

# Wanos on vSphere Hypervisor (eSXI)

## Complete Lab Setup Guide

This guide explains how to deploy a complete lab on a VMware vSphere Hypervisor. The step-by-step guide includes steps to create Head Office and Branch Wanos VM instances on the same Hypervisor system as well as virtual networks to simulate the Server LAN, WAN Link and Branch LAN. Physical Interfaces can be used to connect the lab to the physical network. Additional Workstation VM's are added to simulate end to end testing.

The lab setup uses bridge mode and hence the **192.168.1.X/24** address space is used on both Head Office and Branch sides. The lab design is illustrated in the following network diagram:

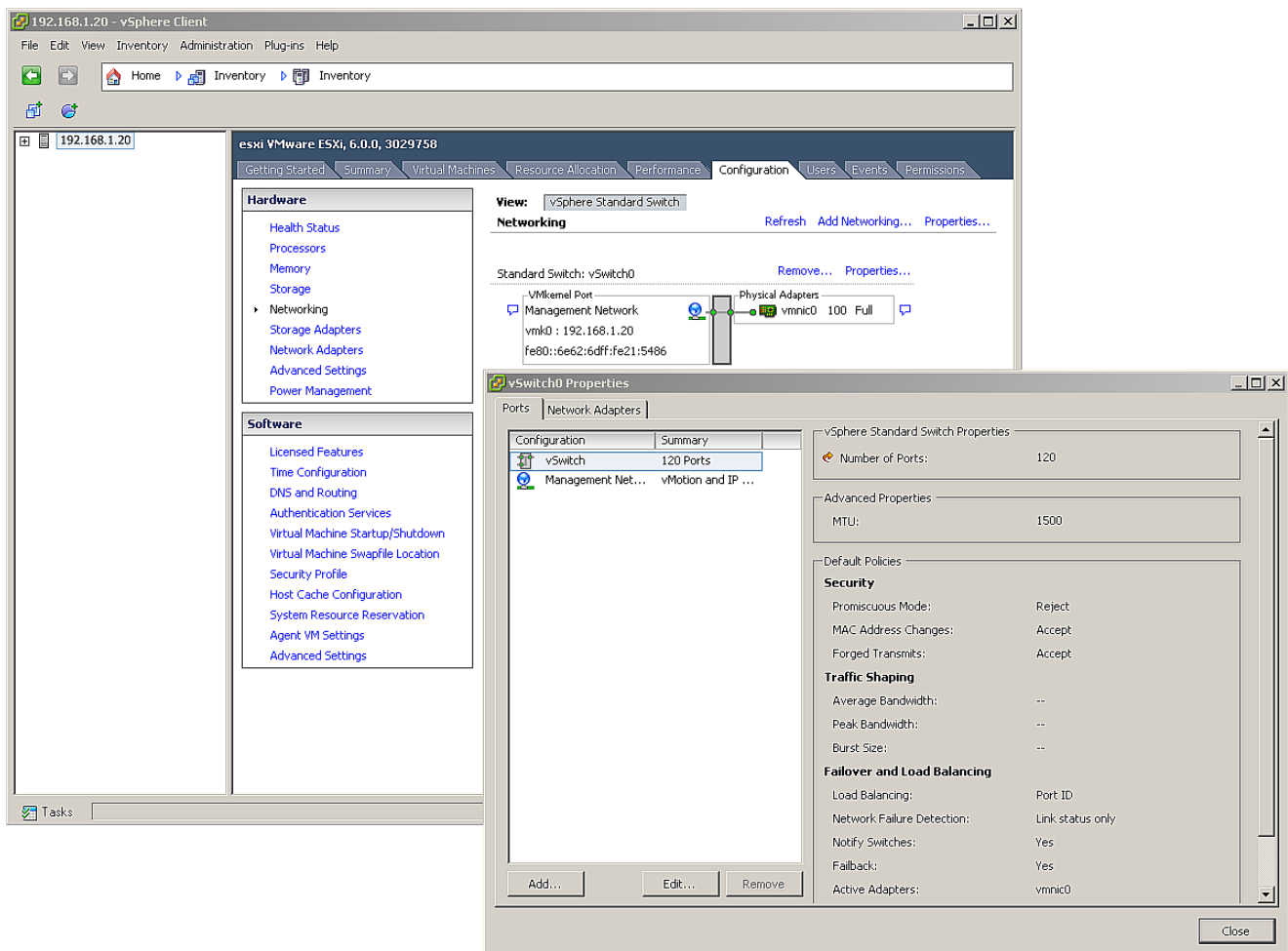


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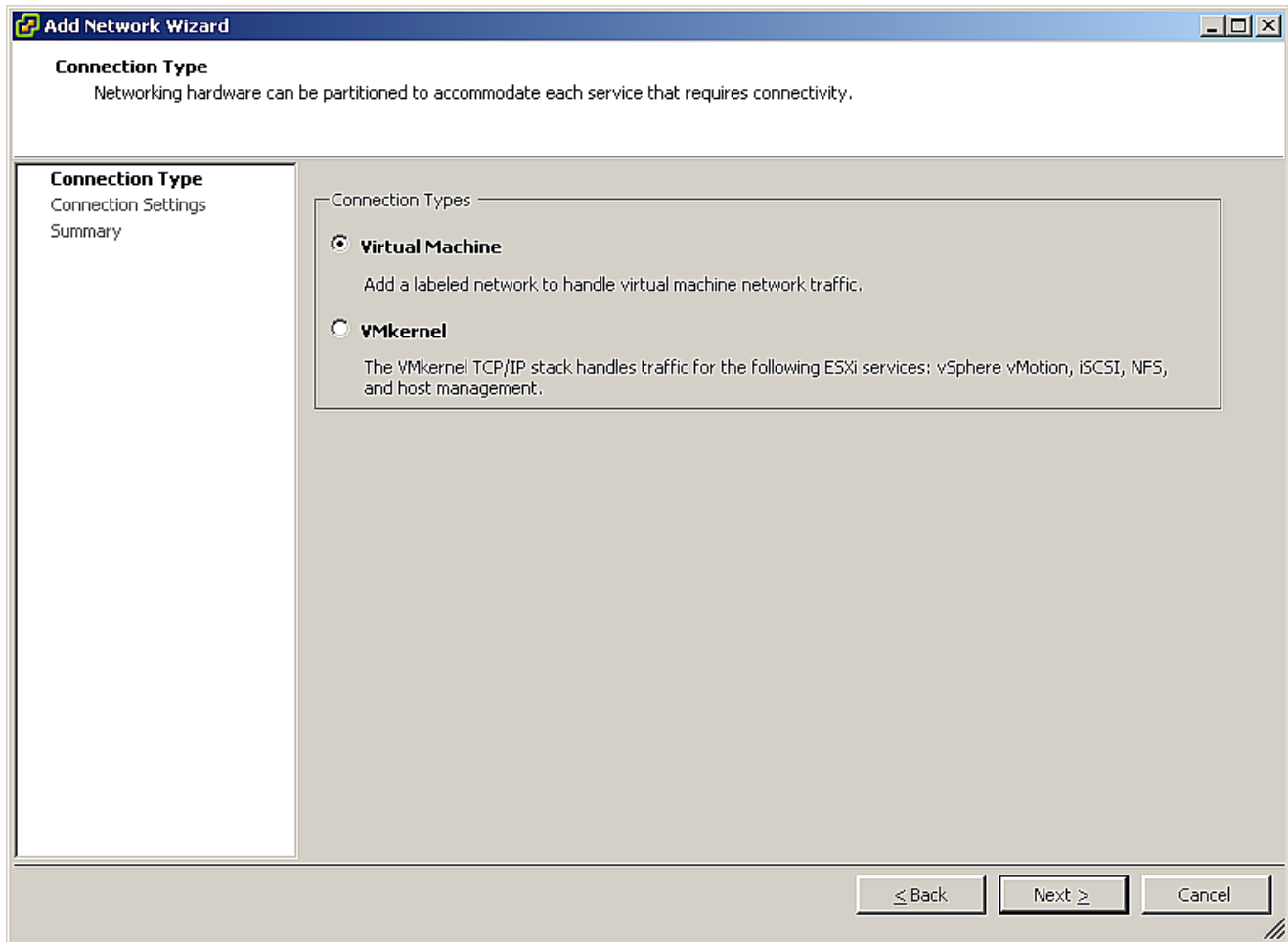
# Configure eSXI vSwitch

Configuring vSwitch before deploying Virtual Machines is a good idea. This section tackles the vSwitch configuration. 3 Port Groups will be created – **PhyNIC**, **WAN\_Link**, **Branch\_LAN**. To configure vSwitch navigate to **Server > Configuration (tab) > Networking > Properties (under Standard Switch)**. Refer to the screenshot below for reference.

