

How to Perform DHCP Split Scope using SolarWinds® IP Address Manager

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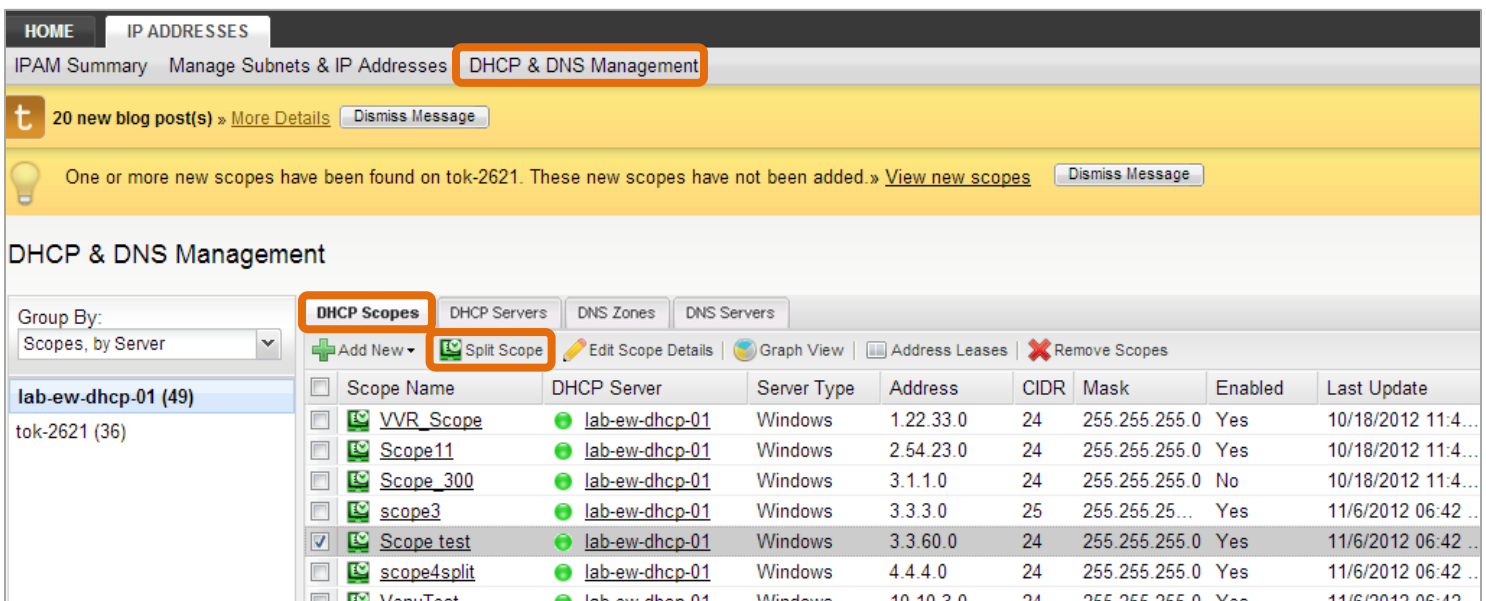
[SolarWinds® IP Address Manager](#) (IPAM) simplifies the process of managing your DHCP servers by allowing you to split your DHCP scopes so you can ensure high availability, and helping you improve the load balancing of your DHCP services. SolarWinds IPAM supports Microsoft® and Cisco® DHCP servers for the Split Scope functionality.

Using SolarWinds IPAM, you can easily configure your DHCP split scope using a two-step wizard. Additionally, you can view related scopes and scope distribution across your subnets, all from IPAM's centralized Web console. IPAM helps you:

- Manage and monitor Microsoft and Cisco DHCP services and scopes directly from the IPAM console.
- View related DHCP scopes and scope distribution across your DHCP servers.

Using the DHCP Split Scope Wizard

To perform the DHCP split scope operation, you need to have at least two DHCP servers added to the IPAM tool. To open the split scope creation wizard, click **DHCP & DNS Management** >> **DHCP Scopes** >> select a DHCP scope to be split >> click **Split Scope**.



