



# Introduction

Ok. So you've got a brand new Linux box. Now what?

How do you:

- Keep your system updated?
- Apply security fixes?
- Install the latest cool package?



# Introduction

In the *old days* you:

- found out a patch was needed
- searched for it
- downloaded it
- tried to install it
- discovered you needed five other packages installed
- hoped you didn't break something

Yes. The **Red Hat Network (RHN)**



# Introduction

Is there a better way?

Yes. Package management and software repositories

Package managers:

- track the changes in a package
- apply the updates
- check for dependencies

The **Red Hat Network (RHN)** provides package management through a software repository and hardware database.



# What is RHN?

- Subscription Service (paid for all by several units at ISU)
- A database and package repository maintained by Red Hat
- For ISU, it is also a proxy server



# What is RHN?

- Web and command line/GUI interface for maintaining your system(s)
- A daemon (service) running on your system
- Source of initial distribution ISOs



# How does it work?

You need the RHN client, **yum**, installed on your system

Inform your system that it should use the RHN, a proxy of RHN or a satellite of RHN. For ISU, that means pointing your system to our proxy server, **cyclops.iastate.edu**.

Do this by running the configuration GUI or modifying the configuration file `/etc/sysconfig/rhn/up2date`



# How does it work?

Or let us do it for you:

```
# wget http://cyclops.iastate.edu/bootstrap.sh
```

```
# sh ./bootstrap.sh --register <activation_key>
```

This registers your system with the RHN and instructs RHN to use our proxy server for downloading cached packages. It also uploads your system's *profile* to the RHN

Your activation key also subscribes the system to various *channels*. We can customize the channels for you.



# How does it work?

Now what? Why isn't it doing anything?

You need to tell it to do something:

- Manually via **yum** or
- Using the web interface at [rhn.redhat.com](http://rhn.redhat.com)





# The Web Interface

Allows you to get information

- All systems you have registered
- All groups you maintain
- Available channels
- Available packages
- Available errata and updates



# The Web Interface

Allows you to **schedule** actions

- Check for updates
- Apply errata updates
- Automate the updates
- Download packages and ISOs

**\* You can act on multiple systems simultaneously \***



# Command Line Interface/GUI

Allows you to get information:

- View available packages (all or just those not installed)
- Get information about a particular package
- Search for packages



# Command Line Interface/GUI

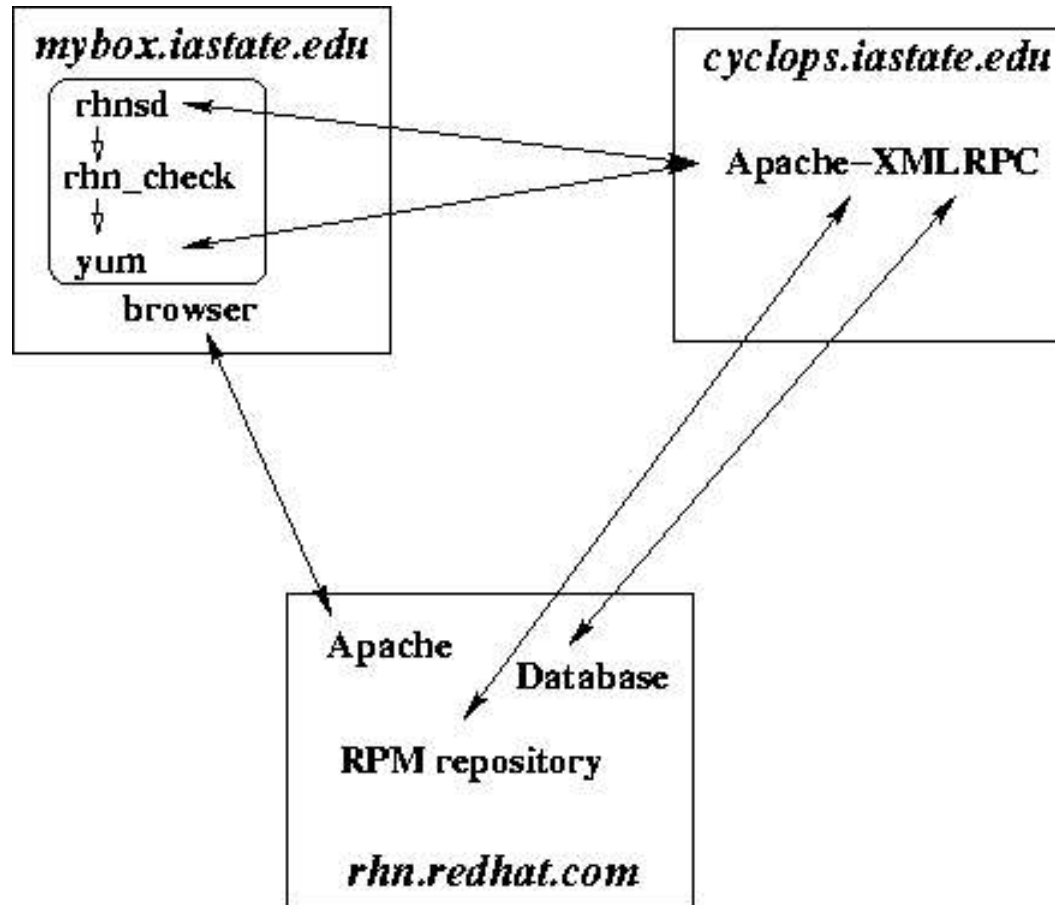
Allows you to perform actions **immediately**:

- Install new packages
- Check for new updates
- Apply updates
- Remove packages

**\*Is most useful for managing single systems\***



# Putting It All Together





# Exercise

## **Open a Terminal Window**

(We'll need this for the command line interface)

- Through the applications menu (the Red Hat)

Applications (Red Hat) -> Accessories -> Terminal

- Right click on the desktop and choose Open Terminal



# Exercise

## **Registering a System with RHN**

```
# wget http://cyclops.iastate.edu/pub/bootstrap.sh
```

```
# sh ./bootstrap.sh --register <activation_key>
```



# Exercises

## yum

Which packages have I not installed?

```
# yum list available
```

How do I see every package available?

```
# yum list all
```





# Exercises

## The Web Interface

- Login to *rhn.redhat.com* with your RHN account ID (**isu-NetID**)
- Where to change your password?

