cisco.



Cisco HyperFlex Workload Profiler

First Published: 2018-01-29 Last Modified: 2023-02-07

Americas Headquarters

Cisco Systems, Inc. 170 West Tasman Drive San Jose, CA 95134-1706 USA http://www.cisco.com Tel: 408 526-4000 800 553-NETS (6387) Fax: 408 527-0883 THE SPECIFICATIONS AND INFORMATION REGARDING THE PRODUCTS IN THIS MANUAL ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL STATEMENTS, INFORMATION, AND RECOMMENDATIONS IN THIS MANUAL ARE BELIEVED TO BE ACCURATE BUT ARE PRESENTED WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. USERS MUST TAKE FULL RESPONSIBILITY FOR THEIR APPLICATION OF ANY PRODUCTS.

THE SOFTWARE LICENSE AND LIMITED WARRANTY FOR THE ACCOMPANYING PRODUCT ARE SET FORTH IN THE INFORMATION PACKET THAT SHIPPED WITH THE PRODUCT AND ARE INCORPORATED HEREIN BY THIS REFERENCE. IF YOU ARE UNABLE TO LOCATE THE SOFTWARE LICENSE OR LIMITED WARRANTY, CONTACT YOUR CISCO REPRESENTATIVE FOR A COPY.

The Cisco implementation of TCP header compression is an adaptation of a program developed by the University of California, Berkeley (UCB) as part of UCB's public domain version of the UNIX operating system. All rights reserved. Copyright © 1981, Regents of the University of California.

NOTWITHSTANDING ANY OTHER WARRANTY HEREIN, ALL DOCUMENT FILES AND SOFTWARE OF THESE SUPPLIERS ARE PROVIDED "AS IS" WITH ALL FAULTS. CISCO AND THE ABOVE-NAMED SUPPLIERS DISCLAIM ALL WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, THOSE OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OR ARISING FROM A COURSE OF DEALING, USAGE, OR TRADE PRACTICE.

IN NO EVENT SHALL CISCO OR ITS SUPPLIERS BE LIABLE FOR ANY INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOST PROFITS OR LOSS OR DAMAGE TO DATA ARISING OUT OF THE USE OR INABILITY TO USE THIS MANUAL, EVEN IF CISCO OR ITS SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Any Internet Protocol (IP) addresses and phone numbers used in this document are not intended to be actual addresses and phone numbers. Any examples, command display output, network topology diagrams, and other figures included in the document are shown for illustrative purposes only. Any use of actual IP addresses or phone numbers in illustrative content is unintentional and coincidental.

All printed copies and duplicate soft copies of this document are considered uncontrolled. See the current online version for the latest version.

Cisco has more than 200 offices worldwide. Addresses and phone numbers are listed on the Cisco website at www.cisco.com/go/offices.

The documentation set for this product strives to use bias-free language. For purposes of this documentation set, bias-free is defined as language that does not imply discrimination based on age, disability, gender, racial identity, ethnic identity, sexual orientation, socioeconomic status, and intersectionality. Exceptions may be present in the documentation due to language that is hardcoded in the user interfaces of the product software, language used based on standards documentation, or language that is used by a referenced third-party product.

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: https://www.cisco.com/c/en/us/about/legal/trademarks.html. Third-party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1721R)

© 2018-2023 Cisco Systems, Inc. All rights reserved.



Communications, Services, Bias-free Language, and Additional Information

- To receive timely, relevant information from Cisco, sign up at Cisco Profile Manager.
- To get the business impact you're looking for with the technologies that matter, visit Cisco Services.
- To submit a service request, visit Cisco Support.
- To discover and browse secure, validated enterprise-class apps, products, solutions and services, visit Cisco Marketplace.
- To obtain general networking, training, and certification titles, visit Cisco Press.
- To find warranty information for a specific product or product family, access Cisco Warranty Finder.

Documentation Feedback

To provide feedback about Cisco technical documentation, use the feedback form available in the right pane of every online document.

Cisco Bug Search Tool

Cisco Bug Search Tool (BST) is a web-based tool that acts as a gateway to the Cisco bug tracking system that maintains a comprehensive list of defects and vulnerabilities in Cisco products and software. BST provides you with detailed defect information about your products and software.

Bias-Free Language

The documentation set for this product strives to use bias-free language. For purposes of this documentation set, bias-free is defined as language that does not imply discrimination based on age, disability, gender, racial identity, ethnic identity, sexual orientation, socioeconomic status, and intersectionality. Exceptions may be present in the documentation due to language that is hardcoded in the user interfaces of the product software, language used based on standards documentation, or language that is used by a referenced third-party product.



Introduction

• Introduction, on page 1

Introduction

ESXi Introduction

Hx Workload Profiler is a VMware vCenter characterization tool that can estimate the compute, storage, and network usage of hosts and VMs across multiple vCenter deployments. The output of the tool can be fed into HxSizer product to size the HyperFlex cluster requirements. The workload requirements are estimated by the HxProfilertool.

Hx Workload Profiler key outputs:

- 30-day historic summary of host-level compute metrics
- Detailed compute, storage, and network metrics for hosts and VMs for all vCenters profiled
- Detailed time series data to analyze trends of key metrics in the UI
- Download of time series data of all key metrics

The Hx Workload Profiler tool is delivered as an OVA and can be used to monitor multiple vCenters simultaneously.

Cisco HyperFlex Workload Profiler



System Requirements

• ESXi System Requirements, on page 3

ESXi System Requirements

Requirement	Description
ESXi version	v5.5 or later
OVA size	 vCPU: 4 RAM: 8 GB Disk: 100 GB (thin provisioning supported). It is recommended that you use thin provisioning while deploying the VM.
Scale for end-points	 Maximum number of simultaneous vCenters: 16 Maximum number of hosts: 200 Maximum number of VMs: 4000
Credentials	Root/admin credentials
Browser support	 Chrome: Chrome version 50 or later Firefox: Unsupported IE: Unsupported Safari: Unsupported

I



Setting Up the Virtual Appliance

- Logging into the Profiler, on page 5
- HX Profiler Software License, on page 6
- Deploying the Virtual Machine, on page 7
- Configuring and Using the Profiler Application, on page 12
- Using the Profiler Service, on page 13
- Locating the Application Logs, on page 14

Logging into the Profiler

Logging in to the ESXi Profiler

The Hx Workload Profiler user interface (UI) uses system credentials for authentication.

