ADTRAN

Configuration Guide

vWLAN Installation Using KVM

This configuration guide describes the installation of ADTRAN's Bluesocket virtual wireless local area network (vWLAN) on Kernel-based Virtual Machine (KVM). Included in this guide are an overview of the prerequisites for running vWLAN on KVM and the necessary steps to install vWLAN on KVM.

This guide includes the following sections:

Overview

KVM can be used to install and deploy multiple vWLAN instances. This type of installation and deployment is achieved by deploying a number of vWLAN instances on commodity server hardware. These instances are deployed on a host system, using a variety of open source technologies, such as Linux, KVM, and others, to install, configure, and manage each vWLAN instance. Each vWLAN instance provides the software functionality of vWLAN, using virtual interfaces and relying on the host memory and central processing unit (CPU) allocation.

You should be familiar with the following technologies before attempting to configure and use vWLAN in a virtual environment:

- Linux
- KVM
- Quick Emulator (QEMU)
- LibVirt

This guide focuses on the necessary steps to configure KVM for vWLAN deployment, and assumes a familiarity with other technologies used in conjunction with KVM.

Hardware and Software Requirements and Limitations

The following sections detail requirements for support of vWLAN installation and management in a KVM environment.The listed requirements are for vWLAN instances using firmware version 3.0.1, and the use of vWLAN with KVM is currently in Beta testing.

Virtual Hardware Requirements

The minimum requirements for a single vWLAN instance include the following resources:

- 4 CPUs/cores
- 41 GB of free disk space
- 6 GB memory (RAM)

Software Requirements

Running vWLAN on KVM requires that the following prerequisites have been satisfied:

- KVM, LibVirt, and QEMU are installed and properly configured.
- A bridged network interface is available for use by vWLAN. Both Linux bridges and Open vSwitch (OVS) bridges are acceptable.
- Using Virtual Machine Manager (virt-manager) is optional, but it is used in this guide.
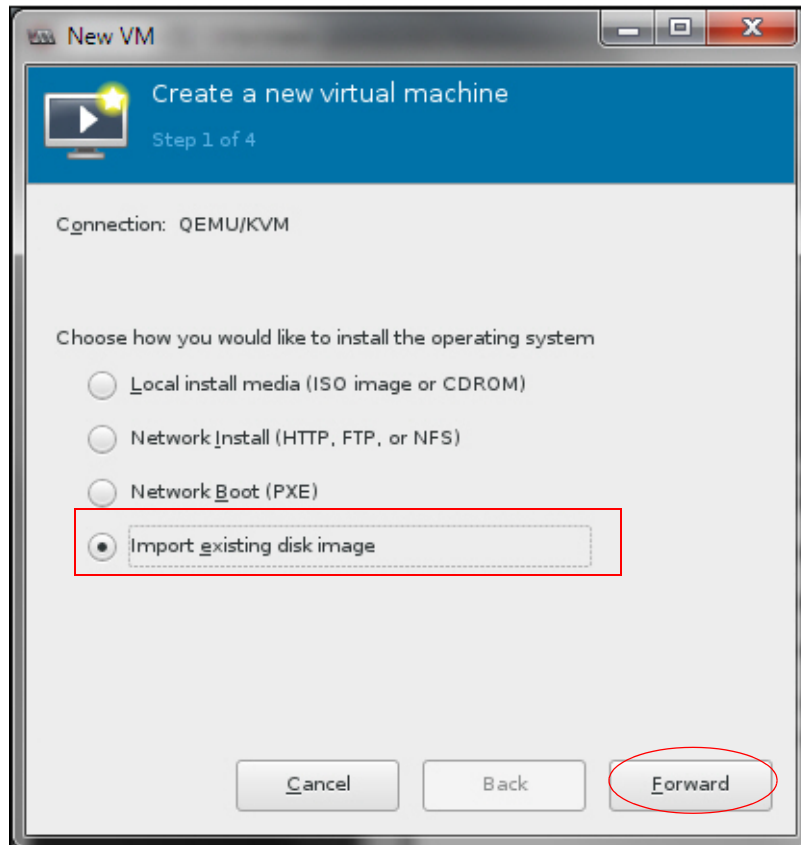
Refer to your operating system's documentation for guidance in meeting these requirements.
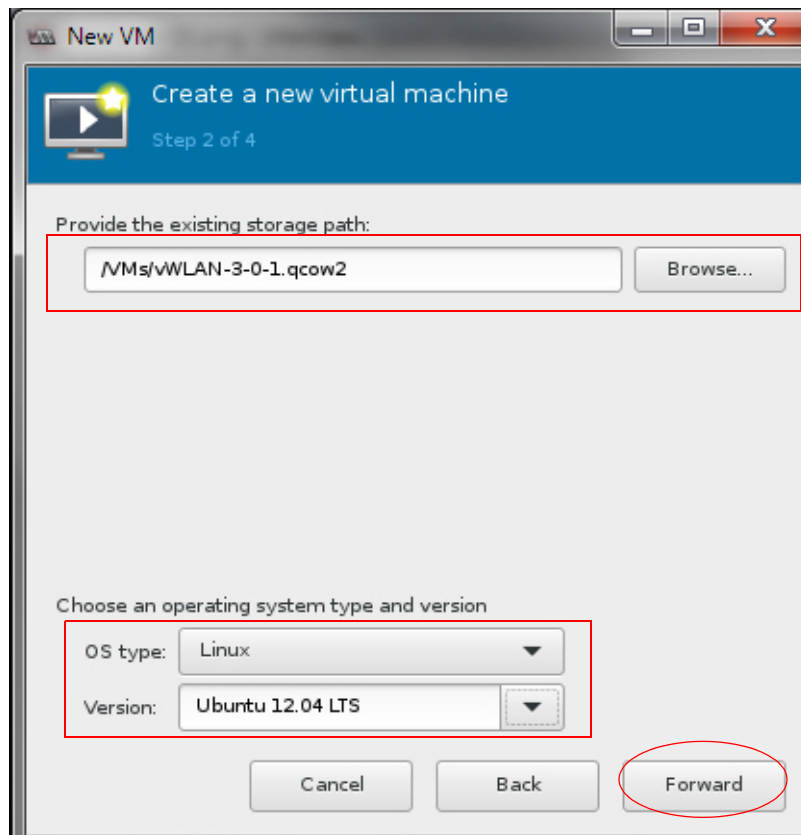
vWLAN Installation in a KVM Environment

