Oracle® SD-WAN Aware
Installation and Upgrade Guide

Release 8.1

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Oracle SD-WAN Aware Installation and Upgrade Guide, Release 8.1

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About This Document

The purpose of this document is to provide the reader with an understanding of how to install Talari Aware on VMware vSphere or in the Amazon Web Services (AWS) Cloud. It covers requirements for installing the Aware VM server and instructions on how to deploy the Aware application.

The information provided in this document is current as of Talari Aware 3.1 GA.

Audience

This document was designed for network administrators.

References

The following documents are available on the Talari Support Portal (http://www.talari.com/support):

- *Talari Glossary*
- *Talari Aware 3.1 GA Release Notes*
- *Talari Aware 3.1 New Features Guide*

Request for Comments

We value the opinions and experiences of our readers. To offer feedback or corrections for this guide, please contact Talari Networks (http://www.talari.com/support).

1
Aware Installation Requirements

Virtual Machine Requirements

1. Processor
   - 4 Core, 3 GHz (or equivalent) or better for the server managing up to 64 Sites
   - 8 Core, 3 GHz (or equivalent) or better for the server managing up to 128 Sites
   - 16 Core, 3 GHz (or equivalent) or better for the server managing up to 256 Sites
   - 16 Core, 3 GHz (or equivalent) or better for the server managing up to 550 Sites
2. Memory
   - A minimum of 8GB of RAM is recommended for the VM managing up to 64 Sites
   - A minimum of 16GB of RAM is recommended for the VM managing up to 128 Sites
   - A minimum of 32GB of RAM is recommended for the VM managing up to 256 Sites
   - A minimum of 32GB of RAM is recommended for the VM managing up to 550 Sites
3. Operating System
   - VMware Hypervisor ESXi 5.1.0 or higher
   - An environment running Microsoft Windows to perform the Aware installation
4. Disk Space

> **Note:**
>
> Aware only supports locally-attached storage due to application performance requirements.

The Aware VM image itself is about 500 MB. When you install the image, it creates a default 8 GB disk containing the Aware program, supporting operating system files, Maps, Configurations, Views, and default data storage for polled Talari Appliance data. You will need to migrate from the default data disk to a disk that is sized per your Aware deployment.

> **Note:**
>
> Disk space requirements are highly dependent on the number of Sites, WAN links, and Network Services configured in your Talari WAN. The table below provides guidelines for storage required based on the scale of your Talari WAN.

Table 1-1 Database Sizing Parameters

Talari WAN Scale			Storage Size for up to One Year of Data
Max # of Client Sites	Average # of WAN Links per Site	Average # of Network Services[1] per Site	
32	2	4	1.2 TB
32	4	8	1.8 TB
32	8	16	5.3 TB
64	2	4	1.5 TB
64	4	8	2.6 TB
64	8	16	9.6 TB
96	2	4	1.8 TB
96	4	8	3.3 TB
96	8	16	14.0 TB
128	2	4	2.0 TB
128	4	8	4.1 TB
128	8	16	18.0 TB
192	2	4	2.6 TB
192	4	8	5.6 TB
192	8	16	27.0 TB
256	2	4	3.0 TB
256	4	8	7.2 TB
256	8	16	35.0 TB
550	2	4	6.0 TB
550	4	8	14.4 TB
550	8	16	70 TB

[1] Static Conduit Service, Dynamic Conduit Service, Intranet Service, Internet Service

The database size also considers the space required for database migration during software updates. Database configuration options within Aware allow for older data to be automatically deleted. The numbers below scale by the number of months that data is stored. For example, storing six months of data requires half the space identified in the table above for storing one year of data.

Note: Due to the write-heavy nature of time-series data and the database, it is recommended that you do not use RAID-5 with Aware. RAID-1 or RAID-1+0 are recommended if you plan to implement a RAID. In addition, Logical Volume Manager (LVM) adds a small but appreciable amount of overhead, so using LVM is not recommended.

Amazon Web Services Requirements

- A 64-bit Talari Aware Amazon Machine Image (AMI)
- An Amazon Virtual Machine and EC2 Instance that meets the following requirements based on the scale of the Talari WAN to be managed by Cloud Aware:

Table 1-2 Amazon Web Services Requirements

Talari WAN Scale			Amazon EC2 Instance		
Max # of Client Sites	Average # of WAN Links per Site	Average # of Network Services[1] per Site	Instance Type	Storage Volume Type	Storage Size for up to One Year of Data
64	2	4	m4.xlarge	General Purpose	1.5 TB
64	4	8	m4.xlarge	General Purpose	2.6 TB
64	8	16	m4.xlarge	General Purpose	9.6 TB
128	2	4	m4.2xlarge	General Purpose	2.0 TB
128	4	8	m4.2xlarge	General Purpose	4.1 TB
128	8	16	m4.2xlarge	General Purpose	18.0 TB
256	2	4	m4.4xlarge	General Purpose	3.0 TB
256	4	8	m4.4xlarge	General Purpose	7.2 TB
256	8	16	m4.4xlarge	General Purpose	35.0 TB
550	2	4	m4.4xlarge	General Purpose	6.0 TB
550	4	8	m4.4xlarge	General Purpose	14.4 TB
550	8	16	m4.4xlarge	General Purpose	70 TB

[1] Static Conduit Service, Dynamic Conduit Service, Intranet Service, Internet Service

Network Bandwidth Requirements

The Aware VM requires network bandwidth for polling appliances. The table below shows the total network overhead for polling variable sized networks with a five-minute polling interval and the configured Bandwidth Limit rate that is required to poll the data within five minutes. The Bandwidth Limit rate is controlled by the Aware VM and is configured from the **Manage** tab and the **APN Discovery** tile if the default value is not sufficient.

Note: Network Bandwidth requirements are highly dependent on the number of Sites, WAN links, and Network Services configured in your Talari WAN. A typical deployment can use the default value, which limits the total Aware network bandwidth to 1000kbps. Configure your Aware network use based on the scale of your network.

Table 1-3 Network Bandwidth Requirements

Talari WAN Scale			Data Collected per 5-minute Poll	Bandwidth Rate to Configure per 5-minute Poll (Kbps)
Max # of Client Sites	Average # of WAN Links per Site	Average # of Network Services[1] per Site		
32	2	4	1.2 MB	Default 1000
32	4	8	3.6 MB	Default 1000
32	8	16	20.0 MB	Default 1000
64	2	4	2.3 MB	Default 1000
64	4	8	7.2 MB	Default 1000
64	8	16	40.0 MB	2000
96	2	4	3.5 MB	Default 1000

Table 1-3 (Cont.) Network Bandwidth Requirements

Talari WAN Scale			Data Collected per 5-minute Poll	Bandwidth Rate to Configure per 5-minute Poll (Kbps)
Max # of Client Sites	Average # of WAN Links per Site	Average # of Network Services[1] per Site		
96	4	8	10.8 MB	Default 1000
96	8	16	60.0 MB	3000
128	2	4	4.6 MB	Default 1000
128	4	8	14.4 MB	Default 1000
128	8	16	80.0 MB	4000
192	2	4	6.9 MB	Default 1000
192	4	8	21.6 MB	2000
192	8	16	120.0 MB	6000
256	2	4	9.2 MB	Default 1000
256	4	8	28.8 MB	2000
256	8	16	160 MB	10000
550	2	4	18.4 MB	Default 1000
550	4	8	57.6 MB	2000
550	8	16	320 MB	10000

[1] Static Conduit Service, Dynamic Conduit Service, Intranet Service, Internet Service

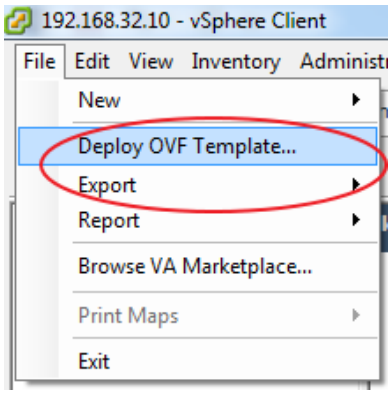
2
Install Aware On a New VM Using VMware

Before attempting this procedure, make sure your server meets the minimum requirements. The following procedure must be performed from a Microsoft Windows environment.

Import the Talari Aware ISO into vSphere Client

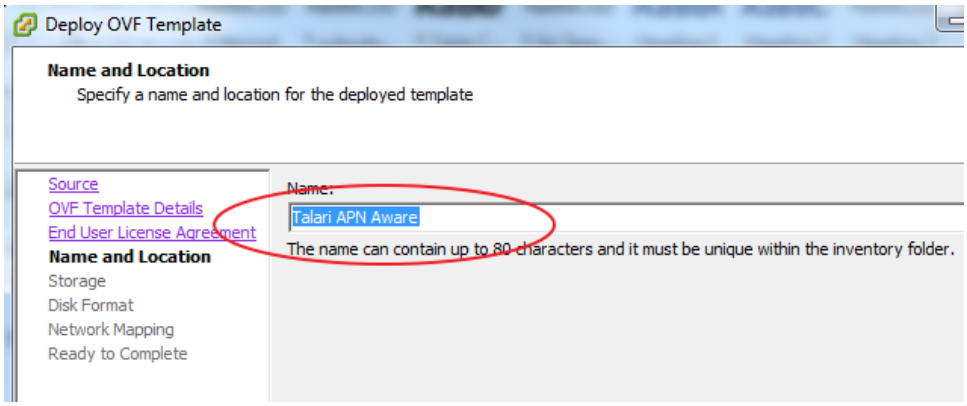
1. Open any web browser and go to the Talari Support site (http://www.talari.com/support). Login with your Talari Support credentials.
2. Click on the **Talari Aware** link and then click on the link to the release you plan to upgrade to.
3. Click on the **Talari Aware VM Image** (full VM Install) link to download the software update file (e.g., **APN_Aware_Aware_R1_3_GA_H1_04012015_nmsv1_vmware.ova**).
4. Start and log in to the vSphere Client program.
5. When the start screen of the vSphere Client opens, click on **File**, then **Deploy OVF Template...**

Figure 2-1 Deploy OVF Template



6. Browse to the location of the Aware VM Image (.ova package) that was downloaded from the Talari Support portal.
7. Click **Next** and a screen will display information for the VM being imported.
8. Click **Next** and a screen will display the End User License Agreement. Click **Accept**.
9. Click **Next** and the **Name and Location** screen displays a default name for the VM. Change the name if desired and click **Next**.

Figure 2-2 Name the VM



10. Accept the defaults on the next three screens by clicking **Next**, then click **Finish**. This will have vSphere create the VM.

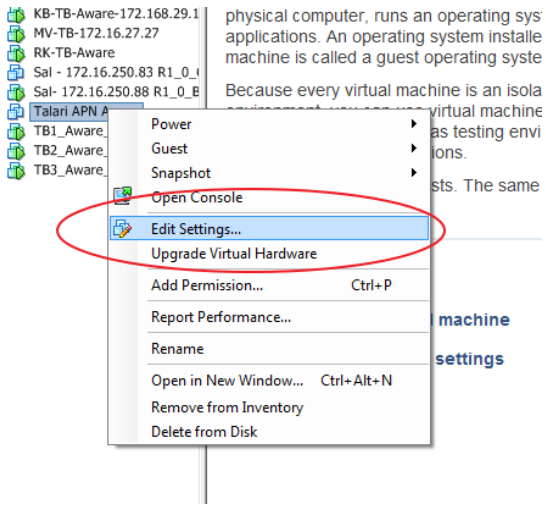
> **Note:**
>
> Decompressing the disk image onto the server can take several minutes.

> **Note:**
>
> If this is the first time you've used the vSphere Client, you may need to click on the **Inventory** icon, identify the server, and expand its inventory list.

