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## Configure DHCP

 For supported software information, click [here](#).

The Dynamic Host Configuration Protocol (DHCP) is a network management protocol used in IP networks to dynamically distribute IP address and other network configuration parameters for interfaces and services. A DHCP server allows client devices to request IP addresses and networking parameters automatically, thus reducing the need for a network administrator or user to configure these settings manually.

A DHCP relay agent is a device forwards DHCP messages between DHCP servers and clients when the DHCP clients and the DHCP server are located in different subnets.

You can configure a Versa Operating System™ (VOS™) device to be a DHCP server (sometimes referred to as a local DHCP server) and to be a DHCP relay agent. You can also configure global DHCP properties that apply to local DHCP servers.

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## Configure DHCP Server Profiles

For a DHCP server, you can configure the following profiles, which you associate with a DHCP server to define the properties of the server or with a global DHCP server to configure default profiles (for least and options profiles only):

- DHCP lease profile
- DHCP options profile
- DHCP static mapping profile
- DHCP address pool

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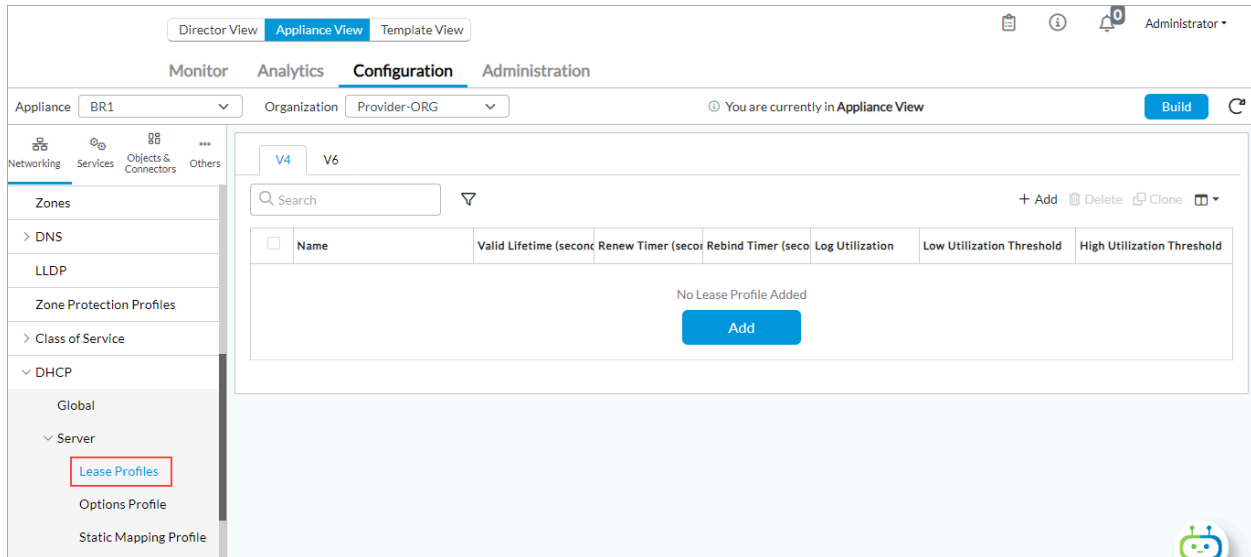
## Configure a DHCP Lease Profile

In a DHCP lease profile, you configure how long a dynamically assigned IP address is active, and you configure information about generating log messages. You can configure a DHCP profile for both DHCPv4 and DHCPv6. You can associate a DHCP lease profile with the global DHCP server and with a local DHCP server.

To configure a DHCP lease profile:

1. In Director view:
  - a. Select the Configuration tab in the top menu bar.

- b. Select Devices > Devices in the left menu bar.
  - c. Select an organization in the left menu bar.
  - d. Select a device in the main pane. The view changes to Appliance view.
2. Select the Configuration tab in the top menu bar.
3. Select Networking > DHCP > Server > Lease Profiles in the left menu bar, and then select either the V4 or V6 tab in the horizontal menu bar.



4. Click the  Add icon. In the Add Lease Profile popup window, enter information for the following fields.

IPv4:

Add Lease Profile
✕

Lease Profile Name \*

Description
Tags

Life Time (seconds)
Renew Timer (seconds)
Rebind Timer (seconds)

☐ Log Utilization

Low Threshold
High Threshold

IPv6:

Add Lease Profile
✕

Lease Profile Name \*

Description
Tags

Life Time (seconds)
Preferred Life Time (seconds)

Renew Timer (seconds)
Rebind Timer (seconds)

Low Threshold
High Threshold

Field	Description
Lease Profile Name (Required)	Enter a name for the lease profile.
Description	Enter a text description for the lease profile.
Tags	Enter a keyword or phrase that allows you to filter the lease profiles. This is useful when you have many profiles and want to view those that are tagged with a particular keyword.
Lifetime	<p>Enter how long the lease profile is valid, in seconds.</p> <p><i>Range:</i> 60 through 31536000 seconds</p> <p><i>Default:</i> 3600 seconds</p>
Renew Timer	<p>Enter the time during which a client can renew the lease profile. You can configure the renew timer to be less than or equal to 50 percent of the valid lifetime.</p> <p><i>Range:</i> 60 through 31536000 seconds</p> <p><i>Default:</i> 900 seconds</p>
Rebind Timer	<p>Enter the time during which a rebind request can be sent by a client after a period of inactivity. The rebind timer can be configured <math>\leq</math> 80 percent of the valid lifetime.</p> <p><i>Range:</i> 60 through 31536000 seconds</p> <p><i>Default:</i> 2800 seconds</p>
Log Utilization (Group of Fields)	You must select Log Utilization to generate the dhcp-pool-utilization alarm. For more information, see <a href="#">Configure VOS Device Alarms</a> .
<ul style="list-style-type: none"> <li>Low Threshold</li> </ul>	<p>Enter the lower value below which to log usage.</p> <p><i>Range:</i> 20 through 80 percent</p> <p><i>Default:</i> 80 percent</p>

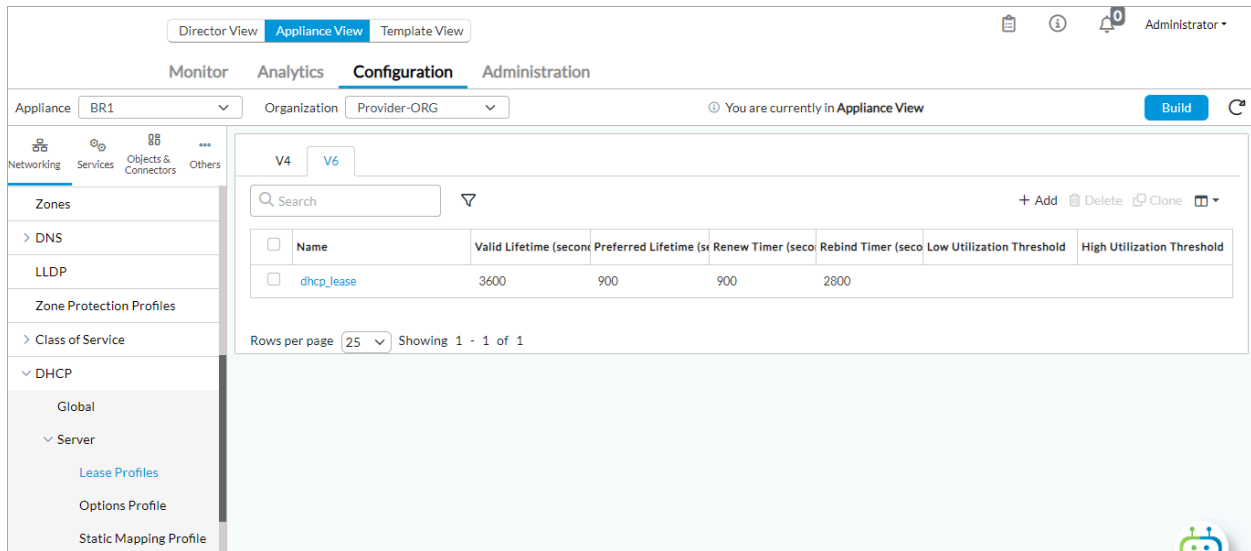
<ul style="list-style-type: none"> <li>◦ High Threshold</li> </ul>	Enter the upper value above which to log usage.  <i>Range:</i> 20 through 95 percent  <i>Default:</i> 95 percent
Preferred Lifetime	(For IPv6 only.) Enter how long a valid address is in the preferred state and can be used without any restrictions.

