

Getting Started With the Network Access Control System

Version 1 for Network Access Control System Release 9.0

Welcome

Thank you for purchasing this Network Access Control (NAC) 9.0 System. The NAC System enhances the basic security functionality of a mixed switch network. Security requirements are concentrated in an access controller. This component enforces user identification, authentication, access controls, and auditing by controlling user access to the network. User access decisions reside in this guard component, which controls connections through the network switch by issuing commands to the network controller.

This guide provides all the instructions you will need to install the NAC System. It provides instructions for new factory staged machines, software upgrades, software package system installations, and local and remote reinstallation. You will also need the **NAC System R9.0 Installation, Operations and Maintenance Guide**, as some of the instructions refer to the sections in this manual.

Unpack and Inspection

Before you get started, please verify that the contents of the box are as shown on the Detailed Content List. If any piece of your order is missing or damaged, please call 1-800-WE2-CARE (800-932-2273). Please do not proceed with the installation if some piece of your order is missing, unless the WE2CARE support technicians specifically recommend it.

Getting Started

This guide is broken down into several sections. You will need to refer to one specific section based on what you are installing or upgrading.

Before beginning the installation, here are some definitions of terms that you may see used throughout this guide when referring to your type of installation.

- **Setup:** All software has been loaded on to your new D-Class server machine by the factory. You must setup and configure the machine
- **Upgrade:** An upgrade is an installation on a machine which has an earlier version of the NAC system
- **Migration:** This term is used when you are moving your NAC software from an old machine to a new machine

Use the table below to help you decide which procedure you will be using:

Machine	Release of NAC	Procedure needed	hardware upgrade required	software required
D 370 Server	9.0	Setup	None	None
D 370 Server	7.0	Upgrade	None	all
HP C110	7.0	Upgrade	none	all
HP 715	7.0	Upgrade	Two 2-GB Hard Disks	all

1. Setup

Setup is required on all machines that were factory installed. A Factory installed system is one in which almost all of the NAC System software has been installed at the factory. Follow the procedures below to configure your NAC system.

1. Assemble all the hardware.
2. Turn on the computer. Power up the monitor and then the system unit. No special timing is necessary, just make sure you power up the system unit last. The machine will boot.
3. To get to the console login prompt, select the **Options** button and pick the **Command line login** option. Now login as root.
4. Enter the following command: **/sbin/set_parms initial** [ENTER]
5. When asked to connect the machine to a network, press: **y** [ENTER]
Enter the IP address of this machine. (Example: 123.122.111.333)
6. You will be prompted for the system name. For BNS-2000/BNS-2000 VCS networks, enter the name that was used to configure the CPM-HS module in the network switch. For LANs, this is the official host name associated with the machine's internet address.
7. Respond to the prompts to set the geographic location, time zone, time, and root password.
8. At the Console login: prompt, type : **root** [ENTER]
9. You now need to serialize the Informix software on your machine. Find the Informix-SQL and Informix-Online serial number cards. They should be with the Informix-SQL and Informix-Online tapes. You do not need the tapes now, just the cards. Be careful to keep track of which card is for Informix-SQL and which is for Informix-Online. It is suggested that you mark the cards to avoid confusion.
10. When you have the cards, execute the following commands:
cd /usr/informix
./installsqlrt
11. After a short delay caused by installation of some files, you will be presented with a "Greeting Message" by the Informix-SQL software. Type the serial number from the card provided with the Informix tapes:
<AAA#00000000>
Make sure you use the right card. The card itself is not marked Informix-SQL, only the tape cases are marked. If you lose track of which tape a card goes with, match the tape codes on the card and the tape case.
12. You will be prompted for the serial number key for the software. Type the serial number key as it appears on the card provided with the software:
<KEY-123>
13. You will be prompted to enter **RETURN** to continue. Press [enter]

The INFORMIX-SQLRT software will be installed and serialized.

14. You now need to serialize the Informix-Online software. Execute the following commands:
cd /usr/informix
./installonline
15. After a short delay caused by installation of some files, you will be presented with a greeting message by the Informix-Online software. Type the serial number from the card provided with the Informix-Online software:
<AAA#00000000>

Make sure you use the right card. The card itself is not marked Informix-Online, only the tape cases are marked. If you lose track of which tape a card goes with, match the tape codes on the card and the tape case.

16. You will be prompted for the serial number key for the Informix Online software. Type the serial number key as it appears on the card provided with the software:

<KEY-123>

17. You will be prompted to enter **RETURN** to continue. Press **[enter]**

The INFORMIX-Online software will be installed and serialized.

