

# Setup and Installation for Partek Flow

## Preliminaries And Prerequisites

- I. Check the computer to see if it is running a RAID (always assume it is unless you have absolute confirmation otherwise).
  - A. If it is a laptop, see if there is a peripheral hard drive attached, and look for software RAID managers
  - B. If it is a desktop (or server), check for peripheral hard drives, but also check for hardware RAID controllers. The simplest and most definitive method is to reboot the computer, and watch during the boot cycle, but if this is not a recommended step, other possibilities are:
    1. Check in /opt for MegaRaid or some variant. This usually indicates a hardware RAID has been configured, however, MegaRAID may or may not be controlling it
    2. To start the RedHat GUI, type `start -- :n`
      - a) where n is a number greater than or equal to 0 that designates the X-session (the default is 0), there can be a maximum of 10 at one time
    3. Check for commonly used software and hardware RAID controller software. Note that Windows and RedHat usually will not “see” a RAID, unless it was configured within it. RedHat and other Operating Systems recognize a RAID as a single volume during the installation process.
    4. As a last resort, check the partitions with `cat /etc/fstab`, `diskutil list` or a similar command. If a computer is configured with a RAID, it usually will have 2 hard drives that are listed in the partition table.
  - C. There is no “simple” advisory for installation on a computer with a RAID. The briefest of explanations is if a RAID 0 is used for the OS, and the data is stored on a RAID configuration with redundancy, such as RAID 1 (mirroring, one drive failure allowed), or RAID 5 (stripe with mirroring, 1 drive failure allowed), then the data will be reasonably safe, but the OS should be backed up if possible, since striping offers no redundancy or parity.
  - D. Obviously, check the hardware and the OS specifications to ensure that all are met. The following will serve as a reference for installing RedHat on a computer with a RAID 0 for the OS, a RAID 5 for the data, which will run Partek Flow. Modifications can be made for a computer not running a RAID, or for a different operating system like Ubuntu.
- II. Download RedHat Workstation from TigerWare
  - A. This can be accomplished by authenticating with mylsu, then starting the download process. Note that occasionally the download will fail to start.
  - B. It is also advisable to apply for a RedHat Satellite account to administer the workstation; details are listed in Tigerware on how to accomplish this
- III. Download the reference docs for the RedHat Installation and Partek Installation
  - A. Since there may be variations between versions, and the software may change, this is also strongly advised. The Partek Flow installation document can be found here: <http://www.partek.com/html/PartekFlow/PartekFlowInstallationGuide.pdf>  
The RedHat installation guide can be found both at TigerWare, and on RedHat’s site (registration may be required).
- IV. Copy the Partek License number. It usually is located at:  
/home/flow/.partekflow/license/Partek.lic  
However, it may be in a different location, and can also be accessed from the Partek website.
- V. Setup the Installation media

- A. There are several media; the two that are necessary are a minimal boot (ending in ...boot.iso), and an installation dvd (ending in ...dvd.iso). Copy the minimal boot .iso to a flash drive using the command `dd if=/path/to/iso.iso of=/dev/diskNotPartition` and then burn the Installation media to a DVD, via command line or other means.
  - 1. If an optical drive is not present in the computer that will be installed, or unexpected problems arise, it is possible to also image a flash drive with the installation media, however, do not boot from this flash drive (use the minimal boot).
  - 2. Notes for creating the installation DVD:
    - a) Do **not** use Ubuntu to burn the installation disk. Use either RedHat, Windows, or MacOSX (there are unfixed errors with the burn software in Ubuntu).
    - b) Do not attempt to create a CD/DVD master image from a flash drive of the installation media.
  - 3. If a flash drive is used in place of an installation DVD:
    - a) A minimal boot USB drive **must** be used to boot the computer, and the USB flash drive must be inserted after the initial boot
- VI. Copy the network server information, and the network NFS mount information for BigNAS
  - A. The computer is set up with DHCP, but it is a good idea to copy all network settings
  - B. Copy all information (mount for BigNAS, etc.) either in RedHat GUI, /etc/mnt , or fstab
- VII. Backup all data before beginning

