access Service Instance 201	Microsoft SharePoint Server	Access Service Instance	
Activated APM Agent	Operations Manager APM Inf	Activated APM Agent	
Active Directory Client Persp	Active Directory Server Com	Client systems designated to monitor Active Directory	
Active Directory DC and Glo	Active Directory Server 2000	Active Directory DC that is also a Global Catalog Server	
Active Directory DC and Glo	Active Directory Server 2003	Active Directory DC that is also a Global Catalog Server	
Active Directory DC and Glo	Active Directory Server 2008	Active Directory DC that is also a Global Catalog Server	
Active Directory Domain Co	Active Directory Server 2000	Instances of this class represent AD Domain Controllers r	L
Active Directory Domain Co	Active Directory Server 2003	Instances of this class represent AD Domain Controllers r	L
Active Directory Domain Co	Active Directory Server 2008	Instances of this class represent AD Domain Controllers r	L
Admin API	Windows Azure Pack	This is the Windows Azure Pack Admin API Class	
Admin Service In SPServicel	Microsoft SharePoint Founda	Admin Service in SPServiceInstance for a particular server	4
AdminSite	Windows Azure Pack	This is the Windows Azure Pack Admin Site Class	
AdvisorConnector Class	Microsoft System Center Adv		\sim
<	111	>	
431 total Targets, 431 visible,	1 selected		
		Help OK Cancel	

- 12. Click **Task Status**. This view shows the output from tasks that have been executed in the console. The Task Status view shows when a task is completed, finished, and the user who executed this specific task.
- 13. Click **Windows Computers**. This view shows the state of the following aspects of discovered Windows computers: Overall state of the computer, State of the agent on the computer, if an agent is installed, State of the management server role, if the computer is a management server, State of the Windows operating system.
- 14. To see information that is collected for a computer, select the computer Name field for a specific computer.
- 15. The properties in the tasks pane can be clicked to display all of the information that is collected.
- 16. To open other views for a computer, right-click the computer, select Open, and click a view to open.
- 17. Expand **Microsoft SQL Server** and click **Active Alerts** to view the alerts specific to SQL Server.



18. Click the Authoring workspace.



19. This workspace is used to create new monitoring scenarios. Existing management packs can be added or changed or new management packs can be created for applications that do not have one.

20. Click **Management Pack Templates**. Management packs contain settings that enable agents to monitor a specific service or application in System Center 2012 – Operations Manager. These settings include discovery information that allows management servers to automatically detect and begin monitoring objects, a knowledge base that contains error and troubleshooting information, rules and monitors that generate alerts, and reports. Management packs might also contain tasks, diagnostics, and recovery tools and guidance to help fix problems.

	Manage				
File Edit View Go Tasks Too	ols Help				
Search 👻 🖕 📀	Add Monitoring Wizard 🖕 🐺 Scope 🔎 Find 🚺 Tasks				
File Edit View Go Tasks Tools Help Search 					
Authoring	Q Look for:				
Management Pack Templates	Name				
Croups	.NET Application Performance Monitoring				
Management Pack Objects	JEE Application Availability Monitoring				
	JEE Application Performance Monitoring				
	OLE DB Data Source				
	Process Monitoring				
	TCP Port				
	🖏 UNIX/Linux Log File Monitoring				
	UNIX/Linux Process Monitoring				
	C Web Application Availability Monitoring				
	C Web Application Transaction Monitoring				
	🥪 Windows Azure Application				
	🧬 Windows Azure Monitoring				
	n Windows Service				
	WS-Management and SMASH Device Discovery				

21. Click **Groups**. In System Center 2012 – Operations Manager groups can be used to scope views, reports, overrides, and alert notifications. Groups are created in the Authoring workspace in the Operations console.

		Groups - OM_Contoso -	Operations Manager
File Edit View Go Tasks To	ols Help		
Search 👻 📮 🖻	🖻 Create a New Group 🝦 🛛 🎼 Scope 🔛 Find 🔯 Tasks 🖉		
Authoring <	Groups (202)		
Authoring	Q Look for:	Find Now Clear	
Management Pack Templates	Name	Sub-groups	Created
Z Distributed Applications	AD Domain Controller Group (Windows 2000 Server)	0	1/4/2014 7:54:44 PM
Groups	AD Domain Controller Group (Windows 2003 Server)	0	1/4/2014 7:54:55 PM
	AD Domain Controller Group (Windows Server 2008 and ab	ove) 0	1/4/2014 8:03:30 PM
	AD Monitoring Client Computer Group	0	1/4/2014 7:53:55 PM
	Agentless Managed Computer Group	0	1/10/2014 6:16:13 P
	AIX Computer Group	0	1/4/2014 8:20:59 PM
	AIX Instances Group	0	1/4/2014 8:21:02 PM
	All Business Critical Windows 2000/XP Clients	0	1/4/2014 6:24:37 PM
	All Network Connection Group	0	1/4/2014 6:18:09 PM
	All Network Monitoring Group	0	1/4/2014 6:18:09 PM
	All Operations Manager Objects Group	9	1/4/2014 6:34:56 PM
	All Windows Azure Monitored Deployments	0	1/4/2014 8:17:39 PM
	All Windows Azure Monitored Resources	0	1/4/2014 8:17:38 PM
	All Windows Azure Monitored Subscriptions	0	1/4/2014 8:17:39 PM
	All Windows Computers	0	1/10/2014 6:16:13 P
	App Controller Objects Group	0	1/5/2014 6:43:58 AM
	Application Virtualization Server 5.0 Computer Group	0	1/5/2014 5:28:56 AM
	Client Monitoring Data Group	0	1/4/2014 6:17:09 PM
< 111 >	Cluster Roles	0	2/12/2014 12:03:08
Add Monitoring Wizard	Computer Group consisting of LS Synthetic Transaction Wa	tcher No 0	1/5/2014 6:16:47 AM
New Distributed Application	Computer Group consisting of Synthetic Transaction instan	ces 0	1/5/2014 6:16:50 AM
New Group	Group details:		
Monitoring			
Authoring			

22. Click the **Reporting** workspace.



- 23. Operations Manager provides extensive reporting capabilities, including multiple report libraries that can be selected to customize reports for specific requirements. Reports perform a query against the data warehouse database and return the results in an easy-to-read format.
- 24. Click the **SQL Server 2012 (Monitoring)** node in the **Reporting** workspace. This view is used to open and schedule reports for various SQL Server tasks.
- 25. Click the Administration workspace.



- 26. The Administration workspace is the primary workspace for administrators. The workspace is used to configure a management group and its managed objects. There are several different options available on this workspace.
- 27. Expand **Device Management**. Device management is used to perform configuration of specific management servers, agent-managed computers, agentless-managed computers, UNIX servers, and Linux servers.
- 28. Click **Agent Managed**. Various tasks can be performed on agent-managed computer, these include repairing or uninstalling an agent on a target computer.

Administration	Agent Managed	(6)				
🍄 Administration	🔍 Look for:			Find Now	Clear	
Connected Management Groups	Health State	FQDN	Name	-		Domain
Device Management	▲ Primary Mana	agement Server: SCOM01.con	toso.com (6)			
agent Managed	Healthy	DC01.contoso.com	DC01			contoso
Jy Agentless Managed	() Healthy	SCCM01.contoso.com	SCCM01			contoso
Management Servers	Healthy	SCDPM01 contoso.com	SCDPM)1		contoso
Y Pending Management	Healthy	SCO01 contoso com	SC001			contoso
UNIX/Linux Computers	Treating	30001.0011050.0011	30001			contoso
🌼 Global Service Monitor	😻 Critical	SCSM01.contoso.com	SCSM01			contoso
🂱 Management Packs	🕢 Healthy	SCVMM01.contoso.com	SCVMM	01		contoso
🗌 📑 Network Management						
🛚 🖂 Notifications						
📑 Channels						
🏝 Subscribers						
Subscriptions						
Product Connectors						

- 29. Click **Agentless Managed.** An agentless managed machine is a Microsoft Windows-based system in which an agent cannot be installed can be managed without an agent. Not all management packs support agentless management, for example the Active Directory management pack and the Microsoft Exchange Server 2003 management pack do not support agentless management.
- 30. Click **Management Packs**. This is a listing of all the management packs imported into the management group.
- 31. Right clicking an individual management pack in the results gives additional options such as viewing its properties, deleting the pack, or export any customizations to another management group.

Administration	Look for:	ear			
Sconnected Management Groups	Name	 Version 	Sealed	Date Imported	Description
Device Management	📷 360 Application Monitoring Dashboards	7.1.10226.0	Yes	1/4/2014 6:24:5	
Agent Managed	Transferred Active Directory Server 2000 (Discovery)	6.0.8228.0	Yes	1/4/2014 7:54:1	Active Directory Management Pack for
Agentiess Managed	Active Directory Server 2000 (Monitoring)	6.0.8228.0	Yes	1/5/2014 5:14:4	Active Directory Management Pack for
Pending Management	🚟 Active Directory Server 2003 (Discovery)	6.0.8228.0	Yes	1/4/2014 7:54:5	Active Directory Management Pack for
UNIX/Linux Computers	📷 Active Directory Server 2003 (Monitoring)	6.0.8228.0	Yes	1/5/2014 5:15:3	Active Directory Management Pack for
Global Service Monitor	Take Active Directory Server 2008 and above (Discovery)	6.0.8228.0	Yes	1/4/2014 7:55:2	Active Directory Management Pack for
🆓 Management Packs	🚟 Active Directory Server 2008 and above (Monitoring)	6.0.8228.0	Yes	1/4/2014 7:56:1	Active Directory Management Pack for
📑 Network Management	📷 Active Directory Server Client (Monitoring)	6.0.8228.0	Yes	1/4/2014 7:56:3	Active Directory Management Pack for
Notifications	📷 Active Directory Server Common Library	6.0.8228.0	Yes	1/4/2014 7:53:4	Active Directory Management Pack C
🚠 Channels	🚟 AIX Operating System Library	7.4.4337.0	Yes	1/4/2014 8:20:5	Microsoft AIX Operating System Libra
Subscribers	The Application Virtualization Server 5.0	5.0.0.0	Yes	1/5/2014 5:28:2	This monitoring pack provides monit
Subscriptions	📷 Baselining Tasks Library	7.0.8433.0	Yes	1/4/2014 6:15:1	System Baselining Tasks Library: This
Product Connectors	🚟 BizTalk Server Discovery	7.0.1033.0	Yes	1/5/2014 5:29:4	This Management Pack is designed for
Run As Configuration	🚟 BizTalk Server Library	7.0.1033.0	Yes	1/5/2014 5:29:0	This Management Pack is the BizTalk
Security	🚟 BizTalk Server Monitoring	7.0.1033.0	Yes	1/5/2014 5:30:3	This Management Pack is designed for
🚯 Settings	🚟 Client Monitoring Internal Library	7.1.10226.0	Yes	1/4/2014 6:22:3	Microsoft System Center Client Moni
A System Center Advisor	🚟 Client Monitoring Library	7.1.10226.0	Yes	1/4/2014 6:17:0	Microsoft System Center Client Moni
😳 Windows Azure	🚟 Client Monitoring Overrides Management Pack	7.1.10226.0		1/4/2014 6:23:2	This management pack is the default
(III >	🚟 Client Monitoring Views Library	7 1 10226 0	Vec	1/4/2014 6-22-3	Microsoft System Center Client Moni

32. Links in the tasks pane are used to create, import, and download management packs.

- 33. Click **Product Connectors**. Product connectors are used to synchronize Operations Manager data with other management systems such as those that monitor non-Windows computers or create trouble-tickets. Product connectors can integrate a deployment of Operations Manager into another management platform or connect other management systems into a full Operations Manager management solution. Any product connectors that the user integrates with Operations Manager will be displayed in this section of the Administration workspace.
- 34. Expand **Security** and click **User Roles**. In Operations Manager, operations such as resolving alerts, running tasks, overriding monitors, viewing alerts, viewing events, and so on have been grouped into user roles, with each user role representing a particular job function. Role-based security allows administrators to limit privileges that users have for various aspects of Operations Manager.



- 35. Expand **System Center Advisor**, click **Advisor Connection**. System Center Advisor is an online service that analyzes installations of Microsoft SQL Server 2008 (and later versions), and Windows Server 2008 and 2008 R2, and Lync Server 2010. Advisor collects data from the installations, analyzes it, and generates Alerts that identify potential issues (such as missing security patches) or deviations from identified best practices with regard to configuration and usage. Advisor also provides both current and historical views of the configuration of servers in an environment. This service is not available to explore as there is no Internet connection in the lab.
- 36. Click the **My Workspace** workspace. This workspace provides an area that can be customized for specific needs. Users can create folders to organize the workspace, add shortcuts to favorite views, save useful searches, and create views.



5.1.3 - SCA: Introduction to Advisor

In this exercise the user will learn about the different workspaces and functions of System Center Advisor, integrated with System Center 2012 R2 Operations Manager. Advisor is a free cloud service which offers proactive monitoring and best practice recommendations to reduce downtime and resolve issues faster. Advisor collects information about the servers and applications, then sends it to Azure for analysis. The resulting best practice recommendations can be viewed a web interface or integrated into System Center 2012 R2 Operations Manager. Sign up for free at www.SystemCenterAdvisor.com.

Estimated time to complete: 5 minutes



Perform the following on SCOM01

- 1. From SCOM01 minimize the Operations Manager Console if it is open.
- 2. Double-click on the folder on the Desktop called **Advisor Solutions**.



3. Double-click on the document entitled **System Center Advisor**. This is the System Center Advisor homepage where it is possible to sign up for a free account using a Microsoft ID. This lab does not have a connection to the Internet, so all of the websites which are displayed are actually all offline copies. This means that the links and other references to Internet locations will not work.

🚜 oge oerrei secunty conniguration aoes n	1/10/2014 1.00 MM	WITTINE DOCUMENT	$(j \in i \rightarrow i \setminus 0)$
😰 System Center Advisor	2/6/2014 8:52 PM	MHTML Document	296 KB
🙀 The SQL Server build on this instance is I	1/13/2014 1:53 AM	MHTML Document	1,287 KB

4. From **SCOM01**, open the **Operations Manager Console** by clicking the icon in the taskbar.



5. Navigate to the **Administration** workspace.



- 6. Scroll down and expand System Center Advisor.
- 7. Select Advisor Connection.
- 8. Read the information on the screen. In this lab a previous System Center Advisor connection had been established.



9. Under the **Actions** tab, note the **Add a Computer/Group** link. This is how a new computer would be monitored using Advisor.



10. On the left navigation pane select **Advisor Managed**. This displays the servers which are currently managed by Advisor.

		Advisor Managed - C	OM_Contoso -	Operations Manager
File Edit View Go Tasks Tools	Help			
Search 👻 🖕 🜆 S	cope 👂 Find 🔃 Tasks 🔞 🝦			
Administration <	Advisor Managed (7)			
4 🌼 Administration	Display Name	Full Name		
👼 Connected Management Groups	DC01.contoso.com	Microsoft.Windows.Computer:DC01.contoso.com		
🖻 늘 Device Management	SCCM01.contoso.com	Microsoft.Windows.Computer:SCCM01.contoso.com		
🔯 Global Service Monitor	SCDPM01.contoso.com	Microsoft.Windows.Computer:SCDPM01.contoso.com		
🦓 Management Packs	SCO01.contoso.com	Microsoft.Windows.Computer:SC001.contoso.com		
Lei Network Management	SCOM01.contoso.com	Microsoft.Windows.Computer:SCOM01.contoso.com		
Notifications	SCSM01.contoso.com	Microsoft.Windows.Computer:SCSM01.contoso.com		
Product Connectors	SCVMM01.contoso.com	Microsoft.Windows.Computer:SCVMM01.contoso.com		
Resource Pools	-			
 A Security 				
Settings				
System Center Advisor				
Advisor Connection				
Advisor Managed				
🎯 Windows Azure				

- 11. Select the **Monitoring** workspace.
- 12. On the left navigation pane navigate to **Monitoring** then expand **System Center Advisor**.
- 13. Select **Advisor Health State**. This shows the health of the management server which is SCOM01 and this also shows the health of the various Advisor agents.

