

# Configure RSPAN with VMware

Published: 2018-04-20

The Remote Switched Port Analyzer (RSPAN) enables you to monitor traffic on one switch through a device on another switch and then send the monitored traffic to one or more destinations.

## Before you begin

RSPAN requires that you configure an RSPAN VLAN on your physical switches. If you cannot configure an RSPAN VLAN, consider configuring ERSPAN as an alternative. For more information, see [How Mirroring Works](#).

- You must have experience with basic VMware ESX and ESXi administration through the VMware vSphere Web Client.
- You must have an uplink port (HW NIC) attached to the switch (preferably one that is not designated for general network traffic).
- Direct access to the iDRAC console is preferred.

For information about configuring the VMware vSphere server, see the *Working with Port Mirroring* section in the ESXi and vCenter documentation for your version of VMware.

For information about configuring VMware with a Discover appliance, see [Deploy the ExtraHop Discover Appliance with VMware](#).

The following steps outline the key procedures that are required to configure RSPAN with VMware for an ExtraHop Discover appliance. Note that procedures in these steps might vary between versions of VMware.



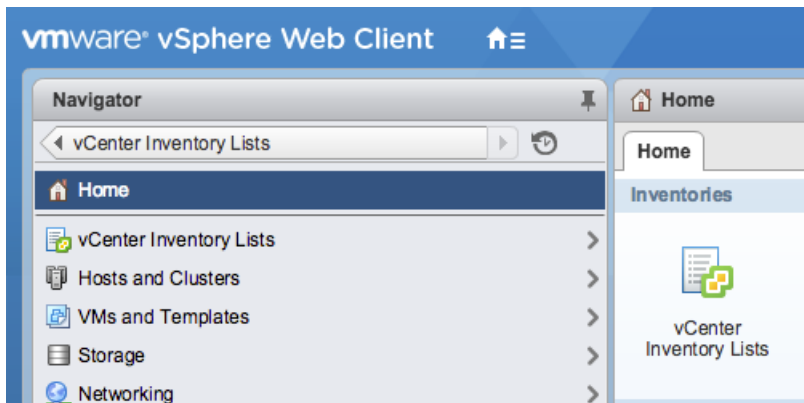
**Note:** While these steps are required for RSPAN configuration, most deployments have completed the first four steps prior to installing the ExtraHop Discover appliance. If you have an existing Virtual Distributed Switch, start with step 5.

1. [Create a virtual distributed switch \(VDS\)](#)
2. [Add port groups to the VDS](#)
3. [Add a host to the VDS](#)
4. [Add uplink ports to the VDS](#)
5. [Configure an RSPAN port mirror on the VDS](#)

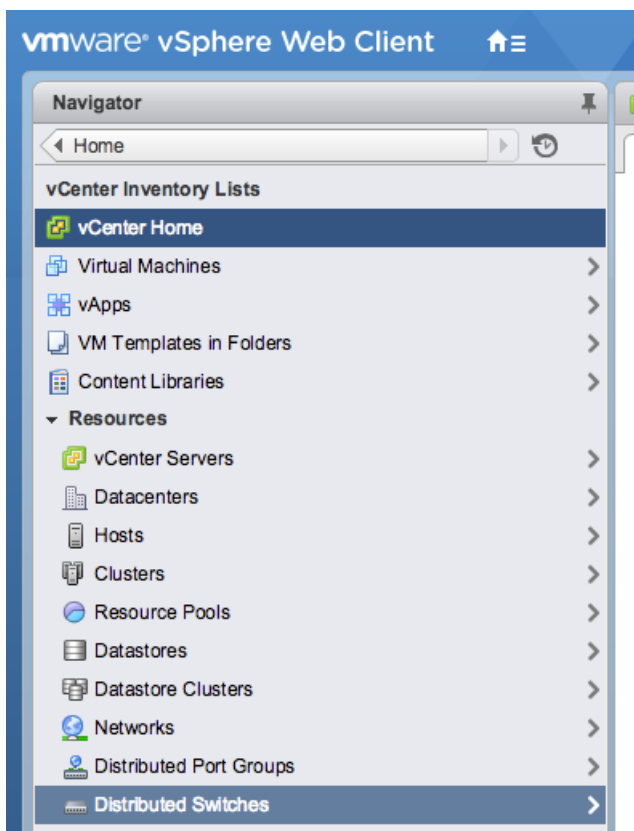
## Create a virtual distributed switch

Complete the following steps to create a virtual distributed switch (VDS). The VDS carries traffic from your virtual machines (VM) to your physical network and to other VMs.