5. Click OK. The main pane displays the lease profile that you configured.

IPv4:

The screenshot shows the Versa Networks configuration interface. The top navigation bar includes tabs for Director View, Appliance View (selected), and Template View. Below this are tabs for Monitor, Analytics, Configuration (selected), and Administration. The main content area is titled 'Configuration' and shows the 'Appliance View' for 'BR1' under the 'Provider-ORG' organization. The left sidebar shows a tree view with categories like Networking, Services, Objects & Connectors, and Others. Under 'Networking', 'Zones' is expanded, showing 'DNS', 'LLDP', 'Zone Protection Profiles', 'Class of Service', and 'DHCP'. Under 'DHCP', 'Global' and 'Server' are listed, with 'Lease Profiles' selected. The main pane displays the 'V4' tab for 'V6'. It shows a table with columns: Name, Valid Lifetime (seconds), Renew Timer (seconds), Rebind Timer (seconds), Log Utilization, Low Utilization Threshold, and High Utilization Threshold. The table contains one row for 'dhcp\_lease' with values: 3600, 900, 2800, and a checked box for Log Utilization. The bottom of the pane shows 'Rows per page: 25' and 'Showing 1 - 1 of 1'.

IPv6:

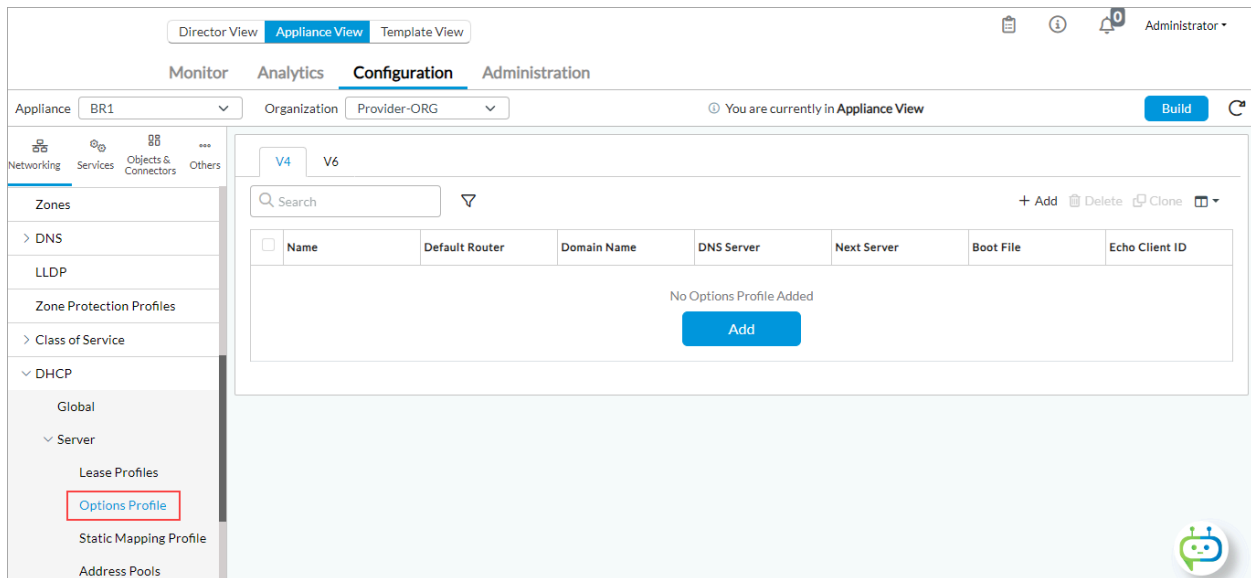


## Configure a DHCP Options Profile

In an options profile, you define the DHCP options that the DHCP server uses when allocating IPv4 or IPv6 addresses to DHCP clients.

To configure a DHCP options profile:

1. In Director view:
  - a. Select the Configuration tab in the top menu bar.
  - b. Select Devices > Devices in the left menu bar.
  - c. Select an organization in the left menu bar.
  - d. Select a device in the main pane. The view changes to Appliance view.
2. Select the Configuration tab in the top menu bar.
3. Select Networking > DHCP > Server > Options Profile in the left menu bar, and then select the V4 or V6 tab in the horizontal menu bar.



- Click the  Add icon. In the Add Options Profile popup window, select the General tab, and then enter information for the following fields.

IPv4:

Add Options Profile

General

Advanced

DHCP Custom Options

Options Profile Name \*


dhcp\_options

Description

Default Router

☐

Default Router List

+ 

☐

92.2.20.1


Domain Name

Tags

DNS Server

☐

DNS Server List

+ 

DNS Server List Not Configured

OK

Cancel

IPv6:

Add Options Profile

General

DHCP Custom Options

Options Profile Name \*

dhcp\_options

Description

Tags

DNS Server



☐ DNS Server List

+

DNS Server List Not Configured

OK

Cancel

Field	Description
Options Profile Name (Required)	Enter a name for the options profile.
Domain Name	(For IPv4 only.) Enter the name of the domain from which addresses are allocated.
Description	Enter a text description for the options profile.
Tags	Enter a keyword or phrase that allows you to filter the options profile. Tags are useful when you have many profiles and want to view those that are tagged with a particular keyword.
Default Router	(For IPv4 only.) Click the  Add icon to add the router for DHCP clients to use to forward data packets.
DNS Server	Click the  Add icon to add the DNS server address information.

- For IPv4 only, select the Advanced tab, and then enter information for the following fields.



Add Options Profile

General

Advanced

DHCP Custom Options

Boot Options

File Name

Next Server

☒ Echo Client ID

Netbios

☐ Name Server

Name Server Not Configured

Type

--Select--

OK

Cancel

[https://docs.versa-networks.com/Secure\\_SD-WAN/01\\_Configuration\\_from\\_Director/Common\\_Configuration/Configure\\_DHCP](https://docs.versa-networks.com/Secure_SD-WAN/01_Configuration_from_Director/Common_Configuration/Configure_DHCP)

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9

Field	Description
Boot Options (Group of Fields)	
◦ Filename	Enter the name of the file to use to boot the DHCP client.
◦ Next Server	Enter the IP address of the next server in the boot sequence.
◦ Echo Client ID	Click to add the client ID information.
NetBIOS (Group of Fields)	
◦ Name Server	Enter the IP address of the Windows Name Internet Server (WINS) to use for name resolution.
◦ Type	<p>Select the node type of name resolution:</p> <ul style="list-style-type: none"> <li>◦ b—Broadcast. A b-node client sends the destination name in a broadcast message.</li> <li>◦ h—Hybrid. An h-node client unicasts the destination name to the WINS server.</li> <li>◦ m—Mixed. An m-node client broadcasts the destination name.</li> <li>◦ p—Peer to peer. A p-node client sends the destination name in a unicast message to the WINS server.</li> </ul>

6. Select the DHCP Custom Options tab. In the Add DHCP Custom Options popup window, enter information for the following fields. Note that VOS devices support all the IANA DHCP/BOOTP options, that is, options 1 through 255. For more information about the options, see the IANA DHCP/BOOTP [webpage](#).

