

Tivoli on Linux

Installation & Pre-reqs

1. compress and uncompress required in /usr/bin. RH7.2 has ncompress on CD2. Without these, backups hang for ever and TEC installs fail (at least).
2. **odadmin start all** sometimes doesn't work - use **/etc/Tivoli/oserv.rc start**

Redhat 7.2 quirks

1. root's rm is aliased to **rm -i** which forces an interrogation; use **rm -f** to force
2. Use **Programs ->Settings -> Peripherals -> Keyboard** to increase the key repeat rate - 13 seems about right
3. vi on RedHat Linux tends to hide CR/LF problems - check whether vi is operating in dos mode (it will show **[dos]** at the bottom of the page. Use vi **-b** <file> to edit in binary mode which shows CR/LF.
4. Installing ITM 5.1.1 gives problems as it has issues with cpp in RH7.1 and 7.2. This work-around has to be applied before the installation process of ITM 5.1.1. The steps for the work-around are:
 - a. ensure cpp is installed if necessary - it should come in with gcc 2.96+
 - b. rename the preprocessor file: mv /usr/bin/cpp /usr/bin/cpp.orig
 - c. create a link to cat (symbolic or not) with the command:
 - ln -s /bin/cat /usr/bin/cpp
 - d. install the ITM 5.1.1
 - e. remove the link /usr/bin/cpp:
 - rm /usr/bin/cpp
 - f. rename /usr/bin/cpp.orig to the original name:
 - mv /usr/bin/cpp.orig /usr/bin/cpp
5. rexec (in fact all the "r" utilities) are disabled by default are require some hacking to get going. This means endpoints cannot easily be installed with winstlcf with rexec.
6. Use ps -efw or ps -efww to see long process listings
7. Acrobat is not installed by default on this distribution. This also means there is no integration with NetScape out-of-the-box to read NetView books.
- 8.

SuSE 9.1 Professional quirks

1. Pretty well all Tivoli javas are broken. TEC 3.9 FP2 seems to have a good one. It reports itself as JRE 1.3.1 (JIT enabled) cxia32131-20031021. To fix this:
 - a. tar up jre under \$BINDIR/TME/TEC (from a TEC 3.9 FP2)
 - b. tar up jre under any bad products eg. \$BINDIR/JRE/1.3.0 (for backup purposes)
 - c. remove jre subtree from offending product eg. \$BINDIR/JRE/1.3.0
 - d. untar tec jre bundle back here
 - e. restart oserv
 - f. The working java -version reports JRE 1.3.1 (JIT enabled) cxia32131-20031021
 - g. I have now created /usr/local/Tivoli/jane_java/jre with the TEC 3.9 FP2 tree in it and symlink all Tivoli requirements for java to this, eg.
 - i. cd \$BINDIR/JRE/1.3.0
 - ii. ln -s /usr/local/Tivoli/jane_java/jre jre

Installing DB2 on RedHat 7.2

1. Prerequisites
 - a. pdksh required - I used the one that comes with NetView - 5.2.14-8
 - b. libncurses.so.4 required
 - i. If you have libncurses.so.5 installed then use a symlink
 - cd /usr/lib
 - ln -s libncurses.so.5.2 libncurses.so.4
 - c. glibc 2.1 required
 - i. If you have 2.2 then install the following from RedHat CD 2
 - compat-glibc-6.2-2.1.3.2.i386.rpm
 - compat-egcs-6.2-1-1-2-16.i386.rpm
 - d. Ensure root has /sbin and /usr/sbin in PATH
2. Install DB2 7.1 Extended Edition with the db2setup command
 - a. It is not necessary to create user ids first
 - b. You will get a user **db2inst1** and a user **db2as** both in the group **db2asgrp**. Passwords will be set to ibmdb2. I have set home directories to **/db2** and **/db2as** respectively.
 - c. Install Fixpack 7. Before installing, do the following:
 - i. su - db2inst1
 - ii. Check that the db2profile has been sourced
 - iii. db2 force applications all