Configure the VM

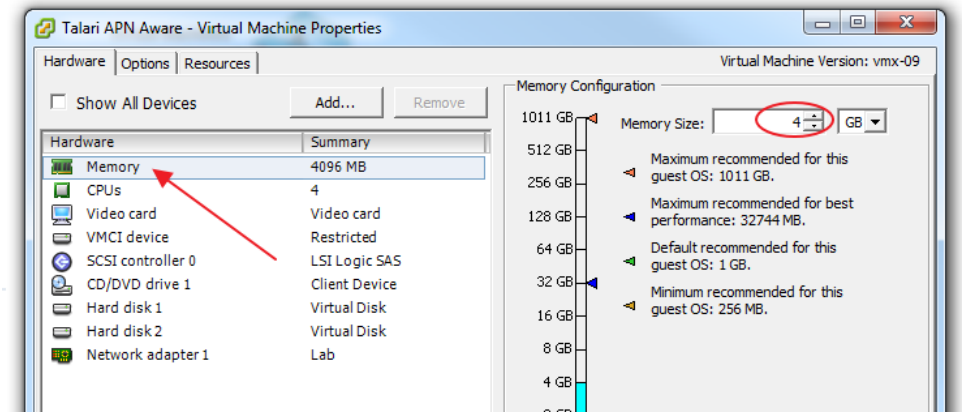
1. From the inventory list, right click on the new VM and select **Edit Settings…** from the menu.

Figure 2-3 Edit VM Settings



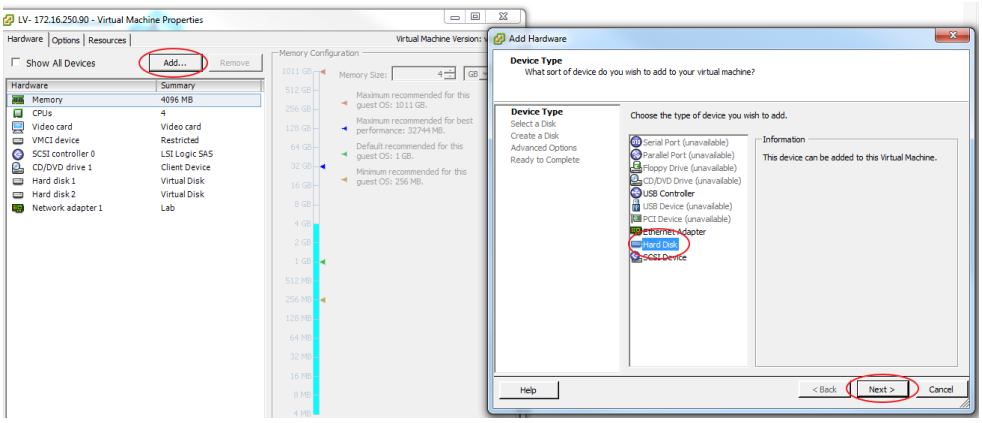
2. On the right side of the **Virtual Machine Properties** screen, change the **Memory Size**.

Figure 2-4 Adjust Memory Size



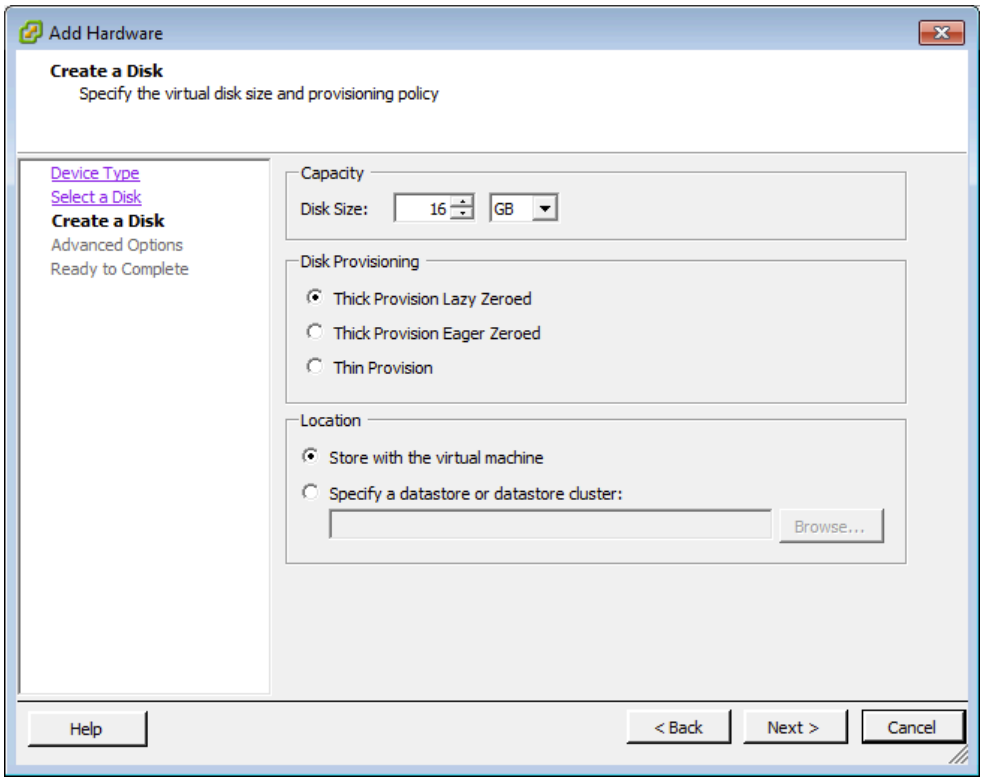
3. Click on **Add…** When the **Add Hardware** screen opens, select **Hard Disk** and click **Next**.

Figure 2-5 Add Hard Disk



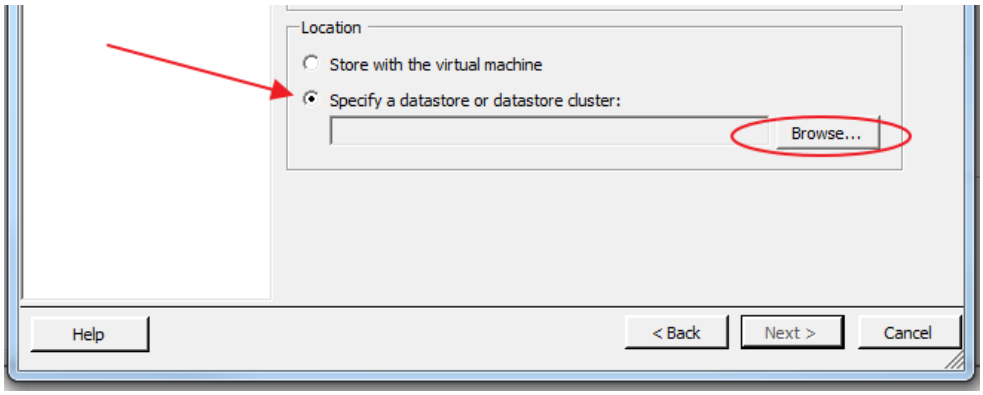
4. Click the radio button for **Create a new virtual disk** and click **Next**.
5. On the **Create a Disk** screen, change the **Disk Size**.

Figure 2-6 Adjust Disk Size



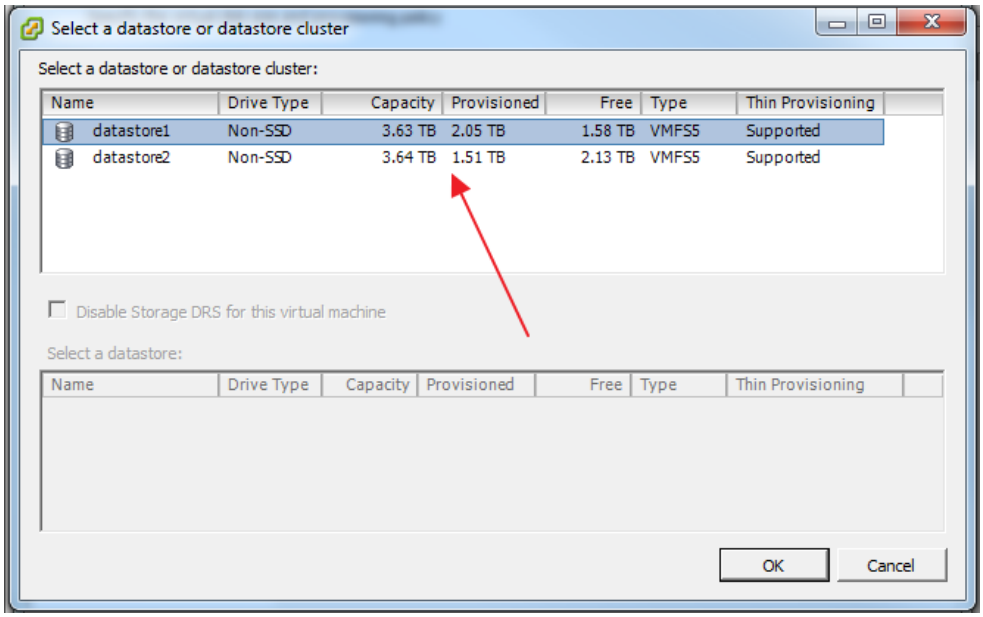
6. In the **Location** section of the **Create a Disk** screen, click the **Specify a datastore or datastore cluster** radio button and click **Browse**.

Figure 2-7 Specify Datastore



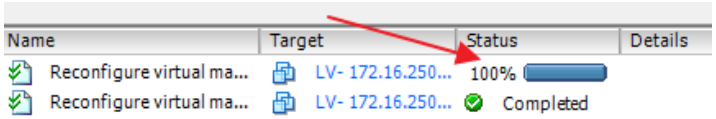
7. On the **Select a datastore or datastore cluster** screen, choose any available datastore with enough space remaining and click **OK** to return to the **Add Hardware** screen.

Figure 2-8 Choose Datastore



8. Accept the default settings by clicking **Next** and then **Finish** to return to the **Virtual Machine Properties** screen.
9. Click **OK** to exit the **Virtual Machine Properties** screen.
10. A progress bar appears at the bottom of the screen illustrating the creation of the virtual disk.

Figure 2-9 VM Reconfiguration Progress

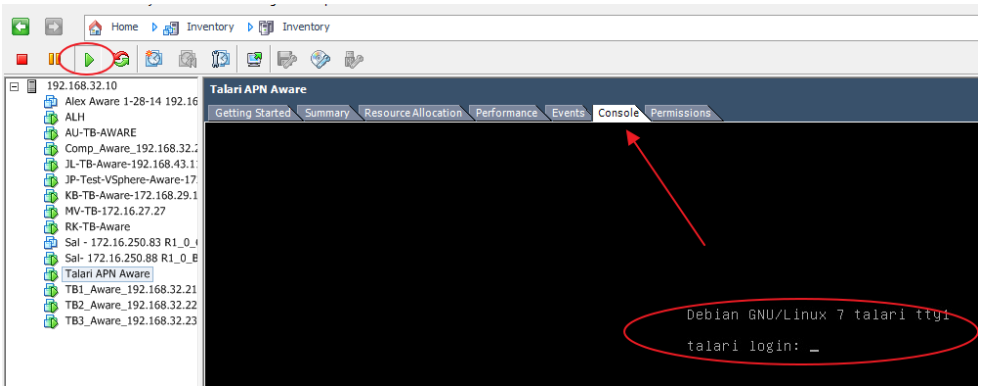


Start the VM

1. From the inventory list, make sure the new VM is still selected and power it on by clicking the **Play icon**.
2. Click on the **Console** tab in the right-hand pane of the vSphere Client screen.
   Note: To exit the console, release the mouse by pressing and holding the **Ctrl** and **Alt** buttons simultaneously.

   Note: It may take up to 15 minutes for the Aware instance to finish initializing the first time the VM is launched. The login prompt will not be displayed until initialization is complete.

Figure 2-10 Open vSphere Client Console



3. Login with the following credentials:
   Login: root

   Password: Talari

Configure DHCP

1. If you are using a DHCP server, record the Host IP address that appears.
2. If you are not using a DHCP server, set the **Host IP** manually as follows:
   a. From the command line, manually set the **Host IP** and **Netmask**.
   ifconfig eth0 <host_ip> netmask 255.255.0.0
   b. From the command line, manually add the **default gateway**.
   route add default gateway <gw_ip>
   c. Edit the /etc/network/interfaces file as follows:

```
  GNU nano 2.2.6         File: /etc/network/interfaces

# interfaces(5) file used by ifup(8) and ifdown(8)
auto lo
iface lo inet loopback
# The Management network interface
auto eth0
iface eth0 inet static
address 172.16.250.19
netmask 255.255.0.0
gateway 172.16.0.5

                        [ Read 9 lines ]
^G Get Help  ^O WriteOut  ^R Read File ^Y Prev Page ^K Cut Text  ^C Cur Pos
^X Exit      ^J Justify   ^W Where Is  ^V Next Page ^U UnCut Text^T To Spell
```

> **Note:**
>
> The **address** line in the /etc/network/interfaces file is the Host IP.

