Virtual Iron Network

Head node (currently not being used):

Title: Dell Power Edge 1950

Processor: Quad-Core Intel Xeon 5300 sequence processors at up to 3.0GHz

Hard Drive: Four 3.5 inch 146 GB hard-drive 10,000 RPM, RAID 0

Memory: 2GB 667 MHz Fully Buffered RAM (FBD) in matched pairs

Node:

(Total: 2)

Title: Dell Power Edge R900

Processor: 4 Quad-Core Intel Xeon Processors 7300 series, up to 2.93GHz

Hard Drive: Four 3.5 inch 146 GB hard-drive 10,000 RPM, RAID 0

Memory: 2GB FBD, 667MHz

This will show you how to install and configure the operating system and Virtual Iron software upon which virtual management server and virtual nodes will be configured into a network.

Linux installation

1. Installation of UB's version of Fedora Linux on the nodes. This is accomplished by inserting an operating system's CD into each node (total of four CDs).
2. By default the BIOS is configured to look at the CD-ROM to boot. When you power on a node it will ask to press any key to boot from the CD, otherwise it will look into the hard drive. Press any key at this point.
3. Detailed installation of UB's Linux can be found here (http://ubit.buffalo.edu/linux/ublinux4/ublinux.php)
4. Things to keep in mind: It is recommended to have two partitions, one for the base operating system, and another for backup. Erase all previous partitions if you don't need them.

5. All four CDs will be required for the installation (some of them you will have to insert more than once during the installation).
6. During the installation you will be asked to configure the time zone and root password (all explained in the detailed installation guide).
7. Configure the network interface card (IP address, subnet mask, domain name server, and primary gateway). If you are setting this cluster at University of Buffalo you will need to request this information from UBIT office.
8. You are finished installing UB's version of Fedora Linux.

Virtual Iron

1. Virtual Iron software can be found here (http://www.virtualiron.com/products/Free_Download.cfm). This is a commercial product that offers a 30-day trial. Try it out first and see if you like the product, at the bottom of the document you will find links to similar products.

2. Fill out the required information to download the trial version of Virtual Iron. It will ask you to provide an email. They will send you a trial license that you will need to activate the software. When you receive the email, download the trial version on the node you selected as your management server.

3. Download the Package for Linux server.

4. Open up the terminal on the node that you have selected as your management server.

5. Start the installation of Virtual Iron by typing "sh ./VirtualIronInstall***versionnumber***.bin". Version number is written with the name of the bin file that you downloaded.

6. A window will appear that will guide you through the installation.

7. When choosing the install set, select to install the Virtualization Manager.

8. The default location to install the software is fine.

9. Select the license key when the installation asks you.

10. Provide the password for the administration.

11. Communication Setup: You will have two options; HTTP and HTTPS. The differences between the two are the port numbers and security. HTTP does not use encryption, less secure, and by default uses port 80. HTTPS uses encryption and uses port 443.

12. Provide a public interface IP address and the management network interface IP address. Public address is the one that machines from outside the domain will see. If they open up their internet browser and type this address, it will take them to the page where with proper credentials will be able to join the virtual network.

13. After the installation is done you will be able to type your public address in the internet browser and access the administration of Virtual Iron. In order to run open this page you must install JRE 1.5.0 or later. You can find that here (http://java.sun.com/javase/downloads/index_jdk5.jsp).

Management

After logging into your Virtual Iron administration manager you will be able to create virtual networks, virtual data centers, and virtual servers. On each node that you want to manage, set their BIOS to network or PXE boot. Turn on the nodes and they will boot the Virtual Iron software from the management server.

- On the server virtualization manager page you will be able to look at the inventory of the nodes that will be management by the server. Just click on the Hardware icon on the left of the screen and it will show you the information.

- You can create a network by selecting the networks tab and clicking “create network”. Enter the name for the network. Setup wizard will guide you through the steps that will ask you to select nodes and assign them ports.
- To create a virtual data center, click on the Resource center icon above the hardware icon and then click “create new virtual data center”. Assign desired nodes to the data center by clicking on the second tab from the left on the very top left corner of the management window. A window will appear and here you can select nodes that you want to be assigned to the data center.

Other Virtual Machine server software can be found here:

- http://register.vmware.com/content/download.html
- http://xen.xensource.com/download/