## Installation or Reinstallation of RedHat

- I. Reboot the machine
- II. Enter the BIOS (usually F12), and check to make sure that an optical drive is set first in the Boot order, or if using a minimal USB Boot drive (this is not recommended for RedHat Installation), that the USB is set first-it may have the option of "USB Emulation". Save and exit to reboot the machine.
- III. The computer should boot to a screen like this:



Select the option to Install or Upgrade.

Note: If you are using an optical drive, you may see a step before this asking to check the disk with anaconda. This step is strongly advised.

- IV. Select the Language (English), the Time Zone (America/Chicago), and Select a nontrivial root password.
- V. In a screen that asks what type of device will the installation involve, select **Specialized Storage Device**.

What type of devices will your installation involve?

**Basic Storage Devices**  
☐ Installs or upgrades to typical types of storage devices. If you're not sure which option is right for you, this is probably it.

**Specialized Storage Devices**  
☒ Installs or upgrades to enterprise devices such as Storage Area Networks (SANs). This option will allow you to add FCoE / iSCSI / zFCP disks and to filter out devices the installer should ignore.

Back Next

In the screen that follows:

- A. If you are upgrading/reinstalling an existing installation, for example, upgrading the operating system but not altering the data, **and** the operating system is on a different drive or RAID, select both the drive that will have the OS installed on it, the drive with the Data (note that a RAID may not be specifically named in this screen), and the drive with the installation media.
  - B. If you are doing a full (clean) installation, select the drive that will have the OS installed, and the drive that will have the data, if there is a difference.
- VI. In the screen that asks what type of installation that you would like, select “**New Installation**”. This will take you to a screen that will prompt you to select which drives will be used for the installation. If a drive has data that will be used but not modified (for example, from an existing installation), select the appropriate drive to mount but not install, and the appropriate drive to install.
- VII. For installation, this step has some flexibility, depending on how you would like to setup the installation.
- A. The following mount points are required (and should be listed already):
    - 1. /
      - a) this is root, see “B” for more information and sizing guidelines

2. /boot
  - a) self explanatory, the size can generally be left at the default (1 GB is more than enough)
- B. Other requirements are:
  1. swap
    - a) this is not a mount point, but must be created. Additionally, Partek requires a minimum swap space of 32 GB (more is better)
  2. /opt
    - a) this can be set as a mount point, for example, if /opt/unbundledApps were used as a mount point for installation on /opt/unbundledApps/otherStuff. Partek requires /opt to have a minimum size of 100GB, and unless a specific or highly customized installation is being created, /opt should simply be included as part of /root , and /root should have at least 120 GB of storage space.  
See <http://docs.oracle.com/cd/E19455-01/805-7228/6j6q7ueup/index.html>
  3. /home
    - a) this is the location for data, and can be either stored on the same hard drive, or a second hard drive. /home **can** be set to a different mount point after installation, but this is not advisable (at all!), and Partek specifically states that installations with the OS in a different location on the network from the /home run into trouble with this type of setup.
- C. If you are performing a clean installation:
  1. Set mount point /root to 120GB or more
  2. Set mount point /home to the desired location (see above, usually the other hard drive)
  3. Set swap to 40 GB or more
- D. If you are upgrading the installation
  1. Make sure you backed up everything
  2. Set mount point /root to 120 GB or more
  3. Set mount point /home to the existing location of /home
  4. Set swap to 40GB or more
- E. Double check the before proceeding, because this is a “point of no return”; this will modify the partition table(s) and delete data
- F. The next screen will ask to confirm settings, then install.
- G. After installation, be sure to register with the LSU Red Hat satellite at  
`rpm -ivh http://satellite.rhn.lsu.edu/pub/rhn-org-trusted-ssl-cert-1.0-1.noarch.rpm`  
 then

```
rhnreg_ks --serverUrl https://reg018.hpc.lsu.edu/XMLRPC --sslCACert /usr/share/rhn/RHN-ORG-TRUSTED-SSL-CERT --username empl-jcaskey --password hfeUecQ31xBq
```

