

Linux 6.1 and VNMRJ3.2A Installation

By Shaoxiong Wu, Emory University

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Objective:

To Install RedHat 6.1 and VNMRJ3.2A on HP Z420 workstation that will work as the host computer to operate the NMR --- Mercury 300 (4 Nucs only console)

Materials:

REDHAT –Workstation 6.1-x86_64-boot.iso --- this is a boot disk to start.
rhel-workstation-6.1-x86_64-DVD.iso ----- this is the software disk.
(both DVD can be copied from original disc)

Agilent NMR Software VnmrJ3.2A for Inova and MercuryPlus Software DVD
P/N G9291-60002 Just one disc. To install VNMRJ3.2A on VNMR5, there is another DVD. But you need this disk to start.

For VNMR5 NMR system: Agilent NMR Software VnmrJ3.2 P/N G5028-60002 ----- VnmrJ 3.2 Linux
RHEL 5.3/6.1 Note. You still need above DVD G9291 to install, since the folder “agilent_preinstall”
is in there, but not in G5028.

Instruction:

Installation procedure:

1. Linux 6.1; two DVDs.
2. Disable Selinux security, Internet connection by using eth0.
3. Preinstall vnmrj, you need vnmrj DVD (both) and Linux software DVD;
4. Install VNMRJ3.2.
5. Install VNMRJ3.2 Patches;
6. Install printer;
7. Configure the eth1 to connect the console.
8. #setacq, load shims and config the console, makesuacqproc;
9. Configure hosts /etc/fstab and server's /etc/exports, hosts.allow to get on the server.
10. Shim and Calibrate the system;
11. Write macro: loadshim, goserver;
12. Add users; and update users

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13: dbsetup, sudoins.

14: Edit experiment options for user.

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Part One ---- Linux OS installation

1. The HP Z420 delivered with window 7 installed. After power on, insert the disk the boot disk. Power off and then power on the PC again to boot on the Linux installation disk. (boot disk: rhel-workstation-6.1-x86_64-boot.iso.

This file is downloaded from redhat website, license fee \$179. After download it and write a CD for the boot, and the installation DVD: rhel-workstation-6.1-x86_64-DVD.iso)

2. Select the first line: [install or upgrade an existing system](#), then press return. There are some activities on the screen.

2. After the screen come up, select test, after the test, there some message displayed on the screen, then press OK. eject disk, then;

3. Insert the RHEL 6.1 installation -6.1 x86_64-DVD.iso then select test. The computer will test the CD, or select skip to skip the test. It takes about few minutes to test the CD.

4. Select continue to load the software. Click next at the right corner. Select : **Basic storage devices**, then click **next**.

--- select English, next. Select US English next ; Basic storage devices. Next

--- Fresh Installation next; type the name of the host computer such as m300;or inova400;or i600-I at the hostname, next

---select America/New York next ;

--- root passwd ---- ch next

--- Select Use all space; select write changes to disk
Format----- it takes few minutes.

5. Select [desktop](#).

Start installation. It takes about 10 minutes.

The last message: congratulations, your red hat linux installation is completed. The CD will be ejected and ask for reboot.

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After reboot, you have to setup few things.

1. click forward, agree License information,

2. software update ---- forward

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3. User name: swu do not use network login then forward
 4. De-set the date and time sync the date and time.
 5. disable the Kdump
- reboot again, it takes a little patient on the boot up screen. This time it will be at login screen.

Note: first reboot may stopped at some point with smaller letters. Because the DVD is still in the driver. Make a hard power off and turn on again. In this case, you make a hard power off and power on again. *After the installation: it requires reboot. The screen will stopped at some point (see picture), turn power off, turn it on again. The computer will reboot again.*

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LOGIN AS ROOT:

before this step, you click the web browser, ---- server not found.

Setup the network : connect the Ethernet cable to eth0(on board port

Select System → preference →network connection → come up a window.

