



Managing Address Space

Address blocks provide an organizational structure for addresses used across the network. Address blocks can consist of static addresses or dynamic addresses allocated to DHCP servers for lease assignment. An address block can have any number of child address blocks and can culminate in one or more child subnets. The address block administrator is responsible for these objects. This administrator can create parent and child address blocks or subnets, which are always the leaf nodes of the address space. Static subnets can be further subdivided into one or more IP address ranges. However, dynamically added subnets create their own subnets that the administrator cannot modify or delete.



Note For IPv6 address management, see the [Viewing IPv6 Address Space, on page 12](#)

- [Address Block Administrator Role, on page 1](#)
- [Address Blocks and Subnets, on page 2](#)
- [Pulling and Pushing, on page 8](#)
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Address Block Administrator Role

The address block administrator role manages address space at a higher level than that of specific subnet or static address allocations. This is actually a middle manager role, because there is likely to be a higher authority handing out address blocks to the system.

Related Topics

[Required Permissions, on page 1](#)

[Role Functions, on page 2](#)

Required Permissions

To exercise the functions available to the address administrator, you must have at the:

- **Regional cluster**—The regional-addr-admin role assigned. This role should probably be unencumbered by further lease-history, ipv6-management, byod-management, and dhcp-management subrole restrictions.
- **Local cluster**—The addrblock-admin role assigned.

Role Functions

These functions are available to the address block administrator at the:

- **Regional cluster:**

- Address aggregation. For example, if the 10.0.0.0/16 address block exists at the regional cluster and a local cluster administrator creates the 10.1.1.0/24 address block, the local address block (through replication) is rolled up under its parent at the regional cluster. This allows a unified view of the address space at the regional cluster without affecting the local cluster configuration.
- Address delegation. Administrators can delegate address space to the local cluster, thereby giving up authority of the delegated object.
- Subnet utilization reports. The regional cluster supports subnet utilization reporting across regions, protocol servers, and sets of network hardware.
- Lease history reports. This provides a single vantage point on the lease history of multiple DHCP servers. The administrator can query the history data at the local cluster to constrain the scope of the history report. Lease histories can be queried by VPN (if defined), time range and criteria that contain the following choices: IP address, MAC address, IP address range, or all. This is an important feature to meet government and other agency mandates concerning address traceability. For details on querying lease history, see [Querying Leases](#).
- Polling configurations. The administrator can control the intervals and periods of local cluster polling for replication, IP histories, and subnet utilization. You can also set the lease history trimming ages and compacting intervals at the CCM server level. (See the *"Managing Central Configuration" chapter in Cisco Prime IP Express 9.0 Administrator Guide*)
- Check the DHCP and address data consistency.

- **Local cluster:**

- Manage address blocks, subnets, and address types.
- Check the DHCP and address data consistency.

Address Blocks and Subnets

An address block is an aggregate of IP addresses based on a power-of-two address space that can be delegated to an authority. For example, the 192.168.0.0/16 address block (part of the RFC 1918 private address space) includes 216 (or 65536) addresses. Address blocks can be further divided into child address blocks and subnets. For example, you might want to delegate the 192.168.0.0/16 address block further into four child address blocks—192.168.0.0/18, 192.168.64.0/18, 192.168.128.0/18, and 192.168.192.0/18.

**Note**

The DHCP server also uses address blocks to manage subnet allocation for on-demand address pools (see [Configuring Subnet Allocation](#)). Address blocks used for dynamic address pools must be created using the **dhcp-address-block** command in the CLI. The unified address view in the web UI also displays these dynamic address blocks, but does not provide an edit link to them, because they have been delegated in their entirety to the DHCP server. They should not be further subdivided for subnet allocation. The DHCP server automatically handles these address blocks as it receives subnet requests. These address pools are indicated by a **D** (for “Delegated”).

A subnet is the leaf node of the address space and cannot be further subdivided. If you create the 192.168.50.0/24 subnet, you can subsequently create an address block by that same name, and the subnet will become a child of the address block. However, you cannot further subdivide or delegate the 192.168.50.0/24 subnet.