3. From the command line, kill the **dhclient**:

   ```
   pkill dhclient
   ```

4. From the command line, restart networking:

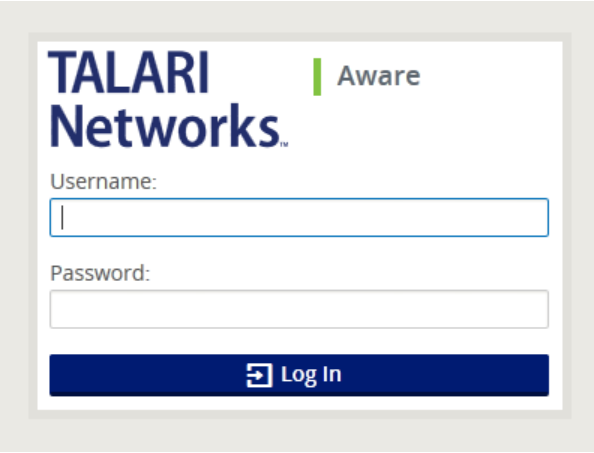
   ```
   /etc/init.d/networking restart
   ```

Configure the Talari Storage System

1. Open any web browser and navigate to the Host IP.
2. Login with the following credentials:
   Username: talariuser

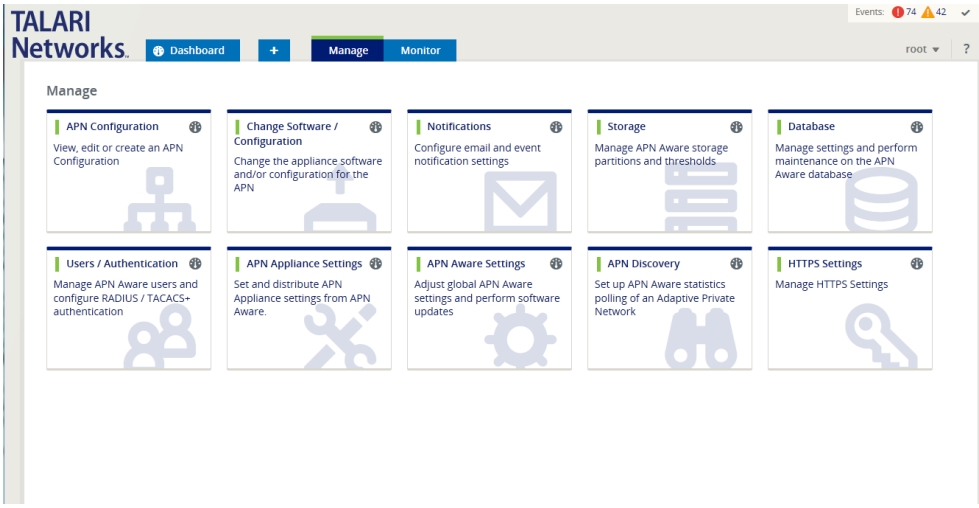
   Password: talari

Figure 2-11 Login to Aware



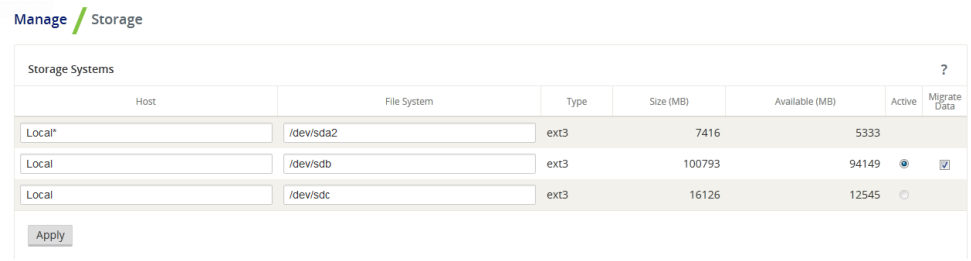
3. Click on **Manage**, and then **Storage**.

Figure 2-12 Click on the Storage tile



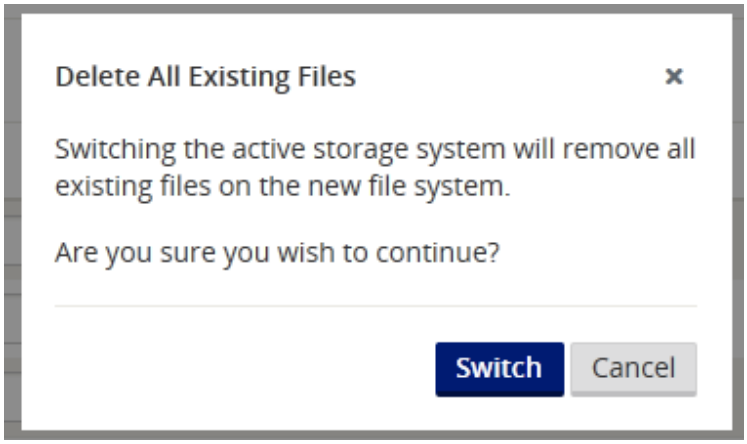
4. Click the **Active** radio button next to the storage partition you created and click **Apply**.

Figure 2-13 Switch the Storage Partition



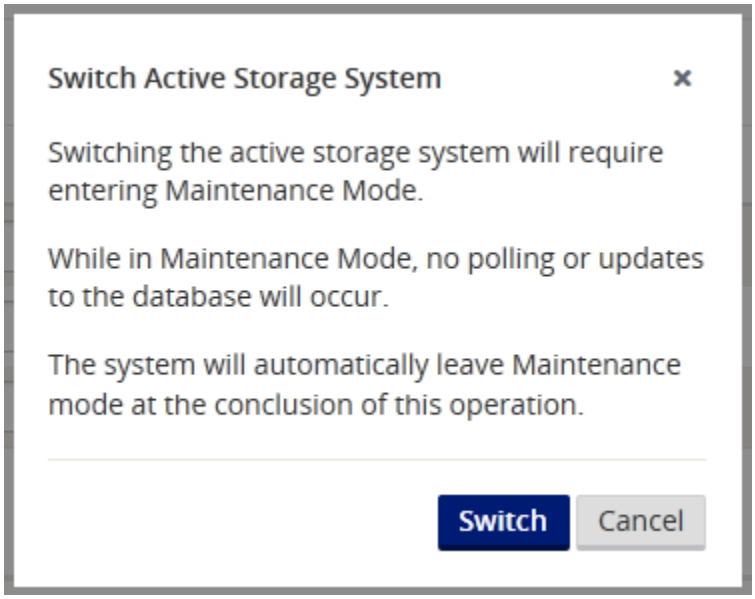
5. The **Delete All Existing Files** warning dialog appears. Click **Switch**.

Figure 2-14 Delete All Existing Files Warning Dialog



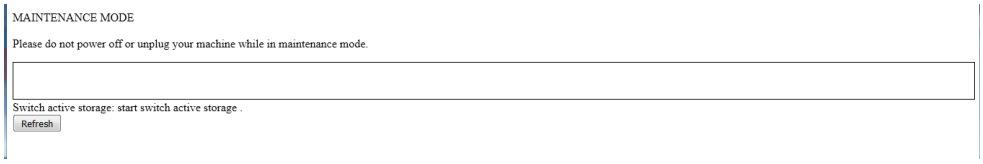
6. The **Switch Active Storage System** dialog appears. Click **Switch**.

Figure 2-15 Switch Active Storage System Warning Dialog



7. This will place Aware into **Maintenance Mode** and a progress bar appears.

Figure 2-16 Put Aware in Maintenance Mode



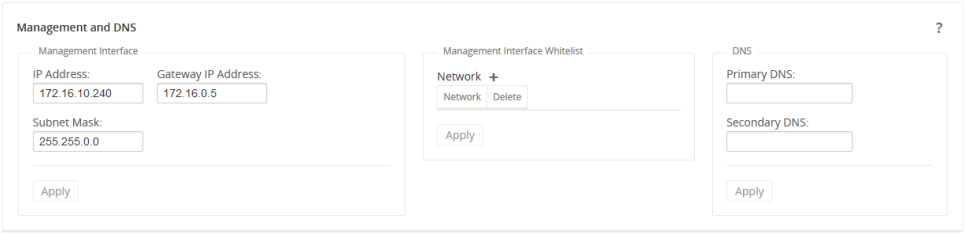
8. When the progress bar completes, click **Continue**.

Configure Talari APN Aware Settings

1. Click **Manage**, then **APN Aware Settings**.
2. Change the Management IP/DNS/Time Settings as desired.

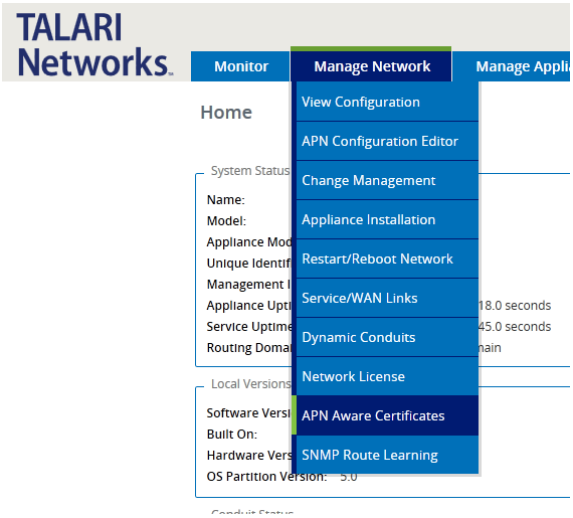
> **Note:**
>
> Enter the Host IP address, Netmask, and Gateway information here to enforce the settings as static.

Figure 2-17 Change Management IP and DNS Settings



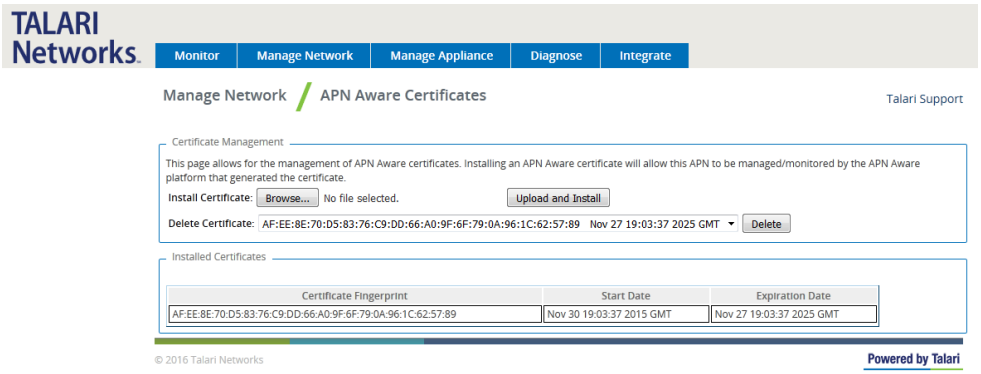
3. Click **Manage**, then **APN Discovery**.
4. Click on **Download Certificate**, then **Save** to save the certificate file to the local workstation.
5. Login to the NCN, click **Manage Network**, then **APN Aware Certificates**.

Figure 2-18 Choose APN Aware Certificates



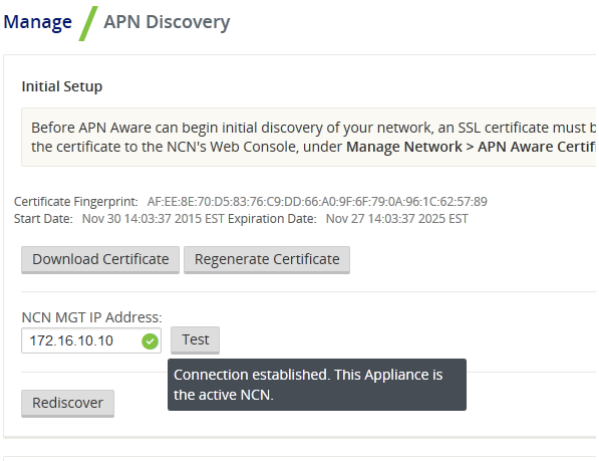
6. Click **Choose File** and choose the file you downloaded (e.g., **APNAAwareSSLCert**) to open it.