Click on *Your Account* on the left side of the page

- How do you request that Red Hat notify you of new updates and the status of your systems?

Click on *Your Preferences* on the left side of the page



# Exercises

## The Web Interface

- What Red Hat channels are available?  
Click on *Channels* at the top of the page
- What packages are available in the Red Hat Enterprise Linux Server 5 for 32 bit x86 channel?  
Click on *IA-32*  
Click on *Packages* at the top of the next page
- Find the ISOs  
Click on Channels; Click on *Download Software* on the left side  
Click on *Red Hat Enterprise Linux v.5 for 32 bit x86*



# Exercise

## Finding Information About Your System

Find your system

Click on *Systems* at the top of the page

Locate your system in the list

OR

Enter your system's name in the search box

Click on the system name.

Click some tabs at the top of the listing and explore your system



# Exercise

## Applying Errata

Find the Errata for your system

Under the system's name click on *Software* and then click on *Errata*

Schedule errata updates

Click the check box next to one or more errata

Click the *Apply Errata* button at the bottom of the page

Click the *Confirm* button at the bottom of the next page



# Exercise

## Applying Errata

Force the system to check with the RHN (or wait four hours):

In a terminal window run

```
# rhn_check
```



# Exercise

## **Automatic Errata Updates**

Find your system

Click on the *Details* tab

Click on the *Properties* Tab

Click the check box next to *Automatic application of relevant errata*

Click the *Update Properties* button at the bottom of the page



# Exercise

## Subscribing to Channels

Find your system

Locate the **ISL** (*Iowa State Linux*) channel:

- Click on the Software tab

- Click on the *Software Channels* tab to show the channels available for your system

Examine the contents of the channel:

- Click on the *Info* link next to the name of the channel

- Click on the *Packages* tab at the top of the page

- Click on a package name

- Click on the *File List* tab at the top of the page



# Exercise

## Subscribing to Channels

Find your system

Locate the **ISL** (*Iowa State Linux*) channel

Subscribe your system to that channel

Click the check box next to *Iowa State Linux Server*

Click the *Change Subscriptions* button at the bottom of the page





# Exercise

## Installing Packages

Install a package from the Iowa State Linux channel:

At a terminal window, enter:

```
# yum install isl-base
```



# Working With Groups

Using one *activation key*, you can manage several systems

Systems become associated with a **System Group**

Errata for a System Group can be applied with one action

System Groups and collections of individual systems can be manipulated simultaneously as **system sets** with the **System Set Manager**



# Exercise

## Viewing Systems and System Groups

At the Red Hat Network web site click on the *Systems* tab at the top of the page

Click on the *Systems* link on the menu on the left side of the page

View only out-of-date, inactive or unentitled systems by using the links in the submenu on the left side of the page

Click on the *System Groups* link on the menu on the left side of the page



# Exercise

## Using the System Set Manager

Click on the *System Groups* link or the *Systems* link on the menu on the left side of the page

For groups:

Click the *Use Group* button to the right of a system group name

For individual systems:

Click the check box next to the system name, click *Update List* at the bottom of the page and click the *Manage* button at the top right of the page or click the *System Set Manager* link on the left side of the page



# Exercise

## Using the System Set Manager

Apply errata updates to the system set:

- Click the *Errata* tab at the top of the System Set Manager page
- Click the check box next to the errata you wish to apply
- Click the *Apply Errata* button at the bottom of the page
- Do NOT schedule the update

Verify any updates later by choosing the system and clicking the *Events* tab at the top of the page



# Other Packages

## External APT/Yum Repositories

Red Hat doesn't have EVERYTHING

Sometimes you need to install other packages from other repositories.

**APT** is another method for installing and managing systems and dependencies.

We maintain a mirror of several repositories at

<http://rh-mirror.linux.iastate.edu>



## Other Packages

### Example: Dag Wieers Repository

**yum** can not only “talk” to RHN, it can talk to other **yum** repositories

Add a file to `/etc/yum.repos.d` called `dag.repo` with the lines:

```
name=Dag RPM Repository for Red Hat Enterprise Linux
baseurl=http://dag.linux.iastate.edu/dag/redhat/el5/en/$basearch/dag
gpgcheck=1
enabled=1
```

(We already did this when we ran **bootstrap.sh**)



# RHN Alert Applet

## Pup and Puplet

Red Hat Enterprise Linux 5 has a graphical (GUI) front-ends for **yum**

- **pup** – **P**ackage **U**Pdater
- **pirut** – **P**ackage **I**nstall **R**emove and **U**ppdate **T**ool

Windows users may like “reminders”:

**puplet** is an alert icon that pops into your tool bar when updates are available. Clicking on the **puplet** icon starts up **pup**





# Exercise

## Pup and Pirut

### Pup

- In a terminal window, enter **pup**
- Choose Applications (Red Hat) -> System Tools -> Software Updater

### Pirut

- In a terminal window, enter **pirut**
- Choose Applications (Red Hat) -> Add/Remove Software