Cacti Installation on Fedora Core 7

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by Jason Warnes

Introduction

This is an attempt to document an installation of the Fedora Core 7 distribution of the Linux operating system and the Cacti network graphing software. For this installation I exclusively use packages (pre-compiled binaries) for two reasons,

- Ease of installation
- Ease of update

I hope you find it useful. The installation that's documented is based on Cacti 0.8.6j. As Cacti evolves the installation may change.

Intended Audience

This document is intended for people that are familar with the Linux operating system and comfortable with command-line administration of their Linux system.

> ⭐ **This document will not teach you how to use Linux or Cacti.**

If you are looking for more details documentation about Fedora feel free to visit the Fedora Core Documenation web site or the Fedora Forum.

As well if you are looking for more information regarding Cacti visit the Cacti Documentation Wiki or the Cacti User Forums.

Document Standards

In this document various font types, and images will be used to help destinguish between instructions, console commands, tips and important information. Below is a table how each can be identified.

Font / Image	Meaning / Purpose
Default document font type.	This font will be used for the document instructions. Suggested installation choicses will be shown in **bold**.
`ls -al <cacti directory>`	Any console commands will appear in a font type like this. Any command line options will be surrounded by italizised *< >* brackets. When inserting these command line options omit the brackets.
⭐	Important information reguarding the current instruction will be identified by the blue star image.
💡	Any tips regarding the current instruction will be identified by the light bulb image.

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Requirements

The requirements are few but listed below,

- Hardware must meet the minimum requirements for Fedora Core 7. Refer to the [Fedora Core 7 release notes](#) for the minimum requirements.
- Internet Access (for YUM)

Fedora Core 7 Minimal Installation

For my Fedora Core installation I choose to install the bare minimums. Fell free to choose whatever packages you wish, it won't effect the installation of Cacti. But for this document I will illustrate how I installed Fedora Core 7 on my system.

1. Boot the Fedora Core 7 installation media (DVD, boot.iso, PXE, etc.). You will see the GRUB installation menu for Fedora Core 7.

Illustration 1: Fedora Core 7 GRUB Installation Menu

Choose the **text-mode** installation method and press Enter.

2. Next you'll need to choose an installation language. Select your proper language by using the arrow keys (▢) and press Enter.
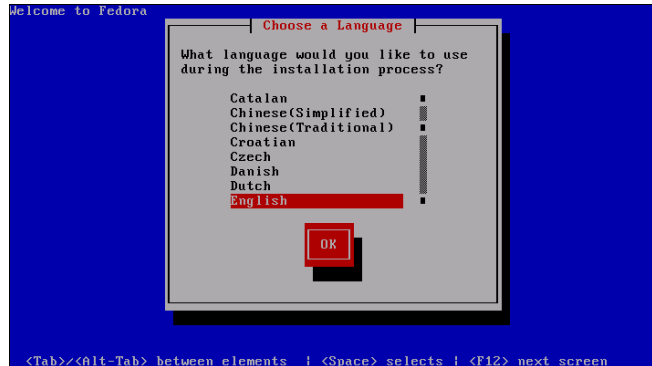

Illustration 2: Choose Installation Language Menu

⭐ **For the sake of this document I will be choosing English.**

3. Next you will need to choose the type of keyboard you have. Using the arrow keys again, choose your keyboard type and press Enter.

Illustration 3: Choose Keyboard

⭐ **For the sake of this document I will be choosing the us keyboard type.**

4. Now you will need to choose your installation media. Select your proper media installation type and press Enter.
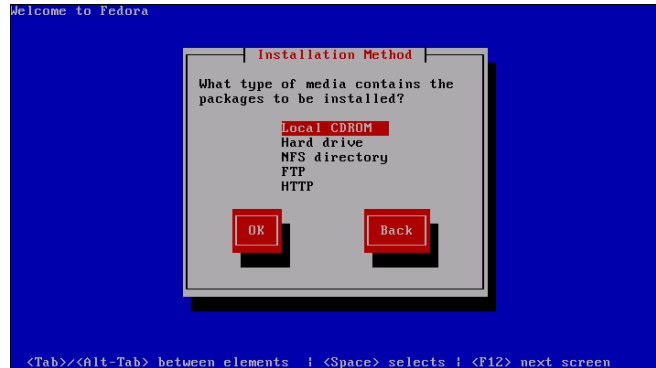

Illustration 4: Choose Installation Media

Each installation media type has different options that won't be covered in this document. But if you booted with the Fedora Core 7 DVD you will be choosing **Local CDROM**.

> 💡 **If you are prompted to test your media choose Skip, it saves a lot of time. Just assume your installation disc(s) are okay.**

5. Once the installation starts you will be presented with a Welcome to Fedora! message.
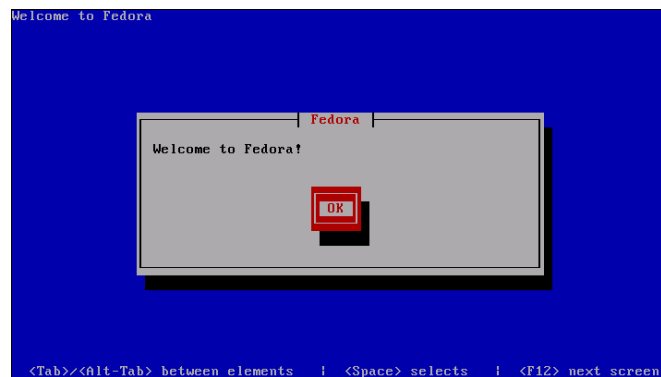

Illustration 5: Welcome Message

Press Enter on the **OK** button to continue.

by Jason Warnes

6. If you are installing on a new hard drive you may see a warning that the drive needs to be initialized before partitions can be created.

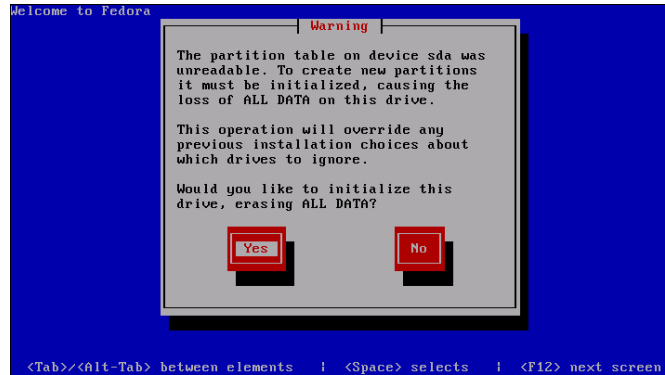*Illustration 6: Initialize Disk Warning*

⭐ **By choosing Yes this will destroy any data that is on your hard drive!**

Choose **Yes** to initilize your hard drive.