Add DHCP Custom Options

×

Name \*

Options

☒ Default

☐ Vendor ID

Code

Type

boolean

▼

☐ Array

☐ Persistent

☐

Value


+

🗑

Value Not Configured

OK

Cancel

Field	Description
Name (Required)	Enter a name for the custom option.
Options (Group of Fields)	
◦ Default	Click to have this option be the default.
◦ Vendor ID	Click when vendor information is exchanged between the DHCP server and client, and then enter the vendor information.
Code	Enter the code to assign to the option.
Type	<p>Select the value type corresponding the option code:</p> <ul style="list-style-type: none"> <li>◦ boolean</li> <li>◦ fqdn</li> <li>◦ ipv4-address</li> <li>◦ string</li> <li>◦ unit8</li> <li>◦ unit16</li> <li>◦ unit32</li> </ul>
Array	Click to include the DHCP custom option in all DHCP messages.
Persistent	Click to include the DHCP custom option in all DHCP messages.
Value	Click the  Add icon to enter a value to assign to the option.

- Click OK to save the DHCP custom options.
- Click OK in the Add Options Profiles popup window. The main pane displays the options profile that you configured.

IPv4:

The screenshot shows the Versa Networks configuration interface. The top navigation bar includes 'Director View', 'Appliance View' (selected), and 'Template View'. The left sidebar shows the 'Configuration' tab selected, with a tree view under 'DHCP' showing 'Global' and 'Server' (selected). The main panel shows the 'V4' tab selected, with a table of DHCP options. The table has columns: Name, Default Router, Domain Name, DNS Server, Next Server, Boot File, and Echo Client ID. One row is visible: 'dhcp\_options' with 'true' in the 'Echo Client ID' column. The bottom status bar shows 'Rows per page 25' and 'Showing 1 - 1 of 1'.

IPv6:

The screenshot shows the Versa Networks configuration interface. The top navigation bar includes 'Director View', 'Appliance View' (selected), and 'Template View'. The left sidebar shows the 'Configuration' tab selected, with a tree view under 'DHCP' showing 'Global' and 'Server' (selected). The main panel shows the 'V6' tab selected, with a table of DHCP options. The table has columns: Name, DNS Server, and Custom Options. One row is visible: 'DHCP\_options' with 'MTU' in the 'Custom Options' column. The bottom status bar shows 'Rows per page 25' and 'Showing 1 - 1 of 1'.

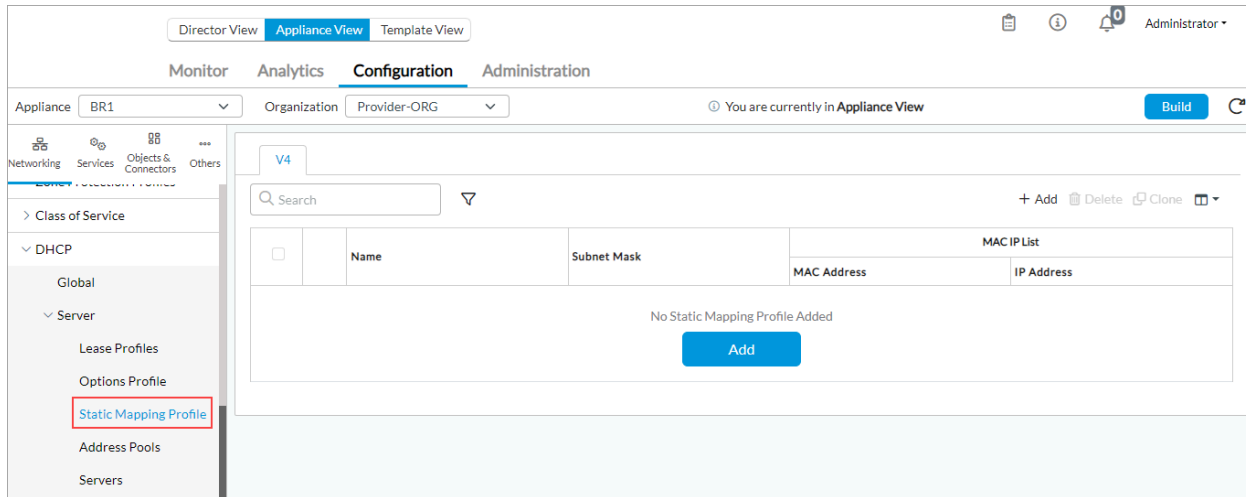
## Configure a Static Mapping Profile

For IPv4, you can configure a profile to statically map IPv4 address to MAC addresses.

To configure a static mapping profile:

1. In Director view:
  - a. Select the Configuration tab in the top menu bar.
  - b. Select Devices > Devices in the left menu bar.
  - c. Select an organization in the left menu bar.

- d. Select a device in the main pane. The view changes to Appliance view.
2. Select the Configuration tab in the top menu bar.
3. Select Networking > DHCP > Server > Static Mapping Profile in the left menu bar, and then select the V4 tab in the horizontal menu bar.



4. Click the  Add icon. In the Add Static Mapping Profile popup window, enter information for the following fields.

Add Static Mapping Profile

×

Name \*

profile

Subnet Mask \*

255.0.0.0

MAC IP List

MAC Address * ↕	IP Address	
<div></div>	<div></div>	<div>+</div>
No Records to Display		

OK

Cancel

Field	Description
Name (Required)	Enter a name for the profile.
Subnet Mask (Required)	Enter the subnet mask from which to allocate the IP addresses.
MAC IP List (Group of Fields)	
◦ MAC Address	Enter the MAC address of the network interface card (NIC).
◦ IP Address	Enter the IP address that corresponds to the MAC address.
◦ Add icon	Click to add the MAC–IP address mapping.

5. Click OK.

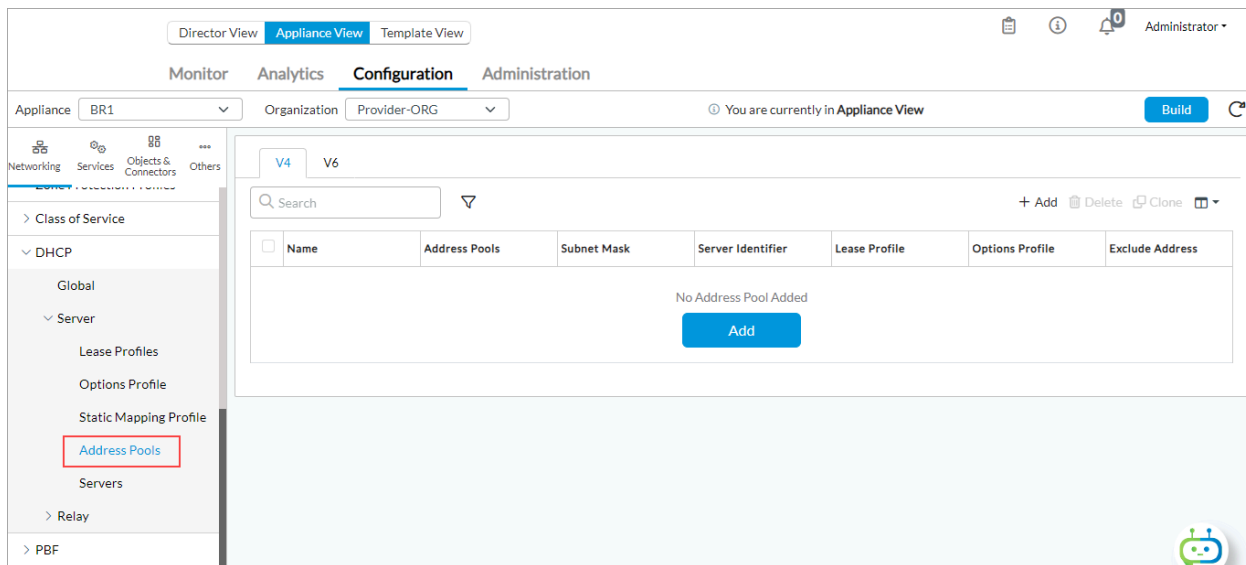
## Configure an IP Address Pool

You can configure DHCPv4 and DHCPv6 to dynamically allocated IP address from a specific pool of IP addresses. The DHCP server then assigned only these addresses to clients that request an IPv4 or IPv6 address.

