Technical Guide

Vista Manager Network Appliance (VST-APL) 3.2.1

User Guide

Introduction

The Vista Manager Network Appliance (VST-APL) includes the tools to simplify and centralize management and security of your network. It provides an integrated graphical view for monitoring and management of wired, wireless and third-party devices by combining:

- Vista Manager to provide an integrated graphical display of your network
- AMF Cloud to manage Allied Telesis wired switches and firewalls
- Wireless Controller (AWC) to manage and automatically optimize Allied Telesis wireless network devices
- SNMP or SNMP-based Trap Receiver to monitor a broad range of third-party devices
- AMF Security to defend your network from internal threats.

What information will you find in this document?

The web-based VST-APL GUI allows you to manage the appliance and to set up and access applications to run on it. This guide describes how to configure the VST-APL by using the GUI. It follows after the Installation Guide, once you've cabled up the VST-APL and powered it up, and established your initial connection with the VST-APL GUI. Topics include:

AlliedWare Plus™ OPERATING SYSTEM

Contents

Products and software versions that apply to this guide

This guide applies to the Vista Manager Network Appliances (VST-APL) running VST-APL 3.1.1 and later. For more information, see:

- The product's Datasheet
- The product's Installation Guide
- Vista Manager Network Appliance (VST-APL) Technical Documents—for information about how to use the VST-APL and the applications supported on it.

These documents are available on our website at alliedtelesis.com.

Software deployment and licensing

The appliance comes with supported software installed, including Vista Manager EX. Add capability and capacity with subscription-based licenses for AMF-Cloud, AWC Wireless Controller, and AMF Security automation and management tools.

The VST-APL software consists of an ISO file containing the operating system and APP files for the applications. Each version of VST-APL consists of a set of supported ISO and APP files, as shown in Table 1 below. When you upgrade VST-APL, make sure you upgrade the operating system and all the applications you are using, so that they match.

Table 2 below shows the activation and licensing status for the VST-APL software for applications.

To see details of the applications and versions available and to access software updates, see the **Software Download Centre**. For information about licenses, see the datasheet for your appliance.

Table 1: Supported VST-APL software versions

Software Component	VST-APL 3.1.1	VST-APL 3.2.1
VST-APL Operating System	Version 1.2.1: ATVSTAPL-1.2.1.iso	Version 1.3.1: ATVSTAPL-1.3.1.iso
Vista Manager EX	Version 3.5.0: vista-x86_64-3.5.0.app	Version 3.6.0: vista-x86_64-3.6.0.app
AMF Cloud	Version 5.5.0-2.3: AMF-x86_64-5.5.0-2.3.app	Version 5.5.1-0.1: AMF-x86_64-5.5.1-0.1.app
Wireless Controller (AWC)	Version 3.5.0: awc-x86_64-3.5.0.app	Version 3.6.0: awc-x86_64-3.6.0.app
AMF Security	Version 1.8.1: sesc-x86_64-1.8.1.app	Version 1.8.1: sesc-x86_64-1.8.1.app
Trap Receiver (SNMP-based)	Version 2.5.0: snmp-x86_64-2.5.0.app	Version 2.5.0: snmp-x86_64-2.5.0.app
SNMP (Full SNMP)	Version 2.6.0: fullsnmp-x86_64-2.6.0.app	Version 2.6.1: fullsnmp-x86_64-2.6.1.app

Table 2: Activation and licensing of VST-APL software components

Software	Activation and license information
VST-APL Operating System	Ships with the operating system and GUI for the appliance enabled. The VST-APL operating system is pre-loaded into operating memory. It does not show in the File Management page of the GUI.
Vista Manager EX	Application image preloaded. Requires activation. No license required.
AMF Cloud	Application image preloaded. Requires license and activation.
Wireless Controller (AWC)	Application image preloaded. Requires license and activation.
AMF Security	Application image preloaded. Requires license and activation.
Trap Receiver (SNMP-based)	Application image preloaded. Requires activation. No license required.
SNMP (Full SNMP)	Application image preloaded. Requires license and activation.

Getting started with simple VST-APL configuration

This section describes how to get the applications on your appliances started quickly and easily in these steps:

For more detailed information about using the appliance, see the sections that follow this one.

Connect to the web-based Device GUI

Connect to the GUI with a web browser by following the steps below. These browsers are supported:

- Google Chrome™
- Mozilla Firefox™
- Microsoft Edge
- Internet Explorer ™11 or later
- Apple Safari™.

Step 1: **Connect to the VST-APL appliance.**

Connect the appliance to the network by one of the front panel Ethernet ports.

Step 2: **Open a web browser and browse to the IP address for the VST-APL GUI.**

From the factory, the appliance is set to accept an IP address from DHCP. If the device does not receive an IP address from a DHCP server within 10 seconds of the interface becoming active, the VST-APL uses the default IP address 192.168.1.1/24.

If the IP address is assigned by DHCP, you can find it from the DHCP server.

For more information on starting the initial management session, see the Installation Guide.

Step 3: **Accept the security exception.**

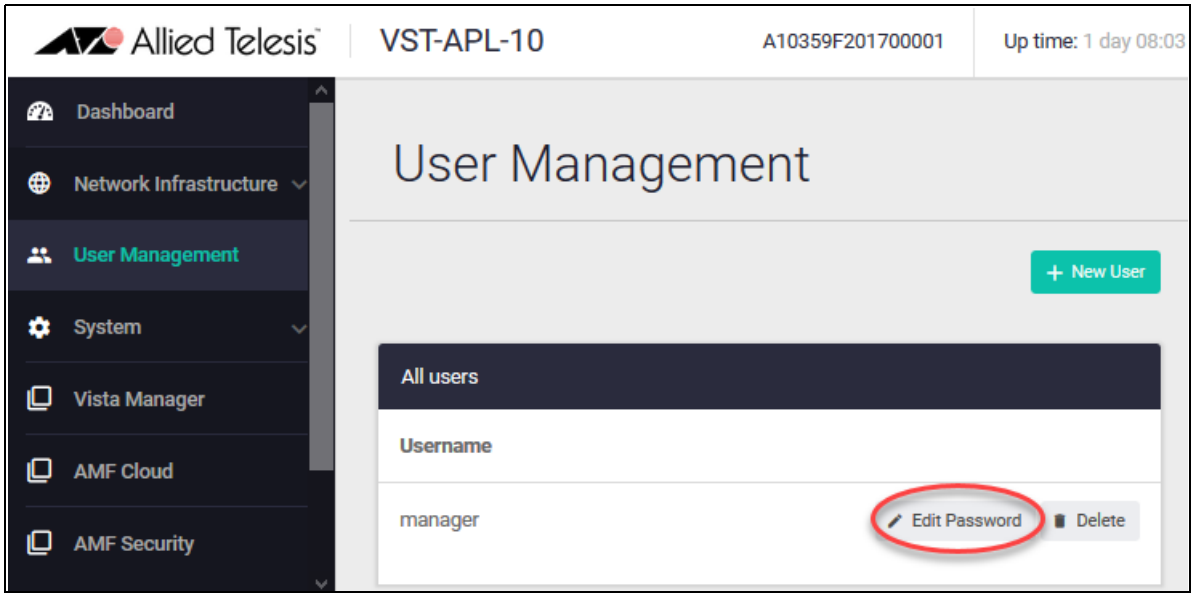
Accept the security exception for the self-signed certificate for GUI software on the appliance.

Step 4: **Log in with the default username of *manager* and the default password of *friend*.**

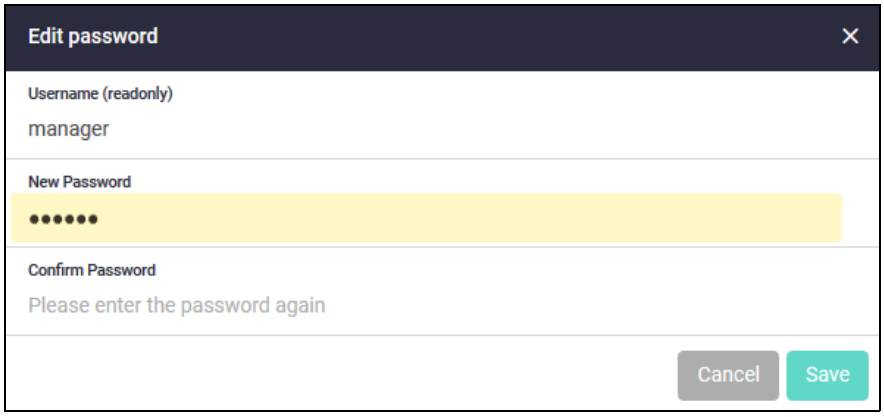
The web browser displays the VST-APL GUI dashboard.

Change the manager password

In the Dashboard menu, click **User Management**.



In the User Management page, click **Edit Password** to the right of the user 'manager'.



Enter the new password twice and click **Save**.

Set up network interfaces

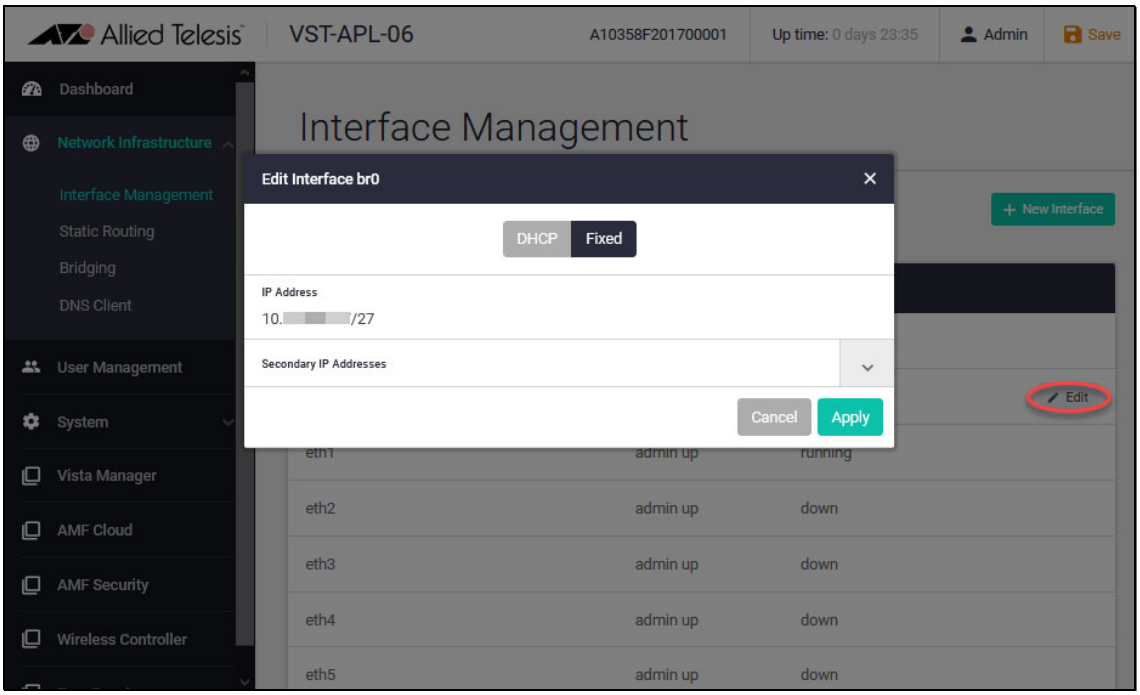
By default, the appliance accepts IP addressing from a DHCP server, including an IP address and a default route. You can get these from the DHCP server. If a DHCP server does not supply this configuration to the appliance, you will need to manually add an IP address and a default route.

1. Configure the IP address.

   From the menu, navigate to the **Network Infrastructure** > **Interface Management** page.

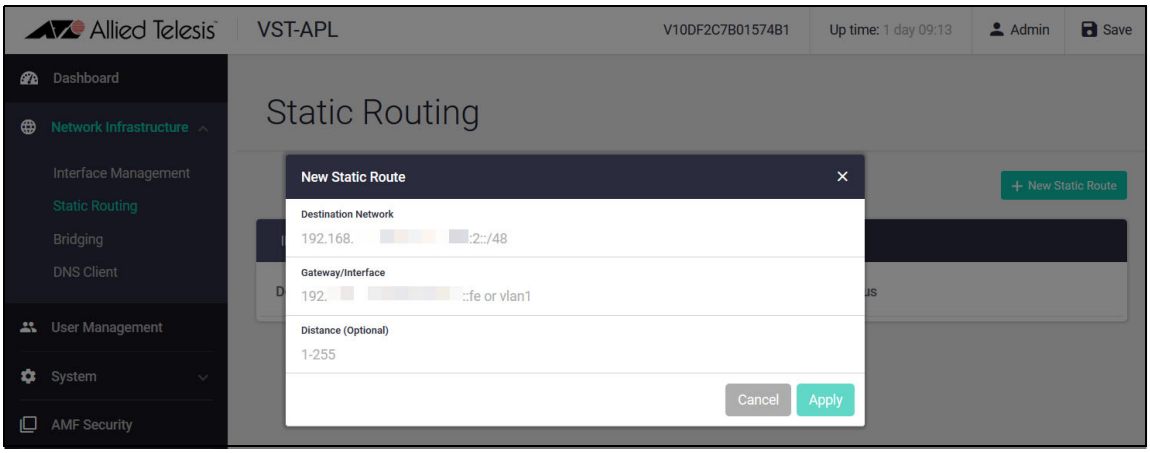
   Click the **edit** button to the right of 'br0'. This is the bridge connecting interfaces.

   Change the IP address of the bridge (br0) to one that you will be able to navigate to from the device you are accessing the GUI from. When you change the IP address, you will lose your browser's connection to the appliance. Point your browser to the new IP address.



2. Add a default route.

   Navigate to the **Network Infrastructure** > **Static Route** page and click the **+ Static Route** button to add a default route.



To set up advanced network interface configuration, use the pages available under the Network Infrastructure menu item. See "Setting up network infrastructure" on page 14.

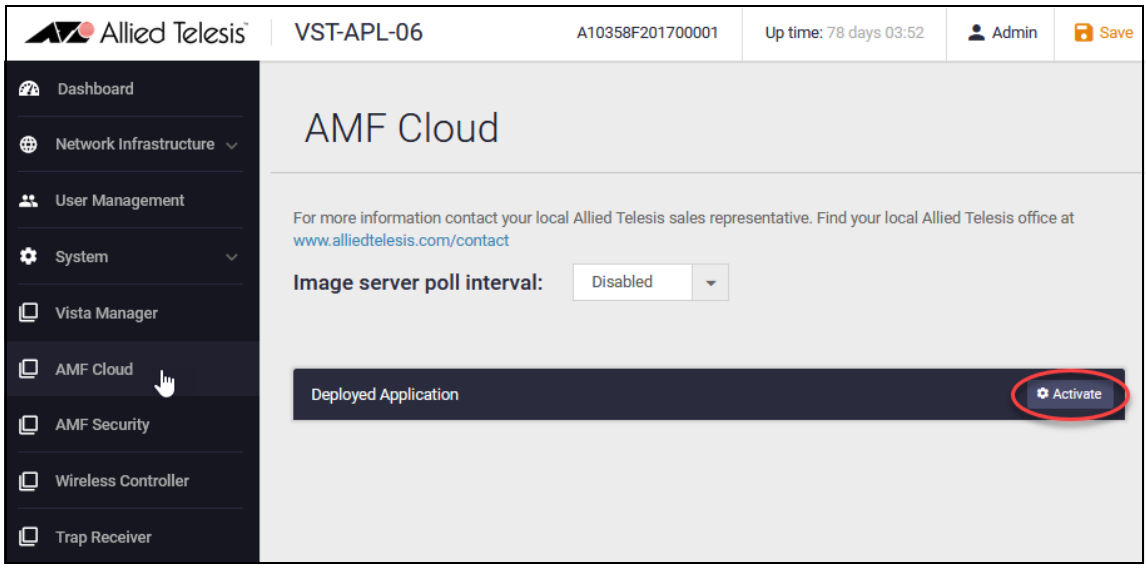
Save the VST-APL configuration

To save the VST-APL configuration, click the **Save** button at the top right of VST-APL GUI page. It is orange when there is unsaved configuration and black otherwise. Save whenever you have VST-APL configuration you want to retain over an appliance reboot.

Activate an application

Activate each application you will use on the appliance. To activate an application, follow these steps. See also "Example: activate the applications" on page 10.

1. Click the button for the application in the **menu**. A page opens for the application.



2. Click the **Activate** button. An **Application Configuration** dialog box opens for setting up the application.

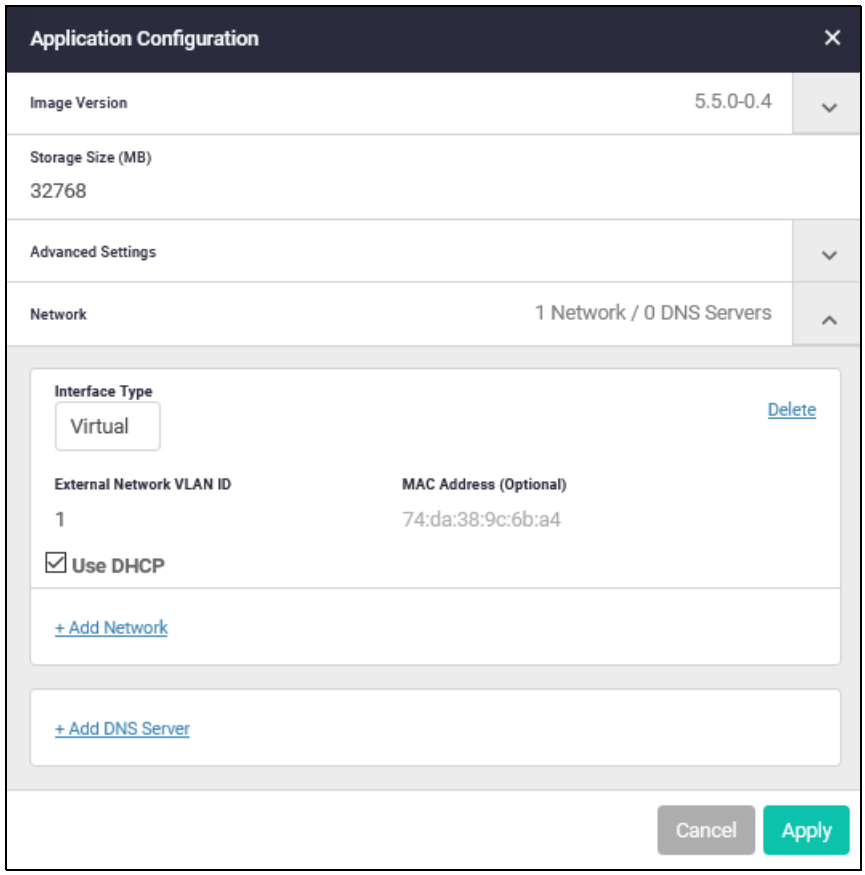
3. Set up the application parameters:

   Enter the storage size. We recommend entering the storage values in this table to configure the applications.