Advisor Health State	- OM_Contoso - Operations Manager
File Edit View Go Tasks Tools Help	
Search 👻 🝦 🐺 Scope 🔎 Find 🖸 Tasks 🔞 👙	
Monitoring Advisor Health State	
▷ 🙀 Microsoft SQL Server 📃 🔿	
A Management Server State (1)	Advisor Agent State (6)
A Microsoft System Center Virtua	State R Name
Microsoft System Center Virtua	Healthy SCOM01.contos
Kate	Healthy SCCM01 contos
Microsoft Windows Client SCOM01.contos Irue	Healthy SCDRM01 conto
Microsoft Windows Cluster	Healthy SCO1 contors
Ima Microsoft Windows Hyper-V	Healthy SCUMM01 cont
Ima Microsoft Windows Internet Inf	Healthy Scylind Long
Image Microsoft Windows Server	warning DC01.contoso.c
Image Microsoft Windows Server DHC Microsoft Windows Server DHC	
A MICLOSOLI WINDOWS SERVER DIVS	
a microsoft windows Server File S	
Microsoft Windows Server Lind	
Retwork Monitoring	
Derations Manager	
> 🙀 Service Manager	
Equation 2015 Provider Foundation	
Equation 2 Control	
E3 Synthetic Transaction	
E3 System Center 2012 Configuration	
E System Center 2012 R2 Data Pro	
4 🦓 System Center Advisor	
Active Alerts	
Advisor Health State	
System Center Orchestrator	

- 14. In the left navigation pane select **Active Alerts**. This displays all of the alerts for Advisor.
- 15. Under the list of critical alerts, select the alert with the title **Unsupported SQL Server version used by VMM.**

	Active Alerts - C	M_Contos	so - Opera	rations Manager				
File Edit View Go Tasks Tools Help								
Search * g: Uverneek * g: 1 He Scope (Prind) Le Tesse) * g								
Monitoring <	Active Alerts (29)							
Microsoft SQL Server	Q Look for: Find Now Clear							
Microsoft System Center Virtua	🚯 Source 🖉 Name	A Resolution	on State Ci	Created	Age		^	
Microsoft System Center Virtua	▲ Severity: Critical (6)							
Microsoft System Center Virtua	SCO01.contoso SQL Server security configuration does not allow System Center Advisor to funct	New	1/	/10/2014 8:14:51 PM	38 Days, 17 Ho		=	
Microsoft Windows Active Direct	SCVMM01.cont SQL Server security configuration does not allow System Center Advisor to funct	New	1/	/10/2014 8:15:59 PM	38 Days, 17 Ho			
Microsoft Windows Cluster	SCOM01.conto SQL Server security configuration does not allow System Center Advisor to funct	New	1/	/10/2014 8:17:38 PM	38 Days, 17 Ho			
Microsoft Windows Hyper-V	SCVMM01.cont Unsupported SQL Server version used by VMM	New	1/	/10/2014 8:03:21 PM	38 Days, 17 Ho			
Microsoft Windows Internet Infe	SCVMM01.cont VMM Server does not meet some of the recommended hardware specifications	New	1/	/10/2014 8:03:23 PM	38 Days, 17 Ho		- 1	
Microsoft Windows Server	SCVMM01.cont VMM Server SPN are not registered correctly	New	1/	/10/2014 8:03:23 PM	38 Days, 17 Ho			
Microsoft Windows Server DHC	✓ Severity: Warning (23)						-	
Microsoft Windows Server DNS	A SCCM01.conto SQL Server database configuration: number of tempdb data files might result in	New	1/	/10/2014 8:17:31 PM	38 Days, 17 Ho			
Microsoft Windows Server File &	A SCDPM01.cont SOL Server database configuration: number of tempdb data files might result in	New	1/	/12/2014 9:31:41 PM	36 Days, 15 Ho			
Microsoft Windows Server File S	A SCDPM01.cont SQL Server Database mail configuration issue may result in mail not getting proc	New	1/	/10/2014 8:11:17 PM	38 Days, 17 Ho			
Microsoft Windows Server Upd							~	
Network Monitoring	Alert Details						~	
Operations Manager								
Service Manager	Unsupported SQL Server version used by VMM	/	Alert Descrip	ption			\sim	
Service Penorting	Source: SCVMM01.contoso.com	T	The Microsof	oft SQL Server instance that	this VMM server is u	ising is not running an up-to-date or supported version of		
Synthetic Transaction	Full Path Name: SCVMM01.contoso.com\SCVMM01.contoso.com	5	SQL Server.					
System Center 2012 Configuration	Alert Rule: O System Center Advisor Alert	L. L.	Upgrade to a	a supported SQL Server ver	rsion and service pa	k level. See the TechNet article for more information.		
System Center 2012 R2 Data Pro	Created: 1/10/2014 8:03:21 PM	F	Path: /VMM	Server				
4 🙀 System Center Advisor		1	VMM Releas	se: VMM 2012 R2 RTM				
Active Alerts =		2	SQL Release:	:: Unknown				
Advisor Health State		2	SQL Version:	: Unknown				
System Center Orchestrator		9	SQL Product	t Level: Unknown				
Team Foundation Server 2012		Ν.	VMM Version	on: 3.2.7510.0				
UNIX/Linux Computers								
Veeam for VMware								
Web Application Transaction M	Knowledge:		🖾 View a	additional knowledge				
Mindows Azure	This alert is generated by System Center Advisor							
Windows Azure Pack Monitorin	Learn more about Advisor							
Windows Service And Process h	Hide knowledge							

16. On the Alert Details in the center pane, read the information about the alert description. System Center Advisor provides information about both Windows Server and application issues.

5.2 - SCAC: Manage Applications through Self-Service

5.2.1 - SCAC: Deploy a Virtual Machine through Self-Service

In this exercise a self-service user will deploy a virtual machine from a template using App Controller.

Estimated time to complete: 5 minutes



Perform the following on SCVMM01

1. From SCVMM01, open App Controller by selecting the Internet Explorer icon from the taskbar.



2. If the site does not open, browse to https://SCVMM01.contoso.com.



3. If a notification appears about the certificate, click **Continue to this website (not recommended)**.



4. When prompted to sign in, enter **contoso\administrator** for the user name and **Passw0rd!** for the password. Click the **Sign In** button.

Microsoft System Center 2012 R2	App Controller
Enter your credentials to sign in	
User name:	
contoso\administrator	
Password:	
•••••	
	Sign In
	Sight in

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- 5. Navigate to the **Overview** workspace and review the information.
- 6. Select the Virtual Machines workspace.



7. Under Virtual Machines, click Deploy.



8. Under New Deployment, under CLOUD, select Configure.



9. Select Contoso-Cloud and click OK.

Select a cloud for this deployment

Cloud	Connection Name	
Contoso-Cloud	SCVMM01.contoso.com	
Available quota		
Virtual Machines CPU	Memory Storage Custom Quota	

10. In the **TEMPLATE** box, click **Select a Template**.



11. Select VM_PetShop_Web and click OK.

Choose a template

The available quota after the deployment is displayed for the selected template. You cannot deploy a template that exceeds the available quota for the cloud. Location: SCVMM01.contoso.com\Contoso-Cloud

								Filter:	(all)			Q
Γ	Name	Туре	Release	Date Modifi	ed	Virtual Machines	CPU	Mer	mory	Storage	Custom Quota	
	VM_PetShop_Web	Virtual Machin	e	1/28/2014 1	2:57 PM		1	1	64 MB	30 GB		1
Available Quota remaining after deployment						_						
	Virtual Machines	CPU Me	mory	Storage	Custom	Quota						

12. In the VIRTUAL MACHINE box, click Configure.



13. In Virtual machine name, enter Contoso-Pet-Web and review the settings below.



Properties of new virtual machine

Show all

Name and description Virtual network adapters

Name and description

Virtual machine name:

Contoso-Pet-Web

To generate a computer name, enter * only.

*

Computer name:

PetWeb##

Description:

VM Template for PetShop Website

Operating system:

Windows Server 2012 R2 Standard

Memory: 64 MB

- 14. Click **OK**.
- 15. In the lower right corner, click **Deploy**. The Virtual Machine deployment will start. Note that the deployment will fail, this is expected due to limitations of the lab environment (nested virtualization).

VIRTUAL MACHINE Contoso-Pet-Web	Contoso-Cloud		
	VIRTUAL MACHINE Contoso-Pet-Web		

5.2.2 - SCAC: Deploy a Service through Self-Service

In this exercise a self-service user will deploy a service from a template using App Controller.

Estimated time to complete: 5 minutes



Perform the following on **SCVMM01**

1. From **SCVMM01**, open **App Controller** by selecting the **Internet Explorer** icon from the taskbar.



2. If the site does not open, browse to <u>https://SCVMM01.contoso.com</u>.



1

3. If a notification appears about the certificate, click **Continue to this website (not recommended)**.

 ((((((b)))	https://scvmm01.cont $\mathcal{P} = \mathbf{X}$ O Waiting for scvmm01.cont X
8	There is a problem with this website's security certificate.
t	The security certificate presented by this website was not issued by a trusted certificate authority.
	Security certificate problems may indicate an attempt to fool you or intercept any data you send to the server.
	We recommend that you close this webpage and do not continue to this website.
	Ø Click here to close this webpage.
	Sontinue to this website (not recommended).
	More information

4. When prompted to sign in, enter **contoso\administrator** for the user name and **Passw0rd!** for the password. Click the **Sign In** button.

Microsoft System Center 2012 R2	App Controller
Enter your credentials to sign in	
User name:	
contoso\administrator	
Password:	
••••••	
	Sign In

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5. Navigate to the **Services** workspace.



6. Click Deploy.



7. On the **New Deployment** page, under **Cloud**, click **Configure**.



8. Select Contoso-Cloud and click OK.

Select a cloud for this deployment

Cloud	A.	Conr	nection Name		
🗉 Contoso-Cloud		SCVM	1M01.contoso.	com	
Available quota —					
Virtual Machines	CPU	Memory	Storage	Custom Quota	

9. In the **TEMPLATE** box, click **Select a template**.



- 10. Select **PetShop_Service** and click **OK**. This shows the service template configuration.
- 11. In the **SERVICE** box, click **Configure**.



- 12. Under Service name, enter PetShopDev.
- 13. Under **Priority** select **Low** then click **OK**.

🆄 Propertie	es of PetSh	nop_Service ser	rvice		
Show all		General			
General		Service name: PetShopDev Description: Two Tier Applica Priority: Low Cost center:	ation Pattern		*
				ОК	Cancel

14. Under the VM_PetShop_SQL tier in the upper INSTANCE box, click Configure.



- 15. For **Computer name**, enter **PetSQL1A** and scroll down to review the settings.
- 16. Click **OK**.



Properties of new virtual machine

Show all	Name and description				
Name and description	Virtual machine name: *				
virtuai network adapters	754edd9a-2870-4eb9-9102-c2d91d8bed90				
	To generate a computer name, enter * only.				
	Computer name:				
	PetSQL1A				
	Description:				
	Operating system:				
	Windows Server 2012 R2 Datacenter				
	Memory:				
	4096 MB				
	Dynamic memory: 32768 maximum				
	OK Cancel				

17. In the **INSTANCE** box in the lower left, click **Configure**.

18. For **Computer name**, enter **PetSQL1B** and click **OK**.

Computer name: PetSQL1B

- 19. Under the VM_PetShop_Web tier in the upper INSTANCE box, click Configure.
- 20. In the Computer name, enter PetWeb1A and click OK.

Computer name: PetWeb1A

- 21. Click **Configure** for the **INSTANCE** in the lower right.
- 22. In the Computer name, enter PetWeb1B and click OK.

Computer name: PetWeb1B

23. In the lower right corner, click **Deploy**.

The Virtual Machine deployment will start. Note that the deployment will fail, this is expected due to limitations of the lab environment (nested virtualization).

5.3 - SCOM: Monitor Applications

5.3.1 - SCOM: Monitor Applications

In this exercise the SQL Server 2012 servers that are used to support System Center 2012 R2 will be monitored and analyzed using Operations Manager. Operations Manager provides real-time monitoring through alerts, as well as other helpful information about the performance, health and capacity of application, hardware, networking components, hypervisors, and virtual machines.

Estimated time to complete: 5 minutes



Perform the following on SCOM01

1. From **SCOM01**, open the **Operations Manager Console** by clicking the icon in the taskbar.



2. Navigate to the Monitoring workspace.



3. Navigate to Monitoring > Microsoft SQL Server and select Active Alerts.


4. Select the critical active alert with the name, Run As Account does not exist on the target system or does not have enough permissions. The full list of SQL Server alerts may be different than the screenshot below.

Active Alerts (7)		
🔍 Look for:	Find Now Clear	
🚯 Source 🦉	Name	Resolution State
▲ Severity: Critical (6)		
MSSQLSERVER	SQL DB Engine 2012 Page Life Expectancy is too low	New
🔞 SQLSERVERAGE	SQL Server Agent Windows Stopped	New
🛿 MSSQLSERVER	Run As Account does not exist on the target system or does not have enough permissions	New

5. From the Tasks pane, select Alert Properties.



6. Under the General tab, for **Owner** click the **Change** button.

TFS Work Item Owner:	
Owner:	Change
Ticket ID:	

7. In the Select User dialog enter SQLAdmin and click Check Name to have it resolve to SQLAdmin@Contoso.com

Select U	Jser X
Select this object type:	
User	Object Types
From this location:	
Entire Directory	Locations
Enter the object name to select (examples):	
SQLAdmin (SQLAdmin@contoso.com)	Check Names
L]	
1	
Advanced	OK Cancel

- 8. Under Ticket ID enter SQL1
- 9. Under Alert Status in the dropdown, choose Acknowledged.

•	Alert Properties	x
General Product Knowled	ge Company Knowledge History Alert Context Custom Fields	
😟 Run As Accoun	t does not exist on the target system or does not have enough permissions	
Key Details:		
Alert source:	MSSQLSERVER	
Severity:	Critical	
Priority:	Medium	
Age:	38 Days, 19 Hours, 49 Minutes	
Repeat Count:	175	
TFS Work Item ID:		
TFS Work Item Owner:		
Owner:	SQLAdmin@contoso.com Change	
Ticket ID:	SQL1	
Alert Description: Management Group: ON [SCO01.contoso.com][N	1_Contoso. Script: DiscoverSQL2012FileGroups.js : Cannot login to database MSSQLSERVER:Orchestrator]	< >
Alert Status:		
Once you have identified the system once change	I the problem and taken corrective action, you can select 'Closed' which will remove the Alert s are committed.	from
Acknowledged	✓	

- 10. Click Apply.
- 11. Select the **Product Knowledge** tab and review the information.

	- Alert Properties				
General	Product Knowledge	Company Knowledge	History	Alert Context	Custom Fields

12. Select the Alert Context tab and review the information.

• <u>-</u>					Alert P	roperties		x
General	Produ	uct Knowledge	Company	Knowledge	History	Alert Context	Custom Fields	
Date a Time:	ind	2/25/2014 1:5	3:19 PM	Descrip Managen	tion: nent Grou	p: OM Contoso.	Script: DiscoverSQL2012FileGroups.js :	^
Log Na	ime:	Operations Ma	inager	Cannot lo	ogin to da	tabase [SCO01.	contoso.com][MSSQLSERVER:Orchestrator	1

- 13. Click **OK**.
- 14. From the left navigation pane, select the **Computers** tab.



- 15. Select any of the computers which are being monitored.
- 16. On the Task pane, under Windows Computer Tasks, select Ping Computer.

Computers (6)		Tasks
🔍 Look for:	Find Now Clear	
State	Maintenance Mode Name SQL Server 2008 DB Engine SQL Server 2005 DB Engine	Windows Computer Tasks ^
Not monitored Critical	SCVMM01.contoso.com SCCM01.contoso.com	Display Account Settings
Critical Critical Critical	Console Task Output	Display Active Sessions
 Critical 	The task was completed.	Display Network Shares
	Output: Pinging sccm01.contoso.com [20.0.0.105] with 32 bytes of Reply from 20.0.0.105: bytes=32 time<1ms TTL=128	Display Workstation Statistics
	Reply from 20.0.0.105; bytes=32 time<1ms TTL=128 Reply from 20.0.0.105; bytes=32 time<1ms TTL=128 Reply from 20.0.0.105; bytes=32 time<1ms TTL=128	List Processes
	Ping statistics for 20.0.0.105: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds:	Ping Computer

- 17. Once the output completes, **close** the console task output.
- 18. On the Task pane, under Windows Computer Tasks, select List Services.



19. On the Run Task - List Services dialog, select Run.

1		Run Task - Lis	t Services	×
Run the task on	these targets			🕢 Help
Target		B	in Location	
SCCM01.conto	oso.com			
Task Parameter	'S			
Name			Value	
Override ask credentials			Task description	
 Use the prede 	fined Run As Account		List running services on the serve	r
Other :				
User name :				
Password :				
Domain :	contoso	×		
ask confirmatio	n			
Don't prompt v	when running this task	in the future	Run	Cancel

- 20. When the Task Output appears, expand the dialog box and review the information.
- 21. Click Close.

2	Task Statu	ıs - List Services	- D X
The task completed	d successfully.		🔞 Help
Task	Status	Task Target	
 List Services 	Success	sccm01.contoso.com	
Task Output		Conv Text	
Task Output			ча сору нтис
 List Service 	es	Task Description	^
Status:	Success	List running services on the server	
Scheduled Time:	2/24/2014 7:24:37 PM		
Start Time:	2/24/2014 7:24:37 PM		
Submitted By:	contoso\Administrator		
Run As:			
Run Location: Target:			
Target Type:	Windows Server 2012 Computer		~
Category:	Maintenance		
You can close this tasks in a task sta	dialog at any time. Doing so wil tus view.	not interrupt executing tasks. You can c	heck the status of
			Close

- 22. On the left navigation pane select Microsoft SQL Server | Databases | Database State.
- 23. Review the various databases which are monitored across this lab.

	Database State
File Edit View Go Tasks Tools Help Search ♥ _↓ I ₩ Scope	Find 🖸 Tasks 🥹 🚦
Monitoring <	Database State (41)
Databases	Q Look for:
Database State	State 🔺 🍘 Name Path
SQL Server 2012 Databases Summary Dasi	O Not monito VirtualManager SCVMM01.cont

24. On the left navigation pane select **Microsoft SQL Server | Health Monitoring | Agent Health** and review the information.



25. Under Health Monitoring, navigate to Database Engine Health and review the information.



26. Navigate to Microsoft SQL Server | Server Roles | Analysis Services.



- 27. Select **MSSQLSERVER** under the path **SCOM01.contoso.com** and review the information in the detail view.
- 28. Select Server Roles | Database Engines.
- 29. Select the database engine named **MSSQLSERVER** for **SCVMM01.contoso.com** and review the information in the detail view.
- 30. Navigate to Microsoft SQL Server | Server Roles | Reporting Services.
- 31. Select MSSSQLSERVER SCCM01.contoso.com and review the information.
- 32. Navigate to Microsoft SQL Server | SQL Agent | SQL Agent State.



- 33. Select the **SQLSERVERAGENT** for **SCOM01.contoso.com** and review the information in the **Detail View**.
- 34. Feel free to browse some of the other application monitoring views. This lab includes views that do not contain any data, as not all applications are deployed within this lab.