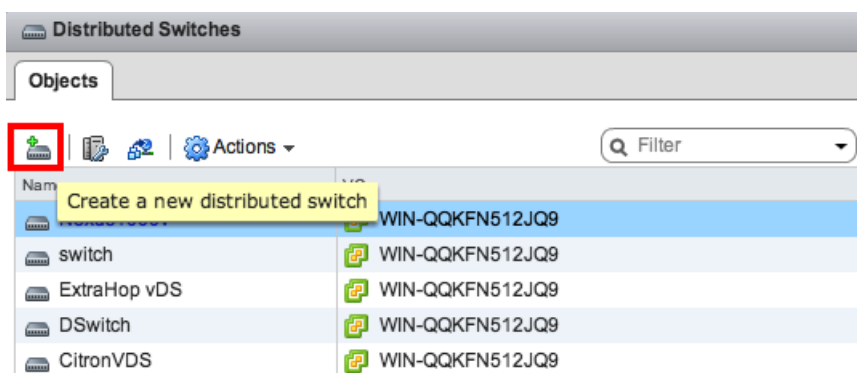
1. Log into the vSphere Web Client.
2. Click **vCenter Inventory Lists**.



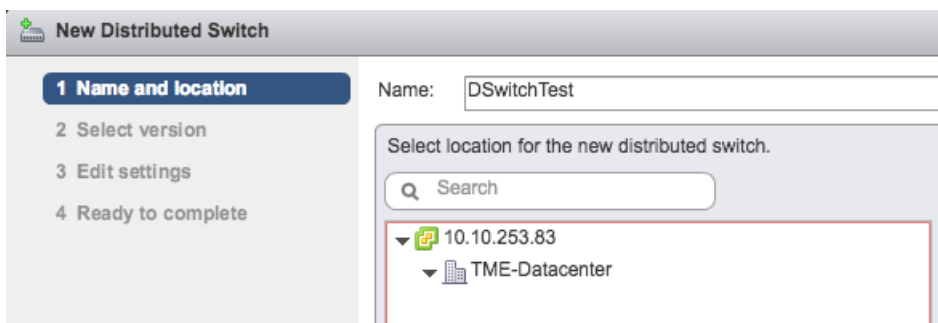
3. In the left panel, click **Distributed Switches**.



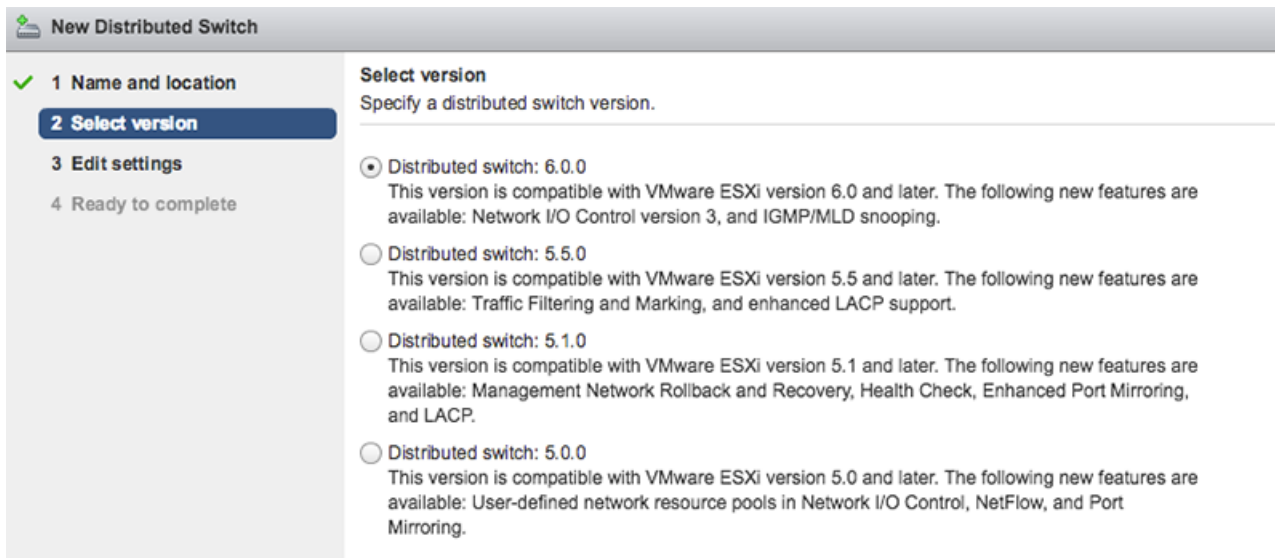
4. Above the list of switches, click the **Create a new distributed switch** icon.