A DHCPv6 server can be either a stateful or a stateless server. A stateful DHCPv6 server provides both IPv6 address and other information, such as a DNS server list and a domain name, to hosts. If you are configuring a stateful DHCPv6 server, you configure an address pool. A stateless DHCPv6 server does not provide IPv6 addresses, but provides only other information. If you are configuring a stateless DHCPv6 server, you do not need to configure an address pool.

To configure an address pool:

1. In Director view:
  - a. Select the Configuration tab in the top menu bar.
  - b. Select Devices > Devices in the left menu bar.
  - c. Select an organization in the left menu bar.
  - d. Select a device in the main pane. The view changes to Appliance view.
2. Select the Configuration tab in the top menu bar.
3. Select Networking > DHCP > Server > Address Pools in the left menu bar, and then select the V4 or V6 tab in the horizontal menu bar.



4. Click the  Add icon. In the Add Address Pool popup window, enter information for the following fields.



Add Address Pool
✕

Name \*

dhcp\_pools

Description

Tags

Subnet Mask

Server Identifier

Lease Profile

Options Profile

--Select--

--Select--

Addresses Exclude Addresses

Addresses


+
trash
table
filter
<
1
>
25

<input type="checkbox"/>	Name	IPv4 Address
<input type="checkbox"/>	poo1	92.2.20.1 - 92.2.20.2

OK

Cancel

Field	Description
Name (Required)	Enter a name for the pool.
Description	Enter a text description for the address pool.
Tags	Enter a keyword or phrase that allows you to filter the address pool. Tags useful when you have many address and want to view those that are tagged with a particular keyword.
Subnet Mask	Enter the subnet mask from which to allocate the IP addresses.
Server Identifier	Enter the IP address of the DHCP server.
Lease Profile	Select the lease profile to assign to the address pool. To create a lease profile, see Configure a DHCP Lease Profile, above.
Options Profile	Select the options profile to assign to the address pool. To create an options profile, see Configure a DHCP Options Profile, above.





5. Select the Addresses tab, and then click the  Add icon to configure the address pool. Enter information for the following fields.

IPv4:

### Add Addresses

Name *	Description
<input type="text" value="Pool1"/>	<input type="text"/>

☐ IPv4 Address/Prefix ☒ IPv4 Range

Begin Address * 	End Address * 
<input type="text" value="92.2.20.1"/>	<input type="text" value="92.2.20.2"/>
Subnet Mask 	Default Route 
<input type="text"/>	<input type="text"/>

IPv6 (for a stateful DHCPv6 server only):

### Add Addresses

Name *	Description
<input type="text" value="ipv6-range"/>	<input type="text"/>

☐ IPv6 Address/Prefix ☒ IPv6 Range

Begin Address *	End Address *
<input type="text" value="2000::10"/>	<input type="text" value="2000::60"/>

Field	Description
Name (Required)	Enter a name for the address pool.
Description	Enter a text description for the address pool.
IPv4 Address/Prefix	(For IPv4 only.) Click to assign a static IPv4 address or prefix to clients.
IPv6 Address/Prefix	(For IPv6 only.) Click to assign a static IPv6 address or prefix to clients.
IPv4 Range	(For IPv4 only.) Click to define a range of IPv4 addresses from which to assign IP addresses to clients.
IPv6 Range	(For IPv6 only.) Click to define a range of IPv6 addresses from which to assign IP addresses to clients.
Begin Address (Required)	Enter the start address of the address pool.
End Address (Required)	Enter the end address of the address pool.
Subnet Mask	(For Releases 22.1.3 and later; for IPv4 only.) Enter the subnet mask for the IPv4 address range. When you configure a subnet mask for an IPv4 address range, addresses in this mask range have higher precedence than those outside the address pool.
Default Route	(For Releases 22.1.3 and later; for IPv4 only.) Enter the default route for the IPv4 address range. When you configure a default route for an IPv4 address range, this route has a higher precedence than a route outside the address pool.

6. Click OK.
7. Select the Exclude Addresses tab.

Add Address Pool

Name \*

Description

Tags

Subnet Mask

Server Identifier

Lease Profile

Options Profile

Addresses
Exclude Addresses

Exclude Addresses

+

1

25

☐


Name

IPv4 Address

No Address Pool Added

OK

Cancel

- Click the  Add icon to configure addresses to exclude from the address pool. The address that you exclude replace those in the address pool. Enter information for the following fields.

IPv4:

Add Exclude Addresses

Name \*

Description

☐ IPv4 Address/Prefix
☐ IPv4 Range

IPv4 Address/Prefix \*

92.2.20.205/32

OK

Cancel

IPv6:

Add Exclude Addresses

Name \*

IPv6-exclude

Description

☐ IPv4 Address/Prefix

☒ IPv6 Range

Begin Address \*

2000::20

End Address \*

2000::26

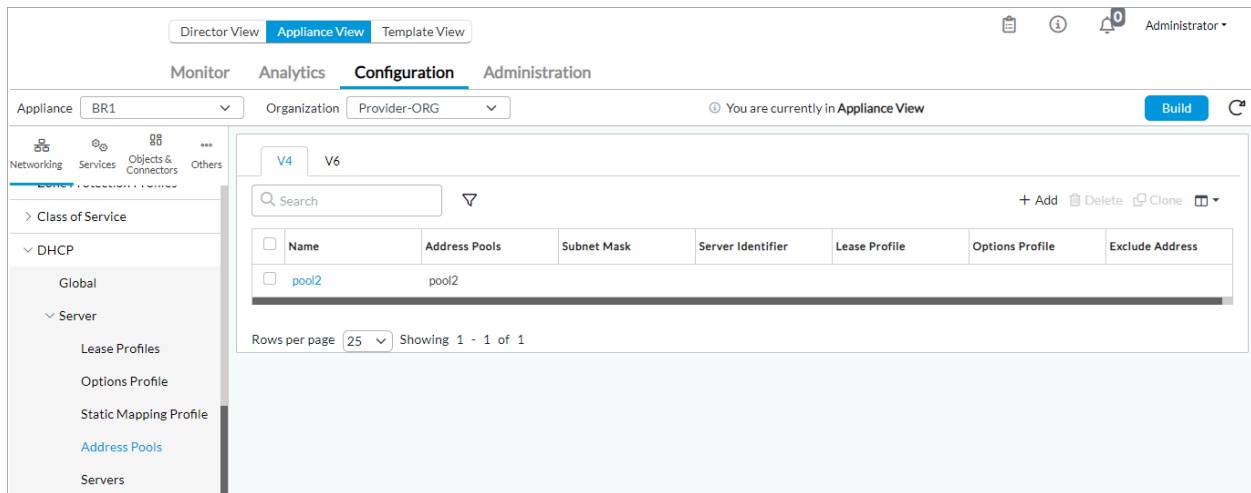
OK

Cancel

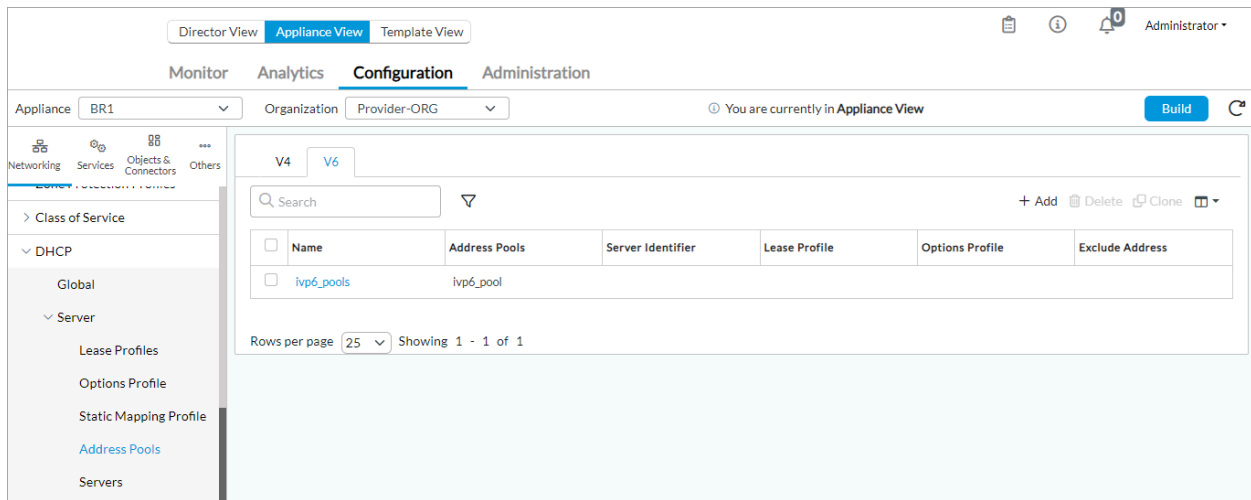
Field	Description
Name (Required)	Enter a name for the exclude address pool.
Description	Enter a text description for the address pool.
IPv4 Address/Prefix	(For IPv4 only.) Click to exclude a static IPv4 address or prefix to clients.
IPv6 Address/Prefix	(For IPv6 only.) Click to exclude a static IPv6 address or prefix to clients.
IPv4 Range	(For IPv4 only.) Click to exclude a range of IPv4 addresses from which to assign IP addresses to clients.
IPv6 Range	(For IPv6 only.) Click to exclude a range of IPv6 addresses from which to assign IP addresses to clients.
Begin Address (Required)	Enter the start address of the address pool.
End Address (Required)	Enter the end address of the address pool.

- Click OK.
- Click OK in the Add Address Pool popup window. The main pane displays the address pools that you configured.

IPv4:



IPv6:



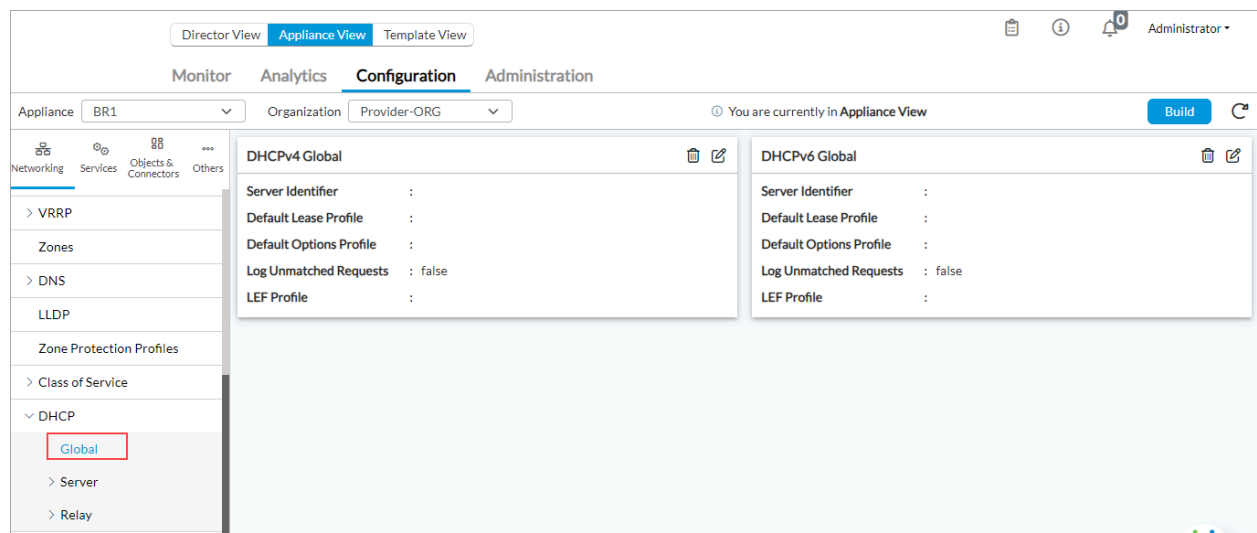
## Configure Global DHCP Properties


When you configure a VOS device to be a DHCP server, the server uses global DHCPv4 and DHCPv6 properties if you do not configure server-specific settings.

To configure global DHCP properties:

1. In Director view:
  - a. Select the Configuration tab in the top menu bar.
  - b. Select Devices > Devices in the left menu bar.
  - c. Select an organization in the left menu bar.
  - d. Select a device in the main pane. The view changes to Appliance view.

- 2. Select the Configuration tab in the top menu bar.
- 3. Select Networking > DHCP > Global in the left menu bar.



- 4. Click the  Edit icon. In the Edit DHCPv4/v6 Global popup window, enter information for the following fields.

DHCP IPv4:

Edit DHCPv4 Global

Server

Server Identifier

Default Lease Profile

--Select--

Default Options Profile

--Select--

Logging

Select LEF Profile

--Select--

☐ Default Profile

☐ Log Unmatched Requests

OK

Cancel

DHCP IPv6:



Edit DHCPv6 Global

Server

Server Identifier

Default Lease Profile

Default Options Profile

Logging

Select LEF Profile

☐ Default Profile

☐ Log Unmatched Requests

OK

Cancel

Field	Description
Server Identifier	Enter the IP address of the DHCP server.
Default Lease Profile	Select the DHCP lease profile to use as the default. To create a lease profile, see <a href="#">Configure a DHCP Lease Profile</a> , above.
Default Options Profile	Select the DHCP options profile to use as the default. To create a lease profile, see <a href="#">Configure a DHCP Options Profile</a> , above.
Logging (Group of Fields)	
<ul style="list-style-type: none"> <li>Select LEF Profile</li> </ul>	Select the global log export functionality (LEF) profile to use for DHCP logs. Logs are sent to the active collector of the LEF profile. For information about configuring a LEF profile, see <a href="#">Configure Log Export Functionality</a> . For information about associating a LEF profile with the configuration of a feature or service, see <a href="#">Apply Log Export Functionality</a> .
<ul style="list-style-type: none"> <li>Default Profile</li> </ul>	Click to have the LEF profile be the default profile.
<ul style="list-style-type: none"> <li>Log Unmatched Requests</li> </ul>	Click to generate a log of DHCP client requests that do not fulfill the matching criteria configured in the server.

5. Click OK.

## Configure DHCP Lease Parameters

When you configure a VOS device as a DHCP server, DHCP lease information is stored in a local database on the device. By default, the device performs lease database cleanup at midnight every day and there is a maximum of 4 database entries per client. You can modify the defaults.

For devices configured in active-standby high availability (HA) pairs, the lease database is automatically synchronized between the devices in the pair. For Releases 22.1.3 and later, you can enable lease database synchronization for active-active HA pairs. To do this, you specify the IP addresses of interfaces and the routing instance used to perform the synchronization.

To configure DHCP lease database parameters:

1. In Director view, select Administration > Appliances, and then select the DHCP server device. The view changes to Appliance view.
2. In Appliance view, select Others > System > Configuration > Configuration.