Other application views include:

- 35. Forefront Endpoint Protection
- 36. Microsoft BizTalk RFID
- 37. Microsoft BizTalk Server 2013
- 38. Microsoft Dynamics NAV 2013
- 39. Microsoft Exchange Server 2013
- 40. Microsoft Lync Server 2013 Health
- 41. Microsoft SharePoint
- 42. Team Foundation Server 2013
- 43. Windows Azure
- 44. Windows Service And Process Monitoring

5.3.2 - SCOM: Monitor a Distributed Application

In this exercise a distributed application will be configured, which allows a collection of objects to be viewed as related and interconnected services through Operations Manager. A two-tier Distributed Application will be designed which represents the Service Manager Console and SQL database (SCSM01) and the IIS website for the self-service portal (SCSM02).

Estimated time to complete: 10 minutes



Perform the following on SCOM01

1. From **SCOM01**, open the **Operations Manager Console** by clicking the icon in the taskbar.



2. Navigate to the **Authoring** workspace.



3. Expand Authoring and select Distributed Applications.



- 4. From the upper ribbon select **Create a New Distributed Application**.
- 5. Under Name enter Service Manager Portal.
- 6. Under Template select: Line of Business Web Application.
- 7. Under Management Pack select Default Management Pack.

Distribu	uted Application Designer
🎄 Create a Distributed A	pplication
 Name Your Distributed Application Choose a name that best matches the distributed you like. 	application you want to create. You can fill a description for it if
Name:	Description (optional):
Server Manager Portal	
2. Choose Distributed Application Tem	plate
Select a template that most closely matches the object will be created along with a set of monitors	listributed application you have deployed. A distributed application , rules, views, and reports.
Template:	Description:
.NET 3-Tier Application Line of Business Web Application Messaging Windows Azure Distributed Application Plank (Advanced)	This distributed application contains Web Sites and Databases.
	View Details
3. Save to a Management Pack Select a management pack where your distributed Management Pack: Default Management Pack	d application and its components will be saved.
[You manufacture of the state o	
	OK Cancel

- 8. Click **OK**.
- 9. The **Distributed Application Designer** should appear. Maximize the designer.
- 10. Select the upper box that says Service Manager Portal Web Application Web Sites.
- 11. On the top ribbon bar, click **Save**. This will take several minutes to complete.
- 12. Select the object called Service Manager Portal Web Application Databases.



- 13. From the lower left corner select the **Database** group.
- 14. From the databases, select the database called **ServiceManager**. Hold **Ctrl** and also select the database called **SharePointP_SMPortal**.

Object	Path	^
Report Server Tem	SCDPM01.c	Г
ReportServerTem	SCOM01.co	
ServiceManager	SCSM01.con	
Sharepoint_SMPo	SCSM01.con	
TalkingHeads	SCOM01.co	1
iempdb	SCVMM01.c	
tempdb SC	L Database	
tempdb	SCCMUT.con	
tempdb	SCO01.cont	L
🚺 tempdb	SCSM01.con	
tempdb	SCOM01.co	=
Virtual Manager DB	SCVMM01.c	1
Virtual Manager DB	SCVMM01.c	

15. Right-click the 2 databases. Select Add to > Service Manager Portal Web Application Databases.



16. Select the Service Manager Portal Web Application Web Sites.



- 17. Click on Web Site in the lower left corner.
- 18. Select the **Default Web Site SCSM01.contoso.com**. Hold **Ctrl** and also select **SCSMWebContentServer**.



19. Right-click on one of the selected and choose Add to > Service Manger Portal Web Application Web Sites.



- 20. On the top ribbon bar, click Add Component.
- 21. Under Name your component group enter IIS Web Site.
- 22. In the Create New Component Group select the button Objects of the following type(s).

	component group:	
IIS Web S	e	
What object	s do you want to add to this component group?	
	nte	
Objects	of the following type(s):	
8-QQ	Object	1
	Administration Item	-
i i	Global Settings	
Ē	Microsoft.SystemCenter.InternalWorkflowTarget	
E	Microsoft.SystemCenter.InternalWorkflowTarget Microsoft.SystemCenter.Warehouse.Cube.CubeMetadata	
	Microsoft.SystemCenter.InternalWorkflowTarget Microsoft.SystemCenter.Warehouse.Cube.CubeMetadata Microsoft.SystemCenter.Warehouse.Dimension	
	Microsoft.SystemCenter.InternalWorkflowTarget Microsoft.SystemCenter.Warehouse.Cube.CubeMetadata Microsoft.SystemCenter.Warehouse.Dimension Microsoft.SystemCenter.Warehouse.Dimension	
	Microsoft.SystemCenter.InternalWorkflowTarget Microsoft.SystemCenter.Warehouse.Cube.CubeMetadata Microsoft.SystemCenter.Warehouse.Dimension Microsoft.SystemCenter.Warehouse.Dimension.ProcessingInterval Microsoft.SystemCenter.WorkflowTarget Callection	
	Microsoft.SystemCenter.InternalWorkflowTarget Microsoft.SystemCenter.Warehouse.Cube.CubeMetadata Microsoft.SystemCenter.Warehouse.Dimension Microsoft.SystemCenter.Warehouse.Dimension.ProcessingInterval Microsoft.SystemCenter.WorkflowTarget Collection Configuration.hem	
	Microsoft.SystemCenter.InternalWorkflowTarget Microsoft.SystemCenter.Warehouse.Cube.CubeMetadata Microsoft.SystemCenter.Warehouse.Dimension Microsoft.SystemCenter.Warehouse.Dimension.ProcessingInterval Microsoft.SystemCenter.WorkflowTarget Collection Configuration Item Logical Entity	
	Microsoft.SystemCenter.InternalWorkflowTarget Microsoft.SystemCenter.Warehouse.Cube.CubeMetadata Microsoft.SystemCenter.Warehouse.Dimension Microsoft.SystemCenter.Warehouse.Dimension.ProcessingInterval Microsoft.SystemCenter.WorkflowTarget Collection Configuration Item Logical Entity Physical Entity	
	Microsoft.SystemCenter.InternalWorkflowTarget Microsoft.SystemCenter.Warehouse.Cube.CubeMetadata Microsoft.SystemCenter.Warehouse.Dimension Microsoft.SystemCenter.Warehouse.Dimension.ProcessingInterval Microsoft.SystemCenter.WorkflowTarget Collection Configuration Item Logical Entity Physical Entity DPMTask	
	Microsoft.SystemCenter.InternalWorkflowTarget Microsoft.SystemCenter.Warehouse.Cube.CubeMetadata Microsoft.SystemCenter.Warehouse.Dimension Microsoft.SystemCenter.Warehouse.Dimension.ProcessingInterval Microsoft.SystemCenter.WorkflowTarget Collection Configuration Item Logical Entity Physical Entity DPMTask Extension base class	

23. Scroll down and select LS IIS Web Site and also LS IIS Web Application.

Create New Component Group	x
Name your component group:	
IIS Web Site	
What objects do you want to add to this component group?	
O All Objects	
Objects of the following type(s):	
LS Deployment LS Exchange Unified Message Connectivity Watcher LS IIS Web Application LS IIS Web Site LS Instance Message Conference Watcher LS Instant Message Watcher LS MCX Peer-to-Peer Instance Message Watcher LS PersistentChatMessage Watcher LS Pool LS Pool	*
LS PSTN Watcher LS QoE abstract monitoring class for all QoE alerting categories	
LS QoE abstract monitoring class for all QoE alerting categories with	(
	~
OK Cancel	

- 24. Click OK.
- 25. Select the LS IIS Web Site group in the lower left corner.
- 26. On the top toolbar, click the **Create Relationship** button.

	Distributed Application Designer - Server
<u>Eile V</u> iew <u>H</u> elp	
Save Objects 📴 Details 🖄 A	dd <u>C</u> omponen: 🔦 Create <u>R</u> elationship 🞇 Re <u>m</u> ove 🎧 R <u>e</u> set 📰 <u>P</u> roperties 🛛 Org Chart (North-Sc
Objects	
Search for objects:	Server Manager Portal Web Application Web Sites
Organize Object Types	Default Web Site [SCSM01.contoso.com] SCSMWebContentServer [SCSM01.contoso.com]
) Database (41)	
Distributed Application Component	↓
LS IIS Web Site (0)	Server Manager Portal Web Application Databases
Object Path	ServiceManager [SCSM01.contoso.com;MSSQLSERVER]
	IIS Web Site

27. Under Service Manager Portal Web Application Web Sites select Default Web Site (SCSM01.contoso.com) and move the dashed pointer to the newly created IIS Web Site object. Click OK and de-select the Create Relationship button.



28. Click **Save**. This will take up to 10 minutes to save. You may open a second Operations Manager console if you wish to continue to other Operations Manager exercises. This exercise is effectively complete.

- 29. Click Close.
- 30. Navigate to the **Monitoring** workspace, then select the **Distributed Applications** view.
- 31. Andrew this just took me a couple of minutes to save so Corey's rig must be faster than yours: -)

5.4 - SCOM: Review Application Performance Monitoring

5.4.1 - SCOM: Install a Management Pack

In this exercise Application Performance Monitoring (APM) for a .NET web application will be configured to identify code bugs and performance issues. This website, Talking Heads, is a simulated social network which some purposely placed code bugs to trigger Operations Manager alerts.

Estimated time to complete: 5 minutes



Perform the following on SCOM01

1. From SCOM01, open the Operations Manager Console by clicking the icon in the taskbar.



2. Navigate to the Administration workspace.



3. Select Management Packs.

4. From the Tasks pane, select Import Management Packs.

Administration <	Management Packs (277)			Tasks
4 🥸 Administration	🔍 Look for: Find Now	Clear		
Connected Management Groups	Name	▲ Version Sealed	Date Imported Description	Actions
4 🔚 Device Management	360 Application Monitoring Dathboards	7.1.10226.0 Vec	1/4/2014 6:24:5	Actions
agent Managed	soo Application Monitoring ballboards	1111022010 1123	1/4/2014 0.24.5	Properties 1
Agentless Managed	ma Active Directory Server 2000 (Discovery)	6.0.8228.0 Yes	1/4/2014 7:54:1 Active Directory Ma =	Evenent Management Dack
Manager Course	The Active Directory Server 2000 (Monitoring)	6.0.8228.0 Yes	1/5/2014 5:14:4 Active Directory Ma	Export Management Pack
Management servers	Active Directory Server 2003 (Discovery)	6.0.8228.0 Ves	1/4/2014 7:54:5 Active Directory Ma	X Delete
V Pending Management	Active billetery beref 2005 (biscorery)	000022000 123	1/4/2014 HS4SAR Mettre Directory ind	🐺 Create Management Pack
UNIX/Linux Computers	The Active Directory Server 2003 (Monitoring)	6.0.8228.0 Yes	1/5/2014 5:15:3 Active Directory Ma	Create Management Pack
Global Service Monitor	Take Active Directory Server 2008 and above (Discovery)	6.0.8228.0 Yes	1/4/2014 7:55:2 Active Directory Ma	😹 Download Management Packs
Nanagement Packs	📷 Active Directory Server 2008 and above (Monitoring)	6.0.8228.0 Yes	1/4/2014 7:56:1 Active Directory Ma	🚟 Import Management Packs
4 🧾 Network Management	The Active Directory Server Client (Monitoring)	6.0.8228.0 Yes	1/4/2014 7:56:3 Active Directory Ma	
La Discovery Rules	The Active Directory Server Common Library	6.0.8228.0 Yes	1/4/2014 7:53:4 Active Directory Ma	
🛒 Network Devices	- AIV O	7.4.4007.0 V	1/4/2014 0.20.5 MILLER AIV O	

5. On the Select Management Packs screen, click Add | Add from disk.

	Imp	oort Management Packs			x
Select Manageme	nt Packs				
Select Management Packs					🕜 Help
	Import list : Name	Version	Rele	→ Add → Properties) Add from catalog	X Remove
				Add from disk	

- 6. On the **Online Catalog Connection** prompt, click **No**.
- 7. On the Select Manage Packs to import prompt, navigate to C:\ConfScripts\SC-Config\ManagementPacks.
- 8. Select the files named Microsoft.SystemCenter.Apm.Web.IIS7.mp and Microsoft.SystemCenter.Apm.Web.IIS8.mp, then click Open.

Select Management Packs to import						
€ ⊚ - ↑ 🚺	:\C	onfScripts\SC-Config\ManagementPacks v C Search ManagementPacks	م ر]		
Organize 👻 New fol	lder	8== -				
〕 Downloads	^	Name	Date n	^		
🕮 Recent places		Microsoft.SystemCenter.Apm.Wcf.mpb	9/6/20			
		Microsoft.SystemCenter.Apm.Web.IIS7.mp	9/6/20			
🖳 This PC		Microsoft.SystemCenter.Apm.Web.IIS8.mp	9/6/20			
膧 Desktop		Microsoft.SystemCenter.Apm.Web.mpb	9/6/20			
Documents		Microsoft.SystemCenter.ApplicationMonitoring.360.SLA	9/6/20			
L Downloads	=	Microsoft.SystemCenter.ApplicationMonitoring.360.Template.Dashboards.mp	9/6/20			
Music		Microsoft.SystemCenter.ApplicationMonitoring.360.Template.Dashboards.mpb	9/6/20			
Pictures		Microsoft.SystemCenter.ApplicationMonitoring.360.Template.Library.mp	9/6/20			
Videos		Microsoft.SystemCenter.ApplicationMonitoring.Library.mpb	9/6/20			
Local Disk (C:)		Microsoft.SystemCenter.Azure.mp	5/16/2			
Eccal Disk (D:)		Microsoft.SystemCenter.Omonline.OutsideIn.Discovery.mpb	1/23/2			
UVD Drive (E:) 20		Microsoft.SystemCenter.Omonline.Outsideln.InfrastructureMonitoring.mpb	1/23/2	$\mathbf{\vee}$		
-	~	< 111	>			
Fi	ile n	ame: Microsoft.SystemCenter.Apm.Web.IIS8.mp v All Management Packs (*.	mp; * 👻			
		Open Ca	ncel	4		

9. After returning to the Select Manage Packs page, click **Install**. This will take a minute to complete.

	Import Management	Packs			x
Select Manageme	ent Packs				
Select Management Packs					🕢 Help
	Import list :		🕂 Add 🗕 🚰 P	roperties	X Remove
	Name	Version	Release Date	Status	License Terms
	✓ Operations Manager APM Web IIS 8	7.1.10226.0			
	Status details :				
	This management pack is ready to import.				
			_		
				Install	Cancel

- 10. Click Close.
- 11. After returning to the Operations Manager Console, right-click Management Packs, and select **Refresh**.

Administration								
🛛 🌼 Administration								
遇 Connected	Management Groups							
🔺 늘 Device Ma	nagement							
🐔 Agent M	anaged							
by Agentles	s Managed							
🏭 Manager	nent Servers							
📑 Pending	Management							
UNIX/Lin	ux Computers							
🤹 Global Ser	vice Monitor							
Managem	ent Packs							
🔺 📑 Netv 🚆	Discovery Wizard							
💾 Dis 📷	Create Management Pack							
🚟 Ne 📷	Download Management Packs							
Ne 🔁 Ne	Import Management Packs							
🔓 Ch 🍰	New User Role	•						
🏝 Sul _{ଡ଼ିଆ}	Create Run As Account							
🔄 Sul 🌄	Create Run As Profile							
🔺 👱 Prod 🎽								
모모 Int ⊡≇	🖳 Int 🧱 New channel 🔹 🕨							
🛄 Resc 🌆	🚆 Resc 🍢 New subscriber							
4 🏘 Run 📆	Run 😨 New subscription							
🐑 Act	Add Management Group							
🔊 JU 🞑	Refresh	F5						

12. Verify that there are **279** Management Packs and that the **Operations Manager APM Web IIS 7** and **Operations Manager APM Web IIS 8** Management Packs are available.

Administration	Management Packs (278)		
a 🥨 Administration	COOK TOT.	Find Now Clear	
👼 Connected Management Groups	Name	Version	Sealed
4 🔁 Device Management	🚟 Operations Manager APM WCF Library	7.1.10226.0	Yes
Agent Managed	📷 Operations Manager APM Web	7.1.10226.0	Yes
Management Servers	📷 Operations Manager APM Web IIS 8	7.1.10226.0	Yes
Pending Management	📷 Operations Manager APM Windows Services	7.1.10226.0	Yes
UNIX/Linux Computers	🚟 Operations Manager Application Monitoring Library	7.1.10226.0	Yes
🌼 Global Service Monitor	🚟 Operations Manager Internal Library	7.1.10226.0	Yes
🂱 Management Packs	😑 📷 Performance Library	7.0.8433.0	Yes

5.4.2 - SCOM: Configure Application Performance Monitoring

In this exercise Application Performance Monitoring (APM) will be configured for a .NET web application to identify code bugs and performance issues. This website, Talking Heads, is a simulated social network which some purposely placed code bugs to trigger Operations Manager alerts.

Estimated time to complete: 20 minutes



Perform the following on SCOM01

- 1. From **SCOM01**, select **Internet Explorer** from the taskbar.
 - 2. Select the tab for the Talking Heads website. If it does not open automatically, navigate to http://scom01.contoso.com/TalkingHeads.

A http://scom01.contoso.com/talkingheads/				Talking Heads	×	🗿 Operations I	Manager Web
	TAL	king Hi	ADS				
	Status	New Post	Search	Home	Setup		
	оме то Т	alking Head)S - THE SO	CIAL NETW	/ORK		

3. Click the **Home** tab to ensure that the .NET web application is running and the application is responsive. The webpage will refresh, but appear the same.

