# RADEON PRO SOFTWARE

## Radeon Pro Settings for VMware vSphere Client

User Guide v1.1

Radeon Pro Settings for VMware vSphere Client allows system administrators to manage and deploy VMware ESXi Hosts with AMD FirePro™ S7100X, S7150 and S7150x2



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## 1 Overview

This user guide provides an overview of the Radeon Pro Settings user interface plug-in developed for VMware vSphere® Client. This user interface plug-in was designed to allow system administrators to manage and deploy VMware ESXi<sup>™</sup> Hosts with AMD FirePro<sup>™</sup> S7100X, S7150 and S7150 x2 family of products In MxGPU mode.

Using Radeon Pro Settings, you can virtualize your AMD FirePro<sup>™</sup> GPUs and create up to 16 virtual GPUs (defined as mxGPUs) per physical GPU (defined as MxGPUs). These mxGPUs can then be assigned – manually or automatically – to Virtual Machines (VMs) on the ESXi Host.

#### 1.1 Advantages of Using Radeon Pro Settings

- Manage your VMs and MxGPUs on multiple Hosts and Datacenters.
- Change the partitioning of MxGPUs on the fly. No need to reboot the ESXi host system.
- Assign virtual mxGPUs to your VMs with a simple mouse click.
- Easily visualize your deployment with partition usage for MxGPUs and VMs.

## 2 Hardware and Software Requirements

The sections below detail the hardware and software that are required for setting up the VMware environment. Consult the <u>VMware Basic Setup Guide</u> or VMware's website for details on setting up the VMware environment.

#### 2.1 Hardware Requirements

#### 2.1.1 Host/Server

Graphics Adapter: AMD FirePro<sup>™</sup> S7100X, S7150, S7150 x2.

Sample Certified Server Platforms:

- Dell PowerEdge R730 Server.
- HPE ProLiant DL380 Gen9 Server.
- SuperMicro 1028GQ-TR Server.

Additional Hardware Requirements:

- CPU: Minimum 2 CPUs of 4 cores each.
- System memory: 32 GB of RAM minimum, up to a maximum of 1 TB. Number of guest VM's is dependent on RAM.
- Hard disk: 500 GB and up; more guest VMs require more HDD space.
- Network adapter: Gigabit Ethernet (GbE) and up.

#### 2.1.2 Client

Any of the following client devices can be used to access the virtual machine once these VMs are started on the host server:

- Zero client (up to 4 connectors) with standard mouse/keyboard and monitor.
- Thin client with standard mouse/keyboard and monitor running Microsoft® Windows® Embedded OS.
- Laptop/desktop with standard mouse/keyboard and monitor running with Microsoft Windows 7 and up.

#### 2.2 Software Requirements

#### 2.2.1 Host/Server

- VMware ESXi 6.0 U2 and up.
- VMware ESXi 6.5 build 4564106 and up.

#### 2.2.2 vCenter system

- Microsoft Windows Server 2012 R2.
- VMware vCenter 6.0 and up
- vSphere Client (HTML).
  - vCenter 6.0 users can deploy a standalone Appliance. See <u>vSphere Client</u> (HTML5) Fling.

#### 2.2.3 Administrator system

Any OS with one of these internet browsers: Microsoft Internet Explorer® 11+, Microsoft Edge™, Google Chrome™, or Firefox®.

#### 2.2.4 Guest VM

- Microsoft Windows 7 Service Pack 1 (SP1) 64-bit.
- Microsoft Windows 10 Version 1511 TH2 64-bit.
- Latest Radeon Pro Software Enterprise Unified Driver.
- VMware Horizon® View<sup>™</sup> Agent (7.x.x).

#### 2.3 System Configuration

#### 2.3.1 Host/Server Configuration

- Enable IOMMU, SR-IOV, and ARI in CMOS.
- Enable above 4G space memory mapping IO.
- Enable UEFI Boot.
- AMD FirePro™ S7100X, S7150 or S7150 x2.

#### 2.3.2 Guest VM Configuration

Configuration	vCPU	System memory (GB)	Framebuffer size (MB)	Enabled mxGPU	User
High Performance	4	8	3840	2	Workstation User
Professional	2	4	1920	4	Power User
Enhanced	2	3	960	8	Knowledge User
Standard	1	2	480	16	Task worker

(Note: Make sure all guest memory is locked/reserved.)

## 3 Install Driver on VMware ESXi Host

On each VMware ESXi host that will be managed by the UI, install amdgpuv and amdgpuv-cim.

 For VMware ESXi 6.5, download the <u>Radeon Pro - VMware vSphere ESXi 6.5 Driver</u> and install:

amdgpuv-1.02-1OEM.650.0.0.4598673.x86\_64-CL1356850.vib amdgpuv-cim-1.00-6.5.0-4598673.vib

 For VMware ESXi 6.0, download the <u>Radeon Pro - VMware vSphere ESXi 6.0 Driver</u> and install:

amdgpuv-1.02-1OEM.600.0.0.2494585.x86\_64-CL1356850.vib amdgpuv-cim-1.00-6.0.0-2768847.vib

After rebooting the server, no matter how many virtual mxGPUs are configured for each GPU, you should see:

- 1) 15 mxGPUs on the bus for each GPU on VMware ESXi 6.0.
- 2) 16 mxGPUs on the bus for each GPU on VMware ESXi 6.5.