18. You need to set the password for the **sg**, **xport**, and **informix** users now. Type the following:

passwd sg

19. You will be prompted for the new password for the master SA user **sg**. Pick the new password and type it in at the password prompt.

20. You will be prompted to re enter the new password for user **sg** to confirm that you did not make a typing mistake. Re-enter the password you picked.

21. Follow steps 16, 17 and 18 again to set the passwords for **xport** and **informix**. Instead of using **sg**, use **xport**, then **informix** then **root**.

passwd xport
passwd informix

22. You are now done with the initial installation for a factory staged system. To continue the setup process, go to the "Installation and Maintenance Guide" chapter Installation and section 3 on how to customize your system.

2. Upgrading your NAC system on a HP D370, C110 or HP 715 computer

This section details the steps that must be executed to upgrade an existing NAC System to R9.0 on an HP D370 or C110 computer. Upgrades to R9.0 are supported for the RAC and CSAC and standalone NAC from R7.0 to R9.0 on a HP D370, C110, and 715 computer. It is not necessary to upgrade from any of these releases to any interim release prior to installing NAC System R9.0.

If you have a distributed environment, upgrades should be performed on the CSAC before a RAC is upgraded.

Follow the upgrade procedures in the order they are presented.

2.1 Required Software Packages

The following software tapes are required to upgrade a HP 9000 series 715,D370 or C110 computer to NAC system 9.0:

- NAC R9.0 tape (if you have a standalone system)
- RAC R9.0 tape (if you are upgrading a distributed system)
- CSAC R9.0 tape (if you have a distributed system)
- Web Application Tape (this is required for Web-based GUI)
- Plug-ins R9.0 CD (this is required on your PC for the Netscape browser)

2.1 Required Hardware

If you have a HP 715 machine with (2) 1 GB disks, you must upgrade to (2) 2 GB disks. Please contact your hp support team to install your new disks. We recommend using 2GB Single-ended disks for the 715.(HP A4948A)

NOTE: It is very important to backup your database, NAC configuration files and any other files you wish to save, before installing the new disks. If you do NOT backup your data, it will be lost. Follow the procedures below before upgrading your hardware.

2.2 Backing Up the Database

The first step in the upgrade procedure is to save your current NAC database so that it can be converted to the NAC R9.0 format. Use the following procedure:

1. Log in as root on the system console.
2. If the NAC application is running, stop it now. Type in the following:
su - sg [return]
rnac -k [return]
exit [return]

3. Make sure that the Informix database server is running. Type:
su informix -c /usr/informix/bin/tbstat

The state of Informix appears after the first two hyphen characters. It should be On-Line. If INFORMIX is not on-line, execute the following procedure:

```
/bin/sh /etc/init.d/turbo stop [return]  
/bin/sh /etc/init.d/turbo start [return]
```

4. Create a backup directory for the NAC database. Type in the following commands:
rm -rf /usr2/nac_db_backup [return]
mkdir /usr2/nac_db_backup [return]
chown sg /usr2/nac_db_backup [return]
chgrp sg /usr2/nac_db_backup [return]
chmod 775 /usr2/nac_db_backup [return]

5. Become user sg, by typing:
su - sg [return]

6. Unload the nac database, by typing in the following commands:
cd /usr2/nac_db_backup [return]
dbexport -q nac [return]

7. When the database has been exported, examine the */usr2/nac_db_backup/dbexport.out* file for error messages.

8. Return to the root login by typing:
exit [return]

The backup of the NAC database is complete. Continue with the next section.

2.3 Removing the NAC/RAC/CSAC Application Software

The next phase in the upgrade process is to remove the NAC system NAC/RAC/CSAC application from the machine. Use the following procedure:

1. You should be logged in as **root** on the machine.

2. Make sure that the NAC System application is not running.
3. Make sure that the Informix database server is running. Type:
su informix -c /usr/informix/bin/tbstat

The state of Informix appears after the first two hyphen characters. It should be On-Line. If INFORMIX is not on-line, execute the following procedure:

```
/bin/sh /etc/init.d/turbo stop [return]  
/bin/sh /etc/init.d/turbo start [return]
```

4. Drop the nac database by typing:
su - sg [return]
dropdb -d nac [return]
5. If you are upgrading a NAC or CSAC, drop the audit database by typing:
dropdb -d audit [return]
exit [return]
6. Go to the */usr/sg/etc* directory by typing:
cd /usr/sg/etc [return]
7. Remove all Network Access Control System add-in packages from your machine. Add-on packages must be removed first. For each add-on package, execute:
./uninstall [return]

Enter the number for the package you want to remove.
You must repeat this operation for each add-on package that is installed.
After removing all of the add-on packages, remove the NAC application.