TALI	king He	ADS			
Me	Status	New Post	Search	Home	Setup

4. Open the **Operations Manager Console** by clicking the icon in the taskbar.



- 5. Navigate to the **Monitoring** workspace.
- 6. Expand the Microsoft Windows Internet Information Services folder.



7. Click on the **Application Pool State** node and confirm that the **DefaultAppPool** on SCOM01 is listed in the results pane, which confirms that the application has been successfully discovered by the Management Pack.

Monitoring	<	Application Poo	l Stat	e (42)	
🔀 All Performance Data	^	🔍 Look for:			Find Now Clear
Application Pool State		State		Name	Path ^
FTP Site State		Healthy		CCM Server Framework Pool	SCCM01.contoso.com
IIS Computer State		Healthy		DefaultAppPool	SCCM01.contoso.com
IIS Role State		Healthy		Operations Manager App Monitoring	SCOM01.contoso.con
💑 Task Status		Healthy		.NET v2.0 Classic	SCOM01.contoso.con
Web Site State		Healthy		.NET v4.5	SCOM01.contoso.con
Health Monitoring		Healthy		AppControllerAppPool	SCVMM01.contoso.co
Genomance Genomance Genomance		Healthy		.NET v4.5 Classic	SCO01.contoso.com
Microsoft Windows Server DHCP	=			DefaultAppPool	SCSM01.contoso.com
Microsoft Windows Server DNS		🕢 Healthy		ContentHost_appPool	SCSM01.contoso.com
Microsoft Windows Server File & iSCSI Services 2012		🕢 Healthy		DefaultAppPool	SCOM01.contoso.con
Microsoft Windows Server File Services		Healthy		.NET v4.5 Classic	SCOM01.contoso.con
Microsoft Windows Server Update Services 2012 R2		Healthy		SMS Distribution Points Pool	SCCM01.contoso.com
La Network Monitoring	~	Healthy		.NET v4.5	SCO01.contoso.com
< Onerations Manager		Healthy		.NET v4.5 Classic	SCVMM01.contoso.cc
Show or Hide Views		<	III		>
New View 🕨		Detail View			~
Monitoring		😡 IIS Applic	ation	Pool properties of DefaultAppPool	^

8. Select on the Authoring workspace.



9. Right-click the **Groups** node and then click **Create a new Group**.



- 10. On the Enter a name and description for the new group page enter the name TalkingHeads App Server Group.
- 11. Under Management Pack click the New... button.
- 12. On the **General Properties** page for the new Management Pack, enter a name of **TalkingHeads Management Pack** in the **Name** field and click **Next**.

Create a Management Pack		×
General Properties		🕜 Help
Knowledge	Management Pack General Properties	
	TalkingHeads.Management.Pack Name :	
	TalkingHeads Management Pack	
	Version : 1.0.0.0 For example, 1.0.0.0	
	Description :	
	< Previous Next > Create (Cancel

- 13. On the **Knowledge Article** page click **Create**. This may take a minute to complete.
- 14. From the **Create Group Wizard**, click **Next**.

🔤 Create Group Wizard					×
Enter a name and	d description for the new group.				
General Properties					🕜 Help
Explicit Members	Enter a friendly name and descriptio	n			-
Dynamic Members					
Subgroups	Name:				
Excluded Members	TalkingHeads App Server Group				
	Description:				
					<u></u>
					7
	Management pack				
	Select destination management pack:				
	TalkingHeads Management Pack			<u> </u>	New
		< Previous	Next >	Create	Cancel

15. Click the Add/Remove Objects...button to select the servers to be monitored for this application.



- 16. In the **Search for** dropdown menu select **Computer**.
- 17. Enter **SCOM01** in the **Filter by part of name** search box and click the **Search** button.

Create Group Wizard - Object Selection	? X
Select objects to be members of this group.	
Search for:	
Computer V	
Filter by part of name (optional):	
SCOM01	Search

- 18. Under Available Items select the SCOM01.contoso.com entry.
- 19. Click the Add button and then click OK to return to the Choose Members from a List page.

	Create Group	Wizard - Object Se	election	? X
Select objects to be	members of this gro	up.		
Search for:				
Computer			~	
Filter by part of r	name (optional):			
SCOM01				Search
300101				Scarch
Available items				
Name	Path	Full Name		
SCOM01.contoso		Microsoft.Windows.Comput		
Selected objects			Add	Remove
Name	Path	Full Name		
SCOM01.contoso		Microsoft.Windows.Comput		
			ОК	Cancel

- 20. Click Next on the Choose Members from a List page.
- 21. Click Next on the Create a Membership Formula page to skip dynamic membership rules.
- 22. Click Next on the Choose Optional Subgroups page.
- 23. Click **Create** to commit this new group and unsealed Management Pack to the database. This may take several minutes to complete. Wait until the wizard closes.
- 24. Using the **Operations Manager Console** click on the **Authoring** workspace and expand the **Management Pack Templates** node.



25. Click on the **.NET Application Performance Monitoring** node, then under **Tasks**, select **Add Monitoring Wizard**. To expand the toolbar click, on the **Task Pane**.



26. On the **Select Monitoring Type** page leave the **.NET Application Performance Monitoring** node selected and click **Next**.

Select the monitoring type

- NET Application Performance Monitoring JEE Application Availability Monitoring JEE Application Performance Monitoring OLE DB Data Source
- 27. On the General Properties page type the name TalkingHeads App Monitor in the Name field.
- 28. Under Management Pack select the newly created TalkingHeads Management Pack from the dropdown list and click Next.

Enter a friendly name and description		
Name:		
TalkingHeads App Monitor		
Description:		
		<u>^</u>
<u> </u>		v
Management pack		
Select destination management pack:		
TalkingHeads Management Pack	•	New

29. On the What to Monitor window click the Add... button to locate the objects to monitor.



30. Click the Search button and then select the TalkingHeads application in the list of available items.

Filter by part of name (optional):	
	Search

31. Click the **Add** button to insert the **TalkingHeads** and **TalkingHeadsMidtier** to the **Selected objects** list and then click **OK**.

	Object Search	?	х
To add objects, search for the objects and then add	them to the selected objects list.		
Search for:			
Web Applications and Services			~
Filter by part of name (optional):			
	Γ	Searc	:h
Available items			
Component	Application Path	_	
Microsoft System Center 2012 Orchestrator Or	Microsoft System Center 2012 Orchestrator Orchestration	C	
Crchestrator2012	Microsoft System Center 2012 Orchestrator Web Service	/	
ReportingWebService	WSUS Administration/ReportingWebService		
RerverSyncWebService	WSUS Administration/ServerSyncWebService		
Simple Auth Web Service	WSUS Administration/SimpleAuthWebService		≡
🐻 TalkingHeads	Default Web Site/TalkingHeads		
TalkingHeadsMidtier	Default Web Site/TalkingHeadsMidtier		~
Selected objects	Add	Rem	ove
Component	Application Path		
🗑 TalkingHeads	Default Web Site/TalkingHeads		
TalkingHeadsMidtier	Default Web Site/TalkingHeadsMidtier		
		Cara	-
	- OK	Canc	ei

32. Under Monitoring Scope select Production from the Environment dropdown.

Monitoring scope	
Use the environment tag and targeted group to control where monitoring will be applied. The tag will become part of the display name and targeted group defines servers where monitoring will occur.	
Environment: Production	•

33. In the Targeted group section, click Search.

Environment: Production	~ v
Targeted group:	🔆 Create. 👂 Search 💷 Remove
	\square

34. In the Management pack dropdown, select the TalkingHeads Management Pack and click Search.

Group Search		x
To add groups, search for the group by name and management pack and then add them to the selected objects	ist.	
Filter by (optional):		_
Management pack:		
(Any)		-
System Library System Software Library System Virtualization Library	/	`
TalkingHeads Management Pack Team Foundation Server 2012 Management Pack Universal Linux (Debian) Discovery Universal Linux (RPM) Discovery Universal Linux Monitoring		

35. Select the TalkingHeads App Server Group and click OK.

Group Search	?	x
To add groups, search for the group by name and management pack and then add them to the selected	objects list.	
Filter by (optional):		
Management pack:		
TalkingHeads Management Pack		~
	Search	
	Courterin	
Available Groups		
Name Management Pack		
TalkingHeads App Server Group TalkingHeads Management Pack		

36. On the **What to Monitor** page, click **Next**.

Add application comp	oonents to monitor	
Application group:	TalkingHeads App M	Monitor
Application components		📲 Add 💳 Remove
Component	A	Application Path
TalkingHeads		Default Web Site/TalkingHeads
📲 TalkingHeadsMidtie	r in the second s	Default Web Site/TalkingHeadsMidtier
Monitoring scope		
Use the environment ta and targeted group defi	g and targeted group to c nes servers where monit	control where monitoring will be applied. The tag will become part of the display name itoring will occur.
Environment: Producti	on	~
Targeted group:		🔆 Create 🔎 Search 💳 Remove
TalkingHeads App Serv	er Group	
		< Previous Next > Create Cancel

37. On the Server-Side Configuration page, change the Performance event threshold to 3000 (ms).

Configure performance event monitoring
Performance event threshold (ms):
3000

38. Click Advanced Settings.

Configure the default monitoring settings
Event monitoring
✓ Turn on performance event alerts
✓ Turn on exception events alerts
Castinue auformance quart monitoring
Configure performance event monicornig
Performance event threshold (ms):
3000
Use advanced settings to further customize the configuration for the application group
Advanced Settings
Enable additional configuration options for server-side and client-side monitoring

39. In the **Configure exception event monitoring** section, click **Application failure alerts** and **All exceptions**.

 Security alerts 	 Critical exceptions only 	Exception Tracking
 Connectivity alerts 	 All exceptions 	Critical Exceptions

- 40. Click **OK**.
- 41. On the Server-Side Configuration page, click Next.
- 42. On the **Summary** page, click **Create** to set up this new Monitor object. This will take a few minutes to complete and the Wizard will disappear once it has finished.

Application Group:	TalkingHeads App Monitor - Production
Management Pack:	TalkingHeads Management Pack
Warnings:	
🗼 IIS may need to be restarted.	
Server-side monitoring defaults:	
Monitored servers	TalkingHeads App Server Group
Performance event alerts	Enabled
Exception event alerts	Enabled
Performance event threshold	3000 ms
Monitors enabled	% Exception Events/sec exceeds threshold
	% Performance Events/sec exceeds threshold
	Average Request Time exceeds threshold
Application Components:	2
TalkingHeads - Production	
Customized	False
Monitored servers	Server-side: TalkingHeads App Server Group
Client-side monitoring enabled	False
TalkingHeadsMidtier - Production	
Customized	False
Monitored servers	Server-side: TalkingHeads App Server Group

43. Open Internet Information Services (IIS) Manager by clicking Start and typing IIS Manager and clicking the shortcut.



44. Under **Connections** in the left panel, select **SCOM01**. If prompted to get updates, click **No**.

<i>8</i>]		Internet
€ SCOM01 ►		
File View Help		
Connections	SCOM01 H	Home
Start Page	Filter: ASP.NET	🕶 🚏 Go 🕞 🖣
	🐴 🔮	404
	.NET .NET Authorizat Compilatio	.NET Error on Pages

45. Under **Actions** in the right hand panel, click **Restart** to stop and then start the IIS Service.



- 46. Close Internet Information Services (IIS) Manager.
- 47. Click the **Operations Manager** icon on the Taskbar and select **Monitoring** workspace on the Operations Manager Console.

	-			
a	Monitoring	^		
	Active Alerts		Monitoring Overview	
	Discovered Inventory			
	Distributed Applications	≡		
	💑 Task Status			
	UNIX/Linux Computers		Required Configuration Tasks:	
	🗰 Windows Computers			
	Agentless Exception Monitoring		In order for Operations Manager to manage and monitor network you must complete the following steps:	your
	Application Monitoring		netion you must complete the following steps	
	▷ 📴 Data Warehouse		Required: Enable Notification Channels	
	Microsoft Audit Collection Service		Upgrade to full version	
	D I Microsoft SQL Server			
	Microsoft System Center Virtual N			
	Microsoft System Center Virtual N			
	Microsoft System Center Virtual N			
	Microsoft Windows Client		State and Alerts:	
-	Microcoff Windows Cluster	~		
Ì			🔊 Computer Health: Go to	Comp
-	show or Hide Views		Critical:	
New View 🕨			\Lambda Warning:	
		3	Healthy:	
	Monitoring		Maintenance Mode:	
		_	Unknown Status:	

48. Expand the **Application Monitoring** |.**NET Monitoring** | **TalkingHeads App Monitor - Production** node. If this is not visible, from the upper toolbar select **View** | **Refresh** until it appears. This may take awhile.

4 Monitoring
Active Alerts
Discovered Inventory
Distributed Applications
💑 Task Status
UNIX/Linux Computers
Windows Computers
Agentless Exception Monitoring
Application Monitoring
Applications
a 🙀 .NET Monitoring
Active Alerts
IIS 7.0 ASP.NET Web Application Inventory
IIS 8.0 ASP.NET Web Application Inventory
IIS Hosted WCF Web Service Inventory
Monitored Applications
TalkingHeads App Monitor - Production
49. Click TalkingHeads App Monitor and confirm that the APM ASP.NET Web Application Component is in a healthy state, which is represented by a green 'check'. The application is now being monitored from the server-side. It may take several minutes to appear as Healthy. If this is not visible, from the upper toolbar select View | Refresh until it appears.

TalkingHeads App	p Monitor (1)					
🔍 Look for:		Find Now	Clear			
State	Display Name	APM ASP.NET Web Application Component	APM ASP.NET Web Service Application Component	O IIS Hosted WCF Web Service Component	APM Windows Service Component	Client-Side Monitoring Application Component
✓ Healthy	Default Web Site/TalkingHeads	🕢 Healthy				

50. From the **Monitoring** workspace, expand the **Application Monitoring** | **.NET Monitoring** | **IIS 8.0 ASP.NET Web Application Inventory**.

Monitoring
4 🔳 Monitoring
Active Alerts
Discovered Inventory
Distributed Applications
💑 Task Status
UNIX/Linux Computers
Windows Computers
Agentless Exception Monitoring
App Controller
Application Monitoring
Applications
INET Monitoring
Active Alerts
IIS 8.0 ASP.NET Web Application Inventory
IIS Hosted WCFWeb Service Inventory
Monitored Applications

51. Click on the and confirm that the **Default Web Site/TalkingHeads** application is listed on **SCOM01**.

IIS 8.0 ASP.NET Web Application Inv	entory (3)		
🔍 Look for:	Find Now	Clea	r
IIS Application Name	Application Virtual Root		Path
AppController	/LM/W3SVC/2/ROOT		SCVMM01.contoso.com;W3SVC/2
Default Web Site/TalkingHeads	/LM/W3SVC/1/ROOT/TalkingHeads		SCOM01.contoso.com;W3SVC/1
Microsoft System Center 2012 Orc	/LM/W3SVC/3/ROOT		SCO01.contoso.com;W3SVC/3

52. Click on the **Default Web Site/TalkingHeads** entry and then in the **Tasks** pane on the right, click **Check Client-Side Monitoring Compatibility**.

 Tasks
2
State Actions
🛒 Start Maintenance Mode
Edit Maintenance Mode Settings
Stop Maintenance Mode
Personalize view
Tasks ^
Entity Properties
🙀 Health Explorer
Navigation ^
Alert View
🗲 Diagram View
Event View
Performance View
State View
Network (Virtual) Vicinity Dashba
Network Vicinity Dashboard
IIS 8 ASP.NET Application
Check Client-Side Monitoring C
Report Tasks

53. Click **Run** to initiate tests to confirm that the application can be monitored by injecting JavaScript code into the application.

Run Task - Check Client-S	ide Monitoring Compatibility
Run the task on these targets	Help
Target ☑ Default Web Site/TalkingHeads	Run Location SCOM01.contoso.com;W3SVC/1
Task Parameters	Value
Override	
Task credentials Use the predefined Run As Account Other : User name : Password : Domain : contoso Task confirmation	Task description The task verifies that the web application can be safely monitored by using client-side monitoring. This task should be run against all ASP.NET applications that are to be configured for client-side monitoring through the .NET Application Performance Monitoring template.
Don't prompt when running this task in the future	Run Cancel

54. When the task completes, confirm that the **Status** reported is **Success** indicating that the application is compatible with Client Side Monitoring.

Task		Status	Task Targe	t
<	Ш			>
Task Outp	out	🔁 Copy T	ext 🔋 Copy HTI	ML
⊘ Mo	heck Client-Side	Task De	scription	^
Status:	Success	The task	verifies that the	
Schedu Time:	Iled 12/16/2013 11 PM	:31:12 web app safely m	olication can be onitored by	~
	12/16/2013 11	:31:12 using d	iant rida	
You can c	lose this dialog at a	any time. Doing so	will not interrupt	

55. Click **Close** to clear the test window. Client-side Monitoring can now be safely configured for the TalkingHeads application.

⊺ask ⊘Check Client∙	-Side Monitoring	Status Success	Task Target default web	site/talkingheads	
ask Output				🖹 Copy Text 🗎 Copy	нтмі
Check C Compatil	Client-Side Monito Dility	ring	Task Descriptio	n	1
Status: Scheduled Time: Start Time: Submitted By: Run As: Run	Success 2/28/2014 1:58: 2/28/2014 1:58: contoso\Admin	20 AM 20 AM istrator	The task verifies be safely monit monitoring. Thi ASP.NET applica for client-side r Application Per	s that the web application can ored by using client-side is task should be run against a ations that are to be configure nonitoring through the .NET formance Monitoring templat	ell ed
Target:	IIS 8 ASP.NET Ar	plication			>
		Deine ee		unuting tanks. You and shark t	>

56. Select the Authoring workspace.



- 57. Expand Management Pack Templates and click .NET Application Performance Monitoring.
- 58. Right-click on the TalkingHeads App Monitor -Production monitor and select Properties.