4. Enter information for the following fields.

Field	Description
Lease Database Cleanup Interval	Frequency at which the lease DHCP database is cleaned up, in seconds.  <i>Default:</i> 86,400  <i>Range:</i> 300 through 604,800
Lease Database Cleanup Time	Time of day when the lease DHCP database is cleaned up, in hours and minutes.  <i>Default:</i> Midnight (00:00)
Lease Database Max Entries per Client	Maximum number of entries per client in the lease database.  <i>Default:</i> 4  <i>Range:</i> 1 through 128
Lease Database Synchronization (Group of Fields)	(Releases 22.1.3 and later.) The following parameters apply only to active-active HA pairs.
◦ Local IP	IP address of the interface on the current device in the HA pair, which you selected in Step 1.
◦ Remote IP	IP address of the interface on the other device in the HA pair.
◦ Routing Instance	Routing instance to use for syncing the DHCP lease database.

5. For VOS devices configured in an HA pair, follow Steps 1 through 4 for both devices in the pair.

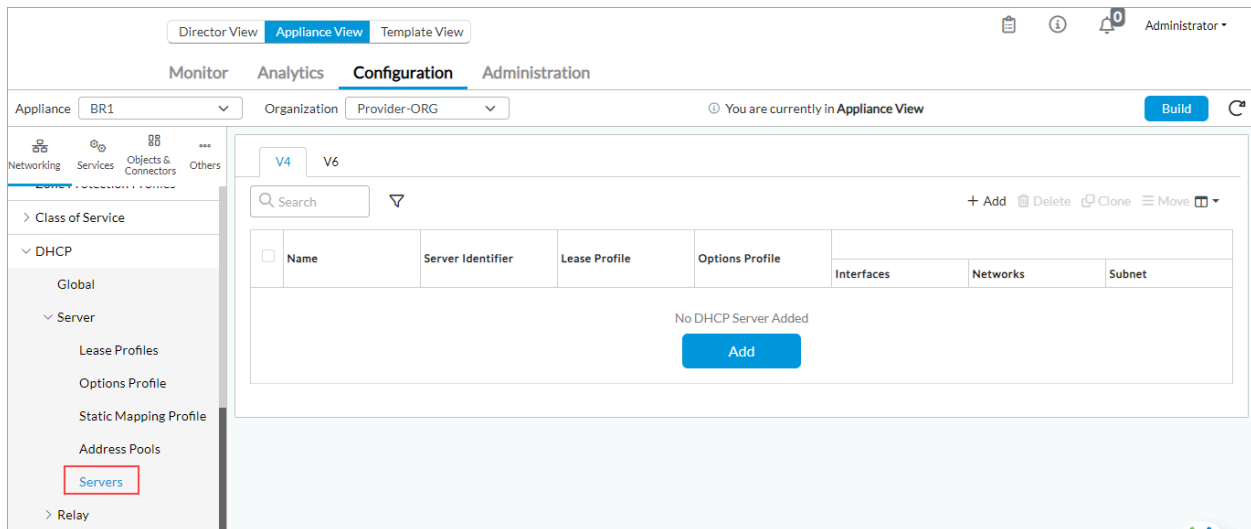
## Configure a VOS Device To Be a DHCP Server


To configure a VOS device to be DHCP server, you configure DHCP properties, including the following:

- IP address of the DHCP server
- Lease information
- DHCP options and option match information
- Static and dynamic address mapping information

To configure a VOS device to be a DHCP server:

1. In Director view:
  - a. Select the Configuration tab in the top menu bar.
  - b. Select Devices > Devices in the left menu bar.
  - c. Select an organization in the left menu bar.
  - d. Select a device in the main pane. The view changes to Appliance view.
2. Select the Configuration tab in the top menu bar.
3. Select Networking > DHCP > Server > Servers in the left menu bar, and then select the V4 or V6 tab in the horizontal menu bar.



4. Click the  Add icon. In the Add DHCP Server popup window, select the General tab, and then enter information for the following fields.

Add DHCP Server

General
Match
Address Allocation
Option

Name \*

Description
Tags

Server Identifier
Lease Profile
Options Profile

OK
Cancel

Field	Description
Name (Required)	Enter a name for the DHCP server.
Description	Enter a text description for the DHCP server.
Tags	Enter a keyword or phrase that allows you to filter the server information. Tags useful when you have many servers and want to view those that are tagged with a particular keyword.
Server Identifier	Enter the IP address of the DHCP server.
Lease Profile	Select the lease profile to associate with the DHCP server. If you do not select a lease profile, the server uses the default lease profile configured at the DHCP Global level. For more information, see Configure DHCP Global Properties, above.
Options Profile	Select the options profile to associate with the DHCP server. If you do not select an options profile, the server uses the default options profile configured at the DHCP Global level. For more information, see Configure DHCP Global Properties, above.

- Select the Match tab to configure the match conditions. The DHCP server responds to DHCP client requests based on the following match conditions:
  - Client identifier
  - Client name
  - DHCP options

- Hardware address
- Interfaces and networks
- IPv4 subnet prefix

6. Enter information for the following fields.

Add DHCP Server

General

Match

Address Allocation

Option

Interfaces/Networks

+

Interfaces/Networks Not Configured

Client Identifier

+

Client Identifier Not Configured

Hardware Address

+

Hardware Address Not Configured

Client Name

+

Client Name Not Configured

IPv4 Subnet Prefix







☒ Hardware Address


☐ From Mapping File

☐ From Mapping Profile

OK

Cancel

Field	Description
Interfaces/Networks	Select the interface or network on which to match the client request, or click the  Add icon to add an interface or a network to the list.
Client Name	Select the name of the client from which DHCP messages are matched, or click the  Add icon to add client name to the list.
Client Identifier	Select the name of the client, or click the  Add icon to add client identifier to the list.
IPv4 Subnet Prefix	(For IPv4 only.) Enter IPv4 subnet prefix to match.
Hardware Address	Click, and then enter the hardware address to match, or click the  Add icon to add a hardware address to the list.
From Mapping File	Click, and then enter the name of the file to use to map IP address to hardware addresses, or click the  Add icon to add a mapping file to the list.
From Mapping Profile	Click, then and enter the name of the mapping profile to use to select clients, or click the  Add icon to add a mapping profile to the list.

7. In the DHCP Option Match Information field, click the  Add icon, and then enter information for the following fields.



Add DHCP Option Match Information

Name \*

DHCP Option Code

Max Length Value

Start Value(Hex)

End Value(Hex)

OK

Cancel

Field	Description
Name (Required)	Enter a name for the match option.
DHCP Option Code	Enter a DHCP option code. Note that VOS devices support all the IANA DHCP/BOOTP options, that is, options 1 through 255. For more information about the options, see the IANA DHCP/BOOTP <a href="#">webpage</a> .
Maximum Length Value	Enter the maximum length of the DHCP option value.
Start Value	Enter the starting value for a range of DHCP option values, in hexadecimal.
End Value	Enter the ending value for a range of DHCP option values, in hexadecimal.

8. Click OK.
9. Select the Address Allocation tab to configure the IP address mode, and then enter information for the following fields.