Subnets can have one or more defined address ranges. Address blocks cannot have address ranges. When you create an address range for a subnet by using the web UI, it becomes a static range, meaning that it cannot be allocated dynamically using DHCP. However, the web UI shows any dynamic ranges defined by DHCP scopes for the subnet. Displaying the ranges as such indicates where overlaps may occur between assigning static addresses for the address space and dynamic addresses for scopes.

The address space view shows the hierarchy of address block and subnets and their parent-child relationships. The hierarchy does not go down to the level of address ranges for each subnet. These are displayed when you access the subnet.

Related Topics

[Viewing Address Blocks, Subnets, and Address Types, on page 11](#)

[Knowing When to Add Address Blocks, on page 4](#)

[Adding Address Blocks, on page 5](#)

[Delegating Address Blocks, on page 6](#)

[Pushing Subnets to Local DHCP Servers, on page 9](#)

[Creating Reverse Zones from Subnets, on page 6](#)

[Reclaiming Subnets, on page 7](#)

[Adding Children to Address Blocks, on page 7](#)

[Adding Address Ranges to Subnets, on page 8](#)

[Viewing Address Utilization for Address Blocks, Subnets, and Scopes, on page 10](#)

Subnet Allocation and DHCP Address Blocks

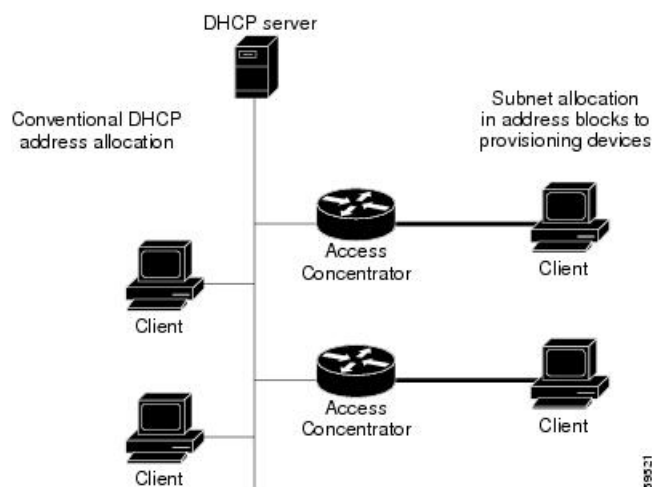
Cisco Prime IP Express supports creating on-demand address pools as a network infrastructure for address provisioning and VPNs. Traditionally, the DHCP server is limited to interact with individual host devices. Through subnet allocation, the server can interact with VPN routers and other provisioning devices to provision entire IP subnets. This Cisco Prime IP Express feature enhances the on-demand address pool capability currently supported by the Cisco IOS Relay Agent.

Cisco Prime IP Express supports explicitly provisioned subnets. You must explicitly configure the DHCP server address space and subnet allocation policies before the server can allocate pools or leases. You can thereby configure a server as a pool manager to manage subnets and delegate them to client devices.

You manage DHCP subnet allocation using DHCP server address block objects in Cisco Prime IP Express. A DHCP address block is a range of contiguous IP addresses delegated to the DHCP server for assignment. The server expects to subdivide these addresses into pools so that it or other servers or devices can allocate them. DHCP address blocks are parents to subnets. These DHCP address blocks are distinct from the address blocks you can create using the Cisco Prime IP Express web UI, which are static. DHCP address blocks cannot include static address ranges or lease reservations.

The image below shows a sample environment where a DHCP server allocates entire subnets to access concentrators or other provisioning devices, in addition to servicing individual clients. The traditional client/server relationship is shown on the left of the diagram, while the subnet allocation to access concentrators is shown on the right of the diagram. Dialup customers, for example, connect to the service provider network at two ISP gateways (routers), which connect to the management network segment where the DHCP server resides. The gateways provision addresses to their connected clients based on the subnet requested from the DHCP server.

Figure 1: Sample DHCP Subnet Allocation Configuration



Knowing When to Add Address Blocks

This use case describes the set of user actions associated with adding a new address block to the network in a shared management network. These preconditions are assumed:

1. From summary IP address utilization reports (see the *"Enabling Subnet Utilization Collection" section in Cisco Prime IP Express 9.0 Administrator Guide*), an address block administrator notes that the top level address block of the company is nearing the 90% utilization mark.
2. The address block administrator submits a request for more address space from ARIN (or some other numbering authority) and the request is granted.