   Table 3: Recommended storage limits for applications

APPLICATION	RECOMMENDED STORAGE (MB)
Vista Manager (Vista Manager EX)	204 800
AMF Cloud	32 768
AMF Security	81 920
Wireless Controller (AWC)	204 800
Trap Receiver (SNMP)	40 960
SNMP (Full SNMP)	102 400

   Click the **Network** drop down list to expand it. Click **Add Network**. If there is a DHCP server on the network to assign IP addressing, select **Use DHCP**. Otherwise, specify the static IP address for the application. (Leave the Interface Type as Virtual.)



   To set up advanced network interface configuration, use the pages available under the Network Infrastructure menu item. See "Setting up network infrastructure" on page 14.

   Click **Apply** to create the container for the application with these application parameters and to start the application. This may take a few minutes. The application page displays information about the application instance.

4. To access and configure applications such as Vista Manager EX, AMF Cloud and AMF Security, click the **Open** button or point your browser directly to the IP address of the application. You can see the IP address and other application configuration by hovering the mouse over the small instance information icon  in the left of the **Deployed Application** panel on the application page.

   You may be asked for authentication. Use the default username 'manager' and password 'friend' the first time, then change the password for the application.

   The first time you access the AMF Cloud application, it requires you to change the default password by using its command line interface. (The time in the password expiry message may be long ago.) Save the configuration using the 'write' command to retain the change.

5. Click the **Save** button in the VST-APL GUI to save the application set-up in the VST-APL configuration.

Example: activate the applications

The appliance has application image files preloaded into persistent storage, such as:

- Vista Manager
- AMF Cloud
- Wireless Controller (AWC)
- Trap Receiver (SNMP-based)
- SNMP (full)
- AMF Security (also known as AMF-Sec or AT-SESC)

If you will use some or all of these applications, you can activate them in the following order. When you configure the applications, use the storage values in Table 3 on page 9.

1. Log in to the VST-APL. The first time you do this, follow the steps in "Connect to the web-based Device GUI" on page 5).
2. Activate AMF Cloud if you are using AMF Cloud on the VST-APL as the AMF master, and configure your AMF network. For information about configuring an AMF network, see the AMF Feature Overview and Configuration Guide.
3. Activate Vista Manager if using it to monitor your AMF and wireless network.
4. Activate Wireless Controller (AWC) if using it to manage wireless access points in your network.
5. Activate SNMP or Trap Receiver if using one of these to manage third-party devices.
6. Activate AMF Security if using it.
7. Save the appliance configuration.

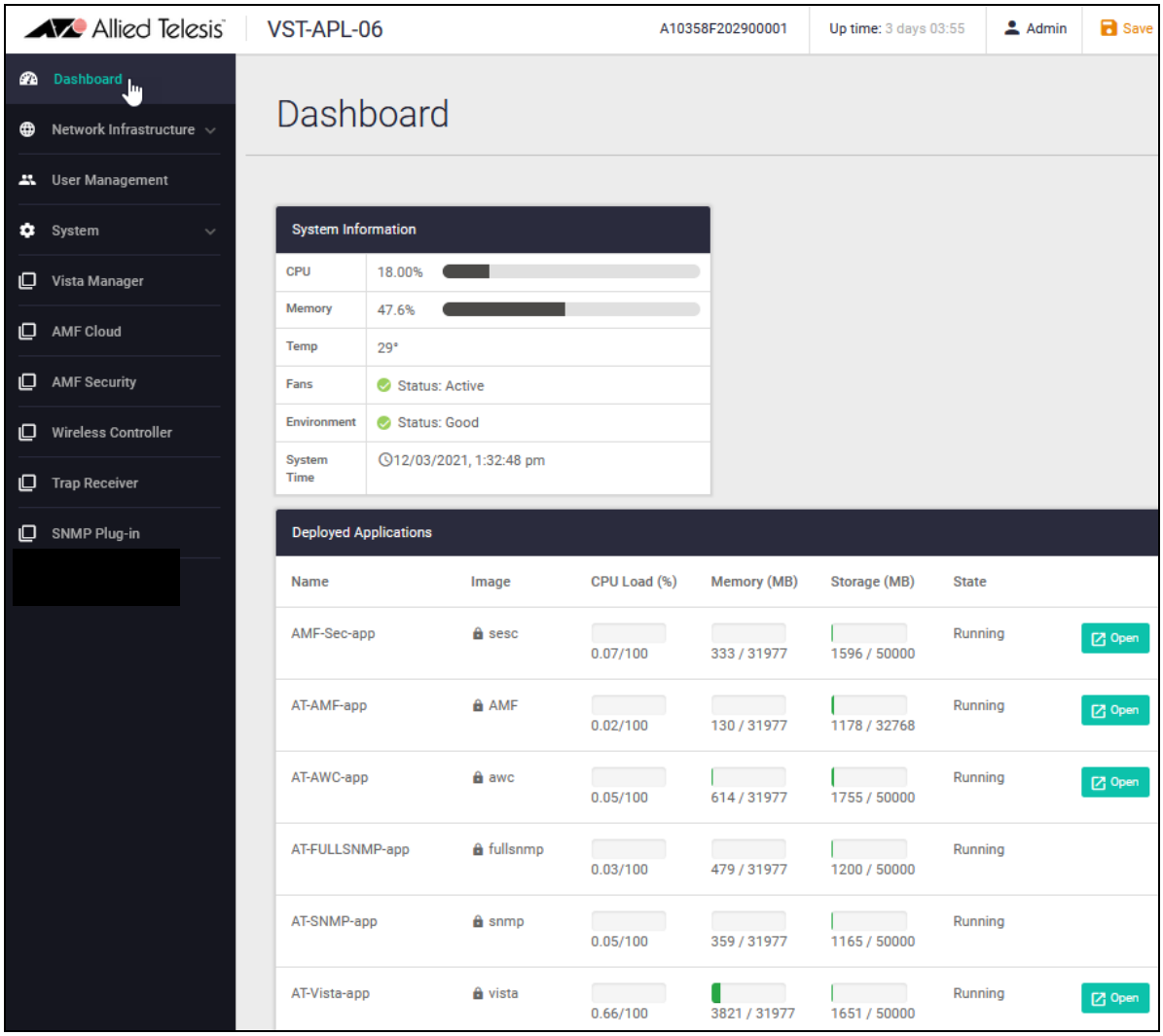
After activating the applications, you may need to:

- Install licences—Vista Manager and Trap Receiver do not require a license; for other applications, you may need to install a license. See the User Guide for the application.
- Register Vista Manager EX plug-ins (the SNMP (full) plug-in or Trap Receiver (SNMP-based) plug-in and/or the AWC Wireless Controller (AWC) plug-in). See the Vista Manager EX User Guide.

For more information about using each application, see its User Guide.

The VST-APL GUI Dashboard

Log in and you'll see the VST-APL GUI dashboard. The dashboard provides an overview of the status of your appliance and the applications loaded on it.



Saving configuration and logging out

At the top right of the screen you can see the **Uptime** for the switch, as well as the **Admin** button, which is used to log out, and the **Save** button.

Configuration changes you make become part of the running configuration on the appliance. This includes:

- appliance network configuration such as bridging, VLAN and IP address assignments
- user accounts
- system time configuration
- the state of applications that have been created—whether an application is running when the configuration is saved.

To make them part of the boot configuration, so they can be backed up and will survive a reboot, save these configuration changes. If an application is running when the configuration is saved, it will start up again when the appliance restarts.

Save any time there is new appliance configuration that you wish the appliance to retain. For example, we recommend saving when you have assigned an IP address to access the appliance, changed the ‘manager’ password, or activated and started applications.

This does not save the internal configuration and data for applications—these are managed separately by the applications themselves.

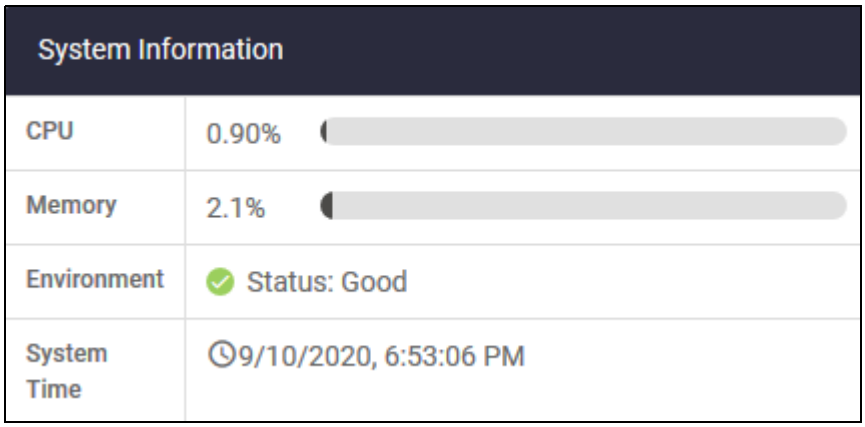
The **Save** button is colored orange any time there is unsaved configuration. If it is black, configuration has been saved.

The configuration is saved to a file named “default.cfg” in persistent storage.

System Information panel

The **System Information** panel provides an overview of the current:

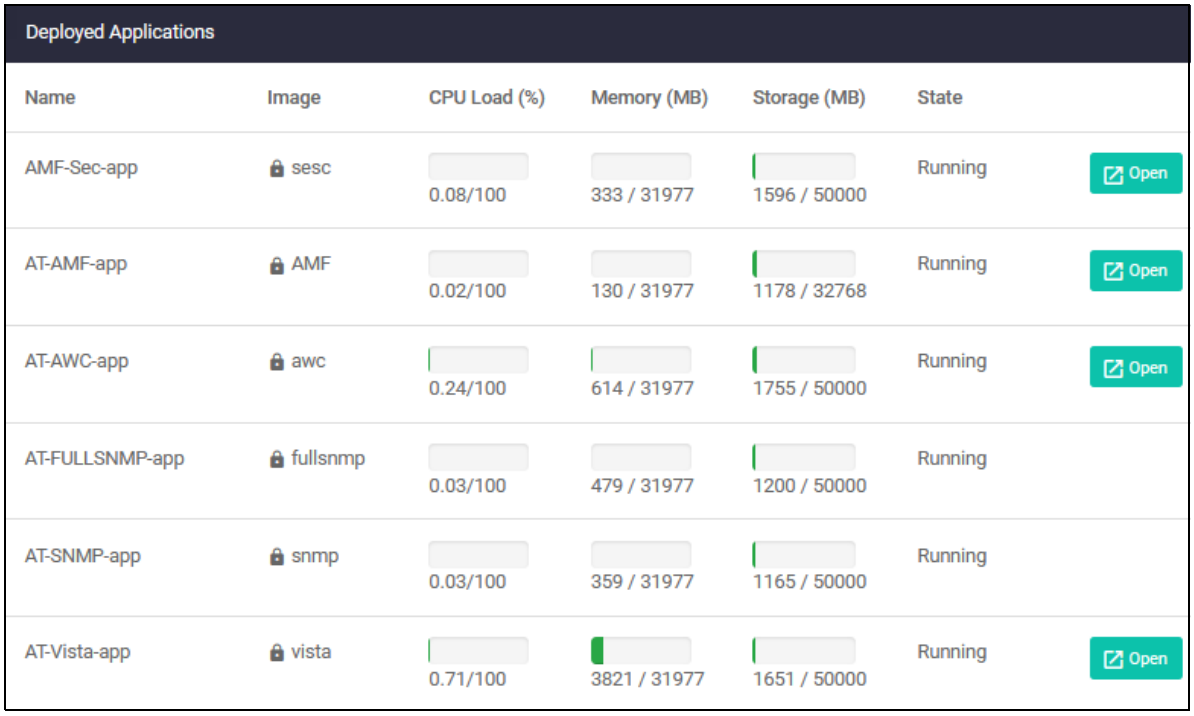
- CPU and memory usage
- environmental status
- system time (format: mm/dd/yyyy hh:mm:ss AM/PM).



For more detailed system information, navigate to **System > About**, and see "Monitoring" on page 35.

Deployed Applications panel

The **Deployed Applications** panel provides overviews of the applications loaded on the appliance and their status.



For each application, the Deployed Applications panel displays:

- the name of the application.
- the name of the image for the application. Once an application instance is created, the lock icon to the left of the image name indicates an application authorised (signed) by Allied Telesis. If you see a warning triangle icon , this indicates an unauthorised application and may present security issues. Remove the application and/or contact your authorised Allied Telesis distributor or reseller.

- the CPU capacity it's using and how much is available to it.
- how much memory it is using and how much is available to it.
- how much storage the application is using and how much is available to it. You must configure a storage allocation as a part of activating the application.
- the state of the application. Before an application is activated, the state is 'Offline'. During normal operation, the state is 'Running'. When you activate, stop or destroy the application instance, it shows information such as 'extracting', 'creating', 'stopping', or 'destroying'.

If there is an **Open** button next to the application, you can use this to access the application.

The Menu

At the left of the dashboard are menu items for **Network Infrastructure**, **User Management** and **System**, and for each of the applications loaded on the device. You can expand **Network Infrastructure** and **System** for more menu items. The **Dashboard** item at the top of the menu returns you to this Dashboard page.

Setting up network infrastructure

This section describes network topology and interfaces on the VST-APL, how applications connect to the network, how to configure network infrastructure, default settings and recommendations.

Interface support on the VST-APL

The VST-APL provides the following interface support:

- One bridge is supported on the appliance.
- All ports attach to the bridge (br0) by default.
- For Vista Manager, AMF Cloud, Wireless Controller (AWC), SNMP, Trap Receiver, and AMF Security applications, only one virtual network attachment is supported per application.
- From VST-APL 3.1.1, eth interfaces can be joined by static or dynamic (LACP) bonding.

Connecting applications to the network

To connect an application instance to the network, you specify the VLAN for the network connection. This avoids binding the applications to the physical interfaces or to the underlying hardware. This means the applications can easily migrate from one piece of hardware to another without disruption to users.

To manage the VST-APL appliance, you connect to the VST-APL GUI via the bridge interface br0. This is the default management interface to the appliance's VLAN-aware bridge.

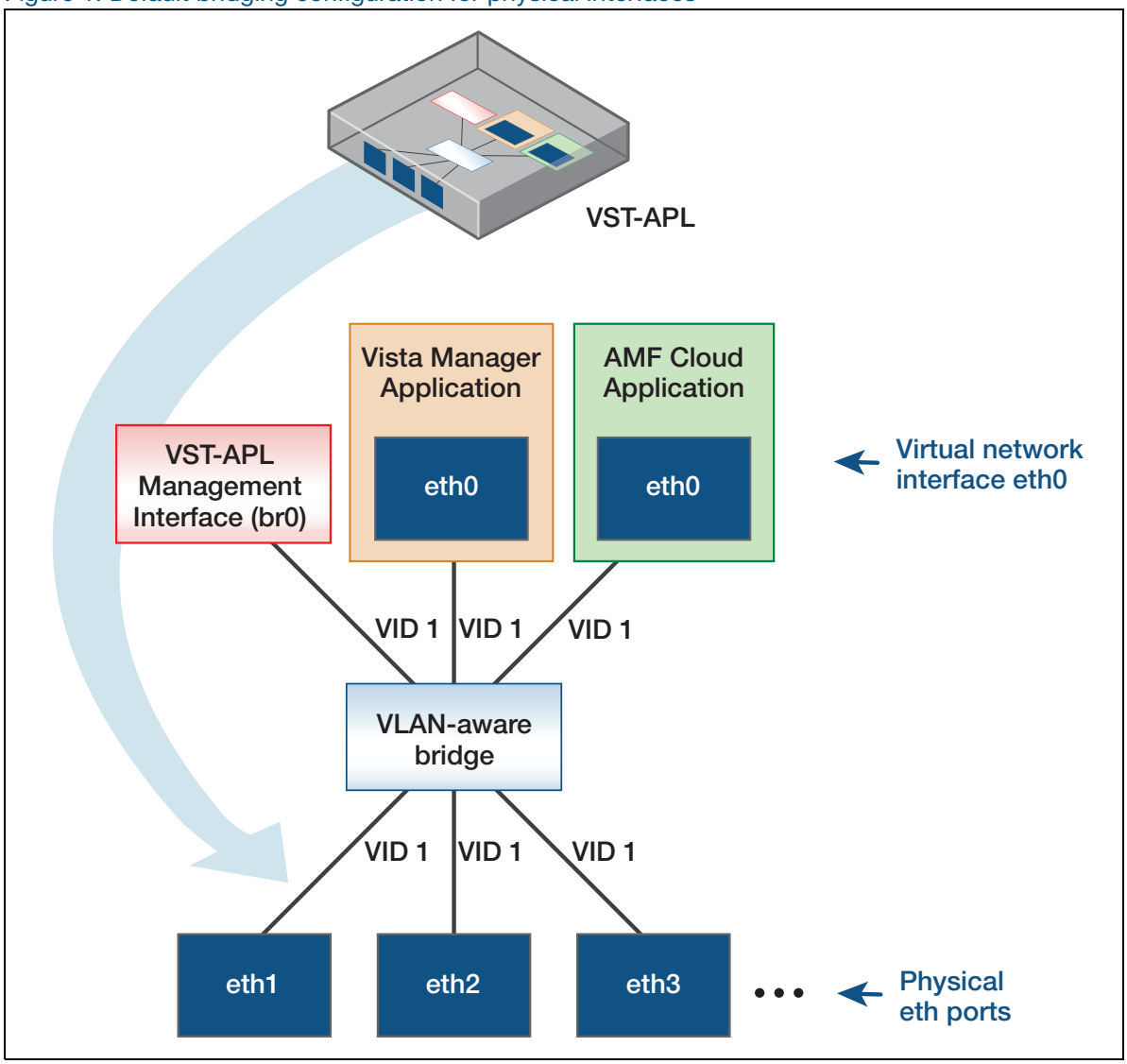
Default topology

By default, each physical Ethernet interface on the VST-APL is connected to the VLAN-aware bridge as an untagged member of the default VLAN, vlan1. In Figure 1 below, eth1, eth2, and so on at the bottom of the diagram, are the physical eth ports on the appliance.

