ADTRAN Bluesocket vWLAN Virtual Appliance (VMware) Quick Start Guide

Date: November 6, 2012
Version: 2.2.1

Contents

Overview

The ADTRAN Bluesocket vWLAN (virtual wireless local area network) architecture was designed on a concept of simplified scalability. vWLAN removes the complexities of dealing with standalone Access Points (APs) by centralizing the management and control functions. Security and mobility are distributed at the edge of the network: the logical placement for networks that are designed for scalability and high availability. This is achieved through the use of smart 802.11n APs which can support user authentication and traffic forwarding decisions at the edge of the network.

Adding additional APs to the vWLAN is as easy as installing a software license and allocating more virtual resources (CPU, memory) which extends coverage to thousands of APs without needing to worry about hardware capacity. ADTRAN's fully virtualized, software-based solution gives customers the flexibility to run vWLAN on either a hardware appliance or VMware vSphere ESX/ESXi Hypervisor.

Terminology

- vWLAN – Virtual Wireless Local Area Network – ADTRAN's distributed, secure wireless solution.
- BSAP – Bluesocket Access Point – Dual radio 802.11n APs that provide wireless network connectivity, authentication, QoS, CoS, Airtime Fairness, and firewall to users.

Sample Use Cases

vWLAN is a flexible wireless solution which supports a mix of guests, students, staff, and corporate users, with web or 802.1X authentication, and supports a range of deployment sizes:

1. Multi-building campus – hundreds of BSAPs across several buildings.
2. Multi-locations – hundreds or thousands of BSAPs deployed across sites or even countries.
3. Large campus, hotel, or corporate office – 50+ BSAPs per site.
4. Large branch or convention center – 10+ BSAPs per site.
5. Branch offices or small hotspots – 1-10 BSAPs per site.
6. Multiple tenants – 1 to hundreds of BSAPs per tenant

A single VMware instance can support BSAPs that are connected from all the use cases. The central control and management plane scales vertically as data is handled at the BSAP. As desired, multiple VMware instances can be used across multiple location deployments.

VMware Compatibility

The vWLAN Virtual Appliance is supported and has been VMware Ready Certified on ESX/ESXi versions 4.0 and 4.1. The vWLAN Virtual Appliance has been tested on ESX/ESXi version 3.5 and 5.0, but has not been certified under the VMware Ready program. vWLAN release 2.2.1 and later supports ESX/ESXi 5.0 in addition however certification coming soon. VMware Player is not supported or recommended for actual deployments.

Resource Requirements

Regardless of the AP deployment size, the vWLAN Virtual Appliance requires the following resources:

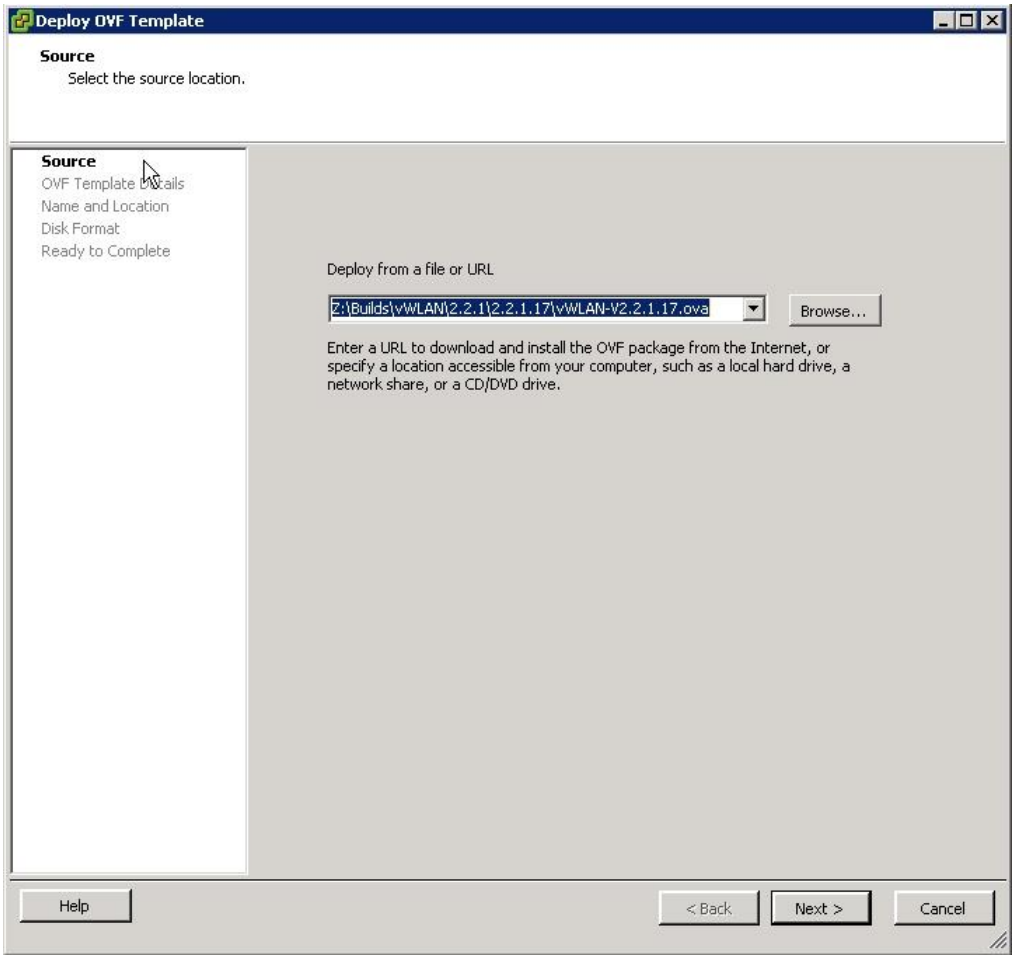
- 41 GB of disk space
- 1 Ethernet NIC
- 4 CPUs/Cores
- 6 GB Memory

