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Reality on Windows

V14.2

Installation Guide

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Overview

This Installation Guide describes installation of Reality on a Windows system.

Before starting the installation or upgrade, ensure that you have the necessary *prerequisites* (see page 5) and *information you must supply* (see page 6).

If upgrading, read *Upgrading from an Earlier Release* on page 17.

Product Overview

Reality is a software environment that supports multiple databases on a UNIX or Windows host. For information about the extensive capabilities of the Reality database management system, see the Reality Reference documentation.

Resilience

Transaction Handling is a feature that maintains the consistency of the database by keeping defined transactions (sets of updates) intact. Rapid Recovery File System, Transaction Logging, Shadow Database, and FailSafe are features offering further levels of resilience. Transaction Logging and Rapid Recovery require a single 'raw log' to be configured for each Realityversion that is being run at the same time. Further resilience features require at least one clean log per database to be configured. Minimum configuration is described in this guide, with additional information in the Resilience reference documentation.

Networking

Comprehensive communications facilities enable communications between a Reality database environment and another Reality database, or a host system environment (UNIX or Windows).

User Documentation

Reality is supplied with comprehensive on-line documentation that you can view in a Web browser.

Contents of the Installation CD

There is one installation CD containing the PDS History Tool, Reality, the online documentation and all of the Reality external components. Refer to the Reality Release Information for details.

The PDS History Tool must always be installed first and will be installed automatically if not already present.

For a description of how to install the external components and the Reality remote tape server, please refer to the Reality External Components Installation Guide.

Prerequisites

Hardware

- PC with Intel Pentium processor or equivalent, 200MHz or faster.
- 64Mb RAM minimum (128Mb recommended) plus 2-6Mb per Reality user. See also *Memory* below.
- 500Mb of available disk space to accommodate setup (actual hard disk used once installed will be between 150Mb and about 350Mb, depending on the system components installed).
- The Reality database can be loaded on to a Primary Domain Controller, Backup Domain Controller, stand-alone member server or WorkStation.
- Northgate can take no responsibility on the processor and memory requirements of other applications running on a Windows server. Ideally, Reality should be loaded on a dedicated server.
- Reality backup and restore is supported on 4mm, 8mm and DLT tape units.
- Using at least a dual processor system is highly recommended.

Software

- Refer to the Reality Release Information for details of which versions of Windows are supported.
- It is recommended that Reality is installed on an NTFS partition.

Memory

Reality memory usage is difficult to predict, but as a rough sizing guide use 128Mb for the system and then 2Mb to 6Mb per user, depending on type of user and application. Performance problems are generally caused by lack of memory. If the server is not dedicated to Reality then other application memory requirements must be added to this.

On-line documentation

The on-line documentation can be installed on a web or file server, or on your local system. It can also be viewed from the Reality CD.

To view the on-line documentation you will require one of the following web browsers:

- Internet Explorer 6.0 or 7.0 (PC only).
  –or–
- Mozilla Firefox 2.0 (PC or UNIX).

Note: You can also view the on-line documentation on some earlier versions of the above browsers and on some other types of browser. A message will warn you that your browser is not fully supported.

Information You Must Supply

The table below lists the information you will need when installing Reality. You can fill in the second column of the table so that you have the information to hand during the installation process (print out this page if you are viewing it on-line).

Contact Northgate for software keys. These are normally supplied in a keyfile (held anywhere on the system) and loaded from that file or you can type them in during the installation procedure.

Note: The serial number key is only valid for installation on the specified date and for the two days following.

Name and location of keyfile.	
Serial number key for date of software install.	
Customer ID.	
Version number key for Reality V14.2.	
User Licences key (see Note 1).	
Despooler Licences key (optional).	
FailSafe or Shadow key (optional).	
Disaster Recovery key (optional)	
Your name (for audit purposes).	
Location for the on-line documentation (see Note 2).	

Refer to the topic Licences in the online documentation for more information about user licences and other software keys.

