Lab 08: Collecting Data for Virtualization

In this lab, you create a VMware Read-Only user with required permissions, add a VMware and a Hyper-V Data Collector policy, and perform VMware and Hyper-V Data Collection.

Lab Exercises

This lab includes the following exercises:

- Exercise A: Creating a VMware Read-Only User with Required Permissions
- Exercise B: Adding a VMware Data Collector Policy
- Exercise C: Manually Running the VMware Data Collection
- Exercise D: Adding a Microsoft Hyper-V Data Collector Policy
- Exercise E: Manually Running the Hyper-V Data Collection



 $\underline{\wedge}$ It is recommended to use **Google Chrome** to perform the lab exercises. After launching the lab, zoom out the lab browser window to 80% to fit the APTARE Portal interface and view all the tabs within the window.

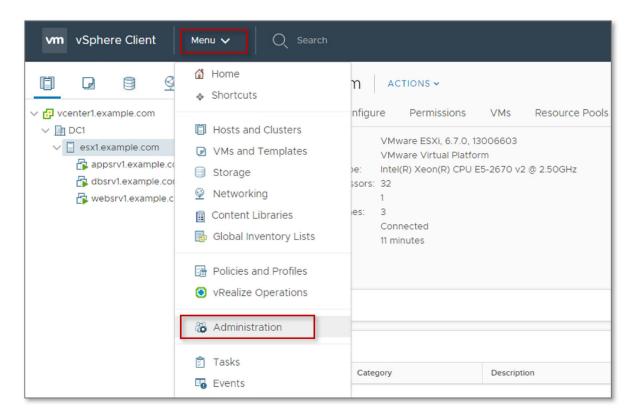
Exercise A: Creating a VMware Read-Only User with Required **Permissions**

The VMware Data Collector uses the VMware Infrastructure SDK and REST APIs over HTTPS to retrieve data from ESX servers. The VMware Data Collector is multi-threaded, enabling it to poll up to five vCenters in one polling cycle.

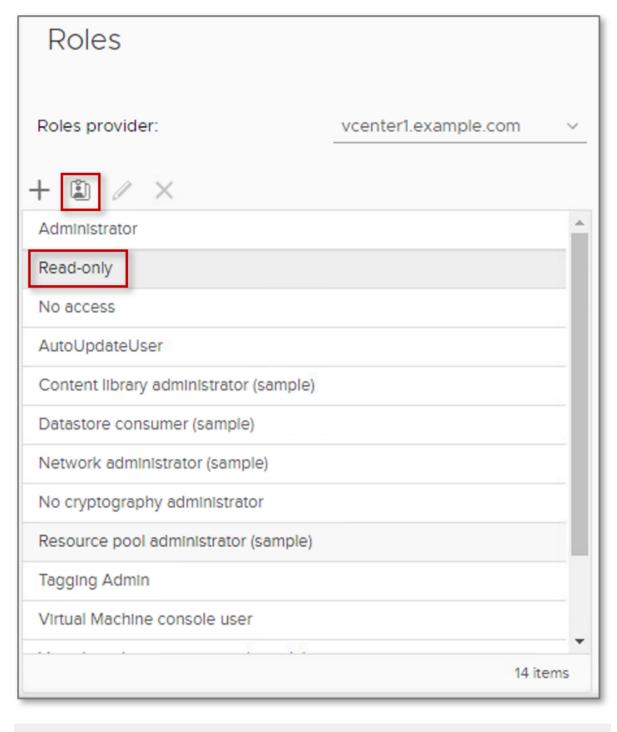
In this exercise, you create and configure a vSphere user with the necessary permissions for Virtualization Manager data collection access.

Creating a Custom Role

	1.	Sign in to the \Box	console system using the following	g credentials.
		Username:	T EXAMPLE\Administrator	
		Password:	T P@ssw0rd	
			e vSphere Client shortcut, located on th the vSphere Web Client .	the desktop of the console.example.com
			-	played, click Advanced > Proceed to vCenter Single Sign-On page is displayed.
	4.	Login to the vS	phere Client using the credentials be	low.
		Username:	T administrator@vsphere.local	
		Password:	T P@ssw0rd	
		The vSph	ere Client can take a few minutes to lo	oad after logging in.
П	5.	From the vSphe	re Client Home, click Menu > Admin	istration as illustrated in the figure below.



