

Bridging NetWare Skills to Open Enterprise Server 2 for Linux Lab

OES02

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Novell, Inc.
404 Wyman Street, Suite 500
Waltham, MA 02451
U.S.A.
www.novell.com

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SECTION 1 Bridging NetWare Skills to Open Enterprise Server 2 for Linux Exercises

For experienced network administrators and engineers (especially those managing NetWare servers), knowing how to manage a server from a command prompt or console is critical.

In these exercises, you practice using basic commands on a SLES server. The goal is to help you relate the commands you currently use in NetWare to those you use to accomplish the same task on OES11

Exercise 1-1 Completing Common Server Management Tasks on OES2 for Linux

Do the following

1. Log into the OES11 desktop as **root** with password of **novell**.
2. From the desktop of your OES11 virtual server, select **Computer > Gnome Terminal**.
3. Switch to your oes2-nw virtual server.
4. In the oes2-nw server, press **Ctrl-Esc**; then display the OES NetWare system console by entering **1**.
5. Display the current date and time:
 - a. From the oes2-nw server console prompt, enter **time**.

Several items of information are displayed, including the Daylight Savings Time (DST) status, time synchronization status, and the current system date and time for both UTC and your local time zone.
 - b. Switch to your OES11 virtual server.
 - c. At the shell prompt, enter **date**.

The current system date and time for your local time zone are displayed.
 - d. Enter **date -u**.

The UTC date and time are displayed. notice that no time synchronization information is displayed. the functionality is not proYast2 timezovided by the date command.
6. Configure your time settings using YaST.
 - a. At the shell prompt, enter **yast2 timezone**.

The YaST Date and Time module appears.
Notice that the hardware clock is currently set to UTC.
 - b. Adjust your region, time zone, time, and date (if necessary) to match the time information on the oes2-nw server.netsata
 - c. Select **Accept**.

You are returned to the command prompt.
7. Check the version information for the operating system by doing the following:
 - a. Switch to your oes2-nw virtual server.
 - b. At the oes2-nw server console, enter **version**.

Because NetWare is tightly integrated with eDirectory, you not only access information about the NetWare operating system, but also eDirectory version and licensing information.
 - c. Switch back to your OES11 virtual server.
 - d. From the OES11 shell prompt, enter **uname -a**.

The output returns the following information:

Kernel name: Linux
Node name: OES11
Kernel release: 2.6.16.60-0.21-default
Kernel Version: #1 Tue May 6 12:41:02 UTC 2008
Machine hardware name: i686
Processor type: i686
Hardware platform: i386
Operating system: GNU/Linux

8. Display network statistics for the server by doing the following:
 - a. At your oes2-nw server console, enter **netstat -nr**.
Your server's routing table is displayed.
 - b. At the shell prompt of your OES11 server, enter **netstat -r**.
The default gateway and routing table is displayed.
 - c. From the oes2-nw server console, press **any key** to return to the command prompt.
9. Check for mounted volumes and devices:
 - a. From the oes2-nw server console, enter **volumes**.
A list of mounted volumes is displayed. This list includes name space and flag information for each mounted volume.
 - b. At the OES11 shell prompt, enter **mount**.
A list of devices and file systems that are currently mounted is displayed. Each line represents information about a device or file system
10. Manage the network card configuration from the command line:
 - a. From your oes2-nw server console, enter **config**.
Information about the servers network interface, including IP address, frame type, and slot number is displayed.
 - b. From the OES11 shell prompt, enter **ip addr**.
Network interface information is displayed for eth1 and lo (the loopback interface.)
 - c. From the oes2-nw server console, enter **edit netinfo.cfg**.
 - d. Scroll down until you see the **BIND** command.
The BIND command is used in NetWare to bind an IP address to a network cd /etc/sysconinterface.

In this case, the 172.17.0.13 IP address is bound to the CNEAMD_1_EII network interface with a subnet mask of 255.255.255.0 each time you boot the server.
 - e. Exit the editor by pressing **Esc** twice; then select **Yes**.

- f. At your OES11 server's shell prompt, change to the /etc/sysconfig/network directory by entering **cd /etc/sysconfig/network**.
- g. List the contents of the directory by entering **ls -alF**.

By using the -l option, you can view details about each directory or file (such as size, modification date, ownership, and permissions).

Notice that there are configuration files for both eth1 (ifcfg-eth1) and loopback (ifcfg-lo).

These files are used to assign interface configuration settings each time you start a Linux server.

- h. Display the contents of the ifcfg-eth1 file by entering the following command:

cat ifcfg-eth1

The following table lists the function of the various parameters within this file:

Table 1-1

Option	Description	Possible Values
BOOTPROTO	Specifies how the interface will be configured.	static dhcp
STARTMODE	Specifies when the interface will be enabled.	onboot manual
IPADDR	Static IP address to be assigned to the interface.	
NETMASK	Static subnet mask to be assigned to the interface.	
NETWORK	Specifies network address of the segment that the interface is connected to.	
BROADCAST	Specifies the broadcast address of the segment the interface is connected to.	