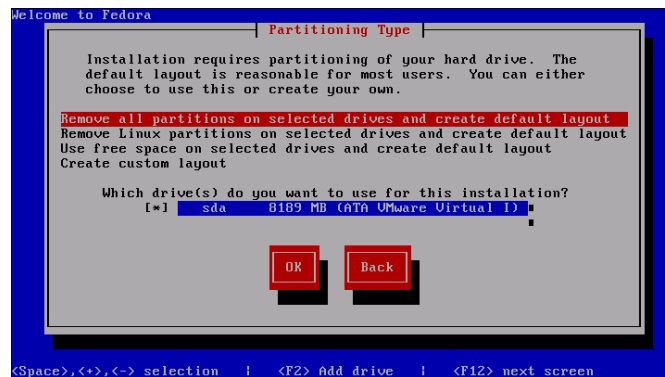7. Next you will be prompted to create your parition layout.

Illustration 7: Disk Partition

Everyone has different ways that they like their disk partitions setup, so I'm not going to go into any detail on to set them up. Set up the paritions anyway you wish.

8. Once the disk partition has been compelted you will need to choose a boot loader.
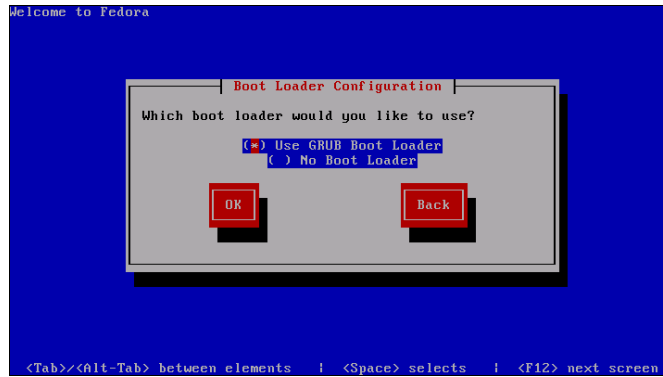

Illustration 8: Choose a Boot Loader

Choose the **Use GRUB Boot Loader** option and press Enter on the OK button.

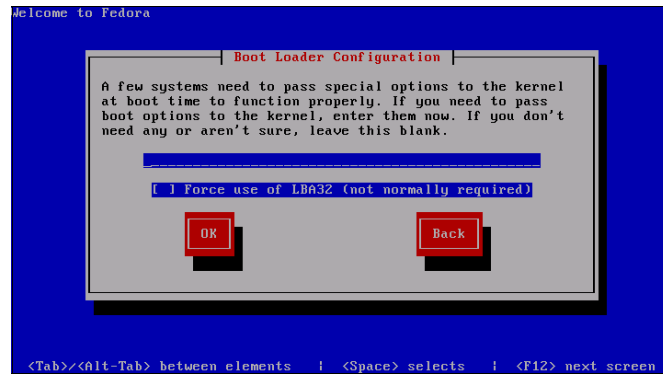9. Leave the Boot Loader Configuration options blank and press Enter on the OK button.

Illustration 9: Boot Loader Configuration

10. Set the GRUB password to whatever you like and then press Enter on the OK button.
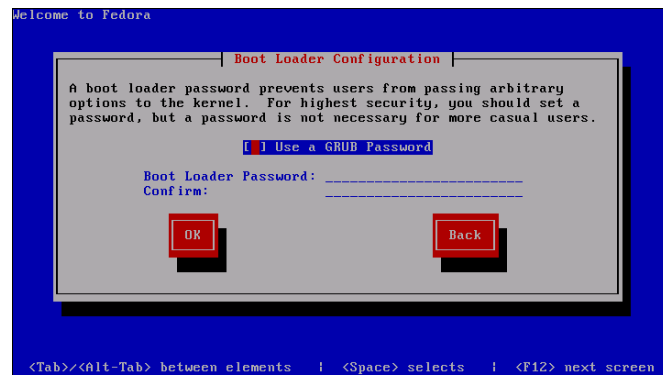

Illustration 10: Boot Loader Password

11. Next is the option to choose what operating systems will be displayed on the GRUB boot loader.
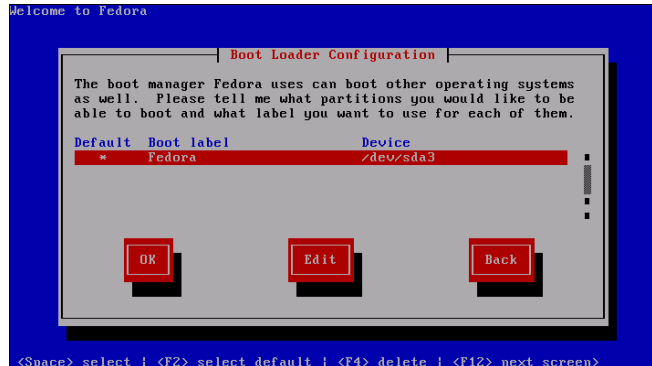
Illustration 11: Edit Boot Loader Menu

Assuming the machine will not be dual booting another operating system you should only have the Fedora boot option listed. If you are dual booting another operating system that is outside the scope of this document, so make any changes if required. Then press Enter on the OK button.

12. Now you need to set the location to where the boot loader is to be installed.
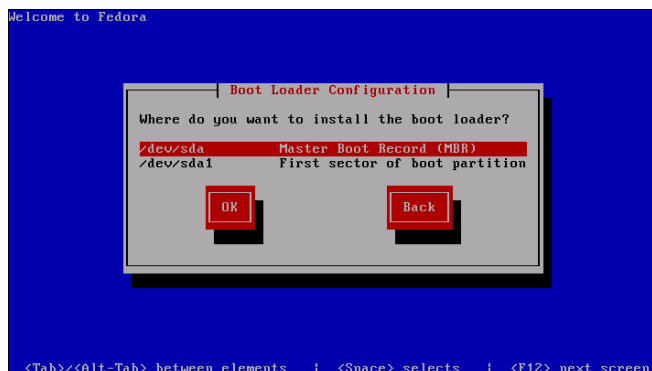
Illustration 12: Boot Loader Installation Location

Typically your boot loader should be installed in the **Master Boot Record (MBR)**.

> **If you are planning to dual boot another operating system and use that operating systems boot loader then you will want to choose the First sector of the boot parition.**

Once you choose your boot loader location, press Enter on the OK button.

13. Next you will be asked if you wish to configure the eth0 interface.
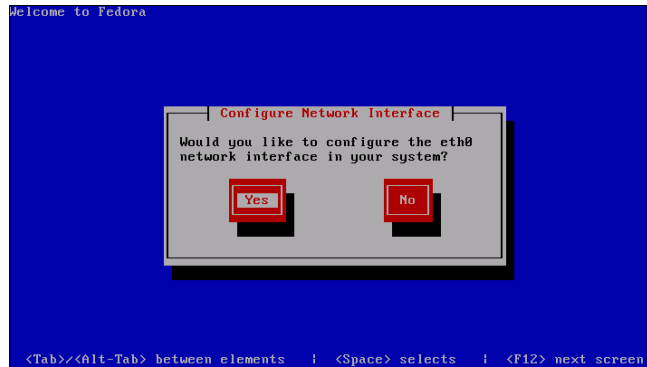
Illustration 13: Configure eth0?