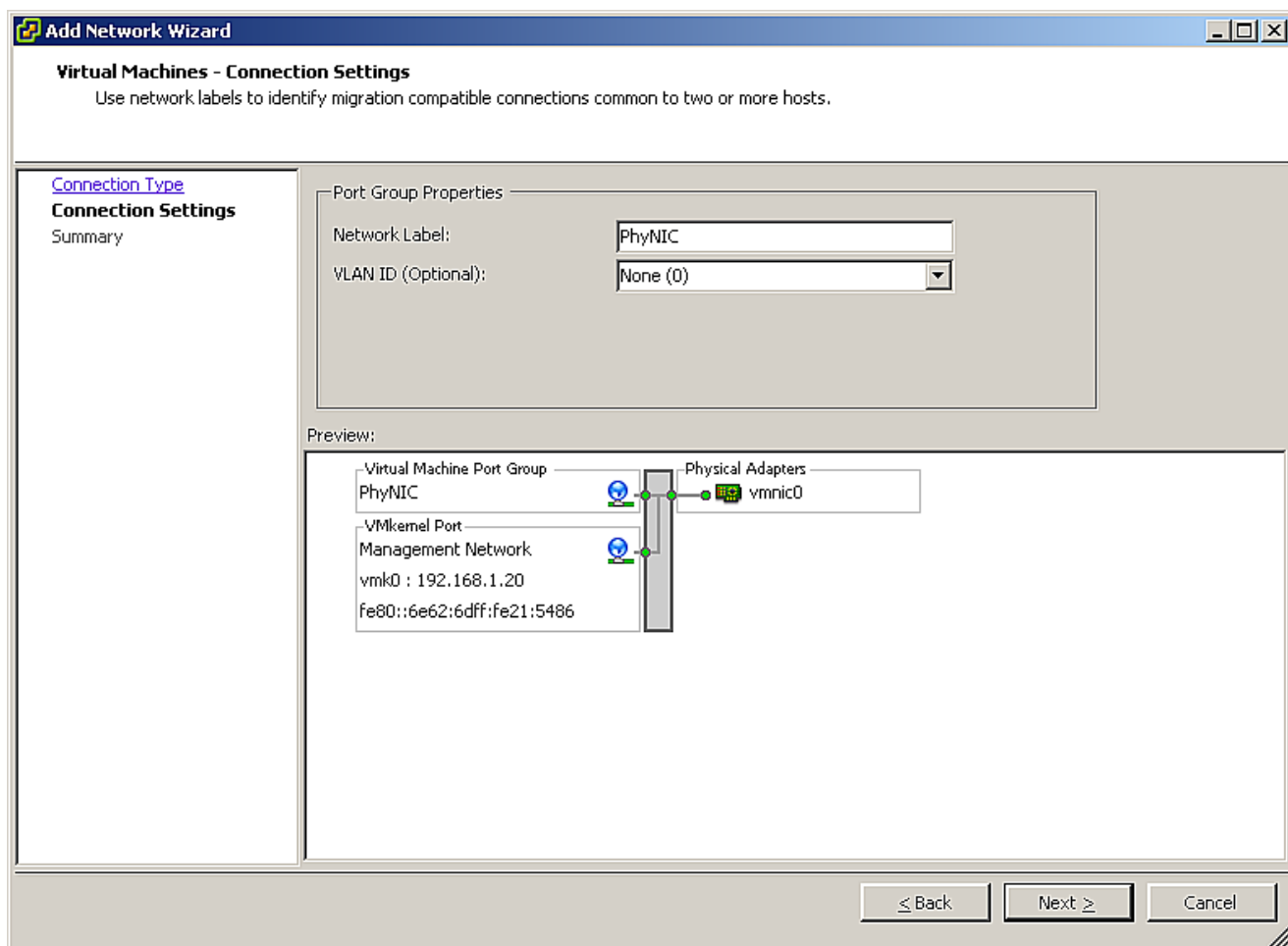


# PhyNIC

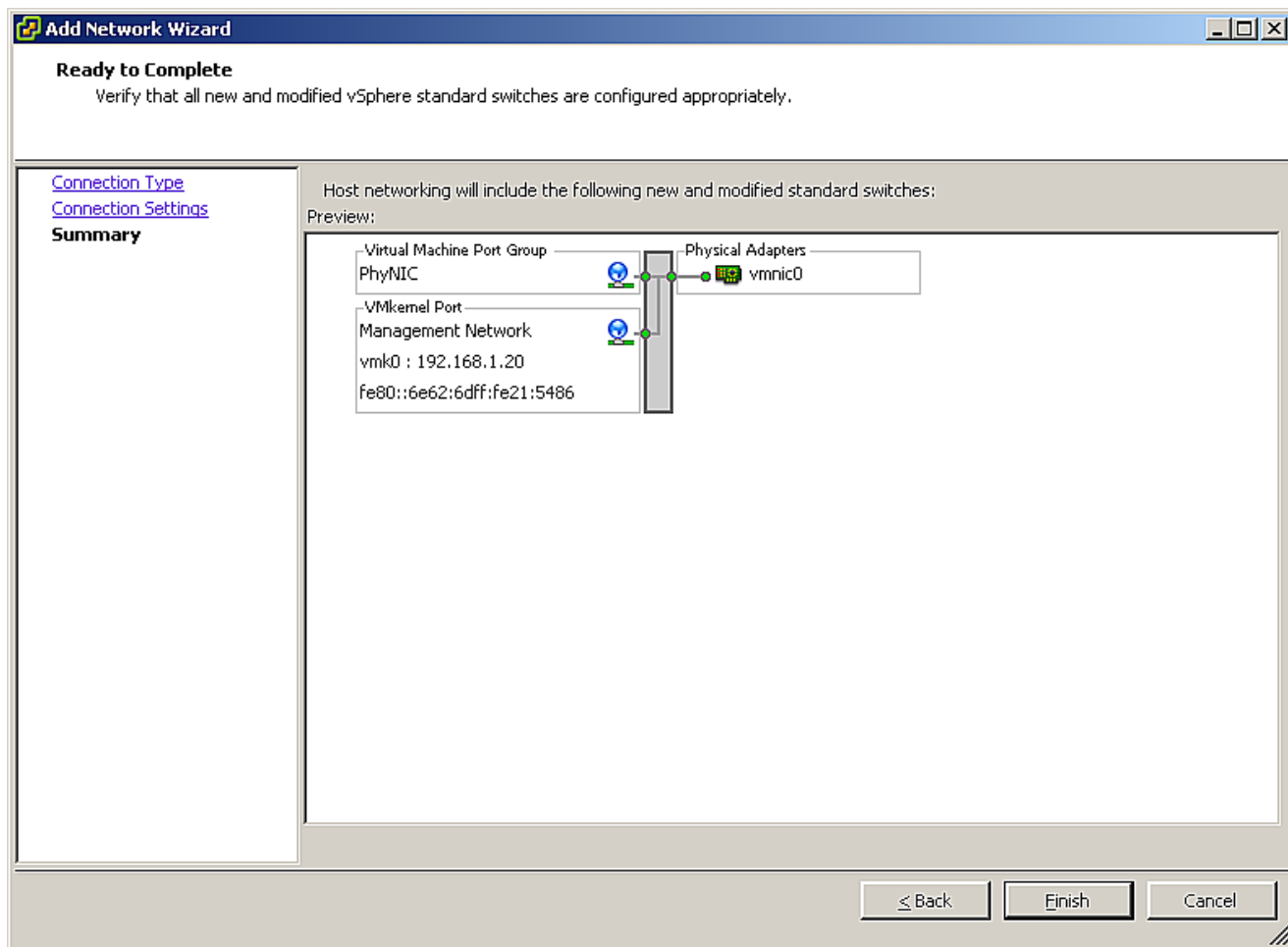
From the **vSwitch Properties** window click **Add**, select **Virtual Machine** and click Next to continue.