Add DHCP Server

General

Match

Address Allocation

Option

☒ Static

☐ Dynamic

Static

☒ IPv4 Address

☐ From Mapping File

☐ From Mapping Profile

IP Address \*

Subnet Mask \*

Dynamic

Address Pool

--Select--

☐ Ping Settings

Count

Delay (msec)

OK

Cancel

Field	Description
Static	Click to have the DHCP server allocate a fixed IP address to clients.
Dynamic	Click to have the DHCP server dynamically allocate IP addresses to clients.
Static (Group of Fields)	
<ul style="list-style-type: none"> <li>IPv4 Address</li> <li>IP Address</li> <li>Subnet Mask</li> </ul>	Click to use a static IP address. Then, in the IP Address and Subnet Mask fields, enter the address and its subnet mask.
<ul style="list-style-type: none"> <li>From Mapping File</li> <li>Filename</li> </ul>	<p>Click to have the DHCP server allocate IP addresses from a mapping file. Then, in the Filename field, enter the name of the file containing the address mapping.</p> <p>The address mapping file is a text file, with one entry per line. Each entry has the following format:</p> <ul style="list-style-type: none"> <li><i>mac-address,ip-address,subnet-mask</i></li> </ul> <p>For example:</p> <ul style="list-style-type: none"> <li>52:0a:28:b5:67:02,172.18.12.150,255.255.255.0</li> </ul> <p>To use a mapping file that is on the local device, create the file in the <code>/opt/versa/var/dhcpd/organization-name</code> directory. For the file, ensure that the owner and group are <code>versa:versa</code> and that the file access mode is <code>664</code>.</p>
<ul style="list-style-type: none"> <li>From Mapping Profile</li> <li>Static Mapping Profile</li> </ul>	Click to have the DHCP server allocate IP addresses from a mapping profile. Then, in the Static Mapping Profile field, select the name of the profile.
Dynamic (Group of Fields)	
<ul style="list-style-type: none"> <li>Address Pool</li> </ul>	Select the address pool from which to allocate IP addresses to clients.
Ping Settings (Group of Fields)	Click to check whether an IP address is already in use before offering it to a client. This checking avoids

	<p>address conflicts. One use case is to determine whether a client has mistakenly configured on a laptop a static address that is taken from the dynamic DHCP address pool.</p> <p>When you enable this option, when the DHCP server receives a DHCP Discover packet from a client, the server performs a probe, sending ping messages to the IP address it plans to offer to the client and then waiting a short time to hear whether it receives any reply messages. If the ping is successful and the DHCP server receives reply messages, this means that the IP address is already in use, and the DHCP server chooses a different IP address to assign to the client. If the ping fails, the IP address is not already in use, and the server assigns it to the client in a DHCP Offer packet.</p> <p>By default, when a VOS device is a DHCP server, it maintains the DHCP active lease table and does not offer any duplicate addresses to the client.</p>
◦ Count	Enter the number of ping packets to send.
◦ Delay	Enter the time delay between ping packets.

10. Click OK.

11. Select the Option tab, and then enter information for the following fields.

Add DHCP Server
✕

General
Match
Address Allocation
Option

Logging


☒ New Allocations
☒ Renewals

DHCP Option Match Information

+
trash
table
filter
<
1
>
25
▼

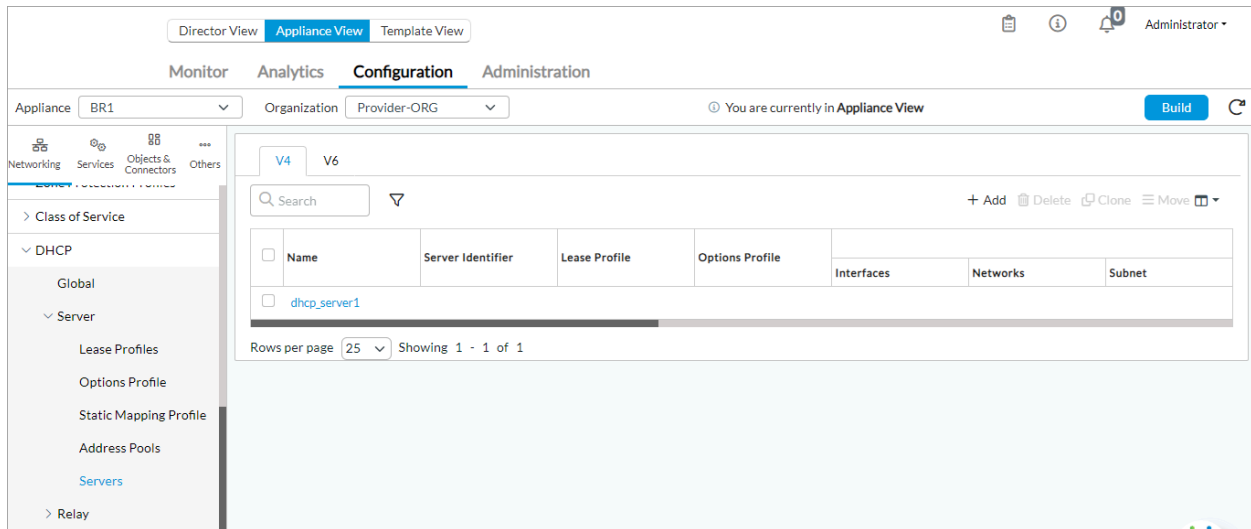
<input type="checkbox"/>	Name	DHCP Option Code
No DHCP Option Match Information Added		

OK
Cancel

Field	Description
New Allocations	Click to log requests from clients for the allocation of an IP address.
Renewals	Click to log requests from clients that are to renew the allocated IP address.
DHCP Option Match Information	Click the  Add icon to add DHCP Option Match Information. For more information, see Step 7.

12. Click OK. The main pane displays the DHCP servers that you configured.

IPv4:



## Configure the VOS Device To Be a DHCP Relay Agent

You can configure a VOS device to be a DHCP relay agent. A DHCP relay agent is positioned between a DHCP server and the server's clients, and it forwards DHCP messages from the clients to the DHCP server.

To configure DHCP relay agent, you first configure a DHCP relay agent profile, and then you configure the DHCP relay agent itself.

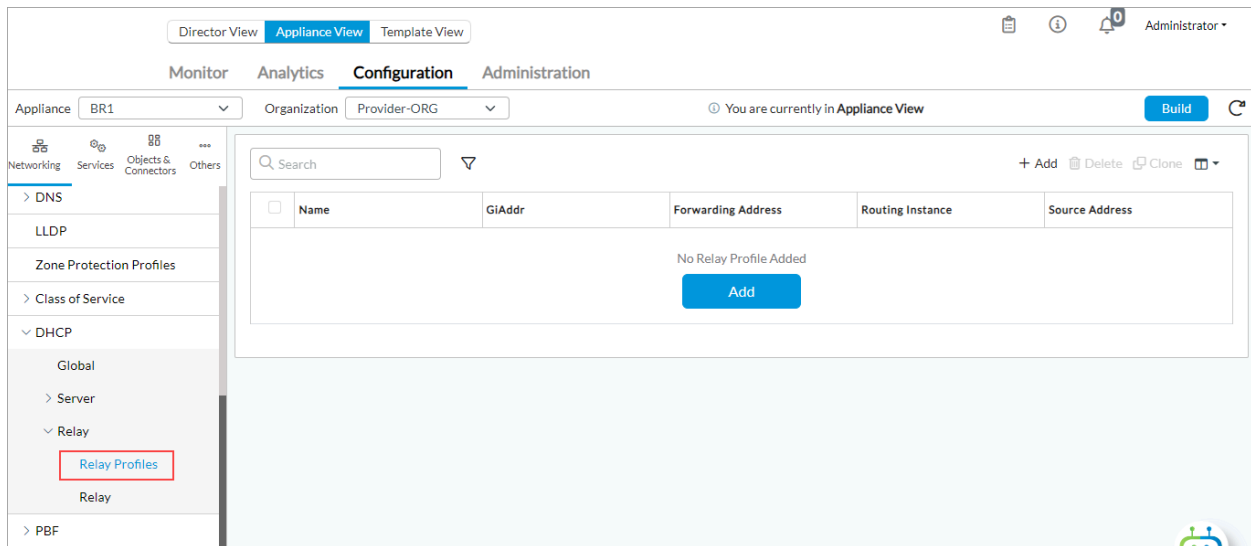
## Configure a DHCP Relay Agent Profile


You configure a DHCP relay agent profile to configure the behavior of the relay agent. A relay agent profile defines the following information:

- IP address of the DHCP server to which messages are forwarded
- Router to use to route messages to the DHCP server
- Action to perform on the relay information in the DHCP messages from clients

To configure a DHCP relay agent profile:

1. In the Director view:
  - a. Select the Configuration tab in the top menu bar.
  - b. Select Devices > Devices in the horizontal menu bar.
  - c. Select an organization in the left menu bar.
  - d. Select a device in the main pane. The view changes to Appliance view.
2. Select the Configuration tab in the top menu bar.
3. Select Networking > DHCP > Relay > Relay Profiles in the left menu bar. The main pane displays the relay profiles that are already configured.