Press Enter on the **Yes** button.

14. Now you will have the option of whether to enable the network interface on boot and what IP stacks are loaded.
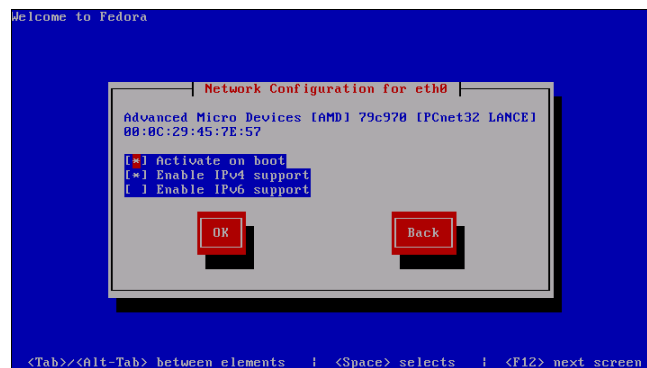
Illustration 14: eth0 Configuration

Choose the options that best suit your network and then press Enter on the OK button.

> 💡 **Unless you are actuall running an IPv6 network I'd suggest disabling it.**

15. Next you have the option to configure the IPv4 address on eth0 interface.
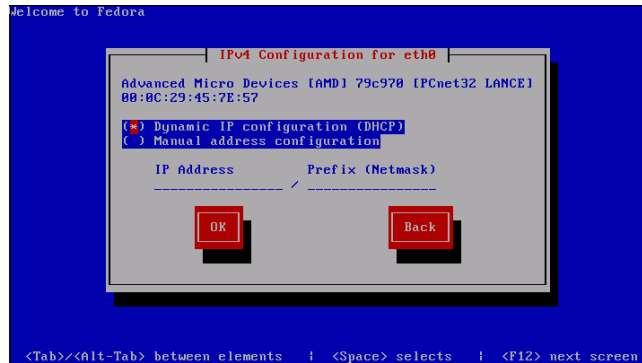
Illustration 15: eth0 IPv4 Configuration

Configure the eth0 interface to best suit your network, then press Enter on the OK button.

> For the sake of this document I will be choosing DHCP.

16. Next you have the option of setting your hostname.
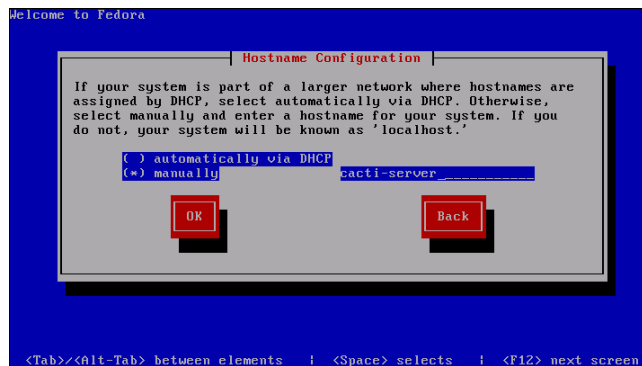
Illustration 16: Set Hostname

Typically DHCP servers are not configured to send out hostnames with IP addresses, so I find it easier to set the hostname manually. Choose the **manually** option and set a hostname for your server. Once you set your hostname press Enter on the OK button.

17. Next you will be asked to set the time zone of your server.
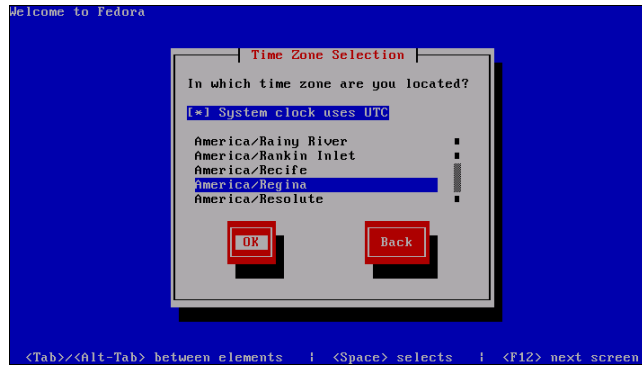
Illustration 17: Choose a Time Zone

Choose the proper time zone for your location and then press Enter on the OK button.

18. Now you will be required to choose a root password.
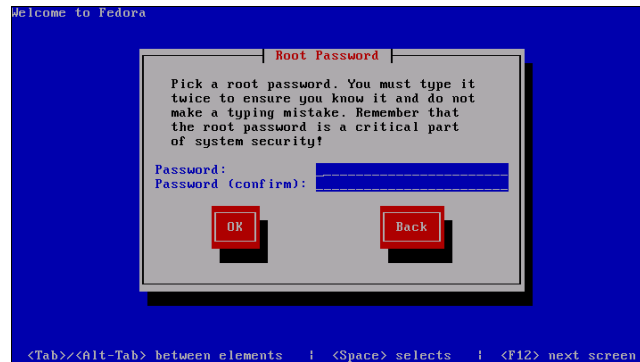
Illustration 18: Set root Password

Once you have choosen a root password type it in the Password: and Password (confirm): fields, then press Enter on the OK button.

> 💡 **The root account is the account with access to all the system commands and files, so ensure your root password is suffeciently strong.**

19. Now you will need to choose what packages will be installed.
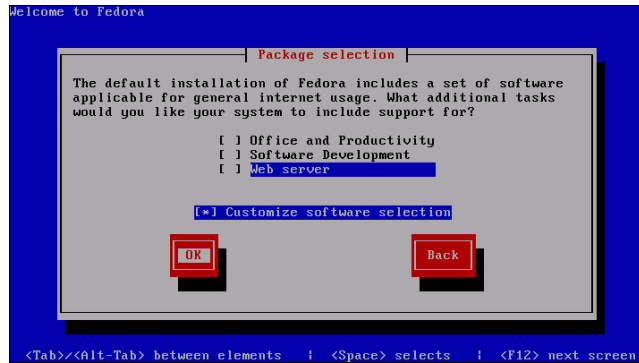
Illustration 19: Package Selection

For this, **un-select the Office and Productivity** option. Then **select the Customize software selection** option and press Enter on the OK button.

20. Since this is going to be a "minimal" installation we will be un-selecting all the package groups. Using the arrow keys **scroll through the entire list and ensure there everything is un-selected**.

Illustration 20: Package Group Selection

Once you have everything un-selected press Enter on the OK button.