Step 1 To access the UI, launch a browser window and enter http://<IP> or http://<IP:8000> or http://<IP>/profiler/index.html or http://<IP:8000>/profiler/index.html, where the IP is the IP address of the VM.

The HX Profiler UI appears:

	HX PROFILER		
	Sign In User Name *		
	Password * 🔹		Martin Martin
© 2017 2021, Gisco Systems trademarks or trademarks of Cis	Learn more about Cisco I IX Profiler at I leip Center i, Inc. All rights reserved. Cisco, the Cisco logo, and Cisco co Systems, Inc. and/or its affiliates in the United States	o Systems are registered and certain other countries	

Step 2 When prompted, log in to the UI with the following credentials:

User name: monitoring

Password: <new password set during the install workflow>

Step 3 You can use the User Preference option in the top right corner of the UI to configure **Language** or **Theme**.

User Prefe	erence			
Language				
English				
Theme				
Light	Dark			
		Cancel	Save	
1				

Click Cancel or Save to continue.

Step 4 When finished, you can end the user session by clicking **Logout** at the top right of the page.

HX Profiler Software License

The lifespan of the HX Profiler Software License is 45 days from the date of deployment. The HX Profiler displays a Software Expiration warning message after 30 days have elapsed after deployment.



Deploying the Virtual Machine

Deploying the ESXi Virtual Machine

- Step 1 Log in to VMware vSphere Client. Step 2 Select File > Deploy OVF Template. Actions - ucs-507.eng.storvisor.com (Reboot Req. expired o 🕆 New Virtual Machine... vSphere vm 词 Deploy OVF Template. New Resource Pool... ŋ 쁆 New vApp.. ucs-50 Summai
- Step 3 Select the OVA file you want to deploy from the Select an OVF template option.

Maintenance Mode

uc



Step 4 Click Next, review the OVF template details, and then click Next again.

Step 5 On the Select a name and folder page, specify the name and location for the virtual appliance, and then click Next.

1 Select an OVF template 2 Select a name and folder	Select a name and folder Specify a unique name and target location
3 Select a compute resource 4 Review details	Virtual machine name: Cisco-HXWorkload-Profiler-4.0-vCenter
5 Select storage 6 Ready to complete	Select a location for the virtual machine.

r

Select a name and folder	Select a compute resource Select the destination compute resource for this operation
Select a compute resourc	
Review details	
Select storage	\sim 10
Select networks	
Ready to complete	
	Compatibility
	Compatibility checks succeeded
	 Compatibility checks succeeded.
	 Compatibility checks succeeded.

Step 6 On the **Select storage** page, specify the storage for the configuration and disk files, and then click **Next.**

 1 Select an OVF template 2 Select a name and folder 3 Select a compute resource 	Select storage Select the storage for the configuration and disk files				
4 Review details	Encrypt this virtual machine (Requires Key Management Server)				
5 Select storage	Select virtual disk format:		Thick Provision La	zy Zeroed 🗸	
7 Ready to complete	VM Storage Policy:		Datast	ore Default	×
	Name	Capacity	Provisioned	Free	Typ
	8	10 TB	2.39 TB	8.26 TB	NF 1
	8	10 TB	9.52 TB	2.79 TB	NF
	8	111.75 GB	108.51 GB	3.24 GB	VN
		1 GB	67.23 GB	08	NF
	Compatibility				
	 Compatibility checks 	succeeded.			

1 Select an OVF template 2 Select a name and folder 3 Select a compute resource	Select storage Select the storage for the configuration and disk files				
4 Review details	Encrypt this virtual machine (Requires Key Management Server)				
5 Select storage	Select virtual disk format:		Thin Provision	~	
7 Ready to complete	VM Storage Policy:		Thick Provision Lazy	Zeroed	~
	Name	Capacity	Thin Provision	erzeroed	Typ
		10 TB	2.39 TB	8.26 TB	NF ^
		10 TB	9.52 TB	2.79 TB	NF
	8	111.75 GB	108.51 GB	3.24 GB	VN
	8	1 GB	67.23 GB	0 B	NF
	<	_			• •
	✓ Compatibility checks	succeeded.			

Step 7On the Select networks page, specify the destination network for each source network, and then click Next.You can configure either DHCP or a static IP address for the VM.

(Mandatory) You must change the system password for default user monitoring in the System Password fields.

 1 Select an OVF template 2 Select a name and folder 	Select networks Select a destination network for each source network.						
3 Select a compute resource	Source Network	Ŧ	Destination Network				
5 Select storage	VM Network		VM Network			~	-
6 Select networks						1 items	1
7 Customize template							
8 Ready to complete	IP Allocation Settings						
	IP allocation:	Static - Manual					,
	IP protocol:	IPv4					
							-

Select an OVF template	 Network 	5 settings
2 Select a name and folder 3 Select a compute resource	Public Network Gateway	ex: 10.81.0.1/leave this empty if DHCP is used
Select storage		
6 Select networks 7 Customize template 8 Ready to complete	Public Network IP	ex: 10.11.0.120/leave this empty if DHCP is used
	DNS	ex: 8.8.8.8/leave this empty if DHCP is used
	Public Network Netmask	ex: 255.255.0.0/leave this empty if DHCP is used
	Public Network Type	DHCP V
	v Root Credential	1 settings
	System Password	Please provide a password for monitoring user. (min 8 characters)
		Password
		Confere Document

Step 8 On the Ready to Complete page, review your deployment settings, select Power On After Deployment, and then click Finish.

1 Select an OVF template	Dravisianing hung	Our los formations
2 Select a name and folder	Provisioning type	Deploy from template
3 Select a compute resource	Name	
5 Select storage	Template name	Cisco-HXWorkload-Profiler-4.0-vCenter
✓ 6 Select networks	Download size	3.2 GB
8 Ready to complete	Size on disk	100.0 GB
	Folder	
	Resource	
	Storage mapping	1
	All disks	Datastore:
	Network mapping	1
	VM Network	VM Network
	IP allocation settings	
	IP protocol	IPV4
	IP allocation	Static - Manual
	Properties	Dublic Mohardz Gatoway -

What to do next

You must wait for the deployment task to complete. On completion, a successful deployment message displays.