4. Click the  Add icon. In the Add Relay Profile popup window, enter information for the following fields.

Add Relay Profile

Name \*

Relay1

Description

Tags

Gateway IP Address

Pass Through

Keep

Forwarding Information

+

<

1

>

25

<input type="checkbox"/>	Name	Forwarding Address	Routing Instance	Source Address
No Forwarding Information added				

OK

Cancel



Field	Description
Name (Required)	Enter a name for the relay agent profile.
Description	Enter a text description for the relay agent profile.
Tags	Enter a keyword or phrase that allows you to filter the relay profiles. Tags are useful when you have many profiles and want to view those that are tagged with a particular keyword.
Gateway IP Address	Enter the IP address of the LAN interface that receives DHCP requests from a client. Note that if VRRP is enabled, the VRRP VIP address is used as gateway IP address.
Pass Through	<p>Select the action to take on the relay information in the message:</p> <ul style="list-style-type: none"> <li>◦ Drop—Remove the relay information from the message and forward it.</li> <li>◦ Keep—Retain the information and forward the message.</li> <li>◦ Replace—Replace the relay information of other servers with the current relay agent information and forward the message.</li> </ul>

5. In the Forwarding Information section, configure the DHCP server information to use to forward client messages.

Click the  Add icon, and then enter information for the following fields.

Add Forwarding Information

×

Name \*

Routing Instance

--Select--

▼

Source Address

IPv4 Address

Forwarding Address \*

☐

Forwarding Address \*


+

🗑️

Forwarding Address Not Configured

OK

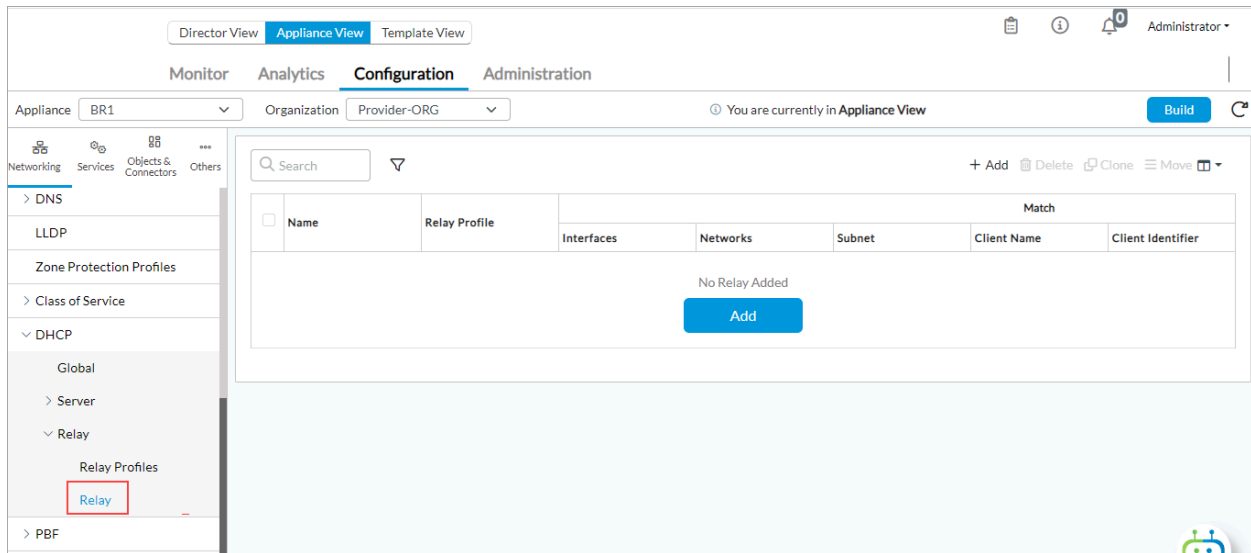
Cancel

Field	Description
Name (Required)	Enter a name for the DHCP server.
Routing Instance	Select the routing instance to use to reach the DHCP server.
Source Address	Enter the IP address of the source.
Forwarding Address (Required)	Click the  Add icon, and select the IP address of the DHCP server.

6. Click OK.

## Configure a DHCP Relay Agent

- In Director view:
  - Select the Configuration tab in the top menu bar.
  - Select Devices > Devices in the left menu bar.
  - Select an organization in the left menu bar.
  - Select a device in the main pane. The view changes to Appliance view.
- Select the Configuration tab in the top menu bar.
- Select Networking > DHCP > Relay > Relay in the left menu bar.



- Click the **+** Add icon. In the Add Relay popup window, select the General tab, and then enter information for the following fields.

Add Relay

General
Match
Relay Settings

Name \*

best\_buy\_relay

Description

Tags


OK

Cancel

Field	Description
Name (Required)	Enter a name for the DHCP relay agent.
Description	Enter a text description for the DHCP relay agent.
Tags	Enter a keyword or phrase that allows you to filter the relay. Tags are useful when you have many relays and want to view those that are tagged with a particular keyword.

- Select the Match tab to configure criteria based on which the DHCP messages are selected for forwarding to the DHCP server. The relay agent forwards packets based on the following match conditions. For field descriptions, see [Configure a VOS Device To Be a DHCP Server](#), above.

- Client identifier
- Client name
- DHCP options
- Hardware address
- Interfaces and networks

6. Click the  Add icon to add an interface or network, client name, and client identifier.

Add Relay

General

Match

Relay Settings

☐ Interfaces/Networks
 +
 

Interfaces/Networks Not Configured

☐ Client Name
 +
 

Client Name Not Configured

☐ Client Identifier
 +
 

Client Identifier Not Configured

☒ Hardware Address
 ☐ From Mapping File

DHCP Option Match Information

+




<
1
>
25
▼

<input type="checkbox"/>	Name	DHCP Option Code
No DHCP Option Match Information Added		

OK

Cancel

7. In the DHCP Option Match Information field, click the  Add icon, and then enter information for the following fields. For field descriptions, see [Configure a VOS Device To Be a DHCP Server](#), above.

Add DHCP Option Match Information

Name \*

DHCP Option Code

Max Length Value

0 .. 4294967295

0 .. 4294967295

Start Value(Hex)

End Value(Hex)

OK

Cancel

8. Select the Relay Settings tab, and then enter information for the following fields.

Add Relay

General
Match
Relay Settings

Relay Profile \*

--Select--

Logging

☐ New Allocations
☐ Renewals

OK

Cancel

Field	Description
Relay Profile (Required)	Select the relay profile associated with the DHCP relay agent.
Logging (Group of Fields)	
◦ New Allocations	Click to log DHCP request messages for allocation of IP addresses.
◦ Renewals	Click to log DHCP request messages for IP address renewals.

9. Click OK.

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## Supported Software Information

Releases 20.2 and later support all content described in this article, except:

- Releases 22.1.3 adds the Subnet Mask and Default Route fields in the Add Address Pool > Add Addresses popup window. You can synchronize the DHCP lease database for active-active pairs.

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## Additional Information

[Apply Log Export Functionality](#)

[Configure DHCP Snooping](#)

[Configure Log Export Functionality](#)

[IANA Dynamic Host Configuration Protocol \(DHCP\) and Bootstrap Protocol \(BOOTP\) Parameters](#)