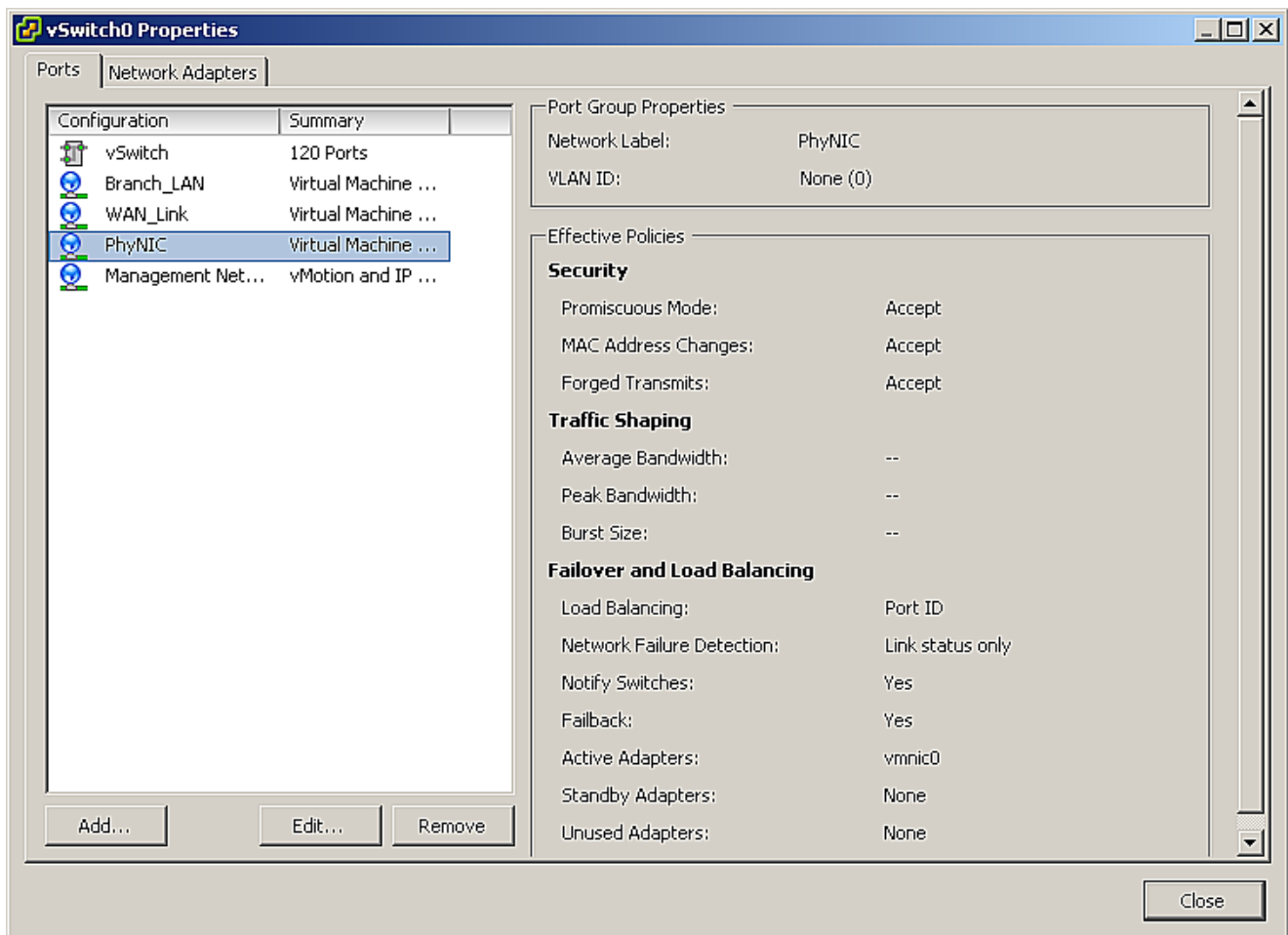
Set the **Network Label** to **PhyNIC**, leave **VLAN ID** to **None (0)** and click **Next** to continue.



Review the information and click **Finish** to add a new Port Group.