If the IP address has not been assigned after the OVA deployment, reboot the HxProfiler VM.

Configuring and Using the Profiler Application

Configuring and Using the ESXi Profiler Application

Perform the Hx Workload Profiler application configuration and operations from the web-based UI.

The following table shows the high-level steps for configuring the application.

Task	See
Addition of a poller, which is referred to as a workload or node.	Adding vCenter to the ESXi Profiler, on page 15
Configuration of the profiling attributes.	Starting ESXi Data Profiling, on page 21
Start the polling operation.	Starting the Profiler Service, on page 13

Configuring and Using the Windows Bare Metal Profiler Application

Perform the Hx Workload Profiler application configuration and operations from the web-based UI.

The following table shows the high-level steps for configuring the application.

Task	See
Addition of a poller, which is referred to as a workload or node.	Adding Windows Bare Metal to the Profiler, on page 17
Configuration of the profiling attributes.	Starting Windows Bare Metal Data Profiling, on page 23
Start the polling operation.	Starting the Profiler Service, on page 13

Configuring and Using the Linux Bare Metal Profiler Application

Perform the Hx Workload Profiler application configuration and operations from the web-based UI.

The following table shows the high-level steps for configuring the application.

Task	See
Addition of a poller, which is referred to as a workload or node.	Adding Linux Bare Metal to the Profiler, on page 19
Configuration of the profiling attributes.	Starting Linux Bare Metal Data Profiling, on page 24
Start the polling operation.	Starting the Profiler Service, on page 13

Using the Profiler Service

Using the Profiler Service

The Hx Workload Profiler start and stop services use the profiler_service.sh command.

The following table shows the high-level steps for using the profile service.

Task	See
Starting the Profiler Service	Starting the Profiler Service, on page 13
Stopping the Profiler Service	Stopping the Profiler Service, on page 13
Restarting the Profiler Service	Restarting the Profiler Service, on page 13

Starting the Profiler Service

To start the profiler service:

Run the following command: sudo service hxpmonitor start.

Stopping the Profiler Service

Complete the following steps to stop the profiler service:

- **Step 1** Run the following command: sudo service hxpmonitor stop.
- **Step 2** Run the following command: sudo service hxpcontroller stop.

Restarting the Profiler Service

Complete the following steps to restart the profiler service:

• •				
Step 1	Run the following comand: sudo	service	hxpcontroller	restart

Step 2 Run the following comand: sudo service hxpmonitor restart.

Locating the Application Logs

Locating the ESXi Application Logs

You can find Hx Workload Profiler logs in the following locations:

Table 1: Application Logs

Log	Path
Server	/home/monitoring/monitor/server.log
Controller	/home/monitoring/controller/logs/*
Monitor	/home/monitoring/monitor/monitor/monitor.log



Configuring and Using the Profiler Application

- Adding a Server to the Profiler, on page 15
- Starting Data Profiling, on page 21
- Downloading Profiling Results, on page 25
- Viewing Data Collections from Servers, on page 27
- 30-Days Sizing Summary Report, on page 34

Adding a Server to the Profiler

Adding vCenter to the ESXi Profiler

At the first login following installation of Hx Workload Profiler, you are redirected to the landing page where you can find the + **Add Workload** option on the top right corner of the page. You can select vCenter, then you can add multiple vCenters.

To calculate the metrics for a host, the Profiler captures the metrics for all the VMs on the Host. You then need to select the VM to be profiled. By default none of the VM's are selected.

The workflow includes:

- Node details tab: Records your vCenter details and then connects to the vCenter. If the connection succeeds, the **Next** button displays enabling you to select the hosts for profiling.
- Select Hosts tab: Provides the vCenter details in hierarchy of vCenter, Datacenters, Clusters, and Hosts, with the option to select hosts to Profile. Default: All hosts in vCenter are selected.
- Profiling Setting tab, which provides:
 - Profile Name: for specifying the name of the profile which must be unique.
 - Profile period: for specifying the period of profiling. Default value is 7days and the minimum value is 1day.
 - Polling Interval: for specifies the frequency for which polling should occur.
 - Quick Profile: for a quick estimate
 - Detailed Profile: for detailed end-to-end profile results.

Step 1 Log in to the Profiler. See Logging in to the ESXi Profiler, on page 5.

Step 2 Follow the steps provided to enter values for the following options:

ltem	Description		
vCenter Name	Name of the vCenter you are adding.		
User Name	Name of the user as part of the login credentials for the vCenter.		
	Note HX Profiler uses VMware SDK to collect different performance metrics. To get the performance data, the user account connecting to the VMware vSphere must have administrator privileges.		
Password	The password set as part of the login credentials for the vCenter.		
Polling Interval	The interval at which you want polling to occur. The default is 20 seconds. You can change the interval to between 20-120 seconds, based on the number of hosts and VMs being polled in that vCenter.		

"deads HX Profiler WORKLOADS > Add		V4.0 Ø Å
Ceneral	Step 1 General Add host details and credentials to configure workboad	
Belect Hosts Profiling Settings	Node Details Node Name *	
	User Name *	
	Pessword * db	
< Back Close		Next



cisco HX Profiler	WORKLOADS > Add		V4.0 @	2
E Progress		Step 3 Profiling Settings		Î
(1) General		Add profile details and polling interval to start profiling		
2 Select Hosts		Settings		
Profiling Settings		Profile Name * profile1		
		Profile Period *		
		7 Days × 📖		
		Polling Interval * 20 O		
		hxprofiles.label.generateProfile		
		Detailed Profile Quick Profile		
< Back	Close		Start Pro	ofiling

Step 3Click Start Profiling. The Profiler service starts automatically.
When the connection status indicates successful connection, click Next.

Step 4 On the **Poll filter** tab, review the hierarchy values.