To install the drivers, copy the amdgpuv driver and CIM to a data store using SSH and use the following commands to install:

esxcli software vib install --no-sig-check -v /vmfs/volumes/datastore1/amdgpuv- 1.02-10EM.650.0.0.4598673.x86\_64.vib

esxcli software vib install --no-sig-check -v /vmfs/volumes/datastore1/amdgpuv-cim-1.00-6.5.0-4598673.vib

### 4 Install the Plug-in on VMware vCenter Server

#### 4.1 Install the Plug-in using Radeon Pro Settings Registration Tool

The Radeon Pro Settings Registration Tool allows a Windows or Linux computer to remotely register the plugin to a vSphere Client. By using this tool, a user can quickly update or register the plugin by simply providing the client's credentials.

#### 4.1.1 Register and install the plug-in

- 1. Download and unzip the <u>Registration Tool</u> to your local system.
- 2. Launch the **RPSRegistrator** suitable for Linux or Windows depending on your OS

🔅 RPS	_	
	Please enter your server credentials:	
Server Address:	vcenter.domain.com	
User Name:	admin@vsphere.local	
Password:	********	
Port:	443	
Version:	1.0.1-Beta —	
Quit		Connect

3. Click Next and enter your vCenter credentials

- 4. Pick the Version of the plugin you would like to install
- 5. Click on **Connect** and the tool will attempt to register and install the plugin on the server
- 6. If the plugin is already registered, click **Update** when prompted
- 7. If registration was successful, you will be prompted to restart the vSphere Client Service

#### 4.1.2 Restart VMware vSphere Client service

- 1. Log in to the VMware vSphere Web Client (Flash).
- Click the Home icon the select Administration -> Deployment -> System Configuration.
- 3. Click on **Nodes** in the left navigation bar and choose your **VMware vCenter Server**.
- 4. Restart the VMware vSphere Client service under the Related Objects tab.

/mware <sup>,</sup> vSphere Web Cli	ent <del>fi</del> ≣							U   Administration@VSPHERELOCAL •   H	eb •   Q. Search •
Nevigetor #	0 0 6 6	Actors +							📝 Work In Progress 🛛 🖡
(I Back )	Summary Manage Related Ot	(ects ]							MRF - Edit Resource S
System Configuration									Win10-DL380 Template
🕌 Nofes 📃 🚺	Services	services							
Services 23	🖹 Restart 🌗 Start 🔳 Stop	🖌 Settings   🍓 Actions 🗸						📡 🖪 (q. Filer	
Notes	None 1	Stortup Type	Health	State					
	Auto Deploy	Manual	Not applicable	Stopped (norm	al)				
"	Component Manager	Automatic	i Good	Running					
	Content Library Service	Automatic	i Goed	Running					
	ImageBuilder Service	Manual	Not applicable	Stopped (norm	al)				
	License Service	Automatic	i Good	Running					
	Service Control Agent	Automatic	Good Good	Running					
	VMware ESX Agent Manager	Automatic	i Good	Running					
	VMware HTTP Reverse Proxy	Automatic	Good	Running					
	VMware Message Bus Contl	Manual	Not applicable	Stopped (norm	al)				
	VMware Performance Chart	Automatic	i Good	Running					
	VMware Postgres	Automatic	i Goed	Running					
	VMware Service Lifecycle M	Automatic	Good	Running					
	VMware Sysiog Collector	Automatic	i Good	Running					
	VMware vCenter Server	Automatic	Good Good	Rutning					
	VMware vCenter-Services	Automatic	Good	Running					
	VMware vService Manager	Automatic	Good	Running					
	VMware vBphere Authentica	Manual	Not applicable	Stopped (norm	al)				
	VMware vSphere Client	Automatic	i Good	Running					
	VMware vSphere ESXI Dum	Manual	Not applicable	Stopped (norm	al)				
	VMware vSphere Profile Dri	Automatic	Good 🛑	Running					
	VMware vSphere Web Client	Automatic	🛑 Good	Running					
	Virtual SAN Health Service	Automatic	Good	Furning					
	avAPI Endpoint	Automatic	i Good	Running					Photos Tax
									🖸 Aams 🕴 X
									AJ New (1) Acknowledge
									•
	M							23 Objects 🎧 Export 🐚 Copy	<ul> <li>Host connection and power st</li> </ul>
				_					
The Recent Objects X X	E Recent Tasks								¥ ×
Viewed Crested	ŋ.								Q Filer +
	Task Name	Taget	Status	Initiator	Queued For	Start Time	1 V Completion Time	Sever	
Balacenter_1									
8									
· ·									