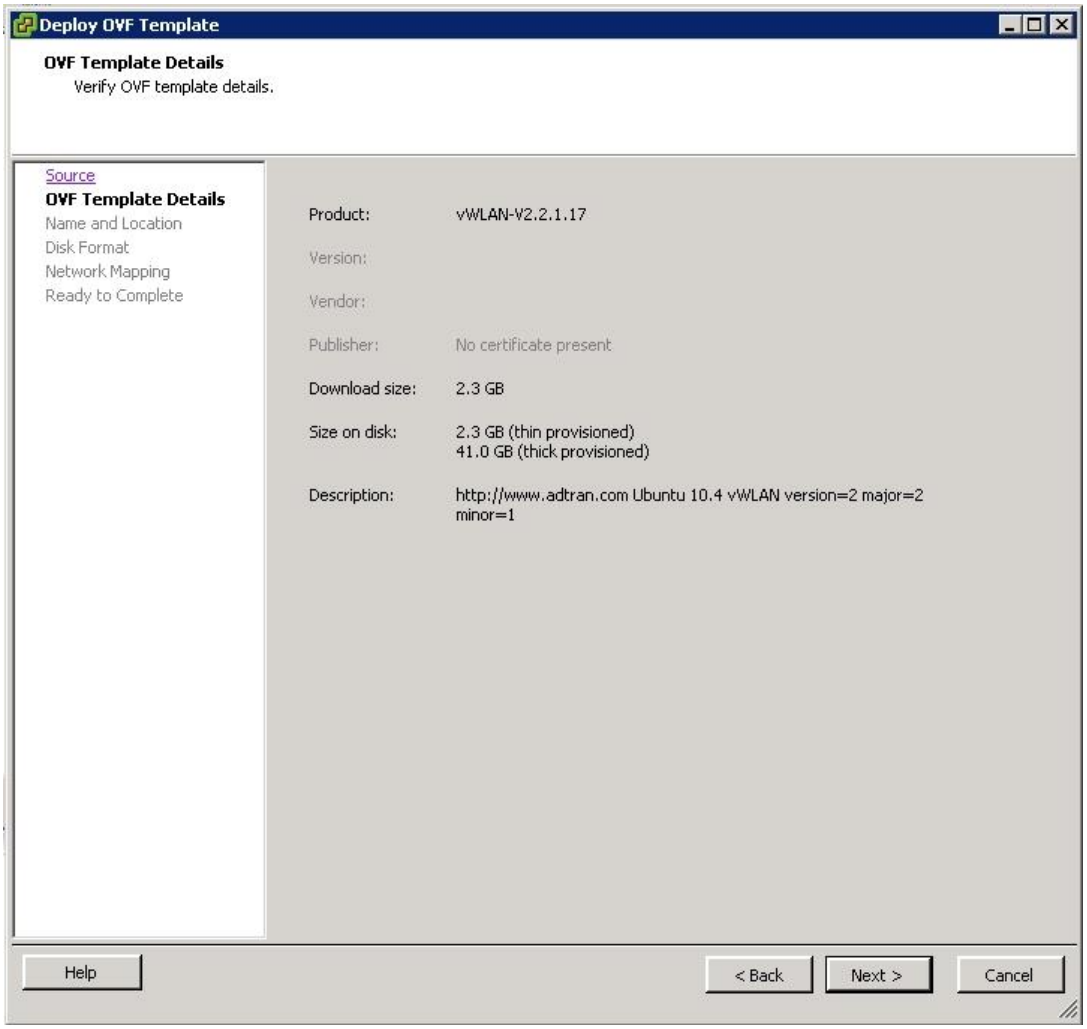
Installing the Virtual Appliance

There are two methods to install a vWLAN Virtual Appliance. The recommended option is OVA (Open Virtualization Appliance), as this is a streamlined installation that only requires you to upload a compressed file. An OVA is an single file archive containing an OVF (Open Virtualization Format) virtual machine along with supporting files. The other option is using the vmdk/vmx VMware method. You should only use this option if you need to customize the .vmx file before creating the Virtual Machine. Based on the method you choose, you should download the appropriate file from the ADTRAN support site (support.adtran.com).

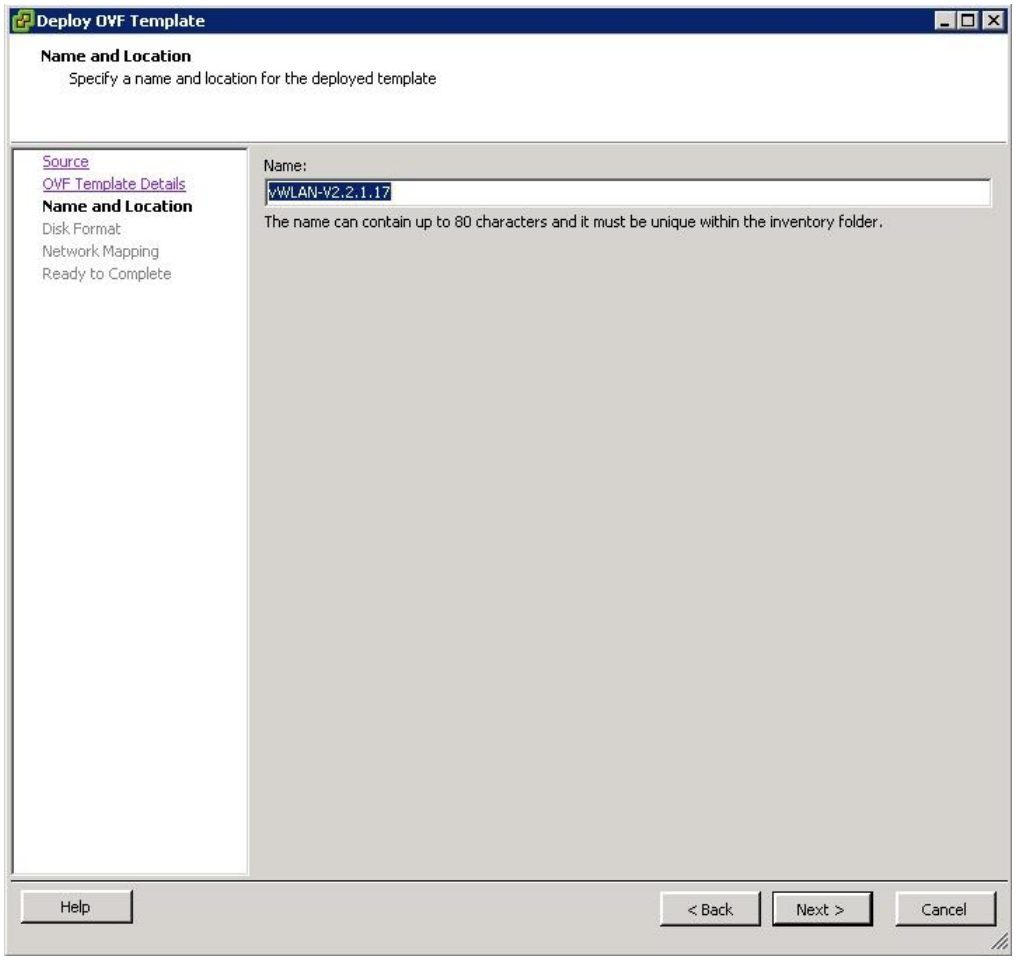
Creating a Virtual Appliance Using an OVA File

Download the vWLAN Virtual Appliance OVA file from the ADTRAN support site (support.adtran.com). Then from the File Menu in the VMware vSphere Client, choose the option “Deploy OVF Template…”. This will launch a wizard to deploy the OVA – first point to the .ova file that you have downloaded, and the click Next through the rest of the wizard:

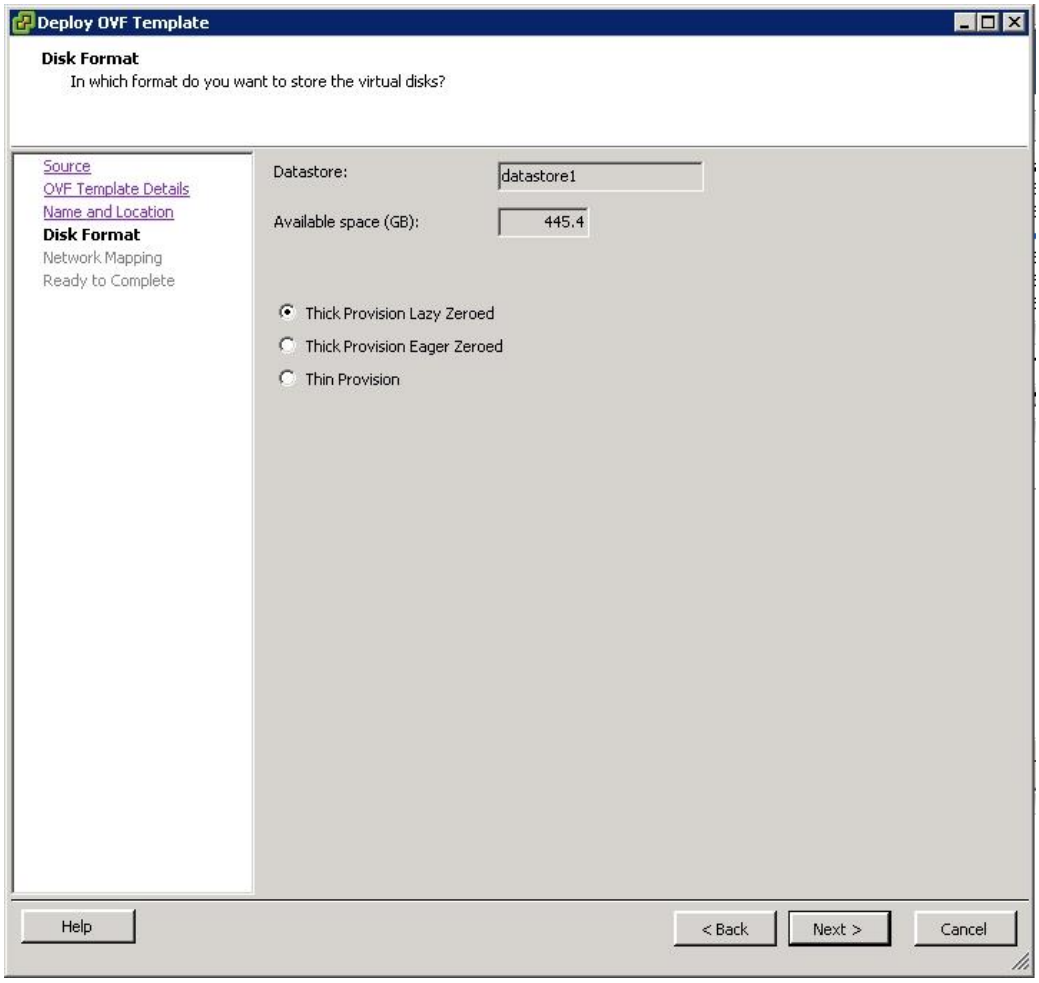



Deploy OVF Template
OVF Template Details
Verify OVF template details.
Source
OVF Template Details
Name and Location
Disk Format
Network Mapping
Ready to Complete
Product:
vWLAN-V2.2.1.17
Version:
Vendor:
Publisher:
No certificate present
Download size:
2.3 GB
Size on disk:
2.3 GB (thin provisioned)
41.0 GB (thick provisioned)
Description:
http://www.adtran.com Ubuntu 10.4 vWLAN version=2 major=2 minor=1
Help
< Back
Next >
Cancel

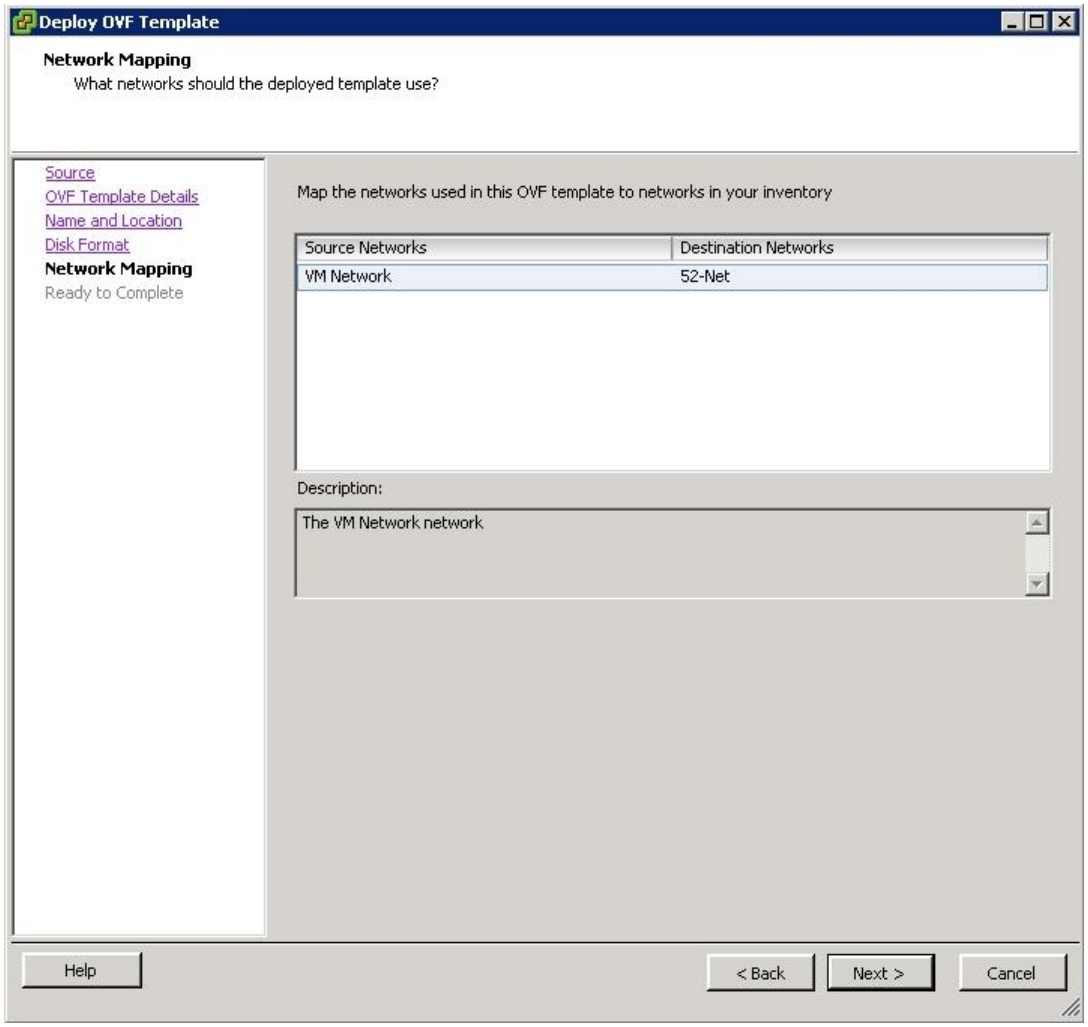
You may rename the vWLAN Virtual Appliance to what ever you wish, but it is recommended you keep it as shipped to display the version. However, if you do decide to change the name, you can view the original version name in the notes section of the virtual machine itself.