Notes:

1. If you intend using Database Isolation, you will need a User Licences key for each instance of Reality.

2. If you already have a Web server installed, this can be the document root directory for your Web server. Alternatively, the documentation can be installed in the default location and accessed through the Reality mini web server, which is designed to handle simple document requests with no risk to system security See *Installing the On-line Documentation* on page 10.

Set-up before Installation

This document assumes that the Windows platform is fully configured, and that the installing user is a member of the Administrator's group.

Note: When Reality is installed on a host that is part of a Domain, a user-id `Reality User` is installed in the Domain User List. If the host is then moved, or made standalone, Reality will fail to start because it no longer has a default `Reality User` id to use. To make sure that this problem does not occur, run the command **`ntinstall`** from within the `Realman` folder.

- Telnet daemons that have been configured from Windows or using third party software will either need to be reconfigured to use a different port or the Reality default telnet port (23) will need to be changed. Refer to the section *netadmin Utility* on page 24.

- The temporary folder referenced by the system environment variable TEMP must exist.

- If you intend installing the demonstration/evaluation version of Reality on Windows 7, you will need to enable the Windows Telnet client, as follows:

  1. In the Windows Control Panel select **Programs and Features**. Then select **Turn Windows features on or off**.

  2. Scroll down to the **Telnet Client** option and enable it by ticking the associated check box.

Disk Layout

- For optimum performance the system swap device and the Reality database should be on different physical hard disks.

- If Transaction Logging is to be used then the transaction log files should be on a third hard disk.

- If possible the tape drives should be on a different SCSI controller to the database disks.

- The paging file should be at least twice as big as memory.

- By convention the Reality databases reside in a \real0 folder in the root folder of a specified disk drive, where this is a physical or logical drive. This is not mandatory, but will aid support. The \real0 folder needs to be created prior to creating the database(s).

Note: For very large databases it is recommended that you create a partition database using standard host files on different spindles (see Types of Database in the Reality On-line Documentation for details). Alternatively, you can use the Windows Disk Administrator to create a striped set across several hard disks and create the database on this.

Installation

Loading the Reality Software

Before installing Reality, you must close all other applications, including any anti-virus software. You must also shut down the Reality remote tape server if you have this installed (run the command **`Realrts -e`**).

You will be given the choice of installing a demonstration/evaluation version or the full version of Reality.

- If you choose the demonstration/evaluation version, you will be limited to 3 concurrent users. You do not need any software keys for this option.

  Note: If you wish to carry out performance/stress testing, you can increase the number of users for a 30-day period by registering with Northgate Information Solutions (via the *Northgate web site*).

- If you choose the full version, you will need to obtain a Reality Software keyfile from Northgate. Alternatively, you can enter individual keys manually, in which case you will need at least a **Serial Number Key**, **Version Key** and **User Licences Key** (see *Information You Must Supply* on page 6).

  Note: A new set of keys is required both for new installations and for upgrades. If you are upgrading from a version prior to V10.0, the keys must be installed during the main installation (they cannot be installed separately).

MultiValue Migration

As an aid to migration, Reality can be configured to emulate another type of MultiValue system (refer to the online documentation for more details). When you install Reality, you can choose an appropriate emulation. If the emulation you require is not listed, refer to the latest migration information on Reality web site (*http://www.northgate-reality.com/products.php?pageId=42*).

Demonstration/Evaluation Version

1. Log on to Windows as an administrator.
2. Insert the CD-ROM in the drive.
3. When the introductory dialog appears, if you intend to try migrating to Reality from another MultiValue system, choose the appropriate emulation from the drop-down list.
4. Click the **Demo** button.
5. If you are installing for the first time, the Reality licence agreement is displayed. You must accept this agreement before you can continue.
6. When prompted, choose the drive on which to install Reality. The software will be installed in the folders RealMan, RealityDemo and RealWebDemo on this drive.
7. When prompted, log off and back on again. Do not remove the CD from the drive.

8. Once you have logged on again, the installation will continue automatically, installing the Reality demonstration database, the RealWeb demonstration and the Reality On-line Documentation.