- 6. Under **Administration**, select **Access Control** > **Roles**. The available **Roles** are displayed in the center pane of the **vSphere Web Client**.
- 7. From the list of **Roles**, select the **Read-only** role and click the **Clone role action** icon as illustrated in the figure below.

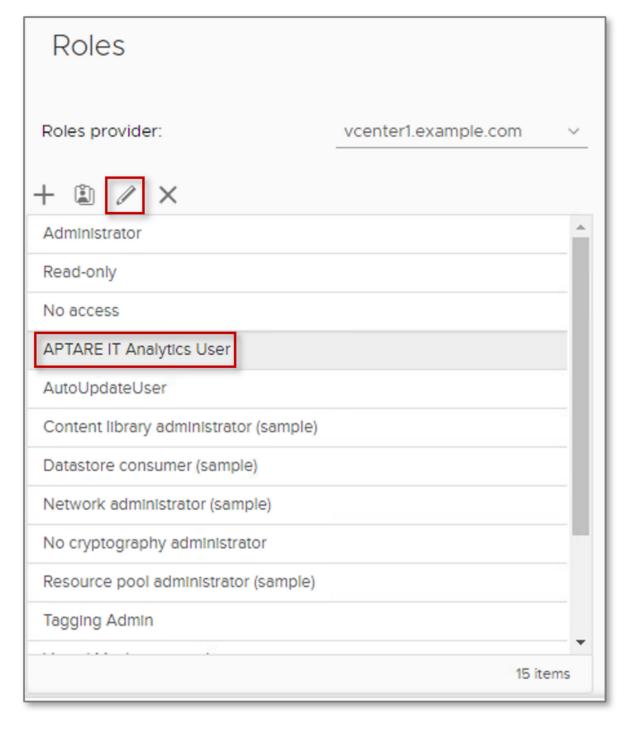


If the Clone role action icon is greyed out, reboot the vcenter1.example.com server,
wait for a few minutes after rebooting the vcenter1.example.com server and then return
to step 7 in this exercise.

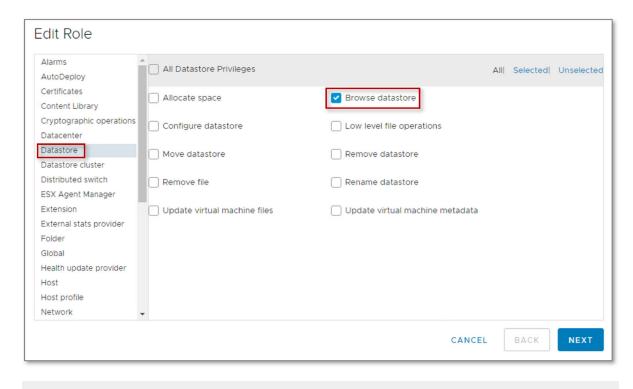
- 8. In the **Clone role action** dialog box, change the **Role name** to **APTARE IT Analytics User** and remove the **Description**.
- 9. Click **OK** to save the **Role**.

You are returned to the center pane of the **vSphere Web Client** and the **APTARE IT Analytics User** role is now listed in the list of **Roles**.

10. From the list of **Roles**, select the **APTARE IT Analytics User** and click the **Edit role Action** button as illustrated in the figure below.



11. In the **Edit Role** dialog box that is displayed, select **Datastore > Browse datastore** as illustrated in the figure below.



- The only permission that is required beyond the **Read-Only** role is **Browse Datastore**.
- 12. Click **NEXT** and then click **FINISH** to save the changes.

Creating a new user

- ☐ 13. Under **Administration**, select **Single Sign On > Users and Groups**. The available **Users** are displayed in the center pane of the **vSphere Web Client**.
- 14. In the center pane of the **vSphere Web Client**, click the **Domain** drop-down list and change the **Domain** to **VSPHERE.LOCAL**.
- 15. Click **ADD USER**. The **Add User** dialog box is displayed.
- 16. In the **Add User** dialog box, enter the following details:



17. Leave all the other fields blank and click **OK** to create the user.

You are returned to the center pane of the **vSphere Web Client** and the **aptare** user is now listed in the list of **Users**.