> **Any software dependencies needed for Cacti (like Apache httpd) will be installed later.**

21. Once the depedency check finishes press Enter on the OK button to start your installation.
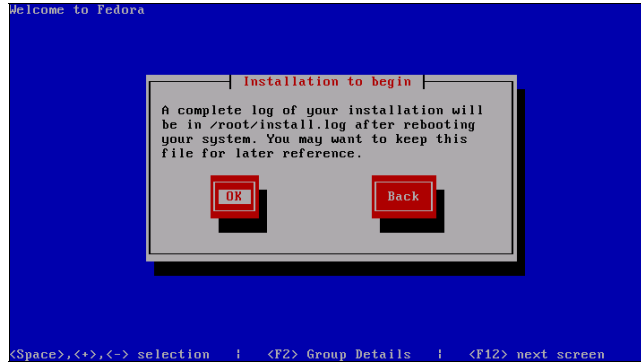
Illustration 21: Installation About to Begin

22. Once the formatting of the file systems completes the installation will start.
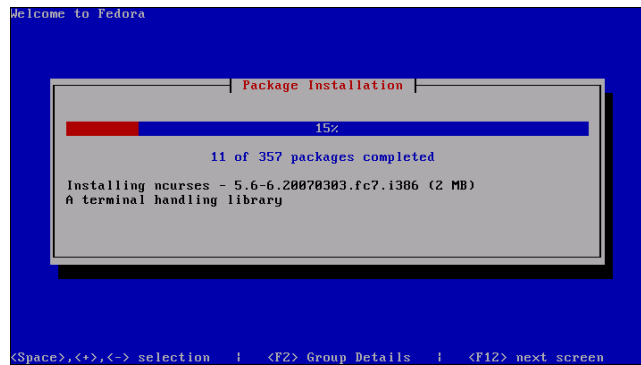
Illustration 22: Installation Progress

The installation progress will be illustrated by the red bar.

23. Once the installation is completed you will need to press Enter on the **Reboot** button.
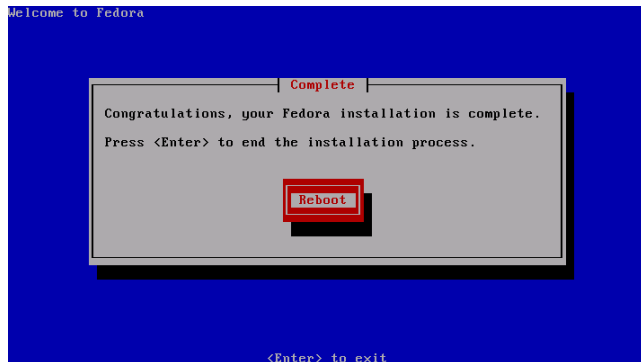
Illustration 23: Installation Complete

Fedora Core 7 First Boot & Post Installation Configuration

After the completion of the Fedora Core 7 installation the first boot has a few configuration steps before getting to the login prompt.

1. On Fedora's first boot you will be presented with a screen which allows you to configure some aspects of the system. The configuration will be done manually, so press Enter on the **Exit** button.
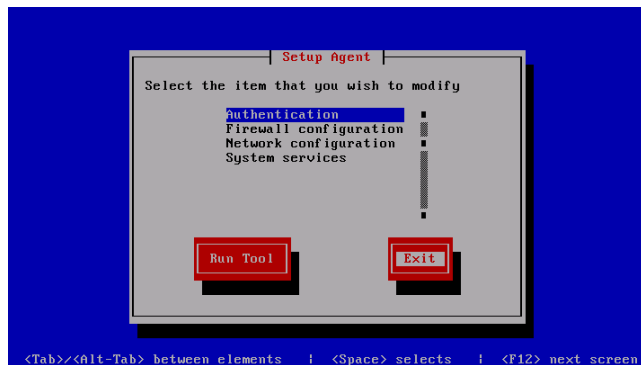
Illustration 24: Fedora First Boot

2. The system will now continue to the login prompt.
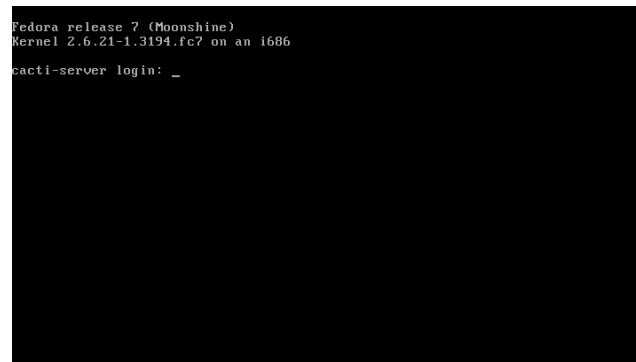
Illustration 25: Login Prompt

3. Login as root.
4. Next the state of SELinux on the system will be disabled. Edit your **/etc/sysconfig/selinux** file with your favorite text editor. Look for the line that says **SYSLINUX=enforcing** and change it to **SYSLINUX=disabled**. Save those changes and exit your editor.

> SELinux is a security tool and typically disabling it is not recommended, but for the sake of this document I have disabled it because I have not taken the time to see what files and directories would need to be changed in order to keep SELinux running.

5. Reboot the system for the SELinux changes to take effect.
6. Once the system reboots, at the login prompt, log in as root again.
7. Now the currently installed software will be updated with Yum. This is done by typing `yum update` at the shell prompt as shown below.

```
[root@cacti-server ~]# yum update
```

> 💡 **Depending on how many packages have been updated since the original distribution of Fedora Core 7, the update list could be very extensive and coule be well over 100MB.**

8. When prompted if it's okay to download the updates, press the **y** key and then Enter. This will start the download and subsequefnt installation of all the updates. If prompted to install any new DSA signatures, press **y** and then Enter to approve the installation.

```
(130/148): krb5-workstati 100% |=========================| 443 kB    00:00
(131/148): gtk2-2.10.14-3 100% |=========================| 6.8 MB    00:09
(132/148): initscripts-8. 100% |=========================| 1.5 MB    00:02
(133/148): dhclient-3.0.5 100% |=========================| 274 kB    00:00
(134/148): libXi-1.1.1-1. 100% |=========================|  27 kB    00:00
(135/148): vixie-cron-4.1 100% |=========================|  79 kB    00:00
(136/148): selinux-policy 100% |=========================| 1.0 MB    00:01
(137/148): libgcc-4.1.2-2 100% |=========================|  92 kB    00:00
(138/148): cairo-1.4.10-1 100% |=========================| 556 kB    00:00
(139/148): tzdata-2007h-1 100% |=========================| 746 kB    00:01
(140/148): yum-3.2.7-1.fc 100% |=========================| 551 kB    00:00
(141/148): audit-libs-pyt 100% |=========================|  72 kB    00:00
(142/148): perl-5.8.8-24. 100% |=========================|  10 MB    00:15
(143/148): newt-0.52.7-1. 100% |=========================| 131 kB    00:00
(144/148): dhcdbd-2.7-5.f 100% |=========================|  60 kB    00:00
(145/148): kbd-1.12-22.fc 100% |=========================| 1.0 MB    00:01
(146/148): gnome-themes-2 100% |=========================| 2.5 MB    00:04
(147/148): libnfnetlink-0 100% |=========================|  22 kB    00:00
(148/148): libsemanage-2. 100% |=========================| 137 kB    00:00
warning: rpmts_HdrFromFdno: Header V3 DSA signature: NOKEY, key ID 4f2a6fd2
Importing GPG key 0x4F2A6FD2 "Fedora Project <fedora@redhat.com>" from /etc/pki/
rpm-gpg/RPM-GPG-KEY-fedora
Is this ok [y/N]: y
Running Transaction Test
```