When you activate an application instance, you must assign it a network interface via which to reach it. The only supported interface is virtual, and the first virtual interface assigned for each application instance is eth0. As shown for the applications at the top of the diagram, eth0 is the application's virtual eth interface to the VLAN-aware bridge.

This means that by default, any interface in an application instance that is attached to vlan1 is connected to the same Layer 2 broadcast domain as all physical interfaces on the appliance.

Figure 1: Default bridging configuration for physical interfaces

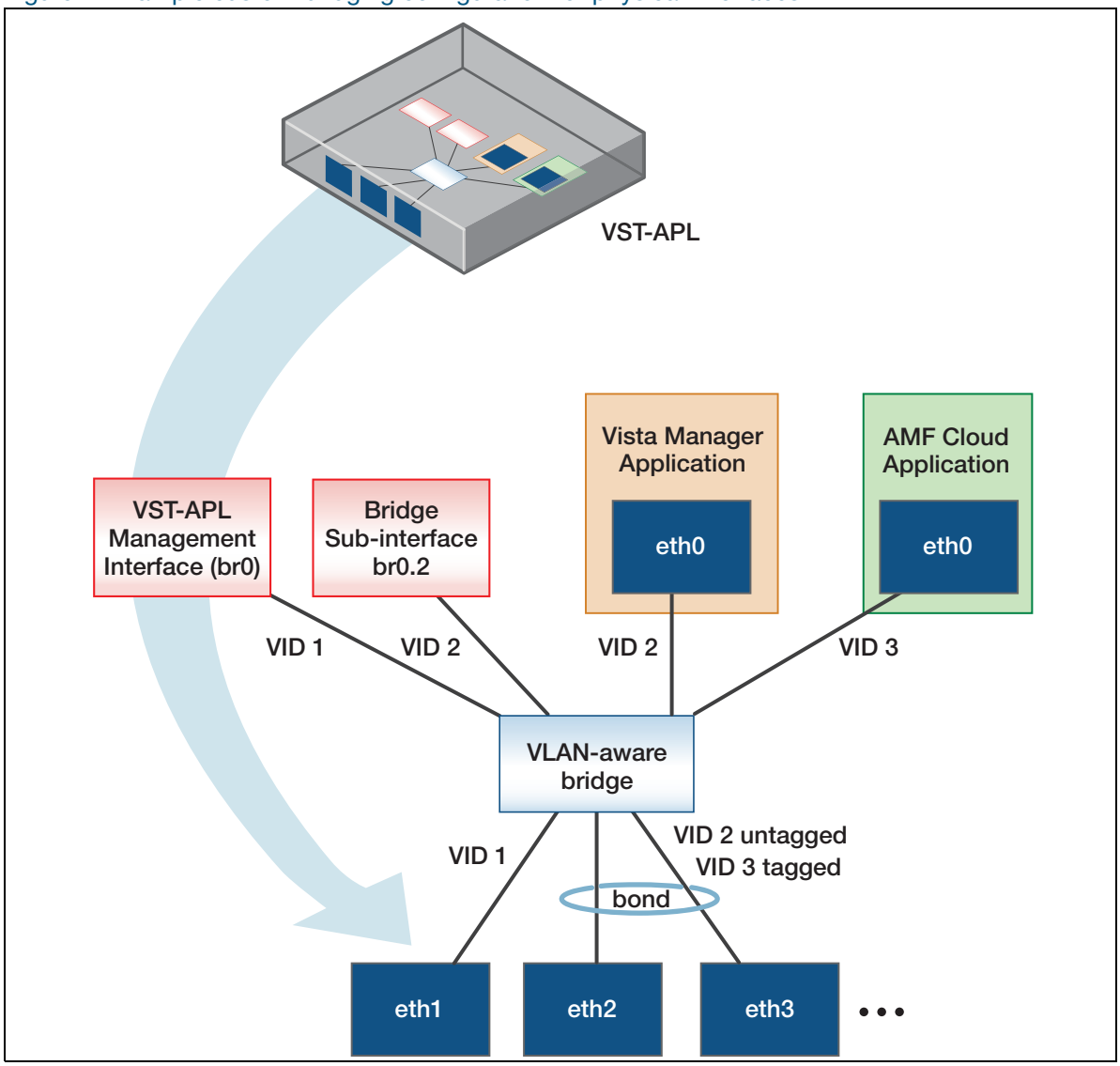


Advanced topology

You can configure the VST-APL interfaces for more complex network topologies. You can:

- connect different applications on the VST-APL to different VLANs on the network.
- join two or more physical eth links of the same speed to create bonds. This could be used to increase the bandwidth for an application's connection to another device on the network, such as an AlliedWare Plus device.

Figure 2: Example custom bridging configuration for physical interfaces

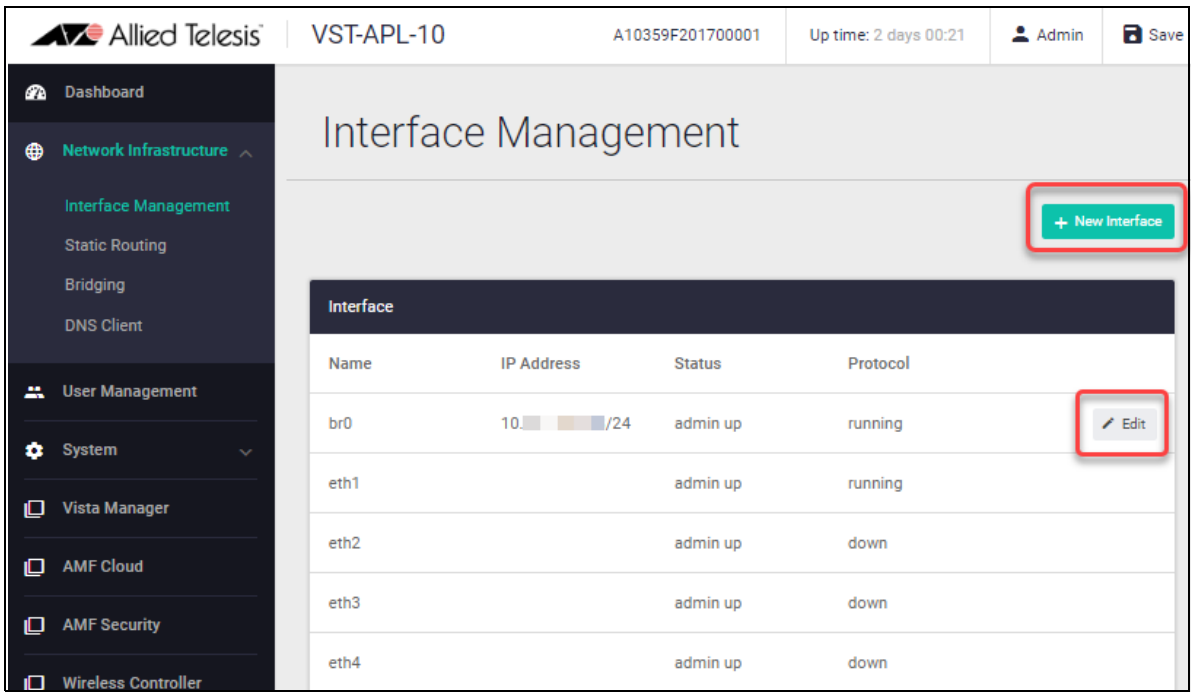


For example, some of the more advanced settings for Figure 2 are:

- AMF Cloud and Vista Manager are NOT connected internally, and would require an external device for connectivity if they needed to communicate.
- The VST-APL appliance has network connectivity to the Vista Manager application via bridge sub-interface br0.2 which is connected to vlan2.
- Eth1 is only a member of vlan1 with vlan1 as the native VLAN.
- Eth2 and eth3 are part of a bond. The bond is a member of both as an untagged member of vlan2 and a tagged member of vlan3.

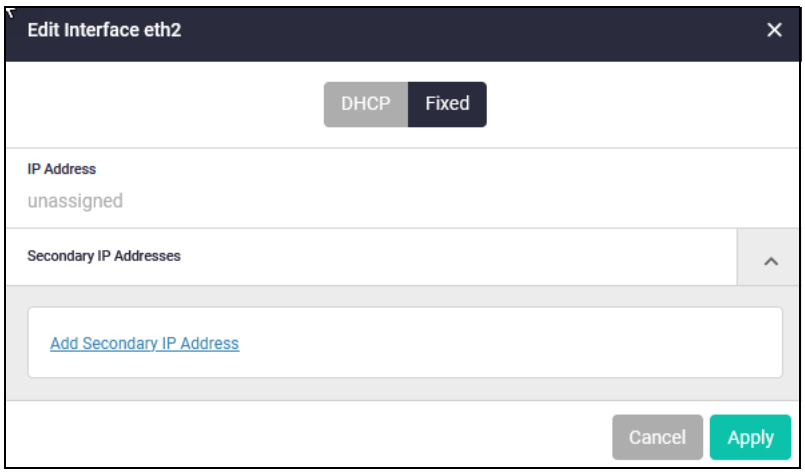
Configure Interface Management

By default, the VST-APL has a number of physical eth interfaces, and one VLAN-aware bridge (br0). To view and configure interfaces, navigate to **Network Infrastructure > Interface Management**.



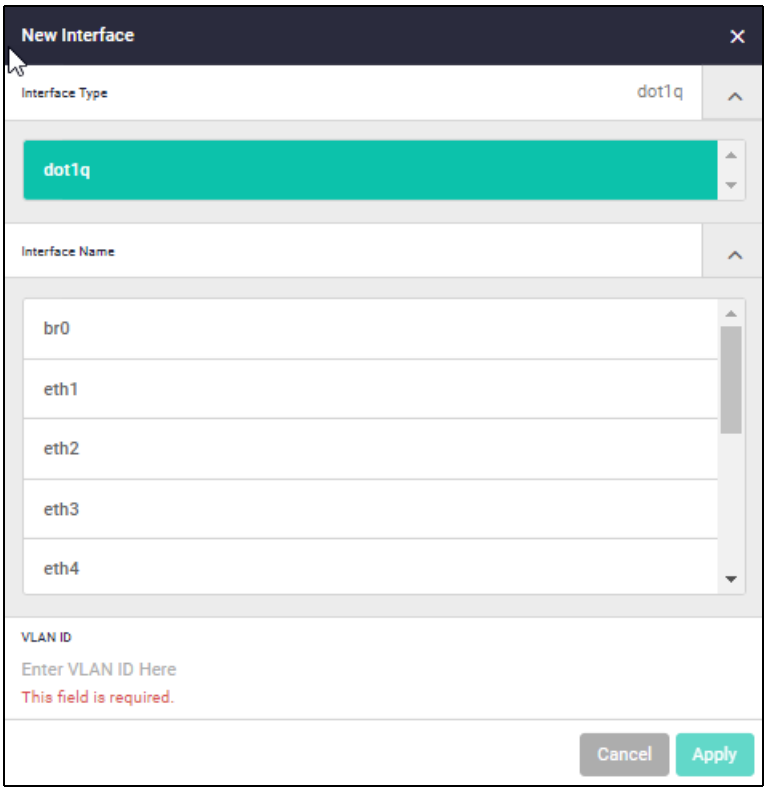
On the Interface Management page, you can:

- See an overview of all interfaces on the VST-APL, including the VLAN-aware bridge (br0), bridge 802.1Q sub-interfaces, physical eth ports (eth1, eth2, and so on), and bonds. For each interface, see the IP address (if assigned), the status (admin up or down), and whether the protocol is running or down.
- Assign IP addressing to the bridge, bridge 802.1Q sub-interfaces, and eth interfaces that are not attached to the bridge. Click **Edit** to its right. Either select DHCP or enter a primary and optional secondary IP address.



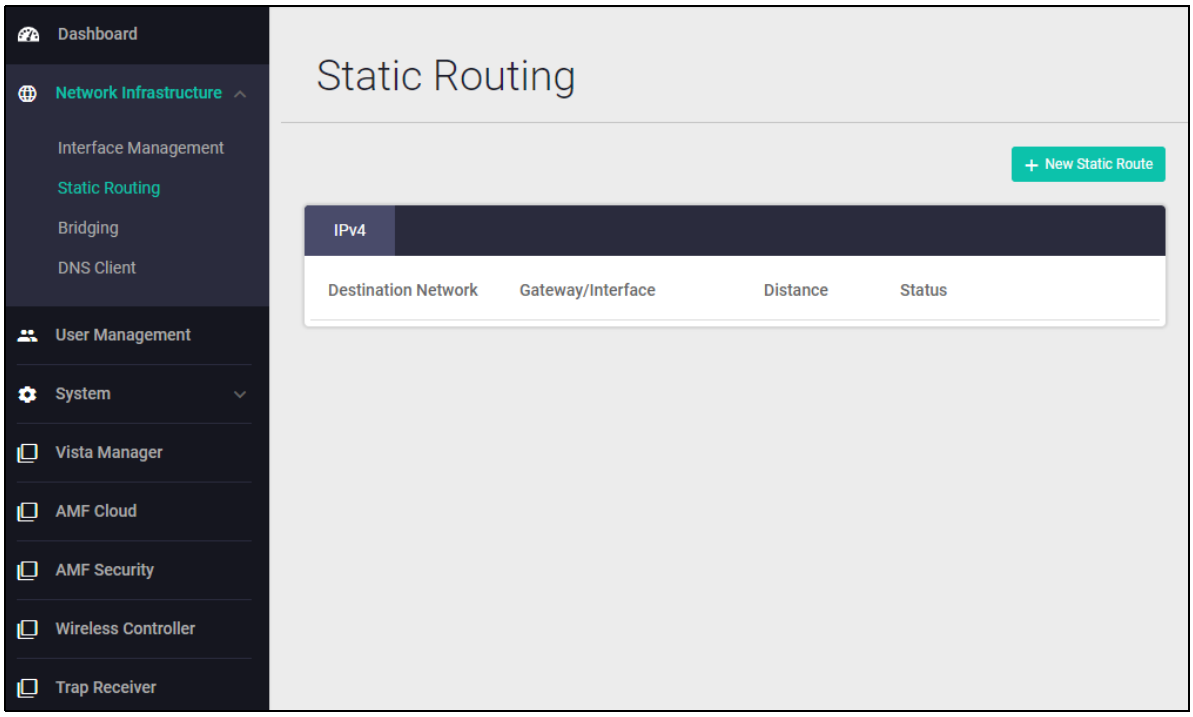
- Create an 802.1Q sub-interface on an eth port or on the bridge. Click the **+ New Interface** button at the top right of the Interface table. In the **New Interface** dialog box, expand the **Interface Name** list, and select the interface. Enter a VLAN ID. Click **Apply**. The new sub-interface will show

in the **Interface** panel as the interface and the VLAN ID separated by a dot. For example, if you assign VID 300 to eth2, this is called eth2.300.



Configure Static Routing

By default, the VST-APL appliance is set accept IP addressing from a DHCP server, or if none is supplied, to use the IP address 192.168.1.1. To configure and view static routes, navigate to **Network Infrastructure > Static Routing**. The default static route is not displayed.



To add a new static route, click the **+ New Static Route** button above the top right of the routes panel.

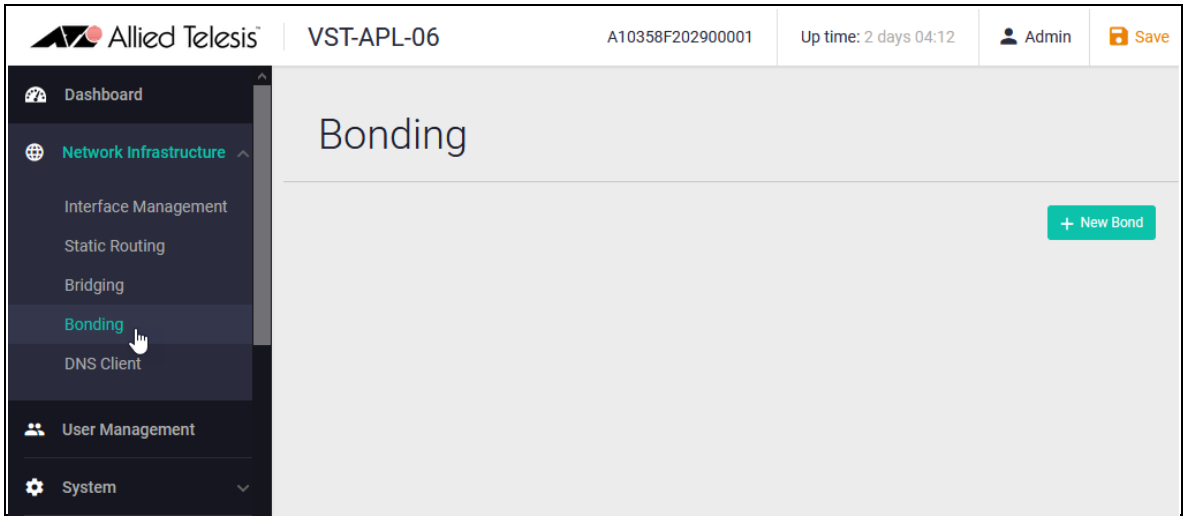
Enter the IPv4 address of the destination network. Specify the IPv4 address for the gateway, and optionally the administrative distance for the route. Click **Apply**.