Assigning the APTARE IT Analytics User role to user aptare

		ration, select Access Control > Global Permissions. The default Gl displayed in the center pane of the vSphere Web Client.	obal				
19. In the center pane of the vSphere Web Client, click the Add Permission (+) button. The Add Permission dialog box is displayed.							
20. In the Add Permission dialog box, enter the details as illustrated in the figure below.							
	Add Pe	ermission Global Permission Root	×				
	User	vsphere.local 🛑	<u> </u>				
		Q aptare					
	Role	APTARE IT Analytics User	<u>~</u>				
		☑ Propagate to children					
		CANCEL	ок				
	does not we recommend	ter manually entering the user (aptare) in the Add Permission dialogors ork as expected and can cause the data collection to fail, hence it is ded to search for the user (aptare) within the Add Permission dialogors the user (aptare) from the search results that are displayed.					
<u> </u>	Click OK to assig	on the APTARE IT Analytics User role to user aptare.					
<u> </u>	Log out of the v :	Sphere Client and close the Google Chrome browser window.					
Go to L	Go to Lab Exercises						

Exercise B: Adding a VMware Data Collector Policy

In th	nis e	exercise, you add a VMware D	ata Collector Policy.				
		1. On the desktop of the console system, double-click the Aptare Portal shortcut to launch the APTARE IT Analytics Portal .					
		When the APTARE IT Analyt icredentials.	ics Portal login page is displaye	d, and login using the following			
		Username: T admin@	example.com				
		Password: T P@ssw0	rd				
		_	Portal, navigate to Admin > Data urrently configured Portal Data C				
		The Admin tab is locate	d on the menu bar in the APTA l	RE IT Analytics Portal.			
		Select collector1 (collector1 click Add Policy.	icon) in the list of currently conf	figured Data Collectors and then			
		In the resulting menu, under 'dialog box is displayed.	Virtualization , click VMware . Tl	he VMware Data Collector Policy			
	6.	In the VMware Data Collecto	or Policy dialog box, Enter the fo	ollowing details:			
		Field	Value				
		Policy Domain	T Aptare				
		ESX/Virtual Center Server	T vcenter1.example.com				
		User ID	T aptare@vsphere.local				
		Password	T P@ssw0rd				
		Repeat Password	T P@ssw0rd				
	7.	Retain the default Optimizati	on Level.				
		Select the Datastore Scan , ES probes and retain the default	SX Server Performance , and Vi schedules.	rtual Machine Performance			
			he Virtual Machine Performan	ESX Server Performance probe ce probe runs every 3 hours, and			

9. In the **VMware Data Collector Policy** dialog box, click **OK** to create the policy.

	You are returned to the Collector Administration page, note that the new VMware policy is assigned to collector1 .
	For this lab, you will run the VMware Data Collection manually instead of waiting for it to run on schedule.
☐ 10. F	Remain logged into the APTARE IT Analytics Portal. You will return to it in the next exercise.
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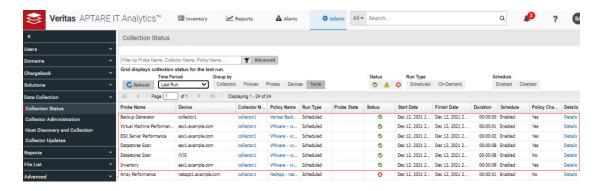
Exercise C: Manually Running the VMware Data Collection

In this exercise, you manually run the VMware Data Collection using the **checkinstall.bat** script located on the Data Collector server, **collector1**.