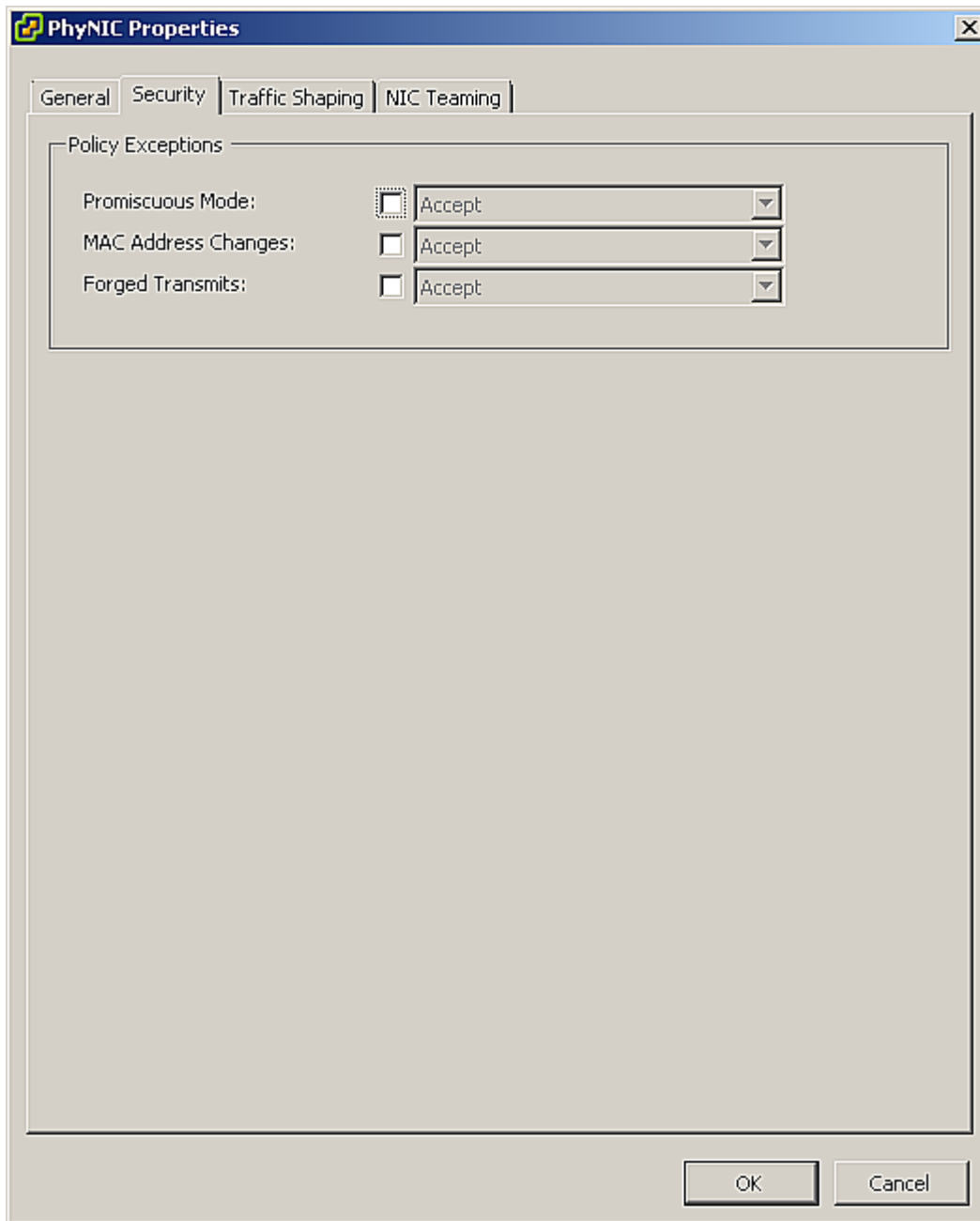


After adding a new Port Group, the Security setting needs to be updated. From the vSwitch Property window, select or click the target Port Group, **PhyNIC** in this case, and click **Edit**. Refer to the screenshots below.



*The vSwitch Properties window show what Port Groups that are available for the given vSwitch.*

Under Security (*tab*), enable **Promiscuous Mode** and set the value to **Accept**.



The Security (*tab*) allows the **Promiscuous Mode** to be set which is required in Wanos.



## WAN\_Link

To add WAN\_Link port group, follow the same steps found in [PhyNIC](#) and use the following information:

**Network Label:** WAN\_Link

**VLAN ID:** 10

**Promiscuous Mode:** Accept

## Branch\_LAN

To add Branch\_LAN port group, follow the same steps found in [PhyNIC](#) and use the following information:

**Network Label:** Branch\_LAN

**VLAN ID:** 11

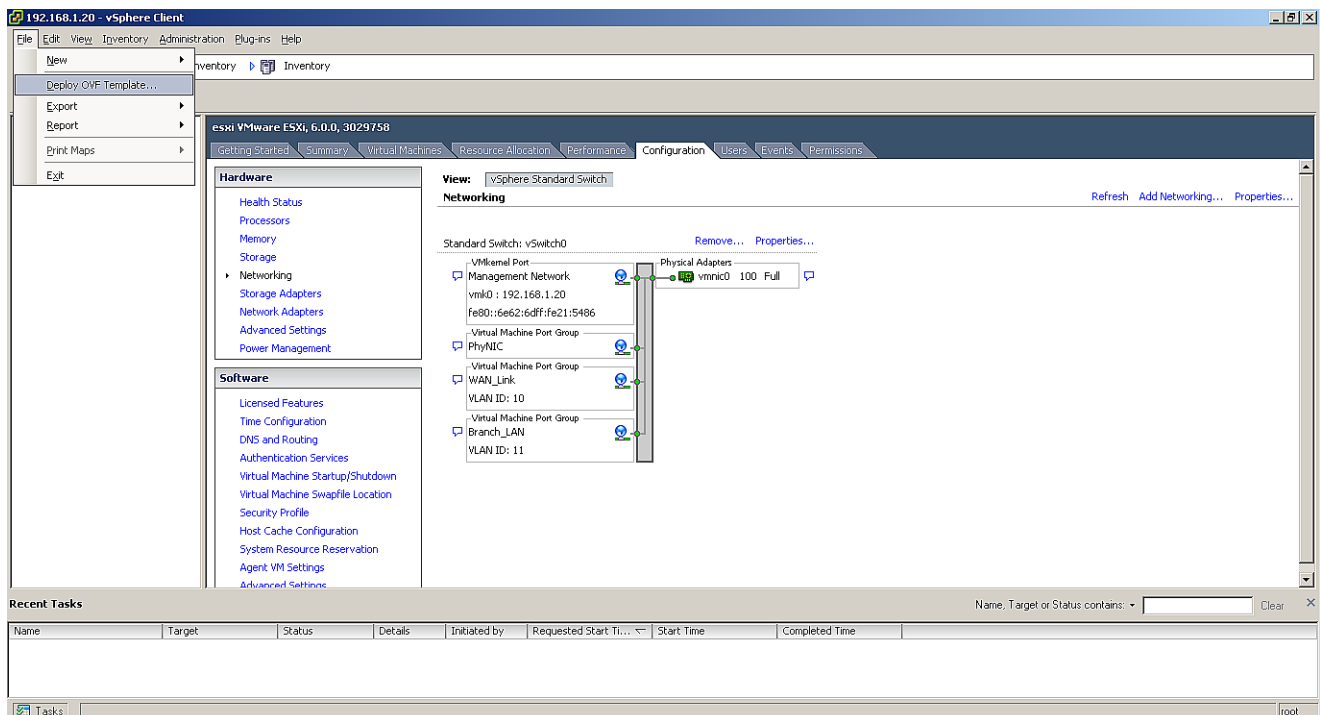
**Promiscuous Mode:** Accept

# Deploy Wanos and Windows Virtual Machines

This section tackles the deployment of Wanos and Windows Virtual Machines. Download the **Virtual Appliance OVA** from [Wanos Downloads section](#) and decompress the zip file to extract the OVA file into a directory of preference (e.g. Downloads). Two Wanos VMs will be deployed to simulate two offices that will be explained in a later chapter. The VMs are named **Wanos-HQ** and **Wanos-Branch**.

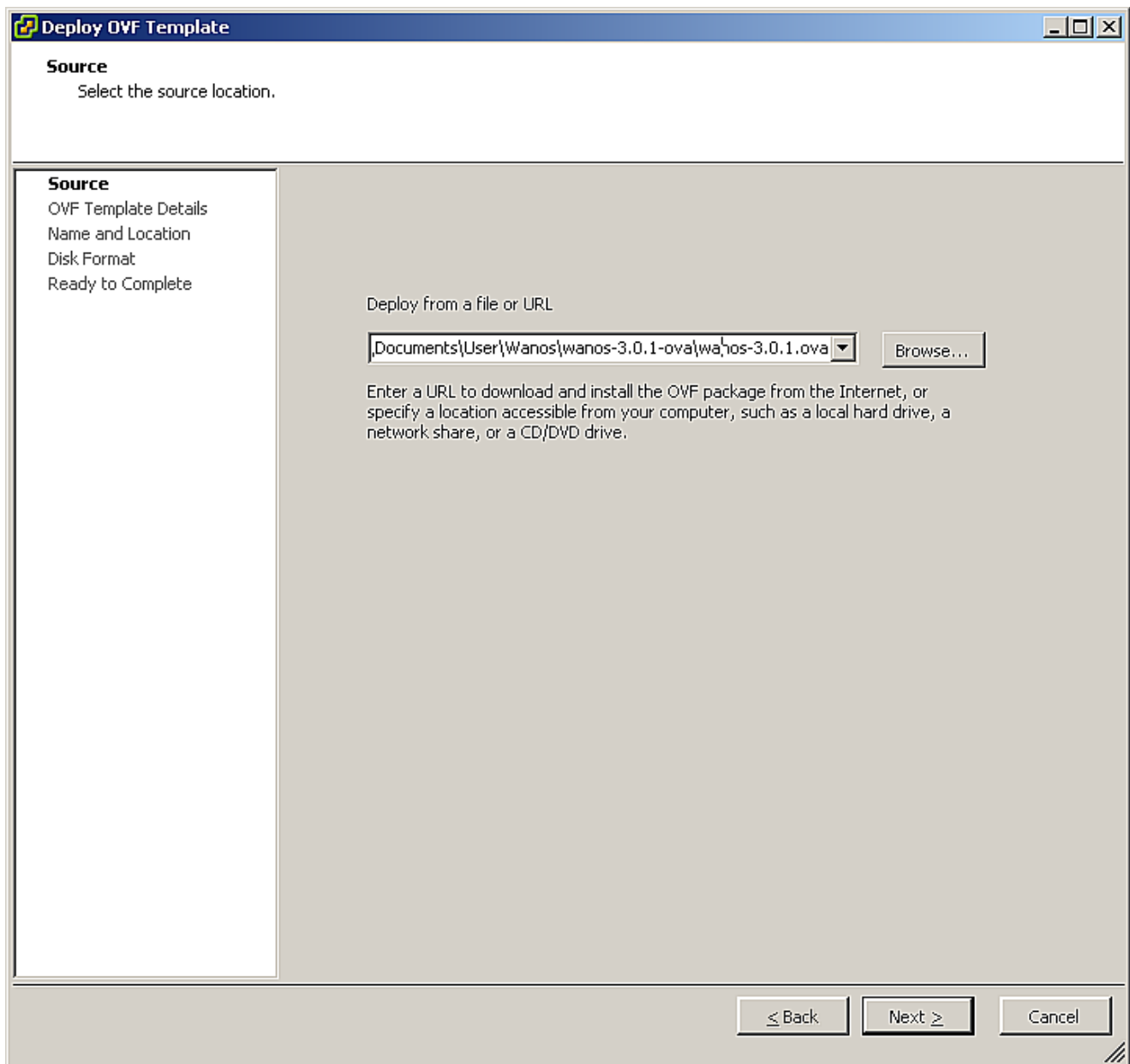
This guide assumes that the user has a Windows-based virtual machine, in OVA format, available for deployment.