To edit an existing static route, click **Edit** at its right.

Configure Bonding

You can create static or dynamic (LACP) bonds by joining multiple physical eth ports. To create, modify, or view bonds, navigate to **Network Infrastructure** > **Bonding**. You can join together in a bond any 2 or more eth links that have the same speed. For example, you can join all the 1 Gb ports into one bond.

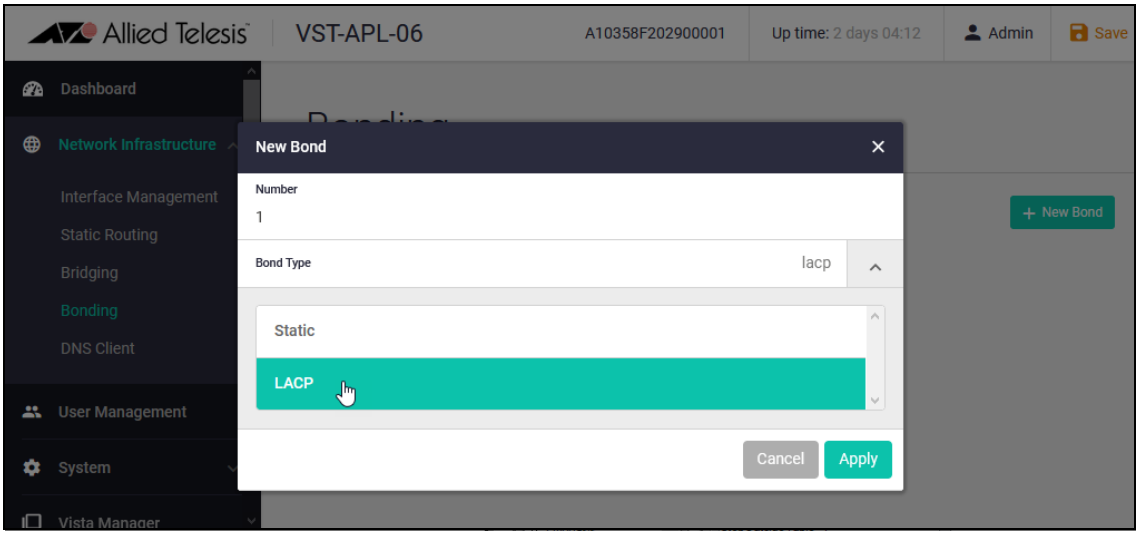
Figure 3: Bonding page



Create a bond

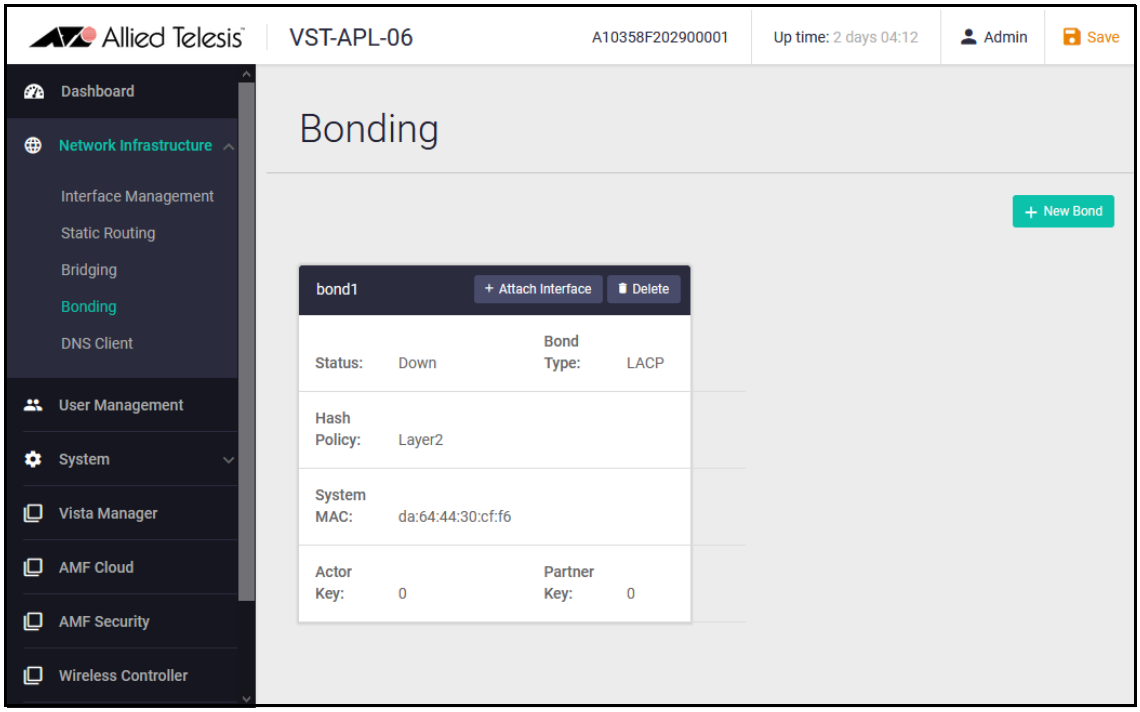
By default the appliance has no bonds. To create a bond:

1. On the **Bonding** page, click **+New Bond**.



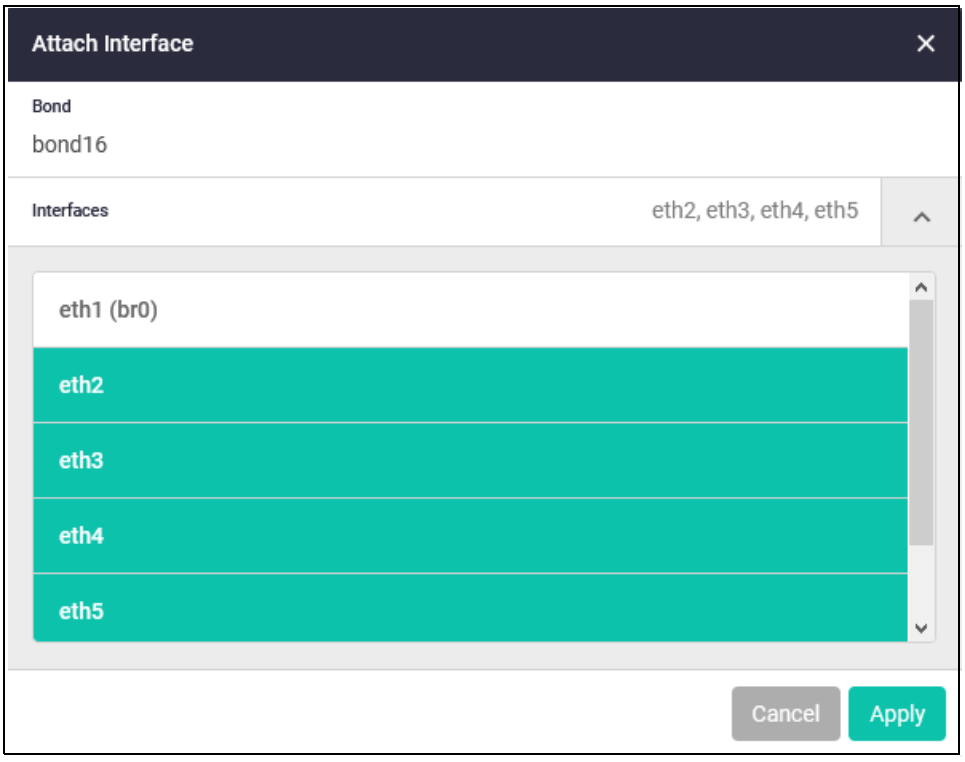
In the New Bond dialog box, enter an ID number for the bond and select whether it is to be a static bond or an LACP (dynamic) bond. Click **Apply**.

The Bonding page shows the new bond with no interfaces.



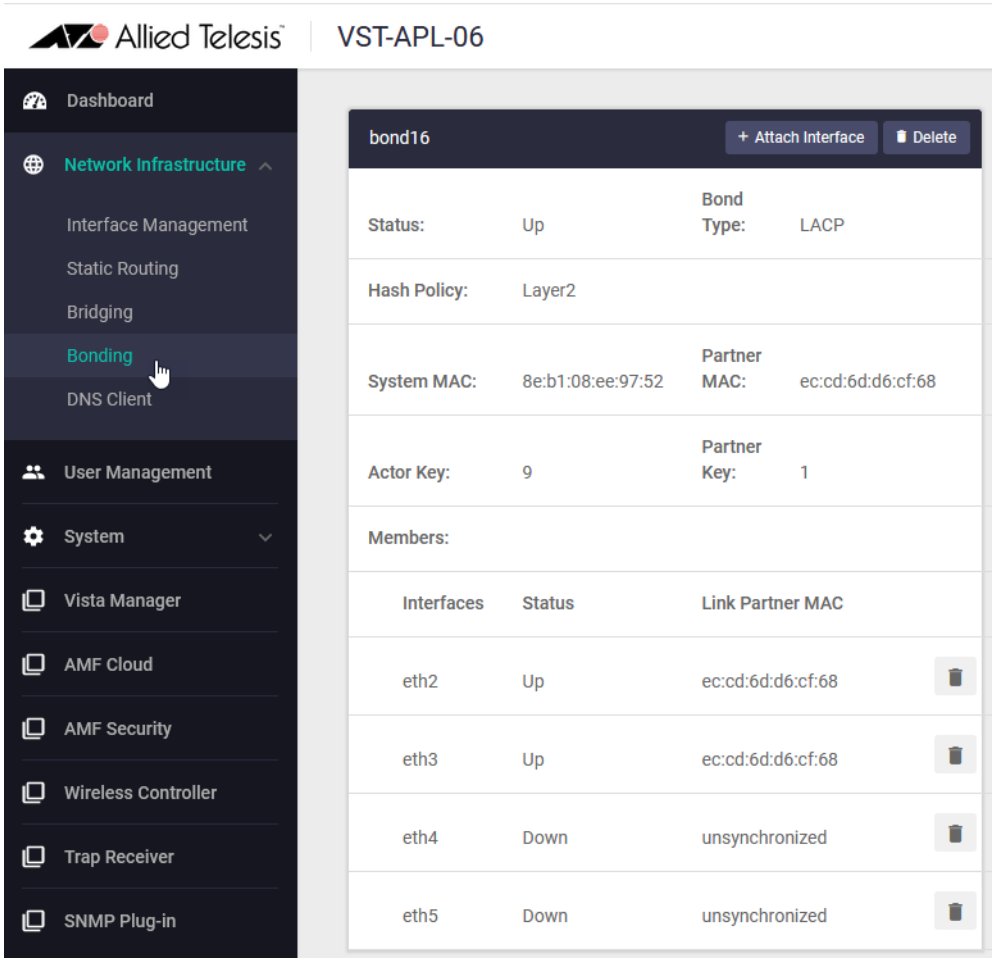
2. Click the **Attach Interface** button in the panel for the bond. Select from the list of available ports to add. An eth port is not available if it belongs to another bond. Any eth ports added to a bond are removed from the bridge.

   If an interface in the list is already attached, this is shown in parentheses. Adding the interface to a bond removes it from its previous attachment. For instance “eth1 (br0)” shows that the port eth1 is attached to the bridge br0. If you add eth1 to a bond, it is removed from the bridge.



Click **Apply**.

3. If you configure an LACP bond, you must ensure that the other end of the LACP connection has the appropriate LACP configuration.



The Bonding panel in the Bonding page shows the status of the LACP links, such as:

- **Down** (link down) and **Unsynchronised**;
- **Up** (link partner interface is running) and **Unsynchronized** (LACP link partner is not configured correctly)
- **Up** (link partner interface is running) and MAC address of the **Link Partner** (the link partner is synchronized).

4. If required, add the bond to the bridge (**Network Infrastructure** > **Bridging** page). Bonds are not automatically attached to the bridge.

Remove an eth port from a bond

1. Click on the recycle bin by the port in the bond panel on the Bonding page.
2. The eth port is not automatically re-attached to the bridge. Reattach it in the **Bridging** page if required.

Remove a bond from the appliance

1. Click **Delete** at the top of the bond panel in the Bonding page.
2. Eth ports that were attached to the bond are not automatically re-attached to the bridge. Reattach them in the **Bridging** page if required.

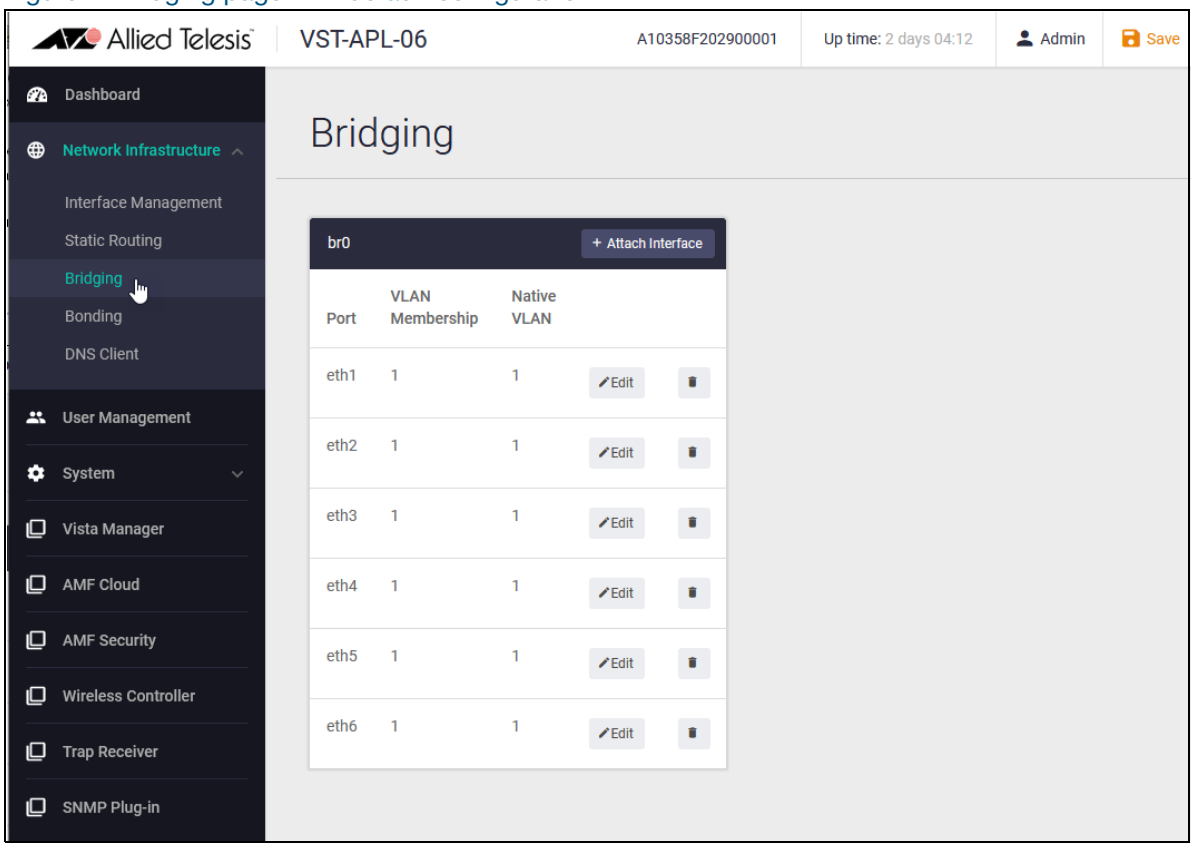
Configure Bridging

There is one VLAN-aware bridge (br0) on the appliance. By default, all physical eth interfaces are attached to the bridge. If you create bonds, they are not automatically attached to the bridge; you will need to attach them. When you activate an application, you create a virtual eth interface attachment to the bridge (eth0).

If the default configuration is suitable for your network, you don't need to change this.

To view and configure bridge connections, navigate to **Network Infrastructure** > **Bridging**.

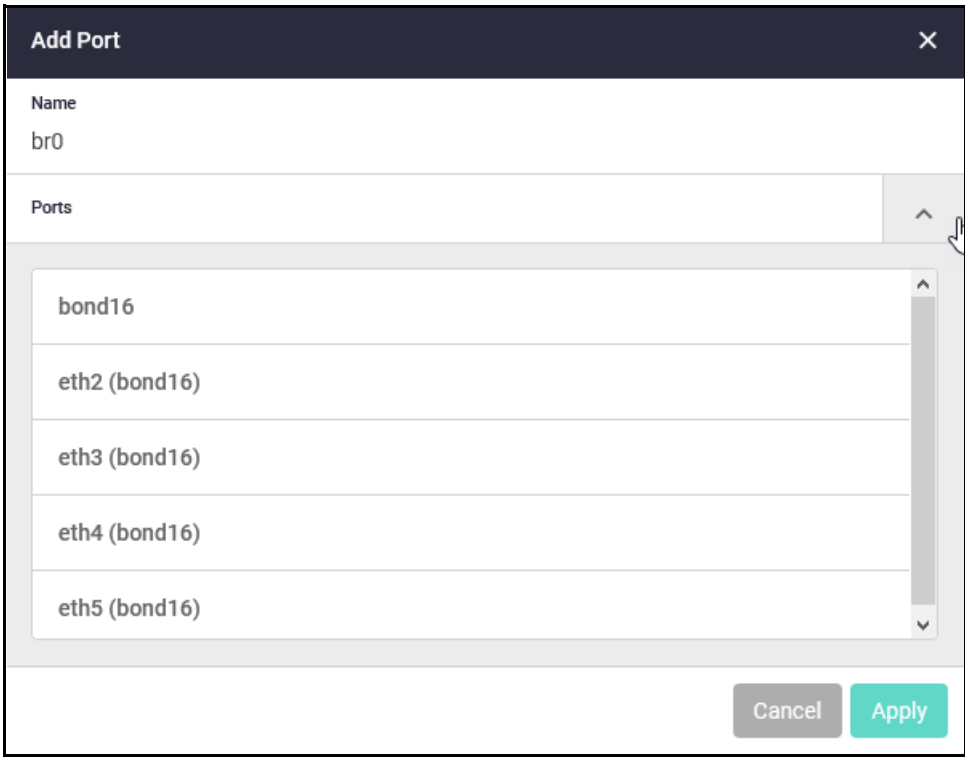
Figure 4: Bridging page with default configuration



You can use the **Bridging** page to:

- Attach a physical port or a bond to the bridge.
  Click the **+ Attach interface** button at the top right of the table. In the **Add Por**t dialog box, select from the available interfaces (ports and bonds). Enter the VLAN membership range (a contiguous range) and the native VLAN ID. Click **Apply**.