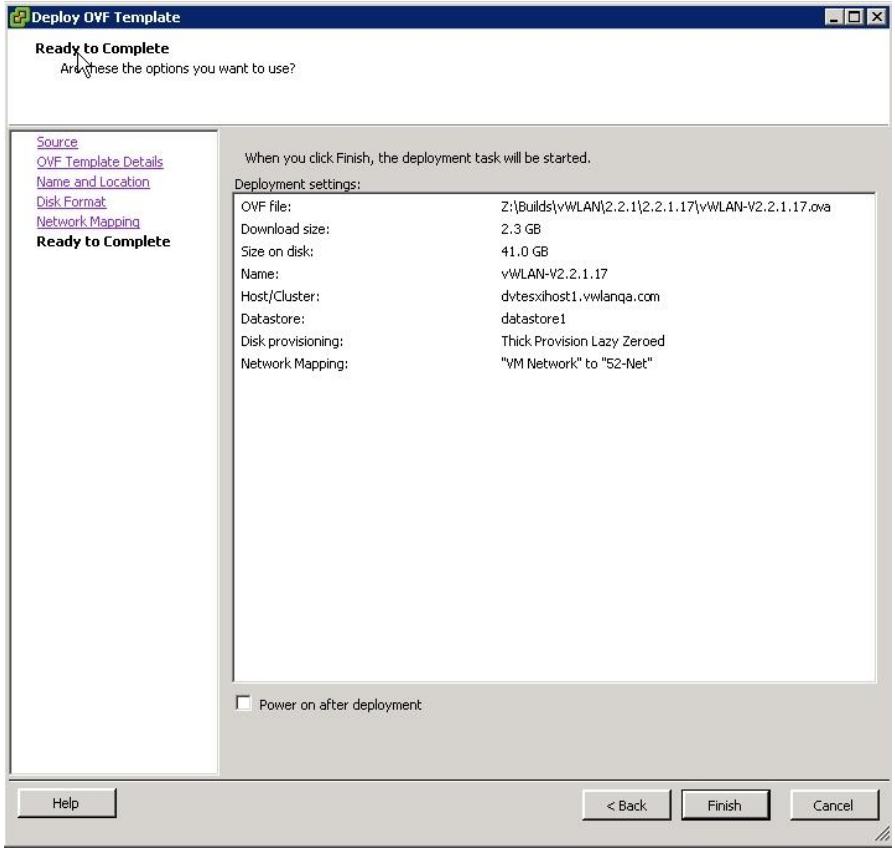


Choose the Datastore and Disk Format you wish to use to deploy the Virtual Machine:

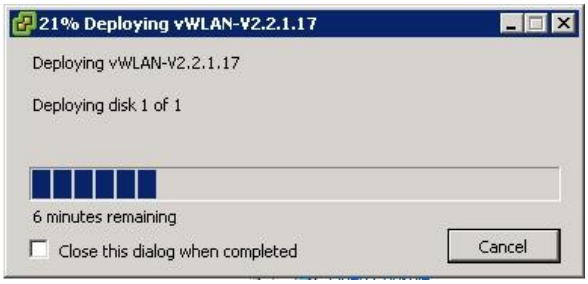


Choose the Destination Network:





Click Finish and this will import the OVA, extract the OVF file, and create the virtual machine. The entire process will take a few minutes:

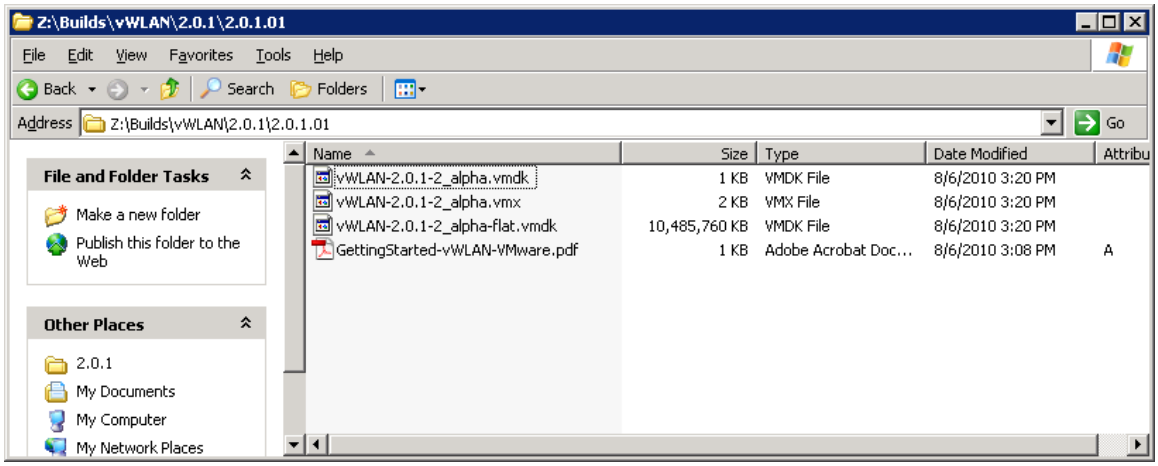


Creating a Virtual Appliance Using a VMDK File

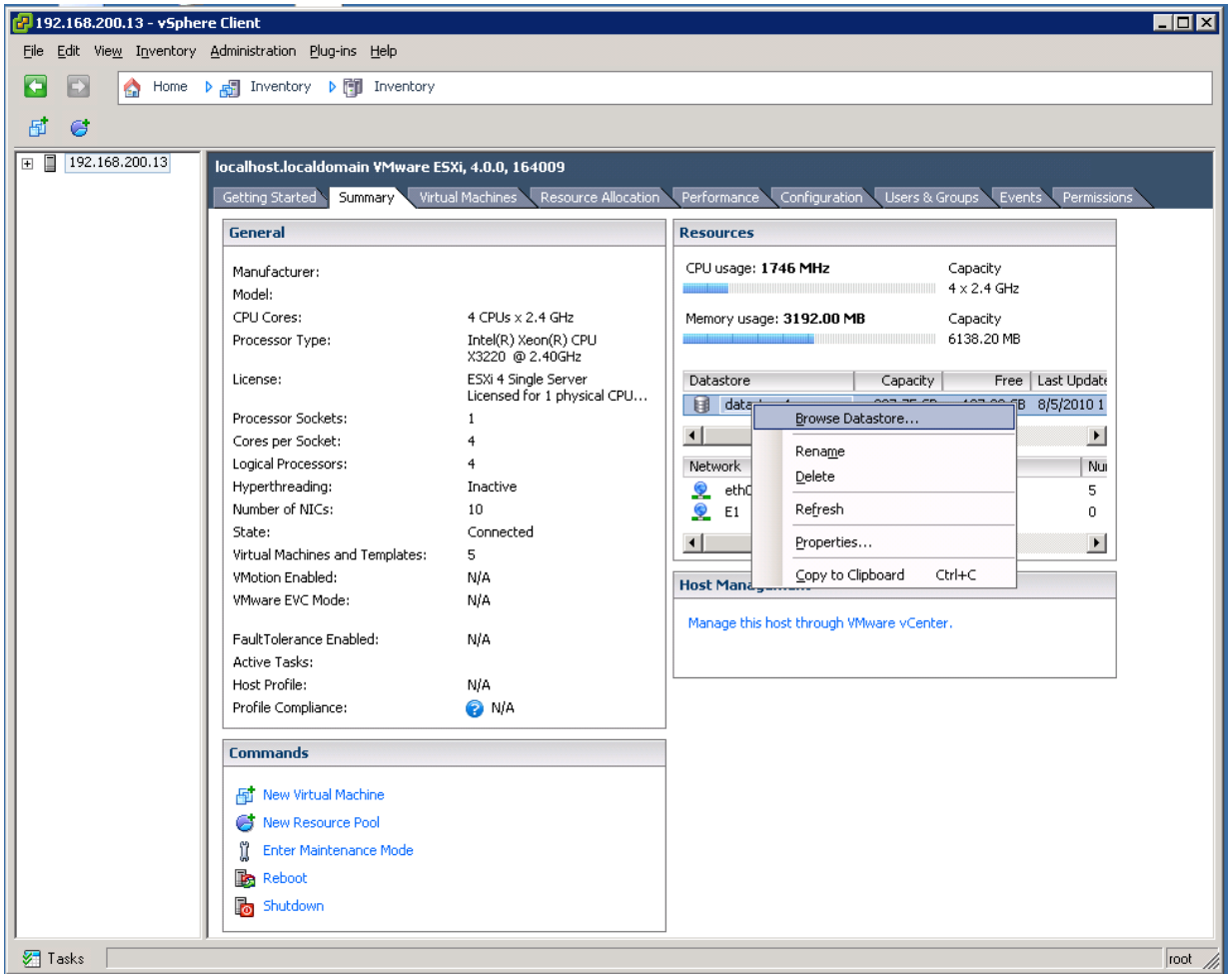
Download the vWLAN Virtual Appliance VMDK File from the ADTRAN support site (support.adtran.com) and uncompress it into a local directory. The directory should now contain the following files:

- vWLAN-2.2.1-x.vmx – Virtual Appliance Configuration File
- vWLAN-2.2.1-x.vmdk – Virtual Disk Descriptor file
- vWLAN-2.2.1-x-flat.vmdk – Virtual Disk as a flat file

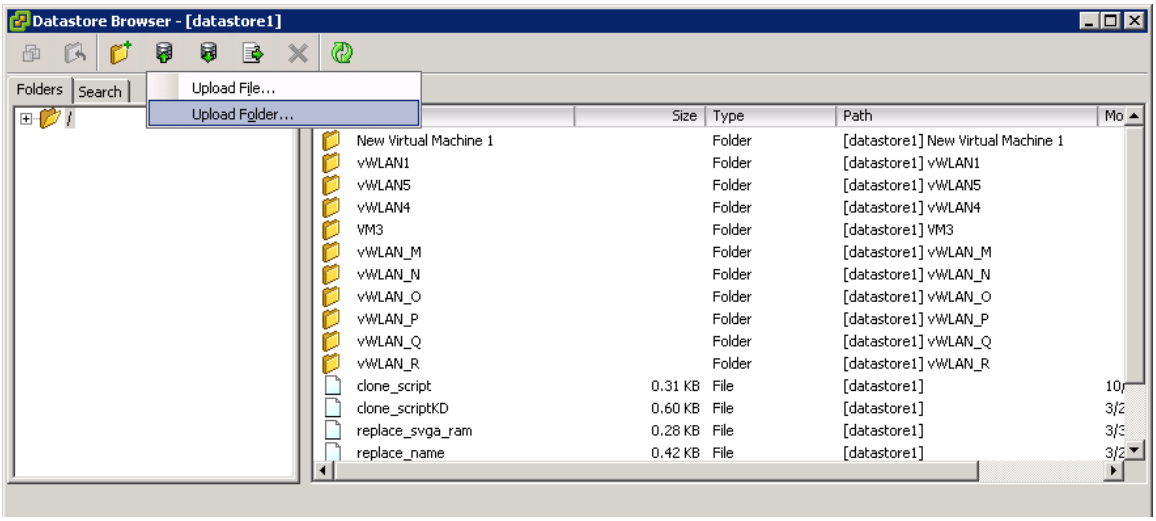
Verify the MD5 hash for each file against the values that are posted on the ADTRAN support site (support.adtran.com) to confirm they were not corrupted during download or un-compression.



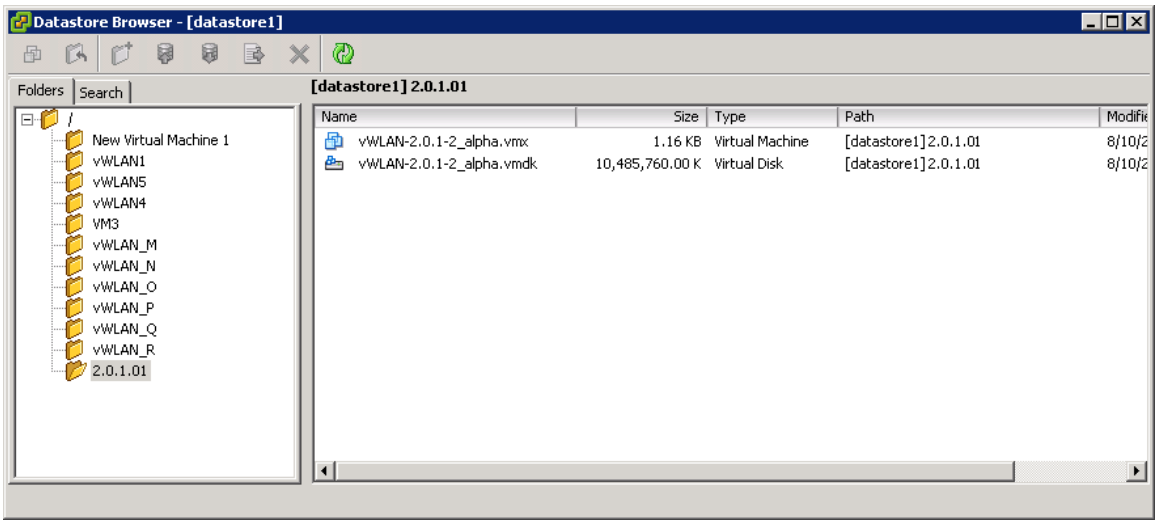
Within the vSphere client, navigate to the summary tab and right click the datastore where you would like to save your vWLAN Virtual Appliance.



