

Virtual Machines

Armor Knowledge Base

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To fully use this screen, you must have the following permissions assigned to your account:

- Read Workload(s)
- Write Workload
- Read Virtual Machine Stats
- Read Virtual Machine(s)
- Write Virtual Machine
- Scale Virtual Machine
- Read Location(s)
- Read Virtual Data Centers
- Read Tasks
- Write Tasks
- Read Storage
- Read product catalog
- Read Network IP
- Read Network NAT
- Read Entity Metadata
- Read Log Management Plan Selection
- Write Orders
- Read Orders
- Read Notification(s)



The **Virtual Machine** screen also displays:

- Load Balancer
- Backup & Recovery Server
- Persistent Data Encryption Manager
- Advanced WAF

Available Virtual Machines

Armor offers the following types of virtual machines:

Windows

Operating system	<ul style="list-style-type: none">• Windows
Version	<ul style="list-style-type: none">• 2008 R2 Datacenter• 2008 R2 Standard• 2008 R2 Web• 2012 Datacenter• 2012 R2 Standard• 2012 Standard• 2016 Standard (Desktop Experience)



Windows servers require a minimum of 2 CPU and 2GB of memory.



2008 R2 Web and 2008 R2 Standard does not support CPUs 12 and above.

CPU	• 2	• 4	• 8	• 12	• 16
Memory (GB)	<ul style="list-style-type: none"> • 2 • 4 • 6 • 8 • 12 • 16 	<ul style="list-style-type: none"> • 4 • 8 • 12 • 16 • 24 • 32 • 64 	<ul style="list-style-type: none"> • 8 • 16 • 24 • 32 • 48 • 64 	<ul style="list-style-type: none"> • 12 • 24 • 36 • 48 • 72 • 96 	<ul style="list-style-type: none"> • 16 • 32 • 48 • 64 • 96

Linux

Operating system	• CentOS	• RHEL	• Ubuntu
Version	<ul style="list-style-type: none"> • 6 • 7 	<ul style="list-style-type: none"> • 6 • 7 	<ul style="list-style-type: none"> • 16.04 • 18.04

Linux servers require a minimum of 1 CPU and 2GB of memory.

CPU	• 1	• 2	• 4	• 8	• 12	• 16
Memory (GB)	<ul style="list-style-type: none"> • 2 • 4 • 6 • 8 	<ul style="list-style-type: none"> • 2 • 4 • 6 • 8 • 12 • 16 	<ul style="list-style-type: none"> • 4 • 8 • 12 • 16 • 24 • 32 • 64 	<ul style="list-style-type: none"> • 8 • 16 • 24 • 32 • 48 • 64 	<ul style="list-style-type: none"> • 12 • 24 • 36 • 48 • 72 • 96 	<ul style="list-style-type: none"> • 16 • 32 • 48 • 64 • 96

Review Virtual Machines

1. In the Armor Management Portal (AMP), in the left-side navigation, click **Infrastructure**.
2. Click **Virtual Machines**

Column	Description
Name	This column displays the name of the virtual machine.
Primary IP	This column displays the primary IP address associated with the instance.
Type	This column display the type of instance. More common types are VM and Log Relay .
Date Created	This column displays the date the virtual machine was created in AMP.
State	The security status of the instance, in relation to the installed agent. There are three states: <ul style="list-style-type: none"> • Unprotected indicates the agent is not installed in the instance. <ul style="list-style-type: none"> • Instances without an agent will be labeled as Unprotected. All instances from the public cloud account will be displayed. • Needs Attention indicates that the agent is installed, but has not properly communicated (heartbeat) with Armor. • OK indicates that the agent is installed and has communicated (heartbeat) with Armor.

Power	This column displays the power status of the virtual machine: <ul style="list-style-type: none"> • A green icon indicates that the virtual machine is powered on. • A red icon indicates that the virtual machine is powered off. • An orange icon indicates that the virtual machine is in a different (inconsistent) power state than the other virtual machines in the same vApp. • An infinite loop icon indicates that the virtual machine is pending installation.
Tags	This column displays any tags that have been added to the virtual machine on the Tags + Notes screen.

Review Details for a Specific Virtual Machine

1. In the Armor Management Portal (AMP), in the left-side navigation, click **Infrastructure**.
2. Click **Virtual Machines**.
3. Locate and select the desired instance.