Once the address space is made available, the regional address administrator:

1. Adds the new blocks to the central address block map, and based on a review of the utilization reports, creates and delegates address blocks to be used by the local clusters. The action of delegating the address blocks causes them to be pushed to the local clusters.
2. Allocates the new address space to network elements as needed using failover synchronization to simplify the configuration tasks:
 - Allocates subnets to a failover pair (gets a scope template for the subnet, either from the subnet or the failover pair).
 - Finds a free subnet (finds the address block of the right type).
 - Allocates the free subnet to an address destination (DHCP server or other destination).

Adding Address Blocks

Once you configure your network, you can add DHCPv4 address blocks.

Local Advanced and Regional Web UI

To view the CCM address blocks, from the **Design** menu, choose **Address Blocks** under the **DHCPv4** submenu to open the List/Add DHCP Address Blocks page.

To add an address block, click the **Add Address Block** icon in the Address Blocks pane on the left. Enter its network address in the Address field, then choose the address mask from the drop-down list. For example, enter 192.168.50.0 in the Address field, then choose 24 in the drop-down list to create the 192.168.50.0/24 address block, which is all the addresses in the range 192.168.50.0 through 192.168.50.255.

For a review of the number of available addresses for each subnet mask, see the table below. These available hosts exclude the two network and broadcast addresses in each range.

Table 1: Subnet Masking

Network Mask	Octet Designation	Available Hosts in Each Address Range
/8	255.0.0.0	16777214
/9	255.128.0.0	8338606
/10	255.192.0.0	4194302
/11	255.224.0.0	2097150
/12	255.240.0.0	1048574
/13	255.248.0.0	524286
/14	255.252.0.0	262142
/15	255.254.0.0	131070
/16	255.255.0.0	65534
/17	255.255.128.0	32766
/18	255.255.192.0	16382
/19	255.255.224.0	8190
/20	255.255.240.0	4084
/21	255.255.248.0	2046
/22	255.255.252.0	1022
/23	255.255.254.0	510
/24	255.255.255.0	254
/25	255.255.255.128	126

Network Mask	Octet Designation	Available Hosts in Each Address Range
/26	255.255.255.192	62
/27	255.255.255.224	30
/28	255.255.255.240	14
/29	255.255.255.248	6
/30	255.255.255.252	2

Delegating Address Blocks

Address block delegation is the coordinated actions of marking the delegated address block at the regional cluster as being delegated to a local cluster and creating the delegated address block in the local cluster. To delegate an address block to a local cluster, the address block cannot have child address blocks or subnets. The delegated address block created at the local server must have the same address size as the one at the regional cluster.

You can delegate only one address block to one local cluster at a time; you cannot delegate it to multiple local clusters. You can also delegate an address block to an owner.

To delegate an address block, you must:

1. Have the central configuration administrator create a local cluster to which to delegate the address block (see the “*Configuring Server Clusters*” section in *Cisco Prime IP Express 9.0 Administrator Guide*).
2. Have the central configuration administrator synchronize the regional cluster with the local cluster (see the “*Synchronizing with Local Clusters*” section in *Cisco Prime IP Express 9.0 Administrator Guide*). The local cluster will have address source references to the regional cluster through the synchronization process.
3. Delegate the address block to the cluster or an owner.

Creating Reverse Zones from Subnets

You can create reverse zones from subnets directly on the List/Add Subnets page instead of having to do so manually (see the “*Adding Reverse Zones from Subnets*” section in *Cisco Prime IP Express 9.0 Authoritative and Caching DNS User Guide*). Click the **Create** icon in the Reverse Zone column of the List/Add Subnets page to open the Create Reverse Zone(s) for Subnet page. On that page, choose a configured zone template from the drop-down list, then click **Report** to return to the List/Add Subnets page.

