

How to customize network settings on a server where the Reciprocal Net site software has been pre-installed

Background

The Reciprocal Net project is furnishing computer hardware to the twelve initial partner sites (alpha/beta-testers) in order to ease the burden of joining the Reciprocal Net Site Network. These machines are PC's that have been pre-installed with Red Hat Linux and the Reciprocal Net site software, along with all the supporting software packages that the site software requires. It may be necessary for the system administrator who receives one of these pre-configured computers to customize its network settings to suit the local network environment. This document is a guide for doing so.

Required information

Before you can proceed with these instructions, you will need to have obtained the following information from your local network's administrator:

- The *IP address* assigned to your server. This address must be reachable from the Internet on TCP port 80 (HTTP). If your local network environment includes a NAT engine between your server and the Internet, your network administrator will assign to your server both a "private" address and a "public" one. Use the private address as you follow these instructions.
- The *IP subnet mask* to be used by your server.
- The *IP default gateway* address to be used by your server.
- The *IP broadcast address* to be used by your server. It is possible to compute this from the IP address and subnet mask to be used by your server, but it usually ends with **.255**.
- The *IP network number* to be used by your server. It is possible to compute this from the IP address and subnet mask to be used by your server, but it usually ends with **.0**.
- The IP address(es) of your network's existing *DNS servers*.
- The *DNS name* assigned to your server. This name comes in two forms: **yourserver** (the *hostname*) and **yourserver.youruniv.edu** (the *fully-qualified domain name*). You need to know both. If your local network environment includes a NAT engine between your server and the Internet, your network

administrator may assign to your server both a “public” name and a “private” name that are different. Use the public name as you follow these directions.

Instructions

Log in to the server’s console as root and get a command prompt. Use your favorite text editor to open the file `/etc/hosts` . There may be a variety of comment lines that begin with the character `#`, and one line that begins with `127.0.0.1` . All other lines in this file are extraneous; delete them. Now, add the following line to the bottom of the file:

```
150.150.150.150    yourserver.youruniv.edu    yourserver
```

. Replace `150.150.150.150` with the IP address assigned to your server, `yourserver.youruniv.edu` with the fully-qualified domain name assigned to your server, and `yourserver` with the hostname assigned to your server. Save the file and exit back to a command prompt.

Use your favorite text editor to open the file `/etc/resolv.conf` . Delete every line in this file. Then, add the following lines to it:

```
search youruniv.edu
nameserver 150.150.150.1
nameserver 150.150.150.2
```

. Replace `youruniv.edu` with the DNS domain assigned to your server. This is the part of the fully-qualified domain name after the hostname has been removed. Replace `150.150.150.1` with the IP address of the first DNS server on your network. Replace `150.150.150.2` with the IP address of the second DNS server on your network. You should use one `nameserver` line for each DNS server that your network has. Most networks use one, two, or three DNS servers. Save the file and exit back to a command prompt.

Open the file `/etc/sysconfig/network-scripts/ifcfg-eth0` . The file contains several lines and only some of them need to be changed. Those lines are:

```
BROADCAST=150.150.150.255
IPADDR=150.150.150.150
NETMASK=255.255.255.0
NETWORK=150.150.150.0
```

. Replace `150.150.150.255` with the IP broadcast address to be used by your server, `150.150.150.150` with the IP address assigned to your server, `255.255.255.0` with the IP subnet mask to be used your server, and `150.150.150.0` with the IP network address to be used by your server. Save the file and exit back to a command prompt.

Open the file `/etc/sysconfig/network` . Find the `HOSTNAME` line and change it to read:

```
HOSTNAME=yourserver.youruniv.edu
```

. Replace ***yourserver.youruniv.edu*** with the *fully-qualified DNS domain name* assigned to your server. Then find the ***GATEWAY*** line and change it to read:

```
GATEWAY=150.150.150.254
```

. Replace ***150.150.150.254*** with the *IP default gateway* to be used by your server. Save the file and exit back to a command prompt.

Open the file `/etc/tomcat4/server.xml` in your favorite text editor. Find the ***<Engine>*** tag in this file and change it to read:

```
<Engine name="Standalone"  
defaultHost="yourserver.youruniv.edu" debug="0">
```

(wrapped for readability). Replace ***yourserver.youruniv.edu*** with the *fully-qualified DNS domain name* assigned to your server. Then find the ***<Host>*** tag and change it to read:

```
<Host name="yourserver.youruniv.edu" debug="0"  
appBase="webapps" unpackWARs="true">
```

(wrapped for readability). Again, replace ***yourserver.youruniv.edu*** with the *fully-qualified DNS domain name* assigned to your server. Save the file and exit back to a command prompt.

Open the file `/usr/local/apache2/conf/httpd.conf` . Find the ***ServerAdmin*** line and change it to read:

```
ServerAdmin root@yourserver.youruniv.edu
```

. Replace ***yourserver.youruniv.edu*** with the fully-qualified DNS domain name assigned to your server. Then find the ***ServerName*** line and change it to read:

```
ServerName yourserver.youruniv.edu
```

. Replace ***yourserver.youruniv.edu*** with the fully-qualified DNS domain name assigned to your server. The DNS name specified in this file must match exactly the one you set in Tomcat's ***server.xml*** file a moment ago. Save the file and exit back to a command prompt.

And finally, reboot your computer by typing

```
reboot
```

at the command prompt. Your server should be activated with the network parameters you specified when it comes back up.

Technical support

Configuring a Reciprocal Net-owned computer to suit a partner lab's local network environment is a supported procedure. Technical support for this procedure is available by sending e-mail to help@reciprocalnet.org. Comments about this document are also welcome.