To get started, click **File > Deploy OVF Template** from vSphere Client. Refer to the screenshot below for reference.



## Deploy Wanos-HQ

Locate the extracted Wanos **OVA** file by clicking **Browse** and point to the directory where Wanos was extracted. Click **Next** to continue. The next window will show the **OVF Template Details**. Click **Next** to continue.



Set the **Name** to **Wanos-HQ**. Click **Next** to continue.

The screenshot shows a window titled "Deploy OVF Template" with a blue header bar. Below the header, the text "Name and Location" is displayed in bold, followed by the instruction "Specify a name and location for the deployed template". On the left side, there is a vertical navigation pane with the following items: "Source" (a blue link), "OVF Template Details" (a blue link), "Name and Location" (the current step, in bold), "Disk Format", "Network Mapping", and "Ready to Complete". The main area of the window contains a "Name:" label above a text input field that contains the text "Wanos-HQ". Below the input field, a note states: "The name can contain up to 80 characters and it must be unique within the inventory folder." At the bottom right of the window, there are three buttons: "< Back", "Next >", and "Cancel".

Select **Thick Provision Lazy Zeroed** (default) and click **Next** to continue.

*Note: If Storage Space is a concern, select **Thin Provision**.*

The screenshot shows a window titled "Deploy OVF Template" with a "Disk Format" section. The question "In which format do you want to store the virtual disks?" is displayed. On the left, a navigation pane lists "Source", "OVF Template Details", "Name and Location", "Disk Format" (selected), "Network Mapping", and "Ready to Complete". The main area shows "Datastore:" as "USB-Drive" and "Available space (GB):" as "35.7". Three radio buttons are present: "Thick Provision Lazy Zeroed" (selected), "Thick Provision Eager Zeroed", and "Thin Provision". At the bottom, there are "Back", "Next", and "Cancel" buttons.

**Deploy OVF Template**

**Disk Format**  
In which format do you want to store the virtual disks?

[Source](#)  
[OVF Template Details](#)  
[Name and Location](#)  
**Disk Format**  
[Network Mapping](#)  
[Ready to Complete](#)

Datastore:

Available space (GB):

Thick Provision Lazy Zeroed  
 Thick Provision Eager Zeroed  
 Thin Provision

Under Network Mapping set the following:

Source Network	Destination Network
wan0	WAN_Link
lan0	PhyNIC

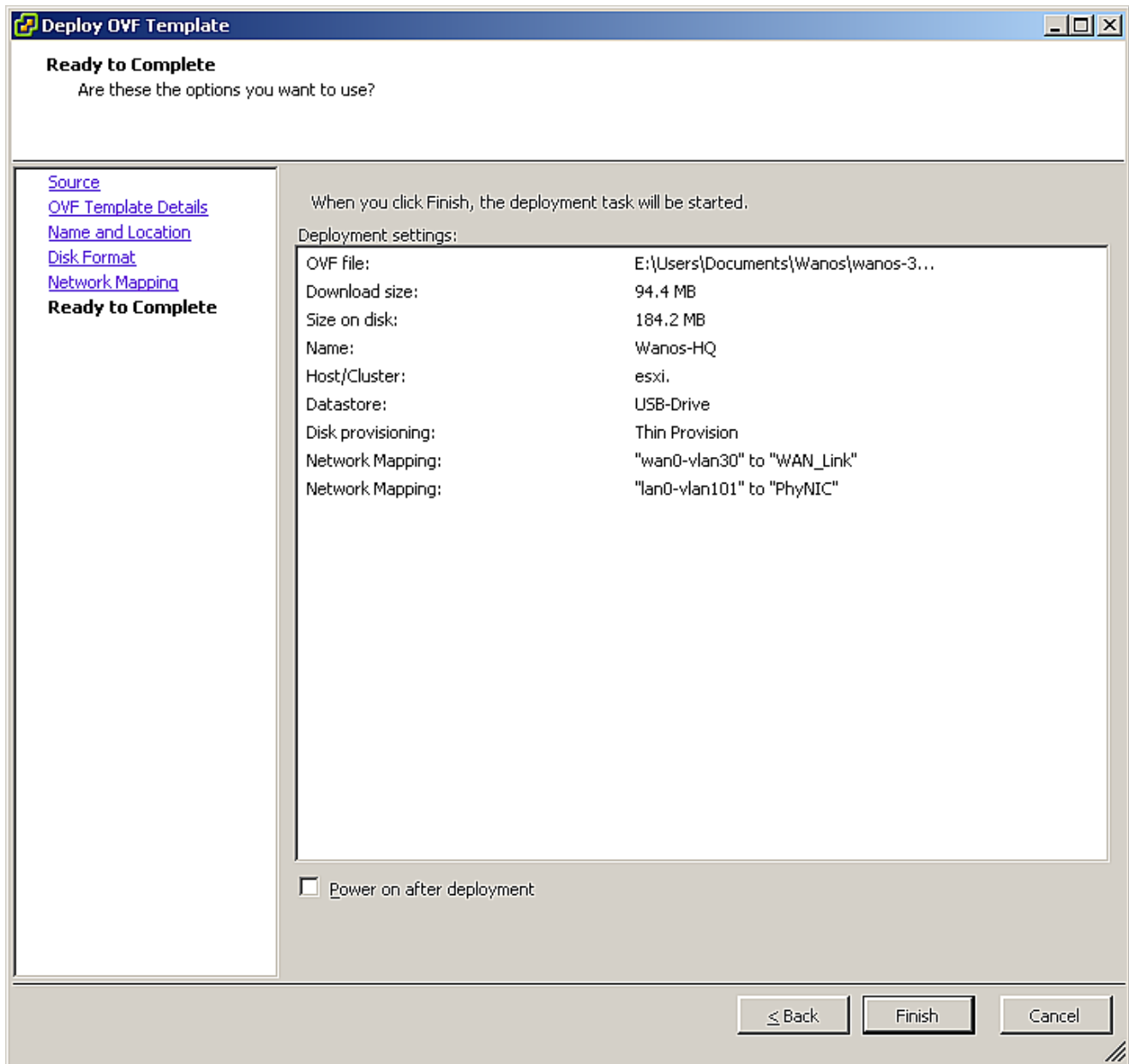
Click **Next** to continue.