#### 4.2 Install the Plug-in through VMware Managed Object Browser

- 4.2.1 Register and Install the Plug-in
  - 1. Open a browser and type in the following URL:

https://<NAME\_OF\_VCENTER>/mob/?moid=ExtensionManager

2. A window will appear similar to the following:

Home					Logout
Managed Managed	Object Typ Object ID: E	e: Mana ExtensionM	gedObjectReference lanager	e:ExtensionManager	
Properties					
NAME	ТҮРЕ	VALUE			
extensionList	Extension[]	extensionLis	t["com.vmware.vim.ls"]	Extension	
		extensionLis	t["com.vmware.vim.sms"]	Extension	
		extensionLis	t["com.vmware.vim.sps"]	Extension	
		extensionLis	t["com.vmware.vim.stats.report"	] Extension	
		extensionLis	t["com.vmware.vim.vcha"]	Extension	
		(more)			
Methods					
Methods					
Methods RETURN TYPE	1		NAME		
Methods RETURN TYPE		Extension	NAME FindExtension		
Methods RETURN TYPE		Extension string	NAME FindExtension GetPublicKey		
Methods RETURN TYPE Extension	ManagerIpAlloc	Extension string ationUsage[]	NAME FindExtension GetPublicKey QueryExtensionIpAllocationUsad	16	
Methods RETURN TYPE Extension ManagedObjec	ManagerIpAlloc tReference:Man	Extension string ationUsage[] lagedEntity[]	NAME FindExtension GetPublicKey QueryExtensionIpAllocationUsad QueryManagedBy	10	
Methods RETURN TYPE Extension ManagedObjec	ManagerIpAlloc tReference:Man	Extension string ationUsage[] iagedEntity[] void (	NAME FindExtension GetPublicKey QueryExtensionIpAllocationUsae QueryManagedBy RegisterExtension	16	
Methods RETURN TYPE Extension ManagedObjec	ManagerIpAlloc tReference:Man	Extension string ationUsage[] iagedEntity[] void	NAME FindExtension GetPublicKey QueryExtensionIpAllocationUsad QueryManagedBy RegisterExtension SetExtensionCertificate	16	
Methods RETURN TYPE Extension ManagedObjec	ManagerIpAlloc tReference:Man	Extension string ationUsage[] void void void	NAME FindExtension GetPublicKey QueryExtensionIpAllocationUsae QueryManagedBy RegisterExtension SetExtensionCertificate SetPublicKey	18	
Methods RETURN TYPE Extension ManagedObjec	ManagerIpAlloc	Extension string ationUsage[] agedEntity[] void void void void	NAME FindExtension GetPublicKey QueryExtensionIpAllocationUsar QueryManagedBy RegisterExtension SetExtensionCertificate SetPublicKey UnregisterExtension	12	

3. Click on the **RegisterExtension** link. The window shown below will pop up:

oid RegisterE	ctension	
NAME	ТҮРЕ	VALUE
extension (required)	Extension	<extension> <description> <label>AMD Radeon Pro Settings</label> <summary>MxGPU Control Panel for vSphere Client</summary> </description> <key>com.amd.mxgpui</key> <company>AMD</company> <type></type> <version>1.0.0</version> <subjectname></subjectname> <server> <url>https://download.amd.com/software/mxgpui-plugin.zip</url> <description> <label>AMD Radeon Pro Settings</label> <summary>MxGPU Control Panel for vSphere Client</summary> </description> <company>AMD</company> <type>HTTPS</type> <adminemail>string</adminemail></server></extension>
		Taxaka Math

4. In the pop-up window, copy and paste the XML below into the **VALUE** text box. This will register the plugin and install the necessary files to your VMware vCenter Server.

```
<extension>
 <description>
   <label>AMD Radeon Pro Settings</label>
   <summary>MxGPU Control Panel for vSphere Client</summary>
 </description>
 <key>com.amd.mxgpui</key>
 <company>AMD</company>
 <type></type>
 <version>1.0.1</version>
 <subjectName> </subjectName>
 <server>
   <url>https://download.amd.com/software/mxgpui-plugin.zip</url>
   <description>
     <label>AMD Radeon Pro Settings</label>
     <summary>MxGPU Control Panel for vSphere Client</summary>
   </description>
   <company>AMD</company>
   <type>HTTPS</type>
   <adminEmail>string</adminEmail>
<serverThumbprint>A3:50:BF:3E:48:05:6E:26:B5:49:B9:83:E7:BA:0B:4E:1E:94:DC:35
</serverThumbprint>
 </server>
 <client>
   <version>1.0.1</version>
   <description>
     <label>AMD Radeon Pro Settings</label>
     <summary>MxGPU Control Panel for vSphere Client</summary>
   </description>
   <company>AMD</company>
   <type>vsphere-client-serenity</type>
   <url>https://download.amd.com/software/mxgpui-plugin.zip</url>
 </client>
 <lastHeartbeatTime>2017-03-15T09:00:00Z</lastHeartbeatTime>
 <healthInfo>
   <url></url>
 </healthInfo>
 <shownInSolutionManager>true</shownInSolutionManager>
</extension>
```

5. Click **Invoke Method**. It should show **Method Invocation Result: void** if it was successfully registered and installed.

oid RegisterE	xtension	1
Parameters NAME	ТҮРЕ	VALUE
<b>extension</b> (required)	Extension	<client> <version>1.0.0</version> <description> <label>AMD Radeon Pro Settings</label> <summary>MxGPU Control Panel for vSphere Client</summary> </description> <company>AMD</company> <type>vsphere-client-serenity</type> <url>https://download.amd.com/software/mxgpui-plugin.zip</url> </client> <lastheartbeattime>2017-03-15T09:00:00Z</lastheartbeattime> <healthinfo> <url></url> </healthinfo> <showninsolutionmanager>true</showninsolutionmanager>

#### 4.2.2 Restart VMware vSphere Client Service

Same as Section 4.1.2

#### 4.3 Offline Installation

Please try this alternative install process if you cannot download the plug-in via the vCenter server.