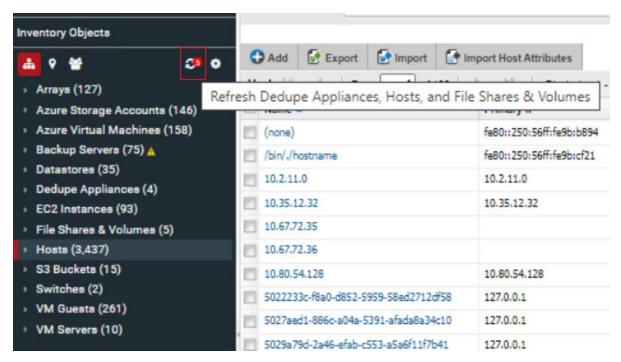
Running the VMware Data Collection

1.	Sign in to the collector1 system using the following credentials.
	Username: T EXAMPLE\Administrator
	Password: T P@ssw0rd
2.	Double-click the Command Prompt shortcut, located on the desktop of the collector1 system, to launch the Command Prompt .
3.	In the Command Prompt window, type the following command and press Enter to change directory to C:\Program Files\Aptare\mbs\bin .
	Command: T cd /d "C:\Program Files\Aptare\mbs\bin"
4.	In the Command Prompt window, type the following command and press Enter to run the Checkinstall Utility .
	Command: T checkinstall.bat
5.	At the Choose the probe you want executed prompt, type 2 to select VMWARE and press Enter to continue.
6.	At the Enter a number or comma-separated numbers prompt, type 1 to select vcenter1.example.com , and press Enter to continue.
7.	At the Choose the probe you want executed prompt, type 5 and press Enter to perform CheckInstall for all the configured probes.
	When the probes are complete, the Enter a number or comma-separated numbers prompt is displayed.
	The probes may take 3-5 minutes to complete.
8.	At the Enter a number or comma-separated numbers prompt, type 2 and press Enter to return to the main menu.
9.	At the main menu, type 6 and press Enter to exit the utility.
	Mait for 3-5 minutes before performing the next steps.
10.	In the Command Prompt window, type the following command to stop the Aptare Agent service.
	Command: T stopservices.bat

service.
Command: T startservices.bat
The above steps 10, 11 are not required in a production environment.
12. In the Command Prompt window, type exit and press Enter to close the Command Prompt window.
Verifying VMware Data Collection in the Portal
☐ 13. Access the desktop of the ☐ console system.
☐ 14. If required, sign in to the ☐ console system using the credentials provided below.
Username: T EXAMPLE\Administrator
Password: T P@ssw0rd
15. Access the APTARE IT Analytics Portal.
 15. Access the APTARE IT Analytics Portal. 16. If required, login to the APTARE IT Analytics Portal using the below credentials.
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16. If required, login to the APTARE IT Analytics Portal using the below credentials.
16. If required, login to the APTARE IT Analytics Portal using the below credentials. Username: T admin@example.com
 ☐ 16. If required, login to the APTARE IT Analytics Portal using the below credentials. ☐ Username:
 ☐ 16. If required, login to the APTARE IT Analytics Portal using the below credentials. ☐ Username:
 □ 16. If required, login to the APTARE IT Analytics Portal using the below credentials. □ Username: □ admin@example.com □ P@ssw0rd: □ P@ssw0rd □ 17. In the APTARE IT Analytics Portal, navigate to Admin > Data Collection > Collection Status. The list of currently configured Portal Data Collectors is displayed. □ 18. On the Collection Status page, click the Refresh link located next to the Time Period to clear any active filters. □ 19. On the Collection Status page, verify that the following probes have been completed
 □ 16. If required, login to the APTARE IT Analytics Portal using the below credentials. Username: □ admin@example.com Password: □ P@ssw0rd □ 17. In the APTARE IT Analytics Portal, navigate to Admin > Data Collection > Collection Status. The list of currently configured Portal Data Collectors is displayed. □ 18. On the Collection Status page, click the Refresh link located next to the Time Period to clear any active filters. □ 19. On the Collection Status page, verify that the following probes have been completed successfully.
 □ 16. If required, login to the APTARE IT Analytics Portal using the below credentials. Username: □ admin@example.com Password: □ P@ssw0rd □ 17. In the APTARE IT Analytics Portal, navigate to Admin > Data Collection > Collection Status. The list of currently configured Portal Data Collectors is displayed. □ 18. On the Collection Status page, click the Refresh link located next to the Time Period to clear any active filters. □ 19. On the Collection Status page, verify that the following probes have been completed successfully. • Virtual Machine Performance



- If any of the above probes have failed, refer to the above instructions and run the **checkinstall.bat** script again.
- 20. In the **APTARE IT Analytics Portal**, click **Inventory** located on the menu bar to navigate to the **Inventory** page.
- 21. On the **Inventory** page, click **Refresh** located on the **Hierarchy Panel** to refresh the view.