Field	Description
Type	This entry displays the type of instance, specific to the offerings offered by your public cloud provider, such as EC2 instance for AWS. <ul style="list-style-type: none"> • More common types are VM and Log Relay.
Provider	This entry displays Armor Complete , the provider for the instance.
Instance ID	This entry displays the ID associated with the virtual machine.
Instance State	This entry displays the security status of the virtual machine.
Region	This entry displays the data center that hosts the virtual machine.
Availability Zone	This entry displays the available zone within the specified region.
Workload	This entry displays the workload associated with the virtual machine.
Storage	This entry displays the disk storage amount.
Original OS Version	This entry displays the original operating system for the virtual machine.
Current OS Version	This entry displays the current operating system for the instance or virtual machine.
Public IPS	This entry displays the public IP address(es) associated with the virtual machine.
Primary Private IP	This entry displays the private IP address associated with the virtual machine.

Create a Virtual Machine

Create a Virtual Machine with a New Workload

1. In the Armor Management Portal, in the left-side navigation, click **Infrastructure**.
2. Click **Virtual Machines**.
3. Hover over the plus (+) icon, and then click the **Virtual Machine** icon.
 - If you do not have any virtual machines listed, then click **Deploy New**, and then select **Virtual Machine**.
4. Locate and select the desired operating system and operating system version.
5. On the right side, use the **Region** drop-down menu to select the data center to host your virtual machine.
6. Select the desired virtual machine based on your CPU and memory needs (GB).
 - You can click **High CPU** or **High Memory** to filter the list of virtual machines. You can also click **Show All Options** to see every virtual machine offering.
 - Armor labels virtual machines by CPU and memory features. For instance, **2x4** indicates that the virtual machine has 2 CPU and 4 GB of memory.
7. In **Name**, enter a descriptive name for your virtual machine.
8. In **Workload**, select **New Workload**.
9. In **New Workload Name**, enter a descriptive name.
10. In **New Tier Name**, enter a descriptive name.
11. In **Location**, select and verify the data center to host your virtual machine.
12. Under **Access Credentials**, note your username to access the virtual machine.
13. In **Password**, enter a secure password to use to access the virtual machine.
 - Your password must contain:

- An upper-case letter
 - A lower-case letter
 - A number
 - A special character: ! @ # \$ % ^ * () { } []
- You can also click **Generate Password** to allow Armor to create a password.
- (Optional) For additional storage, under **Storage Substrate** and **Disk Size**, select your desired storage, and then click **Add Disk**.
 - On the right-side menu, review the pricing information, and then click **Purchase**.
 - When you order a virtual machine, you are also ordering Intelligence Security Model (ISM) for the virtual machine. Prices for ISM will vary based on the number of virtual machines you have ordered. IMS pricing is based on the following tiered structure:

Tier	Number of virtual machines
1	1 - 10
2	11 - 25
3	26 - 100
4	101 - 250
5	251 - 500
6	500 +

- To view the status of your newly created virtual machine, in the left-side navigation, click **Infrastructure**, click **Virtual Machines**, and then search for your newly created virtual machine.



After you create a virtual machine, Armor recommends that you:

- Create a firewall rule**

- By default, outbound and inbound traffic are blocked from virtual machines. To allow traffic, you must create a firewall rule. To learn more, see [Firewall Rules](#).

- Download the SSL/VPN client.**

- To access the virtual machine, you must download the SSL/VPN client. To learn more, see [SSL VPN](#).

Create a Virtual Machine with an Existing Workload



If you create a virtual machine with an existing workload, then your **Location** and **Virtual Data Center** will be automatically selected.