- 1. Download the plugin as a zip from here.
- 2. Copy the plugin zip to the appropriate location:
  - a. VCSA:

/usr/lib/vmware-vsphere-ui/plugin-packages/

b. Windows vCenter:

C:\ProgramData\VMware\vCenterServer\runtime\vsphere-ui\plugin-packages

🛞 🕶 🕇 📜 « Loc	al Disk (C:) 🕨 ProgramData 🕨 VMwa	re 🕨 vCenterServer 🕨 runtime 🕨	vsphere-ui 🕨 plu	igin-packages 🕨	✓ C Sea	arch plugin-packages	ρ
🚖 Favorites	Name	Date modified	Туре	Size			
E Desktop	license-client	11/25/2016 4:22	File folder				
🔈 Downloads	🗼 mxgpui	3/10/2017 11:56	File folder				
laces Recent places	🐌 opsmgmt-client	11/25/2016 4:22	File folder				
	🐌 root-app	11/25/2016 4:22	File folder				
No. This PC	📕 sso-admin-ui	11/25/2016 4:22	File folder				
🍋 Desktop	🐌 vsphere-client	11/25/2016 4:22	File folder				
Documents							
🔈 Downloads							
Dusic 🔰							
🗼 Pictures							
Videos							
🔩 Local Disk (C:)							
🛃 DVD Drive (D:) VMwa							
🕒 Network							
							_
items 1 item selected							

3. Create a new folder in plugin-packages named **mxgpui** and unzip the contents of the zip file into **plugin-packages/mxgpui** 

(→) - ↑ 📜 « Prog	ramData ♦ VMware ♦ vCenterServer	In runtime In vsphere-ui In pl	ugin-packages 🕨 mx	gpui 🕨	✓ C Search mxgpui	Q
Favorites	Name	Date modified	Туре	Size		
Desktop	🗼 plugins	3/10/2017 11:56	File folder			
Downloads	build-info.txt	3/10/2017 11:56	Text Document	1 KB		
Recent places	🖹 plugin-package.xml	3/10/2017 11:56	XML Document	2 KB		
This PC						
Desktop						
Documents						
Downloads						
Music						
Pictures						
Videos						
Local Disk (C:)						
DVD Drive (D) VMwa						
- oro onic (o.) mile						
Notwork						
Network						
ems 1 item selected						

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- 4. Register the plugin using the MoB, as outlined in Section 4.2.1
  - a. Use the following XML script, instead of the XML script provided in <u>section</u> 4.2.1

```
<extension>
<description>
<label>MxGPUI</label>
<summary></summary>
</description>
<key>com.amd.mxgpui</key>
<version>1.0.1</version>
<lastHeartbeatTime>2017-04-17T18:53:00Z</lastHeartbeatTime>
</extension>
```

5. Restart the vSphere Client, as shown in Section 4.1.2

#### 4.4 Update the Plug-in

If there is a new plug-in to update, follow the steps below:

#### 4.4.1 Update the Plug-in

1. Open a browser and type in the URL:

https://<NAME\_OF\_VCENTER>/mob/?moid=ExtensionManager

2. A window will appear similar to the following:

Home					Logout
Managed Managed	Object Typ Object ID: E	oe: Mana ExtensionM	gedObjectReference lanager	:ExtensionManager	
roperties					
NAME	ТҮРЕ	VALUE			
extensionList	Extension[]	extensionLis	t["com.vmware.vim.ls"]	Extension	
		extensionLis	t["com.vmware.vim.sms"]	Extension	
		extensionLis	t["com.vmware.vim.sps"]	Extension	
		extensionLis	t["com.vmware.vim.stats.report"]	Extension	
		extensionLis	t["com.vmware.vim.vcha"]	Extension	
		(more)			
Methods			NAME		
Methods RETURN TYPE		Futoncion	NAME		
Methods RETURN TYPE		Extension	NAME FindExtension		
4ethods RETURN TYPE		Extension string	NAME FindExtension GetPublickey		
Aethods RETURN TYPE Extension	ManagerIpAlloc	Extension string ationUsage[]	NAME FindExtension GetPublicKey QueryExtensionIpAllocationUsage	ŝ	
Methods RETURN TYPE Extension ManagedObject	ManagerIpAlloc tReference:Man	Extension string ationUsage[] agedEntity[]	NAME FindExtension GetPublickey QueryExtensionIpAllocationUsage QueryManagedBy	<u>e</u>	
Methods RETURN TYPE Extension ManagedObjec	ManagerIpAlloc tReference:Man	Extension string ationUsage[] nagedEntity[] void	NAME FindExtension GetPublickey OueryExtensionIpAllocationUsage OueryManagedBy RegisterExtension	<u>e</u>	
Methods RETURN TYPE Extension ManagedObjec	ManagerIpAlloc tReference:Man	Extension string ationUsage[] agedEntity[] void void	NAME           FindExtension           GetPublickey           OueryExtensionIpAllocationUsage           OueryExtensionIpAllocationUsage           OueryExtensionExtension           SetExtension           SetExtensionCertificate	2	
Aethods RETURN TYPE Extension ManagedObjec	ManagerIpAlloc tReference:Man	Extension string ationUsage[] aggedEntity[] void void void	MAHE FindExtension GetPublicKey OueryExtensionIpAllocationUsage OueryManagedBy RegisterExtension SetExtensionCertificate SetPublicKey	<u>e</u>	
Aethods RETURN TYPE Extension ManagedObjec	ManagerIpAlloc tReference:Man	Extension string ationUsage[] void void void void	MAHE FindExtension GetPublickey OuervExtensionIpAllocationUsage OuervManagedBy RegisterExtension SetExtensionCertificate SetEvublickey UpregisterExtension	2	

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3. Click on the **UpdateExtension** link. In the pop-up window field **VALUE**, enter the following. Change the version and URL as necessary.

```
<extension>
 <description>
   <label>AMD Radeon Pro Settings</label>
   <summary>MxGPU Control Panel for vSphere Client</summary>
 </description>
 <key>com.amd.mxgpui</key>
 <company>AMD</company>
 <type></type>
 <version>1.0.1</version>
 <subjectName> </subjectName>
 <server>
   <url>https://download.amd.com/software/mxgpui-plugin.zip</url>
   <description>
     <label>AMD Radeon Pro Settings</label>
     <summary>MxGPU Control Panel for vSphere Client</summary>
   </description>
   <company>AMD</company>
   <type>HTTPS</type>
   <adminEmail>string</adminEmail>
<serverThumbprint>A3:50:BF:3E:48:05:6E:26:B5:49:B9:83:E7:BA:0B:4E:1E:94:DC:35
</serverThumbprint>
 </server>
 <client>
   <version>1.0.1</version>
   <description>
     <label>AMD Radeon Pro Settings</label>
     <summary>MxGPU Control Panel for vSphere Client</summary>
   </description>
   <company>AMD</company>
   <type>vsphere-client-serenity</type>
   <url>https://download.amd.com/software/mxgpui-plugin.zip</url>
 </client>
 <lastHeartbeatTime>2017-03-15T09:00:00Z</lastHeartbeatTime>
 <healthInfo>
   <url></url>
 </healthInfo>
 <shownInSolutionManager>true</shownInSolutionManager>
</extension>
```

4. Click **Invoke Method**. It should show **Method Invocation Result: void** if it was successfully registered and installed.

oid UpdateEx	tension	
Parameters NAME	ТҮРЕ	VALUE
extension (required)	Extension	<extension> <description> <label>AMD Radeon Pro Settings</label> <summary>MxGPU Control Panel for vSphere Client</summary> </description> <key>com.amd.mxgpui</key> <company>AMD</company> <type></type> <version>1.0.0</version> <subjectname></subjectname> <server> <url>https://download.amd.com/software/mxgpui-plugin.zip</url> <description> <label>AMD Radeon Pro Settings</label> <summary>MxGPU Control Panel for vSphere Client</summary> </description> <label>AMD Radeon Pro Settings</label> <summary>MxGPU Control Panel for vSphere Client</summary>  <company>AMD</company> <type>HTTPS</type> <adminemail>string</adminemail></server></extension>

#### 4.4.2 Restart VMware vSphere Client Service

The same step as section 4.1.2

## 5 Using the Plug-in

#### 5.1 VMware vSphere HTML5 Client

1. After installing/updating the plug-in on the VMware vCenter Server. Open a browser and type in the URL <u>https://<NAME OF VCENTER></u>, where the name of the server can be either the IP or FQDN of the server. This will lead to a page with two entries as shown in the image below.

<b>vm</b> ware <sup>.</sup>	
Getting Started To access vSphere, log in to: vSphere Web Client (Flash) vSphere Client (HTML5) - partial functionality For help, see: vSphere Documentation Supported Functionality in vSphere Client (HTML5)	venter Servers

2. Click on **VSphere Client (HTML5)**. If the option is not available, please ensure you are using vSphere 6.5. If you are using a fling HTML5 client, you can use:

https://<NAME\_OF\_HTML5\_CLIENT>/ui

3. Log in with an account with administrator privileges.

#### 5.2 Starting the Plug-in

- 5.2.1 From the VMware vSphere Client Home Page
  - 1. Click the Radeon Pro Settings icon on the home page.

vm vSphere Client	Menu	✓ <b>Q</b> Set	arch				
Home	Н	ome					
Hosts and Clusters	> In	ventories					
Ms and Templates	>						
Storage	>		51		(2)		F
Q Networking	>	Hosts and	VMs and	Storage	Networking	Global	Radeon Pro
Global Inventory Lists	>	Clusters	Templates	otorage	i control i i g	Inventory Lists	Settings
🍇 Administration	> м	onitoring					
🗊 Tasks							
Events		5					
Tags & Custom Attributes		Task Console	Event Console				
Q New Search	>						

- 2. Select the Datacenter you wish to manage. There are two options:
  - a. You can view and manage VMs and MxGPUs on all hosts on the selected Datacenter by clicking **Go to Data Center**.
  - b. You can view and manage VMs and MxGPUs on a specific host in the Datacenter by selecting a host from the second drop-down and then clicking on Go to Host.