- 22. In the **Hierarchy Panel**, note that:
 - The ESX Server, esx1.example.com has been added to the VM Servers > VMware host group.
 - All the Datastores configured on esx1.example.com (datastore1 and datastore2) are added to the Datastores > VMware host group.
 - All the Virtual Machines running on the ESX Server, esx1.example.com are added to the VM Guests > VMware host group.
 - You can also view the above information on the **VMware** management page.
- 23. In the **Hierarchy Panel**, click **VM Servers > VMware**. The **VMware** management page is displayed in the right pane.
- 24. On the **VMware** management page, click **Go to Inventory List** to access the inventory list view.

25. On the VMware management page, use the filter and search for esx1.example.com .							
26. In the search results, click esx1.example.com (located under VM Servers row) to navigate to the esx1.example.com management page.							
27. On the esx1.example.com management page, note that all the virtual machines configured on esx1.example.com are listed under the VM Summary section.							
28. On the esx1.example.com management page, drill-down links can also be used to check the configured datastores, disks, total VMs, and Active VMs.							
esx1.example.com							
▼ VM Server Overview × ▼ VM Host Detail +							
VM Server Overview Dec 9, 2021 12:00:00 AM - Dec 12, 2021 11:59:59 PM							
Name: esx1.example.com Total Memory: 8.00 GiB Cluster Name: Host Name: esx1.example.com Total CPUs: 32 # Total VMs: 3 IP Address: 10.10.2.6 CPU Vendor: intel # Active VMs: 3 Data Center: DC1 CPU Description: Intel(R) Xeon(R) Gold 6230 CPU @ 2.10GHz # Datastores: 2 State: O CPU Speed: 1998 mhz Datastore Usage: ■ Status: # HBAs/HBA Ports: 0/0 # Disks: 2 Hardware Health: # NICs: 1 UnAllocated Disk: System Vendor: VMware, Inc. NICs Speed: vmnic0:1000 Version: vmnix-x86 Last Updated: Dec 12, 2021 2:15:48 PM PM Version: Version: Version:							
29. In the APTARE IT Analytics Portal , click Reports located on the menu bar to navigate to the							
Reports page.							
☐ 30. Double-click the Datastore Usage Breakdown report located in the Virtualization Manager > Storage Capacity & Utilization folder.							
☐ 31. In the Datastore Usage Breakdown Scope Selector dialog box that is displayed, set the report scope to HOST=esx1.example.com and click Generate to generate the report.							
To set the report scope, access the Report Scope Selector dialog box, search for esx1.example.com under the VM Servers tab, and double-click esx1.example.com in							

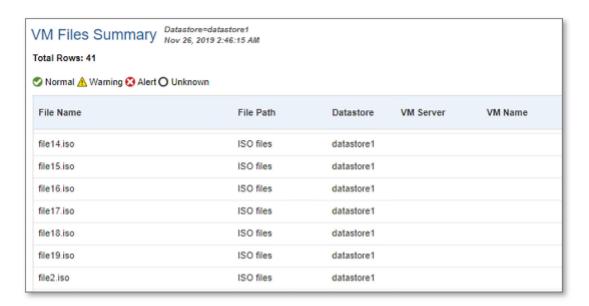
The contents of the **Datastore Usage Breakdown** report is displayed in a new tab.

the search results to add it to the scope.

In the **Datastore Usage Breakdown** report, note that **2.44 GiB** of space on **datastore1** is consumed by files that don't belong to the virtual machines. This information was gathered by the **Datastore Scan** probe.