- In the Armor Management Portal, in the left-side navigation, click **Infrastructure**.
- Click **Virtual Machines**.
- Hover over the plus (+) icon, and then click the virtual machine icon.
- Locate and select the desired operating system and operating system version.
- Select the desired virtual machine based on your CPU and memory needs (GB).
 - You can click **High CPU** or **High Memory** to filter the list of virtual machines. You can also click **Show More Options** to see every virtual machine offering.
 - Armor labels virtual machines by CPU and memory features. For instance, **2x4** indicates that the virtual machine has 2 CPU and 4 GB of memory.
- In **Name**, enter a descriptive name for your virtual machine.
- In **Workload**, select an existing workload.
- In **Workload Tier**, select an existing tier.
 - To create and use a new tier, select **New Tier**, and then in **New Tier Name**, enter a descriptive name.
- Under **Access Credentials**, note your username to access the virtual machine.
- In **Password**, enter a secure password to use to access the virtual machine.
 - Your password must contain:
 - An upper-case letter
 - A lower-case letter
 - A number
 - A special character: ! @ # \$ % ^ * () { } []
 - You can also click **Generate Password** to allow Armor to create a password.
- (Optional) For additional storage, under **Storage Substrate** and **Disk Size**, select your desired storage, and then click **Add Disk**.
- On the right-side menu, review the pricing information, and then click **Purchase**.
 - When you order a virtual machine, you are also ordering Intelligence Security Model (ISM) for the virtual machine. Based on the number of virtual machines that you order, the price of ISM may change.
- To view the status of your newly created virtual machine, in the left-side navigation, click **Infrastructure**, click **Virtual Machines**, and then search for your newly created virtual machine.



After you create a virtual machine, Armor recommends that you:

1. Create a firewall rule
 - By default, outbound and inbound traffic are blocked from virtual machines. To allow traffic, you must create a firewall rule. To learn more, see [Firewall Rules](#).
2. Download the SSL/VPN client.
 - To access the virtual machine, you must download the SSL/VPN client. To learn more, see [SSL VPN](#).

Edit a Virtual Machine

Reboot, Reset or Turn Off a Virtual Machine



These instructions only apply to virtual machines in a **Powered On** status.

1. In the Armor Management Portal (AMP), in the left-side navigation, click **Infrastructure**.
2. Click **Virtual Machines**.
3. Locate and select the desired virtual machine.
 - You can also hover over the desired virtual machine, and then click the vertical ellipses that appear.
4. Next to **Instance State**, click the vertical ellipses.
5. Select and confirm the action:
 - **Power Off** - This action will turn off your virtual machine.
 - **Force Power Off** - This action will forcefully turn off your virtual machine if **Power Off** does not respond.
 - **Shutdown Guest** - This action will turn off the operating system on your virtual machine.
 - **Reboot Guest** - This action will reset the operating system on your virtual machine.
 - **Reset** - This action will reboot your virtual machine.



If the state of your virtual machine does not change after 5 minutes, please contact Armor Support.

Rename a Virtual Machine

1. In the Armor Management Portal (AMP), in the left-side navigation, click **Infrastructure**.
2. Click **Virtual Machines**.
3. Locate and select the desired virtual machine.
4. Hover over the gear icon, and then click the pencil icon.
5. In **VM Name**, enter a descriptive name, and then click **Rename**.

Resize a Virtual Machine

You can use these instructions to learn how to upgrade or downgrade a virtual machine:

Upgrade a Virtual Machine



If you upgrade a virtual machine's memory or CPU, then you will need to reboot your virtual machine.



When you upgrade a virtual machine, the changes will take place immediately. Your next bill will be pro-rated to reflect this upgrade.

1. In the Armor Management Portal (AMP), in the left-side navigation, click **Infrastructure**.
2. Click **Virtual Machines**.
3. Locate and select the desired virtual machine.
4. Next to **Instance Type**, click **Resize**.
5. Click **Increase CPU / RAM**.
6. Select the desired virtual machine type, and then review the information on the right screen.
7. Click **Resize VM**.
8. Click **Resize VM** again.

Downgrade a Virtual Machine



When you downgrade a virtual machine, the changes will take place immediately. Also, to complete the downgrade, your virtual machine will be rebooted.

Your bill will be pro-rated to reflect this change.

1. In the Armor Management Portal (AMP), in the left-side navigation, click **Infrastructure**.
2. Click **Virtual Machines**.
3. Locate and select the desired virtual machine.
4. Next to **Instance Type**, click **Resize**.
5. Click **Decrease CPU / RAM**.
6. Select the desired virtual machine type, and then review the information on the right screen.
7. Click **Resize VM**.
8. Click **Resize VM** again.