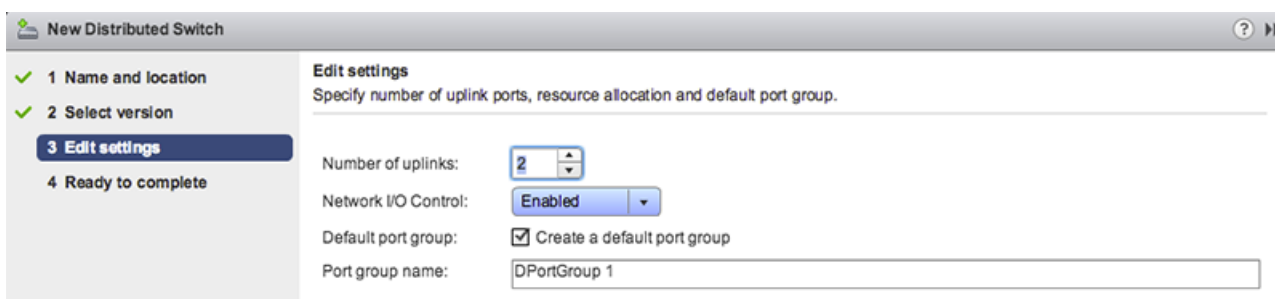
5. In the New Distributed Switch window, type a name for the switch, select the destination data center or network folder, and then click **Next**.



6. Select the distributed switch version and click **Next**.



7. Edit the following settings:



- a) Set the **Number of uplinks** to two or more if your SPAN traffic is on a dedicated NIC (recommended). Otherwise, set this value to 1.
- b) Click the **Network I/O Control** drop-down list and select one of the following options.

**Disabled**

If your SPAN traffic on a dedicated NIC. (Recommended)

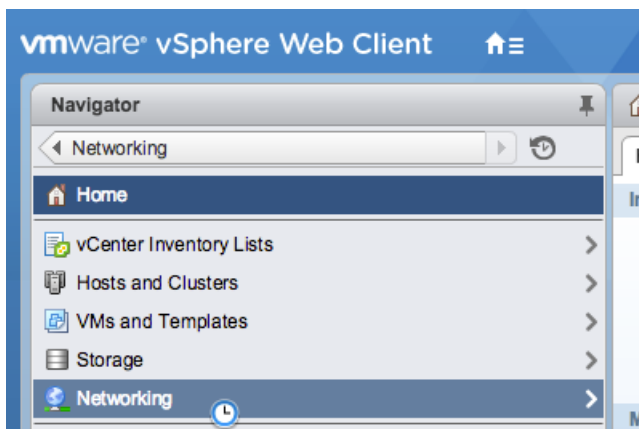
**Enabled**

If your SPAN traffic is on the same NIC as your monitored traffic.

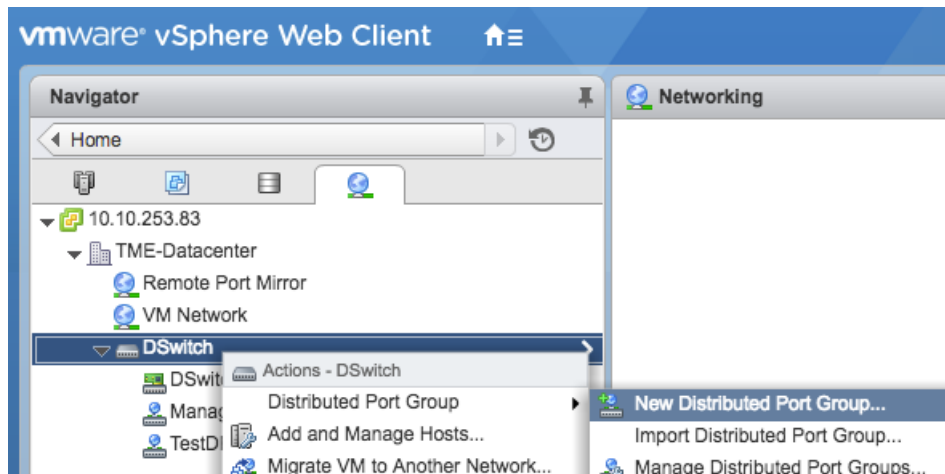
## Add port groups to the VDS

Complete the following steps to add port groups when you deploy a new virtual machine or add a new ESX host into your VDS environment. Port groups enable you to properly associate the new machine or host to the port group that is being monitored immediately.