Select the eth0 click edit. Select connect automatically,

Method: manual click add: to add an IP address: 170.140.###.##

- 255.255.252.0 170.140.188.2 170.140.1.1
- then click apply and close the window, now you should be able to connect to internet.

The Linux 6.1 installation is completed at this point.

[Part Two --- Disable SELinux](#)

Before you can install VNMRJ, you MUST do the following:

disable the SELinux

After load the Linux, you have to disable the SELinux that is a security policy

Login as root:

Vi /etc/selinux/config

Change the line: SELINUX=enforcing to SELINUX=disabled

Save the file and then reboot

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@@@@@@@@@@@@@ this part is not necessary for Mercury and

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Part ??????

INOVA600. No effect so far for installed system.

Not sure about this part, if we have to install it or not.

Install the Nvidia driver: Use a PC to download the file from Nvidia website:

NVIDIA-LINUX-X86_64-331.67.run this is the newest at the time.

Save the file on a USB and then move the file to the /root

Login as root:

In the terminal type: #/sbin/init 3 the screen will be back and come up login:

i600-I login: root and /passwd

At the prompt # sh ./NVIDIA-Linux-x86_64-331.67.run

The file will be installed. select accepted for the license agreement. There are few errors about cc, ignore them then press OK. It will back to the root prompt #.

Then type /sbin/init 5 the screen will back to the Linux login screen. Login as root again.

To check the NVIDIA installation:

#dsmk status It should display Here is not right!!

Part 3 ----- VNMRJ installation

VNMRJ3.2 installation:

Login as root. Insert DVD Agilent VNMRJ3.2 for INOVA and MercuryPlus software DVD PN# G9291-60002

Open a terminal:

#cd /media/vnmrj_32a (THIS IS FOR INOVA AND MERCURY)

#./load.nmr -----load some files in /tmp

Error Message and How to avoid it:

(for VNMRJ400, there is a little different:

#cd /media/G5028-60002

./load.nmr)----- for VNMRJ 400

messages.....

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vnmrj required RHEL package "libX-devel.i686" not installed
vnmrj required RHEL package "rsh-server" NOT installed.

...

Standby it takes few minutes to load the file to the hard disk.

.....

Note: You have to close the folder of the DVD and then click eject.

After few minutes, there is a message, ask you to install Linux package:

*"There are RHEL packages required by Vnmrj that are not installed
VNMRJ Installation can not proceed until required Linux packages are
Installed.*

Please following the instruction below to install the Linux package:

Eject the VNMRJ installation CD and go to the directory

*/tmp/agilent_preinstall Insert your systems RHEL installation DVD and run
the installpkgs script:*

*Cd /tmp/agilent_preinstall /tmp/varian_preinstall --- do not use this
one!!! On the vnmrj32A installation CD, there is no file called
agilent_preinstall, but there is a file called varian_preinstall. Do not use it to
install VNMRJ32. Instead, load the file agilent_preinstall from other CD to
the /tmp. Use this one to install VNMRJ32 for V400.*

./installpkgs

*after completion Eject RHEL DVD, insert the VNMRJ CD and start the Vnmrj
installation."*

Instructed to install Linux package:

Eject the vnmrJ DVD and go to /tmp/agilent_preinstall. Insert the Linux
DVD.

RHEL installation DVD and run the installpkgs script

Cd /tmp/agilent_preinstall (make sure your Linux DVD (2) is in the
CDROM)

#!/installpkgs it takes about 10 minutes

%%%%

the following error, because using the varian_preinstall:

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after completion eject the RHEL DVD, and put the VNMRJ_32A DVD BACK to CDROM. VNMRJ required RHEL package 'rsh' not installed it happed with VNMR400 installation, not in the inova installation. ??????????????