Add Disk Space to an Existing Virtual Machine

You can add the following types of storage to your virtual machine:

Storage Type	Minimum (in GB)	Maximum (in GB)
RAW	250	2000
SSD	10	500
Fluid	50	2000

1. In the Armor Management Portal (AMP), in the left-side navigation, click **Infrastructure**.
2. Click **Virtual Machines**.
3. Locate and select the desired virtual machine.
4. Next to **Storage**, click **Manage Storage**.
5. Click **Add A Disk**.
6. Select your desired **Storage** and **Disk Size**, and then click **Add Disk**.

Move a Virtual Machine to a Different Workload

You can use these instructions to move a virtual machine from one workload into a different, existing workload.



You cannot create a workload without a virtual machine. In other words, you cannot create an empty workload. If you have not created additional workloads, see [Workloads](#).

1. In the Armor Management Portal (AMP), in the left-side navigation, click **Infrastructure**.
2. Click **Workloads**.
3. Select the original workload that contains the desired virtual machine.
4. Hover over the desired virtual machine, and then click the vertical ellipses.
5. Click **Move**.
6. Select the desired workload and tier.
7. Click **Move**.

Delete a Virtual Machine



Armor recommends that you regularly review, and possibly remove, virtual machines that are offline. These virtual machines may affect the data that appears in the **Security Dashboard**.



You can only delete virtual machines that are offline (**Power Off**).



If you delete a virtual machine before the end of the billing cycle, you will still be charged for the full amount; however, in the next invoice, you will receive a credit to offset the cost.

Additionally, any add-on products or add-on subscriptions associated with the deleted virtual machine must be canceled separately.

1. In the Armor Management Portal (AMP), in the left-side navigation, click **Infrastructure**.
2. Click **Virtual Machines**.
3. Locate and hover over the desired virtual machine.

4. Click the vertical ellipses.
5. Click **Power Off**.
6. Click **Power Off** again.
7. Hover over the virtual machine, and then click the vertical ellipses.
8. Click **Delete**.
9. Click **Delete VM**.

View CPU and Memory Information

You can use the **Monitoring** section to view the **CPU utilization** (displayed in percentages) and **memory utilization** (measured in gigabytes) for a specified virtual machine.

1. In the Armor Management Portal (AMP), in the left-side navigation, click **Infrastructure**.
2. Click **Virtual Machines**.
3. Locate and select the desired virtual machine.
4. Click **Monitoring**.
5. (Optional) To view usage information from a particular time period, click the calendar icon, select a date range, and then click **Apply**.
6. (Optional) In the graph, hover over a particular point to view the specific usage information for a particular date and time.



Based on the date and time range that you select, the display settings of the graphs will update accordingly.

Selected time range	Initial range of data returned by AMP	Displayed interval on the x-axis	Sample image
Less than or equal to an hour	1 hour	1-minute intervals	
More than an hour, but less than 24 hours	1 day	10-minute intervals	

More than 24 hours, but less than 7 days

1 week

2-hour intervals

OVERVIEW NETWORKING STORAGE **MONITORING** BACKUP + RECOVERY TAGS + NOTES

07/11/2019 - 07/13/2019

07/11/2019 07/13/2019

10 :00 AM 11 :30 AM

JUN 2019 JUL 2019

Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
26	27	28	29	30	31	1	30	1	2	3	4	5	6
2	3	4	5	6	7	8	7	8	9	10	11	12	13
9	10	11	12	13	14	15	14	15	16	17	18	19	20
16	17	18	19	20	21	22	21	22	23	24	25	26	27
23	24	25	26	27	28	29	28	29	30	31	1	2	3
30	1	2	3	4	5	6	4	5	6	7	8	9	10