Adding Windows Bare Metal to the Profiler

cisco HX Profiler	WORKLOADS > Add				V4.0 ③ &
		:	Select Host Infrastructure Ty	pe	
		-	vCenter	<u>e</u> 1	
		2	Windows Bare Metal	⊙	
		-	Linux Bare Metal	0	
Cancel			Start		

At the first login following installation of Hx Workload Profiler, you are redirected to + Add Workflow. You can select Windows Bare Metal to add Windows Bare Metal to the workload.

SUMMARY STEPS

- **1.** Log in to the Profiler.
- 2. On the Node details tab, enter values for the following options:

- **3.** If you select the Host Name/IP address option, click **Save**. If the given credentials / IP is valid, then workload will be added successfully. In case of any error, recheck and update the provided details, then click Save to add the workload successfully.
- **4.** If you select the IP Address Range, click **Validate**. Given IP range and credentials are validated, and if any of the VMs are not reachable, any error details will be updated in tabular format.
- **5.** If no errors are observed, click **Save**. If there are errors, please check the respective error VM details, rectify them manually and then click on **Revalidate**. Click **Save** to add the workload.

DETAILED STEPS

- **Step 1** Log in to the Profiler.
- **Step 2** On the **Node details** tab, enter values for the following options:

Item	Description
Windows Cluster Name	Name of the cluster you are trying to add
Host Name/IP Address	To enter a single host / different IPs
IP Address Range	To enter a range of VM IPs
User Name	Login username for windows baremetal
	Note The username must have the administrator role assigned to it.
Password	Login password for windows baremetal
Polling Interval (seconds)	Default 20 seconds

cisco HX Profiler	WORKLOADS > Add	V 4.0		&
Progress	General Add host details and credentials to configure			1
1 General	workoad			
Profiling Settings	 Note : Supported and tested version of Windows Servers 2012R2, 2016 and 2019 			
	Cluster Details			
	Windows Cluster Name *			
	Host			
	Host Name / IP IP Address Range			
	Host IP * +			
	Credentials			
< Back	Close		Next	

L

esco HX Profiler	WORKLOADS > Add		V40 🕘 🔔
E Progress		Step 2	
() General		Profiling Settings Add profile details and poling interval to start	
2 Profiling Settings		proteing	
		Settings	
		Profile Name *	
		profile1	
		Profile Period *	
		7 Days × 📾	
		Poliing Interval *	
		20 0 0	
K Back	Close		Start Profiling

- **Step 3** If you select the Host Name/IP address option, click **Save**. If the given credentials / IP is valid, then workload will be added successfully. In case of any error, recheck and update the provided details, then click Save to add the workload successfully.
- **Step 4** If you select the IP Address Range, click **Validate**. Given IP range and credentials are validated, and if any of the VMs are not reachable, any error details will be updated in tabular format.
- **Step 5** If no errors are observed, click **Save**. If there are errors, please check the respective error VM details, rectify them manually and then click on **Revalidate**. Click **Save** to add the workload.

Adding Linux Bare Metal to the Profiler

At the first login following installation of Hx Workload Profiler, you are redirected to + Add Workflow. You can select Linux Bare Metal to add Linux Bare Metal to the workload.

diada HX Profiler	WORKLOADS > Add				V4.0 🕥 🚨
		s	elect Host Infrastructure Ty	гре	
		-	vCenter	0	
		-	Windows Bare Metal	0	
		-	Linux Bare Metal	⊙	
Cancel			Start		

SUMMARY STEPS

- **1.** Log in to the Profiler.
- 2. On the Node details tab, enter values for the following options:
- **3.** If you select the Host Name/IP address option, click **Save**. If the given credentials / IP is valid, then workload will be added successfully. In case of any error, recheck and update the provided details, then click Save to add the workload successfully.
- **4.** If you select IP Address Range, click **Validate**. Given IP range and credentials are validated, and if any of the VMs are not reachable, any error details will be updated in tabular format.
- **5.** If no errors are observed, click **Save**. If there are errors, please check the respective error VM details, rectify them manually and then click on **Revalidate**. Click **Save** to add the workload.

DETAILED STEPS

- **Step 1** Log in to the Profiler.
- **Step 2** On the **Node details** tab, enter values for the following options:

Item	Description
Linux Cluster Name	Name of the cluster you are trying to add
Host Name/IP Address	To enter a single host / different IPs
IP Address Range	To enter a range of VM IPs
User Name	Login username for Linux baremetal
Password	Login password for Linux baremetal
Polling Interval	Default 20 seconds

cisco HX Profiler	WORKL	NADS > Add	V 4.0		æ
E Progress		Step 1			^
Ceneral Profiling Settings		General Add host details and credentials to configure workload			
		Linux Cluster Name *			
		Host			
		Host Name / IP IP Address Range			
		Host IP * +			
		Credentials			- 1
		Domain Username * Password * @ +	+		-
K Back		lose		Next	

cisco HX Profiler	WORKLOADS > Add	V 4.0	0	٨
Progress	Step 2			
1 General	Profiling Settings Add profile details and poiling interval to start			
2 Profiling Settings	Con profiling			
	Settings			
	Profile Name *			
	profile1			
	Profile Period *			
	7 Days × 📾			
	Poling Interval *			
	20			
< Back	Close	Sta	rt Profilir	ng

- **Step 3** If you select the Host Name/IP address option, click **Save**. If the given credentials / IP is valid, then workload will be added successfully. In case of any error, recheck and update the provided details, then click Save to add the workload successfully.
- **Step 4** If you select IP Address Range, click **Validate**. Given IP range and credentials are validated, and if any of the VMs are not reachable, any error details will be updated in tabular format.
- **Step 5** If no errors are observed, click **Save**. If there are errors, please check the respective error VM details, rectify them manually and then click on **Revalidate**. Click **Save** to add the workload.

Starting Data Profiling

Starting ESXi Data Profiling

Following the successful addition of a vCenter Server, the new vCenter displays on the Data Inventory (home) page. You configure the profiling attributes by providing the profile name and duration.

Item	Description
Delete (trash can)	Deletes a previously added vCenter.
Edit (pen)	Edit vCenter properties to add or remove hosts for polling.
Stop (symbol)	Stops the profiling so you can resume it later.
Reset (refresh symbol)	Performs a reset operation, which creates a new profile and starts polling. When you trigger reset, the profiler stops the active/running profile and creates a new one. A prompt asks for confirmation.