Related Topics

[Reclaiming Subnets, on page 7](#)

[Adding Address Ranges to Subnets, on page 8](#)

[Viewing Address Utilization for Address Blocks, Subnets, and Scopes, on page 10](#)

[Pushing Subnets to Local DHCP Servers, on page 9](#)

Reclaiming Subnets

Once you delegate a subnet to the DHCP server or router, you can reclaim it if necessary.

Local Advanced and Regional Web UI

Step 1 From the **Design** menu, choose **Subnets** under the **DHCPv4** submenu to open the List/Add Subnets page.

Step 2 Select the subnet from the Subnets pane on the left, to open the corresponding Edit Subnet page.

Step 3 Click **Reclaim** at the top of the page. This opens the Reclaim Subnet page.

Step 4 If you want to force deleting the subnet, check the Force Delete check box.

Step 5 Click **Reclaim Subnet**.

Note When you push or reclaim subnets for a managed or virtual router, this sets the primary and secondary relationships that are set for the router for all the related subnets and scopes as well.

Adding Children to Address Blocks

You might want to subdivide undelegated address blocks into child address blocks or subnets.

Local Advanced and Regional Web UI

Step 1 From the **Design** menu, choose **Address Blocks** under the **DHCPv4** submenu to open the List/Add Address Blocks page.

Step 2 Click the name of an address block that is not marked as delegated (**D**). This opens the Edit Address Block page.

Step 3 To add a child address block, add an address that is part of the address block network address in the Address/Mask field of the Child Address Blocks section of the Edit Address Block page. Choose a higher mask value than the parent address block, then click **Add**.

An error message appears if you try to set the same network address for a child address block as for a child subnet.

Omitting a value when you click **Add** automatically adds the subdivisions of the parent address space with the appropriate mask value. For example, if the parent space is 192.168.50.0/24, you omit any child subnet value, and click **Add**, the web UI adds the children in this order:

192.168.50.0/26

192.168.50.64/26

192.168.50.128/26

192.168.50.192/26

Step 4 To add a child subnet, add an address in the Address/Mask field of the Child Subnets section of the page that is part of the address block network address, but choose a higher mask value than the parent address block. Then click **Add**.

An error message appears if you try to set the same network address for a child address block as for a child subnet.

If you omit a value when you click **Add**, this automatically adds the subdivisions of the parent address space with the appropriate mask value. For example, if the parent space is 192.168.50.0/24, you omit any child subnet value, and click **Add**, the web UI adds the children in this order:

192.168.50.0/26

192.168.50.64/26
 192.168.50.128/26
 192.168.50.192/26

Adding Address Ranges to Subnets

You can edit the subnet data and add any number of address ranges to a subnet. These ranges must be in the designated network of the subnet.

Local Advanced and Regional Web UI

- Step 1** From the **Design** menu, choose **Subnets** under the **DHCPv4** submenu to open the List/Add Subnets page.
- Step 2** Click the name of the subnet to which you want to add address ranges, in the Subnets pane on the left. This opens the Edit Subnet page.
- Step 3** Enter the starting address of the range in the Start field in the IP Ranges area of the page, then add the ending address in the End field. If you add just the host numbers in these fields, the relative address in the range determined by the address mask is used.
- Step 4** Click **Add IP Range**.
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Pulling and Pushing

Pulling Replica Address Space from Local Clusters

You may choose to pull address space from the replica data of the local clusters instead of explicitly creating it.



- Note** Pulling replica address space from a local cluster where IPv4 subnets were removed does not clear the server name on the subnet. Although the subnet is no longer used, it is still considered allocated to the server. Hence, the delete operation does not appear for the subnet, so that you cannot delete the subnet from the regional cluster. To push or reallocate the subnet to a different cluster, or remove it from the regional cluster, you must first reclaim the subnet (see [Reclaiming Subnets, on page 7](#)). This clears the reference to the local server.
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Regional Advanced Web UI

- Step 1** In the DHCP Address Tree (or DHCPv6 Address Tree) page, click the **Pull Data** icon in the Address Tree pane.
- Step 2** In the Select Pull Replica Address Space (or Select Pull Replica IPv6 Address Space) page:
- To omit reservations while pulling replica, check the **Omit Reservations** check box.
 - Select the Data Synchronization Mode (**Update**, **Complete** or **Exact**)

- Step 3** Click **Report** at the bottom of the page.
- Step 4** Confirm the summary and click **Run**.
- Step 5** Click **OK**.
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Pushing Subnets to Local DHCP Servers

You can push subnets to local DHCP servers.