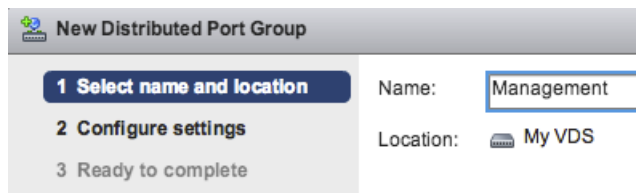
1. Click on **Networking**.



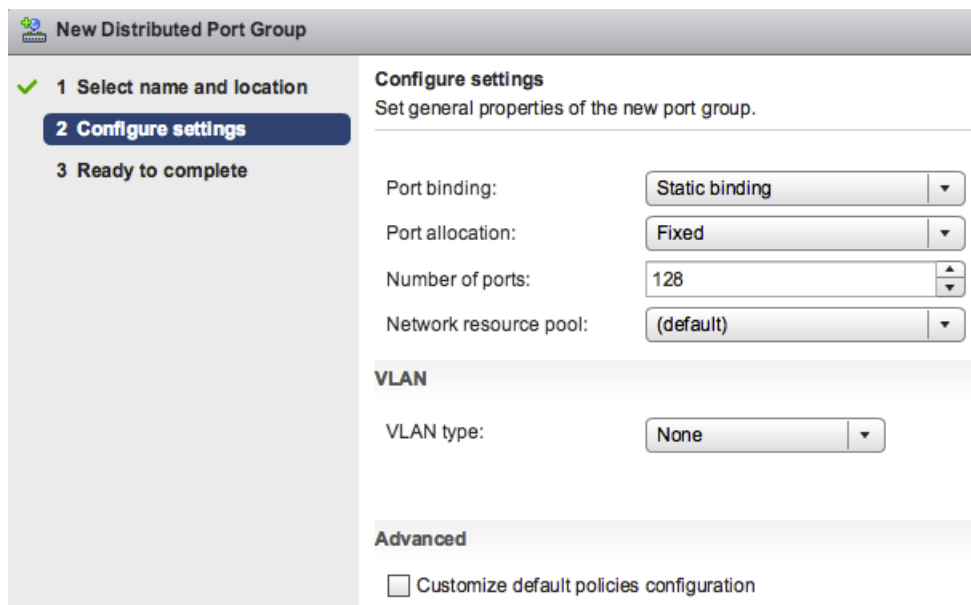
2. Right-click the VDS and then select **New Distributed Port Group**.



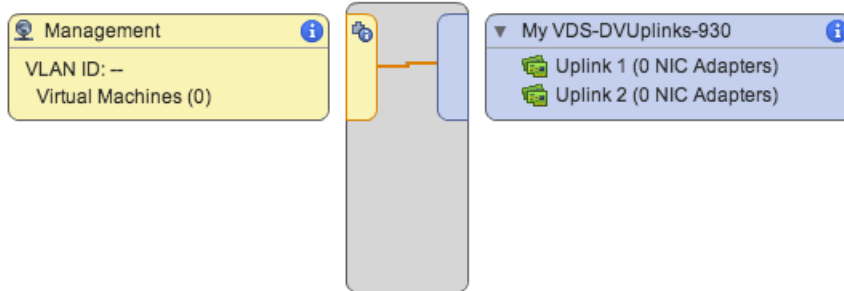
3. In the New Distributed Port Group window, type a name for the port group and click **Next**.



4. Configure the following settings:



- a) Click the **Port binding** drop-down list and select **Static binding**.
  - b) Click the **Port allocation** drop-down list and select **Fixed**.
  - c) In the Number of ports field, type the number of ports you want to connect.
  - d) Leave the default settings for the remaining items.
  - e) Click **Next**.
5. Verify your settings and click **Finish**.  
The new port group appears on the **Manage** tab.