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#### 5.2.2 From the VMware vSphere Client Navigation Bar

Right-click a Datacenter or Host from the left navigation bar and select **Radeon Pro Settings**.

vm vSphere	Client	Menu ~ 🤇	<b>Q</b> Search							
	9 9	ø		ACTIONS	~					
4 🗗		Summary	Monitor	Configure	Permissions	Datacenters	Hosts & Clusters	VMs	Datastores	Netw
Detacenter_1     Detacenter_1     Detacenter_1     Detacenter_1     Detacenter_1     Detacenter_1     Win10-C     団 Win10	Actions - AN	MD Datacenter  .ter ler ual Machine	Virtual Hosts:	Machines: 35 4						
🖞 Win7-DI	Rename		undutes							
ြ Win7-DI 冏 Win7-DI	Tags & Custom Attributes 🕨		•			Value				*
4	Add Perm	nission								
다 MRF 団 W10-VN 団 W7-XD7	Radeon P x-HV62 '11-RF	Pro Settings	Radeon	Pro Settings						÷
🗗 W7-XD7	9-Test1								No items to displa	ay
Win10-R	:51 :S1-JD :S1-VM2	Edit								

#### 5.3 The Virtual Machine Tab

The first tab that you will see is the VM tab and it displays all the VMs in your Datacenter or Host. It also contains the following information for each VM:

- Host name.
- VM name.
- The PCI-E bus number and name of the mxGPU that has been assigned to it.
- Power state.

202		n Pro Settings		
Datecenter	AMD Datacenter			Exit Radeon Pro Set
Winto OL380 Templ	VM	MxGPU		
Win0-DL380-VM2 Win0-DL380-VM3 Win0-DL380-VM4				AUYOY RESTORE REFRESH AUTO ASSIGN AUTO REMOVE
Win7-DL180-Templa Win7-DL180-VM1	Host ^ VM	^ MtGPU	0 Power	
Win7-DL380-VM2 Win7-DL380-VM8	We	7 DURD VMI No MxGPU	<ul> <li>Power Off</li> </ul>	
3 Win7-DL380 VM4	We	7-DL380-VM2 No MxGPU	Power Off	
MRF WIO-VM+HV62	We	P DL380 VM3 No Mx0PU	<ul> <li>Power Off</li> </ul>	
W7-XD715-RE W7-XD79-Test1	We	7-DL380-VM4 No MxGPU	Power Off	
Wint0-RS1 Wint0-RS1-JD	MIT	P 0000/02/01/Toriga 57100X	- Power On	
Wint0 RSI-VM2 Wint0-TH2	wno	VMie-HVI2 0000/dc02.1176/ga 57000X	Power Off	
Wint0-TH2-VM1	W0-	30771-8F 0000-00:02.2 ( Tonga 57800X	Power Off	
LXA-Test1 or Datacenter	W03	X079-3mi1 0000.0tc02.317onga 57100X	Power Off	
	w	15-851 0000/8d:02.0   Tonga 57100X	<ul> <li>Power On</li> </ul>	
	wo-	10-851.JD 0000:0102.0   Tongs 57800X	Power On	
	w	15-R51-VM2 0000:0102:11Tenga 57100X	Power On	
			A	

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#### 5.3.1 Virtual Machine States

There are 3 possible states for a VM in the Radeon Pro Settings Plug-in:

- Under **Power**:
  - 1. Power Off: No mxGPU is assigned.
  - 2. Power On: mxGPU is assigned.
  - 3. Power On: VM is turned on.

Note: mxGPUs cannot be assigned to or removed from a VM that is powered on.

#### 5.3.2 Assigning mxGPUs to VMs

#### 1. Manually

Note: Configure the partitioning of MxGPUs before assigning. See Section 5.4.2

- Click on the **MxGPU** drop-down menu of a VM and select an MxGPU.
  - The drop-down menu displays all MxGPUs available to the VM
  - It also displays the available number of virtual mxGPUs out of the total configured number for each physical MxGPU.