9. When a message appears to tell you that the installation is complete, click **Exit** to finish.

Full Version

1. Log on to Windows as an administrator.

2. Insert the CD-ROM in the drive.

3. When the introductory dialog appears, choose the appropriate emulation from the drop-down list.

4. Click the **Custom** button.

5. When the introductory screen appears, click **Continue**.

6. If you are installing for the first time, the Reality licence agreement is displayed. You must accept this agreement before you can continue.

7. From the main menu, select **Core Reality Software**. Then select **Reality** from the Reality Software Menu.

8. You are then asked if you have a valid keyfile. Click **Yes** to continue.

   Note: If you answer **No**, the demonstration/evaluation version is installed.

9. You are prompted to enter your name, for audit purposes.

10. The next screen gives you the following options:

    Reality - Loads the Reality software.

    Software Keys Only - This option is useful if a Software Key is to be loaded after the initial Reality installation. A version of Reality must be present to run this option.

    Highlight **Reality** and click **Next.**

11. The next screen asks where the Reality software is to be loaded and tells you how much space is required. Select the required disk from the drop down list and click **Next** to continue. The files are now copied to disk.

12. If you chose to install the full version of Reality (see *Loading the Reality Software* on page 8), you are now prompted to enter the date-sensitive **Serial Number Key**, and the **Version Key** and **User Licences Key** (see *Information You Must Supply* on page 6). If a keyfile is available (normally on floppy disk), check the **Load Keys from Keyfile** box and enter the path and filename of the required keyfile. Click **Next** to continue.

    Note: If your Serial Number Key was supplied separately from the other keys (that is, not in the keyfile), you should enter this first and then load the remaining keys from the keyfile (if upgrading from the evaluation

version, you will need to click **Back** to return to the software keys dialog).

13. A list of optional components is displayed with any that are already installed highlighted. To enter keys for optional components (see *Information You Must Supply* on page 6), highlight the required component, enter the licence key when prompted and click **OK.** Alternatively, click **New Part** to enter a new part number, description and key. When you have entered all the required keys, click **Next** to continue.

14. A screen is displayed telling you that installation is complete. This dialog may also ask if you want to restart Windows. If so, you will need to do this before you can create your Reality database. Click **Finish**.

15. If you were not asked to restart Windows, a further message is displayed to tell you that the Reality V14.2 services are being started. Click **Yes** to log off.

16. Log on again with the same user-id to complete the installation. You can then create a database (see *Set Up After Installation* on page 12).

Installing the On-line Documentation

To install the on-line documentation, select **User Documentation** from the main installation menu, followed by **User Documentation**. When prompted, enter the required location – the documentation will be placed in the subfolder `reality\manuals` relative to the install location you specify.

It is recommended that you install the Reality documentation on a Web Server, though it can also be installed on a file server (accessed via a mapped networked drive) or on individual PCs. In all cases, the file system must support long file names. You can also view the documentation directly from the Reality Installation CD (from the main menu select **User Documentation** and then **View User Documentation from CD**).

Note: If you do not have a suitable web server, you can install the documentation on the Reality server in *drive*:`\realman\html` and access them via the Reality mini web server. The mini web server listens on port 3080 (see below).

Viewing the On-line Documentation

The Reality documentation can be viewed in a web browser (see *On-line Documentation* on page 5 for details of supported browsers).

Note: PDF topics are displayed in a separate browser window. To view these topics you must configure your browser's popup blocker feature to allow popups from the location where you have installed the Reality documentation.

If you install the documentation in your web server's document root, your users will be able to access them via a URL such as

`http://`*systemname*`/reality/manuals/default.htm`

If you are using the Reality mini web server, they will need to include the port number in the URL; that is, use:

`http://`*systemname*`:3080/reality/manuals/default.htm`

If you do not use a web server, you will have to open the file **default.htm** in the folder *installLocation***\reality\manuals**.