The uninstall program will automatically save the audit, message and script files for later restore.

8. Go to the root directory by typing:
cd / [return]

The NAC System application software has been removed. Continue with the next section.

2.4 Saving the database and NAC files to tape or machine

Execute the following commands:

1. **mkdir /usr/sg_s/back**
2. **mv /usr2/nac_db/nac.exp /usr/sg_s/back**
3. Insert a blank tape in to the tape drive
4. Execute the following commands:
cd /usr/sg_s
find . -print | cpio -ocuvd > /dev/rmt/0m

You can also back up the files to another machine or external disk.

2.5 Loading The NAC System Software

You are now ready to load the NAC software. Insert the correct tape into the tape drive. (NAC, RAC or CSAC) and follow the instructions below:

1. Log in as root on the your machine
2. Insert the tape labeled NAC, RAC or CSAC into the tape drive.
3. Wait for the blinking light on the tape drive to stop blinking

4. Type in the following commands:
mkdir /tmp/nac
cd /tmp/nac
cpio -icuvdBm </dev/rmt/0m

Wait for a list of files to be read-in. When you see the Unix prompt, type the following command:

./nacinstall

You will be prompted to enter a password for `sg` and `xport`. The installation script will now complete with no further interaction. This should take about 10 minutes.

2.6. Loading the Web Application Package

There are two packages that needs to be loaded:

- Xitami Web Server
- JAVA Runtime Environment

Note: Section 2.6 can be done at any time i.e. before or after NAC installation because it is independent of NAC installation and upgrade.

Instructions for installing xitami Web server

1. Log into the NAC server as root.
2. Insert the tape labeled "WEB-Application Package".
3. Execute the command **cd /opt** to change to directory **/opt**.
4. Execute the command **tar x xitami_web_server**.
All files will be extracted from the tape to the **./xitami_web_server** directory.

Instructions for installing the java run-time

1. Log into the NAC server as root.
2. Insert the tape labeled "WEB-based Packages".
3. Kill and disable the *tbtape* process if it is running.
4. Execute the command **tar x jre11800wjpi_os10.depot**.
The `jre11800wjpi_os10.depot` file will be extracted from the tape to the **/tmp** directory.
5. Execute the command **/usr/bin/cksum /tmp/jre11800wjpi_os10.depot** and verify the result is:
192698267 31744000 jre11800wjpi_os10.depot
6. Execute the command **/usr/sbin/swinstall&**
Wait for the *SD Install - Software Selection(host)* window to appear.
If the *Specified Source(host)* window also appear, click the *Cancel* button to close the window.
7. From the *SD Install - Software Selection(host)* window, select *Change Options...* from the *Options* menu to bring up the *Options(host)* window.
8. From the *Options(host)* window, unselect "Mount filesystems..." and select "Reinstall filesets even...". Click the *OK* button to close the window.
9. From the *SD Install - Software Selection(host)* window, select *Change Source...* from the *Action* menu to bring up the *Specified Source* window.
10. From the *Specified Source* window, click on the *Source Depot Type* drop-down menu and select "Local Tape". Again, from the *Specified Source* window, click on the *Source Depot Type* drop-down menu and select "Local Directory".
Verify the *Source Host Name* field contains the name or the IP address of the node.
Fill in the *Source Depot Path...* field with **/tmp/jre11800wjpi_os10.depot**.
Click the *OK* button to close the window.
11. From the *SD Install - Software Selection(host)* window, verify that an entry labeled as, "B5458DA -> C.01.18.00 HP-UX Java* Runtime..." appears.
Click on the entry to hi-light it.

From the *Action* menu, select *Mark For Install*. The word, "Yes" appears under the *Marked* column and the entry is no longer hi-lighted.

From the *Action* menu, select *Install(analysis)* to bring up the *Install* window.

12. From the *Install* window, verify the source and destination information is correct then click OK to begin the installation.

When the installation stops, click on the *Product Summary* and *Logfile* buttons.

Under *Logfile*, there should not be any errors. Warnings are OKAY.