- iv. db2 terminate
 - v. db2stop
 - vi. db2licd end
- d. Use the command `./installFixPak` to install IBM DB2 FixPak 7.
 - e. After installation of the FixPak is complete, the IBM DB2 instance must be updated. To do this, enter the command:
 - i. `/usr/IBMDB2/V7.1/instance/db2iupdt db2inst1`
3. Add root to the db2 groups
 4. An entry gets put into `/etc/inittab` to run `/etc/rc.db2` on startup but not for run level 5 - edit `inittab` and add this (second field should read 2345)
 5. Increase maximum number of message queues
 - a. Edit the `/etc/sysctl.conf` file to add line to end of file
 - i. `kernel.msgmni=128`
 - ii. This sets the maximum number of message queues available to 128
 - iii. Reboot the system - `shutdown -hfr now`
 - iv. Logon as root and open a new console window.
 - v. Enter the command `ipcs -l` and look for
 - -----Messages: Limit ----- max queues system wide = 128

Installing DB2 on SuSe 9.1

1. DB2 8.1 doesn't seem to work with SuSe 9.1 because of Java problems - get a segmentation fault at `db2setup` command with `winges` about `JAVACLASSPATH`. Note that this is probably fixable using the Java documented above and an `is:javahome <java dir>` parameter at the end of the install command.
2. No extra pre-requisites installed. `pdksh` and `libncurses` not installed. `glibc` was already there.
3. Install DB2 7.1 Extended Edition with the `db2setup` command
 - a. It is not necessary to create user ids first
 - b. You will get a user **db2inst1** and a user **db2as** both in the group **db2asgrp**. Passwords will be set to `ibmdb2`. Take all defaults including to install Warehouse Control database
4. Follow instructions for RedHat for FixPack install, adding root to groups and `inittab` modification.
5. Follow RedHat instructions to increase maximum number of message queues. You may need to create `/etc/sysctl.conf`. This file is activated with
 - a. `sysctl -p`

- b. Check in /proc/sys/kernel for values
 - c. To ensure /etc/sysctl.conf is read at boot time, use Yast -> System -> Runlevel editor in **Expert** mode and set boot.sysctl to **B**.
6. Use ipcs -l command to view parameters
 7. Experienced complete hangups on db2 command (as db2inst1). Get DB21018E system error messages. Can't stop or start db2. Fixed with system reboot! I believe this was because the message queues described above did not persist beyond reboot as I had not done (5c) above.
 - 8.

Installing WAS and IBM HTTP SERVER (IHS) on SuSe 9.1 (Don't!)

1. The Linux WAS 5.0 CD does **not** install WAS and IHS cleanly for TEC 3.9. If you simply follow the TEC 3.9 web Console path and take defaults then it **says** it has installed but in fact hasn't.
2. There are various issues:
 - a. The Java version is wrong on the CD
 - b. IHS 1.3.26 is shipped with WAS 5.0 - apparently this does not work on RedHat 8.x or SuSE 9.x.
3. There are 2 good URLs for WAS and IHS installs on Linux:
 - a. <http://www-106.ibm.com/developerworks/linux/library/l-ss3-installwas5/>
 - b. <http://www-128.ibm.com/developerworks/library/l-ss3-http/>
4. Prerequisites are a pdksh, a compat package and netscape (or a different browser linked to the netscape command).
5. Install IHS first - I used version 2.0.47.1 following the above link for code and installation instructions:
 - a. Setup the path to the correct java
 - export PATH=/usr/local/Tivoli/jane_java/jre/bin:\$PATH
 - b. From untar'ed install directory, run **java -jar setup.jar**
 - c. Take the "Typical" option and all the defaults. It takes about 30Mb and installs into /opt/IBMIHS
 - d. Note that there may be a problem with symbolic links. Is -lia /usr/lib/libgsk* should point to /usr/local/ibm/gsk5/lib, **not** /ibm/gsk5/lib. My links were fine. If not then force the correct links - ln -sf /usr/local/ibm/gsk5/lib/* /usr/lib
 - e. IHS is started / stopped from /opt/IBMIHS/bin with **./apachectl start | stop**
 - f. Having gone this far with IHS, now install WAS
6. The web link above says to set the Java path and then install using **./Launchpad.jar**. This doesn't work because it calls its own, bad java. Start the install by changing to

the <install media>/linux386 and running:

- ./install -is:javahome /usr/local/Tivoli/jane/java/jre
7. You will get a message in time saying that the Operating System is not supported - continue
 8. Choose the **Custom** install option and select:
 - a. Application Server but **not** the Application Server samples
 - b. Administration and all sub options
 - c. Application Assembly & deployment Tools and all sub options
 - d. Do **not** install Embedded Messaging (MQ Series) or any sub options
 - e. Do **not** install the HTTP Server - we already have IHS 2.0 installed
 - f. Install web Server Plugins and the IHS Plugin but **not** the Apache plugin
 - g. Performance and Analysis Tools and all sub options
 - h. Java docs
 9. You will be prompted for the location for httpd.conf for the Web Server plugin for IHS. This defaults to the old (wrong) path. Change to **/opt/IBMIHS/conf**
 10. A message appeared complaining about an "Unhandled error preventing bean204 from displaying" and something about "linuxLibraryLinkActionBean could not loaded" - continue (and hope for the best!)
 11. After WAS says it has installed, back at IHS, modify /opt/IBMIHS/conf/httpd.conf to change the LoadModule line (at the end) to:
 - LoadModule was_ap20_module /opt/WebSphere/AppServer/bin/mod_was_ap20_http.so
 - 12. I have not made WAS 5.0 install with SuSE 9.1. Although it says it is installed, the server does not start**
 13. To uninstall WAS, go to /opt/WbSphere/AppServer/_uninst and run **./uninstall**. Note that this does NOT uninstall IHS 2.0. You will need to manually remove all the files under /opt/WebSphere.
 14. To uninstall IHS, go to /opt/IBMIHS/_uninst and run **java -jar uninstall.jar**
 - 15.

NetView on Linux

1. NetView has to be a non-TME install
2. Ensure that you install the pdksh that comes on the RPMS directory of the NetView CD. If you have a later version, all sorts of functions fail (eg. some serversetup commands).
3. Redhat 7.2 install

- a. I installed NetView, then various Framework products, then tried to install the NetView books. Failure in finding online_books.tar. Program is looking in /usr/OV/online_books/C and the tar file is actually in \$BINDIR/usr/OV/online_books/C. Hacked by copying tar file to where required. Install still fails but it appears to have worked.

NetView on SuSE 9.1 Professional Linux

1. The new Linux CD doesn't document pre-requisites very well. You DO need the pre-reqs documented under the standard "Linux Software Prerequisites" section in the standard Release Notes. I used the following on a 2.6.5-7.145 kernel:
 - a. binutils 2.15.90.0.1.1-31
 - b. inetd or **xinetd** 2.3.13-39
 - c. net-snmp 5.1-80
 - d. XFree86-Xvfb 4.3.99.902-40
 - e. pdksh 5.2.14-780
 - f. glibc 2.3.3-97
2. Ensure that xinetd is running. If not turn it on with chkconfig and start it:
 - a. chkconfig xinetd on
 - b. /etc/init.d/xinetd start
3. By default, the SNMP agent is shipped with a config file in **/etc/snmpd.conf**. This file **only** permits access from the loopback address using public. Modify this file to permit access from the NetView machine's external address - you can duplicate the loopback line and modify. For example, for the machine tino:
 - a. rocommunity public tino
4. Ensure that net-snmpd runs from reboot and is currently running:
 - a. chkconfig snmpd on
 - b. /etc/init.d/snmpd start
5. Check that the agent (tino) responds to SNMP:
 - a. snmpwalk -v 1 -c public tino
6. The pre-install check script, NVprereq.sh in the CD TOOLS directory checks explicitly for a sub-release of Linux. For SuSe, the check is for /etc/SuSE-release to contain "8.0", "8.1" or " 9 ". The latter is really <space>9<space>. A 9.1 version does not pass this test. I copied NVprereq.sh and modified the above test to remove the surrounding spaces around the "9", and ran my "NVprereq.sh server". This doesn't circumvent the unedited check on actual installation. Once you are confident that the pre-reqs **are** met, create the file **/tmp.noNVPrereqCheck** and then run the **instalnv -k SERVER** command and the **instalnv -k BOOKS**.
7. When first starting the NetView GUI it failed and there were lots of wings about

“GLIBC_2.0 not defined in libc.so.6”. This seemed to go away after exporting **LD_ASSUME_KERNEL=2.4.19**, even after this environment variable was reset. In general, NetView background and GUI processes run with **LD_ASSUME_KERNEL=2.4.1**.