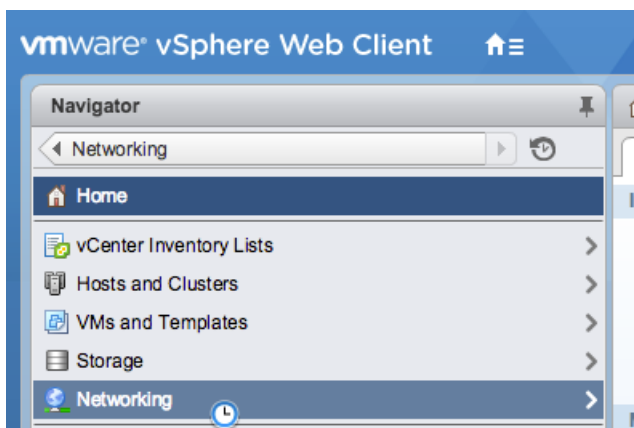


6. Repeat these steps for any additional port groups.

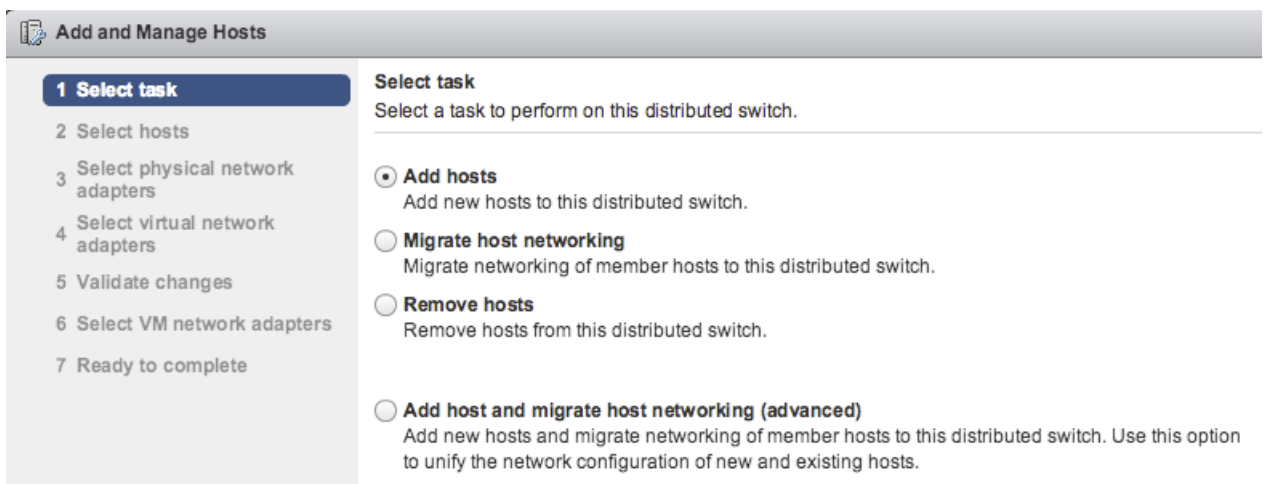
## Add a host to the VDS

Complete the following steps to add a host to the VDS. Skip this procedure if all hosts have already been added to the cluster. We recommend that you dedicate one uplink for management and one uplink for spanning.

1. Click **Networking**.



2. Right-click the VDS and then select **Add and Manage Hosts**.
3. In the **Add and Manage Hosts** dialog box, click the **Add Hosts** radio button and click **Next**.



- Click the plus icon **+** to add a host.

- In the list of available hosts, select the checkbox next to the host and click **OK**.

Host	Host State	Cluster
<input checked="" type="checkbox"/> 10.10.247.89	Connected	N/A

- Select the host from the list and click **Next**.
- Select the checkboxes next to the network adapters you want to add to the host and click **Next**.
- Assign one of the NICs to the management port group.
  - Select the network adapter from the list and click the **Assign Port Group** icon.
  - In the **Select Network** pop-up window, select the port group to assign to the network adapter for management.
  - Assign one NIC to the monitoring port group.
- Select the network adapter from the list and click the **Assign Port Group** icon.
- In the Select Network pop-up window, select the port group to assign to the network adapter for monitoring.

Name	Distributed Switch
Management	My VDS
Monitor Traffic	My VDS

- After you have assigned each adapter to a Destination Port Group (in the far right column), click **Next**.