Under *Product Summary*, you should see:

Java-Jre1-1	C.01.18.00	Installed	Ready
Java-PlugIn1-1	C.01.13.00	Installed	Ready

13. From the *Install* window, click on the "Done" button to close the window.
14. From the *SD Install – Software Selection* window, select *exit* from the *File* menu to exit the *swinstall* application
15. Change the directory to `/opt/java/jre`
16. Read the `jre.release.notes` for important license and setup information
17. Move the `jre.tar.Z` to under the `/opt/java` directory
18. Execute `zcat jre.tar.Z|tar xvf -` to uncompress and extract files.
19. Locate and verify that the `bin` and `lib` directories/files exist under `/opt/java/jre`.

3.0 Converting the database on a NAC or CSAC

You should now convert the NAC and CSAC databases to R9.0 format. If your NAC database was saved on a tape or machine, retrieve the information and put the data in the appropriate directory. Do the following:

1. Log in as **root** on the NAC or CSAC
2. Make sure the NAC System application is not running.
3. Make sure the INFORMIX database server is running. If it is not running, restart the server by executing:

```
sh /etc/init.d/turbo start
```

4. Become user `sg` by typing:

```
su sg
```
5. Now convert the old NAC database to R9.0 by typing the following commands:

```
cd /usr2/nac_db_backup/nac.exp
```

6. Now load the R9.0 NAC database by entering:

```
dbload -d nac -c /usr/sg/db/dbldfile2 -l logfile
```

*Note that the `-l` option here is using a lowercase letter **L**.

7. Check logfile for errors when the `dbload` command completes.
8. Convert data to R9.0 format by entering:

```
dbconvert -r9.0 -d nac
```

9. Verify the network parameters in the `param` table by executing:

```
sgcheck param network
```

- 10 After you have verified that the conversion was successful, delete the NAC-database unload files by executing:

```
exit [return]  
cd /usr2  
rm -rf nac_db_backup
```

The database has been converted to R9.0.

For upgrades on a standalone NAC -
Continue with the section final steps.

For upgrades on a CSAC -
You must now upgrade all the RACs using a copy of the CSAC's database.
Continue with the next section.

3.1 Converting the database on a RAC

This section will copy the CSAC's R9.0 database to the RAC.

1. Log in as **root** on the RAC.
2. Make sure that dkserver is running on the RAC, so you can copy the files from the CSAC.
Execute the following on a RAC to see if dkserver is running:

```
ps -e | fgrep dkserver
```

If this command returns no output, dkserver is not running, and you must start it.
Do the following on the RAC to start it:

```
sh /etc/init.d/dkitrc start
```

3. Now follow the procedures given in chapter 3, section Restoring the NAC Database of the R9.0 "Network Access Control System Installation, Operations and Maintenance Guide" to copy the CSAC's R9.0 database to the RAC. Do not put the RAC into init state 3 until you do this, because the NAC database is still in the old format

Continue with the next section

3.2 Final Steps

This section contains the final steps in a local upgrade.

1. Edit the **"/etc/inittab"** file and set the default init state to 3.

A proper inittab entry looks like this:

```
init:3:initdefault
```

2. The following files have been automatically reused:

*/usr/sg/db/messages/** (administrator-defined message and menu files)

*/usr/sg/db/scripts/** (the script files)

/usr/sg/db/sitefile (the site file)

/usr/sg/db/weakPIN (the weak PIN file)

/usr/sg/etc/sg_init (the process configuration file)

/usr/sg/etc/ss_config (the ss configuration file)

3. A new *"/usr/sg/db/termid"* file has been installed. The old one is in *"/usr/sg/db/termid.old."* If you added entries to your old *"termid"* file, you will want to retrieve them and add them to the new file.

4. The old *"sg"* crontab has been saved in *"/usr/sg/sg.cron.old."*

5. You should review chapter 2, the section "Customizing the NAC System" in the R9.0 Network Access Control System Installation, Operations and Maintenance Guide" to see how you can further customize your Network Access Control System application.
6. If you were using the "SecurID" authentication method in the previous NAC release, you should install the R9.0 "SecurID" package. See chapter 2, section "Install the SecurID Authenticator Package" of the R9.0 "Network Access Control System Installation, Operations and Maintenance Guide" for installation details.

You have completed the local upgrade on your NAC, RAC or CSAC.

4.0 Migrating to the HP Platform

When you upgrade to release 9.0 of the Network Access Control System software, you may also be upgrading some of your hardware platforms to the HP D370 server platform. Procedures are given in this section to move your R6.0 and R7.0 NAC-databases to your new platforms and convert them to R9.0 format, and to copy application configuration files from your R6.0 and R7.0 machine to your new R9.0 machine.