The screenshot shows a window titled "Deploy OVF Template" with a sub-header "Network Mapping" and the question "What networks should the deployed template use?". On the left, a sidebar lists navigation options: "Source", "OVF Template Details", "Name and Location", "Disk Format", and "Network Mapping" (which is highlighted and labeled "Ready to Complete"). The main area contains the instruction "Map the networks used in this OVF template to networks in your inventory" and a table mapping source networks to destination networks.

Source Networks	Destination Networks
wan0-vlan30	WAN_Link
lan0-vlan101	PhyNIC

At the bottom of the window, there are three buttons: "≤ Back", "Next ≥", and "Cancel".

Review the Deployment settings. Click **Back** if needed otherwise, click **Finish** to deploy the Virtual Machine. Ensure that **Power on after deployment** is not checked / marked.



## Deploy Wanos-Branch

Follow the same steps outlined in [Deploy Wanos-HQ](#) and use the following information:

**Name:** **Wanos-Branch**

**Network Mapping:**

Source Network	Destination Network
wan0	WAN_Link
lan0	Branch_LAN

## Deploy HQ-PC

Follow the same steps outlined in [Deploy Wanos-HQ](#) and use the following information:

**Name:** **HQ-PC**

**Network Mapping:** **PhyNIC**

## Deploy Branch-PC

Follow the same steps outlined in [Deploy Wanos-HQ](#) and use the following information:

**Name:** **Branch-PC**

**Network Mapping:** **Branch\_LAN**



# Resource Reservation

Optionally, depending on performance requirements, resources can be reserved.

For example the Virtual Machines can be configured as follows:

## Wanos-HQ

<b>Hardware</b>	
CPU	4 (2 cores, 2 virtual sockets)
Memory	2 GB or 2048 MB
<b>Resources</b>	
CPU	Reservation: 1300 MHZ
Memory	Reservation: 2048 MB

## Wanos-Branch

<b>Hardware</b>	
CPU	4 (2 cores, 2 virtual sockets)
Memory	2 GB or 2048 MB
<b>Resources</b>	
CPU	Reservation: 1300 MHZ
Memory	Reservation: 2048 MB

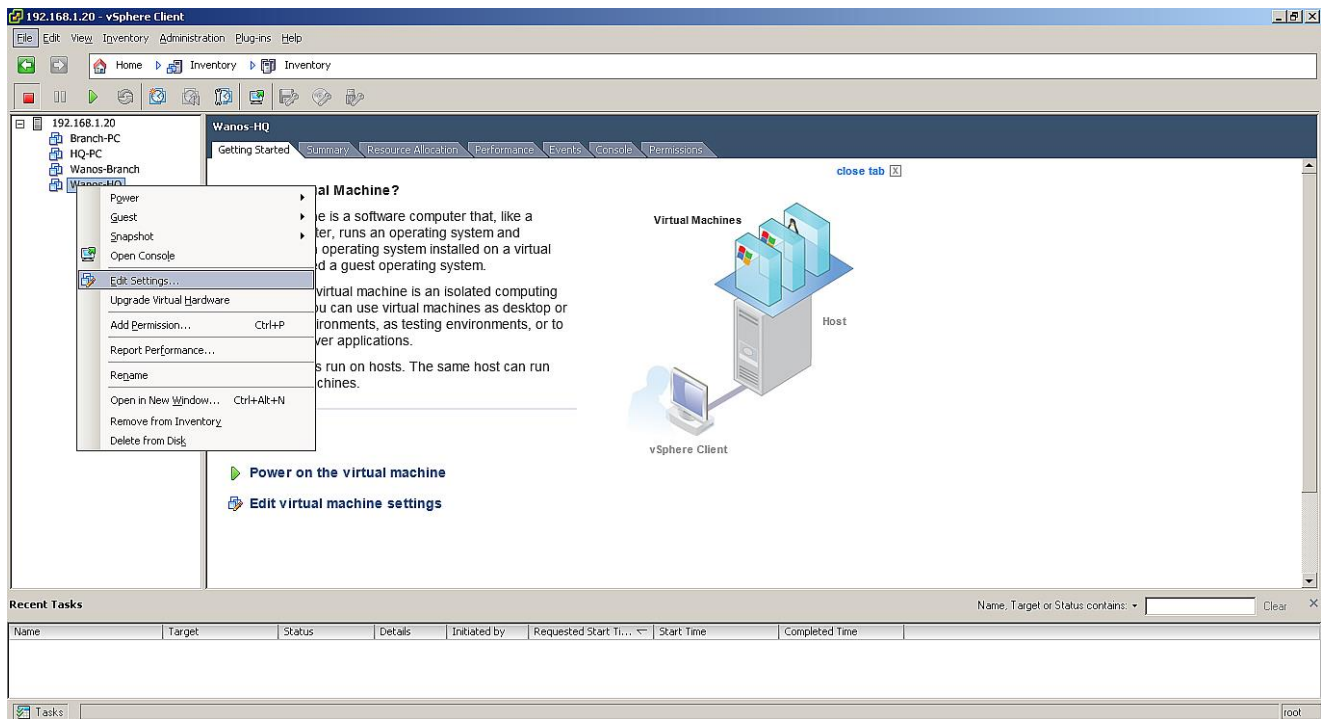
Performance and Compatibility will vary depending on the hardware used. Review the hardware and performance guides for more information:

[Sizing Guide](#)

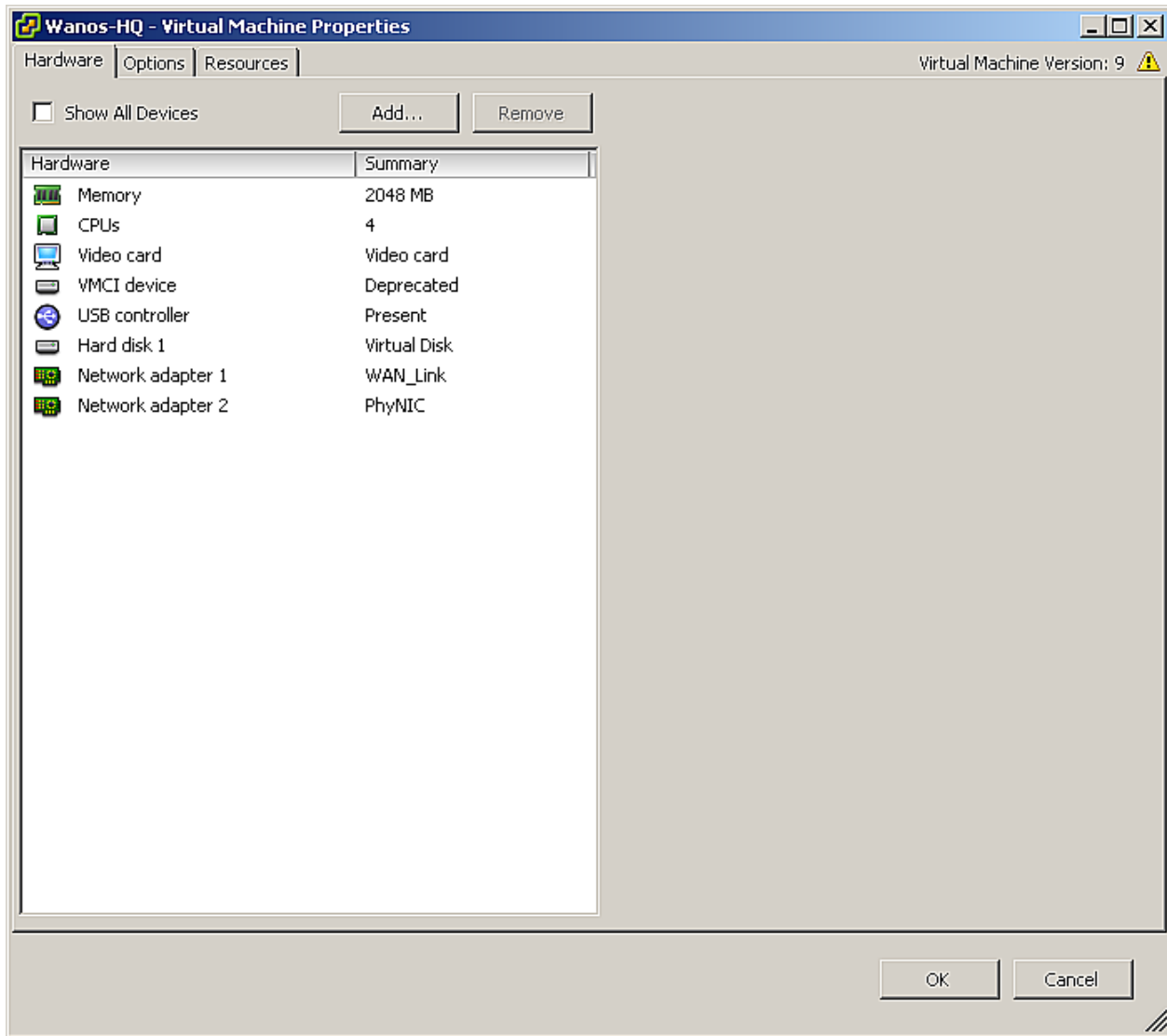
[Hardware Guide](#)