Figure 2-19 Open Aware SSL Certificate from the NCN



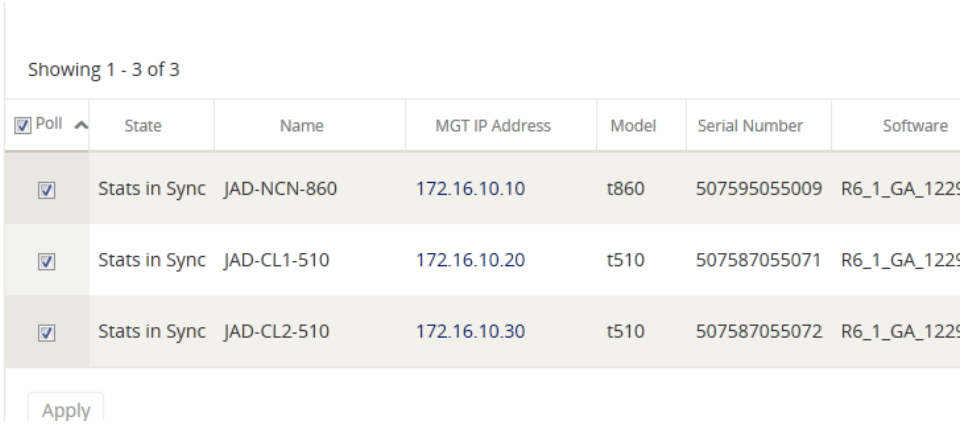
7. Click **Upload and Install**. When installation is complete, go back to the Aware installation.
8. In Aware, click on the **Manage**, then **APN Discovery**.
9. Enter the NCN Management IP Address and click **Test**. If everything is correct a green check mark appears with a message stating, "**Connection established. This Appliance is the active NCN.**"

Figure 2-20 Enter the NCN Management IP Address



10. Click **Discover** and all the configured appliances will autopopulate in a list at the bottom of the screen.
11. Click the checkbox next to **Poll** to automatically select all the polling checkboxes for discovered devices and click **Apply**.

Figure 2-21 Choose the Devices to Poll



12. The Aware installation is complete.

Upgrading an Aware VM

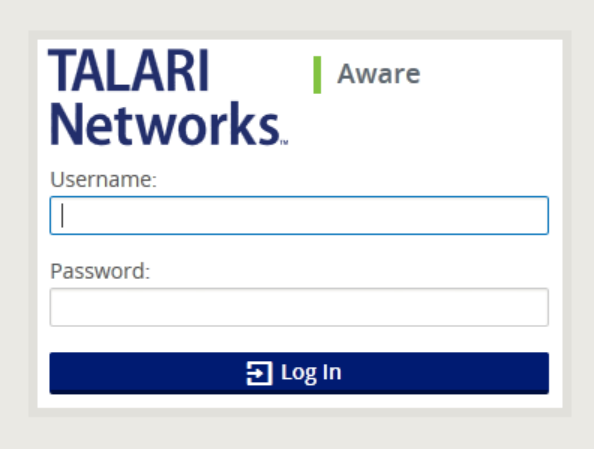
An upgrade may be done either on an existing VM or by provisioning a new VM.

Upgrade Aware On Existing VM

> **Note:**
>
> Before attempting this upgrade procedure, make sure your server meets the minimum requirements.

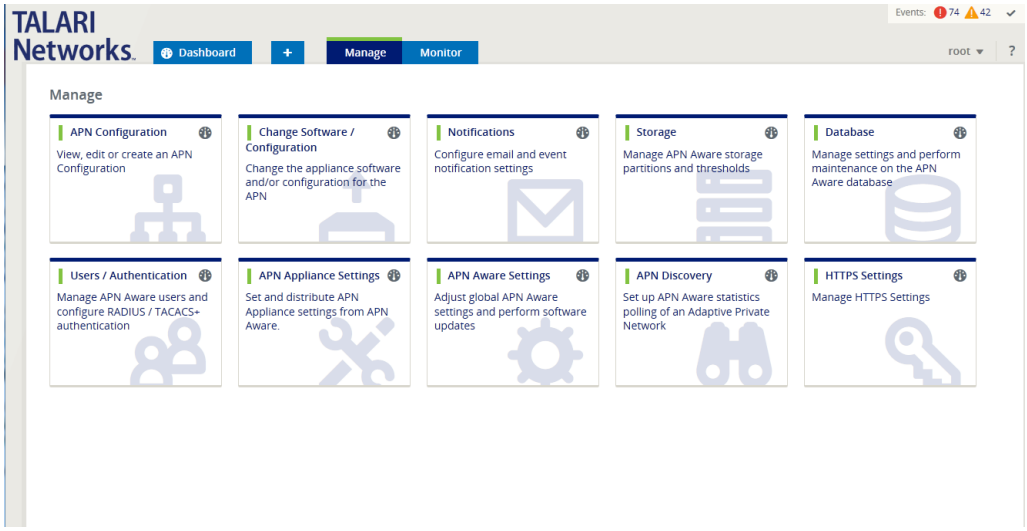
1. Open any web browser and go to the Talari Support site (http://www.talari.com/support). Login with your Talari Support credentials.
2. Click on the **Talari Aware** link and then click on the link to the release you plan to upgrade to.
3. Click on the **Talari Aware Software** link to download the software update file (e.g., **talari-nms_Aware_R3_0_GA_P1_11082016_amd64.tar.gz**).
4. Open any web browser and navigate to the Host IP. Login with your existing credentials.

Figure 2-22 APN Aware Login Screen



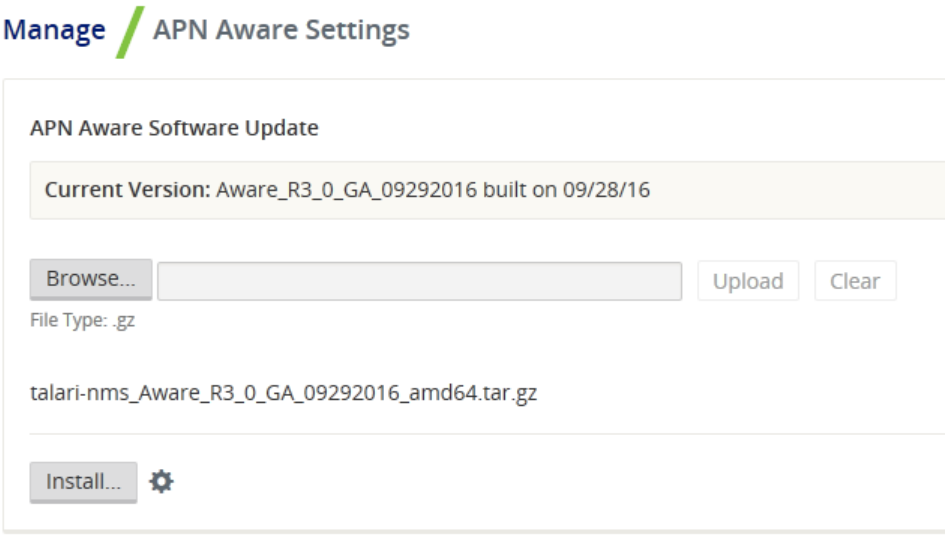
5. On the Talari web interface click on **Manage**, then **APN Aware Settings**.

Figure 2-23 Manage APN Aware Settings



6. In the **APN Aware Software Update** section, click on **Browse** and navigate to the file downloaded from the Talari Support site.

Figure 2-24 Select Software Update File

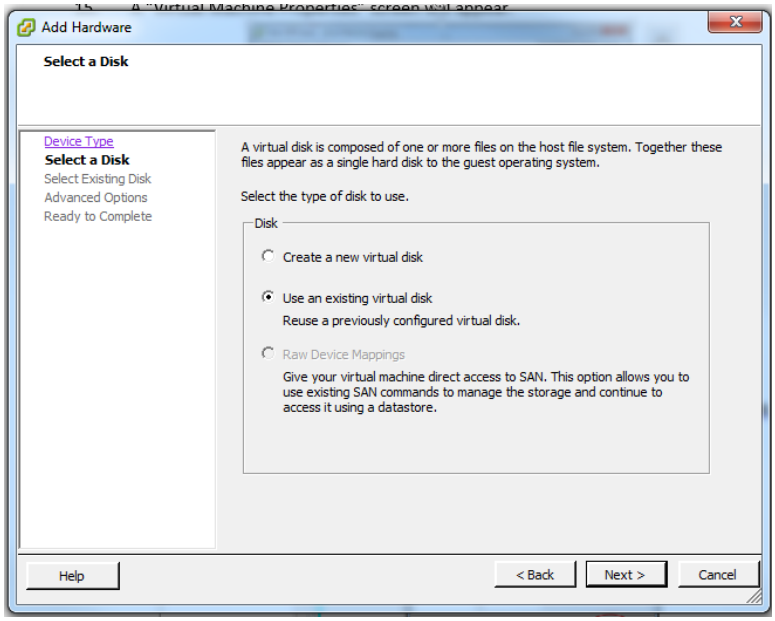


7. Click **Upload**, and once the upload finishes, click **Install**, and follow the onscreen prompts to complete the software upgrade.

Upgrade Aware Using a New VM

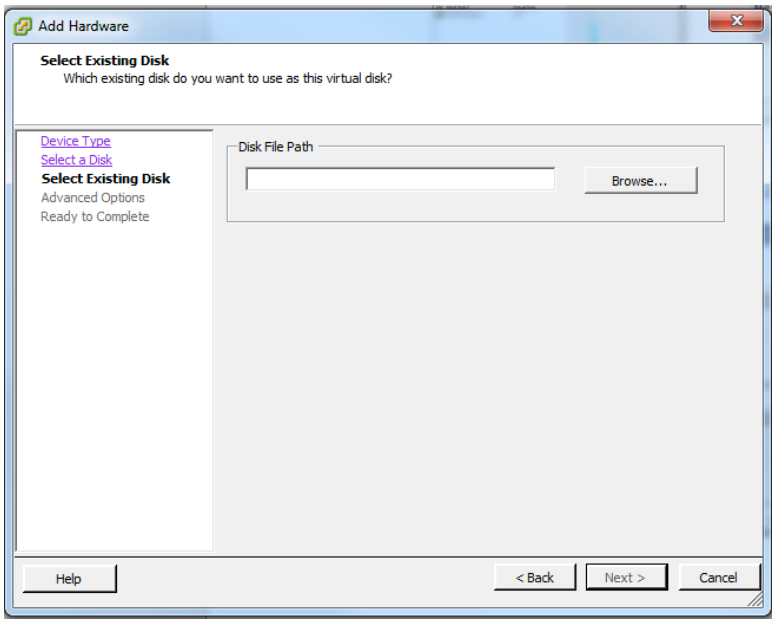
1. From the **Select a Disk** screen, click the radio button next to **Use an existing virtual disk** then click **Next**.

Figure 2-25 Use Existing Virtual Disk



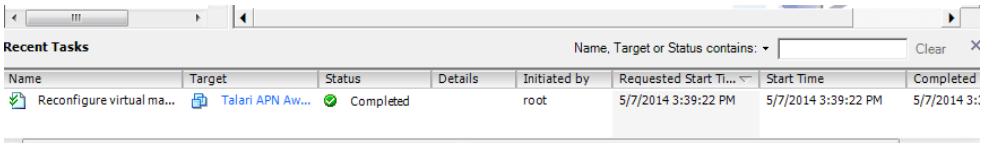
2. Click the **Browse** button, and select the **Disk File Path** of the existing Aware VM you want to upgrade.

Figure 2-26 Choose Existing Aware VM



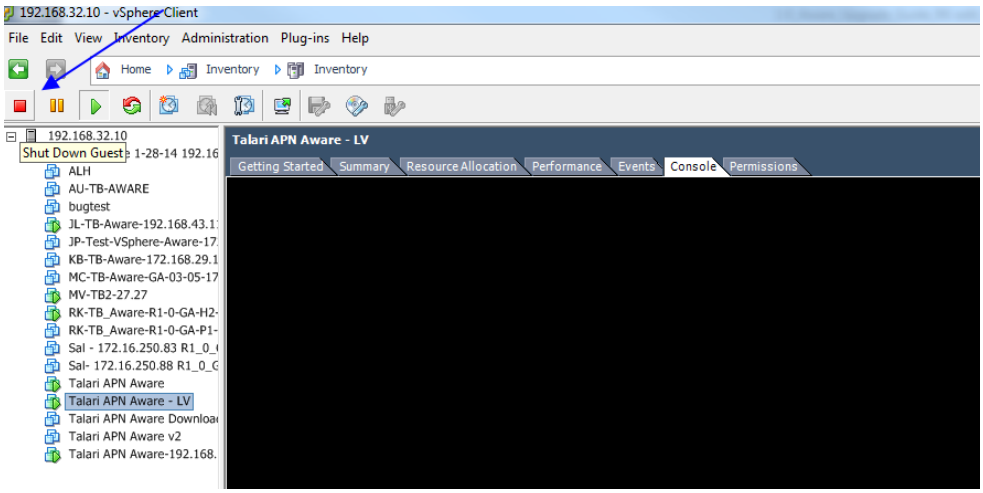
3. Click the **Next** button after selecting the VM, and a progress bar will appear at the bottom of the screen illustrating the reconfiguration of the virtual machine. Wait for the update to reach **Completed** status.