This procedure assumes that your new platform already has R9.0 installed on it, and that you have some way to move files between your old machine and your new R9.0 one.

1. Do the following:
 - Log in as user **root** on the old machine.
2. Make sure the Network Access Control System application software is not running on your old machine. You are about to unload the NAC database, and this cannot be done if anything has the database open.
3. Restart "INFORMIX-OnLine" by entering:

```
/bin/sh /etc/init.d/turbo stop [ENTER]  
/bin/sh /etc/init.d/turbo start [ENTER]
```

4. Make sure the */usr/tmp/nac.exp* directory and the */usr/tmp/dbexport.out* file do not exist. Remove them if they do.
5. Increase the file size limit and become user "sg" by entering:

```
ulimit 1000000  
su - sg
```
6. Unload the old NAC-database by entering:

```
cd /usr/tmp  
dbexport -q nac
```
7. When the database has been exported, examine the */usr/tmp/dbexport.out* file for error messages.
8. Make sure you have not run out of space under */usr*. Execute:

```
df /usr [return]
```

Make sure the output of this command does not say "0 blocks." If it does, you will have to unload your database in another file system besides */usr*, or free up some space in */usr* so you can try again.

9. Now you must move the unloaded database to the new R9.0 machine.
Move the */usr/tmp/nac.exp* directory (and all the files in it) on the old machine to the */usr/tmp/nac.exp* directory on your R9.0 machine. Make sure that all the files you moved are the

same sizes on both machines when you are finished. Make sure "/usr/tmp/nac.exp" and everything in it is owned by user "sg" when you get it in place on the R9.0 machine.

10. Now log in to the R9.0 machine as user **root**.
11. Make sure the Network Access Control System application software is not running on your R9.0 machine. You are about to reload the NAC-database, and this cannot be done if the database is being used by the NAC application.
12. Restart the "INFORMIX" database server by entering:
"sh /etc/init.d/turbo stop"
"sh /etc/init.d/turbo start"
13. Become user "sg" by entering:
su - sg
14. Now convert the old NAC -database. Enter:
cd /usr/tmp/nac.exp
15. Now load the R9.0 nac-database by entering:
dropdb -d nac [enter]
tcreatdb -d nac
dbload -d nac -c /usr/sg/db/dbldfile2 -l logfile

*Note that the **-l** option here is using a lowercase letter **L**.
16. Check logfile for errors when the dbload command completes.
17. Convert data to R9.0 format by entering:
dbconvert -r90 -d nac
18. Verify the network parameters in the param table by executing:
scheck param network [enter]
19. After it has been verified that the conversion was successful, the NAC database unload files can be deleted by executing the following on both machines:
cd /usr/tmp [enter]
rm -rf /usr/tmp/nac.exp [enter]
20. Now you should copy the configuration files from your old machine to your 9.0 machine. You may want to retrieve the following old files for use on your 9.0 setup:

- /usr/sg/db/messages/* (administrator-defined message and menu files)
- /usr/sg/db/scripts/* (the script files)
- /usr/sg/db/sitefile (the site file)
- /usr/sg/db/weakPIN (the weak PIN file)
- /usr/sg/etc/sg_init (the process configuration file)
- /usr/sg/etc/ss_config (the ss configuration file)

21. If you reuse the */usr/sg/db/messages/** files, you can use the "enter message" and "enter menu" commands to install them on your R9.0 system, or you can just put them in the */usr/sg/db/messages* directory.
22. The old *sitefile* file can be reused as is in R9.0. You can install it in "*/usr/sg/db/sitefile*" on the R9.0 machine.
23. A new "*/usr/sg/db/termid*" file has been installed during R9.0 installation. If you added terminal type entries to your old "termid" file, you can add the new entries to the new "*/usr/sg/db/termid*" file.
24. The old "*weakPIN*" file can be reused as is in R9.0. You can install it in "*/usr/sg/db/weakPIN*" on your R9.0 machine.
25. The old "*ss_config*" file can be reused in R9.0 as is. Get the file and install it "*usr/sg/etc/ss_config*" if you want to reuse it. There are several new options available in this file in R9.0. Consult the manual page for "sglogin" in appendix B of the R9.0 "Network Access Control System System Administration Guide" for further details. Pay particular attention to the "-b" option, which you may need to use for proper operation.

You have completed the migration process.