- 59. Click on the Client-Side Monitoring tab.
- 60. Click the **Enabled** checkbox to turn on CSM for this application.

	it-side monitoring it	or web applications				
Client-side n monitoring. 7	ionitoring uses JavaSc o ensure that these sci lications	ript scripts automatical ripts can run, you shoul	ly added to each man d run the Check Clier	aged web ap nt-Side Monit	plication that is c oring Compatibili	configured for ity task against any
new web app	incations.					🥖 Customize.
Enabled	Component	IIS Ap	plication Path		Excluded Pages	Customize.

- 61. Click the **Customize** button to open the settings window.
- 62. Under Event monitoring check the box to enable **Turn on exception events alerts**.



- 63. Set the Page load threshold (ms) field to 3000.
- 64. Set the Ajax and WCF threshold (ms) field to 3000.
- 65. In the table titled **Configure the IP address filter** select each of the two lines in turn and use the **Remove** button to delete the lines from the table, leaving an empty table.

lifying Settings: Talking	gneads		
Event monitoring			-
Turn on performance e	vent alerts		
Turn on exception even	nts alerts		
Configure performance	event collection		
Page load threshold (ms):		Sensitivity threshold (ms):	
3000	÷	3000 🛨	
Ajax and WCP threshold (r	ns).		1
5000	±		
Sampling Monitor 100 💌 % of i	ncoming requests		
Sampling Monitor 100 💌 % of i Configure client IP add	ncoming requests	Au 22	_
Sampling Monitor 100 💌 % of i Configure client IP add	ress filter	Add / Edt = Rem	we
Sampling Monitor 100 💌 % of i Configure client IP add	ress filter	Add / Edt = Rem	ive
Sampling Monitor 100 💌 % of i Configure client IP add	ncoming requests ress filter // Netmask	Add / Edr. Rem	we
Sampling Monitor 100 💌 % of i Configure client IP add IP Address	ncoming requests ress filter	Add / Edr = Rem	ve D
Sampling Monitor 100 💽 % of i Configure client IP add IP Address More about client IP addre	ncoming requests ress filter Netmask sss filters	Add ZEdr. == Rem	TYPE D

- 66. Scroll down to the Monitors area.
- 67. In the **% Exception Events/sec exceeds threshold** setting enter the value **1**. 1% is extremely low but will be useful to speed up the time to see alerts in this lab.
- 68. In the % Performance Events/sec exceeds threshold setting enter the value 1.

Moni	tors		
	Name 🛆	Threshold	Interval
	% Exception Events/sec exceeds	1 🕂 %	5 🗧 minutes 💌
	% Performance Events/sec excee	1 🕂 %	5 🚍 minutes 📃
	Average Request Time exceeds t	10000 🕂 ms	5 🗧 minutes 💌

69. Scroll further down to the **Transactions** section and click the **Add** button.

🛟 Add 🥒 Edit 💳 Remove
Web Page

- 70. In the Transaction Name box enter Home Page.
- 71. In the ASP.NET page box enter /TalkingHeads/Default.aspx.
- 72. Under **Collect alerts by event type**, click to select the **Application failure** box.
- 73. In the % Exception Events/sec exceeds threshold setting enter the value 1.
- 74. In the % Performance Events/sec exceeds threshold setting enter the value 1.

mourcen	on Properties				
ASP.	VET page settings				
Transa	action name:				
Home	Page				
ASP .N	IET page:				
/Talkir	ngHeads/Default.aspx				
examp	le: 'WirtualDir/MyPage.aspx'				
Perform	mance event threshold (ms):				
1000					
1.000					
Sensit	ivity threshold (ms):				
100					
Colle	ct alerts by event type				
-					
App	olication failure	Performance			
App	olication failure	Performance			
Monit	olication failure	Performance			
Monit	ors	Performance	Interval		
Monit	ors Name % Exception Events/sec exc	Performance Threshold	Interval	5 📑 minutes	
Monit	ors Name % Exception Events/sec exc % Performance Events/sec	Performance	Interval	5 minutes	
Monit	ors Name Kexception Events/sec exc Performance Events/sec Average Request Time exce	Threshold 1 % 1 % 1 % 1 % 1 %	Interval	5 minutes 5 minutes 5 minutes	-
Monit	ors Name X Exception Events/sec Reformance Events/sec Average Request Time exce	Performance	Interval	5 minutes 5 minutes 5 minutes	•

- 75. Click **OK**.
- 76. Under Monitored Servers click Search.

Monitored servers		
You can target a group to limit the scope of the monitoring to the group of serv	ers.	
Targeted group:	<mark>∦</mark> Create	🔎 Search

- 77. In the Management Pack dropdown list select **TalkingHeads Management Pack** and press **Search**.
- 78. Select the Talking Heads App Server Group and then press OK.

Group Search	<u>?</u> [x
To add groups, search for the group by name and management	nt pack and then add them to the selected objects list.
Filter by (optional):	
Management pack:	
TalkingHeads Management Pack	
	Search
Available Groups	
Name	Management Pack
🔁 TalkingHeads App Server Group	TalkingHeads Management Pack

79. Press OK to close the Modifying Settings: TalkingHeads page.

Page Name Comparison Type Page Name Comparison Type Transactions Transaction Name Web Page ▲ Home Page /TakingHeads/Default.aspx Monitored servers You can target a group to limit the scope of the monitoring to the group of servers. Targeted group: ☆ Create ♀ Search ■ Remove TalkingHeads App Server Group	Excluded pages	
Page Name Comparison Type "ransactions Transaction Name Web Page Normal Home Page Monitored servers You can target a group to limit the scope of the monitoring to the group of servers. Targeted group: ☆ Create ♀ Search Remove TalkingHeads App Server Group		🔓 Add 🧷 Edit 📟 Remove
ransactions Transaction Name Transaction Name Web Page Your Page /TalkingHeads/Default.aspx	Page Name	Comparison Type
ransactions ransaction Name Transaction Name Web Page Transaction Name Veb Page TalkingHeads/Default.aspx Vonitored servers fou can target a group to limit the scope of the monitoring to the group of servers. argeted group: argeted group: Create Search Remove FalkingHeads App Server Group		
ransactions Transaction Name Transaction Name Web Page Yome Page /TalkingHeads/Default.aspx		
ransactions Transaction Name Transaction Name Web Page Home Page /TalkingHeads/Default.aspx		
ransactions Transaction Name Transaction Name Web Page Home Page /TalkingHeads/Default.aspx		
ransactions Image: Add <pre></pre>		
ransactions		
ransactions Transaction Name Transaction Name Veb Page TalkingHeads/Default.aspx Vonitored servers fou can target a group to limit the scope of the monitoring to the group of servers. argeted group: Create Search Remove TalkingHeads App Server Group		
Image: Transaction Name Web Page ∠ Image: Transaction Name Web Page ∠ Image: Transaction Name YmakingHeads/Default.aspx ∠ Image: Transaction Name ∠ ∠	ransactions	
Transaction Name Web Page ✓ Nome Page /TalkingHeads/Default.aspx ✓ Monitored servers ✓ ✓ You can target a group to limit the scope of the monitoring to the group of servers. ✓ Fargeted group:		🔓 Add 🥖 Edit 📼 Remove
Home Page /TalkingHeads/Default.aspx	Transaction Name	Web Page 🛆
Yonitored servers You can target a group to limit the scope of the monitoring to the group of servers. Fargeted group:		
Monitored servers You can target a group to limit the scope of the monitoring to the group of servers. Fargeted group:	e. Home Page	/TalkingHeads/Default.aspx
Monitored servers You can target a group to limit the scope of the monitoring to the group of servers. Fargeted group:	e. Home Page	/TalkingHeads/Default.aspx
Monitored servers You can target a group to limit the scope of the monitoring to the group of servers. Fargeted group:	S. Home Page	/TalkingHeads/Default aspx
Monitored servers /ou can target a group to limit the scope of the monitoring to the group of servers. Fargeted group:	👷 Home Page	/TalkingHeads/Default aspx
Youitored servers You can target a group to limit the scope of the monitoring to the group of servers. Fargeted group: Remove FalkingHeads App Server Group	S. Home Page	/TalkingHeads/Default aspx
You can target a group to limit the scope of the monitoring to the group of servers. [argeted group:	R. Home Page	/TalkingHeads/Default.aspx
Fargeted group:	Home Page	/TalkingHeads/Default.aspx
FalkingHeads App Server Group	Home Page Monitored servers You can target a group to limit the scope of the monitori	/TalkingHeads/Default.aspx
	Home Page Yonitored servers You can target a group to limit the scope of the monitori Fargeted group:	/TalkingHeads/Default.aspx ing to the group of servers.
	Mome Page Monitored servers You can target a group to limit the scope of the monitori Fargeted group: TalkingHeads App Server Group	/TalkingHeads/Default.aspx ing to the group of servers. ☆Create ♀ Search ⇔ Remove
	Mome Page Monitored servers You can target a group to limit the scope of the monitori Fargeted group: TalkingHeads App Server Group	/TalkingHeads/Default.aspx ing to the group of servers. ☆Create ♀ Search ⇔ Remove

- 80. Click on the Client-Side Defaults tab.
- 81. Under Event monitoring check the box to enable Turn on exception events alerts.
- 82. Set the Page load threshold (ms) field to 250.
- 83. In the table titled **Configure the IP address filter** select each of the two lines in turn and use the **Remove** button to delete the lines from the table, leaving an empty table.

6	TalkingHeads App M	onitor - Producti	on Properties		X
What to Monitor Server-Side De	faults Client-Side Monitoring	Client-Side Defaults	Summary		
Configure client-side mon	itoring				
Event monitoring					
Turn on performance ever	nt alerts				
✓ Turn on exception events	alerts				
Configure performance ev	ent collection				
Page load threshold (ms):		Ajax and WCF th	reshold (ms):		
250	* *	5000	^		
			👍 Ado	d 🧷 Edit 🗉	Remove
More about client IP address	<u>filters</u>				
Use advanced settings to Advanced Settings	further customize the conf	figuration for the ap	plication group		
			ОК	Cancel	Apply

- 84. Click **OK** to close the **TalkingHeads App Monitor Production Properties** dialog box. The folder will update, and this may take a few moments to complete. The properties page will disappear once it has completed.
- 85. Navigate to Monitoring | Operations Manager | APM Agent Details | Active Alerts.



86. In the Active Alerts pane, wait until a Warning alert appears indicating that Application Pools require a recycle on DC01, or right-click on Active Alerts and select Refresh. When the Alert appears, select the **IIS Restart** is required alert.

Severity: Warning (2)		
🛕 DC01.Contoso	IIS Application Pools recycle is required	New
🛕 DC01.Contoso	IIS Restart is required	New

87. In the details pane below, scroll down and click the **Restart IIS** link.

Alert Details

running on the web server. This monitor transitions to an unnealthy state when its needs to be recycled.

Causes

When application monitoring settings are modified using the .NET Application Performance Monitoring template, IIS might need to be restarted for the new settings to take effect. An example of a scenario that requires restarting IIS is when you are configuring .NET application monitoring for the first application on the web server.

Resolutions

- You can restart IIS by clicking the following link: Restart IIS
- You can run the iisreset.exe command on the web server.
- 88. Ensure SCOM01.Contoso.com is selected and click Run.

a Run Task - Restart Ir	nternet Information Services
Run the task on these targets	🛞 Help
Target	Run Location
SCOM01.Contoso.com	SCOM01.Contoso.com
Task Parameters	
Name	Value
Timeout Seconds Arguments Override Task credentials	300 Task description
Use the predefined Run As Account	This task restarts Internet Information Services
◯ Other :	on target computers.
User name :	7
Password :	
Domain : CONTOSO	
Task confirmation	Run Cancel

- 89. When the Task completes, click **Close**.
- 90. Navigate to **Monitoring | Operations Manager | APM Agent Details** and click the **All Events** node.



- 91. Sort the Events by Event Number.
- 92. Notice Event 4001 in the list, this event indicates that the APM service has started.

All Events (35)				
🔍 Look for:		Find Now Clear		
Level	Date and Time	Source	Event Number	
Information	2/28/2014 1:39:02 AM	System Center Management APM	4001	
Information	2/28/2014 1:39:04 AM	Apm PerfCounterMonitor	4148	
Information	2/28/2014 1:39:04 AM	Apm PerfCounterMonitor	4150	
Information	2/28/2014 1:39:02 AM	.NET app monitoring	34004	
I	1/10/1014 1.14.10 AM	NIFT	24004	
Details				
Date and Time:	2/28/2014 1:39:02 AM	Description:		
Log Name:	Operations Manager			
Source:	System Center Manageme APM	nt Microsoft Monitoring Agent APM ser	vice successfully sta	arted.
Generating Rule:	Collect APM Agent Windo Events	WS		
Event Number:	4001	System information:		
Level:	Information	Agent version: 7.1.10184.0 Windows version: 2.6.2.3.400.0.9.0		
Logging Computer:	SCOM01.contoso.com			
User:	N/A			
Event Data:				🕌 View Event Data
< DataItem typ < EventData < Data /> < Data > Sy EventData<br	e =" System.XmlData " time > ystem information: Agent ve >	= " 2014-02-28T01:39:02.5676184-08:00 " sc ersion: 7.1.10184.0 Windows version: 2.6.2	ourceHealthServicel .3.400.0.9.0. Data</th <th>d = * 8A09AC46-AD45-329F-A711-21996D58943B * ></th>	d = * 8A09AC46-AD45-329F-A711-21996D58943B * >
Click here to hide even	t data			

93. On **SCOM01**, select **Internet Explorer** from the taskbar so that the Talking Heads website opens. If it does not, navigate to <u>http://scom01.contoso.com/TalkingHeads</u>.



- 94. Click the **Home** tab to ensure that the webpage refreshes, which indicates that the IIS server restarted correctly.
- 95. Minimize Internet Explorer.
- 96. On the Desktop, double-click the TalkingHeads folder.



- 97. Double-click on **TalkingHeads.Simulator**, an executable application. If a publisher verification warning appears, click **Run** to continue.
- 98. Next to the Scenario button, click the dropdown and select Default Scenario.



- 99. Once tests appear in the lower window, minimize the **Load Generator**. This runs scripts against the preconfigured bugs in the website to create application exceptions and performance issues on both the server and client side. Application Performance Monitoring will detect these issues and collect data which can be sent to a developer for debugging.
- 100. Open the Operations Manager Console click on the **Monitoring** workspace, and select **Operations Manager | APM Agent Details | All Events**.

101. Wait for Event **4003** to appear. When it does, click to select it and notice that the **APM Agent** started successfully in the details pane.

Log Name:	Operations Manager	Apm Agent started successfully.
Source:	Apm Agent	

102. Expand the Application Monitoring | .NET Monitoring | TalkingHeads App Monitor – Production | TalkingHeads App Monitor node. Note that the Client Side Monitoring Application Component is now active. It may take a few minutes for the current state of the Client-side Monitoring to appear, but when it does it will show as Healthy.



103. Navigate to the Application Monitoring | .NET Monitoring | TalkingHeads App Monitor – Production | Active Alerts node. After a few moments exceptions and performance alerts will begin to appear which confirms that APM was configured correctly.

Ann Controller
A C Application Monitoring
P Applications
4 🚰 .NET Monitoring
Active Alerts
IIS 8.0 ASP.NET Web Application Inventory
IIS Hosted WCF Web Service Inventory
III Monitored Applications
4 🚰 TalkingHeads App Monitor - Production
Active Alerts
ItalkingHeads App Monitor
TalkingHeads
TalkingHeads (Client)
TalkingHeadsMidtier
D Java Monitoring
III >
show or Hide Views
Jane Minus A
vew view 🕨
Monitoring
wontoning

- 104. Wait until there is at least 1 alert in each of the following categories. This should take a few moments.
- 105. Client Application Exception
- 106. Client Performance Exception
- 107. Client Performance Exception
- 108. Server Performance Exception
- 109. Server Application Exception

Act	ive Alerts (12)								
0	Look for:			Find Now	Clear				
ø	Source	\gg	Name		Description	Resolution State	Created	Ŧ	Age
⊿	Severity: Warning (12	2)							
4	SCOM01/Talki		Client Application Exception		/TalkingHeads/	New	2/28/2014 2:19:50 AM		2 Minutes
4	SCOM01/Talki		Client Performance Exception		Client Page : /T	New	2/28/2014 2:19:36 AM		3 Minutes
4	SCOM01/Talki		Client Performance Exception		Client Page : /T	New	2/28/2014 2:19:28 AM		3 Minutes
4	SCOM01/Talki		Server Performance Exception		'/TalkingHeads	New	2/28/2014 2:19:28 AM		3 Minutes
4	SCOM01/Talki		Server Application Exception		'TalkingHeads	New	2/28/2014 2:19:27 AM		3 Minutes
4	SCOM01/Talki		Server Application Exception		'TalkingHeads	New	2/28/2014 2:19:27 AM		3 Minutes
4	SCOM01/Talki		Server Application Exception		'TalkingHeads	New	2/28/2014 2:19:25 AM		3 Minutes
4	SCOM01/Talki		Client Performance Exception		Client Page : /T	New	2/28/2014 2:19:16 AM		3 Minutes
4	SCOM01/Talki		Server Performance Exception		'/TalkingHeads	New	2/28/2014 2:19:13 AM		3 Minutes
4	SCOM01/Talki		Client Application Exception		/TalkingHeads/	New	2/28/2014 2:18:42 AM		4 Minutes
4	Home Page./T		Client Page Performance Exception	n	Client Page : /T	New	2/28/2014 2:18:00 AM		4 Minutes
4	SCOM01/Talki		Client Performance Exception		Client Page : /T	New	2/28/2014 2:18:00 AM		4 Minutes

- 110. Minimize Operations Manager and select the Load Generator.
- 111. Select Stop.