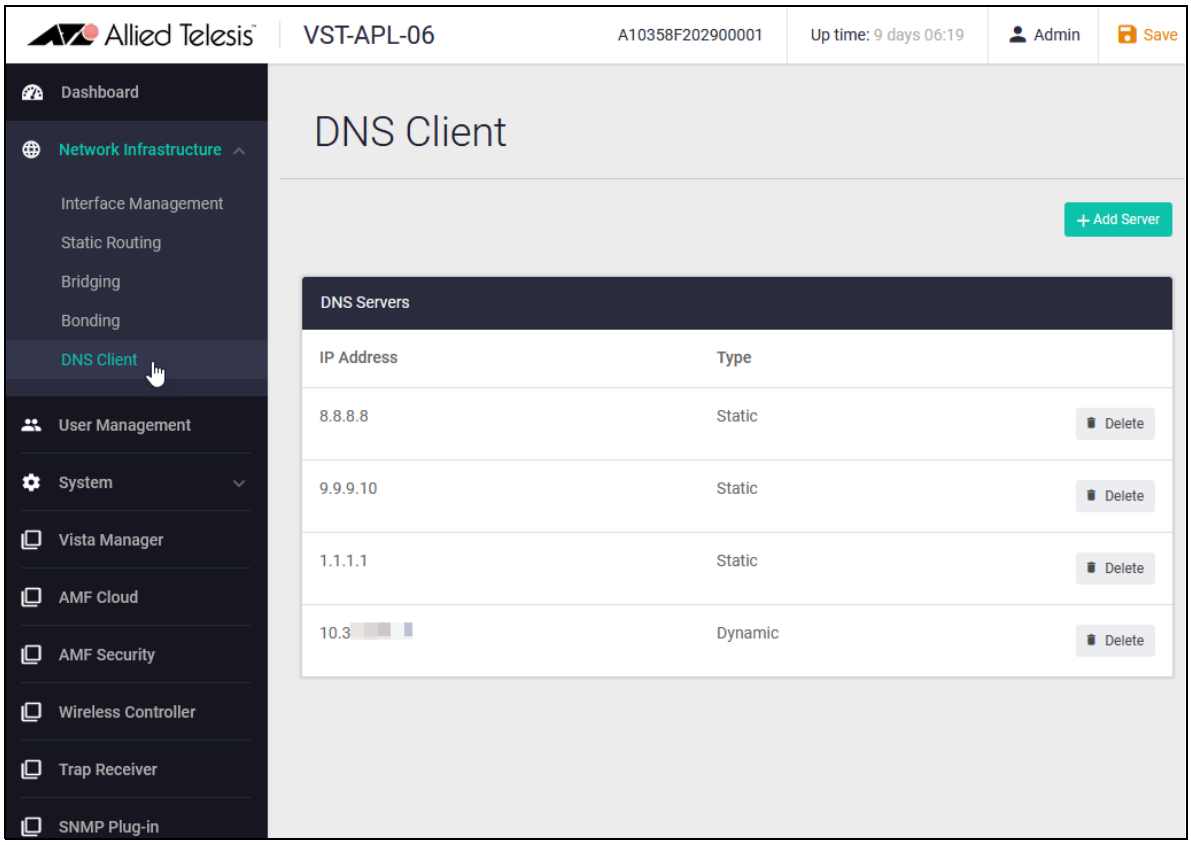
  If an interface in the list is already attached, this is shown in parentheses. Adding the interface to the bridge removes it from its previous attachment. For instance “eth2 (bond16)” shows that the port eth2 is part of bond 16. If you add eth2 to the bridge, it is removed from the bond.



- Remove a port attachment from the bridge. Click the **recycle bin** to its right.
- Edit VLAN membership for physical eth ports and bonds attached to the bridge. Click the **Edit** button to its right. Enter the VLAN membership range (a contiguous range) and the native VLAN ID. Click **Apply**.

Configure the DNS Client

To view or configure DNS servers configured for the DNS client on the appliance, navigate to **Network Infrastructure > DNS Client**. Any DNS Servers assigned by DHCP are shown as dynamic entries.



In the DNS Client page:

- To add a DNS server, click the **+ Add Server** button at the top right of the table of servers. Enter the IP address of the DNS server and click **Apply**.

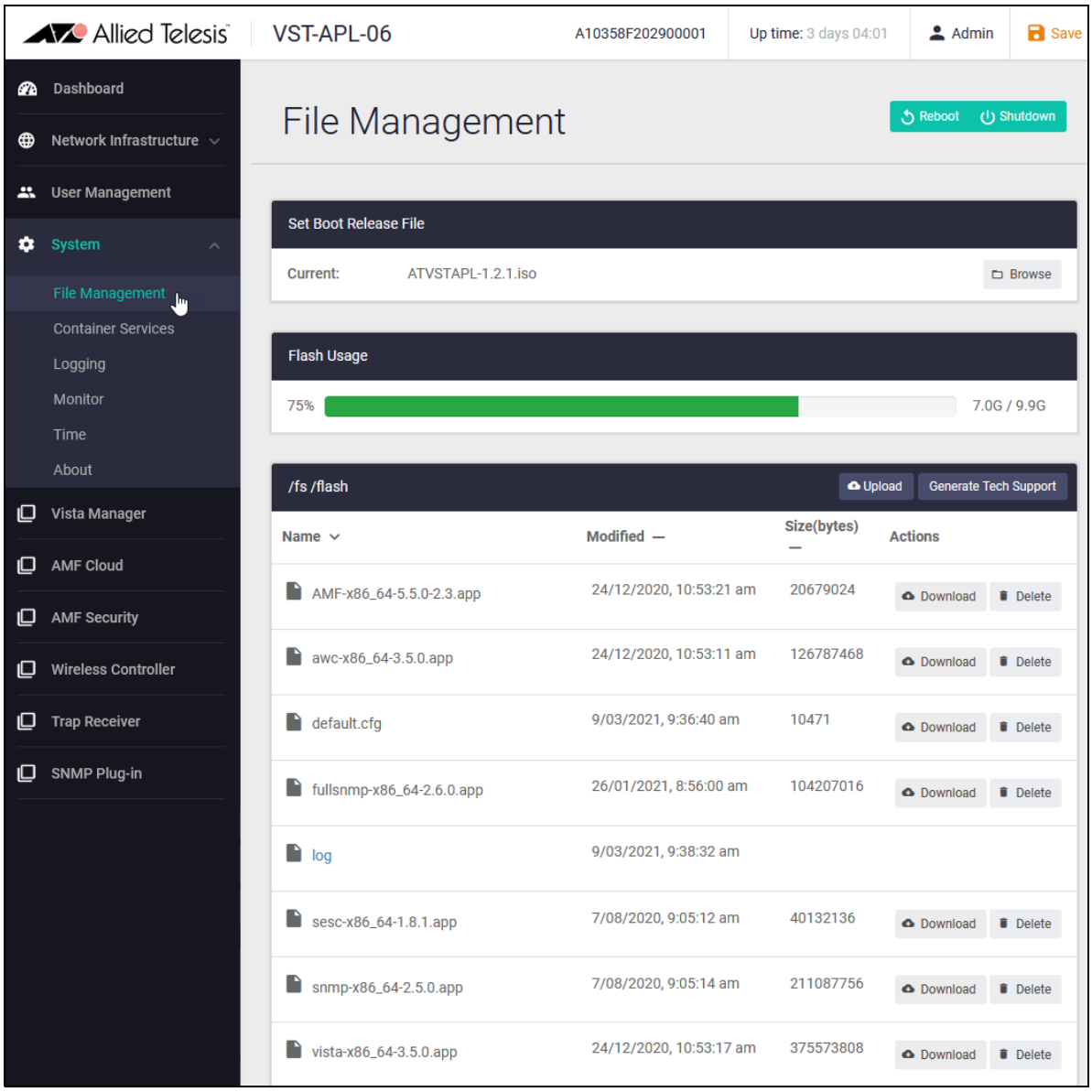
- To delete a DNS server, click **Delete** to its right.

System management

In this section, see information on how to:

Manage files

Navigate to **System > File Management**. In the File Management page, you can view and manage files in the appliance's persistent storage, manage software updates, and access troubleshooting data for tech support.



By default this page will show that the VST-APL file system contains files for:

- each application (filename *appname-x86_64-x.x.x.app", where x.x.x is the version, for example, "vista-x86_64-3.2.2.app").

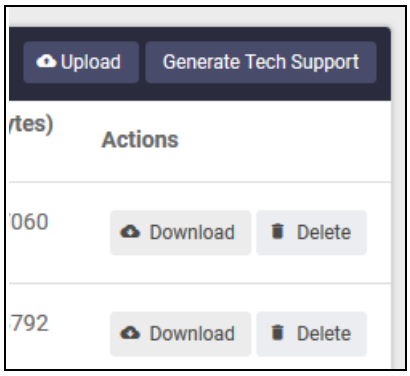
  Note that the operating system and application image files shown in the file system may not be the ones currently running on the appliance. The files shown here are available for activating or upgrading appliance software.

- the default configuration (filename "default.cfg")
- a log directory for log files. The appliance stores the messages in log files (filenames "messages*") in the log directory in the persistent storage system.
- the appliance operating system (ATVSTAPL-x.x.x.iso)

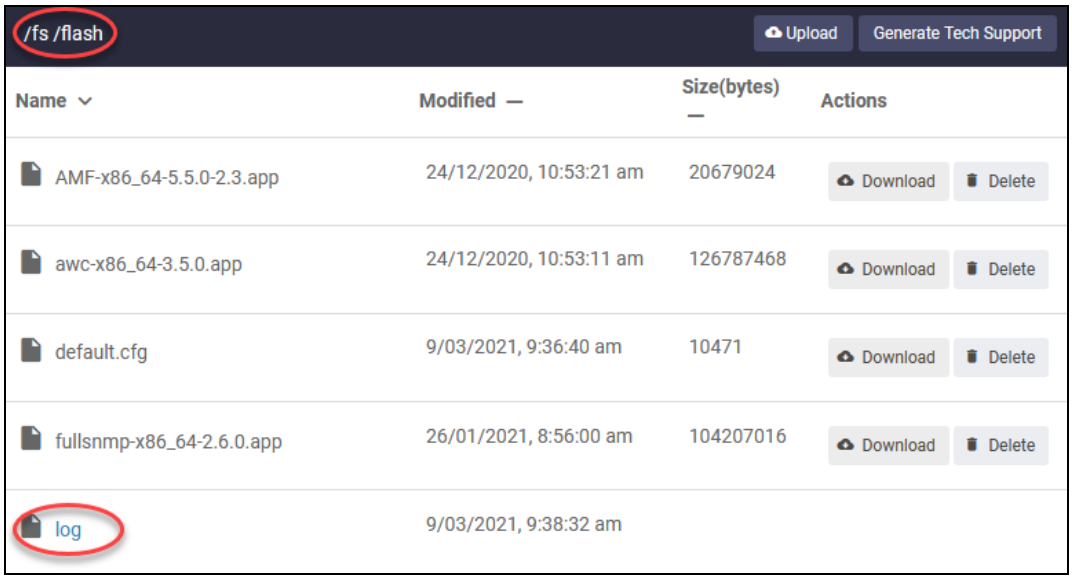
Persistent storage may also contain other files that are:

- generated by the appliance, such as tech-support files (tech-support... .tgz)
- uploaded by a user, for instance new versions of software files. Note that the image files shown in the file system may not be the ones currently running on application.

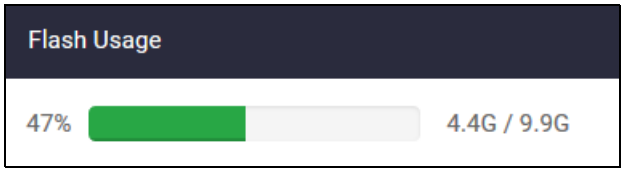
To upload a file to the appliance's persistent storage, use the **Upload** button at the top of the file system panel. To download or delete a file from the appliance, click the **Download** or **Delete** button to the right of the file.



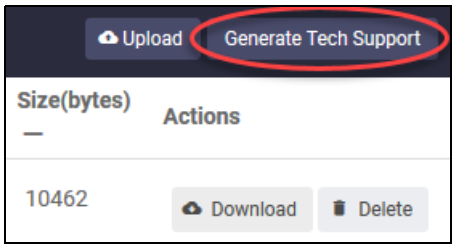
To navigate the file system, click on the path at the top of the file system panel, or click on a directory in the panel.



The **Flash Usage** panel shows the amount and percentage of persistent storage used.

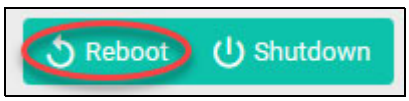


To generate troubleshooting information for the appliance, click the **Generate Tech Support** button at the top right of the file system panel.



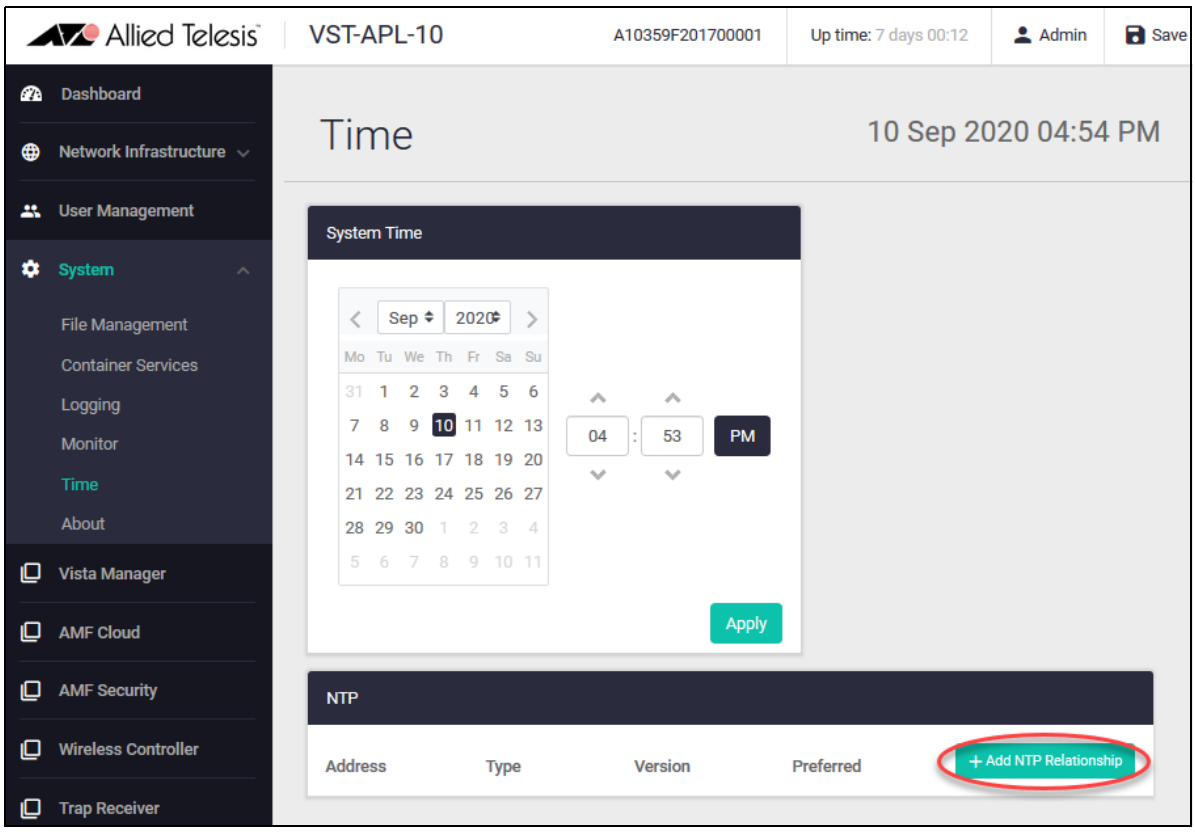
This creates a tech support file stored in the persistent storage system with a filename like ‘tech-support-.....tgz’. The file contains detailed information about configuration and internal processes in the appliance. If you need to contact your authorized Allied Telesis distributor or reseller for technical support, use this button to generate tech support, download the file, and send it to them.

To reboot or shut down the appliance, use the green **Reboot** or **Shutdown** button buttons at the top right of this page.



Configure system time

To configure system time, navigate to **System > Time**. In the **Time** page, you can set the system time manually, or set the appliance to use NTP relationships to determine system time.