**Add and Manage Hosts**

- ✓ 1 Select task
- ✓ 2 Select hosts
- ✓ 3 Select physical network adapters
- 4 Select virtual network adapters**
- 5 Validate changes
- 6 Select VM network adapters
- 7 Ready to complete

**Select virtual network adapters**  
Select a port group to provide network connectivity for the adapters on the distributed switch.

Assign adapters to a destination port group to migrate them. Ctrl + click to multi-select.

Virtual network adapters marked with the warning sign might lose network connectivity unless they are migrated to the distributed switch. Select a destination port group in order to migrate them.

Host/Virtual Adapter	Switch	Source Port Group	Destination Port Group
10.10.247.89			
vmk0	vSwitch0	Management Network	Management
vmk1	vSwitch0	VMkernel	Monitor Traffic

12. On the Validate Changes screen, verify that the status has passed and click **Next**.

**Add and Manage Hosts**

- ✓ 1 Select task
- ✓ 2 Select hosts
- ✓ 3 Select physical network adapters
- ✓ 4 Select virtual network adapters
- 5 Validate changes**
- 6 Select VM network adapters
- 7 Ready to complete

**Validate changes**  
View services depending on the migrated physical and virtual network adapters.

Overall validation status: ✔ Passed

Host/Validation	Validation Status

13. Select the **Migrate Virtual Machine Networking** checkbox.

**Add and Manage Hosts**

- ✓ 1 Select task
- ✓ 2 Select hosts
- ✓ 3 Select physical network adapters
- ✓ 4 Select virtual network adapters
- ✓ 5 Validate changes
- 6 Select VM network adapters**
- 7 Ready to complete

**Select VM network adapters**  
Select virtual machines or network adapters to migrate to the distributed switch.

Migrate Virtual Machine Networking

Assign VMs or network adapters to a destination port group to migrate them. Ctrl + click to multi-select.

Host/Virtual Machine/Network Adapter	NIC Count	Source Port Group	Destination Port Group
10.10.247.89			
Nexus 1000v	3		Management
Apple	1		Management
MongoDB	1		Management
ExtraHop Discovery Edition	2		Management
Network adapter 1		VM Network	Management
Network adapter 2		Nexus Control	Monitor Traffic

14. Click the **Assign Port Group** icon and assign a network adapter for management and a network adapter for monitoring, and click **Next**.

15. Verify your settings and click **Finish**.



**Add and Manage Hosts**

- ✓ 1 Select task
- ✓ 2 Select hosts
- ✓ 3 Select physical network adapters
- ✓ 4 Select virtual network adapters
- ✓ 5 Validate changes
- ✓ 6 Select VM network adapters
- ✓ **7 Ready to complete**

**Ready to complete**  
Review your settings selections before finishing the wizard.

<b>Number of managed hosts</b>	
Hosts to add:	1
<b>Number of network adapters for update</b>	
Physical network adapters:	2
Virtual network adapters:	2
Virtual machine adapters:	13

16. View the progress bar in the right panel and wait for the system to add the host. The following figure shows an example configuration.

**My VDS** Actions ▾

Getting Started Summary Monitor **Manage** Related Objects

Settings Alarm Definitions Tags Permissions Network Protocol Profiles Ports Resource Allocation

Topology

- Properties
- Private VLAN
- NetFlow
- Port mirroring
- Health check

(no filter)

**Management**

VLAN ID: --

- ▶ VMkernel Ports (1)
- ▶ Virtual Machines (10)

**Monitor Traffic**

VLAN ID: --

- ▶ VMkernel Ports (1)
- ▶ Virtual Machines (1)