Installing and using vWLAN in a virtual environment requires that the host system be configured to support each vWLAN instance, by proper allocation of CPU, RAM, and network interfaces. The following sections detail how to create, start, and access vWLAN instances on the host system.

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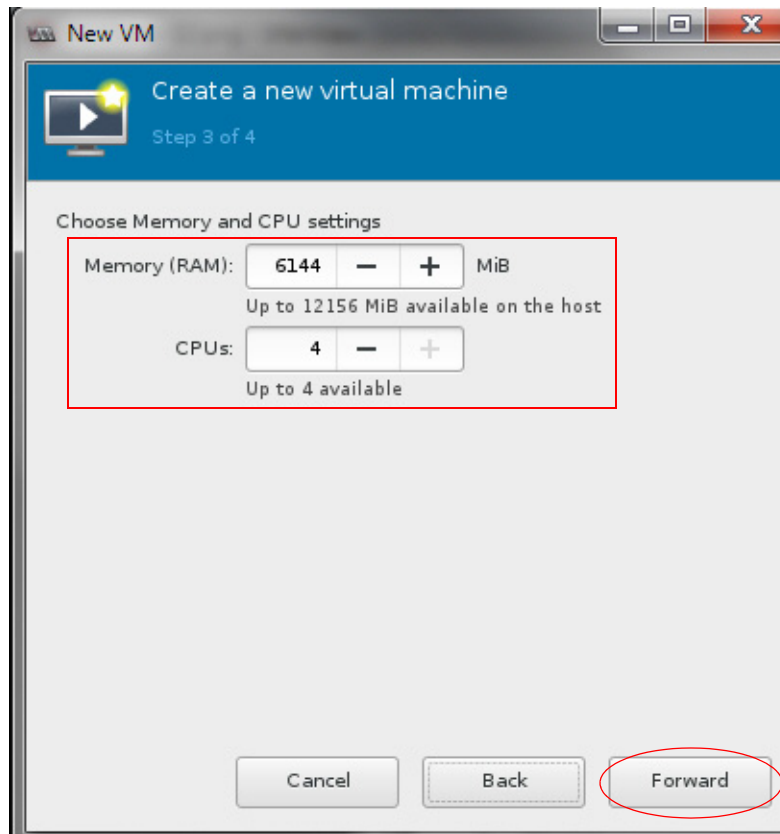
To install vWLAN on KVM, follow these steps:

1. Upload the vWLAN qcow2 image to the desired location on the KVM host.
2. Start Virtual Machine Manager (virt-manager) on the KVM host.
3. Select **File** > **New Virtual Machine** in the virt-manager menu.
4. In the **Create a new virtual machine** window, select **Import existing disk image** and then select **Forward** to continue.
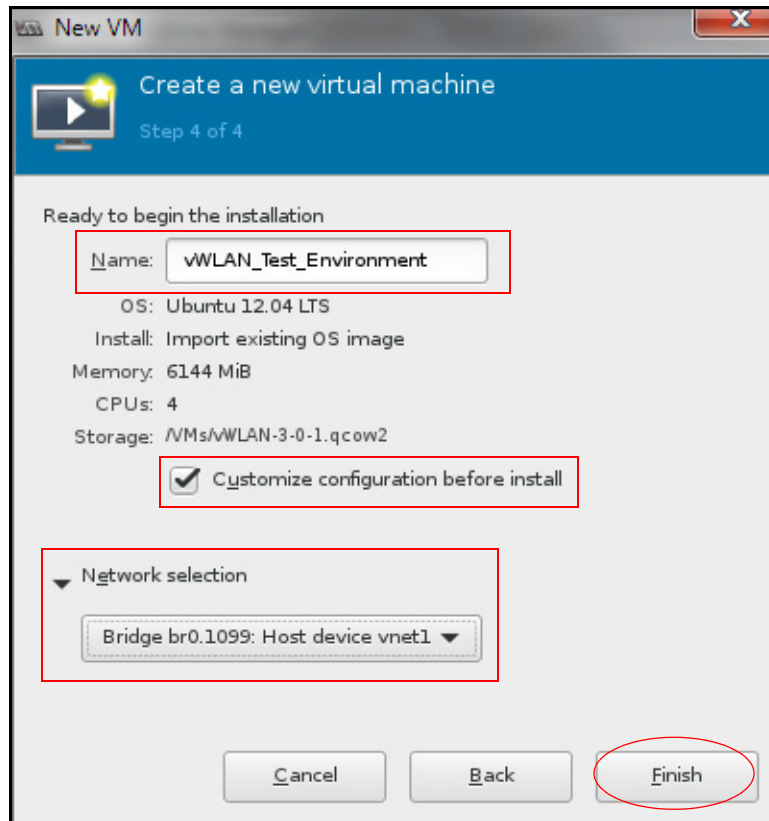
5. On the next screen, use the **Browse** button to select the vWLAN qcow2 image. Next, select **Linux** from the **OS type** drop-down menu, and select **Ubuntu 12.04 LTS** from the **Version** drop-down menu. Finally, select **Forward** to continue.
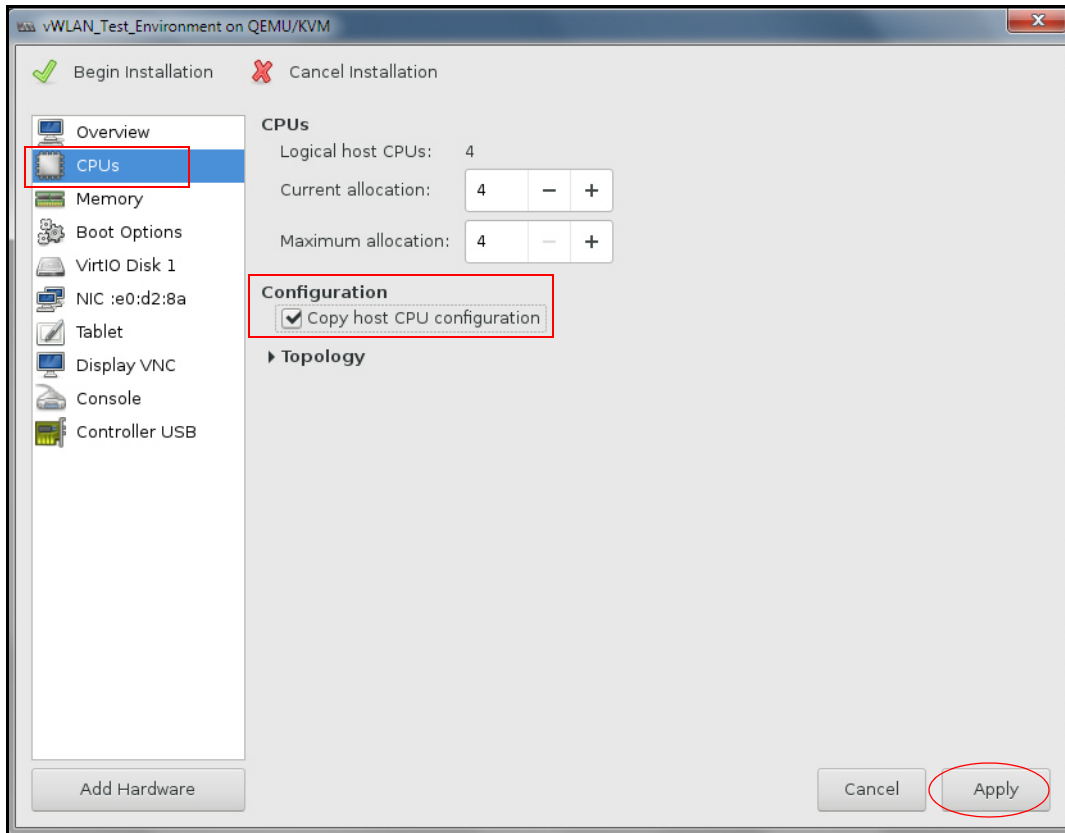
