



DHCP Workshop  
November 7-9, 2005  
Network Operations Center  
Lawrence, KS

November 7, 2005    Installing and Configuring the ISC DHCP Server

Install and perform a basic setup of the Internet Systems Consortium's DHCP server.

Please bring a notebook/laptop computer to use as a DHCP client. (Internet access will be available, so you can keep in touch with your campus.) Server hardware running OpenBSD will be provided, although you're welcome to bring your own server running Linux, BSD, or other Unix operating system. The ISC server runs on Unix(-like) operating systems, so basic familiarity with the Unix shell will be helpful.

If you already have experience with the ISC server, you'll probably prefer to arrive on Day 2.

10:00            Welcome, Overview, and Facility/Server Orientation

10:30            DHCP and ISC Server Overview

11:00            Lab: Download and Install the ISC DHCP Server

Lunch

13:00            Subnet Configuration  
Lab: Initial Configuration and Operation

14:00            Host Configuration  
Lab: Host Reservations

Break

15:00            Examining the Server in Operation  
Lab: Lease and Log Files

16:00            End of Structured Time, Q&A, Etc.

November 8, 2005    DHCP in Detail and Configuring the ISC DHCP Server for Enterprise Use

Learn about the Dynamic Host Configuration Protocol in detail, including use of broadcast, unicast, and relaying; lease states and transitions; and client options.

Configure a DHCP server for college/university-wide use, including multiple subnets, fixed and dynamic addressing, restricted access, and failover for redundancy.

Please bring a notebook/laptop computer to use as a DHCP client. If you did not attend Day 1 and build a server in class, please also bring a newly-installed copy of the ISC DHCP server on a second computer.

If you have extensive experience with the ISC server in an enterprise setting, you may prefer to arrive for the afternoon of Day 2 or on Day 3.

- 8:00 Welcome/Orientation (as Needed)
- 8:30 DHCP in Detail – Rationale, Protocol in Operation, and Message Timeline
- 9:15 Lab: Troubleshooting DHCP Operational Problems
- Break
- 10:00 Expanding the Server – Client Options, Multiple Subnets
- 11:00 Lab: Configuring Client Options, Multiple Subnets
- Lunch
- 13:00 Fixed and Dynamic Addressing
- 13:30 Mini-Lab: Fixed and Dynamic Addressing
- 14:00 Host Classification
- 14:30 Mini-Lab: MAC Address Host Classification for Access Control
- Break
- 15:15 Building Redundancy – Server Failover
- 15:45 Lab: Configuring Failover

November 9, 2005 Advanced Topics

Learn how to get more from your ISC DHCP Server. Configure Dynamic DNS to ease remote troubleshooting and management access to your clients; fingerprint client operating systems to gain awareness and control of what's being used on your network. Bring problems and issues from your own environment to discuss!

Please bring a notebook/laptop computer to use as a DHCP client. If you didn't attend Days 1-2 and build a server in class, please also bring a newly-installed copy of the ISC DHCP server on a second computer.

- 8:00 Welcome/Orientation (as Needed)
- 8:30 DNS and DDNS – Theory and Operation
- 9:15 Lab: Configuring DDNS
- Break
- 10:00 DDNS Issues
- 10:30 Problem Solving with DHCP – Bring Your Own Problem, Q&A
- Lunch
- 13:00 Advanced Host Classification, Client Operating System Fingerprints
- 14:00 Lab: Operating System Classification and Logging
- 15:00 OS Access Control
- 15:30 Mini-Lab: Identifying Unauthorized Client Types and Denying DHCP Access