Figure 2-27 Wait for Reconfiguration to Complete



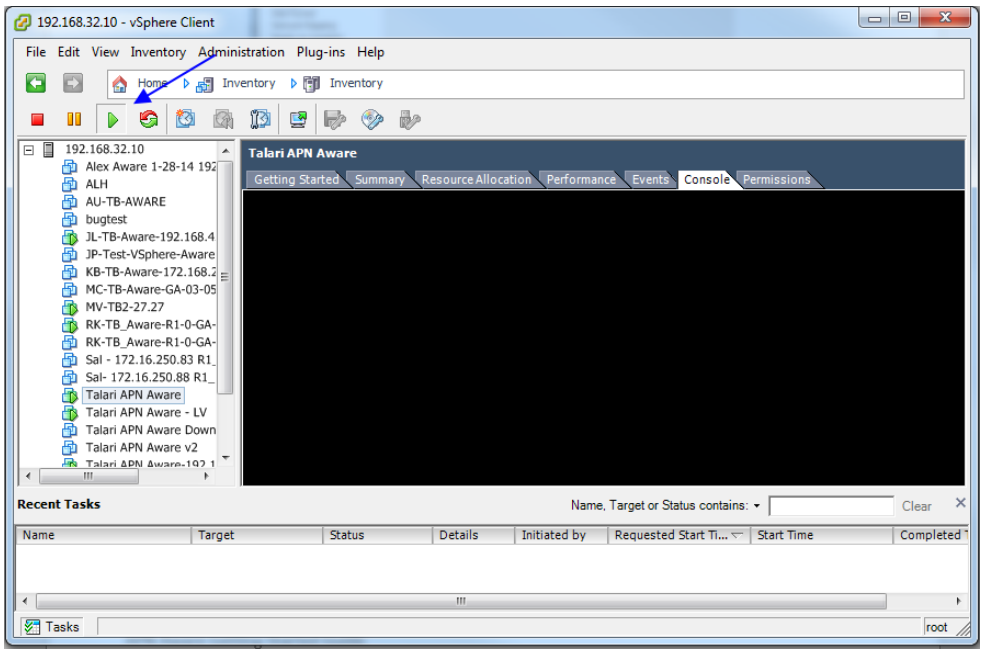
4. From the inventory list, select your previous Aware VM and power it down by clicking the red **Stop icon**.

Figure 2-28 Power Down the Existing VM



5. Power on the VM you chose to upgrade by clicking the green **Play** icon.

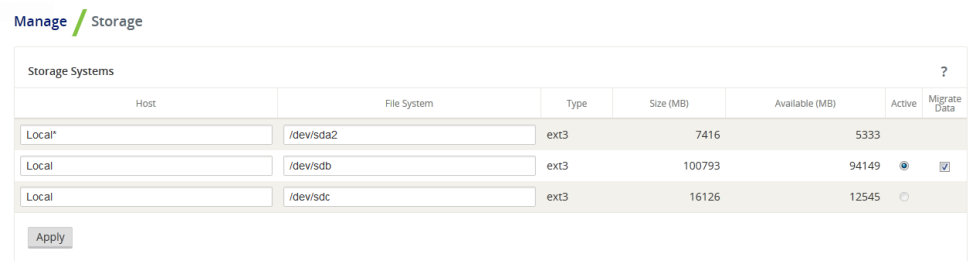
Figure 2-29 Power On Upgraded VM



Increase Storage On Existing Aware VMs

1. Open your vSphere Client and power down the VM you want to create more storage on.
2. Right click on the VM and choose **Edit Settings** from the menu.
3. Click the **Add** button and choose **Hard Disk** then click **Next**.
4. Click the radio button next to **Create a new virtual disk** and click **Next**.
5. In the **Capacity** section of the **Create a Disk** window, adjust the disk size appropriately and then click **Next**.
6. Click **Next** on the **Advanced Options** screen, and click **Finish** on the **Ready to Complete**
7. Power on the VM.
8. Open a web browser and navigate to the Aware Management IP.
9. Click on **Manage à Storage** where you will see your new disk.
10. Click the radio button under Active then click apply (the migrate option is checked by default).

Figure 2-30 Aware Storage Systems



11. When the **Delete All Existing Files** dialog appears, click **Switch**.
12. When the **Switch Active Storage System** dialog appears, click **Switch**.
13. Maintenance mode may run for quite some time. When the **Switch active storage** process completes, click **Continue**.
14. You can now see the new disk is active and your data still intact.
15. Navigate back to the vSphere Client and power down the VM.
16. Right click on the VM and choose **Edit Settings** from the menu.
17. Select the old Hard Disk from the list and click the **Remove** button. Click **OK**.
18. Power on the VM.
19. Open a web browser and navigate to the Aware Management IP.
20. Click on **Manage Storage**, and you will see the old disk is no longer displayed in the list.

3
Aware on Amazon Web Services

The following sections contain procedures for creating and preparing an Amazon Virtual Machine and EC2 instance for a Cloud Aware installation.

Before You Begin

Before you continue, take some time to consider how a Cloud Aware Instance will fit into your current network architecture.

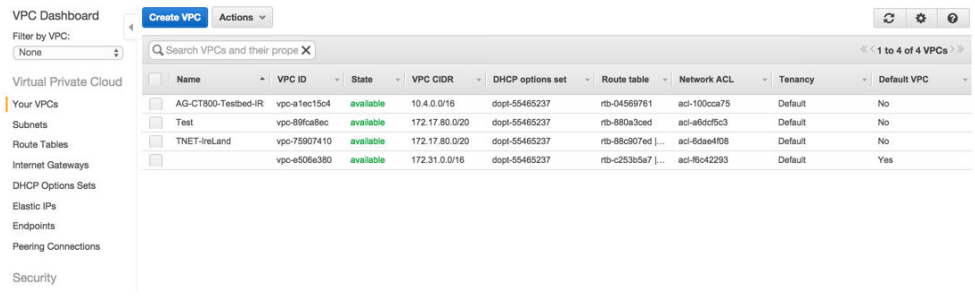
- What CIDR block do you plan to use for your VPC and its subnets?
- Do you plan to use existing subnets or create new ones for your VPC and Cloud Aware interfaces?
- Have you determined how much storage you will need for your Cloud Aware instance based on your Talari WAN?
- How do you plan to configure Security Groups for your Cloud Aware instance?
- Have you already created an AWS Key Pair?

Create an Amazon Virtual Private Cloud

> **Note:**
>
> If a pre-existing VPC is available with connectivity to your private network, we recommend installing Cloud Aware within that VPC to simplify the deployment procedure. If you need to create a new VPC, continue with this procedure.

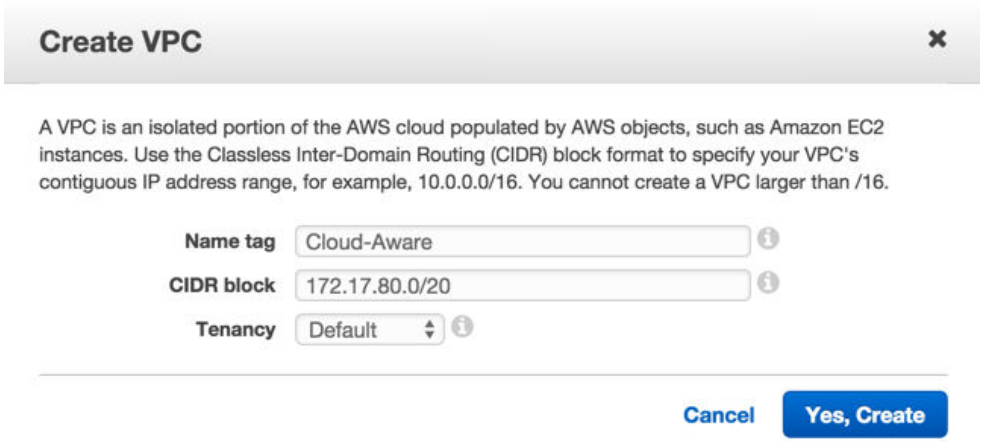
1. Log into Amazon Web Services (AWS).
2. From the main AWS Management Console click on the **VPC** link.
3. From the **VPC Dashboard**, click on the **Your VPCs** link and then click the **Create VPC** button to create a Virtual Private Cloud (VPC).

Figure 3-1 Create a VPC



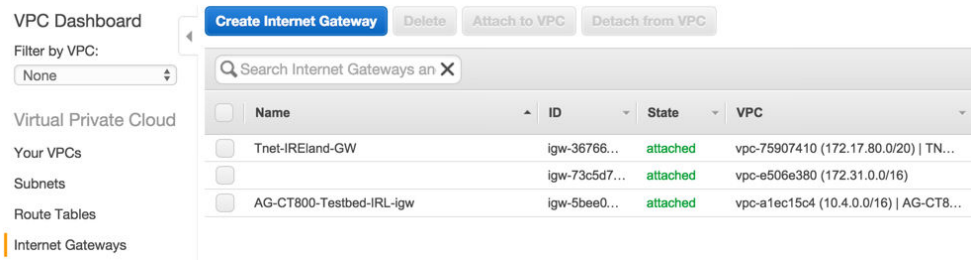
4. Enter a **Name tag** to identify your VPC.

Figure 3-2 Enter a Name and CIDR block



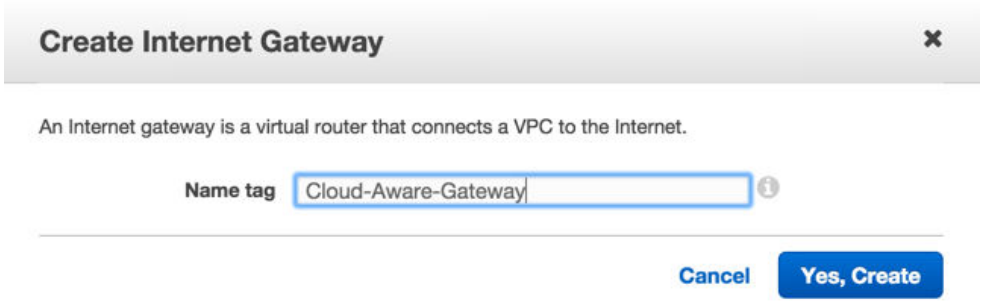
5. Enter your pre-defined VPC **CIDR block**. Click **Yes, Create** to continue.
6. If you do not already have an existing Internet Gateway to use in AWS, from the VPC Dashboard, click the **Internet Gateway Link** and then click the **Create Internet Gateway** button.

Figure 3-3 Create Internet Gateway



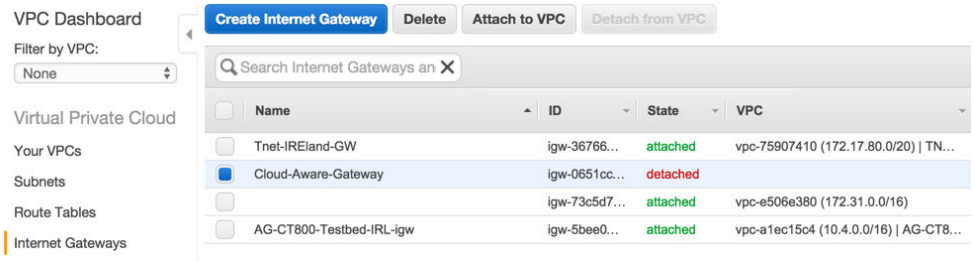
7. Enter a **Name tag** for your Internet Gateway and click the **Yes, Create** button.