Illustration 26: Yum Update

9. Once the update is complete reboot the system so that the new kernel and other updated applications are being used.
10. Now the iptables firewall will need to be modified to allow connections to the Apache web server that will be installed. Edit your /etc/sysconfig/iptables file with your favorite text editor. Modify the file as outlined below by adding the black line inbetween the already existing grey lines,

> ⭐ **It's assumed that iptables is still in its default configuration.**

```
-A RH-Firewall-1-INPUT -m state --state NEW -m tcp -p tcp --dport 22 -j ACCEPT
-A RH-Firewall-1-INPUT -m state --state NEW -m tcp -p tcp --dport 80 -j ACCEPT
-A RH-Firewall-1-INPUT -j REJECT --reject-with icmp-host-prohibited
```

11. Restart the iptables firewall by typing `service iptables restart` at the shell prompt as shown below,

```
[root@cacti-server ~]# service iptables restart
Flushing firewall rules:                                    [  OK  ]
Setting chains to policy ACCEPT: filter                     [  OK  ]
Unloading iptables modules: Removing netfilter NETLINK layer.
                                                            [  OK  ]
Applying iptables firewall rules: ip_tables (C) 2000-2006 Netfilter Core Team
Netfilter messages via NETLINK v0.30.
nf_conntrack version 0.5.0 (4096 buckets, 32768 max)
                                                            [  OK  ]
Loading additional iptables modules: ip_conntrack_netbios_n[  OK  ]
```

Cacti Installation

Now that Fedora Core 7 is installed the next step is to install Cacti. The easiest way to do that is by using the same Yum program that was used to update all the installed base of Fedora Core 7.

> 💡 **By using Yum to install Cacti this will install the pre-compiled version of Cacti as well as all depedencies like PHP, Net-SNMP, MySQL and Apache HTTPD. As well it makes updating all these packages extremly easy.**

> 💡 **The current version of Cacti at the time of this documentation was v0.8.6j. As Cacti evolves the configuration tasks may change.**

1. If not already logged in, log into the system as root.
2. Use Yum to install Cacti by typing `yum install cacti` at the shell prompt as shown below,

```
[root@cacti-server ~]# yum install cacti
```

Yum will then start checking to see what other dependencies are going to be required for the Cacti installation.

3. Yum will confirm that it is okay to download Cacti and its dependencies. When prompted press **y** and then Enter to confirm that it's okay.

```
apr-util              i386    1.2.10-1.fc7     updates      77 k
gmp                   i386    4.1.4-12.3       fedora      350 k
httpd                 i386    2.2.6-1.fc7      updates     996 k
lm_sensors            i386    2.10.4-1.fc7     updates     504 k
mysql                 i386    5.0.45-1.fc7     updates     2.7 M
mysql-libs            i386    5.0.45-1.fc7     updates     1.5 M
net-snmp              i386    1:5.4-15.fc7     updates     711 k
net-snmp-libs         i386    1:5.4-15.fc7     updates     1.1 M
perl-DBI              i386    1.53-2.fc7       fedora      611 k
php                   i386    5.2.4-1.fc7      updates     1.3 M
php-cli               i386    5.2.4-1.fc7      updates     2.5 M
php-common            i386    5.2.4-1.fc7      updates     220 k
php-mysql             i386    5.2.4-1.fc7      updates      79 k
php-pdo               i386    5.2.4-1.fc7      updates      59 k
php-snmp              i386    5.2.4-1.fc7      updates      23 k
rrdtool               i386    1.2.23-6.fc7     updates     465 k

Transaction Summary
================================================================================
Install     18 Package(s)
Update       0 Package(s)
Remove       0 Package(s)

Total download size: 14 M
Is this ok [y/N]: _
```

Illustration 27: Yum Cacti Installation

Once the installation is complete Cacti will be installed in /usr/share/cacti.

4. Since this is the first time that the Apache HTTPD web server has been installed there is some optional configuration you can perform to minimize any warnings on startup. Edit the /etc/httpd/conf/httpd.conf file with your favorite editor and make the following changes,
   - Look for the line starting with `ServerAdmin`. It's a good idea to have the ServerAdmin value set to a valid email address in case errors on the server occur. Change the `root@localhost` to a valid email address for your domain.
   - Look for the line starting with #ServerName. Remove the hash mark (#) from the beginning of this line and change the `www.example.com:80` to the fully qualified domain name (FQDN) of your server followed by `:80`.

5. Access to the web portion of Cacti server is restricted to the server by default. Edit the /etc/httpd/conf.d/cacti.conf file with your favorite editor and modify it so it looks like the one shown below,

```
#
# Cacti: An rrd based graphing tool
#
Alias /cacti     /usr/share/cacti

<Directory /usr/share/cacti/>
        Order Allow,Deny
        Allow from all
</Directory>
```

6. Next configure the Apache HTTPD web server to start automatically when the system is booted. This is done by typing `chkconfig --level 345 httpd on` at the shell prompt as shown below,

```
[root@cacti-server ~]# chkconfig --level 345 httpd on
```

7. Now the default PHP configuration needs to be modified to increase the ammount of memory PHP is allowed to use. Edit the /etc/php.ini file with your favorite editor, look for the line starting with memory_limit and change the line so it looks like the one shown below,

```
memory_limit = 64M        ; Maximum amount of memory a script may consume (16M)
```

> 💡 **If you have a lot of RAM in your system you may want to increase the memory_limit amount higher because if you decide to run a lot of pollers in Cacti or the Weathermap plugin you PHP may need more RAM to run.**

8. Start the Apache HTTPD daemon so that the web server is running and new PHP setting are used. This is done by typing `service httpd start` at the shell prompt as shown below,

```
[root@cacti-server ~]# service httpd start
Starting httpd:                                       [  OK  ]
```

9. Next the MySQL databsae server needs to be installed. This is done with Yum by typing yum install mysql-server at the shell prompt as shown below,

```
[root@cacti-server ~]# yum install mysql-server
```

10. Yum will again confirm that it's okay to download the MySQL server and all it's dependencies. Type **y** when asked to confirm that it's okay to download and install the MySQL server.