6. On the next screen, specify **6144 MiB** in the **Memory (RAM)** field, and **4** in the **CPUs** field. Select **Forward** to continue.
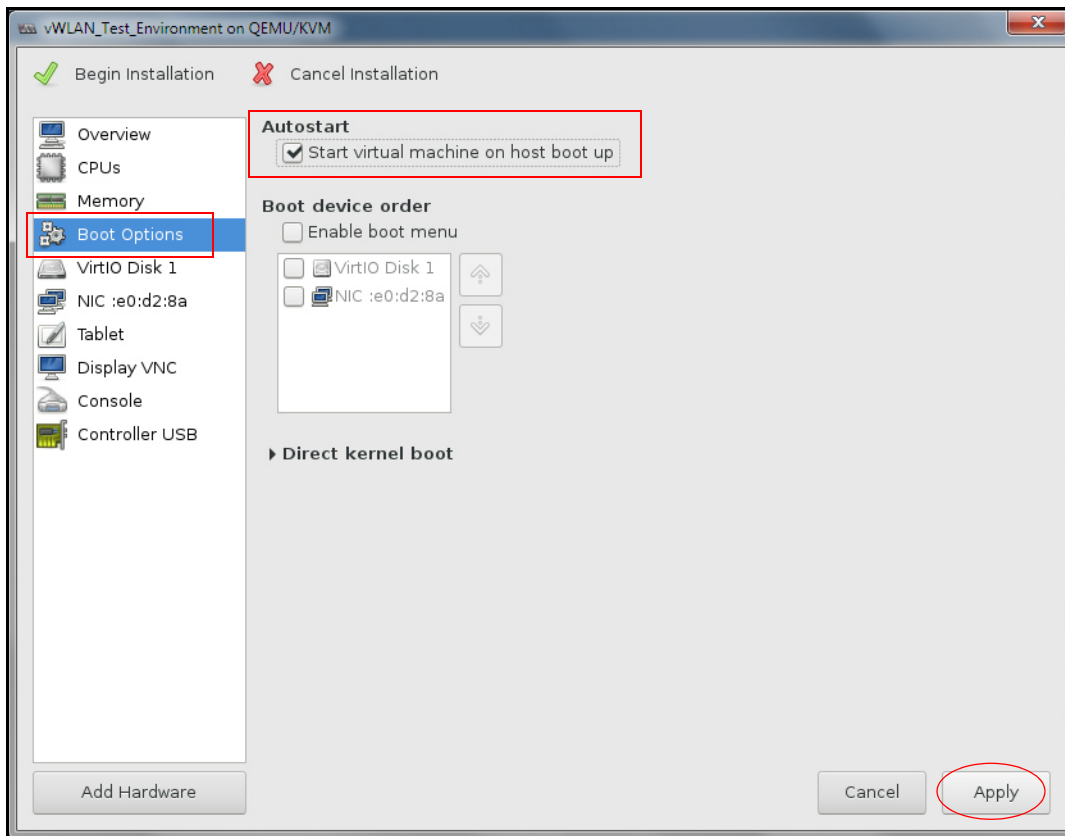
7. On the next screen, specify the VM name in the **Name** field, select the **Customize configuration before install** check box. Next, select the appropriate bridged network interface from the **Network selection** drop-down menu. Finally, select **Finish** to create the new VM.
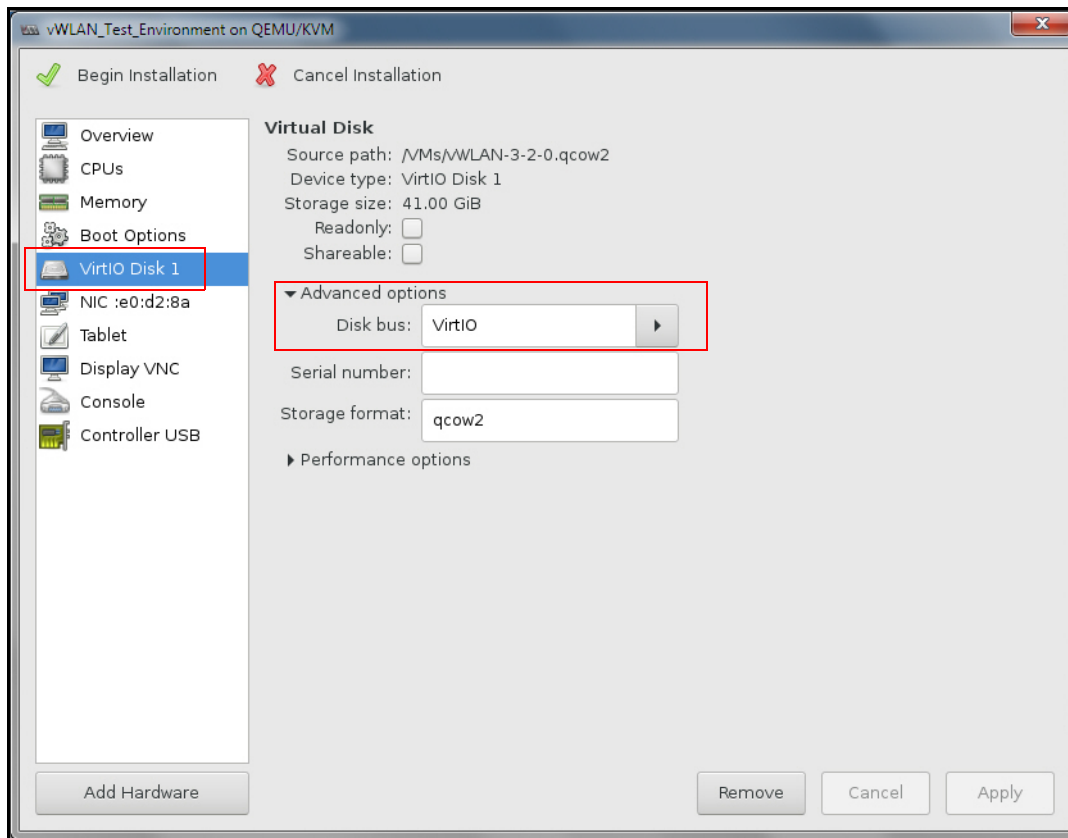
8. In the VM configuration window, select **CPUs** from the left-hand menu and select the **Copy host CPU configuration** check box. Next, select **Apply**.