Sphere Client	Mens • Q Searc	'n				C) Administrator/#VSPIERELOCAL ~ H
Datscenter		Radeon Pro Settin	gs			Dail Radeon
μ Wint0 DL380 Templ μ Wint0 DL380 VM1 μ Wint0 DL380 VM1	VM	MxGPU	J			
D Wint0 DL380-VM3 D Wint0 DL380-VM4 D Win70 DL380-VM4						APPLY RESTORE REF AUTO ASSIGN AUTO R
D WIN7-DL380-VM1	Host	^ VM ^	MxGPU		Power	
D Win7-DL380-VM2 D Win7-DL380-VM3		WE7-0.380 VM	No MeGPU	•	Power Off	
B Win7-DL380 VM4		We7 0.380 VM2	No MxGPU		Power Off	
MRF 1 W10-VM+HV62		Win7-DL380-VM3	No MxGPU		Power Off	
D W7-XD711-RF		We7-DL380-VM4	No MxGPU		Power Off	
Wint0-RS1 Wint0-RS1-JD	_	MIP	0000.0a.50.0   Tonga 57150 [Available:16/16] 0000.0c.00.0   Tonga 57150 [Available:16/16]		Power On	
Winto RSI-VM2		W10-VMe-HV62	0000.86.00.0   Tonga S7150 [Available: 16/16]		Power Off	
WIND-TH2 WIND-TH2-VM1		W7-X078-8F	0000.88.00.0 i Tonga S7150 (Available:16/16)	4	Power Off	
XA-Test1 Ior Datacenter		W7-30279-Test1	0000/dx/02.31Torga 57900X		Power Off	
		Wix12-RS1	0000.8±02.0   Tonga 57100X		Power On	
		WH10-R51-JD	0000/01/02.0   Tongo 57800X		Power On	
		Wix10-R51-VM2	0000:0102.1   Tenga 57100X	-	Pewer On	
					A	

Select No MxGPU to remove an mxGPU from a VM.

Click the **APPLY** button to assign a virtual mxGPU to the respective VMs from the selected MxGPU if the MxGPU has any available.

2. Automatically

Note: Configure the partitioning of MxGPUs before assigning. See Section 5.4.2.

## When Auto Assigning, it is recommended that all MxGPUs on a host are partitioned the same so that VMs have identical performance.

- Click the **AUTO ASSIGN** button to automatically assign mxGPUs to all VMs.
- Virtual mxGPUs will be assigned from the first MxGPU in a host that has available mxGPUs until the MxGPU has no more available mxGPUs. This continues until either all VMs have been assigned an mxGPU or there are no more available mxGPUs.
- Click the **AUTO REMOVE** button to automatically remove mxGPUs from all VMs.

Auto Assign and Auto Remove act on all VMs in a Datacenter while in the Datacenter view, but only act on VMs of a specific host when in a Host view.

#### **Additional Notes**

- VMs need to be powered off in order to be able to assign or remove an mxGPU.
- Only one mxGPU can be assigned to a VM at once. Consider reducing the number of partitions of the MxGPU for better graphics performance on the guest VM.

#### 5.4 The MxGPU Tab

The MxGPU tab displays all physical MxGPUs and the virtual mxGPUs partitioned from each MxGPU. It also contains the following information for each MxGPU:

- PCIE Bus No.
- MxGPU name.
- Power state.
- Name of VM assigned if the mxGPU is assigned to VM.

<b>U</b> 0 2	AMD Radeon Pro Settings		
AND Detecenter	AMD Datacenter		East Radeon Pro Settle
Winto DUSEO Templ     Winto DUSEO VMT     Winto DUSEO VMT     Winto DUSEO VM2     Winto DUSEO VMS     Winto DUSEO VM4	VM MxGPU Paritions	Apply to All MxGPUs	ANAL REPORT REPORT
BI WIN7-DL380 Templa D WIN7-DL380-VMI D WIN7-DL380-VM2 D WIN7-DL380-VM2 D WIN7-DL380-VM4 D WIN7-DL380-VM4 D WIN7-DL380-VM4	Partitions	Apply to hears MedRia      and	
51 W10 VM+ HV62 51 W7 X075 RF 51 W7 X075 Heat 52 W100 R51 53 W100 R51 JD 53 W100 R51 VM2		000044012 1000 100054012 1000 100054012 12000	
B Winto TH2 B Winto TH2-VMT B Winto TH2-VMT B Winto TH2-VMT B XA-Test Other Datacenter		00008-003 WHS MAX-MAX-MAX Impart MV at WHS MAX-MAX-MAX (Marked School) Maximum T	
	· ·	00006:00.2 W7X071185 Tanas X7V 64, (reaches 17960/) 00006:02.3	

#### 5.4.1 mxGPU States

There are 3 possible states for a virtual mxGPU in the Radeon Pro Settings Plug-in

- 1. Not Assigned.
- 2. Assigned Assigned but VM is powered off.
- 3. In Use Assigned and VM is powered on.

#### 5.4.2 Configuring MxGPUs

There are 3 different levels of sliders to configure the partitioning of MxGPUs.

• MxGPU slider: change the configuration of a single MxGPU:



• **Host slider**: click the checkbox to enable this slider and change the configuration of all MxGPUs on the host:

Partitions: 4	Apply to host's MxGPUs	APPLY
	XIN IXIN DA	

(Note: this slider is only available in the Datacenter view)

• **Master slider**: click the checkbox to enable this slider and change the configuration of all MxGPUs:

VM	MxGPU	
Partitions:		✓ Apply to All MxGPUs

This slider will apply the configuration to all MxGPUs in the Host or Datacenter.