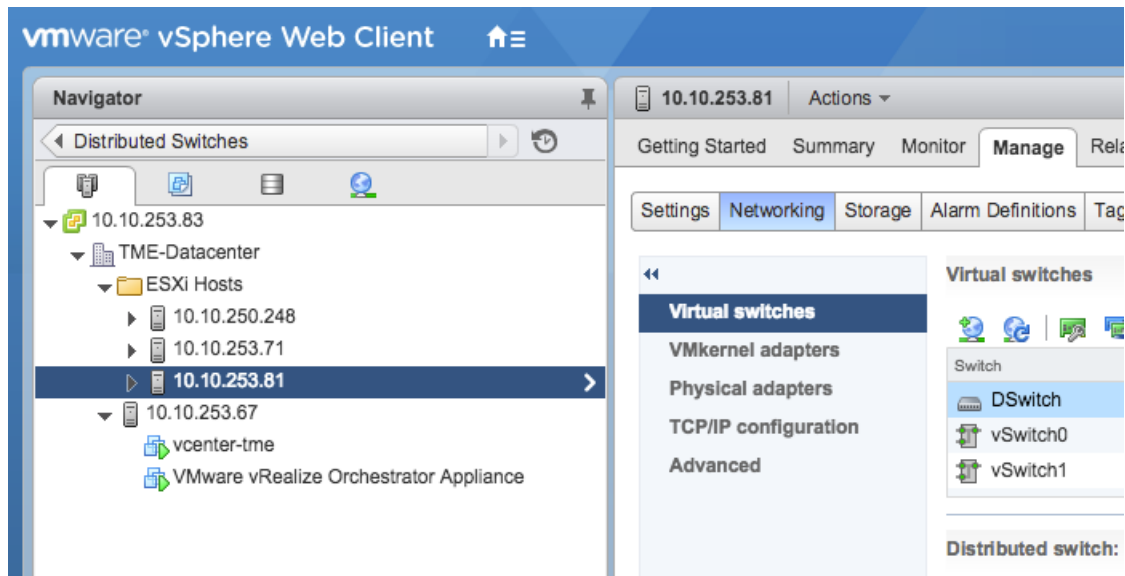
**My VDS-DVUplinks-930**


- ▶ Span (1 NIC Adapter)
- ▶ Uplink (1 NIC Adapter)

## Add uplink ports to the VDS

Complete the following steps to add an uplink port to the VDS. You must assign one uplink port to the VDS for each associated host.

1. Browse to a host in the vSphere Web Client.
2. Click the **Manage** tab, and then select **Networking** > **Virtual Switches**.

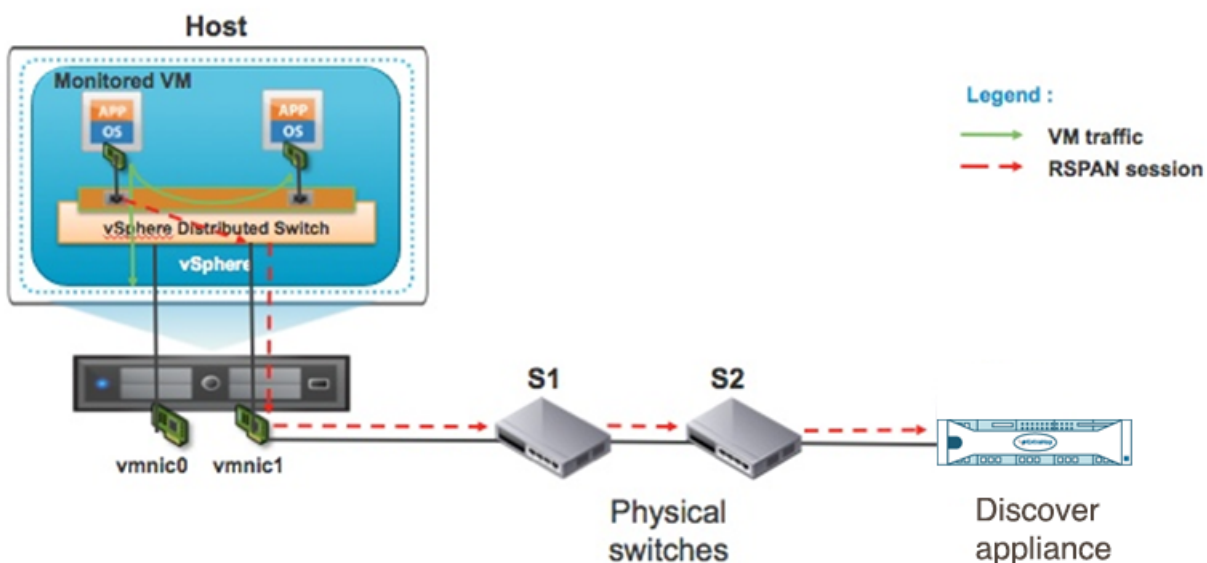


3. From the list, select the distributed switch you want to add an uplink port to.
4. Click **Manage the physical network adapters** .
5. Click **Add +**.
6. From the list, select a network adapter and then select the uplink port from the drop-down menu that you want to assign to the network adapter.
7. Click **OK**.