Table 2: Profiling Operation Options

Item	Description
View Collection	Opens the View Collection page so you can browse through the collected data as part of the profiling to review the HOST and VM level data.

Polling starts as soon as you enter the profiler name ,days and polling period.

- **Step 1** In the dialog that displays, perform the following steps:
 - a) Enter a name for the profile.
 - b) Select a duration value from the **Profiling Period** down-drop list.
 - c) Click **Ok**.

esce HX Profiler	WORKLOADS > Add						¥4.0	ھ ©
Progress Oeneral			K	Step 3 Profiling Settings Add profile details and polling inter profiling	rval to start			
Select Hosts Profiling Settings			Settings Profile Name * profile1					
			Profile Period * 7 Days		>			
			20 hxprofiler.label.generateProfil	e		0		
			Detailed Profile	uick Profile				
< Back	Close						Start I	Profiling
olitolia HX Profiler	WORKLOADS						V4.0	0 A
Total Workloads : 1							* Ad	d Workload
vCenter								8
Host Reachability	 VM Power Status Initializing 	Profiling Summary IniSializing	Pro In J Rev	filing Status http://www.community.commu	Profile Name Interval Total Duration Elapsed Duration Initial Start Time	profile1 20 Sec 7d 1s Jan 20, 2021 12:28 PM	View Colli Downloa	ection d v

esso HX Profiler WORKLOADS	V4.0 ⑦ &
Total Workloads : 1	+ Add Workload
vCenter	00/8
Host Reachability VM Power Status Profiling Summary Profiling Status Profile Name profile 1 Reachable 4 0 Not Reachable 0 0 n 65 0 n 970 control of 0 to 10 0 n 970 control of 0 to 10	View Collection Download

Following successful profile creation, the Profiler begins polling the selected hosts and all the VMs on those hosts. When the polling starts, the data collector runs as a background process. The Datacenter Inventory page displays information about the hosts and polling, showing number of hosts and the status of the polling.

- **Step 2** (Optional) To stop an in-progress profiling operation so you can resume it later, see Stopping the Profiler Service, on page 13.
- Step 3 (Optional) To stop an in-progress profiling operation, click Reset. You can then start a new one.
- **Step 4** (Optional) To browse through the collected data, see Viewing an ESXi Collection, on page 32.
- **Step 5** (Optional) To download profiling data, see Downloading ESXi Profiling Results, on page 25.

Starting Windows Bare Metal Data Profiling

Following the successful addition of a Windows Bare Metal, the newly added Windows Bare Metal displays on the Data Inventory (home) page. You can configure the profiling attributes by providing the profiling name and duration.

Item	Description
Delete (trash can)	Deletes the selected Windows Bare Metal workload / node
Edit (pen)	Edit Windows Bare Metal to add / remove existing VM/hosts for profiling.
Stop (symbol)	Stops the profiling
Refresh	Performs a reset operation, which creates a new profile and starts the polling. When reset is clicked, profiler stops the active/running profile and creates a new one. A prompt asks for confirmation.

ltem				Descript	ion			
View Collection	n			Opens th through review th	ne View Co the collecto he HOST a	ollection page so yet data as part of ond VM level data	you can browse the profiling to a.	
Windows Bare Metal wind							00/	Û
Host Reachability Reachable 1 Not Reachable 0	Profiling Summary 2 SuccessPut.	Profili In Pro Remai	ng Status press ning Duration	0% 6d 23h 59m	Profile Name Interval Total Duration Elapsed Duration Initial Start Time	profile1 20 Sec 7d 31s Mar 1, 2021 12:10 PM	View Collection	•

SUMMARY STEPS

- **1.** (Optional) To stop an in-progress profiling operation so you can resume it later, see Stopping the Profiler Service, on page 13
- 2. (Optional) To stop an in-progress profiling operation, click **Reset**. You can then start a new one.
- **3.** (Optional) To browse through the collected data, see Viewing an ESXi Collection, on page 32.
- 4. (Optional) To download profiling data, see Downloading ESXi Profiling Results, on page 25.

DETAILED STEPS

Step 1	(Optional) To stop an in-progress profiling operation so you can resume it later, see Stopping the Profiler Service, on page 13
Step 2	(Optional) To stop an in-progress profiling operation, click Reset. You can then start a new one.
Step 3	(Optional) To browse through the collected data, see Viewing an ESXi Collection, on page 32.
Step 4	(Optional) To download profiling data, see Downloading ESXi Profiling Results, on page 25.

Starting Linux Bare Metal Data Profiling

Following the successful addition of a Linux Bare Metal, the newly added Linux Bare Metal displays on the Data Inventory (home) page. You can configure the profiling attributes by providing the profiling name and duration.

Item	Description
Delete (trash can)	Deletes selected Linux Bare Metal workload / node
Edit (pen)	Edit Linux Bare Metal to add / remove existing VM/hosts for profiling.
Stop (symbol)	Stops the profiling

ltem	De	Description			
Refresh	Pe an stc A	Performs a reset operation, which creates a new profile and starts the polling. When reset is clicked, profiler stops the active/running profile and creates a new one. A prompt asks for confirmation.Opens the View Collection page so you can browse through the collected data as part of the profiling to review the HOST and VM level data.			
View Collection	Op thr rev				
Linux Bare Metal IIn-215				00/1	
Host Reachability Profiling Summary Reachable 1 Successful	Profiling Status In Progress Remaining Duration 6d	Profile Name Interval Total Duration Elapsed Duration 23h 59m	profile1 20 Sec 7d 31s Mar 1 2021 12:52 PM	View Collection	

SUMMARY STEPS

- **1.** (Optional) To stop an in-progress profiling operation so you can resume it later, see Stopping the Profiler Service, on page 13
- 2. (Optional) To stop an in-progress profiling operation, click **Reset**. You can then start a new one.
- **3.** (Optional) To browse through the collected data, see Viewing an ESXi Collection, on page 32.
- 4. (Optional) To download profiling data, see Downloading ESXi Profiling Results, on page 25.