Problem solved: *you must use agilent_preinstall to load Linux files. On the VNMRJ3.2 for VNMR5 disk, there is a file called varian_preinstall, this is not work. You can load the file from Mercury VNMRJ3.2A disk. Then use it to load Linux files.*

@@@@@@@

Loading NMR software:

then insert the VNMRJ DVD, #cd /media/vnmrj32 then #./load.nmr

Starting the vnmrj installation program ...

A window will come up. Select inova or Mercury software to install. DOSY requires a password to load the software.

Vnmrj home directory /home/vnmrj_3.2_A

It takes about 15 minutes. Click DONE. Logout root.

After completed, you need to install Patches for vnmrj32A.

Logout and login as vnmr1 - no passwd at the first time login.

@@@@@@@@@@@@@@@@@@@@

Note: If it stopped at about 95%. De-select Chinese, Japanese, secure environment. load again. Successful!!! Reboot the system again.

[Part 4 ----- Install Patches](#)

Patch installation:

VNMRJ3.2 for inova system ---- patches can be downloaded from Agilent website

There are two files for Mercury system, there are patches for INOVA and VNMR5

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3.2_LNX_inova_102.ptc and 3.2_LNX_inova_102.readme

Or

3.2_LNX_mercury_102.pts and 3.2_LNX_mercury_102.readme

to install the patches, you must exit vnmrj and login as vnmr1

Use an USB or directly download above files from Agilent website.

Move the file to ~/vnmr1/NMR_software

in the terminal %patchinstall

```
~/vnmr1/NMR_software/3.2_LNX_inova_102.ptc
```

Installed for UNITY INOA spectrometers

Installing patch 3.2_LNX_INOVA_102

It takes few minutes and return a message: Patch 3.2_LNX_inova_102 installation completed.

```
Sudoins makesuacqproc as root
```

```
Dbsetup vnmr1
```

[Part 5 ----- Connect to Console](#)

Install the hostname etc.

Install the network card for NMR operation (You need second Ethernet card if this computer is used to operate NMR: it will be eth1.

Login as root

System → preference → Network connections in the window

Select eth1 the edit

Select connect automatically

Method Manual

iPv4 settings

10.0.0.1 255.255.0.0 10.0.0.2

170.140.1.1

170.140.2.1

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click apply then reboot

Modify the /etc/hosts

```
127.0.0.1 localhost localhost.localdomain localhost4
```

```
localhost4.localdomain4 inova600 or the console name.
```

```
:::1 localhosts localhost.localdomain localhost6 localhost6.localdomain
```

edit:

```
/etc/sysconfig/network-scripts
```

```
vi ifcfg-eth0 (mother board) ---- connect to internet:
```

edit the file

```
BOOTPROTO="dhcp"
```

```
DHCP_HOSTNAME="inova600" ----- name must match!!!
```

```
vi ifcfg-eth1
```

```
NETMASK=255.255.0.0
```

```
Vi /etc/sysconfig/network
```

```
NETWIRKING=yes
```

```
HOSTNAME=inova600
```

Afterreboot, login as vnmr1.

Double click the vnmrj icon. To launch VNMRj.

```
@@@@@@@@@@@@@@@@
```

Error may occur. Solved.

initial login VNMR1, there is no vnmrj icon:

go to terminal type vnmrj adm and updated the vnmr1 account

login vnmr1 again. Dbsetup

click the text icon, select trusted then everything is OK.

After completed: there is note:

If your system is a spectrometer

1. login as the vnmrj administrator account vnmr1

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2. exit all vnmr/vnmrj programs
3. Be sure Ethernet ports have been configured properly
4. selinux and firewall must be disabled
5. Run `/vnmr/bin/setacq root #./setacq`

After this step, you should reload the system parameters: lock frequency. Shims etc. the NMR should be ready to get proton spectrum.

Setup printer:

Login as root to setup the linux printer

Use `vnmrj adm` to setup the VNMRJ printer

Each user has to go to file – printer to select both printer and plotter to make it work.