#### **Additional Notes**

- MxGPUs with mxGPUs in use cannot be reconfigured.
- If you plan to use Auto Assign, it is recommended to use the Host or Master slider to configure MxGPUs to ensure that all assigned VMs have identical performance.
- In the case where an MxGPU with mxGPUs assigned is reconfigured to a lower number of mxGPUs such that some of the assigned mxGPUs are no longer valid, the invalid mxGPUs are automatically removed from the VMs. For this reason, it is recommended to configure all MxGPUs first before assigning mxGPUs to VMs.

### 6 Known Issues

- The plugin is currently not compatible with the vSphere Web Client (Flash)
- The current VMware vSphere Client (Build 4598948) doesn't have the functionality to detect PCI pass-through devices in VM settings. To confirm that your mxGPU assignment was successful, power on the VM and check device manager or log in to the VMware vSphere Web Client (Flash) and check the VM setting there.
- The new AMDGPUV host driver for ESXi host has the functionality to repartition MxGPUs without the requirement of a reboot of the host to enable a smoother user experience, but this requires that all 16 virtual mxGPUs are visible to the VMware ESXi host system at all times. This means that only the first N partitions are usable and the rest are not usable, where N is the number of partitions configured on the MxGPU. It is advised to use the Radeon Pro Settings interface to make all changes since it will only detect usable mxGPUs.

## 7 Troubleshooting

### 7.1 XML Errors when Registering the plugin

1. Invalid Property: "extension.key"

Managed C Managed O Method: Re	Managed Object Type: ManagedObjectReference:ExtensionManager Managed Object ID: ExtensionManager Method: RegisterExtension								
void Regist	terE	ctension							
Parameters									
NAME		ТҮРЕ	VALUE						
extension (requ	extension (required) Extension		<extension> <description> <label>AHD Radeon Pro Settings</label> <summary>MxGPU Control Panel for vSphere Client</summary> </description></extension>						
			Invoke Method						
Method Invocat	tion Re	sult: Invalid	Argument						
NAME	TYPE		VALUE						
faultCause		MethodFau	It Unset						
faultMessage	Locali	izableMessage	[] Unset						
invalidProperty		strin	g "extension.key"						

This error may occur if the plugin is already registered. Check the extension list

Home				Logout
Managed Managed	Object Typ Object ID: E	e: Mana xtensionM	gedObjectReference: lanager	:ExtensionManager
Properties				
NAME	түре	VALUE		
extensionList	Extension[]	extensionLis	["com.vmware.vim.sms"]	Extension
		extensionLis	t["com.vmware.vim.vsm"]	Extension
		extensionLis	t["VirtualCenter"]	Extension
		extensionLis	t["com.vmware.vim.stats.report"]	Extension
		extensionLis	t["com.vmware.vim.sps"]	Extension
		extensionLis	t["com.vmware.vim.vcha"]	Extension
		extensionLis	t["hostdiag"]	Extension
		extensionLis	t["com.vmware.vim.ls"]	Extension
		extensionLis	t["com.vmware.vim.eam"]	Extension
		extensionLis	t["com.vmware.rbd"]	Extension
		extensionLis	[ com.vmware.vmcam ]	Extension
		extensionLis	ti com.amd.mxdput i	Extension
		extensionLis	t" com.vmware.vsan.neatri 1	Extension
		extensionLis	ti com.vmware.vcintegricy i	Extension
		extensionLis	["com umware ouf"]	Extension
		extensionLis	t["com vmware.d"]	Extension
		(less)		
RETURN TYPE			NAME	
		Extension	FindExtension	
		string	GetPublicKey	
Extension	ManagerInAlloc	ationUsage[]	OuervExtensionInAllocationUsage	A
ManagedObjec	Reference:Man	agedEntity[]	OueryManagedBy	<u>-</u>
void RegisterExtension		RegisterExtension		
		void	SetExtensionCertificate	
		void	SetPublicKey	
		void	UnregisterExtension	
		void	UpdateExtension	

A similar error is also seen on vCenter 6.0 when registering the plugin without a connected vSphere Client (HTML5) Appliance. Consult VMware documentation on vSphere Client (HTML5) Fling.

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#### 7.2 Plugin Errors

- 1. Plugin is unresponsive or fails to load data.
  - a. Exit the plugin by cliking "Exit Radeon Pro Settings" and then relaunch the plugin.
  - b. Log out of the vSphere client, and log back in
    - i. Sometimes the vSphere backend session will end due to inactivity. If you are seeing loading issues after some period of inactivity, simply logging out and logging back in should reload the plugin.
    - ii. This will also refresh any caches in the backend.
  - c. Restart the vSphere Client
- 2. Radeon Pro Settings will not adjust the number of MxGPU partitions
  - a. Make sure that the service that handles CIM requests by running the below command on the host.

/etc/init.d/sfcbd-watchdog status

b. If the service is not running, execute the following commands to start the service

esxcli system wbem set -enable true

/etc/init.d/sfcbd-watchdog start