You can use commands such as BIND (in NetWare) and ip (in Linux) from a command prompt to temporarily change a network interface setting.

To make sure the configuration change is persistent, you need to edit the BIND command in the netinfo.cfg file in NetWare or the ifcfg-xxx file settings in Linux.

If you change the IP address in the ifcfg-xxx file and want to immediately assign the IP address without restarting the server, you can use the ifdown and ifup commands to restart the interface.

- i. At the OES11 server's shell prompt, enter **ifconfig**.

Notice that the current IP address assigned to eth1 is 172.17.0.11.

- j. From the command prompt, assign a temporary IP address to eth1 by entering the following:

ifconfig eth1 172.17.0.110

- k. From the command prompt, enter **ifconfig**.

Notice that the IP address for eth1 has changed to 172.17.0.110.

- l. From the command prompt, bring down the eth1 network interface by entering **ifdown eth1**.

- m. Bring up the eth1 network interface back up by entering **ifup eth1**.

- n. Enter **ifconfig**.

Notice that the IP address for eth1 has been restored to 172.17.0.11.

When you use the ifup command, Linux reads the ifcfg-xxx configuration file and assigns the settings (including the IP address) to the network interface.

Therefore, if you want to persistently change the IP address for a network interface, you need to edit the appropriate ifcfg configuration file.

11. Add a secondary IP address to the OES11 network card by doing the following:

- a. At the OES11 shell prompt, enter **ip address add dev eth1 172.17.0.110/24**.

- b. Verify that the address was added by entering **ip addr** at the shell prompt.

You should see a second IP address added to the eth1 interface.

- c. Restart the network service by entering **rcnetwork restart** at the shell prompt.

Linux shuts down the network interfaces, and then restarts them with the IP address listed in the ifcfg-xxx configuration file.

- d. Verify that the secondary address is no longer assigned to eth1 by entering **ip addr**.

12. Manage Lan setting with Yast

Just as Netware provides you with inetcfg to manage LAN settings, Suse provides Yast and Yast2 (non-gui, gui) to manage your LAN settings

- a. From the terminal command prompt on OES11 enter **yast2 lan**

- b. Be sure Tradition Method is selected and press **next**

- c. From the Network Card Configuration Overview you can configure a new card or edit an existing one. highlight the current card and select **edit**

- d. Here you can set things like hostname and DNS servers, Default Gateway (Routing) and more advanced options. Select **Advanced** drop down and then **Additional Addresses**
 - e. Select **Add**
 - f. Enter in the Alias name field enter **SecondIP**
 - g. Enter in the IP Address field **172.17.0.210**
 - h. Enter in the Netmask Field 255.255.255.0
 - i. Select **OK > OK > Next > Finish**
 - j. At the command prompt enter **ip a**
Notice you now have a second ip address and it is persistent
 - k. Check that the way you did above by restarting the network service and then running ip a or ip address
13. Get help from the command prompt.

Both NetWare and Linux provide help from the command prompt.

In NetWare, you use the -h or -help option (when available). In Linux, you can use the man or info commands. In addition, you can use the -h or --help options with most commands to view a usage summary.

Do the following:

- a. From the oes2-nw server console, get help for the netstat command by entering **netstat -h**.
A quick reference screen appears with a synopsis of available options for the netstat command.
- b. Get more extensive help for the netstat command by entering **netstat -help**.
The help option provides a reference of information that includes items such as synopsis, description, and a list of command options.
- c. From the OES11 command prompt, enter **man netstat**.
Notice that the man command provides a synopsis, description, and a list of options available for the command.
Scroll through the man page for the netstat command to view all of the available information.
- d. When you finish, return to the command prompt by typing **q**.
Info files are also available for many Linux commands.
In some cases, info pages display more in-depth information about the command. In other cases, they display the same information as the man command.
- e. From the command prompt, enter **info netstat**.
The same information displayed by the man command appears for netstat.
- f. Return to the command prompt by typing **q**.

14. View system information on your OES2L server.

The /proc directory contains dynamically generated files that contain current information about your OES Linux system.

You can use the cat command with the /proc files to view the information in the terminal window.

Do the following:

- a. Select **Computer > Gnome Terminal**.
- b. From the command prompt, enter **cd /proc**.
- c. List the files and directories by entering **ls**.

The files you can use to view system information are displayed in black.

- d. Display current memory information by entering **cat meminfo**.
Information such as total memory and free memory is displayed.
- e. Display current information about the CPU by entering **cat cpuinfo**.

(End of Exercise)