To know what these **Non-VM Files** are, you can run the **VM Files Summary** report located in **Virtualization Manager > Administration Reports** folder. In this example, **2.44 GiB** of space was consumed by **ISO** files. Below is a snapshot from the **VM Files Summary** report.



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Exercise D: Adding a Microsoft Hyper-V Data Collector Policy

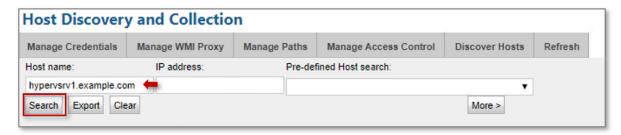
A full collection path to Hyper-V server attached SAN or NAS storage requires that Host Resource collection be run first against the Hyper-V servers. In this exercise, you configure Host Resource collection for the Hyper-V server and add a Microsoft Hyper-V Data Collector Policy.

1.	In the APTARE IT Analytics Portal, navigate to Admin > Data Collection > Host Discovery and Collection. The Host Discovery and Collection page is displayed.					
2.	On the Host Discovery and Collection page, click Discover Hosts . The Host Discovery Policies dialog box is displayed.					
3.	In the Host Discovery Policies dialog box, click Add . The Add Host Discovery Policies dialog box is displayed.					
4.	In the Add Host Discovery Policies dialog box, enter $\boxed{\mathbb{T}}$ hypervsrv1.example.com in the Name field and select Aptare in the Domain drop-down list.					
5.	Verify that collector1 is selected in the Collector drop-down list, and enter T hypervsrv1.example.com in the Host addresses field.					
6.	Under Configuration options, select APT106ADM_Windows_Credentials located under Credentials and APT106ADM_WMI_Proxy located under WMI Proxies.					
	The above credentials and the WMI Proxy were configured in Lab 7.					
7.	In the Add Host Discovery Policies dialog box, click OK to save the discovery policy and return to the Host Discovery Policies dialog box.					
8.	In the Host Discovery Policies dialog box, select hypervsrv1.example.com and click Start to execute the discovery policy.					
9.	At the Are you sure you wish to start the selected discovery browser prompt, click OK .					
10.	In the Host Discovery Policies dialog box, click OK to return to the Host Discovery and Collection page.					
11.	On the Host Discovery and Collection page, click the Discoveries in progress link located at the bottom right corner of the Host Discovery and Collection page.					
	Host Discovery and Collection Manage Credentials Manage WMI Proxy Manage Paths Manage Access Control Discover Hosts Refresh					

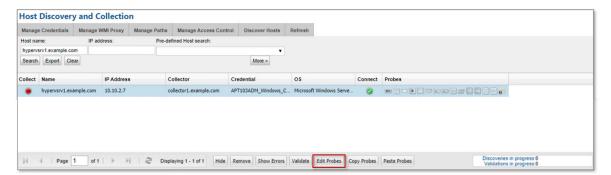


12. In the **Host Discovery Policies** dialog box that is displayed, verify that the discovery for **hypervsrv1.example.com** completed successfully.

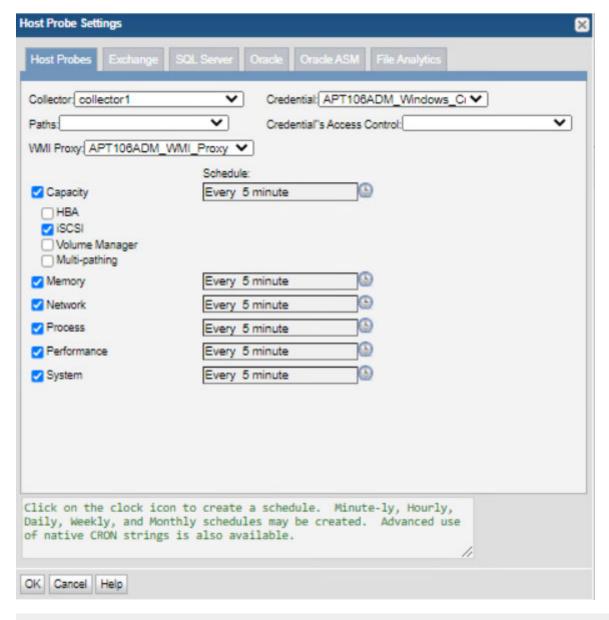
- The discovery might take 5-7 minutes to complete. If the discovery is not yet complete, close the **Host Discovery Policies** dialog box and click the **Discoveries in progress** link again to refresh the status as there is no refresh option available in the **Host Discovery Policies** dialog box.
- 13. In the **Host Discovery Policies** dialog box, click **OK** to return to the **Host Discovery and Collection** page.
- 14. On the **Host Discovery and Collection** page, enter T **hypervsrv1.example.com** in the **Host name** field and click **Search** as illustrated in the figure below.