Load Generator - 2 runs, 52.69 sec. avg. 2 errors	_ □	x	
🗧 🗣 Back 🔹 Next http://localhost/TalkingHeads/Secure/Status.aspx 🚽 🗱 Stop 📔 Browser 🕨 Scenario 👻			
02:23:40.740 Confirm a friend 02:23:42.800 Confirm a friend 02:23:44.364 Confirm a friend 02:23:47.970 Confirm a friend 02:23:47.970 Confirm a friend 02:23:49.725 Confirm a friend 02:23:51.531 Confirm a friend 02:23:56.902 Confirm a friend		~	
02:23:58.170 Completed successfully			
02:23:58.173		~	1
<		>	

112. Close the Load Generator.

5.4.3 - SCOM: View Application Performance Monitoring Data

In this exercise Application Performance Monitoring (APM) information for a .NET web application will be reviewed. This can be used to identify code bugs and performance issues, which assists with application troubleshooting. This website, Talking Heads, is a simulated social network which some purposely placed code bugs to trigger Operations Manager alerts.

Estimated time to complete: 15 minutes



Perform the following on SCOM01

1. From **SCOM01**, open the **Operations Manager Console** by clicking the icon in the taskbar.



2. Navigate to the **Monitoring** workspace.



3. Expand Monitoring | Application Monitoring | .NET Monitoring.



4. Select Monitored Applications and ensure that the state of the TalkingHeads App Monitor - Production is Healthy.



5. Navigate to the Monitoring | Application Monitoring | .NET Monitoring | TalkingHeads App Monitor - Production | TalkingHeads.



6. Select **Overall Component Health**. Note that the application is healthy, however there are several performance alerts.

Q Look for:		Find Now Clear				
State	▼ Name	IIS application path		Path		
	TalkingHeads - Production	Default Web Site/TalkingHead	is	SCOM01.contoso.com		
Activo Alex	etc (5)					
Source	Ø	Name	Descr	iption	Resolution State	Creat
✓ Severity: Wa	rning (5)					
	alkingHeads - Production	Server Performance Exception	'/Talk	cingHeads/Secure/Search.aspx' has ex	New	2/28/
	alkingHeads - Production	Server Application Exception	'Talki	ingHeads - Production' on SCOM01.c	New	2/20/
A SCOM01/T	alkingHeads - Production	Server Application Exception	'Talki	ingHeads - Production' on SCOM01.c	New	2/28/
	alkingHeads - Production	Server Performance Exception	'/Talk	singHeads/Secure/Status.aspx' has exc	New	2/28/
scom01/T						
scom01/T						
SCOM01/T Scom01/T Server Perfo	ormance Exception			Alert Description		

7. Navigate to the Monitoring | Application Monitoring | .NET Monitoring | TalkingHeads App Monitor - Production | Active Alerts.



8. Find an alert with the name **Server Application Exception**.

Active Alerts (12)						
🚯 🛛 Source	\gg	Name	Description	Resolution State	Created	Age
▲ Severity: Warnin	g (12)					
🛕 SCOM01/Talki	i	Client Application Exception	/TalkingHeads/	New	2/28/2014 2:19:50 AM	28 Minutes
🛕 SCOM01/Talki	i	Client Application Exception	/TalkingHeads/	New	2/28/2014 2:18:42 AM	29 Minutes
🛕 Home Page./T	Г	Client Page Performance Exception	Client Page : /T	New	2/28/2014 2:18:00 AM	30 Minutes
🛕 SCOM01/Talki	i	Client Performance Exception	Client Page : /T	New	2/28/2014 2:19:36 AM	28 Minutes
🛕 SCOM01/Talki	i	Client Performance Exception	Client Page : /T	New	2/28/2014 2:19:28 AM	29 Minutes
🛕 SCOM01/Talki	i	Client Performance Exception	Client Page : /T	New	2/28/2014 2:19:16 AM	29 Minutes
👍 SCOM01/Talki	i	Client Performance Exception	Client Page : /T	New	2/28/2014 2:18:00 AM	30 Minutes
🛕 SCOM01/Talki	i	Server Application Exception	'TalkingHeads	New	2/28/2014 2:19:27 AM	29 Minutes
A SCOM01/Talki	i	Server Application Exception	'TalkingHeads	New	2/28/2014 2:19:27 AM	29 Minutes

- 9. Right-click it and select **Properties**. This error indicates that an application running on the server has had an issue.
- 10. Under Alert Description, click the link to launch Internet Explorer.

Alert Description:



- 11. When the Windows Internet Explorer Dialog appears, select **Yes** to close the window.
- 12. **Expand** the various components of the event by clicking the plus signs (+) and triangles and review the information. The information on this page can be used to reproduce the issue and provide information about how to resolve this error.



13. Select the **Similar events** tab at the top of the page. These are identical events that have happened in recent history.

left Actions	
Event prop	ties Similar events Related events Distributed chains Performance counters
Similar by: Problem:	Roblem
From:	2/14/2014 2:20:30 III To: 2/28/2014 2:20:30 III Apply
Number o First Ever	Events: 3 Date: 2/28/2014 2:19:24 AM Last Event Date: 2/28/2014 2:20:30 AM
ID	Description
22	/TalkingHeads/Secure/Post.aspx failed with System.ServiceModel.FaultException
17	/TalkingHeads/Secure/Post.aspx failed with System.ServiceModel.FaultException
9	/TalkingHeads/Secure/Post.aspx failed with System.ServiceModel.FaultException

14. Select the **Related events** tab at the top of the page. This displays events that are similar, but may not be identical to this particular failure.

谷 Actio	ns
Event pro	operties Similar events Related events Distributed chains Performance counters
Period:	1 minute Apply
Number First Ev	r of Events: 6 /ent Date: 2/28/2014 2:20:01 AM Last Event Date: 2/28/2014 2:20:30 AM
ID	Description
20	ASP.secure_post_aspx.ProcessRequest failed with System.Net.WebException: The remote server returned an error: (500) Internal Server Error.
21	/TalkingHeads/Secure/Post.aspx failed with System.ServiceModel.FaultException
22	/TalkingHeads/Secure/Post.aspx failed with System.ServiceModel.FaultException
15	ASP.secure_post_aspx.ProcessRequest failed with System.Net.WebException: The remote server returned an error: (500) Internal Server Error.
16	/TalkingHeads/Secure/Post.aspx failed with System.ServiceModel.FaultException
17	/TalkingHeads/Secure/Post.aspx failed with System.ServiceModel.FaultException

15. Select the **Performance counters** tab. Toggle some of the values to see additional information which is collected about this performance issue.

A Color Scale Counter Units Avg Min Max 2 1 1 Process/V Processor Time % time 13.12 0 9.1 2 0 0.1 Process/V Processor Time % time 3.12 0 9.1 2 0 0.1 Process/V Processor Time % time 0.39 0.0 3.12 2 0 0.1 Process/V Processor Time %8 0.39 0.0 3.22 1 0 MET CLR Exceptions/e of Exceps Timorn / sec op/sec 0.39 0 3.28 1 0 MET CLR Memory/# Gen 0 Colections Gen 0 Colections 36.66 0 111 1 0 MET CLR Memory/# Gen 1 Colections Gen 1 Colections 34.0 0 111 1 MET CLR Memory/# Gen 2 Colections Gen 2 Colections 2.06 0 54 1 MET CLR Memory/# Gen 2 Colections Gen 2 Colections 1.02 0 5.22 0 5.24	nt properties	Similar events	Related events	Distributed chains	Performance counters					
b Color Scale Counter Units Avg Min Max 2	ellecting period:	: 15 min Frequency	y: 9 sec							
g 1 VProcess/Private Bytes % time 13.12 0 69.1 g 0.1 VProcess/Private Bytes M8 252.25 0 321.2 g 1 VProcess/Private Bytes ops/sec ops/sec 0.39.0 0.4 321.2 g 1 VProcess/Private Bytes M8 20.99 0.39.0 0.4 38.28 g 1 VET CAR Remory/# 6en Collections Gen 0 Collections 36.66 0 121.2 g 1 VET CAR Remory/# 6en 1 Collections Gen 1 Collections 36.66 0 121.2 g 1 VET CAR Remory/# 6en 2 Collections Gen 2 Collections 36.06 0 121.2 g 1 VET CAR Remory/# 6en 2 Collections Gen 2 Collections 32.06 0 61.11 g 1 VET CAR Remory/# 6en 2 Collections Gen 2 Collections 13.72 0 67.782 g 1 VET CAR Remory/Gen 2 Heap Size B 1.724.00 0 2.32 g 1 VET CAR Remory/Gen 2 Heap Size B 1.724.00 0	⊿,	Color	Scale		Counter	Units		Avg	Min	Max
0.1 VProcess/Private Bytes MB 225.25 0 527.25 0 \MET CAR Exceptions/# of Exceps Thrown / sec ops/sec 0.39 0 1.89 1 \MET CAR Exceptions/# of Exceps Thrown / sec ops/sec 0.09 0 38.28 1 \MET CAR Memory/# Sptes in all Heaps MB 0.09 0 38.28 1 \MET CAR Memory/# Gen Collections Gen 0 Collections 36.06 0 111 1 \MET CAR Memory/# Gen 1 Collections Gen 2 Collections 2.06 0 56 1 \MET CAR Memory/# Gen 2 Collections Stime 3.72 0 7.82 1 \MET CAR Memory/# Gen 2 Collections B 1.72+007 0 7.82 1 \MET CAR Memory/Large Object Meap size B 1.72+007 0 2.19 1 \MET CAR Memory/Large Object Meap size B 1.72+007 0 2.19 1 \MET CAR Memory/Large Object Meap size B 1.420.00 0 3.32 1 \MET CAR Memory/	✓		1		\Process\% Processor Time	% time		13.12	0	49.19
Image:	~		0.1		\Process\Private Bytes	MB		225.25	0	321.26
MB 20.09 0 82.82 MB 20.09 0 82.82 MB 20.09 0 82.82 MB Control 20.09 0 82.82 MB Control Schole 0 121 MB Control Schole 0 111 MB Control Schole 0 111 MB Control Schole 0 61 MB Control Schole 0 61 MB MB Control Schole 0 61 MB MB Control Schole 0 7.82 MB MB MB MB 0 1.72 0 7.82 MB MB MB MB MB 1.72 0 7.82 MB MB MB MB MB 1.72 0 1.82 MB MB MB MB MB MB<					\.NET CLR Exceptions\# of Exceps Thrown / sec	ops/sec		0.39	0	1.89
Image:					\.NET CLR Memory\# Bytes in all Heaps	MB		20.09	0	38.28
Image:					\.NET CLR Memory\# Gen 0 Collections	Gen 0 Collections		36.06	0	121
Image:					\.NET CLR Memory\# Gen 1 Collections	Gen 1 Collections		34	0	111
Image:					\.NET CLR Memory\# Gen 2 Collections	Gen 2 Collections		22.06	0	86
Image:					\.NET CLR Memory\% Time in GC	% time		13.72	0	96.14
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\					\.NET CLR Memory\Allocated Bytes/sec	B/sec		2.47e+007	0	7.82e+0
\METCLA Memory.Large Object Heap size 8 4,899,177.78 0 6.262 \METCLA Memory.Large Object Heap size ms 1,420.00 0 25,673 \METCLA Memory.Large Object Heap size request/sec 0.04 0 3.33 \METCLA Memory.Large Object Heap size request/sec request/sec 0.40 0.40 0.33 \METCLA Memory.Large Object Heap size Apps/Memory.Large Object Heap size request/sec 7.25 0 31.08 \Metola Meps/Performance Events/sec request/sec request/sec 0.02 0 0.11					\.NET CLR Memory\Gen 2 Heap Size	В		1.17e+007	0	2.19e+0
Mpps/Avg. Request Time ms 1,420.00 0 25,87 Mpps/Exception Events/sec request/sec 0.04 0 0.33 Mpps/Monitored Requests/sec request/sec 7.25 0 31.08 Mpps/Performance Events/sec requests/sec 0.02 0 0.11					\.NET CLR Memory\Large Object Heap size	В		4,899,177.78	0	1.82e+
Vpps/Exception Events/sec requests/sec 0.04 0 0.33 Vpps/Wontbored Requests/sec requests/sec 7.25 0 31.08 Vpps/Performance Events/sec requests/sec 0.02 0 0.11					\Apps\Avg. Request Time	ms		1,420.00	0	25,873
Vops/Montored Requests/sec requests/sec 7.25 0 31.08 Vops/Performance Events/sec requests/sec 0.02 0 0.11					\Apps\Exception Events/sec	requests/sec		0.04	0	0.33
VApps/Performance Events/sec requests/sec 0.02 0 0.11					\Apps\Monitored Requests/sec	requests/sec		7.25	0	31.08
					\Apps\Performance Events/sec	requests/sec		0.02	0	0.11
				100-						
100-				90 -						
				80-						
				50 -						
				50-						
				40-			P			
100 - 90 - 80 - 70 - 50 - 40 -				30				~~~		
				20-				1		

- 16. Close Internet Explorer.
- 17. After returning to the Alert Properties, under the section labeled **TFS Work Item Owner** select **Change**.

Repeat Count:	2	
TFS Work Item ID:		
TFS Work Item Owner:		
Owner:		Change
Ticket ID:		

- 18. On the Select User dialog enter Administrator and select Check Names. Click OK.
- 19. Under Alert Status, click the dropdown and select Scheduled.

Alert Status:

Once you have identified the problem and taken corrective action, you can select 'Closed' which will remove the Alert from the system once changes are committed.

New	×
New Awaiting Evidence Assigned to Engineering Acknowledged	
Scheduled Resolved Closed	

20. Click **OK** to close the Alert Properties.

			Alert P	roperties			×
General	Product Knowledge	Company Knowledge	History	Alert Context	Custom Fields		
A	Server Application	Exception					
Key De	tails:						
Alert so	urce:	SCOM01/TalkingHe	eads - Pro	oduction			
Severity	/:	Warning					
Priority	:	Medium					
Age:		29 Minutes					
Repeat	Count:	2					
TFS Wo	rk Item ID:						
TFS Wo	rk Item Owner:						
Owner:		contoso\Administrator			Change		
Ticket I	D:						
Alert D 'Talkin 'Syste '/Talkin http:/	gHeads - Production' m.ServiceModel.Fault ngHeads/Secure/Post /SCOM01/AppDiagnos	on SCOM01.contoso.cor Exception' with a messa .aspx'. For additional de titcs/Pages/login.aspx?m	n has had ge of 'Sys tails plea: <u>==ev&uid</u>	an application stem.ServiceMo se use the follow =7d427a7c-78a	failure occur. An del.FaultExceptio ving link: 15-43ab-acae-011	exception of type n' was thrown in 17f254ffa1	< >
Alert S Once yo the syst	tatus: u have identified the tem once changes are	problem and taken co e committed.	rrective a	action, you can	select 'Closed' v	vhich will remove	the Alert from
Schedul	ed			~			
1 Previ	ous 🗣 Next				ОК	Cancel	Apply

21. After returning to the Active Alerts node, select a Server Performance Exception alert.

🛕 SCOM01/Talki	Server Application Exception	'TalkingHeads	New	2/28/2014 2:19:27 AM	39 Minutes
🛕 SCOM01/Talki	Server Application Exception	'TalkingHeads	New	2/28/2014 2:19:25 AM	39 Minutes
🛕 SCOM01/Talki	Server Performance Exception	'/TalkingHeads	New	2/28/2014 2:19:28 AM	40 Minutes
🛕 SCOM01/Talki	Server Performance Exception	'/TalkingHeads	New	2/28/2014 2:19:13 AM	40 Minutes

- 22. **Right-click** it and select **Properties**. This error indicates that an application running on the server has had a performance issue when a process exceeded its expected duration.
- 23. Under Alert Description, click the link to launch Internet Explorer.

