

Integrating with ISC DHCP

This document describes setting up the periodic transfer of DHCP data from an ISC DHCP server to a Cascade Profiler™.

Overview

If parts of your network are managed by DHCP address allocation, then host machines may be assigned new IP addresses when their leases expire. In order to report on a host's activity, Profiler must continue to track the connection behavior of the host when its IP address lease expires and the DHCP server assigns it a new IP address.

Profiler can use lease information from the DHCP server to improve its tracking of hosts by their MAC addresses. The general procedure for setting up the transfer of lease information from a DHCP server to the Profiler is as follows:

1. Set up SSH encryption keys so that the DHCP server can log in to the Profiler.
2. Write a script to run on the DHCP server. This script should:
 - Dump the dhcp lease information into a data file.
 - Transfer the data file to the Profiler.
3. Set up a scheduler, such as a cron process, to execute the transfer script at periodic intervals, such as every hour. The interval may need to be a balance between keeping the DHCP data on the Profiler as fresh as practical and minimizing the load on the server.

This note describes setting up the DHCP data transfer mechanism.

Requirements

The following items are required for integrating an ISC DHCP domain server with a Cascade Profiler.

- ISC DHCP version 3 or higher.
- Cascade Profiler version 7.5 or higher.
- Network access between the ISC DHCP server and the Profiler.
- IP address of the Profiler (or address of mBlade1 of a Profiler Blade System).
- Utilities for generating scp clients and ssh keys.

Lease data file format

An example of the output data format of the ISC DHCP software is as follows. Refer to the documentation available from Internet Systems Consortium (www.isc.org) for the specification of this format.

```
lease 10.128.2.219 {
  starts 2 2006/08/15 16:09:09;
  ends 2 2006/08/15 20:09:09;
  tstp 2 2006/08/15 20:09:09;
  binding state free;
  hardware ethernet 00:02:a5:ba:53:9b;
  uid "\001\000\002\245\272S\233";
}
lease 192.168.255.100 {
  starts 1 2007/02/19 01:28:33;
  ends 1 2007/02/19 13:28:33;
  tstp 1 2007/02/19 13:28:33;
  binding state free;
  hardware ethernet 00:04:23:c4:02:30;
}
```

Any IP address that the Profiler receives in flow data that does not appear in the lease data file is assumed to be static.

SSH keys for secure communication with Profiler

SSH on the Profiler must be configured with the public key of the DHCP server. On the Profiler, SSH configuration files are in `/usr/mazu/var/dhcp/.ssh`. Riverbed supports SSH v2.

There are three tasks involved in setting up SSH keys:

1. Create SSH keys on the ISC DHCP server.
2. Copy the DSA public key from the ISC DHCP server into `/usr/mazu/var/dhcp/.ssh/authorized_keys2` on the Standard Profiler or on the Manager blade of the Profiler Blade System.
3. Use `ssh` to connect to the Profiler and change permissions on the SSH directory.
`ssh dhcp@mazu-profiler chmod -R go= .ssh`

Data transfer script

The data transfer script should contain commands that execute as root to copy the DHCP data to the Profiler and then rename the data file.

Copy

Lease information is typically located in `/var/lib/dhcp/dhcpd.leases`. If you are not using a standard build of `dhcpd`, you can locate the lease data file by using:

```
ls -l | grep lease
```

This should return information such as:

```
dhcpd 2693 root 5w REG 8,2 1428 277036
/var/lib/dhcp/dhcpd.leases
```

Use `scp` to transfer the DHCP lease data file from the DHCP server to the Profiler. The output file name should identify the DHCP server, because the Profiler can handle data from multiple DHCP sources. For example, an output file name for “ISC DHCP server 1” might be

```
iscdhcp1.data.in
```

Note that the file name must not end with `.data` when it is copied to the Profiler.

For example,

```
scp /var/lib/dhcp/dhcpd.leases dhcp@mazu-profiler:iscdhcp1.data.in
```

This copies the data file to the home directory of the Profiler user `dhcp`, which is `/usr/mazu/var/dhcp`.

Rename

Use the `mv` command to remove the “.in” suffix from the DHCP data file name after the file has been copied to the Profiler. The file name must end in `.data` after it has been copied to the Profiler. For example:

```
ssh dhcp@mazu-profiler mv iscdhcp1.data.in iscdhcp1.data
```

Example of transfer script

A data transfer script might be similar to:

```
scp /var/lib/dhcp/dhcpd.leases dhcp@mazu-profiler:iscdhcp1.data.in
ssh dhcp@mazu-profiler mv iscdhcp1.data.in iscdhcp1.data
```

For Additional Information

If you have questions or need additional information, please contact Riverbed Technical Support at <https://support.riverbed.com> or call 1-888-RVBD-TAC (1-888-782-3822) in the United States and Canada or +1 415 247 7381 outside the United States.