replacing username and password as appropriate

- H. Other:
  1. The admin account may need to be added to shuders; this must be done as root by:
    - a) visudo
    - b) enable wheel
    - c) `usermod -aG wheel USERNAME`
  2. The Network configuration will need to be checked/completed:
    - a) hostname and ip as appropriate

- b) create a new eth0 or em0 (they are synonymous) to automatically connect on boot:  
`nm-connection-editor &`  
Copy the MAC address with `ifconfig`
3. Setup network drives by

## Installation of Partek

Reference url

- I. Retrieve the Partek yum repo configuration:  
`sudo wget -P /etc/yum.repos.d http://packages.partek.com/redhat/stable/partekflow.repo`
- II. Install Partek Flow:  
`sudo yum install partekflow`
- III. Configure Partek Flow to verify the RAID installation is accessing correctly, to access the Network server BigNAS, and other installation options:  
`/etc/partekflow.conf`

Additional Notes:

- Partek Flow is set up with user flow group partekflow , and any data files must be changed to be owned by this user. Note that the only way to access the /home/flow folder by command line is by root or sudo, **however**, any files that will be used by Partek Flow must be changed as follows:  
`chown -R flow:flowuser directoryname/`  
Doing so will allow the files to be accessed by the Partek Flow Web UI. For best results, these files must also then be moved to the .../PartekFlow directory. To restore a previous Partek Installation, you must reinstall the parted db file (found in /home/flow/.partekflow), typically by overwriting the existing files (note: stop Partek Flow with *service flow stop* before you do this or very bad things will occur )
- With RedHat, iptables must be saved after changes by typing  
`/sbin/service iptables save`  
in addition to restarting (flushing) the iptables rules with  
`service iptables restart`
- Be sure to add both the network file server (Big NAS) and the RAID to /etc/fstab
  - for the RAID, use the UUID (make **sure** to copy it before starting uninstall/reinstall; it will not change as long as it was not reformatted) with ext4, defaults, and 1 2
  - for the NAS, create a mount folder as a mount point, then use:  
volume.location.com:/volume1/directory /mnt/here nfs defaults 0 0

Notes 9/12/15

- restoring the Partek DB had mixed results:
  - the pipelines were visible, however, Partek could not “see” the data, as was originally feared
  - additionally, before fully launching Partek Flow, it needs to be pointed to Big NAS for the output directory, AND Big NAS needs to be cleaned/compressed, because it is running out of space
  - In theory, either the DB file that Partek uses could be modified to reflect the updates and upgrades, or the correct directory could be recreated for the files-it does not appear that Partek recognizes or has even created a PartekFlow directory

## Notes 1/6/16

- If the genelabs1 (RedHat) server is rebooted, the following steps must be performed **before** restarting Partek Flow via *sudo service partekflowd restart*  
login as sudo, then login as the user flow via *su flow* , then run  
*ln -s /media/archivehome/flow/FlowData /home/flow/FlowData/storeFlowData/flow/FlowData*  
*mount genelabnas01.cct.lsu.edu:/volume1/PartekDataDrop /home/flow/userDataDrop*
- IMPORTANT: If Partek Flow is restarted before the following steps are completed, it will create a folder called "FlowData" at /home/flow/FlowData/storeFlowData/flow/FlowData  
Take the following steps if this occurs:
  - 1) Stop Partek Flow via *sudo service partekflowd stop*
  - 2) Delete (only) the "FlowData" directory at /home/.../flow/FlowData, and (only) any directories or files that have been written to that directory
  - 3) run the *ln -s* and *mount* commands above
  - 4) Restart Partek Flow via *sudo service partekflowd start*