Set-up after Installation

Once you have installed Reality, you must carry out some or all of the following, depending on your installation:

1. Install the latest Reality updates; see *Installing Updates* on page 22.
2. Set up the *Windows firewall* (see below).
3. *Create one or more databases* (see below).
4. *Configure your databases* (see page 13).
5. Configure any *Resilience features* that you intend using (see page 14).

Set up Firewall

If you have installed Reality on any recent version of Windows (that is, on XP SP2, Server 2003 SP1, or later), you must enable incoming connections through the Windows firewall by running the batch file *realmanDirectory***bin\sup\firewall.bat** – you can find the location of the realman directory by using the *Defaults option* in the netadmin host utility.

Note: On Windows 7 and Server 2008, you must run **firewall.bat** as an administrator.

By default, **firewall.bat** enables the following connections from the **servers** subnet:

- Incoming connections to Reality (telnet, ODBC/JDBC, JReal, RealWeb, Remote File Access).
- Connections from GUI admin clients (port 2002).
- Reality remote administration (for tlmenu) or GUI admin (port 445).
- Reality remote administration and mini web server for on-line documentation.
- Failsafe link.
- Clean log transfer during database recovery from tlmenu.
- Reality Remote Tape server.

If you do not need to use all the above, or access is required from other subnets, you can edit **firewall.bat** and edit or comment out the appropriate lines. Alternatively, you can configure the Windows Firewall using the Windows Control Panel.

Create Database

Before you can start using Reality you must create at least one database. Different types of database are available (refer to Types of Database in the Reality On-line Documentation) – this section shows you how to create a partition database using files on a single disk partition so that you can start using Reality. You can create this type of database at any convenient location in the Windows file system.

Note: On Windows 7 and Server 2008, databases that will be available on the network must be created in a folder with unrestricted access, such as a dedicated subfolder within the root folder. A database in a user's home folder cannot be accessed remotely.

To create a Reality database, start a Windows command prompt, change to the drive and folder that will hold the database and then run the mkdbase command. For a database on a single file system, include the **-S** option to specify the size of the database:

mkdbase -S *size* **-N** *databaseName*

Where *size* is the size of the database in Mbytes (**M** suffix) or Gigabytes (**G** suffix). For example:

```
mkdbase -S 100M -N pdbase
```

creates a 100Mbyte database called pdbase.

Note: By default, a new database consists of 10 equal-sized host files. It can easily be enlarged by adding more files.

Before other users can use your database, you must do the following:

- Use the *netadmin* utility to set the default database (see page **Error! Bookmark not defined.**).
- Use the unlockdbase utility to unlock the database (refer to the Reality On-line Documentation).

The Database Owner

When you create a new database, a Reality user-id with SYSMAN privileges is created for the database owner (the Windows user who created it). The owner of the database can log on even when the database is locked, without specifying a user-id. If you need to administer the database, you should log on as the database owner.

Note: The database owner's user-id does not initially have a password.

To start reality and log on as the database owner, use the reality command, specifying the database required. For example, to log on to the database **dbase0**, enter:

```
reality dbase0
```

Note: When logging on to the default database, you can omit the database name.

Configuring a Database

The Reality V14.2 system can be configured to suit particular user requirements by using the configuration parameters listed in the section *Reality Configuration on the Host* in the *User's Reference: Administration*. The parameters required must be defined in the Windows file *drive*:\usr\realman\14.2\files\config if they are applicable to all new databases. To change the settings for a particular database, edit the appropriate config file (*DatabasePath*\configs\config) once you have created the database. Missing parameters are given their default values.

Note: Any changes to a specific database config file only take effect when the daemon for the database is restarted. Hence, all users should be logged off and the daemon shut down using the command:

```
killreal -d database
```

Tape Configuration

If your system has one or more tape drives, you must set the following parameters.