Local Advanced and Regional Web UI

- Step 1** Have the central configuration administrator create a local cluster and resynchronize it with the local cluster.
- Step 2** Create a subnet at the regional cluster:
- From the **Design** menu, choose **Subnets** under the **DHCPv4** submenu. This opens the List/Add Subnets page.
 - Click the **Add Subnet** icon in the Subnets pane on the left.
 - Enter at least the network address and choose the mask of the subnet, then click **Add Subnet**.
- Step 3** Have the central configuration administrator create a scope template so that it can create a scope to contain a subnet:
- Log into the regional cluster as the central configuration administrator.
 - From the **Design** menu, choose **Scope Templates** under the **DHCPv4** submenu to open the List/Add DHCP Scope Templates page.
 - Click the **Add Scope Templates** icon in the left pane, to open the Add DHCP Scope Template page.
 - Enter the name for the scope template and click **Add Scope Template**.
 - In the Edit DHCP Scope Template *scopename* page, among other entries on this page, enter the **create-range** expression in the Range Expression field to create a scope with that subnet. (If you choose a policy for the scope template, be sure that the policy exists at the local cluster, or you must push the policy to the local cluster. See the *"Pushing Policies to Local Clusters"* section in *Cisco Prime IP Express 9.0 Administrator Guide*.)
- Step 4** As regional address administrator, add the subnet to the local cluster DHCP server:
- Log into the regional cluster as the regional address administrator.
 - From the **Design** menu, choose **Subnets** under the **DHCPv4** submenu to open the List/Add Subnets page.
 - Select the subnet from the Subnets pane on the left, to open the corresponding Edit Subnet page.
 - Click **Push** at the top of the page. This opens the Push Subnet page.
 - Choose the scope template from the drop-down list.
 - Choose the cluster from the drop-down list.
 - Click **Push Subnet**.
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Viewing Address Space

The address space is a hierarchical tree of address blocks and subnets in IPv4 and prefixes in IPv6, sorted in IP address order. You can choose the level of depth at which to display the tree. You can also expand and contract nodes, which recursively expands or contracts all child nodes. If you pick a new level, this overrides the previous expansion or contraction.

Local Advanced and Regional Web UI

To view the address space as a hierarchical tree:

- From the **Design** menu, choose **Address Tree** under the **DHCPv4** submenu to open the DHCP Address Tree page. Note that you can choose a VPN (if configured).
- From the **Design** menu, choose **Address Tree** under the **DHCPv6** submenu to open the DHCP v6 Address Tree page. Note that you can choose a VPN (if configured).

Viewing Address Utilization for Address Blocks, Subnets, and Scopes

You can view the current address utilization for address blocks, subnets, and scopes.



Tip For address utilization for IPv6 prefixes, see [Viewing Address Utilization for Prefixes, on page 12](#).

Local Advanced and Regional Web UI

The function is available on the DHCP Address Tree page, List/Add DHCP Address Blocks page, and List/Add Subnets page. When you click the **Current Usage** tab, the utilization detail appears.



Note To ensure the proper subnet-to-server mapping on this page, you must update the regional address space view so that it is consistent with the relevant local cluster. Do this by pulling the replica address space, or reclaiming the subnet to push to the DHCP server (see [Reclaiming Subnets, on page 7](#)). Also ensure that the particular DHCP server is running.

The other columns in the Current Usage tab identify:

- **Type**—Whether the address space is an address block, subnet, or scope.
- **Active Dynamic**—Addresses that are part of a dynamic range managed by DHCP and that are currently leased, but not reserved.
- **Free Dynamic**—Addresses that are not currently leased.
- **Active Reserved**—Addresses that are part of a dynamic range and are reserved.

In the Current Usage tab, the Utilization Detail column items are expandable so that you can view the scope data for an address block or subnet. If you click the address block, subnet, or scope name in this column, this opens the Utilization Detail pane for selected item.