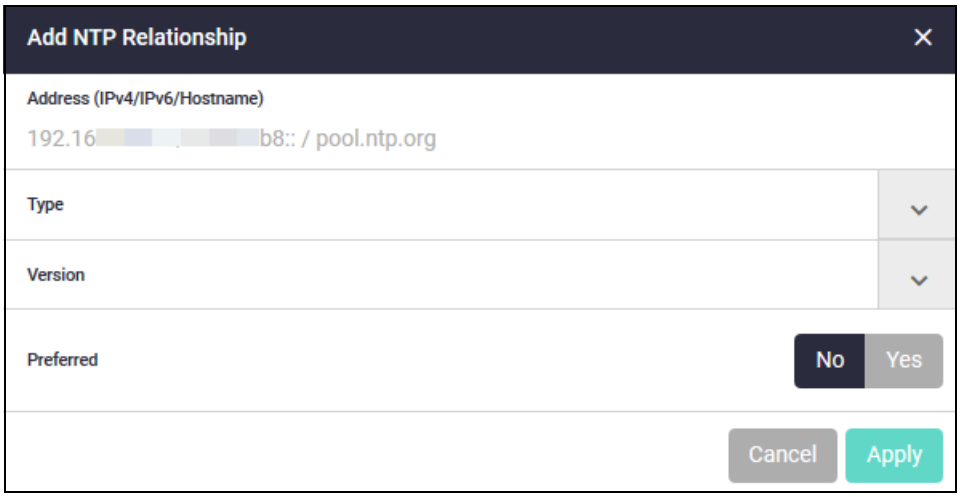


The system time is displayed as local time according to the time zone of the browser used to connect to the VST-APL GUI (not UTC time).

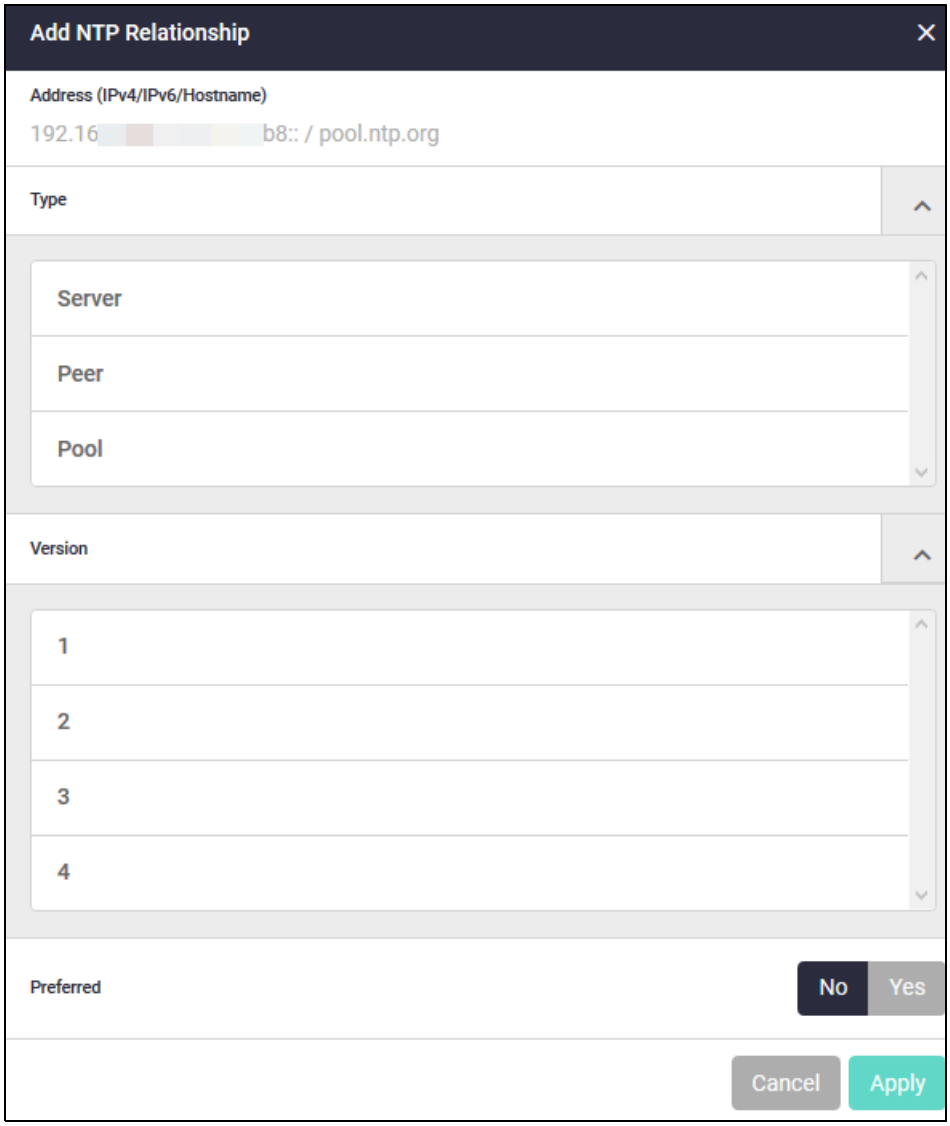
To set the time manually, set it to local time and click **Apply**.

To add an NTP server for the device to get time settings from using the Network Time Protocol, use the following steps.

1. Click the green **Add NTP Relationship** button at the top right of the NTP panel.



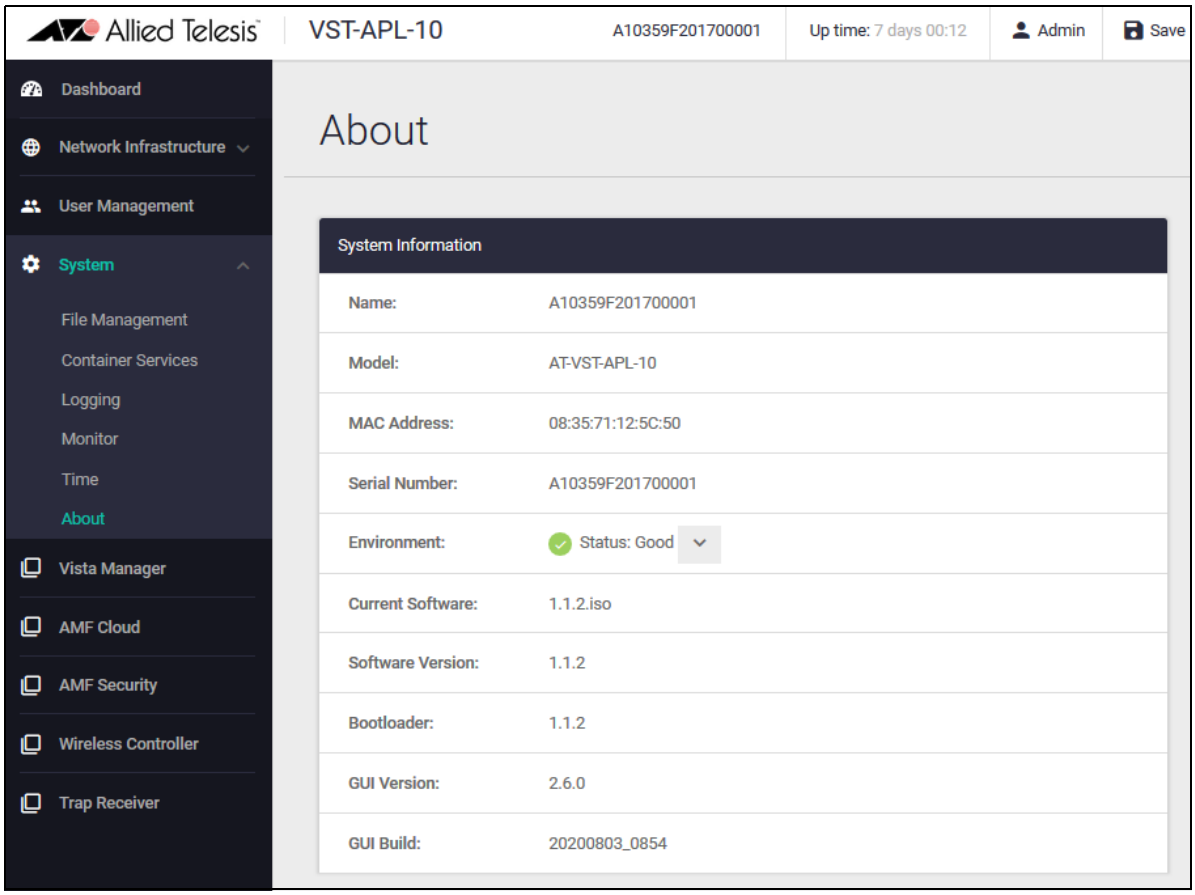
2. Enter the IP address of the NTP peer.
3. Expand the **Type** options by clicking the arrow to the right. Select whether the NTP relationship is to an NTP server, peer or pool.
4. Expand the **Version** options by clicking the arrow to the right. Select the version of the NTP protocol to use with this peer.



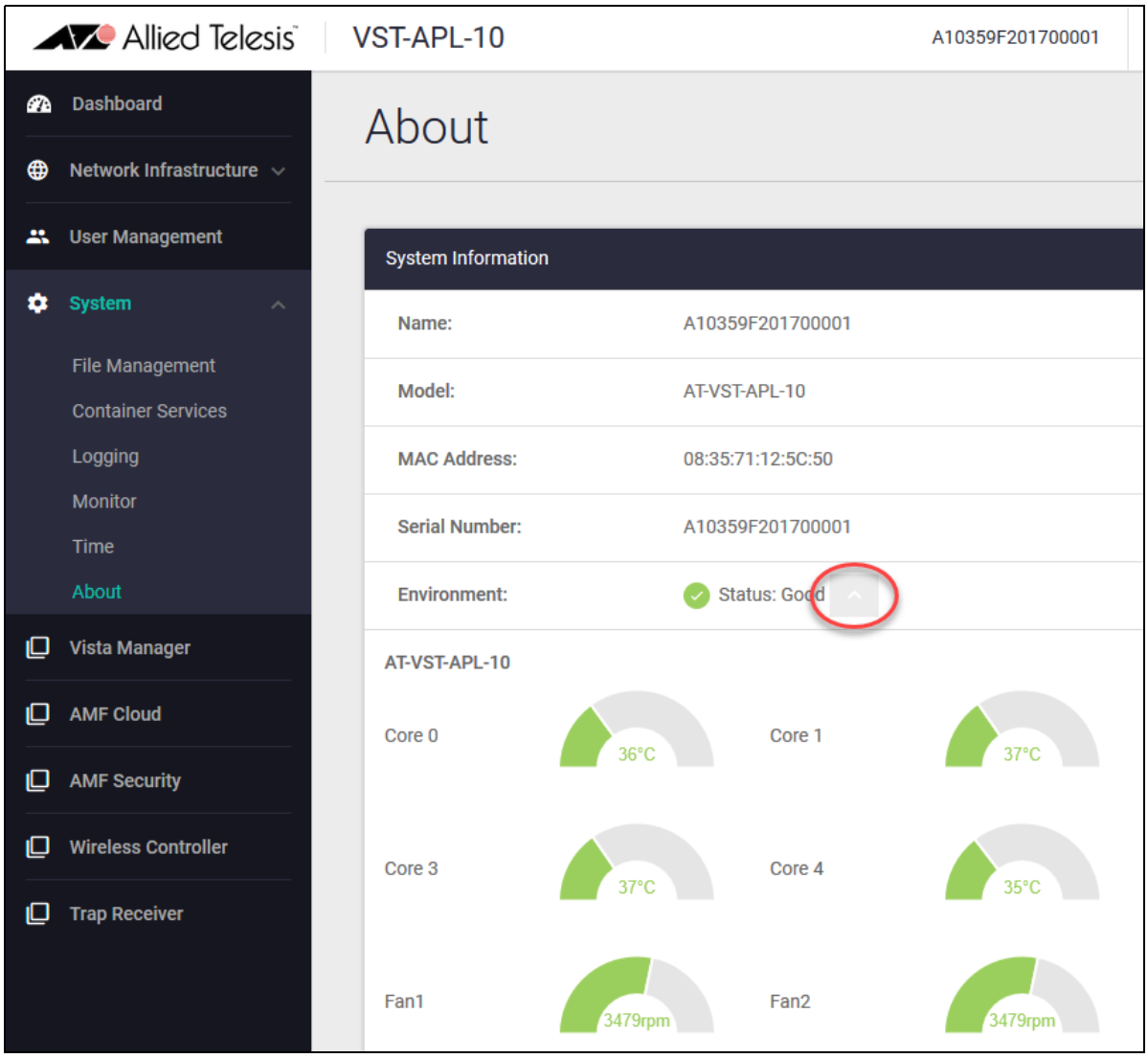
5. Set one NTP peer to be preferred by clicking the **Yes** button. If you configure more than one NTP peer, set the others to **No**. The VST-APL will set its system time based on NTP messages it receives from the preferred peer, or from another peer if it does not receive valid messages from the preferred peer.

View system information

To see details of system hardware, operating software, and environmental indicators, navigate to **System > About**. The About page provides a good overview of your physical appliance and its current setup, and is very helpful in the event of a problem, to assist Allied Telesis support.



To expand details of environmental indicators, click the arrow to the right of the **Environment Status**.

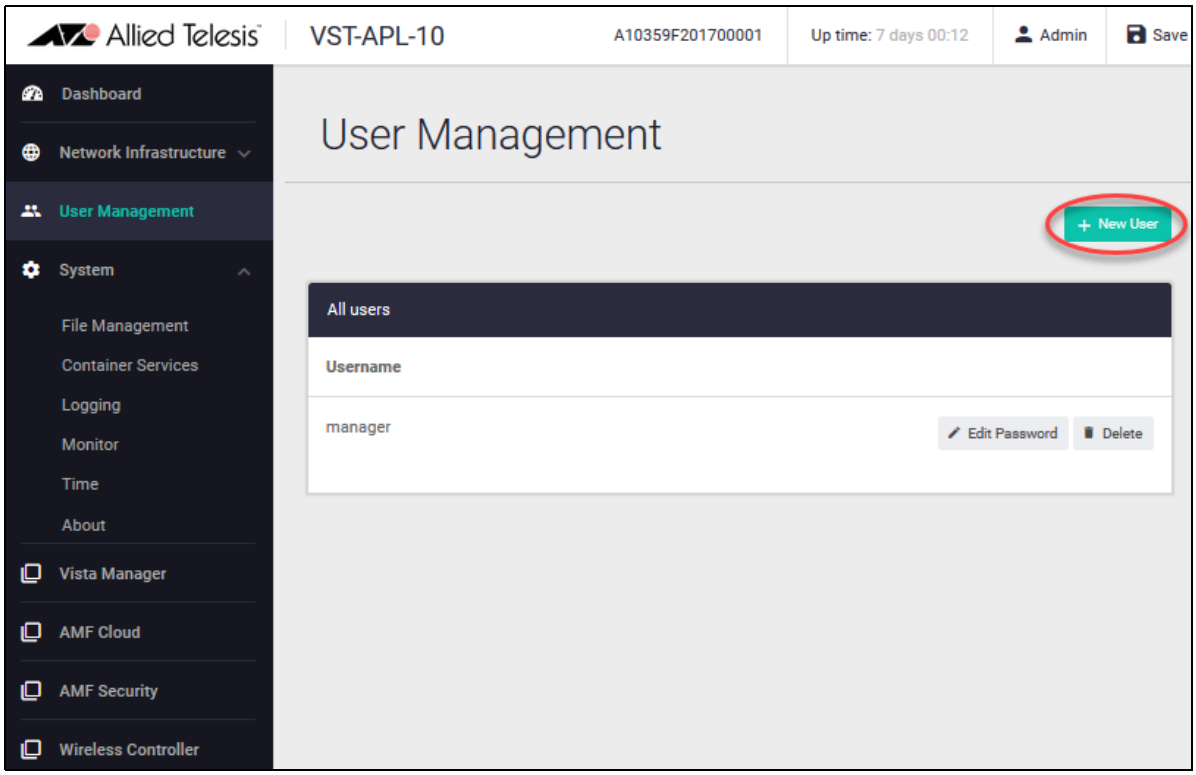


This shows detailed status for monitored components, such as the temperature of each of the CPU cores and the speed for each monitored fan.

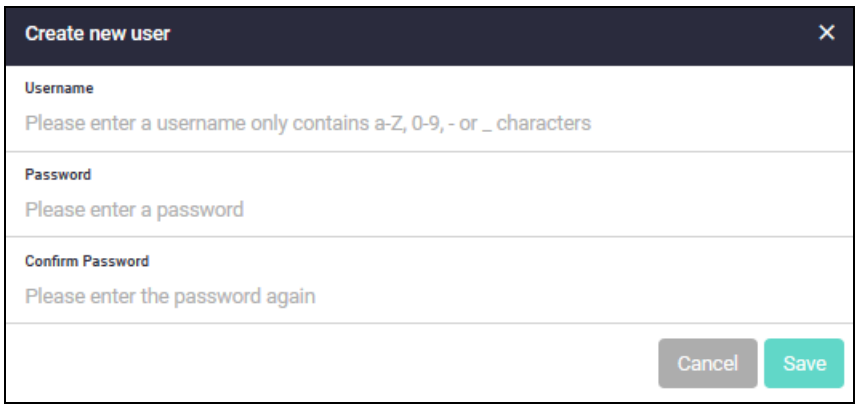
To see the current running software version running on the appliance, see the File Management page (see "Manage files" on page 27).

Configure users

By default, the VST-APL comes with a single user account with username “manager” and password “friend”. We recommend you change this password for security. To view and configure user accounts for the appliance, select **User Management** in the Dashboard menu.



All user accounts have the same privileges as the ‘manager’ account. To add a new user, in the User Management page, click the green **+ New User** button at the top right of the All users panel and enter the username and password (twice), then click **Save**.



To change the password for a user, click the **Edit password** button to the right of the user, enter the new password, then click **Save** in the **Edit password** dialog box.

To remove a user account, click the **Delete** button to its right.

After making changes to the user accounts, click **Save** at the top right of the VST-APL window to save the appliance configuration.

Monitoring

You can view some general information for the appliance on several pages, including the Dashboard, the File Management page (including Generate tech-support), and the About page.