Opening Split Scope Wizard in SolarWinds IPAM

This opens the Split Scope creation wizard which walks you through a two-step process:

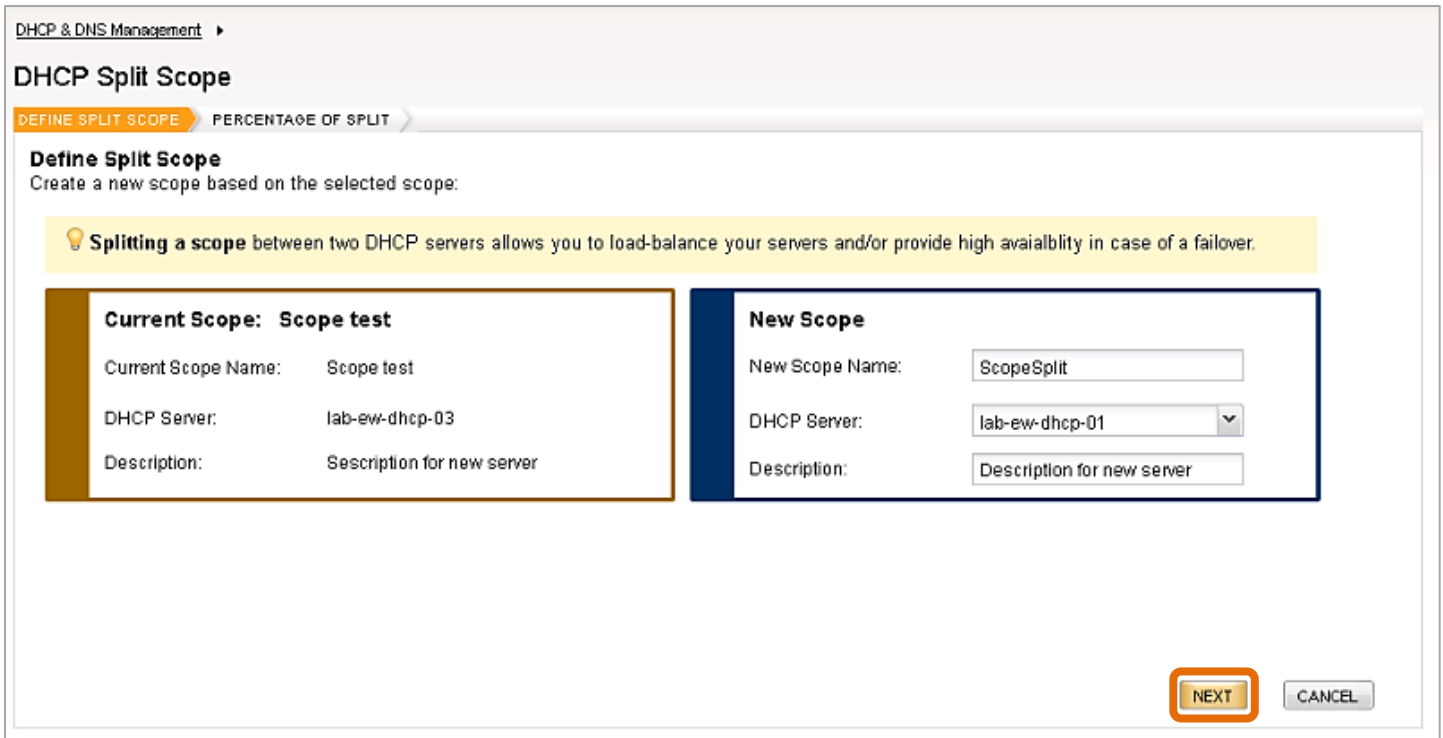
1. Defining the DHCP servers to perform the split scope operation.
2. Range distribution for splitting the scope between the DHCP servers.

Defining the DHCP Servers to Perform the Split Scope Operation

The split scope wizard shows you the source DHCP server selected for the split scope operation, and allows you to select the target DHCP server to where the scope and its IP addresses need to be split.

After selecting the target DHCP server, click **Next**.

Note: Only the DHCP servers added to IPAM will display for selecting the split scope operation.



DHCP & DNS Management ▾

DHCP Split Scope

DEFINE SPLIT SCOPE | PERCENTAGE OF SPLIT ▸

Define Split Scope
Create a new scope based on the selected scope:

Splitting a scope between two DHCP servers allows you to load-balance your servers and/or provide high availability in case of a failover.

| Current Scope: Scope test | New Scope |
|---|--|
| Current Scope Name: Scope test | New Scope Name: <input type="text" value="ScopeSplit"/> |
| DHCP Server: lab-ew-dhcp-03 | DHCP Server: <input type="text" value="lab-ew-dhcp-01"/> |
| Description: Description for new server | Description: <input type="text" value="Description for new server"/> |

Defining Source & Target DHCP Servers for Performing Split Scope Operation

Range Distribution for Splitting the Scope between the DHCP Servers

SolarWinds IPAM software allows you to specify the percentage of IP addresses to allocate to the source and target DHCP scope servers.