8. The NetView online manuals assume that there is a `/usr/bin/netscape`. The standalone command for the online manuals is `/usr/OV/service/onlinebookchk` (a shellsript). This script makes a symlink to `/usr/local/bin/mozilla` if `/usr/bin/netscape` doesn't exist. To use Firefox, simply delete `/usr/bin/netscape` and put in a new symlink:
 - a. `ln -s /opt/MozillaFirefox/bin/firefox.sh /usr/bin/netscape`
 - b. It is not necessary to set the `MOZILLA_HOME` environment variable
9. The online manuals don't work because the `man` command expects to find files with names ending in a numeric suffix. For example `netmon` man pages are under `/usr/OV/man/man8` so the `man` command expects the file for `netmon` to be called **netmon.8**. To make the man pages work, rename all the files.
10. The new script, `/usr/OV/service/nvPerms` can be run to help lock down NetView security. It takes one parameter - a group name, members of which will still enjoy operator privileges. Note that there is no manual page for `nvPerms` (even though the Ficpack 2 Release Notes say there is!). There is also no backup of the original settings. This script breaks various things:
 - a. Online manuals - ordinary users lose execute permission to all directories, including `/usr/OV/man`
 - b.
11. The SuSe 9.1 `net-snmp` agent has OID `1.3.6.1.4.1.8072.3.2.10` which is not in the `/usr/OV/conf/C/oid_to_sym` file. Modify the file to add it - there is a suitable Linux entry right at the end of the file to copy.
12. Configuring TEC integration through `serversetup` seems to hang forever – the processes finally need killing. Create `/usr/OV/conf/tecint.conf` manually. This was resolved by installing the `pdksh` that comes on the NetView CD (5.2.14-8.i386.rpm).
13. `snmpserver` sometimes seems to get unparented which results in **ovstart snmpserver** failing to start the daemon. Check to see if a `java snmpserver` is already running, parented by process 1, and kill it manually.
14. `itmquery` appears not to work. “`itmquery --dump-endpoints`” returns a message saying “A JSSE provider is not available. Verify security.provider in java.security file correctly set. java.security file at `/usr/OV/jre/lib/security/java.security`”. The command seems prepared to list endpoints but not Resource Models that are running.
- 15.

Framework on Linux (general)

1. `odadmin start` doesn't work because of quirks with `xinetd`. This is a known issue on the Tivoli Support website. Download `xinetd_config.sh` from this website. Edit top

line from /bin/sh to /bin/bash. Make executable and run as root via “bash xinetd_config.sh”.

2. Framework 4.1.1 has the “-j” parameter for winstlcf which defines installation vis ssh. Documentation says you need openSSH 3.6.1 but I have it working with 2.9p2-7 on RedHat 7.2 and 8.8p1-37.17 on SuSE 9.1 . You need to modify the ssh client configuration file in /etc/ssh/ssh_config and ensure that StrictHostKeyChecking is set to no (the default is yes).
- 3.

Framework on SuSE 9.1 Professional Linux

1. Installation from the desktop dies if you select to install a product from a media directory that only has patches, and vice versa
2. The Java shipped with FW411 and FW411-FP02 do not work on SuSE 9.1 – this means both mdist and SIS GUIs fail.
3. To fix this, simply put in a symlink:
 - i. `cd $BINDIR/JRE/1.3.0`
 - ii. `ln -s /usr/local/Tivoli/jane_java/jre jre`
- 4.