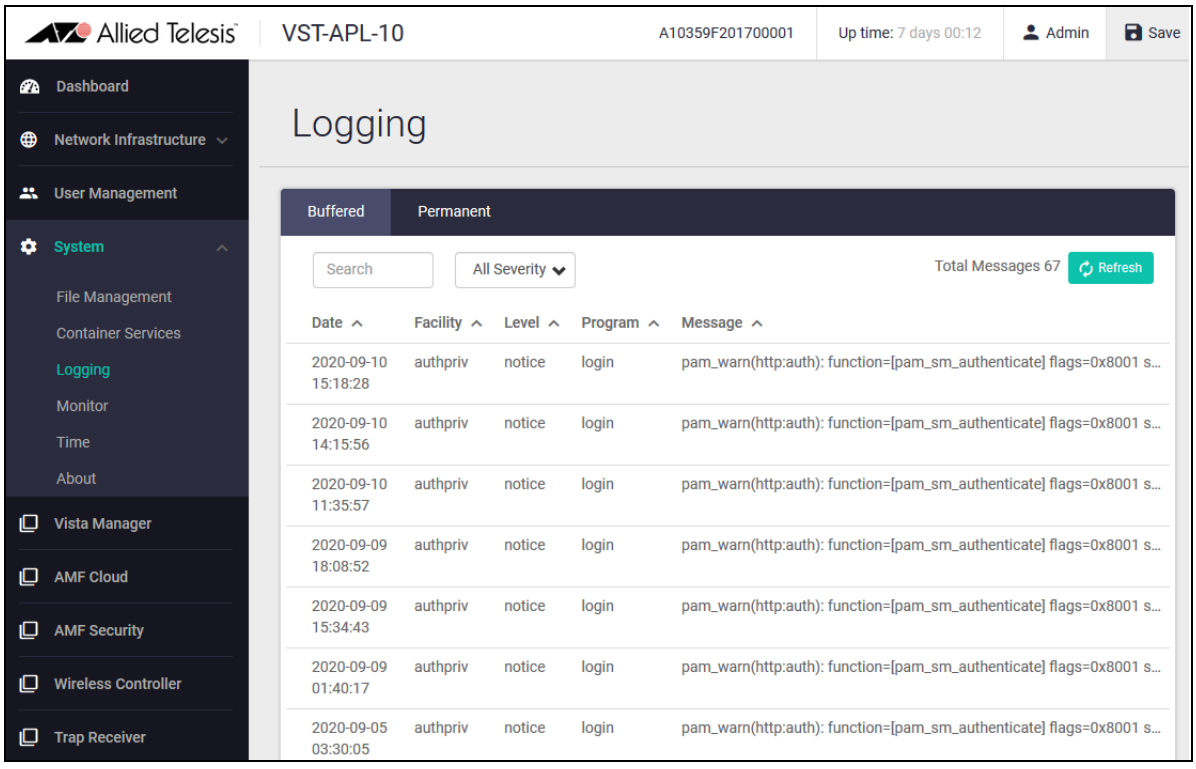
You can see an overview of the environmental status of the appliance on the Dashboard **System Information** panel ("The VST-APL GUI Dashboard" on page 11) and by navigating to the **System** > **About** page ("View system information" on page 32).

This section describes pages that provide more detailed monitoring information:

- "View log messages" on page 35
- "Monitor system CPU and memory" on page 38

View log messages

The VST-APL generates log messages related to the operation of the appliance. To view log messages, navigate to **System > Logging**.



The appliance sends log messages to both the:

- **permanent log**

  The permanent log is stored in persistent storage, and retains messages when the appliance is rebooted. Messages of severity level warning (4) and higher go to the permanent log.

  To view messages in the permanent log, click **Permanent** at the top of the logging panel. If a tech-support file is generated, the contents of the permanent log are included in it.

  The appliance stores the messages in log files in the log directory in the persistent storage system with file names beginning with 'messages'. To download or delete a log file, navigate to the **System > File Management** page and the **log** directory ("Manage files" on page 27).

- **buffered log**

  The buffered log is in current memory. It contains the most recent log messages and discards older ones when it fills the allocated memory. These messages are lost when the appliance restarts. Messages of severity level notice (5) and higher go to the buffered log.

  To view messages in the buffered log, click **Buffered** at the top of the logging panel.

The logging panel displays these components for each message:

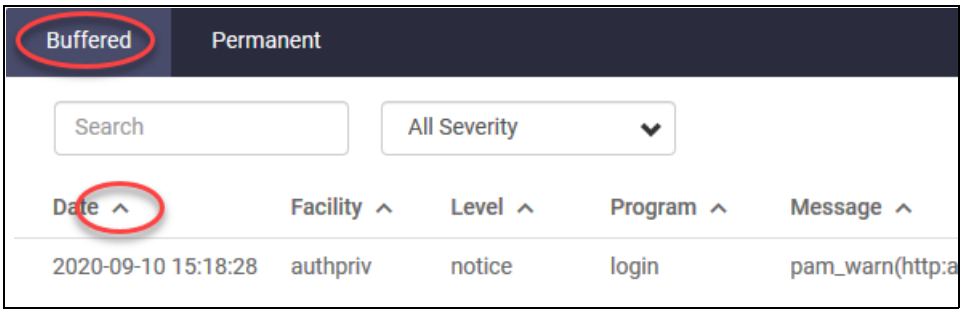
- Date—the date and time when the log message was generated, according to the device's clock in the local time zone.
- Facility—the facility in the operating software that generated the message.
- Level—the severity level of the message, indicating how important it is. See Table 4.
- Program—the particular program in the operating system that generated the message.
- Message—the content of the message.

Table 4: Severity levels in log messages

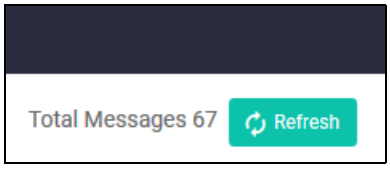
SEVERITY IN MESSAGE	SEVERITY LEVEL	MEANING
emerg	0	Emergency: the system is unusable; operation severely impaired.
alert	1	Alert: action must be taken immediately; operation has been or could be affected.
crit	2	Critical conditions; a possible problem or issue that requires manager attention.
err	3	Error: error conditions; an issue that may require manager attention.
warning	4	Warning conditions; normal notification of an event, not serious or particularly important.
notice	5	Notice: normal but significant condition; useful information that can generally be ignored during normal operation. Messages of this severity level are sent to the buffered log but not to the permanent log.
info	6	Informational messages.
debug	7	Debug level messages; extremely detailed (possibly high-volume) debugging information.

To select which messages to display:

- Show the messages in either the Buffered or the Permanent log by clicking the Buffered or Permanent button at the top of logging panel.
- To filter the messages, select a particular severity level to display or enter a search string.
- To sort the messages, click the arrow to the right of any column headings: Date, Facility, Level, Program, Message.



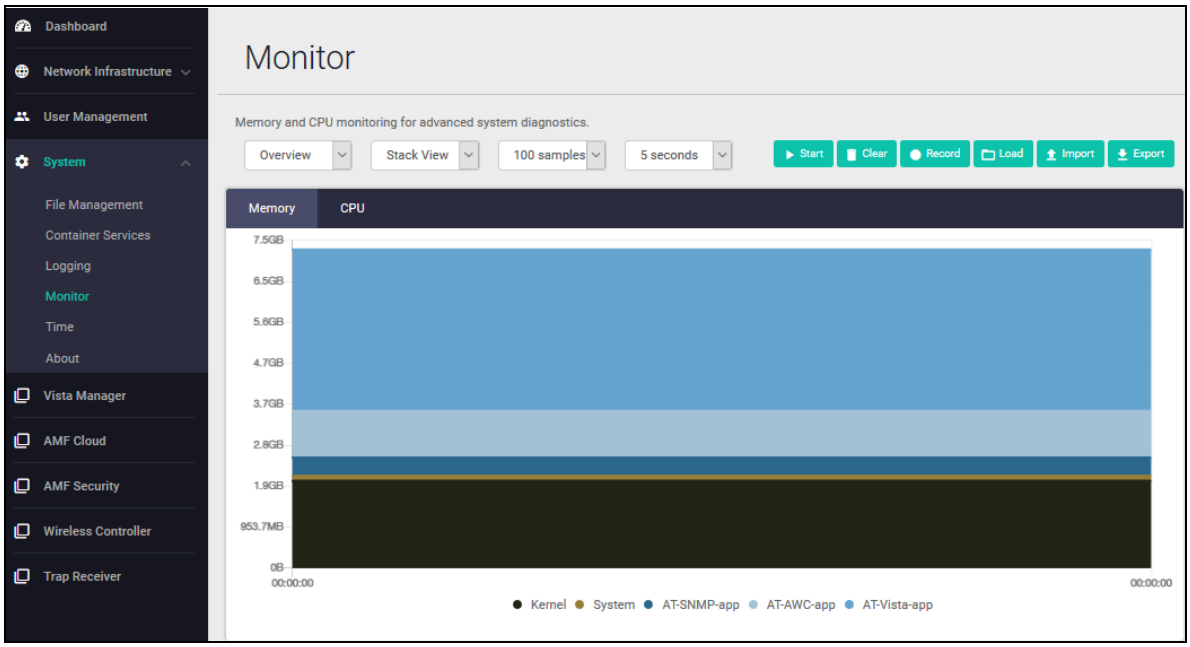
- To update the display, click the green **Refresh** button at the top right of the **Logging** panel. To the left of this button you can see how many messages match the current selection.



- Select how many messages to display at the bottom right of the page.

Monitor system CPU and memory

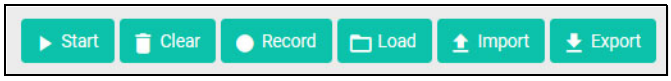
To monitor system CPU and memory use, in the Dashboard, navigate to **System > Monitor**. The appliance can gather samples of memory or CPU usage data for the appliance itself and for applications running on it.



Set the sampling parameters:

- Set the maximum number of data samples to gather by setting the **sample collection limit** in the drop-down list.
- Set the interval between samples by setting the **sampling period** in the drop-down list.

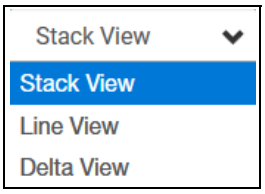
Use the green buttons to gather and record data.



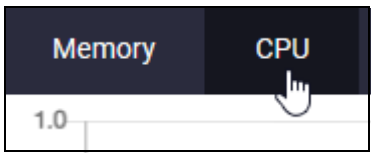
- Start the appliance collecting usage data samples by clicking the green **Start** button and stop sampling by clicking the red **Stop** button.
- Record the data in a file in the appliance persistent storage by clicking the green **Record** button
- Export the data as displayed in the GUI browser to a file in the appliance persistent storage by clicking the green **Export** button
- Reimport data from a file in persistent storage to display in the GUI **Monitoring** page by clicking the green **Load** button
- Import a data file from the file system of the device running the browser to display in the GUI **Monitoring** page by clicking the green **Import** button
- Clear the data from the browser by clicking the green **Clear** button

Select your view of the sampled data (without affecting the sampling itself) in the graph on the **Monitoring** page. The key below the graph shows the color for each program. You can:

- Select the type of **graph** to display from stack view, line view or delta view (values since the start of sampling, beginning at 0) from the drop-down list.



- Select whether to monitor memory or CPU usage by clicking in the **Memory** or **CPU** a the top of the graph panel.



- Display the usage for a particular program by selecting it from the drop-down list. See the color-coded key for the programs below the graph.

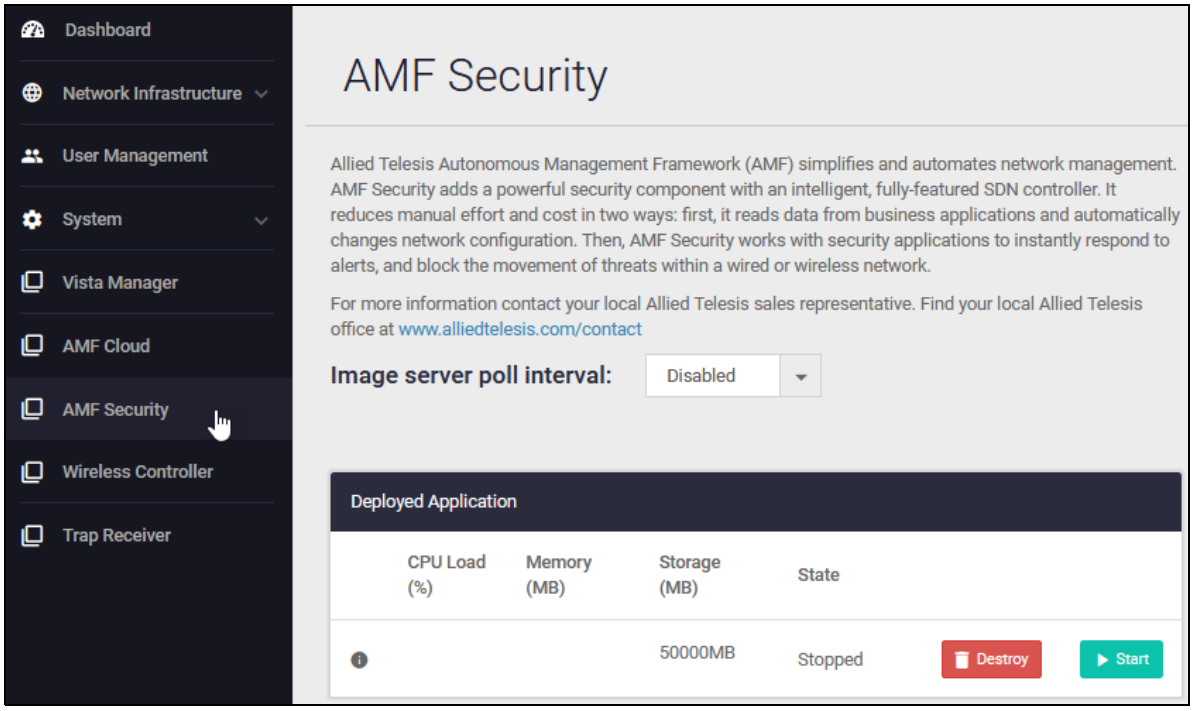
To display more detailed memory use for a particular program, select the program in drop-down list to the left above the graph.

Managing applications

This section describes the application pages in the VST-APL GUI, and:

Start, stop and remove applications

There is a page for each application; click on the menu item for the application to open its page.



This page displays the CPU load, the memory in MB, the storage in MB, and the state of the application, including whether it is:

- Offline—The application instance has not yet been activated or is not reachable.
- Extracting, Creating—when you activate the application, it extracts and creates an instance of the application on the appliance.
- Running—the application is running; normal operation.
- Stopping or stopped—the application stops gracefully. Before you can change the application configuration, you must stop the application. To stop an application, click the **Stop** button.
- Destroying—the application and its configuration is being removed from the appliance. **Caution**: Destroying an application removes the application, its configuration, and all data associated with the application instance from the appliance. To destroy an application, click the **Destroy** button.

If the application has its own GUI (such as Vista Manager), then you can access it by clicking the **Open** button. You can also enter the application's IP address directly in your browser.

View the Container Services page

The underlying technology supporting the applications on this appliance is Container Services.

The System menu includes a Container Services page. In this page, you can see an overview of all the applications on the appliance. Do not use this page to configure or manage applications. Instead, use the separate application pages. Click on the menu item for the application.

Caution: The VST-APL supports one instance of each application. Attempting to use this page to activate more instances of applications can result in overloading the appliance's resources and unpredictable behaviour.
The Container Services page is intended for advanced users who understand the systems resources. For configuration, regular users should only use the specific menu items for each application they need to configure. If you use this page, then monitor the total storage, memory and CPU items in the Compute Node section. If any of these change to red, then you are close to using all the system resources.

Note that the IP address field in the Compute Node Panel on this page is for a Network Attached Compute node. On the VST-APL appliance, this field is empty. The deployed applications run on the local device itself, not on a network attached node.

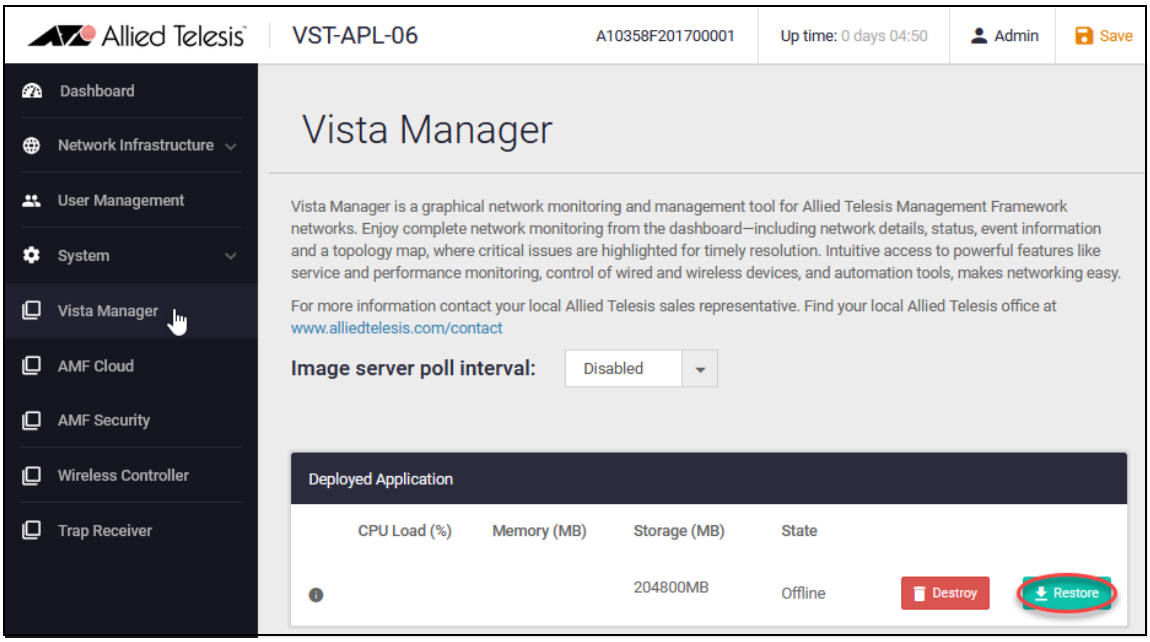
Restore an application after appliance restart

We recommend saving any appliance configuration that you want to retain as soon as you have made it, before the appliance reboots. The **Save** button is orange when there is unsaved configuration, and black when configuration has been saved. Click it to save.