-	rt Description:
	TalkingHeads/Secure/Search.aspx' has exceeded the configured threshold 3000 ms on: SCOM01.contoso.com. For dditional details please use the following link: <u>http://SCOM01/AppDiagnostics/Pages/login.aspx?m=ev&uid=5310623b- b8c-0000-b809-000001527a9d</u>

- 24. When the Windows Internet Explorer Dialog appears, select Yes to close the window.
- 25. **Expand** the various components of the event by clicking the plus signs (+) and triangles and review the information.

ctions		
t properties Similar events Related even	nts Distributed chains Performance counters	
ent class: Performance Event nponent: System.Web.dll Irce: TalkingHeads - Production tus: New	Event Date: 2/28/2014 2:19:25 AM Build: 4.0.0.0 Computer: contoso.com/SCOM01 Aspect: Performance	
	Description	Ξ
Name	Value	
Business Context		
objectURI	http://localhost/TalkingHeads/Secure/Search.aspx	
userHostAddress		
ascritosolidaress	::1 (IPV6)	
3,449 / 3,449 ms WCF : TalkingHeads	::1 (IPV6) Slowest Nodes SU.SearchPostsSoap.Find (). Client side	Ξ
3,449 / 3,449 ms WCF : TalkingHeads	::1 (IPV6) Słowest Nodes s.UI. SearchPostsSoap.Find (). Client side Stack	
3,449 / 3,449 ms WCF : TalkingHeads	::1 (IPV6) Slowest Nodes .UI.SearchPosts.SearchPostsSoap.Find (). Client side Stack © Execution Tree View () Resource Group	E View
3,449 / 3,449 ms WCF : TalkingHeads Expand All	If (IPV6) Slowest Nodes Source Stack Execution Tree View Resource Group teads/Secure/Search.aspx	E View
3,449 / 3,449 ms WCF : TalkingHeads Expand All	I:1 (IPV6) Slowest Nodes SLUI.SearchPosts.SearchPostsSoap.Find (). Client side Stack execution Tree View Resource Group teads/Secure/Search.aspx E.Search.SearchPosts()	- View
3,449 / 3,449 ms WCF : TalkingHeads Expand All □ ● 3,556 ms TalkingHeads.UI.Secure □ ● 3,556 ms TalkingHeads.UI.Secure	III (IPV6) Slowest Nodes Slowest Nodes Stack	- View
3,449 / 3,449 ms WCF : TalkingHeads Expand All ASP page : /TalkingHeads/ULS 3,576 ms TalkingHeads/ULS - 3,555 ms	I:1 (IPV6) Slowest Nodes Slowest Nodes Slowest Nodes Stack Execution Tree View Resource Group Heads/Secure/Search.aspx Search.SearchPostsSoap.Clent.TailkingHeads.UI.SearchPosts.SearchPostsSoap.Find() Workheads UI SearchPostsSoap.Clent.TailkingHeads.UI.SearchPostsSoap.Find() Workheads UI SearchPostSoap.Clent.TailkingHeads.UI.SearchPostsSoap.Find()	E View
3,449 / 3,449 ms WCF : TalkingHeads Eccond Al	I:1 (IPV6) Slowest Nodes Sul. SearchPosts.SearchPostsSoap.Find (). Client side	Uiew
3,449 / 3,449 ms WCF : TalkingHeads Expand Al	I:1 (IPV6) Slowest Nodes SLUI.SearchPosts.SearchPostsSoap.Find (). Client side Stack © Execution Tree View () Resource Group teads/Secure/Search.aspx E.Search.PostsQapClient.Find() SearchPostsSoapClient.Find() SearchPostsSoapClient.Teind() SearchPosts.SearchPostsSoap.Find (). Client side Collection Notes Collection Notes	E View
3,449 / 3,449 ms WCF : TalkingHeads Expand All	I:: I (IPV6) Slowest Nodes Sull.SearchPosts.SearchPostsSoap.Find (). Client side Stack Execution Tree View Resource Group teads/Secure/Search.aspx E.SearchPosts() IrchPosts.SearchPostsSoapClient.Find() SearchPosts.SearchPostsSoapClient.TalkingHeads.UI.SearchPosts.SearchPostsSoap.Find() KingHeads.UI.SearchPostsSoap.Find (). Client side Collection Notes	Uiew
3,449 / 3,449 ms WCF : TalkingHeads Expand All a	I:1 (IPV6) Slowest Nodes Slowest Nodes Slowest Nodes Stack Stack Execution Tree View Resource Group eads/Secure/Search.aspx e.search.SearchPostsSoapClent.Find() SearchPosts.SearchPostsSoapClent.Find() SearchPosts.SearchPostsSoapClent.Find() Collection Notes Value Value Default Must StafTalkmotteade	Uiew
3,449 / 3,449 ms WCF : TalkingHeads Expand All	If (IPV6) Slowest Nodes UI.SearchPosts.SearchPostsSoap.Find (). Client side Stack © Execution Tree View () Resource Group Heads/Secure/Search.aspx E.SearchPostsSoapClient.Find() EarchPosts.SearchPostsSoapClient.Find() KingHeads.UI.SearchPosts.SearchPostsSoap.Find() KingHeads.UI.SearchPostsSoap.Find(). Client side Collection Notes Value Default Vveb Ste/TalkingHeads 2956	View
3,449 / 3,449 ms WCF : TalkingHeads Expand All → 3,506 ms → ASP page : /TalkingHeads → 3,556 ms TalkingHeads.UI.Secure → 3,555 ms TalkingHeads.UI.Secure → 3,555 ms TalkingHeads.UI.Secure → 3,449 ms → WCF : TalkingHeads.UI.Secure → 4,449 ms → 4,449 m	I:: I (IPV6) Slowest Nodes Sulf.SearchPostsSoap.Find (). Client side Stack Execution Tree View Resource Group teads/Secure/Search.aspx Execution Tree View Resource Group teads/Secure/SearchPostsO Execution Tree View Resource Group teads/Secure/SearchPostsSoapClient.Find() Execution Tree View Collection Notes Value Default Web Site/TalkingHeads 2956 703516542560	Uiew
3,449 / 3,449 ms WCF : TalkingHeads Expand All ● 3,566 ms ASP page : /TalkingHeads.UI.Secure ● 3,556 ms TalkingHeads.UI.Secure ● 3,555 ms TalkingHeads.UI.Secure ■ 3,555 ms TalkingHeads.UI.Secure ■ 3,449 ms WCF : TalkingHeads.UI.Secure ■ 0,3,555 ms TalkingHeads.UI.Secure ■ 0,555 ms TalkingH	III (IPV6) Slowest Nodes Slowest Nodes Slowest Nodes Slowest Nodes Stack Execution Tree View Resource Group teads/Secure/Search.aspx E.SearchPostsSoapClent.Find() SearchPosts.SearchPostsSoapClent.Find() SearchPosts.SearchPostsSoapClent.Find() Collection Notes Value Value Default Web Ste/TalkingHeads 2956 703515542560 2	Uiew

26. Close Internet Explorer.

27. After returning to the Alert Properties page, under Alert Status select Closed and click OK.

Alert Status:

Once you have identified the problem and taken corrective action, you can select 'Closed' which will remove the Alert fron the system once changes are committed.



28. After returning to the Active Alerts node, select a Client Application Exception alert.

A	ctive Alerts (11)					
q	Source	Name	Description	Resolution St	ate Created	Age
4	Severity: Warning (1	11)				
	🛕 SCOM01/Talki	Client Application Exception	/TalkingHea	ds/ New	2/28/2014 2:19:50 AM	45 Minutes
	A SCOM01/Talki	Client Application Exception	/TalkingHea	ds/ New	2/28/2014 2:18:42 AM	46 Minutes

- 29. **Right-click** it and select **Properties**. This error indicates that a client received an error while using the application.
- 30. Under Alert Description, click the link to launch Internet Explorer.

Alert Description:

/TalkingHeads/Secure/Status.aspx failed with Web Page Client Side Exception has been detected in application TalkingHeads - Production on SCOM01.contoso.com. For additional details please use the following link: <u>http://SCOM01/AppDiagnostics/Pages/login.aspx?m=ev&uid=5DB036BA-DAD0-4D2B-881E-0B4CF5B13FED</u>

- 31. When the Windows Internet Explorer Dialog appears, select Yes to close the window.
- 32. **Expand** the various components of the event by clicking the plus signs (+) and triangles and review the information.

	Exception Event ID 18 - Interne	et Explorer	3
Actions			
ent properties Similar events	Related events		Ę
vent class: Client Side Exception E iomponent: Unknown ource: TalkingHeads - Product tatus: New	ent Event Date: 2/28/2014 2:20:21 AM Build: N/A n (Client) Computer: contoso.com\SCOM01 Aspect: Application Failure		
Page Url: http://localhost/Talk	gHeads/Secure/Status.aspx		
		Exception Data 🖃	-
Name	Value	Structure	
exception		class	
🗼 message	The value of the property '\$' is null or undefined, not a	a Function object	- 1
••••• •• ••	http://localhost/TalkingHeads/Secure/Status.aspx?U=	=34	
Show Complete Stack Web Page Client Side Exercise	iow parameters Snow lines	Compse a	
		Global Variables 🕀	_
		Browser Capabilities 🗉	
Browser Capabilities			
Name	Value		
Ø Browser Type	IE7		
A Liser Δgent	Mozilla/4.0 (compatible; MSIE 7.0; Windows NT 6.2; WOW64; Triden	nt/7.0; .NET4.0E; .NET4.0C; .NET CLR 3.5.30729; .NET CLR 2.0.50727;	
V ober Agent	.NET CLR 3.0.30729)		
	.NET CLR 3.0.30729)	End User Information 🗷	'

- 33. Under Page Url, note the exact URL which generated the exception event.
 - Page Url: http://localhost/TalkingHeads/Secure/Status.aspx

Name	Value
🗼 queryString	U=34
🗼 sessionID	nksx0zsfg3wr32kzzr1fgqg0
🖕 urlReferrer	http://localhost/TalkingHeads/Secure/Search.aspx

34. Under **Browser Capabilities** note the browser type and various user agents that were used when the event was generated. This can be used to reproduce and troubleshoot the event.

Browser Capabilities 😑

Browser Capabilities	
Name	Value
Browser Type	167
🧼 User Agent	Mozilla/4.0 (compatible; MSIE 7.0; Windows NT 6.2; WOW64; Trident/7.0; .NET4.0E; .NET4.0C; .NET CLR 3.5.30729; .NET CLR 2.0.50727; .NET CLR 3.0.30729)

35. Select the **Similar events** tab at the top of the page, these are identical events that have happened in recent history.

Actions	5				
Event prop	erties Similar events Related events				
Similar by	: Rroblem				
Problem:	/TalkingHeads/Secure/Status.aspx failed with Web Page Client Side Excep.				
From:	2/14/2014 2:20:21 📅 To: 2/28/2014 2:20:21	A A	pply		
Number o	of Events: 2				
First Eve	nt Date: 2/28/2014 2:19:50 AM Last Event Date: 2/28	/2014 2:20:21 AM			
ID	Description	Source	Computer	Status	Local Date
18	/TalkingHeads/Secure/Status.aspx?U=34 failed with "The value of the property '\$' is null or undefined, not a Function object"	TalkingHeads - Production (Client)	SCOM01	New	2/28/2014 2:20:21 AM
14	/TalkingHeads/Secure/Status.aspx failed with "The value of the property '\$' is null or undefined, not a Function object"	TalkingHeads - Production (Client)	SCOM01	New	2/28/2014 2:19:50 AM

36. Select the Related events tab at the top of the page, this displays events that are similar but may not be identical to this particular failure.

谷 Actio	ns			
Event pr	operties Similar events Related events			
Period:	1 minute Apply			
ID		Source	Status	Local Date
19	/TalkingHeads/Account/Login.aspx?ReturnUrl=/TalkingHeads/Secure/Status.aspx failed with "Syntax error"	TalkingHeads - Production (Client)	New	2/28/2014 2:20:25 AM
18 /TalkingHeads/Secure/Status.aspx?U=34 failed with "The value of the property '\$' is null or undefined, not a Function object" TalkingHeads - New Production (Client)				

- 37. Close Internet Explorer.
- 38. After returning to the Alert Properties, under the section labeled **TFS Work Item Owner**, select **Change**.

TFS Work Item ID:	
TFS Work Item Owner:	
Owner:	Change
Ticket ID:	

39. On the Select User dialog enter Developer and select Check Names. Click OK.

Select User		X
Select this object type:		
User		Object Types
From this location:		
Entire Directory		Locations
Enter the object name to select (<u>examples</u>):		
Developer (Developer@contoso.com)		Check Names
Advanced	ОК	Cancel

40. Under Alert Status, click the dropdown and select Assigned to Engineering and click OK. Operations Manage can be connected to Team Foundation Server (TFS) so that any issues which are assigned to developers will appear in their bug database with all the relevant data which can be used to help resolve the issue.

Alert Status:

Once you have identified the problem and taken corrective action, you can select 'Closed' which will remove the Alert from the system once changes are committed.

New 🗸	/
New	
Awaiting Evidence	
Assigned to Engineering	
Acknowledged	
Scheduled	
Resolved	
Closed	

41. After returning to the Active Alerts node, select a **Client Performance Exception** alert.

Ac	Active Alerts (11)								
ø	Source	Name		Description	Resolution State	Created	Age		
⊿	Severity: Warning (11))							
4	🚹 SCOM01/Talki	Client Application Exception		/TalkingHeads/	Assigned to En	2/28/2014 2:19:50 AM	1 Hour, 4 Minu		
4	🚹 SCOM01/Talki	Client Application Exception		/TalkingHeads/	New	2/28/2014 2:18:42 AM	1 Hour, 1 Minute		
	🚹 Home Page./T	Client Page Performance Exception		Client Page : /T	New	2/28/2014 2:18:00 AM	1 Hour, 6 Minu		

- 42. **Right-click** it and select **Properties**. This error indicates that a client received an error while loading a webpage.
- 43. Select the Product Knowledge tab. Review the information.

1			Alert P	roperties			
General	Product Knowledge	Company Knowledg	ge History	Alert Context	Custom Fields		
Sum	imary						
The ol config	bject state is change gured transaction e	ed to unhealthy wh xceeds the monitor	en the total threshold.	number of clie	nt-side performa	nce events for a	
Caus	ses						
Client config time, (t-side performance a gured threshold. Th and then is separate	alerts are generated e total timing is mea ed into the followin	when the p asured at th ag categorie	oage load time f e web browser, s that are availa	for the web appl is correlated to ble in the event	ication exceeds server processin details:	the Ig
When	the page load time	exceeds the thresh	old:				
• Ne	twork request and i	response time					
• Pag	ge redirects						
• Ser	rver response time						
• Do	cument Object Mod	del (DOM) loading ti	ime				
 Per an 	ripheral loading – tł d scripts	ne amount of time t	hat is spent	loading page (external resource	s, such as image	es
• Ru	nning time for Win	dow.OnLoad() client	t-side event	handlers			
When	the response time	for AJAX calls excee	d the thresh	nold:			
• Ne	twork request and i	response time					
• Ser	rver response time						
• Jav	aScript execution						
Signif perfor sugge code, loadir perfor indica of pay	iicant amount of tim rmance problem. Fo est slow network co and can be further ng might be linked rmance of the client ate inefficient code ge redirects might re	e spent in one or a r example, the time nnectivity. Long ser troubleshoot by inv to excessive complex : browser. Long run on the page or migl esult from complex	few catego spent proce ver respons restigating a kity or size o times for th ht be due to or inefficier	ries might poin essing network e time might be associated serve of the application we Window.Onl o slow performa t application co	t to the root cau requests and res caused by slowl er-side performar in page, or might .oad() event or slo nce of client bro ode.	se of the ponses might y-running serve nce alerts. Slow t also point to s ow AJAX JavaScr wser. A large nu	r DOM Iow ipt ımber
Reso	olutions						
Client applic or ine	t-side performance a cation performance efficient application	alerts are generated degradation causes code.	when the r might be s	un time exceed low performan	s the configured te of the web ser	threshold. Typi ver, a slow netv	cal vork,
		1					1

- 44. Select the **General** tab.
- 45. Under Alert Description, click the link to launch Internet Explorer.

Alert Description:

Client Page : /TalkingHeads/Default.aspx is slow at Server Response Time. The configured threshold 1000 ms for
TalkingHeads - Production on SCOM01.contoso.com for the transaction Home Page has been exceeded. For additional
details please use the following link: http://SCOM01/AppDiagnostics/Pages/login.aspx?m=ev&uid=C3B0D8D2-F863-
<u>4E71-A1BC-580D58513E7E</u>

46. When the Windows Internet Explorer Dialog appears, select **Yes** to close the window.

47. **Expand** the various components of the event by clicking the plus signs (+) and triangles and review the information. The graph indicates the exact time that it took for each component of this webpage to load. In this example the threshold is set to 1ms as indicated by the red line and text in the lower part of the diagram. On the upper part of the diagram, note the times that it took for the network request to complete for the time to first byte(TTFB) for the time that it took the document. Object model (DOM) to be ready and the time that it took the page to be ready. This has exceeded the preconfigured threshold which resulted in this alert being generated.

Performance Event ID 1 - Internet Explorer	_ _ ×
& Actions	
Event properties Similar events Session events Distributed chains	6
Event class: Client Side Performance Event Event Date: 2/28/2014 2:17:45 AM Component: Unknown Build: N/A Source: TalkingHeads - Production (Client) Computer: contoso.com\SCOM01 Status: New Aspect: Performance	
Page Url: http://scom01.contoso.com/TalkingHeads/Default.aspx	~
	Performance Metrics 🖃
↓ Page Load Time	↓ Page Content Size
Total Time : 2,424 ms	Total Size: 5.5 KB
	Channel Quality: Excellent
TTFB (1.598 ms)	
DOM Ready (2,130 ms) Page Ready (2,424 ms)	
Threshold - 1,000 ms	
0 1,000 2,000 3,000 4,000	
Duration Server Response Time (1,598 Dom Loading (532 ms, 21.95%) Html # Peripheral Loading (294 ms, 12.13%) window.onload() (0 ms, 0%) Html	,
	a 100% 🔻

- 48. Close Internet Explorer.
- 49. After returning to the Alert Properties, under the section labeled **TFS Work Item Owner**, select **Change**.

TFS Work Item ID:	
TFS Work Item Owner:	
Owner:	Change
Ticket ID:	

50. On the Select User dialog enter Developer and select Check Names. Click OK.

Select Use	r 💌
Select this object type:	
User	Object Types
From this location:	
Entire Directory	Locations
Enter the object name to select (examples):	
Developer (Developer@contoso.com)	Check Names
I	
Advanced	OK Cancel

51. Under Alert Status, click the dropdown and select Assigned to Engineering and click OK. Operations Manage can be connected to Team Foundation Server (TFS) so that any issues which are assigned to developers will appear in their bug database with all the relevant data which can be used to help resolve the issue.

Alert Status:

Once you have identified the problem and taken corrective action, you can select 'Closed' which will remove the Alert from the system once changes are committed.

New	/
New	
Awaiting Evidence	
Assigned to Engineering	
Acknowledged	
Scheduled	
Resolved	
Closed	

52. Click **OK** to close the Alert.

5.5 - SCA & SCOM: Monitor Applications with Advisor

SCA & SCOM: 6.5.1 - Monitor SQL Server

In this exercise System Center Advisor alerts and recommendations about SQL Server 2012 will be viewed through Operations Manager. Advisor is a free cloud service which offers proactive monitoring and best practice recommendations to reduce downtime and resolve issues faster. For more information visit <u>www.SystemCenterAdvisor.com</u>.