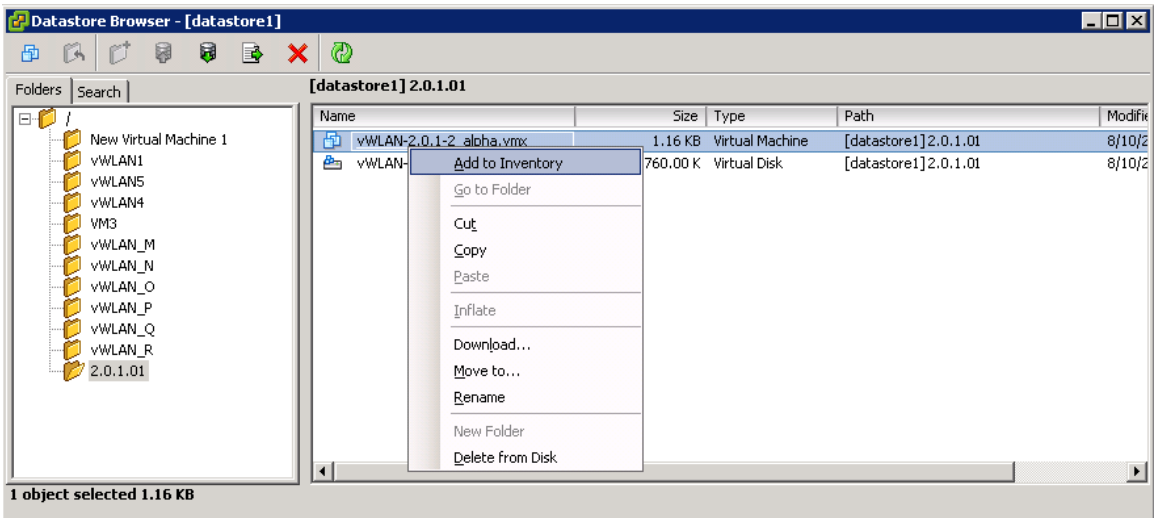
Select “Upload folder” and browse to where you have uncompressed your vWLAN Virtual Appliance on your local computer and upload the folder to the datastore.



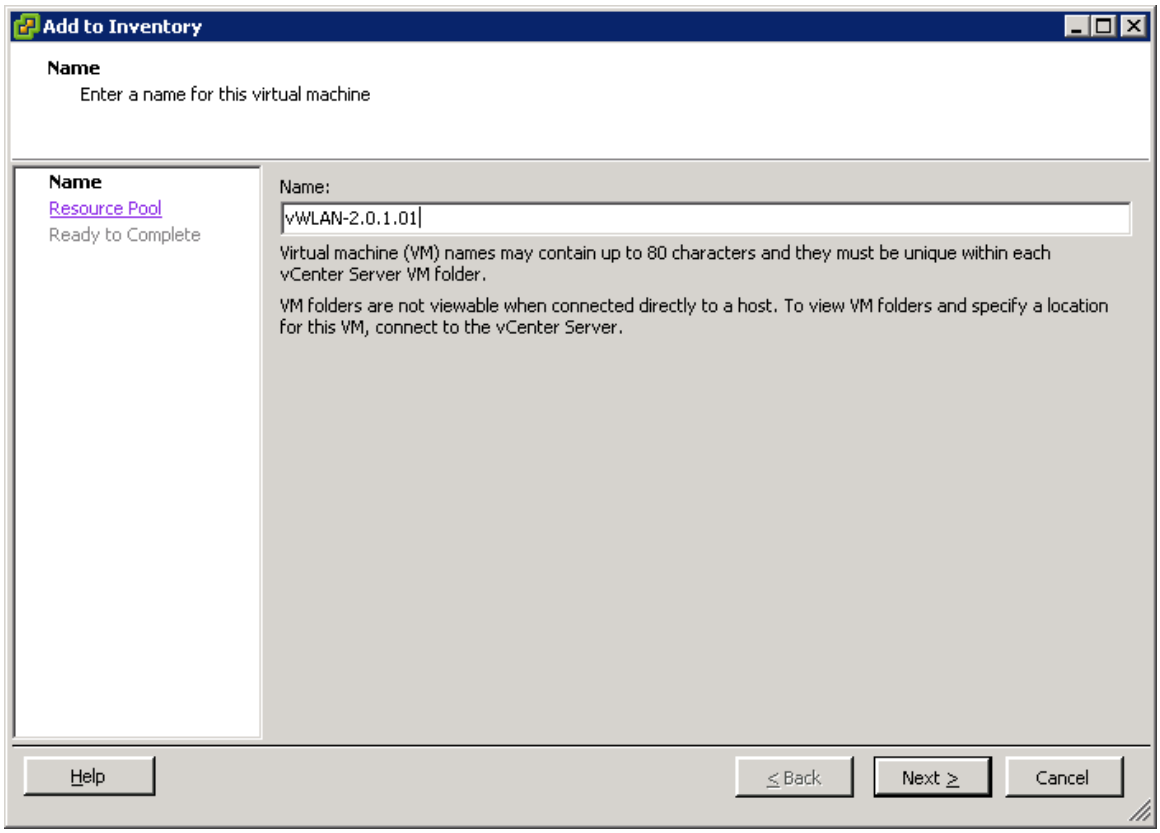
When the upload is completed, you will see the .vmx and .vmdk files – note the .vmdk file doesn’t show as a –flat.vmdk file since vSphere reads the virtual disk descriptor file and represents the disk accordingly.