However, if the VST-APL restarts after an application has been activated but before the appliance configuration has been saved, you can still restore the application and its configuration without having to begin again.

To restore one or more such applications:

1. When the appliance has restarted, navigate to the application page from the VST-APL menu.
2. In the application page, click the **Restore** button to the right of the application in the Deployed Application panel.



The application is restored to the configuration it had before the restart. This may take a few minutes.

3. To start the application, click the **Start** button to its right.
4. Save the appliance configuration by clicking the **Save** button.

Upgrading software

This section describes:

Software versions

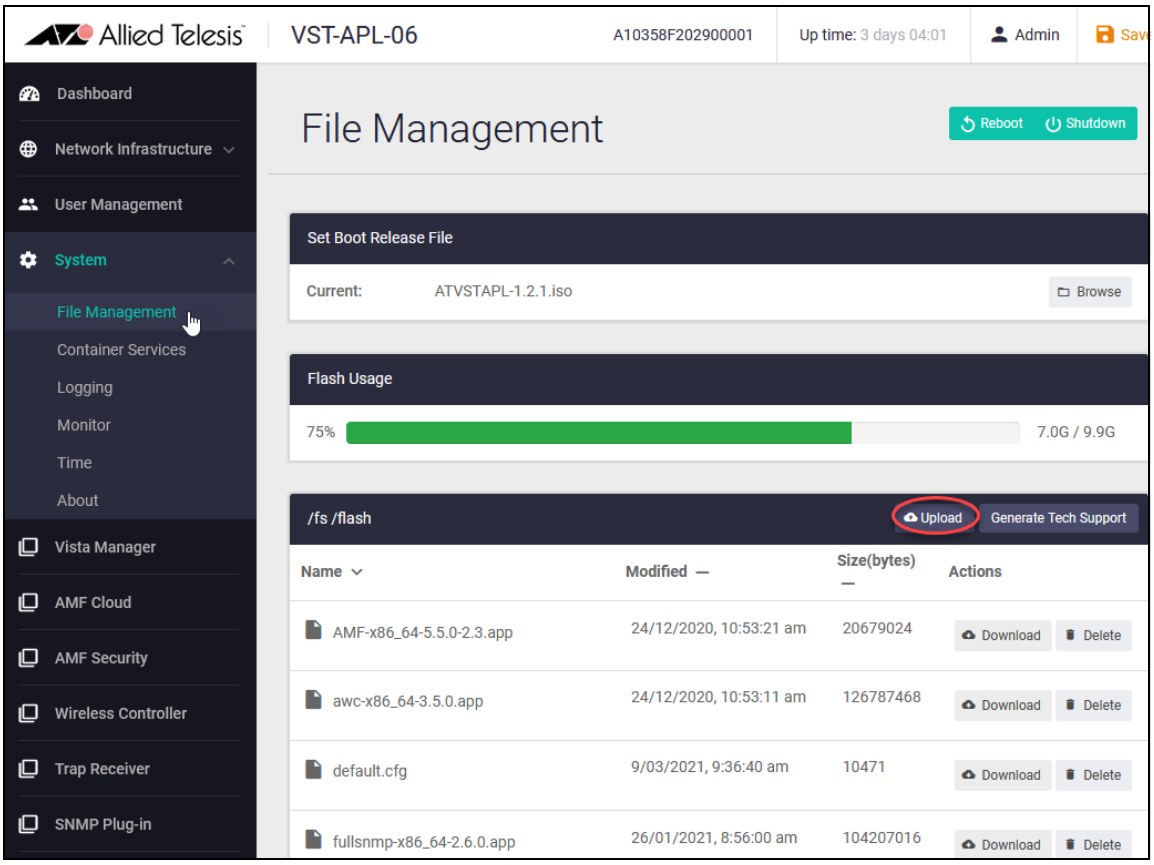
The VST-APL software consists of an ISO file containing the operating system and APP files for the applications. Each version of VST-APL consists of a set of supported ISO and APP files, as shown in "Software deployment and licensing" on page 3. When you upgrade VST-APL, make sure you upgrade the operating system and all the applications you are using, so that they match.

For information about supported software versions, see "Software deployment and licensing" on page 3. To see which version of the VST-APL operating system the appliance is currently running, use the VST-APL GUI to navigate to the **System** > **About** page. To see the application files loaded in the appliances memory, navigate to the **System** > **File Management** page. To see the current version of an application running on the appliance, go to the GUI page for the application by clicking on its menu item, and hover over the instance information icon in the Deployed Application panel.

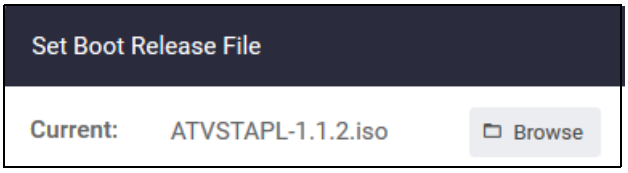
Upgrade the operating system and GUI

To upgrade the VST-APL operating system, follow these steps.

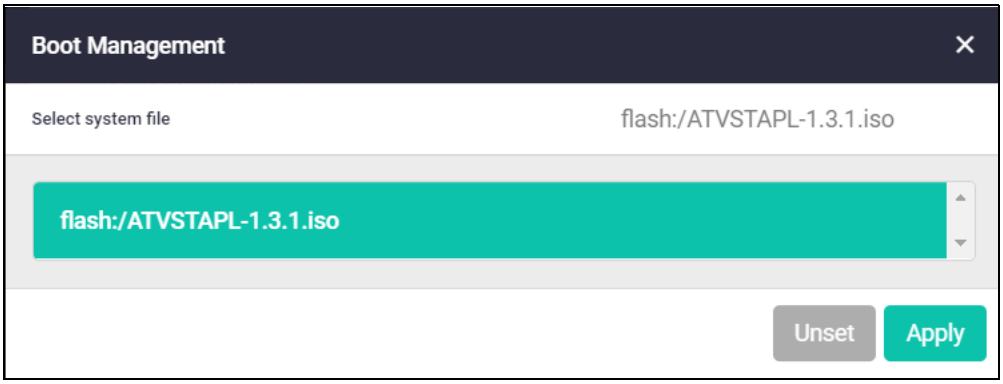
1. Get the latest version of the appliance software from the Software Download Centre. This will have a filename like ATVSTAPL-x.x.x.iso, where x.x.x is the version. Download it to a directory that the appliance can reach, such as the device your GUI browser is running on.
2. If you want to retain current unsaved configuration on the appliance, click the **Save** button at the top right of the VST-APL GUI page. This stores the current state of the applications. The upgrade process will reboot the appliance.
3. You need the new image file in the appliance persistent storage to change the running software. Navigate to the **System** > **File Management** page ("Manage files" on page 27). Upload the software image file to persistent storage by clicking the **Upload** button.



4. Click **Browse** in the **Set Boot Release File** panel to display available software files.



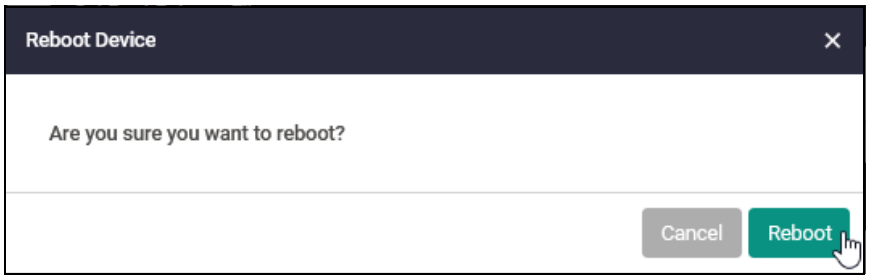
Select the new software version and click **Apply**.



(If you need to unset the new version before the appliance has restarted, and retain the currently running software version, click the **Unset** button.)

5. Reboot the appliance by clicking the green **Reboot** button at the top right of the **File Management** page.

A confirmation dialog box opens—click **Reboot** again to confirm.



The appliance will gracefully shut down any applications that are running, install the new version of the VST-APL operating system, and restart any applications that were running when the appliance configuration was last saved. This may take several minutes. The appliance configuration, including IP addressing, is retained from the last time it was saved.

6. When the upgrade has completed, you will need to re-authenticate to access the appliance.
7. To verify the currently running software version, navigate to the **System** > **About** page and look at the details there.

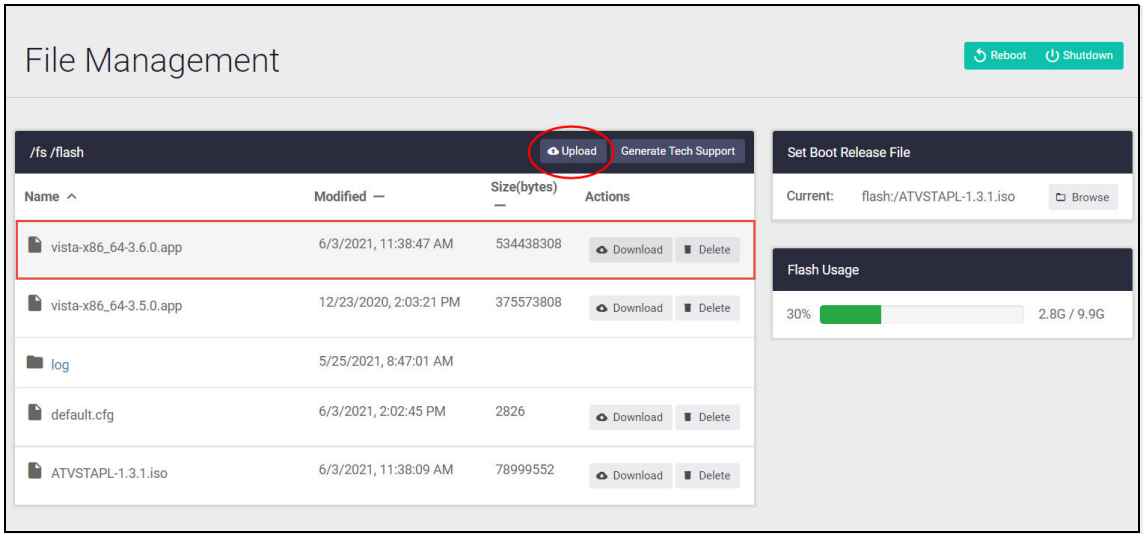
Upgrade an application

To upgrade an application to a new version, you need the new application image file to be saved in the appliance persistent storage. Get the new application image file from the Software Download Centre. Download it to a directory that the appliance can reach, such as the device your GUI browser is running on.

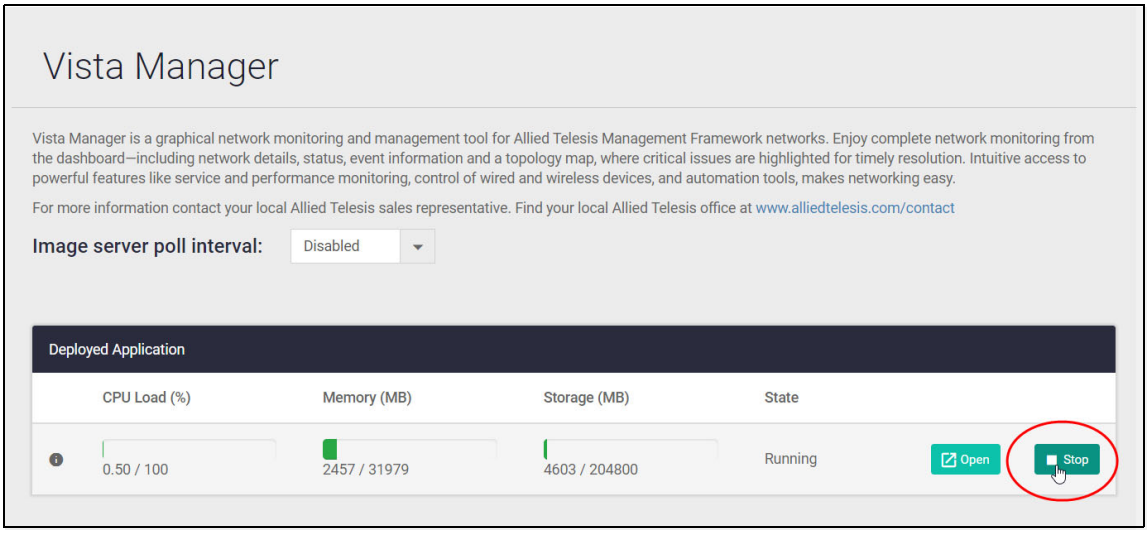
Caution: Applications are not all backwards-compatible; downgrading an application to an earlier version is not supported.

To upgrade an application, follow these steps.

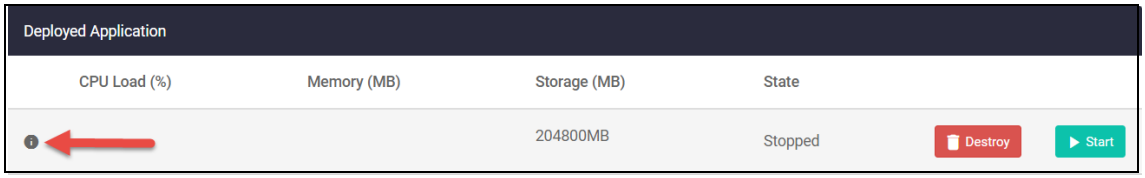
1. In the VST-APL GUI, navigate to the **System** > **File Management** page.
2. Upload the new application image file to persistent storage using the **Upload** button.

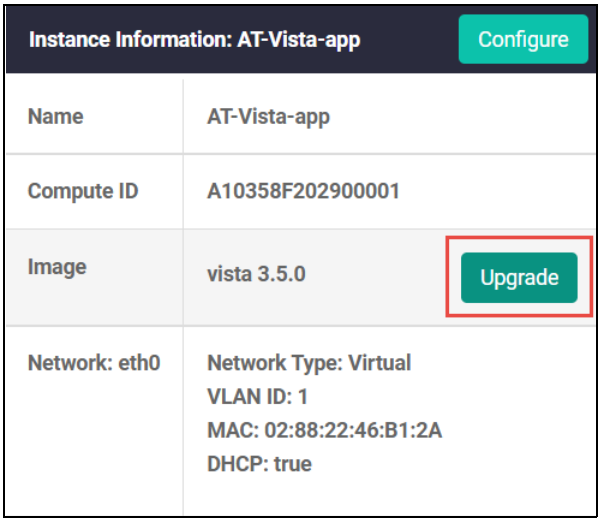


3. Navigate to the application page in the VST-APL GUI. Stop the application by clicking the **Stop** button to its right in the **Deployed Applications** panel. Wait till it shows that it is stopped. This could take a few minutes.



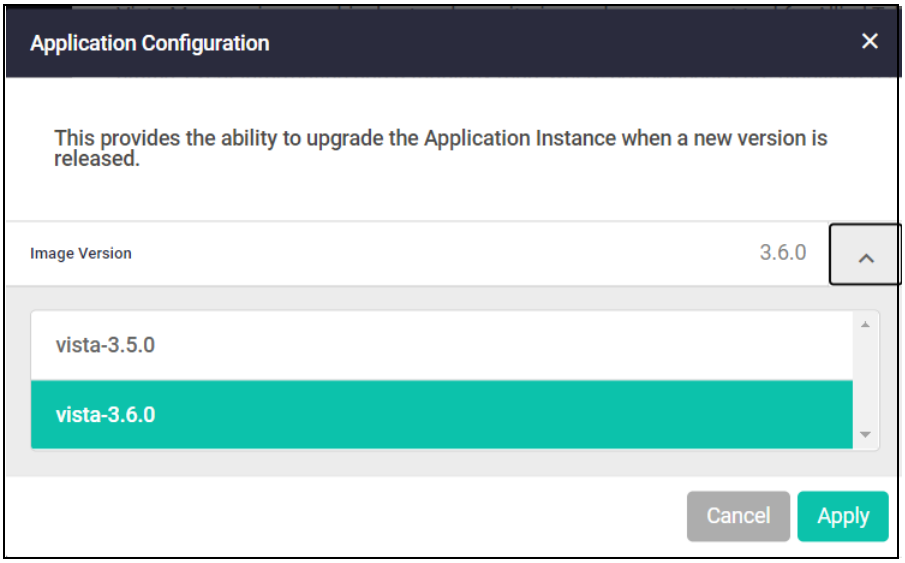
4. Hover over the instance information icon to the left of the application in the Deployed Application panel. You will see the **Instance Information** pop-up panel.





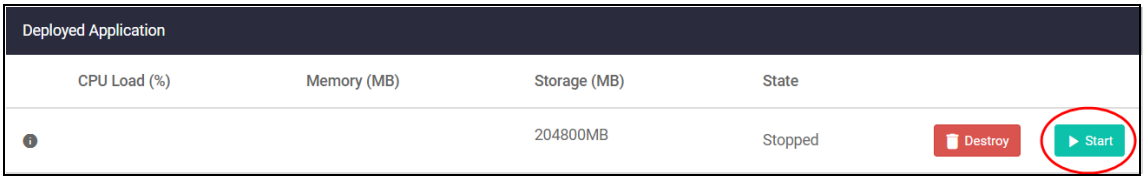
Click the **Upgrade** button.

5. In the **Application Configuration** dialog box, select the application version to upgrade to and click **Apply**. This sets the new version for the application.



In the application page, you can see the new version by hovering over the instance information icon to the left.

6. Click the **Start** button in the right of the Deployed Application panel to restart the application. This may take a few minutes. Appliance and application configuration remain unchanged.



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