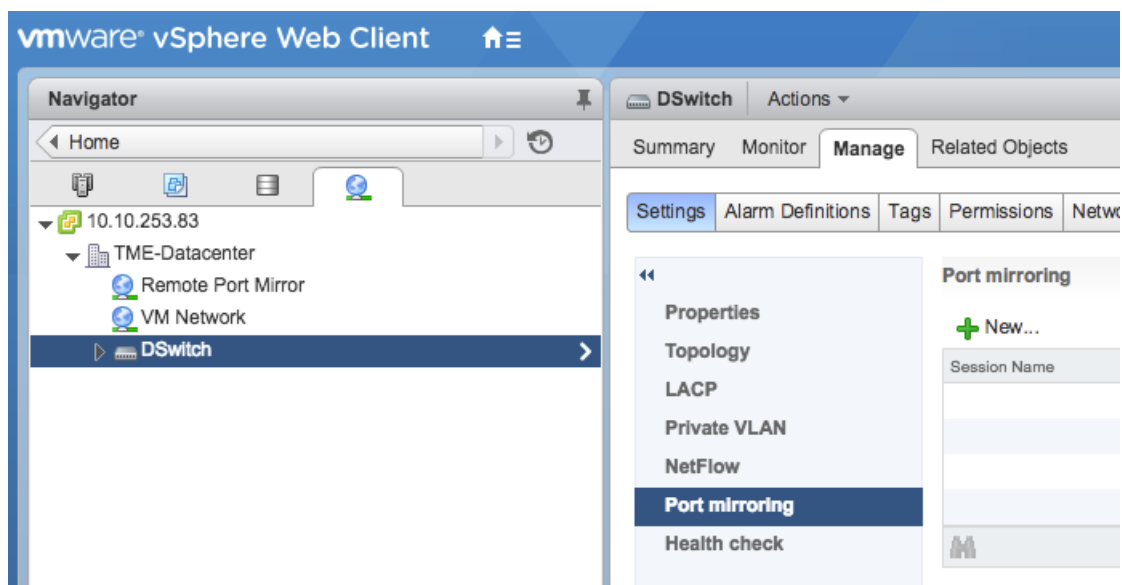
## Configure an RSPAN port mirror

Complete the following steps to configure an RSPAN port mirror to view traffic on the VDS, to configure the local switch to view external traffic, and to configure the ExtraHop virtual Discover appliance to do a combination of both. The ExtraHop virtual Discover appliance can be deployed in environments with multiple ESX servers connected with a virtual distributed switch (VDS).

This section assumes that the ExtraHop Discover appliance is deployed on an ESX host that is managed by vCenter with a configured VDS. You must connect a local switch to an uplink port that is configured as a remote span port with RSPAN VLAN. The port will be specified as the destination port for the port mirror. The RSPAN VLAN will carry the mirrored traffic and can span multiple switches to reach the ExtraHop Discover appliance. The following diagram illustrates the port mirror setup.



1. Click on **Networking**.
2. Select your VDS and ensure that the Settings tab is selected.
3. Click **Port mirroring**.



4. Click **New...**
5. In the Add Port Mirroring Session wizard, select **Remote Mirroring Destination**, and then click **Next**.

DSwitch - Add Port Mirroring Session

**1 Select session type**

2 Edit properties

3 Select sources

4 Select destinations

5 Ready to complete

**Select session type**  
Select the type of the port mirroring session.

---

**Distributed Port Mirroring**  
Mirror network traffic from a set of distributed ports to other distributed ports.

**Remote Mirroring Source**  
Mirror network traffic from a set of distributed ports to specific uplink ports.

**Remote Mirroring Destination**  
Mirror network traffic from a set of VLANs to distributed ports.

6. Provide a session name, change the Status to Enabled, and then specify the encapsulated VLAN ID. This RSPAN VLAN is configured on the local switch.
7. Click **Next**.

DSwitch - Add Port Mirroring Session

✓ 1 Select session type

**2 Edit properties**

3 Select sources

4 Select destinations

5 Ready to complete

**Edit properties**  
Specify a name and the properties of the port mirroring session.

---

Name:

Status:  ▼

Session type: Remote Mirroring Destination

8. Click the plus icon **+** to add the source VLAN IDs that you want to monitor, and then click **Next**.
9. Specify the destination ports that you want to monitor and then click **Next**. This destination port is the uplink port from which you should have a remote span port configured on your local switch.
10. Verify the summary information and then click **Finish** to add the port mirror.