DETAILED STEPS

Step 1	(Optional) To stop an in-progress profiling operation so you can resume it later, see Stopping the Profiler Service, on page 13
Step 2	(Optional) To stop an in-progress profiling operation, click Reset. You can then start a new one.
Step 3	(Optional) To browse through the collected data, see Viewing an ESXi Collection, on page 32.
Step 4	(Optional) To download profiling data, see Downloading ESXi Profiling Results, on page 25.

Downloading Profiling Results

Downloading ESXi Profiling Results

Step 1	On the Datacenter Inventory page, locate and select the profile whose data you want to download.							
Step 2	tep 2 Use the Download option to select one of the following:							
	Option	Description						
	All Data Collection	Downloads 30-day host summary, time series, and CVS for both the host and VM						

I

Option	Description
Summary Report for HxSizer Upload	Collects the historic 30-day information from vCenter and does not require any active polling. The download provides the output in CSV format and can be directly uploaded to the Compute and Capacity Workload of HxSizer.
Profiler Sample Data	Downloads the sampled data for the selected profile in the following formats:
	Summarized host data (CVS)
	Summarized VM data (CVS)
	• Time series data of host (zipped CSV file)
	• Time series data of VM (zipped CSV file)
Profiler Summary PDF	PDF download

isco HX Profiler	WORKLOADS				V4.0 ③ 🔮
Fotal Workloads : 1					+ Add Workload
vCenter 10.81.1.240					0 C / 8
 Host Reachability Reachable 4 Not Reachable 0 	○ VM Power Status ○ Profiling Summar ○ 00 65 ○ 001 229 ○ 001 229 ○ 001 229	Profiling Statu	s 0% ation 6d 23h 39m	Profile Name Interval Total Duration Elapsed Duration Initial Start Time	profile1 20 Sec View Collection 7d 20m 34s Download v All Data Collection
					Summary Report For HXSizer Upload Profiler Sample Data Profiler Summary PDF
					□ ~ / □
Profiling In Progra Remaining	Status ess ng Duration 6d 23h 39m	Profile Name Interval Total Duration Elapsed Duration Initial Start Time	profile1 20 Sec 7d 20m 34s Jan 20, <u>2021</u> All	12:28 PM Data Collectio	 I) ⊂ III View Collection Download ~ on

Step 3 You can still download the profiling results when viewing the compute, storage and network data of various hosts and VMs by clicking on the **Download** button on the top right corner of the UI.

L

etiseه HX Profiler WORRLOADS > vCenter - 10.81.1.240	٧40 ۞ ڲ
Overview Host Compute Metrics Host Storage Metrics VM Compute Metrics VM Storage Metrics	Download v
vCenter	• C / 1
Host Reachability VM Power Status Profiling Summary Profiling Summary	g Status Profile Name profile 1 Interval 20 Sec Total Duration 7d Elapsed Duration 28m 5s Initial Start Time Jan 20, 2021 12:28 PM
30 Day Sizing Summary O	
CPU	B) Effective Capacity (TIB) • Used 284 • Used 10.6 • Unused 356 • Unused 5.71
Aggregate Compute & Storage Dynamic Metrics \circ	
CPUTIBLIZation / RAMUBILIZAtion Read IOPS Write IOPS 5	sad Throunhou Write Throunhou Read Latency (Write Latency (

Viewing Data Collections from Servers

Viewing ESXi Data Collections from vCenter Servers

The View Collection page has five tabs at the top left of the page, Overview, Host Compute Metrics, Host Storage Metrics, VM Compute Metrics, VM Storage Metrics. When clicked, they show summary data described in his section. The View Collection page also provides the summarized data for Compute Summary and Storage Summary of individual host and VMs. You can also fetch the data for specific period of profiling using the predefined filter present on the top right corner of the page with the minimum being 30minutes or the user can also use the time line to select the time period. The following sections describe the summary data shown through filter tool use and in that shown in each tab and view.

HX Profiler WORLOADS	V4.0 🕥 🔔
Total Workloads : 1	+ Add Workload
vCenter 10.81.1.240	00/8
 Host Reachability VM Power Status Reachability VM Power Status Profiling Summary Profile Status Interval 20 Sec Total Duration Total Duration Total Duration Total Start Time Jan 19, 2021 06:52 PM 	View Collection Oownload >
esce HX Profiler WORKLOADS > vCenter-	V4.0 🕤 🚨
Overview Host Compute Metrics Host Storage Metrics VM Compute Metrics VM Storage Metrics	Download v
vCenter	00/8
Host Reachability VM Power Status Profiling Summary Ordie Addition C294 Ord 64 Successrue Successrue Profiling Summary Profiling Status Profiling Status Profiling Status Profiling Status Profiling Status Profile Name profile Interval 20 Sec Total Duration 70 Elapsed Duration IBN 45m-4 Initial Start Time Jan 19, 20	88s 221 06:52 PM
30 Day Sizing Summary O	
Image: CPU Image: VCPUs Image: RAM (GIB) Image: CPU (CPUs) Image: CPUs) Image:	 Used 10.59 Unused 5.72
Aggregate Compute & Storage Dynamic Metrics ⊙	
CPU Utilization (_ : RUM Utilization _ : Read IOPS : Write IOPS : Read Throughpu : Write Throughpu : Read Latency (_ :	Write Latency (:
-divide: HX Profiler WORKLOADS > vCenter-	V40 0 &
Overview Host Compute Metrics Host Storage Metrics VM Compute Metrics VM Storage Metrics C Last updated on: 01:46 P	M Download v
Apgregate by Average value Reset Zoom 30m 1H 24 Jun 20, 12.46 PM Image: Common Com	2H 1W 1M 2M Jan 20.01.45 PM 01.45 PM
Aggregate Metrics (AII VMs Selected)	
Status O CPU O vCPUs O RAM (Gill) Transfer Rate (MBps) 294 • On 64 23399.6 MHz • Off 220 913 • Active 232 • Used 290.5 • Used 290.5 1 • Off 220	
Appregate Metrics (AII VMs Selected)	
CPU Utilization (MHz) V	CPU Utilization

Table 4: Host View Filter Options

ltem	Description
Aggregation	Filters to view the summarizations based on peak or average selections. Your selection determines the display of the table metrics and trends. The summarized values represent the following:
	• Peak: Peak value of all the metrics in the selected interval
	• Average: Averages of all the values in the selected interval

You can filter Host metrics using the search option by host name only. For VM metrics, you can filter either by the Host name to which the VM belongs or directly with the VM name, using the search option.