11. Next configure the MySQL database server to start automatically when the system is booted. This is done similarly to what we done for the web server, by typing `chkconfig --level 345 mysqld on` at the shell prompt as shown below,

```
[root@cacti-server ~]# chkconfig --level 345 mysqld on
```

12. Start the MySQL databse server daemon by typing service mysqld start at the shell prompt as shown below,

```
[root@cacti-server mysql]# service mysqld start
Initializing MySQL database:  Installing MySQL system tables...
OK
Filling help tables...
OK

To start mysqld at boot time you have to copy
support-files/mysql.server to the right place for your system

PLEASE REMEMBER TO SET A PASSWORD FOR THE MySQL root USER !
To do so, start the server, then issue the following commands:
/usr/bin/mysqladmin -u root password 'new-password'
/usr/bin/mysqladmin -u root -h cacti-server password 'new-password'
See the manual for more instructions.
You can start the MySQL daemon with:
cd /usr ; /usr/bin/mysqld_safe &

You can test the MySQL daemon with mysql-test-run.pl
cd mysql-test ; perl mysql-test-run.pl

Please report any problems with the /usr/bin/mysqlbug script!

The latest information about MySQL is available on the web at
http://www.mysql.com
Support MySQL by buying support/licenses at http://shop.mysql.com
                                                       [  OK  ]
Starting MySQL:                                        [  OK  ]
```

13. Set the root password of the MySQL server to something that you want by typing mysqladmin -u root password '<your_password>', where <your_password> is the password you choose (omit the <>). An example is shown below,

```
[root@cacti-server ~]# mysqladmin -u root password 'Passw0rd'
```

> ⭐ **For the sake of this document the MySQL root password is Passw0rd, but you should choose a much stronger password!**

14. Now create a new database for Cacti. This is done by typing mysqladmin -u root -p<your_password> create <cacti_database> at the shell prompt, where <your_password> is the password you had chosen for your root MySQL database account above and <cacti_database> is the name you wish to call the Cacti database.

```
[root@cacti-server ~]# mysqladmin -u root -pPassw0rd create cacti
```

> 💡 **Using a database name of "cacti" is recommended.**

15. Log into the MySQL server with your root account. This is done by typing `mysql -u root -p<your_password>` at the shell prompt as shown below, where `<your_password>` is what you chose above as the root MySQL account password.

```
[root@cacti-server ~]# mysql -uroot -pPassw0rd
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 5.0.45 Source distribution

Type 'help;' or '\h' for help. Type '\c' to clear the buffer.

mysql>
```

16. Create a new account for the Cacti application to attach to the cacti database. This is done by typing `GRANT ALL PRIVILEGES ON <cacti_database>.* TO '<cacti_db_user>'@'%' IDENTIFIED BY '<cacti_db_password>' WITH GRANT OPTION;` at the mysql> prompt where `<cacti_database>` is the name of your Cacti database, `<cacti_db_user>` is the name of the account you want Cacti to connect to the database with, and `<cacti_db_password>` is the password you wish to use for the account. An example is shown below,

```
mysql> GRANT ALL PRIVILEGES ON cacti.* to 'cactiuser'@'%' IDENTIFIED BY 'cactiuser'
WITH GRANT OPTION;
Query OK, 0 rows affected (0.00 sec)
```

The above example would create and account called **cactiuser** with a password of **cactiuser** which has access to the database named **cacti**.

17. Next the privileges need to be refreshed. This is done by typing FLUSH PRIVILEGES; at the mysql prompt.

```
mysql> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.00 sec)
```

18. Log out of the MySQL server by typing `exit` at the mysql> prompt.

19. Import the empty Cacti tables into the newly created database by typing `mysql -u <cacti_db_user> -p<cacti_db_password> <cacti_database> < /usr/share/doc/cacti-0.8.6j/cacti.sql` at the shell prompt as shown below,

```
[root@cacti-server ~]# mysql -u cactiuser -pcactiuser cacti
< /usr/share/doc/cacti-0.8.6j/cacti.sql
```

20. Open the /usr/share/cacti/include/db.php file with your favorite editor and modify it so that it matches the database and account setup that was made above. An example of the file is shown below,

```
<?php
/* make sure these values refect your actual database/host/user/password */
$database_type = "mysql";
$database_default = "cacti";
$database_hostname = "localhost";
$database_username = "cactiuser";
$database_password = "cactiuser";
$database_port = "3306";
?>
```

The `$database_default` is the name you chose for your database, the `$database_hostname` can remain as localhost, the `$database_username` is the username you created for Cacti to use in the database and `$database_password` is the password you

set for that account.

21. Now use Yum to install the Net-SNMP utilities by typing `yum install net-snmp-utils` at the shell prompt as shown below,

```
[root@cacti-server ~]# yum install net-snmp-utils
```

22. Yum will again confirm that it's okay to download the Net-SNMP utilities package. Type **y** when asked to confirm that it's okay to download and install the Net-SNMP utilities.

23. Open the /etc/cron.d/cacti file with your favorite editor and remove the hash mark (#) from the beginning of the line so that it looks similar to the one below,

```
*/5 * * * *    cacti   /usr/bin/php /usr/share/cacti/poller.php > /dev/null 2>&1
```

What this does is enable the Cacti poller to run every 5 minutes.

24. Open a web browser and navigate to `http://<cacti_server_address>/cacti` where `<cacti_server_address>` is either the fully-qualified domain name, or IP address of your Cacti server. This will open a **Cacti Installation Guide** screen as shown below,
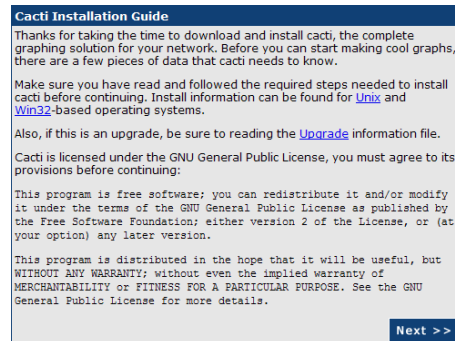

Illustration 28: Cacti Installation Guide

Click on the **Next >>** button.