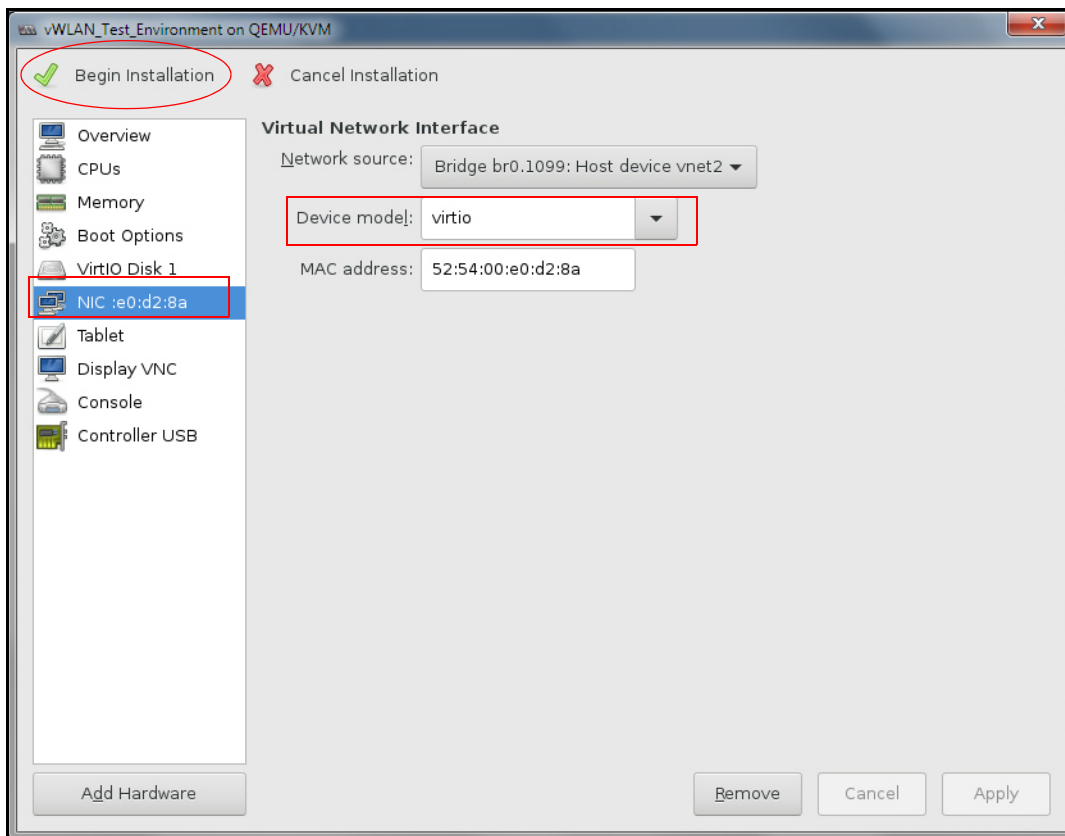9. In the VM configuration window, select **Boot Options** from the left-hand menu and select the **Start virtual machine on host boot up** check box. This will cause the vWLAN instance to start automatically when the host boots. Next, select **Apply**.