You can drag the percentage scale to set the split percentage as required. The IP addresses within the DHCP scopes will be changed accordingly to reflect the percentage split.

Or, if you have specific IP address ranges decided for both the servers, you can enter them in the **Include IP Addresses & Exclude IP Addresses** text fields—the percentage scale will be adjusted accordingly.

Recommendations:

- An 80/20 split is recommended for high-availability scenarios (80 for the server that needs to be available at all times and 20 for the other DHCP server). In this case, you also need to specify the delay time in the **Offer Delay** text field. This ensures that your backup server will start with IP address provisioning only when the primary DHCP server doesn't respond during a given time.
- A 50/50 split is recommended for load-balancing purposes.

Once range distribution is complete, click **Finish**. A pop-up window displays confirming the successful split scope operation.

The screenshot shows the 'DHCP Split Scope' configuration window. At the top, it says 'DHCP & DNS Management' and 'DHCP Split Scope'. Below that, it says 'DEFINE SPLIT SCOPE' and 'PERCENTAGE OF SPLIT'. The main section is titled 'Percentage of Split' and contains the text: 'Specify the percentage of IP addresses to allocate to each of the split-scope servers. An 80/20 split is recommended for high-availability scenarios. A 50/50 split is recommended for load-balancing purposes.'

Below the text is a horizontal bar representing the IP address range from 3.3.60.20 to 3.3.60.55. The bar is divided into two segments: a brown segment on the left representing 51% of the addresses, and a blue segment on the right representing 49%. The x-axis is labeled 'Percentage of IP Addresses' and has markers at 0%, 20%, 50%, 80%, and 100%.

There are two configuration panels below the bar:

- Scope 'Scope test' on 'lab-ew-dhcp-03' DHCP Server:**
 - Percent of Addresses: %
 - Include Addresses: to
 - Exclude Addresses: to
 - Offer Delay: ms
- Scope 'ScopeSplit' on 'lab-ew-dhcp-01' DHCP Server:**
 - Percent of Addresses: %
 - Include Addresses: to
 - Exclude Addresses: to
 - Offer Delay: ms

At the bottom right, there are three buttons: 'BACK', 'FINISH' (highlighted with an orange border), and 'CANCEL'.

Range Distribution for Splitting DHCP Scopes

You can now select the DHCP Servers tab and mouse-over both the source and target DHCP servers to see the IP address range according to the split (shown below).

DHCP & DNS Management

The screenshot shows the SolarWinds IPAM DHCP & DNS Management interface. On the left, a tree view shows 'lab-ew-dhcp-02 (3)' selected. The main area displays a table of DHCP scopes under the 'DHCP Scopes' tab. A tooltip is visible over the 'Scope Split' row, showing details for a split scope.

| Scope Name | DHCP Server | Scope Address | Server Type | Address | CIDR | Mask | Enabled | Last Updated |
|------------|----------------|---------------|-------------|-----------|------|---------------|---------|--------------|
| ScopeSplit | lab-ew-dhcp-02 | | Windows | 3.3.60.0 | 24 | 255.255.25... | Yes | 11/6/2012 |
| VenuTest | lab-ew-dhcp-02 | | Windows | 10.10.3.0 | 24 | 255.255.25... | Yes | 11/6/2012 |
| testing1 | lab-ew-dhcp-02 | | | | | 255.255.25... | Yes | 11/6/2012 |

Scope Subnet
10.10.10.0 /24

Scope Address Range
10.10.10.1 to 10.10.10.250

Excluded Addresses
10.10.10.1 to 10.10.10.124
10.10.10.125 to 10.10.10.250

Related Scopes
testing1 on server lab-ew-dhcp-01

Looking up the IP Addresses on the DHCP Servers after the Split Scope Operation

ISC DHCP with SolarWinds IPAM

For subnets and scopes for ISC DHCP, SolarWinds IPAM provides you with a wizard to create/modify subnets and specify scope properties like exclusions, pools, IP ranges, and leases without having to manually edit remote configuration files. [Click here](#) for directions on creating and modifying subnets and scopes on ISC DHCP.

Note:

- The split scope operation can be performed ONLY between two DHCP servers from the same vendor—NOT between DHCP servers from two different vendors.
- When IPAM does the scope splitting for the target server, it excludes the IP addresses from the source server and reserves it for the assignment by the target server.

Why SolarWinds IP Address Manager?

Eliminate Complexity, Improve Reliability, Save Time & Money!