TEC on Linux (general)

1. Ensure compress and decompress utilities are installed
2. Beware if Framework 4.1.1 is installed then the Install Wizard tree with base TEC 3.9 gives errors
3. TEC 3.9 lists DB2 7.2 FP7 and DB2 8.1 FP2 as supported; TEC 3.9 FP2 only lists DB2 8.1 FP2 as supported.
4. The logfile adapter for Linux seems to be based on an old Solaris one with some modifications for RedHat 6. It does not match well with /var/log/messages on either RedHat 7.2 or SuSE 9.1 Professional. This is on the Tivoli support database with a comment that it will be fixed in TEC 3.9 FP3.
- 5.

TEC on SuSE 9.1 Professional Linux

1. DB2 8.1 doesn't install on SuSE 9 – this seems to be a known issue. DB2 7.2 and Fixpack 7 seem to install fine. Taking all the defaults creates users db2inst1, db2fenc1 and db2as, all with password ibmdb2
2. Add db2inst1 as a login for the Root Tivoli Administrator
3. Logon as db2inst1 (su db2inst1 – using “su – db2inst1” causes X authorisation problems)

4. Use the Install Wizard tree from TEC 3.9 FP2 if Framework 4.1.1 is installed. Note that there is an issue getting the Java installer to run if the code is on a VMWare read-only shared folder.
5. Run the `tec_install.sh` script and install the TEC database. Ensure that the directory supplied to hold the database manipulation scripts, is writable and known. Select to generate the scripts but don't execute them.
6. If the scripts are run as-is, it bombs out after running the `cr_db.db2` script when trying to re connect to the tec database. The problem seems to be with the parameter in `cr_db.db2` which sets `num_ioservers` to 12. If you comment this line out it runs fine and `num_ioservers` defaults to 3. You will then need to run the `cr_tbl.db2` script.
7. Create the tec rim – don't omit the hostname parameter and put double quotes around the database home directory:
 - `wcrtrim -v DB2 -h `hostname` -d tec -u db2inst1 -H "/usr/IBMdb2/V7.1" -s TCPIP -I /home/db2inst1 tec`
8. Check the rim with “`wrimtest -l tec`”
9. Installing base TEC 3.9 products from `tec_install.sh` on the TEC 3.9.1 FP2 code tree, produces errors on the UI Server install when trying to run the `wconsole` command (this seems to be because the TEC java is broken). TEC Server seems to run fine.
10. Base TEC 3.9 Console is broken because java is broken.
`$BINDIR/TME/TEC/jre/bin/java -version` produces a segmentation fault!
11. To avoid problems with TEC java, install products in the following order. This is documented in TEC 3.9 FP2 as being applicable to Linux on zSeries but it also appears necessary for SuSE 9.1 on Intel:
 - TEC JRE 3.9
 - TEC JRE 3.9 FP2
 - Base 3.9 TEC Server, UI Server, Sample Event Info, Console, ACF
 - TEC 3.9 FP2 TEC Server, UI Server, Sonsole, ACF
12. If installation is done via Desktop or command line, there does not appear to be the issue that there is with the Installation Wizard with Framework 4.1.1.
- 13.

ITM on SuSE 9.1 Professional Linux

1. Installing ITM 5.1.1 gives problems as it has issues with `cpp` (as with RedHat). This work-around has to be applied before the installation process of ITM 5.1.1. The steps for the work-around are:
 - a. ensure `cpp` is installed if necessary - it should come in with `gcc 3.3.3-41`
 - b. rename the preprocessor file: `mv /usr/bin/cpp /usr/bin/cpp.orig`
 - c. create a link to `cat` (symbolic or not) with the command:
 - `ln -s /bin/cat /usr/bin/cpp`

- d. install the ITM 5.1.1 and ITM 5.1.1 FP6
- e. remove the link /usr/bin/cpp:
 - `rm /usr/bin/cpp`
- f. rename /usr/bin/cpp.orig to the original name:
 - `mv /usr/bin/cpp.orig /usr/bin/cpp`
2. Run the ITM task to link to an existing JRE, specifying /usr/local/Tivoli/jane_java/jre as the directory
- 3.
- 4.