25. Next choose **New Install** from the installation type drop-down menu.
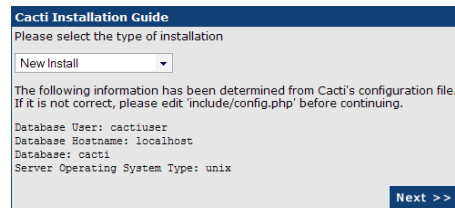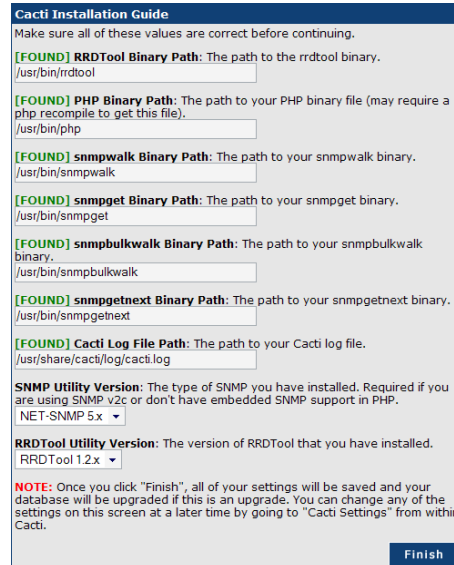

Illustration 29: Cacti Installation - New Install

Click on the **Next >>** button.

26. The installation will then confirm that it has found all the required software

Illustration 30: Cacti Installation - Application Paths

If everything is [FOUND] then click on the **Finish** button. Otherwise install the missing components. If any of the SNMP programs are not found refer to the installation of the net-snmp-utils package above. If RRDTool or PHP is missing Yum can install them in the same manner that Yum was used to install all the other applications earlier in this document.

27. After the installation completes you will be presented with the Cacti login screen similar to the one shown below,

Illustration 31: Cacti Login Screen

28. Log into the Cacti system with the default User Name of **admin** and the Password of **admin**.

29. You will be immediately prompted for a new admin password, choose a new password and click on the **Save** button.

Illustration 32: Change Admin Password

> 💡 **Make sure that your admin password is strong!**

30. Once logged in you will see the Cacti console as shown below,
31. view and display the Localhost graphs similar to the ones below,
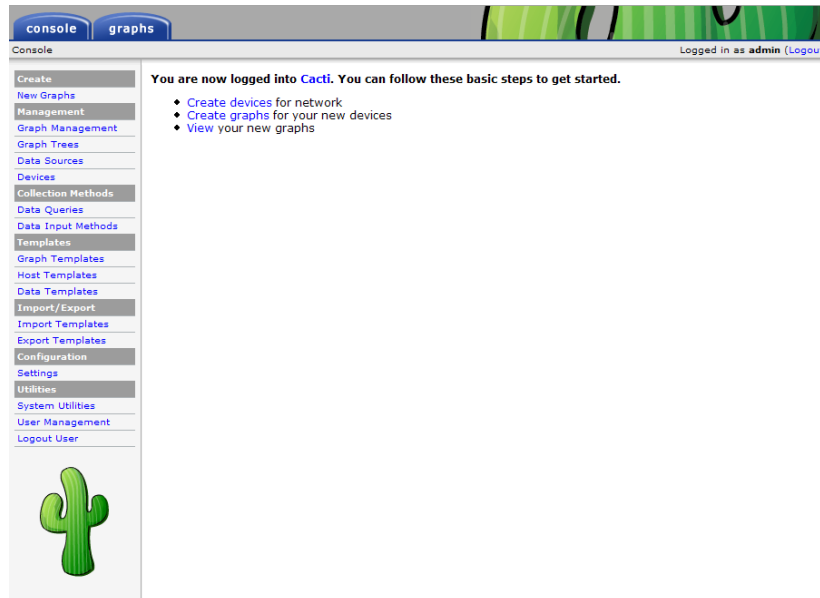
Illustration 33: Cacti Console

32. Click on the **Graphs** tab at the top of the window. This by default will open the Graph Tree view and display the Localhost graphs similar to the ones below,
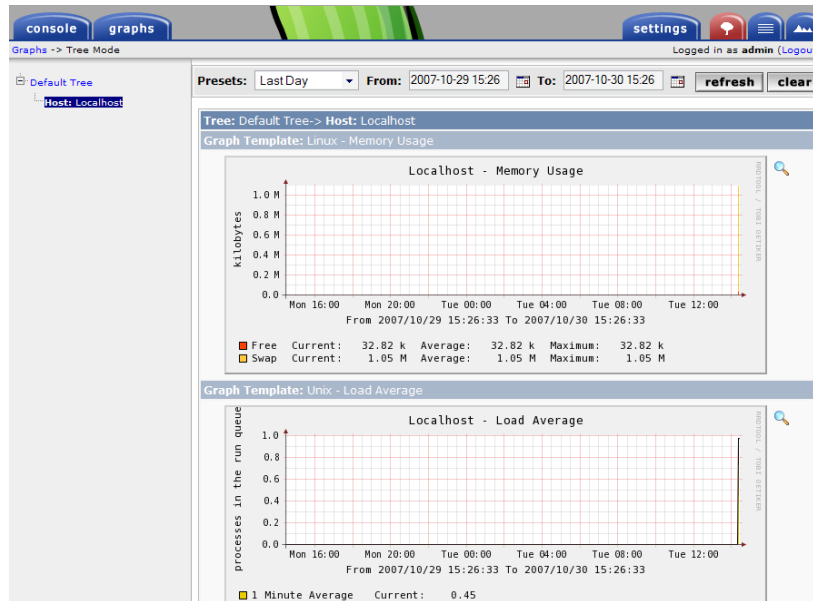
Illustration 34: Cacti Localhost Graphs

If you do not see graphs similar to the ones above, wait 5 more minutes because it could be that the poller hasn't run yet. If after another 5 minutes you still do not see graphs make sure that you have enabled the poller by modifing the /etc/cron.d/cacti file as show earlier in the document.

33. If you see graphs, this confirms that your Cacti installation is functioning properly.

Cacti Plugin Architecture Installation

Using Yum to install all the software may be easy and make future upgrades simpler but there are a few things to know about when using the Cacti Plugin Architecture created by Jimmy Conner. The Plugin Architecture is not part of the default Cacti package, though hopefully in the next major release of Cacti it will be. As a result the installation of Plugin Architecture makes changes to some of the Cacti files that were installed by Yum. But if you wish to really want to get a lot of use from Cacti using plugins are a must.

> 💡 **At the time of the creation of this document the current version of the Plugin Architecture was v1.1. As Cacti and the Plugin Architecture evolves this may change the installation of the Plugin Architecture.**

1. If not already, log into the system as root.
2. Download the Plugin Architecure installation archive by typing `wget http://cactiusers.org/downloads/cacti-plugin-arch.gzip` at the shell prompt as shown below,

```
[root@cacti-server ~]# wget http://cactiusers.org/downloads/cacti-plugin-arch.gzip
--14:48:00--  http://cactiusers.org/downloads/cacti-plugin-arch.gzip
           => `cacti-plugin-arch.gzip'
Resolving cactiusers.org... 209.189.228.146
Connecting to cactiusers.org|209.189.228.146|:80... connected.
HTTP request sent, awaiting response... 302 Found
Location: http://mirror.cactiusers.org/downloads/plugins/cacti-plugin-arch.tar.gz
[following]
--14:48:02--  http://mirror.cactiusers.org/downloads/plugins/cacti-plugin-
arch.tar.gz
           => `cacti-plugin-arch.tar.gz'
Resolving mirror.cactiusers.org... 208.113.141.142, 209.189.228.146
Connecting to mirror.cactiusers.org|208.113.141.142|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 158,014 (154K) [application/x-tar]

100%[====================================>] 158,014       371.38K/s

14:48:03 (370.45 KB/s) - `cacti-plugin-arch.tar.gz' saved [158014/158014]
```

> ⭐ **This will download the cacti-plugin-arch.tar.gz file to the current directory.**

3. Un-tar the archive by typing `tar -xvzf cacti-plugin-arch.tar.gz` at the shell prompt as shown below,

```
[root@cacti-server ~]# tar -xvzf cacti-plugin-arch.tar.gz
```

As the files are decompressed they will be displayed on the screen.