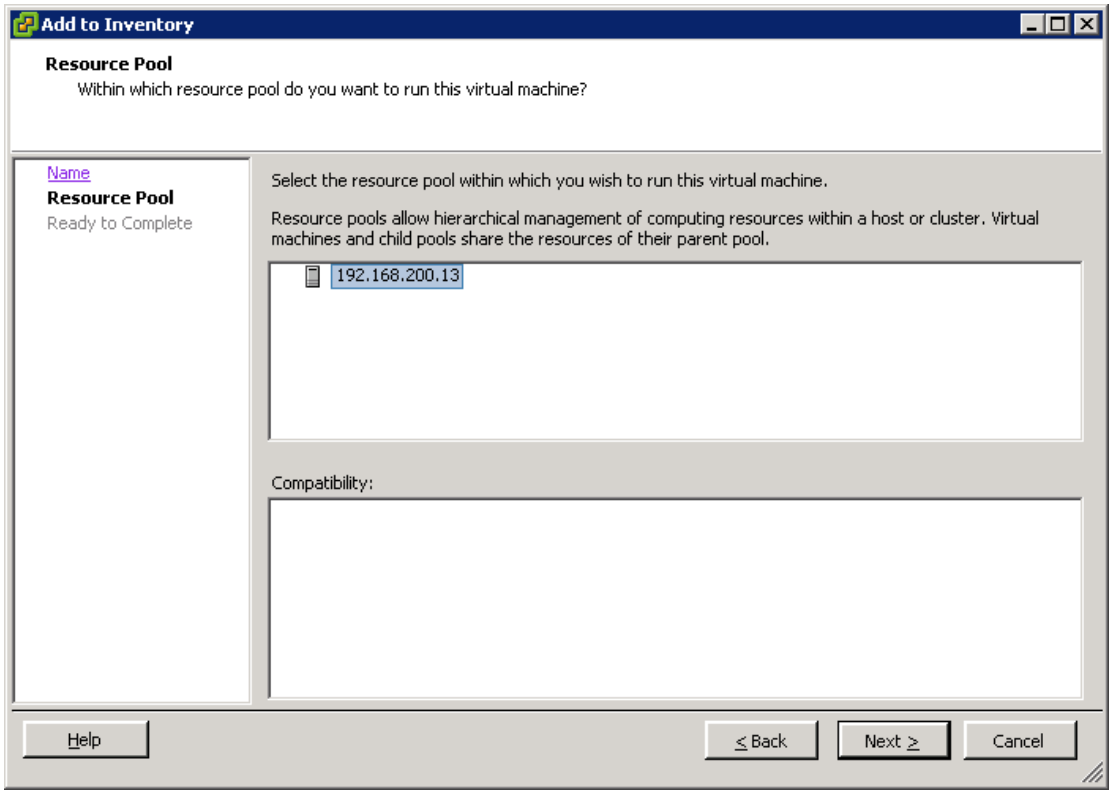
Select the .vmx file and right click to add to the ESX Inventory.



You may rename the vWLAN Virtual Appliance to whatever you wish, but it is recommend you keep it as shipped to display the version. However, if you do decide to change the name, you can view the original version name in the notes section of the virtual machine itself.

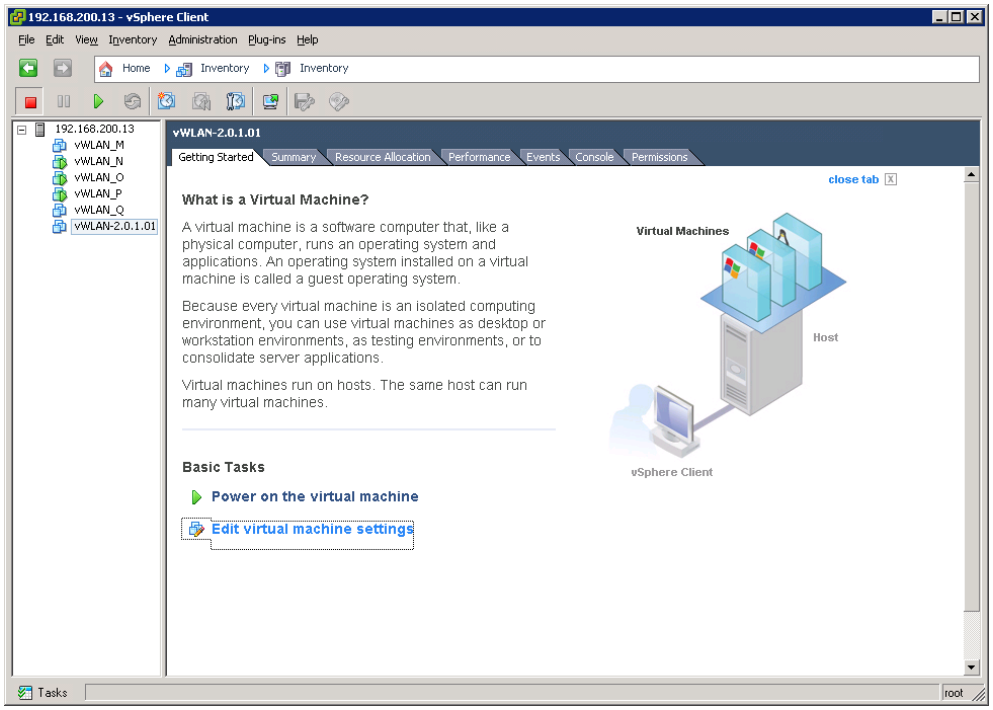


Select the appropriate resource pool for your virtual machine and then hit next and then finish.



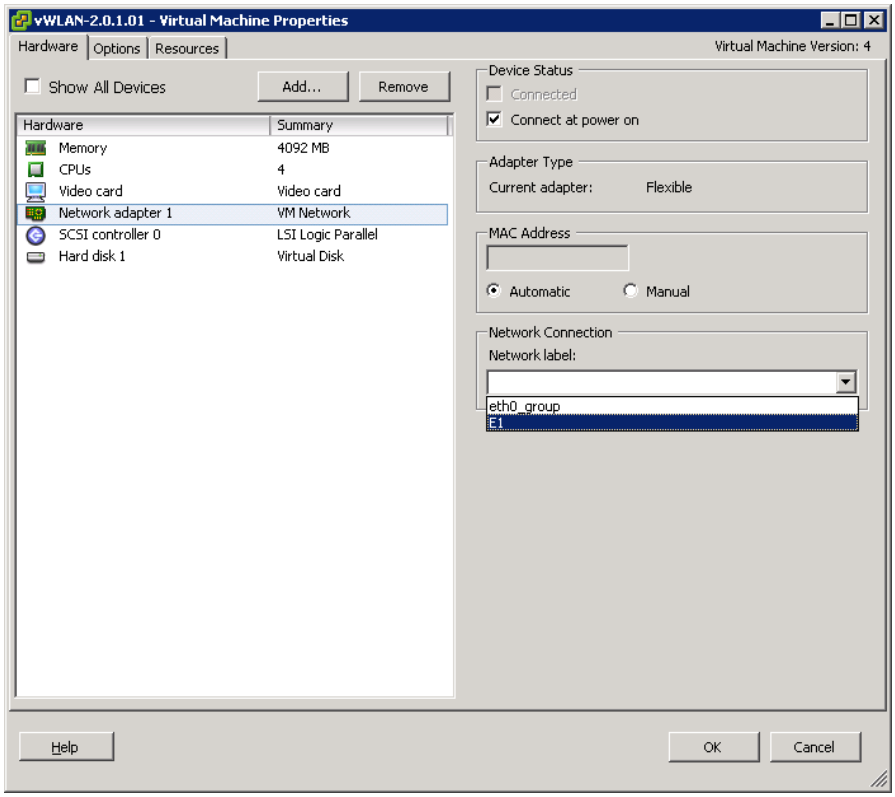
Editing Virtual Machine Settings

Whether you used the OVA or VMDK method, now that the virtual machine is in your inventory, select the machine in the left-hand pane and under the “Getting Started” tab, select “Edit virtual machine settings”.