- Manage and monitor Microsoft DHCP/DNS, ISC DHCP/DNS and monitor Cisco DHCP servers.
- Automatic subnet discovery and [IP address scanning](#) for the most accurate real-time discovery and verification.
- Easily search address for history, op status, MAC, device type, DHCP, DNS properties and more.
- Optional UDT integration shows where an end-point device is connected to the network and who is using the device.
- Delegate tasks to network engineers and system administrators based on role.
- Supports IPv4 and IPv6 networks.
- [Alert notifications](#) help prevent your subnets and DHCP scopes from filling up.
- Historical IP address tracking for trend analysis and [IP capacity planning](#).
- Automatically discovers used and unused addresses.
- Typically deploys in less than an hour.

Top 10 DHCP Scopes by Utilization

| SCOPE NAME | % IP SPACE USED | IPS AVAILABLE | IPS USED |
|------------|-----------------|---------------|----------|
| Scope1 | 50.00% | 4 | 4 |
| Scope3 | 40.00% | 3 | 2 |
| Scope6 | 0.00% | 51 | 0 |
| Scope7 | 0.00% | 51 | 0 |
| Scope9 | 0.00% | 51 | 0 |
| testd | 0.00% | 10 | 0 |
| ImportSync | 0.00% | 100 | 0 |
| sdgdsg | 0.00% | 51 | 0 |
| 4.1 | 0.00% | 100 | 0 |
| Test12345 | 0.00% | 149 | 0 |

Top 10 DHCP Scopes by Utilization with Split Scopes

AVERAGE OF ALL SCOPES PERCENT UTILIZATION DESCENDING

| SCOPE >> RELATED SCOPE | PERCENT IPS USED | SCOPE IPS USED / AVAILABLE | SUBNET IPS USED / AVAILABLE | SCOPE IN SUBNET |
|-------------------------------|------------------|----------------------------|-----------------------------|-----------------|
| Scope1 on 10.199.2.210 | 4 / 4 | 114 / 101 | | |
| Scope3 on bgp-2651-02.lab.tex | 2 / 3 | 168 / 82 | | |
| Scope6 on bgp-2651-02.lab.tex | 0 / 51 | 0 / 254 | | |
| Scope7 on bgp-2651-02.lab.tex | 0 / 51 | 0 / 254 | | |
| Scope9 on bgp-2651-02.lab.tex | 0 / 51 | 0 / 254 | | |
| Test12345 on 10.199.2.210 | 0 / 149 | 0 / 254 | | |
| Scope1 on 10.199.2.210 | 0 / 51 | 0 / 254 | | |
| Scope111111 on 10.199.2.210 | 0 / 51 | 0 / 254 | | |
| TestScope1 on 10.199.2.210 | 0 / 203 | 72 / 132 | | |
| TestScope2 on 10.199.2.210 | 0 / 126 | 115 / 133 | | |

Search for IP Address

Find: Search in: Alias,Hostname,IP Address,Dual \$

DNS Records Mismatch

| DNS SERVER | DNS ZONE | CLIENT HOST NAME | IP IN FWD ZONE | IP IN BWD ZONE |
|-----------------------|-----------|------------------|----------------|----------------|
| localhost.localdomain | prapoorna | Host1.prapoorna. | 10.10.10.1 | 10.100.3.1 |
| localhost.localdomain | prapoorna | Host.prapoorna. | 10.10.10.2 | 10.100.3.1 |
| localhost.localdomain | prapoorna | Host.prapoorna. | 10.100.100.2 | 10.100.3.1 |
| localhost.localdomain | prapoorna | Host2.prapoorna. | 10.10.10.1 | 10.100.3.6 |

Last 25 IPAM Events

8/21/2014 5:58 PM SYSTEM The scanning of '1.1.4.0 /24' started at 8/21/2014 5:57:30 PM has finished successfully. 0 IP(s) were found. The scan duration was '1' minutes.



SolarWinds IP Address Manager

Fully Functional for 30 Days

SolarWinds (NYSE: SWI) provides powerful and affordable IT management software to customers worldwide - from Fortune 500 enterprises to small businesses. The company works to put its users first and remove the obstacles that have become “status quo” in traditional enterprise software. SolarWinds products are downloadable, easy to use and maintain, and provide the power, scale, and flexibility needed to address users’ management priorities. SolarWinds online user community, [thwack](#) is a gathering-place where tens of thousands of IT pros solve problems, share technology, and participate in product development for all of the company’s products. Learn more today at <http://solarwinds.com>.



For additional information, please contact SolarWinds at 866.530.8100 or e-mail sales@solarwinds.com.

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