Figure 3-4 Name Internet Gateway



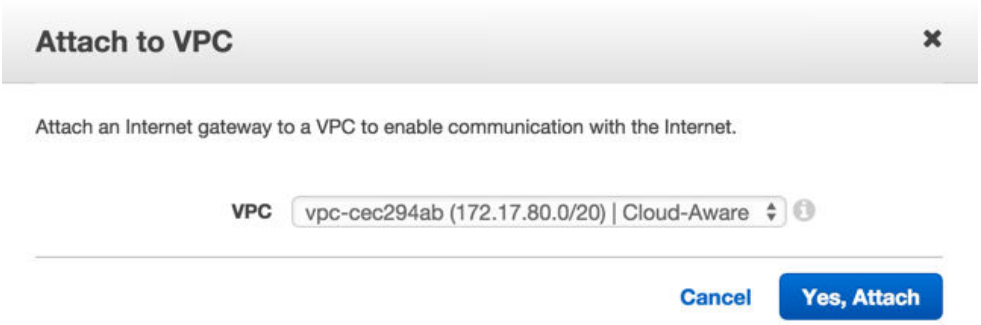
8. Select the Internet Gateway you just created and click the **Attach to VPC** button.

Figure 3-5 Attach Internet Gateway to VPC



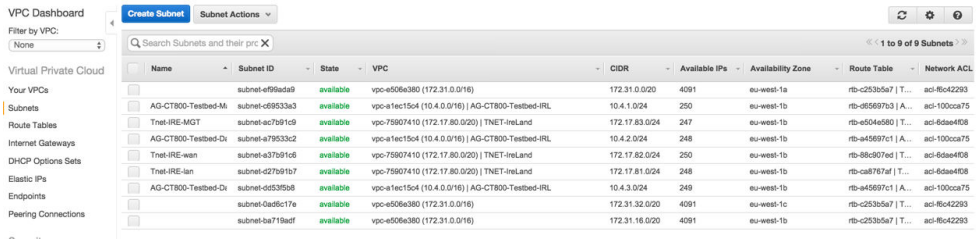
9. Choose the Internet Gateway you created from the drop-down menu and click the **Yes, Attach** button to attach it to your VPC.

Figure 3-6 Choose VPC to Attach to Internet Gateway



10. If you have not defined subnets to use with your VPC, click the **Subnets** link on the **VPC Dashboard**, and then click **Create Subnet** to create subnets (e.g., WAN, LAN, MGT) as your network requires. Cloud Aware only requires access to a management subnet.

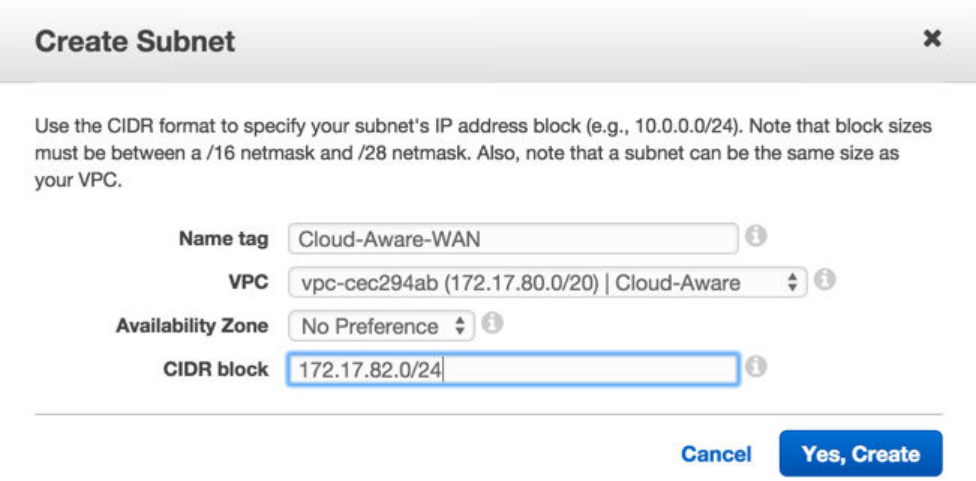
Figure 3-7 Create Subnet



11. Enter a **Name tag** to easily identify the subnet you are creating. Choose your new **VPC** from the drop-down menu. Enter the **CIDR block** you want to define for the subnet. (e.g., WAN, LAN, and MGT). Click the **Yes, Create** button to continue.

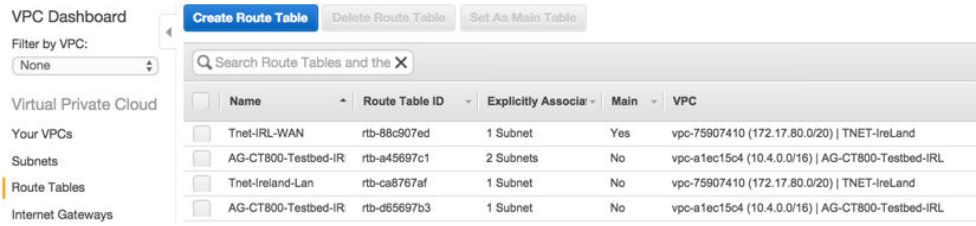
12. Create as many subnets as your network requires.

Figure 3-8 Insert Name, Choose VPC, and Enter CIDR block



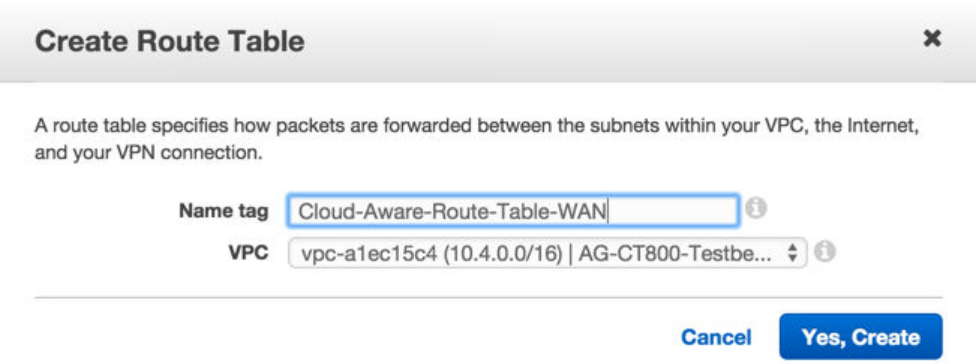
13. If you have not defined route tables to use with your VPC, click the **Route Tables** link on the **VPC Dashboard**, and then click **Create Route Table** to create route tables for your subnets (e.g., WAN, LAN, and MGT) for your Cloud Aware instance.

Figure 3-9 Create Route Table



14. Enter a **Name tag** to easily identify the route table you are creating. Choose your new **VPC** from the drop-down menu. Click the **Yes, Create** button to continue.

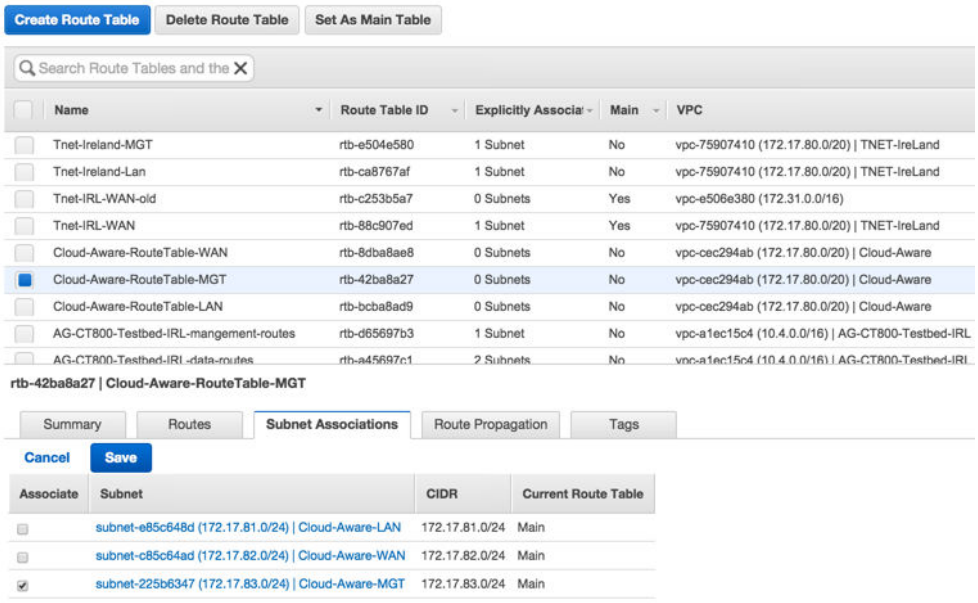
Figure 3-10 Enter Name and Choose VPC for Route Table



15. Create a route table for each subnet.

16. Select the route table you plan to use for Cloud Aware. Click on the **Subnet Associations** tab and click the checkbox next to the management subnet to associate with this route table. Click **Save**.

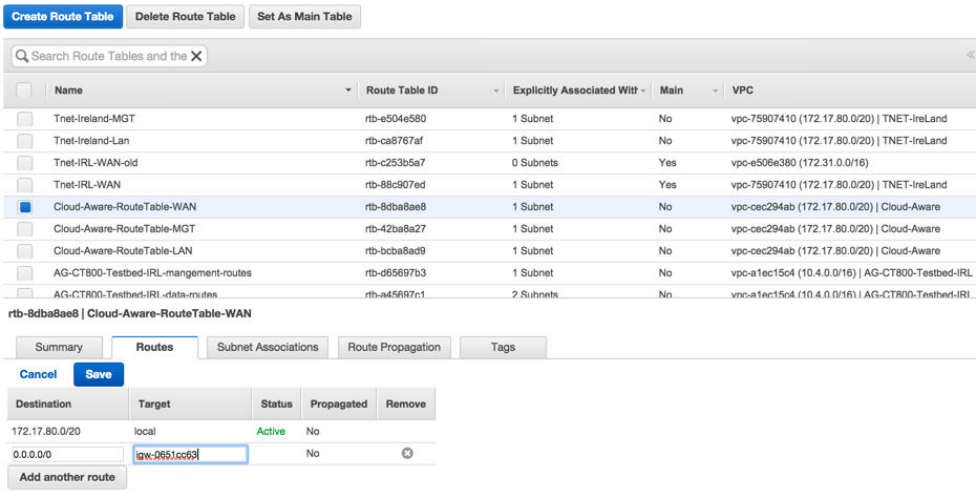
Figure 3-11 Associate Route Table with Subnet



17. Associate each route table with the appropriate subnet.

18. Select the route table you plan to use for Cloud Aware. Click on the **Routes** tab. Click the **Edit** button, and then click the **Add another** route button.

Figure 3-12 Add Routes



19. Enter **0.0.0.0/0** in the **Destination** field and enter the Internet Gateway in the **Target** field. Click **Save** to continue.

> **Note:**
>
> When you click in the **Target** field, a list of available Internet Gateways that you can choose from should appear. If said list does not appear, you can find the name of your Internet Gateway by clicking on the **Internet Gateways** link on the VPC Dashboard and selecting the Internet Gateway. The name appears on the **Summary** tab.

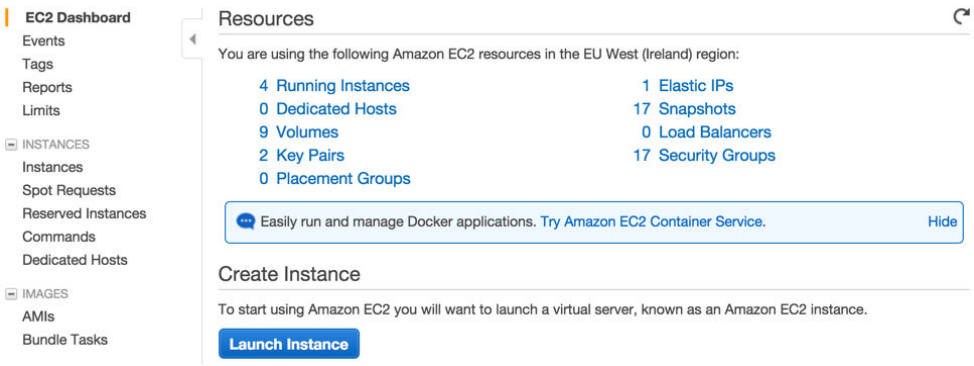
20. Repeat for each route table that you created.