-di-di- cisce HX Profiler WORKLOADS > vCenter-	V40 🕥 🔔
Overview Host Compute Metrics VM Compute Metrics VM Storage Metrics	C Last updated on: 01:46 PM Download V
Aggregate by Average value Jan 20, 12:45 PM C 12:50 PM 12:55 PM 01:00 PM 01:00 PM 01:10 PM 01:10 PM 01:15 PM 01:20 PM 01:25 PM 01:2	Reset Zoom 30m 1H 24H 1W 1M 2M Jan 20, 01:45 PM Jan 20, 01:45 PM 01:40 PM 01:40 PM 01:40 PM
Aggregate Metrics (All Hosts Selected) CPU Utilization (0Hz) 188.8 Used 23.86 Unused 164.94 * On 4 Cones * Used 23.86 * Unused 164.94 * On 4 Cones * On 4 * Of 0 * Inactive 8.5 *	Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex sector Image: Symplex
Aggregate Metrics (All Hosts Selected) CPU Utilization (MHz)	CPU Utilization
Creview Host Compute Metrics Host Storage Metrics VM Compute Metrics VM Storage Metrics	C Last updated on: 01:46 PM Download
Aggregate by Average value Jun 20, 12-06 PM 12-06 PM 12-06 PM 12-06 PM 01:06 PM 01:10 PM 01:15 PM 01:20 PM	Reset Zoom 30m 1H 24H 1W 1M 2M Jan 20, 01:45 PM 01:35 PM 01:45 PM
Aggregate Metrics (All VMs Selected) Status CPU S RAM (GID) 294 • Off 230 CPU S RAM (GID) • Con 64 23399.6 MHz Totra, CPU UTuCation 913 • Active 232 • Inactive 681 2279.5 • Used 290.5 • Used 290.5 • Unused 1989	Transfer Rate (MBps) 2 * Receive 1,1 * Transmit 0.9
Aggregate Metrics (All VMs Selected) CPU Utilization (MHz)	
	• Gr V Viiita600

Host and VM Summarized Metrics

Based on your time period and parameters selections, the Profiler computes and populates the compute and storage metrics. Metrics display for the following values:

Host View Compute Table

- Host_Name
- Processor Type
- · Clock (GHz)
- #Physical Cores
- HT ON/OFF
- CPU Util (MHz)
- CPU Util (%)
- #VMs
- vCPU of active VMs/pCore Ratio
- RAM (GB)
- RAM Util (GB)
- Network Throughput- Rx (Mbps)
- Network Throughput- Tx (Mbps)

Host View Storage Table

- Provisioned Capacity (TB)
- Used Storage Capacity (TB)
- Read Throughput (MBps)
- Write Throughput (MBps)
- Read (%)
- Write (%)
- · Read IOPS
- Write IOPS
- Read Block Size (KB)
- Write Block Size (KB)
- Seq (%)
- Read Latency (ms)
- Write Latency (ms)

VM View Compute Table

- VM Name
- Status
- Host Name

- vCPUs
- CPU Util (MHz)
- CPU Util (%)
- RAM (GB)
- RAM Util (GB)
- Network Throughput- Rx (Mbps)
- Network Throughput- Tx (Mbps)

VM View Storage Table

- VM Name
- Host_Name
- Disk Capacity (GB)
- Disk Used (GB)
- Read Throughput (MBps)
- Write Throughput (MBps)
- Read (%)
- Write (%)
- Read IOPS
- Write IOPS
- Read Block Size (KB)
- Write Block Size (KB)
- Seq (%)
- Read Latency (ms)
- Write Latency (ms)

Host and VM Trends

The View Collection page provides trend charts and an overview of various parameters at a host level and VM level for both compute and storage parameters. The overview provides information aggregate storage and compute matrix along with a 30-day sizing summary. You can view the trend charts by selecting the host or the VM from the table.

Metrics for the following values display in the trend charts:

Host View Compute Trends

- CPU Utilization (MHz)
- CPU Utilization (%)
- CPU Overprovisioning Ratio (%)

- RAM Utilization (%)
- RAM Overprovisioning Ratio (%)
- Receive Rate (Mbps)
- Transmit Rate (Mbps)

VM View Compute Trends

- Receive Rate (Mbps)
- Transmit Rate (Mbps)

Host and VM View Storage Trends

- Read Throughput (MBps)
- Write Throughput (MBps)
- · Read Ratio
- Write Ratio
- Read IOPS
- Write IOPS
- Read Seq (%)
- Write Seq (%)
- Read Latency (ms)
- Write Latency (ms)
- Provisioned Capacity (TB)
- Used storage Capacity (TB)

Histogram Charts

- Read Block Size Histogram
- Write Block Size Histogram



Note You can plot the storage parameter charts for two comparable charts either from the Trend Line chart or from the Histogram chart.

Viewing an ESXi Collection

You can also use the filter and search tool in the Hosts and VM views to display only those hosts and VMs that you want to see.

You can also use the filter tool in the Hosts and VM views to display only those hosts and VMs you want to see.

- **Step 1** In the Datacenter Inventory page, click **View Collection** to browse through the collected data.
- Step 2 In the View Collection page, select between Host Compute Metrics, Host StorageMetrics, VM Compute Metrics or VM Storage Metrics.
- **Step 3** In the **Select VMs** tab, select or unselect the toggle switch for the VMs you want to view, then click **Next**. All VMs are selected by default.
- **Step 4** To view data for a different time period, select from the options in the top right corner with the default minimum value of 30 minutes. Use the time slider above the fixed time period selection to view data for a specific time range from the selected time period.