Estimated time to complete: 10 minutes



Perform the following on SCOM01

1. From SCOM01, open the Operations Manager Console by clicking the icon in the taskbar.



2. Navigate to the Monitoring workspace.



3. Go to **Monitoring** and then select the folder called **System Center Advisor** and select **Active Alerts**.



- 4. Select the **Name** column to sort the names by alphabetical order.
- 5. Select the critical alert which states **SQL Server security configuration does not allow System Center Advisor to function property**. Read the information in this alert. This alert is advising the administrator on how to optimize System Center Advisor so the Advisor service itself can perform better.

-						
Act	ive Alerts (29)					
0	Look for:	Find Now	Clear			
2	Source	Name		-	Resolution State	Created /
۵	Severity: Critical (6)					
۲	SCVMM01.cont	VMM Server SPN are not registered correctly			New	1/10/20
۲	SCVMM01.cont	VMM Server does not meet some of the recor	nmended hardware specifications		New	1/10/20
۶	SCVMM01.cont	Unsupported SQL Server version used by VMN	1		New	1/10/20
۲	SCVMM01.cont	SQL Server security configuration does not all	ow System Center Advisor to function properly		New	1/10/20
<		ш				>
A	lert Details					``
	SQL Server sect Advisor to funct	urity configuration does not allow System Center ion properly	Alert Description			,
	Source: <table-cell></table-cell>	SCVMM01.contoso.com SCVMM01.contoso.com System Center Advisor Alert 1/10/2014 8:15:59 PM	System Center Advisor Health Service runs unde context. When the Advisor service connects to 5 the Local System credentials. In SQL Server versi the Local System account was provisioned as a to the sysadmin server role by default. Starting Local System windows login is not a member of a result when you install Advisor, it will not be instance completely and not all rules can gener instructions in the KB article to provision the re Advisor can work with this SQL Server instance. Path: /MSSQLSERVER Security context used by Advisor to connect to 5 AUTHORITY/SYSTEM Is this login a member of sysadmin server role?:	er the Lo SQL Sen ons [20 Windov with SC i the sys able to ate aler quired SQL Sen No	ocal System security ver instance, it uses 05, 2008 and 2008 P ws Login and addec QL Server 2012, the sadmin server role. / monitor the SQL 20 rts. Follow the logins to ensure ver: NT	12] d 12
	(nowledge:		E View additional knowledge			

6. In the Tasks column under Tasks select **Set Resolution State | Assigned to Engineering**.

g with S of the sy e able to erate ale required	QL Server 2012, the ysadmin server role. As o monitor the SQL 2012 erts. Follow the d logins to ensure	Tas	ks Alert Properties Close Alert	^	
) S	Acknowledged Assigned to Engineering Awaiting Evidence		Set Resolution State Entity Properties Health Explorer		
?: I	Closed New Resolved Scheduled		gation Alert View Diagram View	^	

7. Under Critical Alerts, select the Warning with the name "SQL Server Database configuration: number of temp db data files might result in blocking." In the right column under Advisor Tasks, note the option to View Solution/KB Article. Selecting this link would open the website, however there is no internet connection so an offline copy of this information will be used instead.

Acti	ve Alerts (29)				
Q	Look for:	Find Now	Clear		
ø	Source 🤌	Name		 Resolution State 	Createc ^
4	SCOM01.conto	SQL Server feature "Instant File Initialization" is	not enabled	New	1/10/20
4	SCDPM01.cont	SQL Server database present without a clean co	nsistency check	New	1/10/20
4	SCCM01.conto	SQL Server database present without a clean co	nsistency check	New	1/10/20
4	SCDPM01.cont	SQL Server database present without a backup		New	1/10/20
4	SCCM01.conto	SQL Server database present without a backup		New	1/10/20
4	SCDPM01.cont	SQL Server Database mail configuration issue m	ay result in mail not getting processed.	New	1/10/20
4	SCCM01.conto	SQL Server Database mail configuration issue m	ay result in mail not getting processed.	New	1/10/20
	🚹 SCCM01.conto SQL Server database configuration: number of tempdb data files might result in blocking			New	1/10/20 ≡
4	A SCDPM01.cont SQL Server database configuration: number of tempdb data files might result in blocking New				1/12/20
					~
					/
A	ert Details				*
4	SQL Server databas might result in block	e configuration: number of tempdb data files ing	Alert Description		^
Source: SCCM01.contoso.com Full Path Name: SCCM01.contoso.com/SCCM01.contoso.com Alert Rule: System Center Advisor Alert Created: 1/10/2014 8:17:31 PM This instance of SQL Server has only one tempdb adatabase, increase the number of tempdb data firequired startup trace flags to reduce allocation Path: /MSSQLSERVER Number of tempdb data files: 1 Number of logical processors used by SQL Server			data file while there is neavy tempdb usage, the contention and affect tion in the tempdb iles, and configure the contention.		

- 8. Minimize the **Operations Manager Console** window and from the Desktop open the folder named **Advisor Solutions**.
- 9. Select the webpage file with the identical name **SQL Server database configuration number of tempdb data files might result in blocking.** Open the webpage. Read the information on this webpage as an example of an Advisor best practice. Return to the Operations Manager Console.



10. Return to the **Operations Manager Console** and with the alert still selected select **Close Alert** from the **Tasks** pane.



11. Select the **Warning** with the name, "SQL Server database mail configuration issue may result in mail not getting processed."

Active Alerts (28)						
🔍 Look for:			Find Now	Clear		
🚯 🛛 Source	\gg	Name		^		
A SCOM01.com	nto	SQL Server might have performan	nce impact if Inde	exes I		
🛕 SCOM01.com	nto	SQL Server might have performance impact if Indexes I				
🛕 SCOM01.com	nto	SQL Server has encountered memory paging: Msg 178				
🛕 SCOM01.com	nto	SQL Server has encountered memory paging: Msg 178				
🛕 SCO01.conto	oso	SQL Server feature "Instant File Initialization" is not ena				
🛕 SCVMM01.cont		SQL Server feature "Instant File Initialization" is not ena				
🛕 SCOM01.com	nto	SQL Server feature "Instant File Initialization" is not ena				
A SCDPM01.co	ont	SQL Server database present with	out a clean consi	sten		
A SCCM01.cor	nto	SQL Server database present with	out a clean consi	sten		
A SCDPM01.co	ont	SQL Server database present without a backup				
A SCCM01.com	nto	SQL Server database present with	out a backup	=		
🛕 SCDPM01.cont SQL Server Database mail configuration issue may resu				resu		
▲ SCCM01.conto SQL Server Database mail configuration iss			iration issue may	resu		
▲ SCDPM01.cont SQL Server database configuration: number of			n: number of tem	npdb 🗸		

- 12. Return to the folder on the Desktop called **Advisor Solutions**.
- 13. Select the file with the name **SQL Server Database mail configuration issue may result in mail not getting processed.**
- 14. Open the webpage in **Internet Explorer** and briefly review the information.
- 15. Return to Operations Manager.
- 16. Under the Tasks pane, select Alert Properties.
| | | | Alert Pi | roperties | | | | x |
|-----------------------|---|---|-----------------------------|-----------------------------------|----------------------------|--------------------|--------------|-----|
| General | Product Knowledge | Company Knowledge | History | Alert Context | Custom Fields | | | |
| ▲ s | QL Server Datab | ase mail configuratio | n issue m | ay result in ma | il not getting pro | cessed. | | |
| Key Det | ails: | | | | | | | |
| Alert sou | rce: | SCCM01.contoso. | om | | | | | |
| Severity: | | Warning | | | | | | |
| Priority: | | Medium | | | | | | |
| Age: | | 39 Days, 16 Hours, 23 | Minutes | | | | | |
| Repeat C | Count: | 2 | | | | | | |
| TFS Work | k Item ID: | | | | | | | |
| TFS Work | k Item Owner: | | | | | | | |
| Owner: | | | | | Change | | | |
| Ticket ID | : | | | | | | | |
| Alert De | scription: | | | | | | | |
| In this 9
emails. | SQL Server instance,
Review the informat | . Advisor detected a cor
ion below and see the K | nfiguration
13 article f | issue with DBM
or more informa | ail that can prev
tion. | ent DBMail from se | ending | |
| Path: //
Databa | MSSQLSERVER
se Mail Status: false | | | | | | | ~ |
| Alert Sta | atus: | | | | | | | |
| Once you
the syste | have identified the
m once changes are | problem and taken co
committed. | orrective a | action, you can | select 'Closed' v | which will remove | the Alert fr | rom |
| New | | | | ~ | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| 1 Previou | us 👎 Next | | | | ОК | Cancel | Appl | у |

- 17. Under **Owner**, select the **Change** button.
- 18. In the **Select Use**r dialog, under **Enter the object name to select**, enter **Tier2** and click the **Check Names** button to resolve the object to **Tier2@contoso.com**. Click **OK**.

Select User	x
Select this object type:	
User	Object Types
From this location:	
Entire Directory	Locations
Enter the object name to select (examples):	
Tier2 (Tier2@contoso.com)	Check Names
Advanced OK	Cancel

- 19. Under Ticket ID enter Mail1
- 20. Under Alert Status in the dropdown, choose Scheduled.

-	Alert Properties X
General Product Knowled	lge Company Knowledge History Alert Context Custom Fields
A SQL Server Da	tabase mail configuration issue may result in mail not getting processed.
Key Details:	
Alert source:	SCCM01.contoso.com
Severity:	Warning
Priority:	Medium
Age:	39 Days, 16 Hours, 23 Minutes
Repeat Count:	2
TFS Work Item ID:	
TFS Work Item Owner:	
Owner:	Tier2@contoso.com Change
Ticket ID:	Mail 1
Alert Description:	
In this SQL Server insta emails. Review the infor	nce, Advisor detected a configuration issue with DBMail that can prevent DBMail from sending mation below and see the KB article for more information.
Path: /MSSQLSERVER Database Mail Status: fo	alse
Alert Status:	
Once you have identified the system once changes	the problem and taken corrective action, you can select 'Closed' which will remove the Alert from s are committed.
Scheduled	~
🍄 Previous 🔍 🎙 Next	OK Cancel Apply

- 21. Click **OK**.
- 22. Select the warning that says SQL Server database present without a backup.

A SCCM01.conto	SQL Server database present without a backup		New	1/10/2014 8:17:36 PM	39 Days, 16 Ho
SCDPM01.cont	SQL Server Database mail configuration issue may result in mail not getting processe	ed.	New	1/10/2014 8:11:17 PM	39 Days, 16 Ho
A SCCM01.conto	SQL Server Database mail configuration issue may result in mail not getting processe	ed.	Scheduled	1/10/2014 8:17:35 PM	39 Days, 16 Ho
A SCDPM01.cont	SQL Server database configuration: number of tempdb data files might result in bloc	king	New	1/12/2014 9:31:41 PM	37 Days, 15 Ho
Alert Details					
SQL Server databas	e present without a backup	Alert Description			
Source: SCC Full Path Name: SCC Alert Rule: Syst Created: 1/10	(M01.contoso.com (M01.contoso.com)SCCM01.contoso.com tem Center Advisor Alert (2014 817136 PM	A SQL Server databa damaged or corrup database. Review tl backups at regular	ase has not been ited database. Wi he database that intervals.	backed up since it was create :hout a valid backup, you can does not have a backup and s	d. Backups are essential to recover from lose the data that was stored in the set up a maintenance plan to perform
		Path: /MSSQLSERVE Database name: CN Database creation 1 Time elapsed witho	ER/CM_HQ1 1_HQ1 time: Jan 4 2014 6 out a backup: 6	22PM	

- 23. Go to the **AdvisorSolutions** folder on the Desktop.
- 24. **Open** the webpage with the same name, **SQL Server database present without a backup.** This KB article includes best practices and other helpful information to optimize the performance of the SQL database.
- 25. Return to the Operations Manager console.
- 26. **Select** the warning with the name **SQL Server feature "Instant File Initialization" is not enabled.** Review the information in the details pane under the Alert description. See how this can help optimize the performance of SQL server.

🚹 SCO01.contoso	SQL Server feature "Instant File Initialization" is not enabled	New	1/10/2014 8:14:49 PM	39 Days, 16 Ho
SCVMM01.cont	SQL Server feature "Instant File Initialization" is not enabled	New	1/10/2014 8:15:58 PM	39 Days, 16 Ho
A SCOM01.conto	SQL Server feature "Instant File Initialization" is not enabled	New	1/10/2014 8:17:34 PM	39 Days, 16 Ho
A SCDPM01.cont	SQL Server database present without a clean consistency check	New	1/10/2014 8:09:23 PM	39 Days, 16 Ho
A SCCM01.conto	SQL Server database present without a clean consistency check	New	1/10/2014 8:17:36 PM	39 Days, 16 Ho
A SCDPM01.cont	SQL Server database present without a backup	New	1/10/2014 8:09:22 PM	39 Days, 16 Ho
A SCCM01.conto	SQL Server database present without a backup	New	1/10/2014 8:17:36 PM	39 Days, 16 Ho
A SCDPM01.cont	SQL Server Database mail configuration issue may result in mail not getting processed	d. New	1/10/2014 8:11:17 PM	39 Days, 16 Ho
A SCCM01.conto	SQL Server Database mail configuration issue may result in mail not getting processed	d. Scheduled	1/10/2014 8:17:35 PM	39 Days, 16 Ho
SCDPM01.cont	SQL Server database configuration: number of tempdb data files might result in block	ing New	1/12/2014 9:31:41 PM	37 Days, 15 Ho
A SOI Server featur	re "Instant File Initialization" is not enabled	Alert Description		
A SQL Server feature	re "Instant File Initialization" is not enabled	Alert Description		
SQL Server featur Source: S Full Path Name: S Allert Rule: S Created: 1/	re "Instant File Initialization" is not enabled COO1.contoso.com COO1.contoso.com/SCOO1.contoso.com ystem Center Advisor Alert /10/2014 &:14:49 PM	Alert Description The SQL Server instance is not u: enabled, SQL Server can perform feature, when SQL Server has to used by SQL Server. This can slov of database creation, database i database creation can take a lot "perform volume maintenance ta	ing the instant File Initialization database data file maintenance create or grows alfe, the new file wown the file growth or creatic estore and file growth operation g time. Note that the SQL Server sks" to be able to use the Instan	feature. When Instant File Initialization is and creation operations quickly. Without this portion has to be zeroed out before it can be n operations. This can affect the performance s. During SGL Server startup, tempdb service startup account needs the user right File Initialization feature.
SQL Server featur Source: S S Full Path Name: S Alert Rule: S Created: 1/	re "Instant File Initialization" is not enabled COO1.contoso.com COO1.contoso.com/SCOO1.contoso.com ystem Center Advisor Alert /10/2014 &14:49 PM	Alert Description The SQL Server instance is not us enabled, SQL Server can perform feature, when SQL Server has to used by SQL Server. This can slov of database creation, database i database creation can take a lot "perform volume maintenance ta Path: /MSSQLSERVER	ing the Instant File Initialization database data file maintenance create or grows alle, the new file wown the file growth or creatic estore and file growth operation g time. Note that the SQL Server sks" to be able to use the Instan	feature. When Instant File Initialization is and creation operations quickly. Without this portion has to be zeroed out before it can be n operations. This can affect the performance s. During SQL Server startup, tempdb service startup account needs the user right File Initialization feature.
Source: Sourc	re "Instant File Initialization" is not enabled COO1.contoso.com COO1.contoso.com/SCOO1.contoso.com ystem Center Advisor Alert //Q/2014 &:14:49 PM	Alert Description The SQL Server instance is not u: enabled, SQL Server can perform feature, when SQL Server has to used by SQL Server. This can slow of database creation, database is database treation can take a lor "perform volume maintenance ta Path: /MSSQLSERVER SQL Server service startup accou	ing the Instant File Initialization database data file maintenance create or grow a file, the new file down the file growth or creation estore and file growth operation g time. Note that the SQL server sks" to be able to use the Instan ne CONTOSOVsql	feature. When Instant File Initialization is and creation operations quickly. Without this portion has to be zeroed out before it can bu no perations. This can affect the performance s. During SQL Server startup, tempdb service startup account needs the user right File Initialization feature.
SQL Server featur Source: Si Si Full Path Name: S Alert Rule: S Created: 1)	te "Instant File InItialization" is not enabled C001.contoso.com C001.contoso.com/SC001.contoso.com system Center Advisor Alert /10/2014 8:14:49 PM	Alert Description The SQL Server instance is not us enabled, SQL Server can perform feature, when SQL Server. This can slow of database creation, database id database creation, database id database creation, database id Pathore SQL Server Service startup accou SQL Server service startup accou SQL Server service startup accou SQL Server service startup accou	ing the Instant File Initialization database data file maintenance create or grow a file, the new file down the file growth or creatic estore and file growth operation ig time. Note that the SQL Server sks' to be able to use the Instan sh: CONTOSOVsql ht is granted the user right "perfi lead servicithe face.	feature. When Instant File Initialization is and creation operations quickly. Without this portion has to be zeroed out before it can be n operations. This can affect the performance . During SQL Sever startup, tempdb service startup account needs the user right File Initialization feature.

- 27. Browse several other alerts from Advisor then **navigate** to the folder on the Desktop named **AdvisorSolutions**.
- 28. Open the webpage with the same name as the alert you chose and review. Use the saved webpages in this folder since there is not an active outbound Internet connection available from within the virtual lab environment.
- 29. Close the AdvisorSolutions folder.