> **Note:**
>
> Adding the 0.0.0.0/0 destination may only be necessary for the MGT and WAN route tables.

Create an Amazon EC2 Instance for Cloud Aware

1. Click **EC2** to open the EC2 Dashboard.
2. Click the **Launch Instance** button.

Figure 3-13 Launch Instance



3. Click on **My AMIs** and **Select** the Cloud Aware version you would like to install.
4. Choose an EC2 Instance Type. Consult the following table to determine what Instance Type is sized appropriately for your Talari WAN.

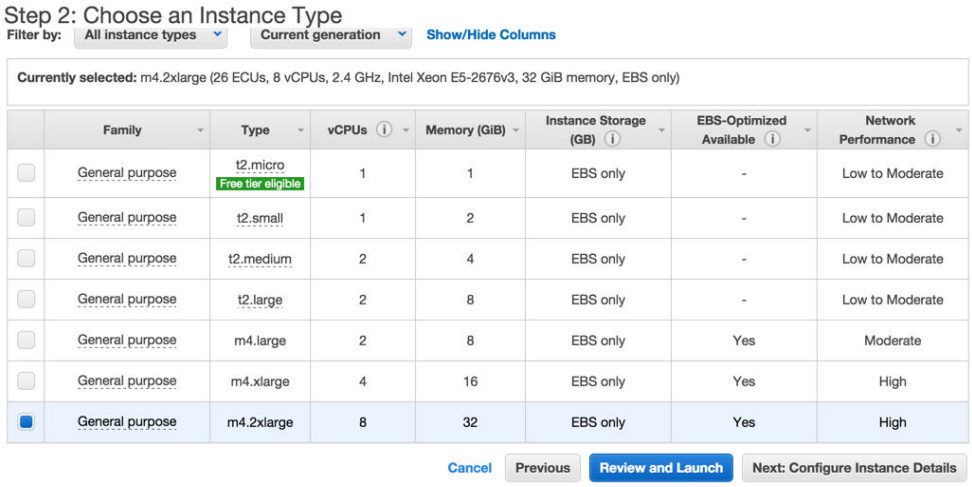
Talari WAN Scale			Amazon EC2 Instance		
Max # of Client Sites	Average # of WAN Links per Site	Average # of Network Services[1] per Site	Instance Type	Storage Volume Type	Storage Size for up to One Year of Data
64	2	4	m4.xlarge	General Purpose	1.5 TB
64	4	8	m4.xlarge	General Purpose	2.6 TB
64	8	16	m4.xlarge	General Purpose	9.6 TB
128	2	4	m4.2xlarge	General Purpose	2.0 TB
128	4	8	m4.2xlarge	General Purpose	4.1 TB

128	8	16	m4.2xlarge	General Purpose	18.0 TB
256	2	4	m4.4xlarge	General Purpose	3.0 TB
256	4	8	m4.4xlarge	General Purpose	7.2 TB
256	8	16	m4.4xlarge	General Purpose	35.0 TB

[1] Static Conduit Service, Dynamic Conduit Service, Intranet Service, Internet Service

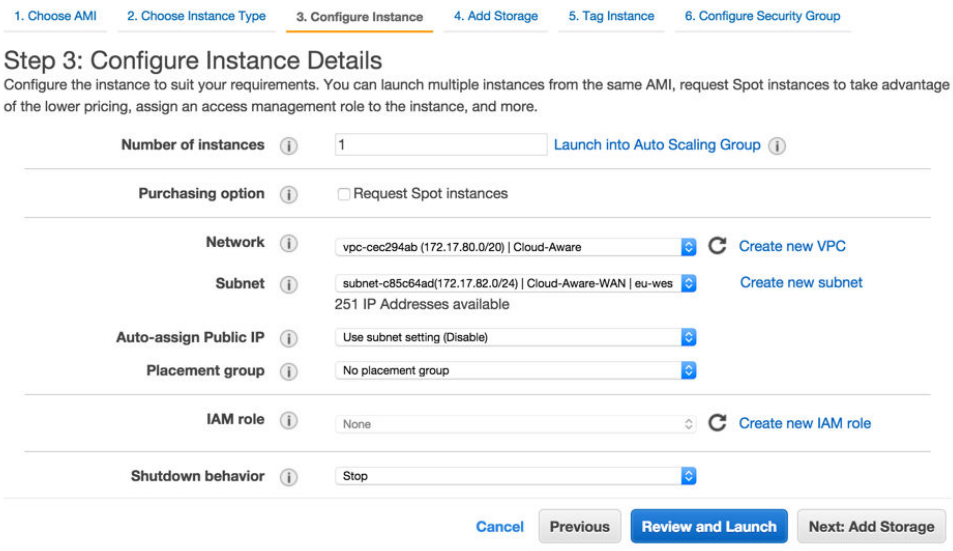
5. Click **Next: Configure Instance Details**.

Figure 3-14 Configure Instance Details



6. Choose the previously created VPC from the **Network** drop-down menu.

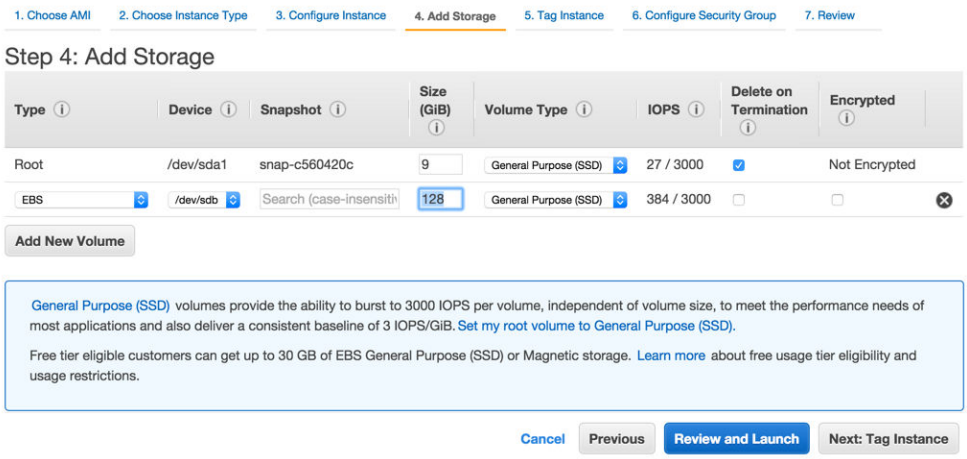
Figure 3-15 Create Instance on VPC



7. Choose the management **Subnet** you previously created from the drop-down menu that will allow you to access your Cloud Aware. Click **Next: Add Storage** to continue.

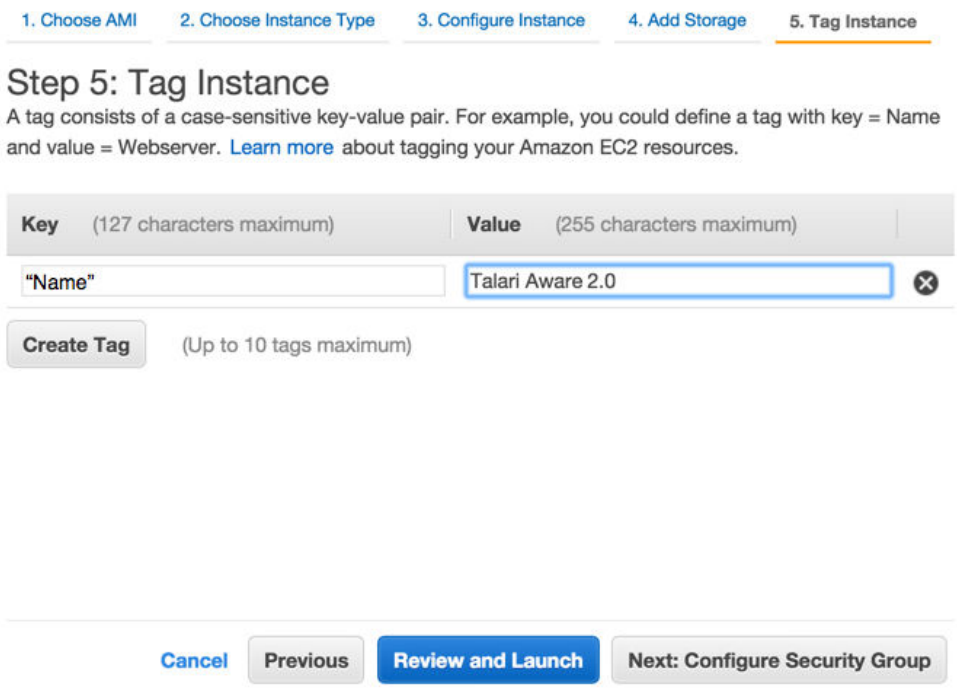
8. Under the **Network Interfaces** section, you may choose to specify a **Primary IP** for the default interface (eth0); otherwise, the IP address is automatically assigned from the subnet.
9. On the **Add Storage** screen click **Add New Volume** and enter the **Size** of the volume to store your Aware database. Consult the Amazon Web Services Requirements section on page 4 for details on how to size this device. Click **Next: Tag Instance** to continue.

Figure 3-16 Add Storage to Instance



10. On the **Tag Instance** screen, enter a **Key** (i.e., a Name) and a **Value** (i.e., a specific identifier for the Instance such as “Talari Aware 2.0”) to make it easy to identify your Cloud Aware EC2 instance. Click **Next: Configure Security Group** to continue.

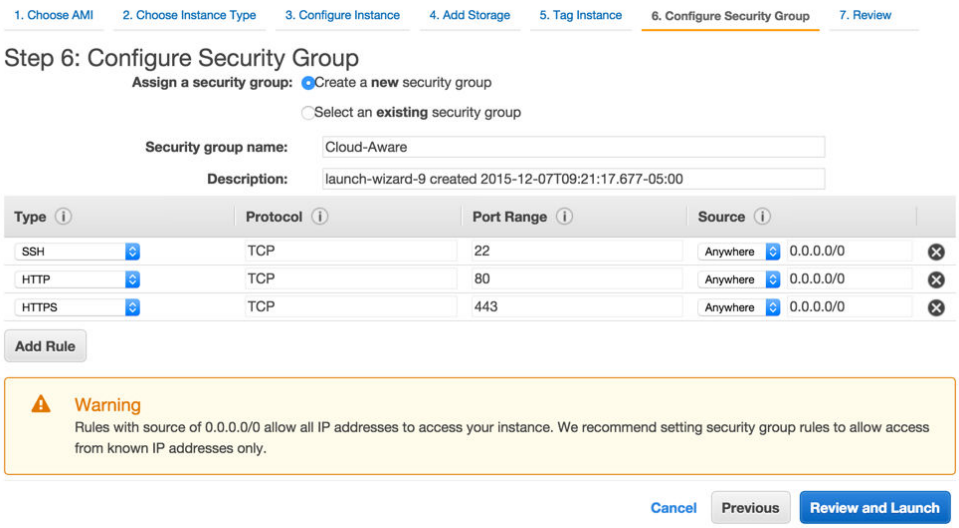
Figure 3-17 Tag the Instance



11. On the **Configure Security Group** page, click the radio button next to **Create a new security group** to follow the process for creating a new security group, or click the radio button next to **Select an existing security group** to choose from the groups already configured. Click **Review and Launch** to continue.