cisco HD	(Profiler	WORKLOADS > vCen	der -						V4.0 🕥	&
Overview	Host Compute Me	trics Host Storage	Metrics VM Compu	te Metrics VM Stora	ge Metrics		4	Last updated on: 01:46 P	M Download	l-
0	Jan 20, 12:50	Jan 20, 12:55	Jan 20, 13:00 Jan	20, 13.05 Jan 20, 12	10 Jan 20, 12:15	Jan 20, 15:20 Jan 20, 12	25 Jan 20, 13:30	Jan 20, 12:35 Jan 20,	12.40 Jan 20, 12	45
Q, Se	arch AJAY × Sea	rch					× 1 items fou	nd 10 - per page 📧] < _1_of1 >	
VM Name	•	Status :	Host Name	: vCPUs	: CPU Util (MHz) : CPU Util (%) :	RAM (GIB) :	RAM Util (GiB) : R	x Rate (MBp. 🌑	ş
YALA		OFF		6	0	0	3	0 0		Ч
4								K] < <u>1</u> of 1 >	

30-Days Sizing Summary Report

Upload 30-Days Sizing Summary Report

You can upload the 30-Days Sizing Summary Report to the HxSizer application from HxProfiler. When the report upload is successful, a reference number is generated. View the history of uploads along with the reference number from the HxProfiler application. In addition to identifying the report, the reference number may be used to claim the scenario from the HxSizer application.

Perform the following steps in the Cisco HX Profiler dashboard to upload the 30-Days Sizing Summary report:

Step 1 Click the Upload icon on the HX Profiler ribbon and select Upload To HXSizer. The Upload Summary Report To HXSizer window appears.



Step 2 Click the Browse button to navigate to the local .csv file that needs to be uploaded to the HXSizer portal.

Profiling Status	Profile Name	profile?
^{In} Upload Summary Report	To HXSizer	×
R Select csy report file		
a Browse No File Select	ted	
D Rename selected .csv file name (Optional)	0
	Close	Upload

- a) Select the desired .csv file.
- b) (Optional) To modify the csv file name, type a new name in the **Rename selected .csv file name** field.
- c) Click Upload.

A reference number indicates a successful upload. Use the **Copy** button to copy the reference number and use it to claim the scenario in the HXSizer application.

				V 4.0.5 🟦 🧿 🛓	<u>0</u>
				File is uploaded	Î
rogress	40	Interval Total Duration	20 Sec 1d	7AVveb7iCCzYXa2bFQFXVX Close	
naining Duration	4% 22h 57m 53s	Elapsed Duration Initial Start Time	1h 2m 6s Jul 12, 2021 11:39 AM	Download ~	

- **Step 3** (Optional) View Upload History
 - a) Click the **Upload** icon on the HX Profiler ribbon and select **Upload History** to view the list of 30-Days sizing summary .csv files that have been uploaded to the sizer application from profiler.

Q Search			2 items found 5 v per page 1 of 1 > >		
File name		Uploaded Date	÷	Reference Number	ş
Sizer_upload_Summary_	perf-vc6.eng.storvi	Jul 12, 2021 12:42 PM		7AVveb7iCCzYXa2bFQFXVX	ŝ
Sizer_upload_Summary_	perf-vc6.eng.storvi	Jul 12, 2021 12:29 PM		jceBxSkXUnsia4SpiwA6fr	Ē



Monitoring Approach

- Download Quick Profile (30-Days) ESX Host Summary Statistics and Data, on page 37
- Profiler Data Collection Architecture, on page 37
- Performing Profiler VM Clean-up, on page 38

Download Quick Profile (30-Days) ESX Host Summary Statistics and Data

You can download the Quick Profile (30-days) ESX Host Summary statistics/data report from the Profiler Home page > **Download Results** option. To use this monitoring option, see Downloading Nutanix AHV Profiling Results for ESXi.

Report characteristics:

- · Includes VM/host level compute and storage capacity metrics
- · Does not include deep storage or compute metrics or metrics for individual VMs
- Data downloads in CSV format and can be uploaded to the Compute and Capacity workload in the Hx Sizer tool

Profiler Data Collection Architecture

Understanding the ESXi Profiler Data Collection Architecture

The Profiler connects to vCenter using the root admin credentials.

Architecture characteristics:

- The Profiler directly collects the vCenter Inventory information (Data Centers, Datastores, Clusters, Hosts, VMs, and basic metrics) and the compute metrics from vCenter itself.
- The Profiler also collects deep storage metrics for each VM and aggregates these metrics at a host-level.
- The vCenter does not directly maintain deep storage metrics. The Profiler software invokes vCenter to fetch this data from each individual host (using vSCSI) to obtain detailed data for each VM. The Profiler

then summarizes the data from all VMs to build a host-level summary. For example, the software obtains maximum, minimum, and average values for metrics, such as latency, where as IOPS (Total Blocks/Interval) and throughput (Total Bytes/Interval) are average values only.

Performing Profiler VM Clean-up

Performing ESXi Profiler VM Clean-up

After you complete your profiling activitites, follow the best practice of performing the Profiler VM clean-up to achieve a thorough shutdown and exit of the Profiler.

- **Step 1** Download the profiled data with the following steps:
 - a) Launch the Profiler application.
 - b) Download the data (CSV format) from the Home page. See Downloading ESXi Profiling Results, on page 25.
 - c) Save the CSV for further analysis.
- **Step 2** To stop the Profiler Service, run the following commands:
 - a) sudo service hxpmonitor stop
 - b) sudo service hxpcontroller stop
- **Step 3** Shut down the VM.
- **Step 4** Delete the VM if it is no longer required to profile the data for the environment.



Troubleshooting

• Troubleshooting, on page 39

Troubleshooting

Troubleshooting Section for vCenter

- 1. If the selected hosts are not reachable, then perform the following steps:
 - Check the connection status of the hosts in vCenter.
 - Make sure all the selected hosts connection status is Connected.
- 2. If you forgot the Profiler VM password, then perform the following step:
 - Delete the old deployed machine and redeploy the new one.

Troubleshooting Section for Windows Bare Metal

- 1. When adding Windows Bare Metal Host, if you receive a **Getting Invalid Username and Password Combination** error, take the following steps in the Windows Bare Metal machine:
 - Open Registry Editor: right click the Start button, select Run, type regedit and press Enter().
 - Go to Path: *HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Ole\AppCompat*.
 - Right click AppCompat -> New -> Dword.
 - Enter RequireIntegrityActivationAuthenticationLevel as Value name.
 - The Value Data should be *Hexadecimal 0x00000000 (0)*.



Note

After setting this registry key, for it to take effect, you must restart your device.