4. Next copy the already patched Cacti files to the Cacti installation directory. This is done by typing `/bin/cp -rf ./cacti-plugin-arch/files-<cacti_version>/* /usr/share/cacti/` at the shell prompt as shown below, where `<cacti_version>` is the version of Cacti that is currently installed.

    ```
    [root@cacti-server ~]# /bin/cp -rf ./cacti-plugin-
    arch/files-0.8.6j/* /usr/share/cacti/
    ```

    > ⭐ **/bin/cp is required in the command line because Fedora aliases cp as cp -i which is an interactive copy and will prompt you for every file reaplacement.**

    > 💡 **To find out what version of Cacti you have installed type rpm -qa | grep cacti at the shell prompt.**

5. The already patched Plugin Architecture files overwrites the Cacti configuration file which includes the database connection information so this will have to be repaired. Open the /usr/share/cacti/include/config.php file with your favorite editor and find where the database settings are declared and make the changes required to connect to the database that was setup earlier in the document. An example of the changes are outlined below in black,

    ```
     | - raXnet - http://www.raxnet.net/                                    |
     +----------------------------------------------------------------------+
    */

    /* make sure these values refect your actual database/host/user/password */
    $database_type = "mysql";
    $database_default = "cacti";
    $database_hostname = "localhost";
    $database_username = "cactiuser";
    $database_password = "cactiuser";
    $database_port = "3306";

    $plugins = array();
    //$plugins[] = 'thold';
    ```

    The `$database_default` is the name you chose for your database, the `$database_hostname` can remain as localhost, the `$database_username` is the username you created for Cacti to use in the database and `$database_password` is the password you set for that account.

6. Further down in the /usr/share/cacti/include/config.php file is the variable `$config['url_path']`, this value needs to be set to `/cacti` as shown below,

```
/*
 This is full URL Path to the Cacti installation
   For example, if your cacti was accessible by http://server/cacti/ you would user
'/cacti/'
   as the url path.  For just http://server/ use '/'
*/

$config['url_path'] = '/cacti/';


/* ----- you probably do not need to change anything below this line ----- */
```

If the `$config['url_path']` variable is not set Cacti will have difficulties displaying graphs and the hyperlinks will be incorrectly formatted. A tell-tale sign that the `$config['url_path']` variable is not set properly is you will see a display link the one below,
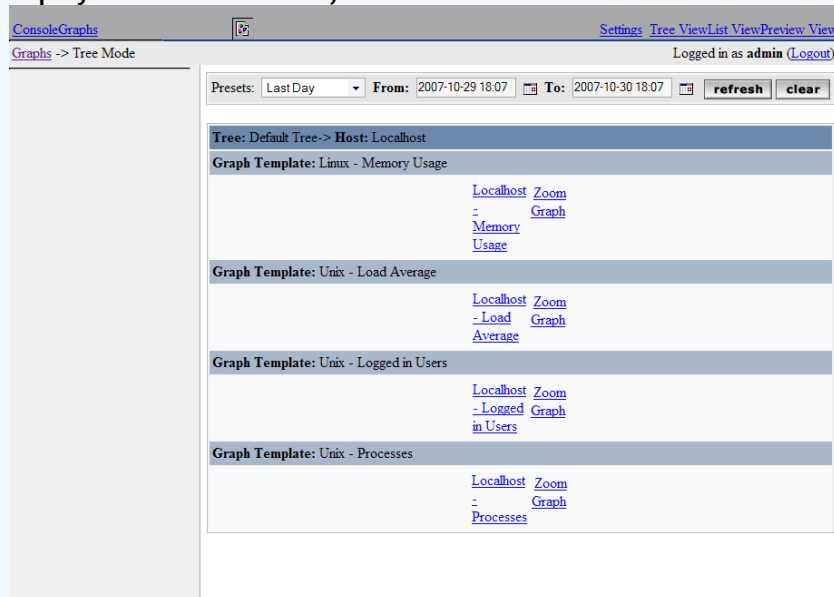
None of the navigation tabs are visible, the fonts appear wrong and all the graphs are gone. Clicking on any of the hyperlinks would send you to a "Page Not Found" error.

7. The Plugin Architecture is now configured. To install plugins follow the installation documentation and/or README's that come with the plugin.

All plugins will need to be installed in /usr/share/cacti/plugins.

Yum Updating

Yum makes it extremely easy to update software on the system. Whether it be kernel updates, Apache HTTPD web server updates, any base Fedora Core software or software installed using Yum can be updated with Yum.

1. If not already, log into the system as root.
2. To check what updates are available on your system type `yum check-update` at the shell prompt as shown below,

```
[root@cacti-server ~]# yum check-update
updates                    100% |=========================| 2.3 kB    00:00
fedora                     100% |=========================| 2.1 kB    00:00

kernel.i686                          2.6.23.1-10.fc7        updates
nfs-utils.i386                       1:1.1.0-4.fc7          updates
python.i386                          2.5-14.fc7            updates
python-libs.i386                     2.5-14.fc7            updates
rpcbind.i386                         0.1.4-8.fc7           updates
tar.i386                             2:1.15.1-28.fc7       updates
```

Any software that has a available udpdate will be displayed.
3. To apply those updates type `yum update` at the shell prompt as shown below,

```
[root@cacti-server ~]# yum update
```

4. When prompted if it's okay to download the updates, press the **y** key and then Enter. This will start the download and subsequefnt installation of all the updates. If prompted to install any new DSA signatures, press **y** and then Enter to approve the installation.
5. Once Yum is completed all the software on your system that was installed through Yum has been updated.

> 💡 **If one of the updates is a kernel update this will require a reboot of the system for that update to take effect.**

> 💡 **When updating Cacti with Yum, since the Plugin Architecture is not installed using Yum any of the changes made during it's installation would be overwritten by Yum. Refer back to the Cacti Plugin Architecture Installation section to reload and re-configure the Plugin Architecure. Any plugins will not be effected, just the Plugin Architecure.**