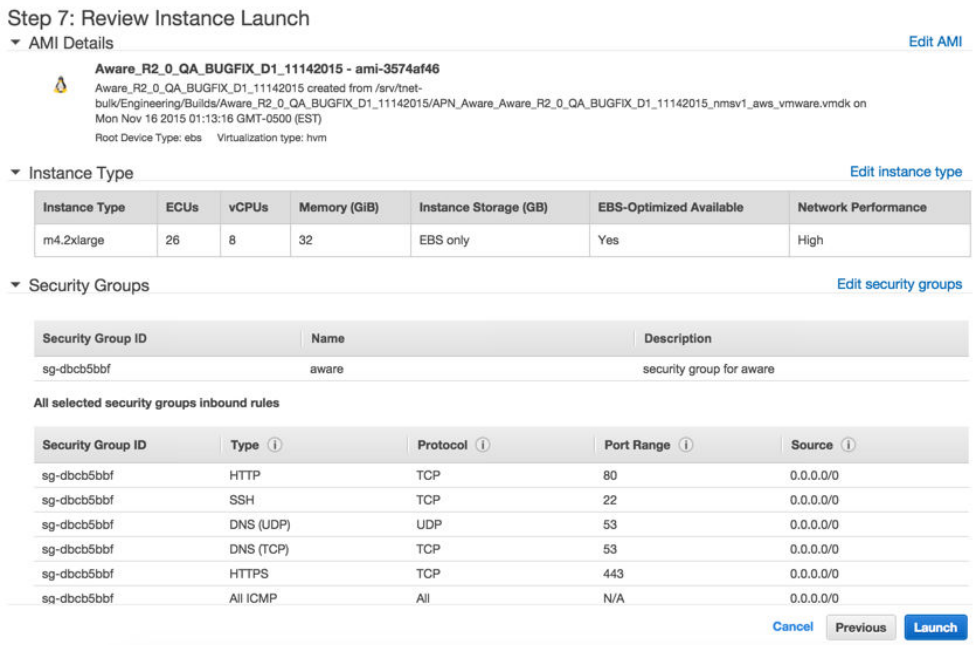
> **Note:**
>
> To use Aware on AWS, at a minimum, SSH, HTTP, and HTTPS should be configured with a **Source** of **Anywhere** or a custom IP range. Network administrators may choose to adjust the security settings to best fit their existing network architecture and security policies.

Figure 3-18 Configure Security Groups



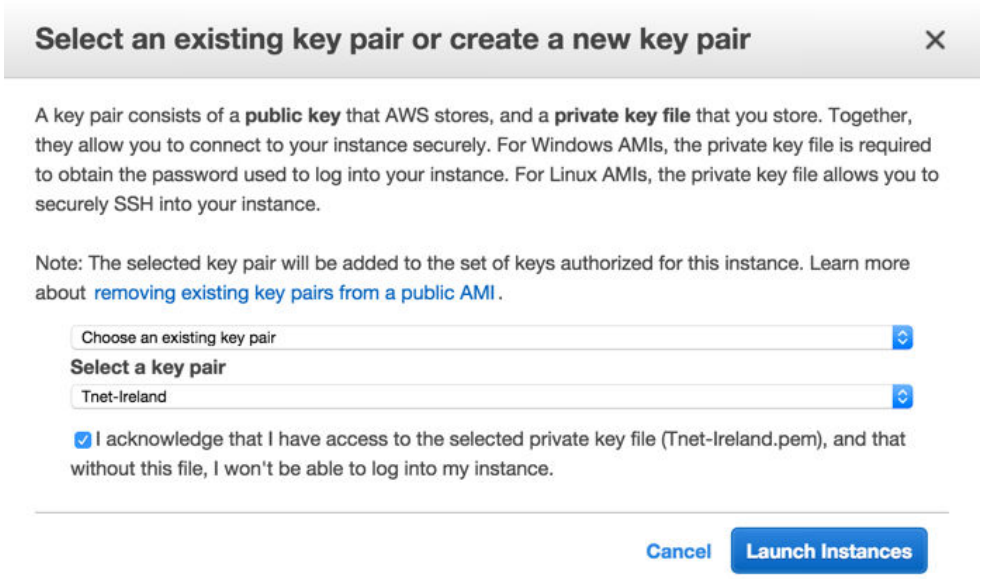
12. The **Review Instance Launch** screen summarizes the settings you configured for your Cloud Aware EC2 instance including any possible security issues and Amazon warnings. Once you have reviewed the information presented on this page, click **Launch** to create and initialize the EC2 instance.

Figure 3-19 Review Instance Before Launch



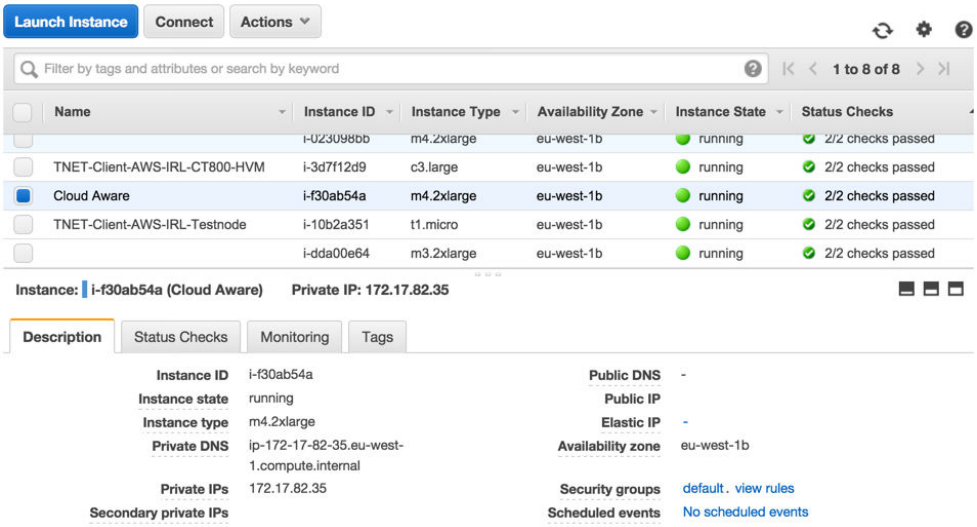
13. On the **Key Pair** window, you may **Choose an existing key pair** or create a new one. Click **Launch Instances** to start your Aware EC2 Instance.

Figure 3-20 Choose or Create a Key Pair



14. When the **Instance State** is **running** and the **Status Checks** are passed, make note of the **Private IP** of your Aware Instance, which can be found on the **Description** tab.

Figure 3-21 Launch New Cloud Aware Instance



15. From the **EC2 Dashboard**, select the **Network Interfaces** link and locate the default interface that was created for the Aware Instance. This will be used as the management interface. Highlight the interface and edit the **Name** tag to make it easy to identify.
16. From the **EC2 Dashboard**, select the **Elastic IPs** link and then click the **Allocate New Address** button to allocate an Elastic IP that will be reachable from outside the VPC.
17. Highlight the Elastic IP and click **Associate Address** from the **Actions** drop-down. Enter the **Network Interface** and **Private IP** of the Aware Instance and click **Associate**.
18. You can now use the Elastic IP to connect to Aware via a web browser. Default login credentials are: **Username:** *talariuser*, **Password:** *talari-<instance-id>* (e.g., talari-i-726a09ff).

Connect Cloud Aware to Your Talari WAN

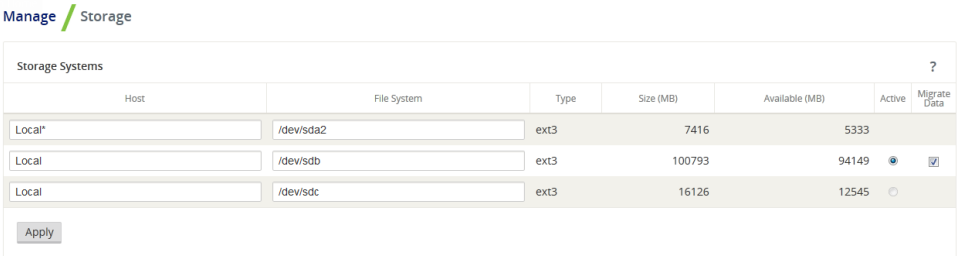
There are a few options for connecting Cloud Aware to your existing Talari WAN.

- **Option 1**: Connect Cloud Aware via VPC
  1. A **Virtual Private Gateway** may be used to establish a **VPN Connection** between the VPC and your private network. Please consult AWS documentation for configuration details.
  2. Once the **Virtual Private Gateway** is operational, add a route to the VPC's route table that directs traffic destined for your private network to the **Virtual Private Gateway.**
- **Option 2**: Connect Cloud Aware via Talari Conduit
  1. If you deployed a Talari Virtual Appliance CT800 within a VPC and connected it to your Talari WAN, Cloud Aware can access the rest of the Talari WAN through its secure Talari Conduit.
  2. Add a route to the VPC's route table that directs traffic destined for your private network to the LAN-side **Network Interface** of the CT800 instance
- Option 3: Create an AWS Direct Connection
  AWS Direct Connect can be used to establish a private connection between the VPC and your private network. Please consult AWS documentation for configuration details (https://aws.amazon.com/directconnect/).

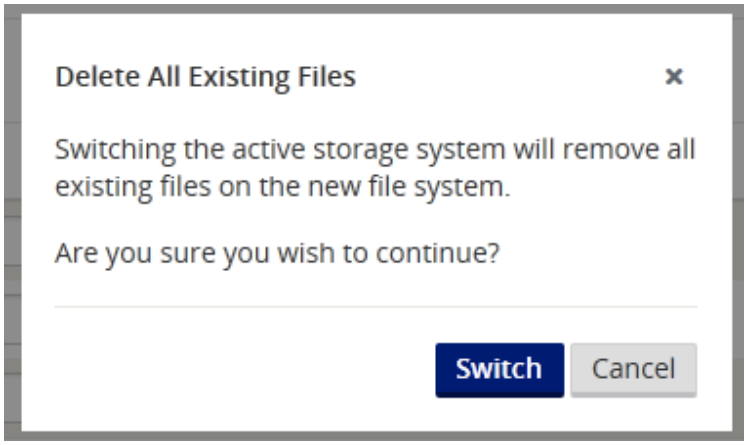
Completing the Connection Between Cloud Aware and Your Talari WAN

Once a connection has been established between the VPC and your private network, do the following:

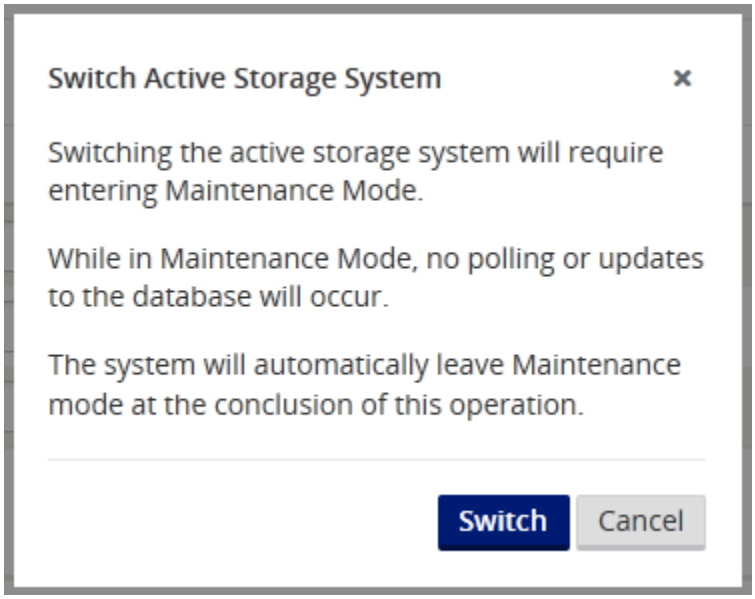
1. Log in to the Aware web console with the username **talariuser** and password **talari**.
2. From the Aware web console, go to **Manage à Storage**, click the **Active** radio button next to the storage partition you created, and click **Apply**.



3. The **Delete All Existing Files** warning dialog will appear. Click **Switch**.



4. The **Switch Active Storage System** dialog will appear. Click **Switch**.



5. Aware will be placed into **Maintenance Mode**. A progress bar will appear. When the progress bar completes, click **Continue**.

6. From the Aware web console, go to **Manage**, then **APN Discovery** and click the **Download Certificate** button to download an SSL certificate to your workstation.
7. From the Network Control Node (NCN) web console, got to **Manage Network**, then **APN Aware Certificates** to upload and install the SSL certificate on the NCN.
8. From the Aware web console, go to **Manage à APN Discovery** and enter the **NCN MGT IP Address**, then click the **Discover** button to discover the Talari Appliances in your Talari WAN.
9. Aware can now manage and monitor the Talari Appliances on your Talari WAN.

4
Aware Network Traffic

Aware network traffic uses SSL encryption. To identify or classify Aware network traffic, look for the following:

1. Poll Request from Talari Aware to Talari Appliance
   - **Protocol:** TCP
   - **Source IP:** Aware Management IP
   - **Source Port:** Random port number
   - **Destination IP:** Appliance Management IP
   - **Destination Port:** 2156
2. Poll Response from Talari Appliance to Talari Aware
   - **Protocol:** TCP
   - **Source IP:** Appliance Management IP
   - **Source Port:** 2156
   - **Destination IP:** Aware Management IP
   - **Destination Port:** Same random port number as initial request