10. In the VM configuration window, select **VirtIO Disk 1** and expand the **Advanced options** drop-down menu to verify that **Disk bus** is set to **VirtIO**.

11. Next, in the VM configuration window, select **NIC** from the left-hand menu. Verify the **Device model** is set to **virtio**. Once verified, select the **Begin Installation** check mark at the top left corner of the menu.

12. Once the VM is deployed, it will automatically start and launch the Virtual Machine Manager Guest Console (virt-viewer) window that displays the vWLAN console.

Access and Authentication Information

The following sections detail how to access and authenticate the vWLAN instance through both Virtual Machine Manager (virt-manager) and the Web-based administration console.

vWLAN Command Line Interface (CLI) via Virtual Machine Manager (virt-manager)

To login to the vWLAN instance using the CLI, select the vWLAN instance in Virtual Machine Manger (virt-manager), and double-click. The default user name is **vwlan** and the default password is **vwlan**.

vWLAN Secure Web-Based Administration Console

vWLAN has a built-in web server used for system administration. You can access the administrator web-based graphical user interface (GUI) by entering the following URL in your web browser:

https://<ip address>**:3000**

The IP address of the virtual machine is found by logging into the vWLAN CLI and selecting **option 2** (**ifconfig**). The IP address you should use is displayed on the **eth0** interface. If it is necessary to scroll up the page to see the **eth0** interface information, press **Shift + Page Up** to scroll up the page.

It can take several minutes for the GUI to become available after the vWLAN instance boots.

Once the administrator web GUI has loaded, log in using the default user name of **root@adtran.com** and the default password of **blueblue**. It is recommended you change the administrator user name and password once you have logged into the vWLAN instance.

Additional Resources

The following table lists references available online for additional information about many of the components used in vWLAN configurations.

Table 3. Additional Online References

Item	Reference Link
A library of additional vWLAN documentation	https://supportforums.adtran.com/community/bluesocket/bluesocket-vwlan/technical-document
vWLAN Administrator's Guide	https://supportforums.adtran.com/docs/DOC-5271
vWLAN Quick Deployment and Configuration Guide	https://supportforums.adtran.com/docs/DOC-7435
vWLAN General Deployment Guide	https://supportforums.adtran.com/docs/DOC-7066