The Utilization Detail pane is read-only, and shows detailed address utilization attributes for the address block, subnet, or scope. The address utilization attributes are described in the table below.

Table 2: Address Utilization Attributes

Utilization Attribute	Description
Total Addresses	
<i>total-dynamic</i>	Total number of leases, excluding reserved ones.
<i>total-reserved</i>	Total number of reserved leases.
Free Dynamic	

Utilization Attribute	Description
<i>avail</i>	Number of dynamic leases that are currently available for issue to clients.
<i>other-avail</i>	Number of dynamic leases that the DHCP failover partner currently has available for issue to clients.
Active Dynamic	
<i>offered</i>	Number of dynamic leases that are currently offered to clients, but not yet acknowledged as being leased.
<i>leased</i>	Number of dynamic leases that are currently acknowledged as leased to clients.
<i>expired</i>	Number of dynamic leases that are past the lease expiration period, but will not be available for other clients (except after the policy grace-period expires).
<i>pend-avail</i>	Number of dynamic leases that are waiting acknowledgement from the failover partner that it did not reissue the lease.
Reserved	
<i>reserved-active</i>	Number of reserved leases that clients are actively using.
<i>reserved-inactive</i>	Number of reserved leases that clients are not actively using.
Unavailable	
<i>unavail</i>	Number of unreserved dynamic leases that a client declines or the server marks with an address conflict (usually indicating configurations that need correcting).
<i>reserved-unavail</i>	Number of reserved leases that a client declines or the server marks with an address conflict (usually indicating configurations that need correcting).
Deactivated	
<i>deactivated</i>	Number of dynamic and reserved leases that clients are actively leasing (that are not offered, expired, or released), but that an administrator deactivated.
<i>leased-deactivated</i>	Number of dynamic leases that clients are actively leasing (that are not offered, expired, or released), but that an administrator deactivated.
<i>reserved-leased- deactivated</i>	Number of reserved leases that clients are actively leasing (that are not offered, expired, or released), but that an administrator deactivated.

Viewing Address Blocks, Subnets, and Address Types

You can view the address blocks and subnets created for a network.

Local Advanced and Regional Web UI

From the **Design** menu, choose **Address Tree** under the **DHCPv4** submenu to open the DHCP Address Tree page.

To choose a level of depth for the address space, click one of the addresses in the Address Tree pane on the left. The details about the address appear in the page. The Address Type column identifies the type of object displayed, an address block or a subnet. The Owner column identifies the owner of the address space, and the Region column identifies the assigned region for the address space.

Address spaces that were assigned dynamically are indicated by a **D** (for “Delegated”) in the Address Type column. You cannot delete this delegated address space.

To refresh the view, click the **Refresh** icon.

You can add, modify, and delete address types. From the **Design** menu, choose **Address Types** under the **DHCP Settings** submenu to open the List/Add Address Types page. Click the **Add Address Type** icon in the Address Types pane on the left, to open the Add Address Type page, and modify settings on the Edit Address Type page. You can also pull replica address types and push address types to the local clusters on the List/Add Address Types page.

Viewing IPv6 Address Space

From the **Design** menu, choose **Address Tree** under the **DHCPv6** submenu, in the local advanced or regional web UI, to view the DHCP v6 Address Tree page. This page is like the DHCP Address Tree page for IPv4 (see [Viewing Address Space, on page 9](#)). On the View Unified v6 Address Space page you can:

- Set a VPN for the address space from the username drop-down list on the top right of the window.
- Add a prefix by clicking the **Add Address Tree** icon in the Address Tree pane, enter the prefix name, address and choosing a DHCP type and possible template. Click **Add IPv6 Prefix** (see [Creating and Editing Prefixes](#)).
- Edit a prefix by selecting its name in the Address Tree pane. This opens the Edit IPv6 Prefix page (see [Creating and Editing Prefixes](#)).
- View the current usage of the prefix space (see [Viewing Address Utilization for Prefixes, on page 12](#)).

Viewing Address Utilization for Prefixes

You can view the current address utilization for prefixes.

Local Advanced and Regional Web UI

The function is available on the DHCP v6 Address Tree page [Viewing Address Space, on page 9](#).