[Performance Guide](#)

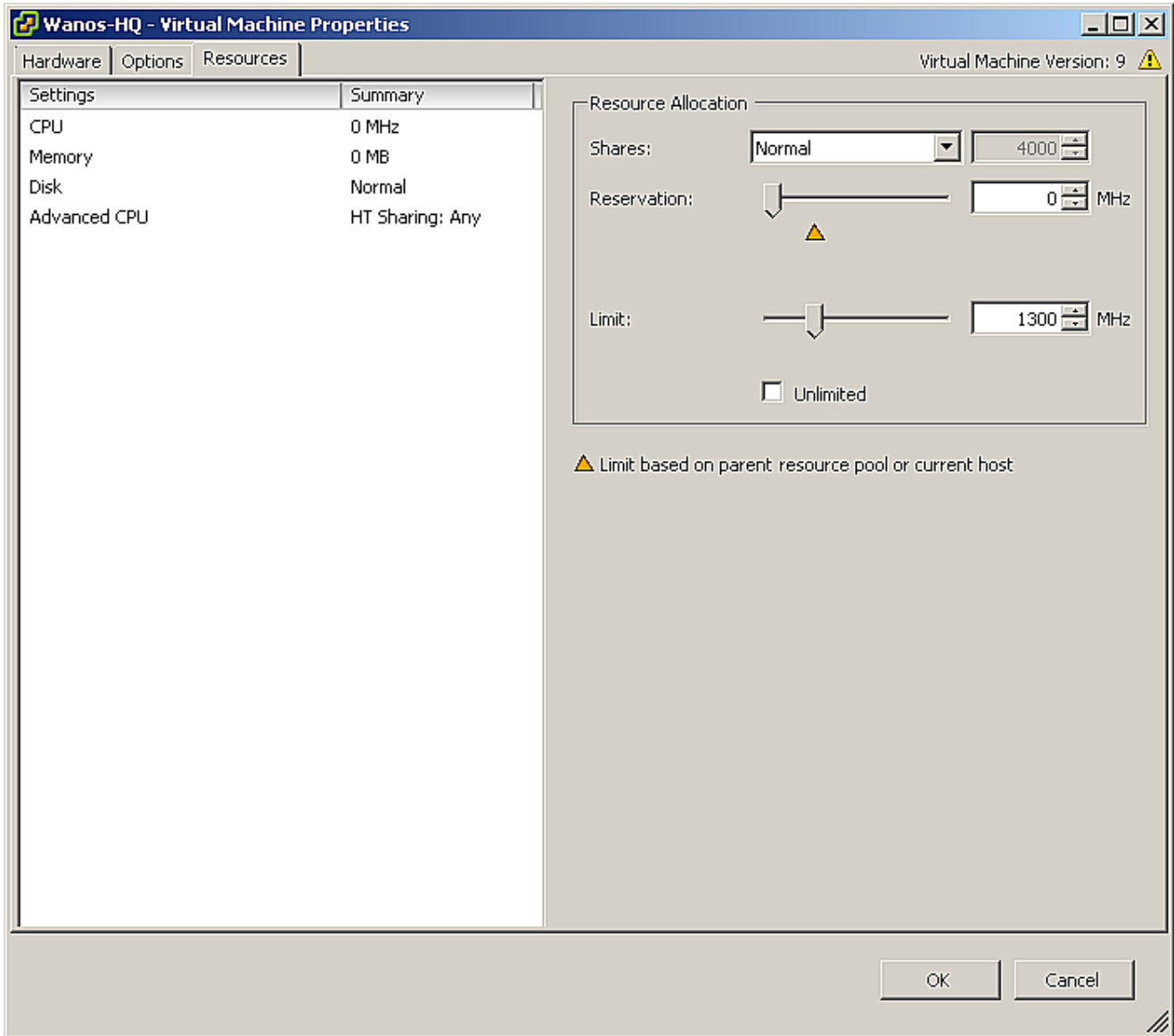
Resource reservation can be modified by navigating to **Server > Virtual Machine** (right click – **Edit Settings**) > **Hardware** and **Resources** (*tab*). Please refer to the screenshots below for reference.



*Screenshot of navigating to **Edit Settings***



Screenshot of **Hardware** (tab)



Screenshot of **Resources** (tab)

# IP Configuration

## 1) Set the IP address on Wanos-HQ:

Log into Wanos-HQ using the default username and password:

Username: **tc**

Passwod: **ChangeM3**

Run the command in the terminal:

```
wanos-cfg
```

Set the IP Address to **192.168.1.16**

Set the Network Mask to **24**

Set the Gateway Address to **192.168.1.1**

Save the new settings.

## 2) Set the IP address on Wanos-Branch:

Log into Wanos-Branch using this username and password:

Username: **tc**

Passwod: **ChangeM3**

Run the command in the terminal:

```
wanos-cfg
```

Set the IP Address to **192.168.1.17**

Set the Network Mask to **24**

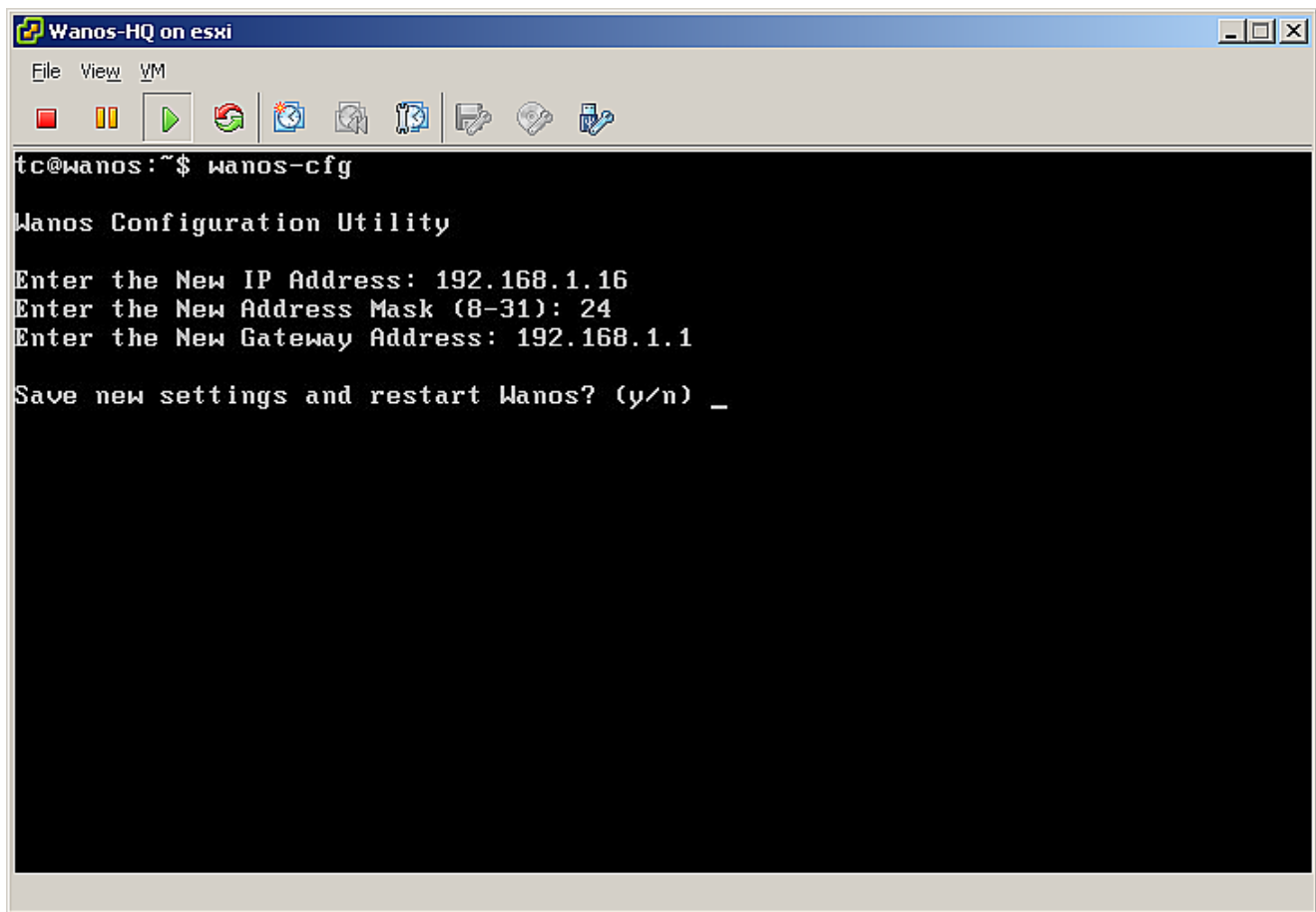
Set the Gateway Address to **192.168.1.1**

Save the new settings.

## 3) Set the IP Addresses of the Workstations:

IP addresses of the Windows **HQ-PC (192.168.1.9)** and **Branch-PC (192.168.1.8)** are set manually or by DHCP when phyNIC is connected to the external network with DHCP server.

Refer to the screenshot below of using the **wanos-cfg** utility for reference.



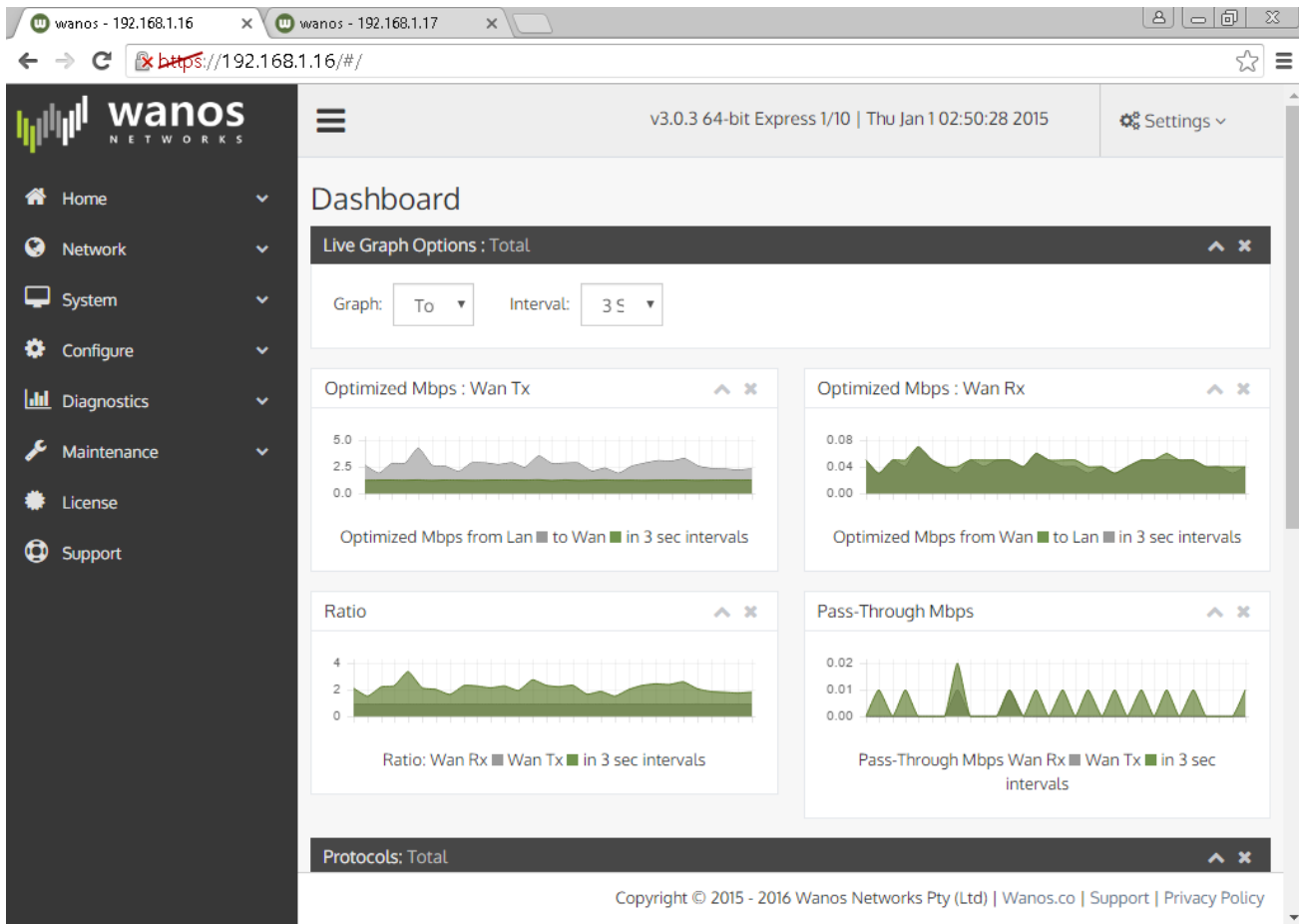
*Running wanos-cfg on XenServer Console*

# Testing Wan Optimization

The user needs to ensure that a file share, Website or FTP site is available on the HQ-PC for testing purposes. A [Silesia Corpus test file](#) can be downloaded on the Wanos Wiki site.

When using a file share, from HQ-PC, open Windows Explorer and connect to **\\192.168.1.8** (Wanos-Branch). Copy the file and paste it to a preferred directory within HQ-PC (e.g. Downloads directory).

Open a web browser and access Wanos-Branch Web UI at <https://192.168.1.17>. Enter the default username and password: **wanos**. During the file copy process, a stream of data from **Optimized Mbps: Wan Tx** and **Optimized Mbps: Wan Rx** graphs can be seen indicating that WAN Optimization is working.



*A graph displaying a WAN Optimized traffic.*