You now need to setup the Network Interface for the VM. Select Network Adapter 1 and configure the corresponding network switch where the interface should be associated. This interface needs network connectivity to DNS and the APs. In this example, the adapter is associated with the “E1” network label.

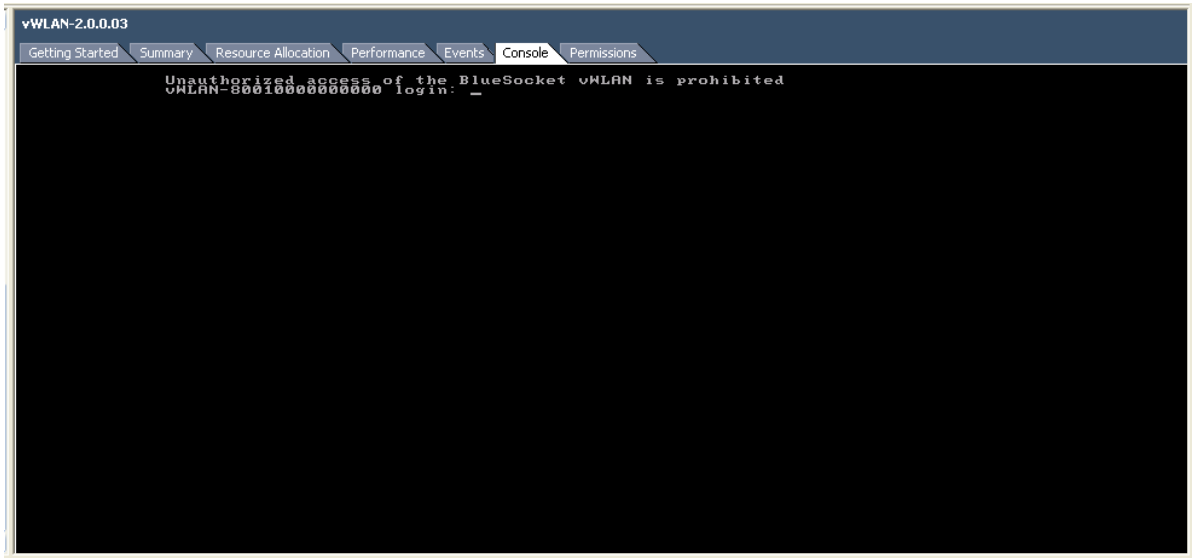
To see the network connections, navigate to ESX’s Configuration>Networking tab for a list of available network switches.



Access and Authentication Information

vWLAN Command Line Interface via vSphere Console Tab

To login to the vWLAN CLI, select the virtual machine and then navigate to the Console tab. The default username is “vwlan” and the password is “vwlan”.



If the login prompt fails to show-up (even after several minutes), hit Alt-F2 (or F3, F4, etc) to switch to a different TTY (terminal) and log in there to troubleshoot.

vWLAN Secure Web-Based Administrative Console

The vWLAN has a built-in web server for system administration. Accessing the admin web server can be done using the following command in your browser:

https://<ip address>:3000

The IP address of the virtual machine can be found under the Summary>General tab in the vSphere client. It may take several minutes for the UI to become available. The default username is “root@ADTRAN.com” and the default password is “blueblue”. After logging in, it is recommended that you change the administrator name and password.

External Resource Requirements for the vWLAN Virtual Appliance

Domain Naming System (DNS)

vWLAN should be placed on a network with DNS access and IP connectivity to the APs. Redirect to hostname, which is required when using a third party SSL certificate provided by a certificate authority for web-based authentication (captive portal), requires both a forward (A record) and a reverse (PTR record) in your organizations DNS server for the public network interface and fully qualified hostname (FQDN) of the vWLAN. The vWLAN queries the PTR record and redirects to what is received going forward. If there is no PTR record the vWLAN will redirect to an IP address rather than a hostname. This may result in the receipt of a web browser security warning indicating a domain name mismatch. Clients use the A record to resolve the hostname of the vWLAN to an IP.

Dynamic Host Configuration Protocol (DHCP)

vWLAN can be configured to use DHCP to obtain an IP address or a static IP address. By default the public network interface is configured as a DHCP client. If you are using DHCP, vWLAN obtains an IP address from the network. If you disable DHCP, you can use the IP address, subnet mask, DNS and host name settings configured. The default IP address, subnet mask, and gateway of the public network interface is 192.168.130.1, 255.255.255.0, and 192.168.130.254 respectively. If DHCP is enabled, as it is by default, the vWLAN will continue to try to obtain an IP via DHCP unless the gateway responds to ICMP in which case it will then fall back to those settings. It is recommended you obtain the IP address received via DHCP and then login to the secure web-based administrative console and set the IP address statically. The IP address received via DHCP can be found in the vSphere client under the Summary>General tab or from the command line interface via the vSphere Console tab. Alternatively, configure the IP address of the vWLAN from the command line interface via the vSphere Console tab.

First-Boot Configuration Procedures

Power on the Virtual Machine

- It might take several minutes to fully boot the vWLAN Virtual Appliance**.**
- You can watch the boot from the vWLAN CLI via vSphere Console tab.
- Find the IP address in the vSphere client under the Summary>General tab or from the vWLAN CLI via the vSphere Console tab.

Log Into the Secure Web-Based Administrative Console of the vWLAN

- https:// <Appliance IP address>:3000
- username: root@ADTRAN.com password: blueblue

You can navigate through the Secure Web-Based Administrative Console of the vWLAN to become familiar with the management interface. To operate BSAPs under the vWLAN Virtual Appliance, you will need to install a BSAP license file. For further information, please see the vWLAN Administrator Guide and other documents available on the ADTRAN support community (https://supportforums.adtran.com).

For more Information and Documentation

Refer to the vWLAN Administrator Guide and other documents available on the ADTRAN support community (https://supportforums.adtran.com).

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Safe Computing statement

The vWLAN Virtual Appliance does not contain malware, spyware, or viruses.