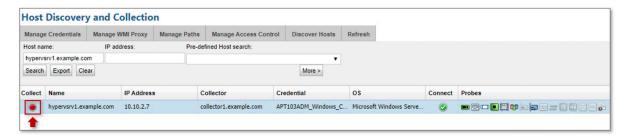
15. In the search results that are displayed, select **hypervsrv1.example.com** and click **Edit Probes** as illustrated in the figure below.



☐ 16. In the **Host Probe Settings** dialog box that is displayed, select the **Capacity** (**iSCSI** only), **Memory**, **Network**, **Process**, **Performance**, and **System** probes and configure each probe to execute every 5 minutes as illustrated in the figure below.

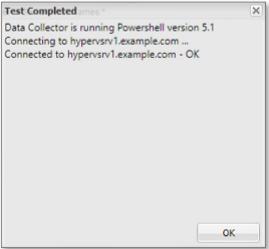


- A LUN from the NetApp Filer in this lab environment, netapp1.example.com is configured on the Hyper-V Server, hypervsrv1.example via iSCSI and therefore only the iSCSI probe is enabled under Capacity in the Host Probe Settings dialog box.
- 17. In the **Host Probe Settings** dialog box, click **OK** to save the configuration and return to the **Host Discovery and Collection** page.
- ☐ 18. On the **Host Discovery and Collection** page, select **hypervsrv1.example.com** and click the **Activate Collection** button as illustrated in the figure below.



19. On the **Host Discovery and Collection** page with **hypervsrv1.example.com** selected, click **Validate**.

The Validate step provides issues.	feedback to troubleshoot host con	nectivity and data collection
20. At the Are you sure you wish t	o validate the selected hosts brow	vser prompt, click OK .
21. On the Host Discovery and Co Show Errors . The Messages dia		mple.com selected, click
Any errors encountered du	iring the validation are logged in th	e Messages dialog box.
22. Verify that no errors are listed inDiscovery and Collection page		COK to return to the Host
23. In the APTARE IT Analytics Por Administration. The list of curre	rtal, navigate to Admin > Data Col ently configured Portal Data Collect	
24. Select collector1 in the list of D	ata Collectors and then click Add P	olicy.
25. In the resulting menu, select MiHyper-V Data Collector Policy		ualization. The Microsoft
26. In the Microsoft Hyper-V Data	Collector Policy dialog box, Enter	the following details:
Field	Value	
Policy Domain	Aptare	
Hyper-V Server Host Names	T hypervsrv1.example.com	
User ID	T EXAMPLE\Administrator	
Password	T P@ssw0rd	
	P@ssword	
27. Retain the default values for Act below illustrates the expected to	tive Probes, Schedules, and click To	est Connection. The figure



28. Click OK to close the Test Completed dialog box and return to the Microsoft Hyper-V Data Collector Policy dialog box.
29. In the Microsoft Hyper-V Data Collector Policy dialog box, click OK to save the policy.
You are returned to the Collector Administration page, note that the new policy is assigned to collector1
You might need to expand collector1 on the Collector Administration page to view a list of assigned policies.
By default, only the Inventory probe is available. This probe runs every day at 02:12.
For this lab, you will run the Hyper-V Data Collection manually instead of waiting for it to run on schedule.
30. Remain logged into the APTARE IT Analytics Portal . You will return to it in the next exercise.
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Exercise E: Manually Running the Hyper-V Data Collection

In this exercise, you perform an **On-Demand** run of the Hyper-V Data Collector Policy and verify Hyper-V data in the Portal.