CANCEL APPLY

More than 7 days, but less than 30 days

30 days

12-hour intervals

07/01/2019 - 07/13/2019

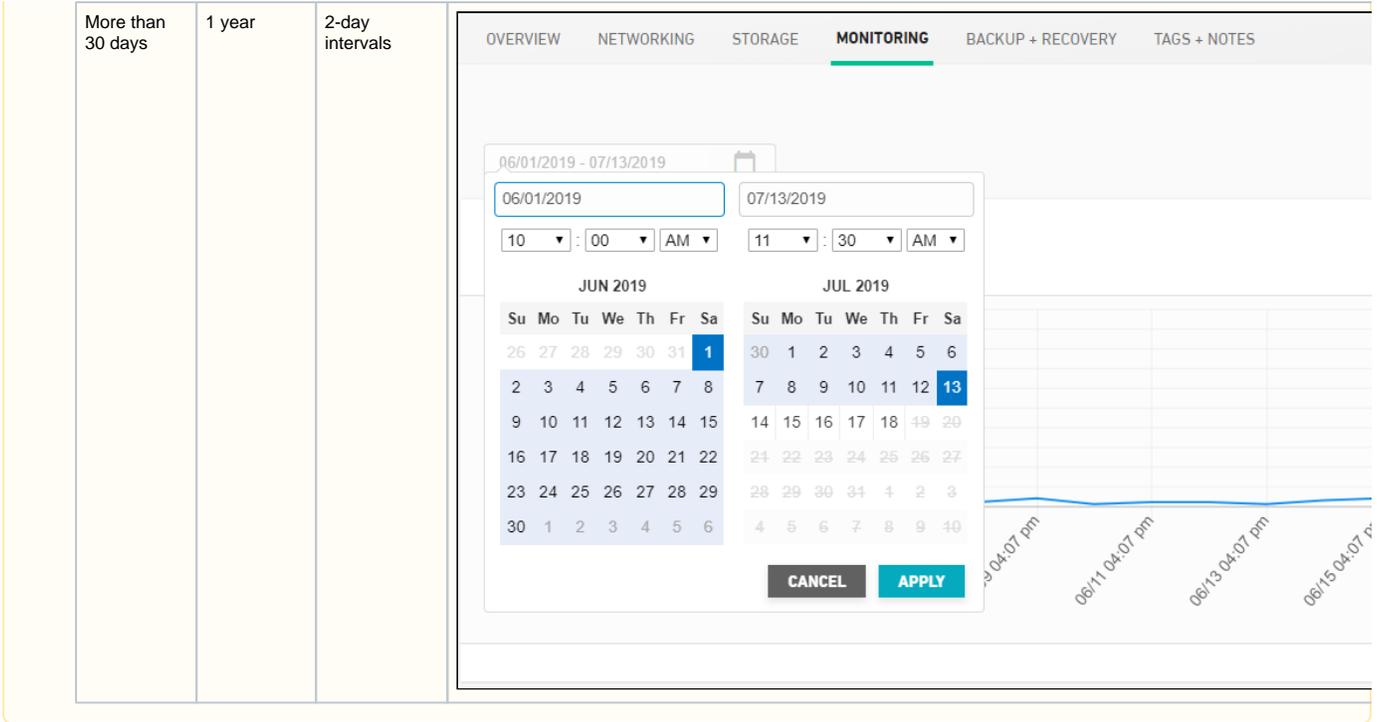
07/01/2019 07/13/2019

10 :00 AM 11 :30 AM

JUN 2019 JUL 2019

Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
26	27	28	29	30	31	1	30	1	2	3	4	5	6
2	3	4	5	6	7	8	7	8	9	10	11	12	13
9	10	11	12	13	14	15	14	15	16	17	18	19	20
16	17	18	19	20	21	22	21	22	23	24	25	26	27
23	24	25	26	27	28	29	28	29	30	31	1	2	3
30	1	2	3	4	5	6	4	5	6	7	8	9	10

CANCEL APPLY



Add Tags and Notes to a Virtual Machine

You can use the **Tags + Notes** section to add tags to your virtual machine, to improve categorization and search capabilities. You can also add notes to help track changes and tasks related to a virtual machine.

1. In the Armor Management Portal (AMP), in the left-side navigation, click **Infrastructure**.
2. Click **Virtual Machines**.
3. Locate and select the desired virtual machine.
4. Click **Tags + Notes**.
 - a. In the **Tags** section, enter the desired tag, then click the (+) symbol to add.
 - i. Multiple tags may be added.



To remove a tag, click the "X" next to the tag.

- b. In the **Notes** section, enter the desired note, then click **Save Changes**.

Related Documentation

- [Advanced Backup](#)
- [Armor Marketplace](#)
- [Continuous Server Replication - Disaster Recovery](#)
- [Continuous Server Replication - Disaster Recovery - for Upgraded Users](#)
- [FAQs for Upgraded Users with Disaster Recovery](#)
- [Firewall Rules](#)
- [Install SSL VPN for Ubuntu 16.x](#)
- [Install SSL VPN for Ubuntu 18.x](#)
- [IP Address](#)
- [Workloads](#)



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