Tip You can use the DHCP v6 Address Tree page to push and reclaim prefixes. Click the **Push** or **Reclaim** icon for the desired prefix. (See [Creating and Editing Prefixes](#) for details.)

When you click the Current Usage tab, the Utilization Detail appears.



Note To ensure the proper subnet-to-server mapping on this page, you must update the regional address space view so that it is consistent with the relevant local cluster. Do this by pulling the replica address space, or reclaiming the subnet to push to the DHCP server. Also ensure that the particular DHCP server is running.

The other columns under the Current Usage tab identify:

- **Range**—Address range of the prefix.

- **Type**—Whether the address space is a prefix or link.
- **Active Dynamic**—Addresses that are part of a dynamic range managed by DHCP and that are currently leased, but not reserved.
- **Allocation Group**—Allocation group to which the prefix belongs.

The items under Utilization Detail are expandable so that you can view the prefix or parent prefix data.

The Utilization Detail page is a read-only page that shows detailed address utilization attributes for the prefix or the parent prefix (identified as Totals). The address utilization attributes are described in the table below.

Table 3: Address Utilization Attributes

Utilization Attribute	Description
<i>aggregation-level</i>	Granularity of the utilization data. Prefix-level indicates the data is for the specific prefix; totals indicates the data is for the parent prefix, which is the sum of its prefix-level counters.
<i>dhcp-type</i>	DHCP address assignment type, which can be dhcp (stateful), stateless (option configuration), prefix-delegation, or infrastructure (maps a client address to a link without an address pool).
Total Addresses	
<i>active-dynamic</i>	Total number of dynamic leases in active use (leased, offered, released, expired, or revoked). The Active Dynamic category shows the states of these leases.
<i>total-reserved</i>	Total number of reserved leases.
Active Dynamic	
<i>offered</i>	Number of dynamic (unreserved) leases that are currently offered to clients, but not yet acknowledged as being leased.
<i>leased</i>	Number of dynamic leases that are currently acknowledged as leased to clients.
<i>expired</i>	Number of dynamic leases that are past the lease expiration period, but will not be available for other clients (except after the policy grace-period expires).
<i>revoked</i>	Number of dynamic leases that the client can no longer use, but that some other client could be using.
Reserved	
<i>reserved-active</i>	Number of reserved leases that clients are actively using.
<i>reserved-inactive</i>	Number of reserved leases that clients are not actively using.
Unavailable	

Utilization Attribute	Description
<i>unavail</i>	Number of unreserved dynamic leases that a client declines or the server marks with an address conflict (usually indicating configurations that need correcting).
<i>reserved-unavail</i>	Number of reserved leases that a client declines or the server marks with an address conflict (usually indicating configurations that need correcting).
Deactivated	
<i>deactivated</i>	Number of dynamic and reserved leases that clients are actively leasing (that are not offered, expired, or released), but that an administrator deactivated.
<i>leased-deactivated</i>	Number of dynamic leases that an administrator deactivated.
<i>reserved-leased- deactivated</i>	Number of reserved leases that an administrator deactivated.
Prefix Delegation Lease Counts	
<i>max-pd-balancing-length</i>	Prefix length used for counting the prefix delegation leases.
<i>prefixes-in-use</i>	Number of prefixes, of the max-pd-balancing-length prefix length, that are in use.
<i>prefixes-available</i>	Number of prefixes, of the max-pd-balancing-length prefix length, available to any client on this server.
<i>prefixes-other-available</i>	Number of prefixes, of the max-pd-balancing-length prefix length, available to any client on the failover partner.
<i>prefixes-in-transition</i>	Number of prefixes, of the max-pd-balancing-length prefix length, in transition between the failover partners.
Failover Related	
<i>available</i>	Number of prefix delegation leases available to any client on this server. This is the count of the number of lease objects and not the number of prefixes of a specific prefix-length.
<i>other-available</i>	Number of prefix delegation leases that this server believes the partner has available to any client.
<i>pending-available</i>	Number of leases that are in the pending-available state.
<i>pending-delete</i>	Number of leases that are in the pending-delete state.