Ru	nn	ing the	Hyper-V D	ata Collec	tion							
			ellector Admir erosoft Hyper				-			-	and se	lect
	2.	Click Run	as illustrated i	n the figure b	elow.							
		Collector	Administration									
		Filter by Name			T Adva	nced						
		C Refresh	Add Policy +	Add Collector	□ Delete	<u></u> Edit	i Disabl	e & Run	0	Expand All	₩ Cut	
		Name 🔺			Domain	Ena	S. 184	Collector	St	Last Modified		Colle
					Kiwi Insurance	Co Yes		Offline	0	Feb 21, 2019	9:21:35 Al	
					APTAREEng	Yes		Offline	0	Sep 6, 2017 2	:30:29 PM	10.0.
			U		HQ	Yes		Offline	0	Jul 28, 2017 1	1:56:56 A	10.1.
					Agency of Com	mt Yes		Offline	0	Feb 1, 2017 1	0:58:01 A	N
		▲ 🍪 collector1			Aptare	Yes		Online	0	Dec 12, 2021	3:05:14 PI	10.6.
		## File Analytics - APT106ADM_FA_F51			Aptare	Yes			0			
		## Host Resource - 2 hosts (active: 2)			Aptare	Yes			0			
					Aptare	Yes			0			
		NetApp - netapp1.example.com			Microsoft Hyper-V - hypervsrv1.example.com							
					rptorc	163			9	_		
		A VMws	are - vcenter1.example	.com	Aptare	Yes			0			
		In the Run	n Microsoft H v1.example.co v probe is select n Microsoft H is collected ju roubleshooting	om is selected cted. yper-V Collect st like a sched	l in the Hy ction dialo	g box, o	Server H	ost Nam	es list	st and tha Data Coll	ection.	
			ΓARE IT Analy ction Status ρ		_	Admin	> Data	Collectio	n >	Collectio	n Stat	us.
		colle requ Colle	Collection Sta ction. This view irements provi ection status, a ime collection	v also contain ding essentia vailable at the	s probe ru I details tha data colle	ns and at enab ector an	can be o le you to d policy	rganized diagnos	to s e co	uit your b llection is:	usines sues.	S

6. On the Collection Status page, monitor the status of the Inventory probe for

hypervsrv1.example.com.

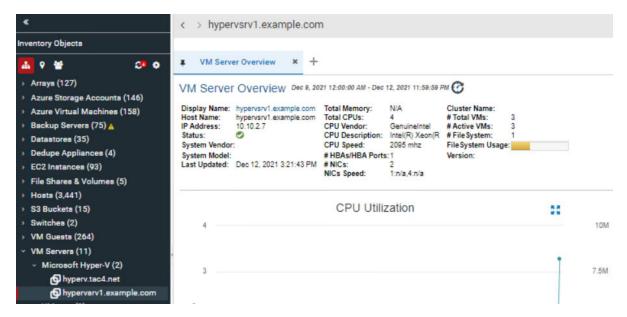
Initially, a Failure status might be displayed for the Inventory probe. Use the Refresh button available on the Collector Status page to refresh the view and monitor the probe until it completes successfully.	
It might take 2-4 minutes for the Inventory probe to complete successfully.	

7. After the probe is complete, click **Inventory** located on the menu bar to navigate to the **Inventory** page.

Verifying Hyper-V Data Collection in the Portal

	8. On the Inventory p	page, click Refresh	located on the Hie	rarchy Panel to	refresh the view.
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- 9. In the Hierarchy Panel, note that the Hyper-V Server, hypervsrv1.example.com has been added to the VM Servers > Microsoft Hyper-V host group.
- 10. In the **Hierarchy Panel**, click **hypervsrv1.example.com** located in the **VM Servers > Microsoft Hyper-V** host group to access the **hypervsrv1.example.com** management page.
- 11. On the **hypervsrv1.example.com** management page, note that all the virtual machines on **hypervsrv1.example.com** are listed under the **Hyper-V VM Summary** section.



12. Log out of the **APTARE IT Analytics Portal** and close the **Google Chrome** browser window.

End of Lab