Parameter	Default Value	Purpose
TapeNum	2	TapeNum defines the number of tape drives on the database, named Tape1, Tape2, etc.
TapeDevType*n*	3	TapeDevType1, TapeDevType2, etc. define the type of tape drive for TAPE1, TAPE2, etc, respectively. The types currently supported are: 2 8mm (Exabyte) cartridge 3 ¼ inch (QIC) cartridge 5 4mm (DAT) cartridge 8 remote tape 9 tape image
TapeDevSize*n*		TapeDevSize1, TapeDevSize2, etc defines the tape capacity size of the tape used in dbsave. Still relevant with virtual tape drives.
Tape*n*	As defined in the supplied config file	Associates a tape number with a Windows device name.
CompressTapeImage	0	Specifies the default compression level (0 to 9) for tape images created from this database. 0 is no compression (fastest); 9 is maximum compression (slowest). Recommended level: 2.

The Tape*n* entries define the default devices for tape attachments without density specifications. For example, the TCL command **T-ATT 2** will use Tape2. Additional entries in the form **Tape*n*:***density*** can be used to define different devices. For example, the command **T-ATT 1 DEN = 6250** would require an entry `Tape1:6250 = \\.\TAPE0`.

Reality counts tape drives from 1, whereas Windows counts tape drives from 0. Tape1 is therefore normally set to `\\.\TAPE0`. Appending the letter 'c' to the Windows device (for example, `\\.\TAPE0c`) will enable hardware compression if available.

How to configure tape devices is described in greater detail in the User's Reference: Administration.

Configuring Resilience Features

To enable resilience features to be used, you must create a Rawlog file. It is recommended that you use a separate disk for the logs (Rawlog and the cleanlogs).

1. Make a logs folder:

   `C:\>` **`mkdir`** *Drive*`:\clogs` (where *Drive* is the logs drive)

2. Log on to Windows as the database owner and from the Command Prompt, run:

   C:\> **mklog -rtos100** *Drive*:**\clogs\RawLog** (where *Drive* is the logs drive)

   This will create a 100Mb Rawlog

3. Stop and start the central daemon using:

   C:\> **realserv -e**

   C:\> **realserv -s**

   Note: On this release, this will log off all users of all databases.

4. Use **tlmenu** from the command prompt to setup the database for Transaction Logging or Failsafe (refer to the Resilience section of the on-line documentation for details).

5. Setup the accounts and files for transaction handling by running **TL-SET-LOG-STATUS** from TCL

6. Transaction Logging can now be started.

Troubleshooting

Reality records error details in logs according to the class of error. Useful log files for diagnosing problems when starting and running Reality on Windows are:

Daemon Log **%REALROOT%\files\daemon.log**

Records major events and errors with Reality daemons and Reality processes.

Session Log **%REALROOT%\files\session.log**

Records incoming and outgoing connections both successful and failed.

Event Log **%REALROOT%\files\event.log**

Records other SMANAGER (Reality session manager) activity.

Notes:

1. If the Reality service fails to start, error messages can be found the in Windows application event log, which can be viewed using the Windows Event Viewer.
2. If more than one version of Reality is installed the session and event logs are held in the files folder for the LIVE version of Reality

Error Numbers

Reality error numbers can be converted into human readable messages by using the **perror** command from the Windows command prompt; for example:

```
$ perror 2004
Error  2004: RFE_NOITEM              Item does not exist
```

From Reality TCL you can use: **sys perror 2004**.

Example Messages

Below is an example of a message logged in the daemon log.

```
Oct 30 07:55:20 #2240  tlrestore WARNING: Image 000000E4 Result
(2027) File section already exists
```

This message indicates that an attempt was made by the 'tlrestore' process (part of Reality resilience) to create a file, which already exists on the database. Running **perror 2027** would report:

```
Error  2027: RFE_SECTEXISTS          File section already exists.
```

Note: More verbose error logging can be activated by running **killreal -l 6** from the Windows command prompt.

Below is an example of information logged in the session log:

```
Session :11  Thu, 21 Nov 2002  15:14:29  IC
    System :demodb, User Id :SYSMAN, Account :SYSMAN, Server
:SQLSRVR
    Client Id :, PLID :INET-207.238.117.133-9
    Class :Process, Flags :0, Timeout 1

Session :11  Thu, 21 Nov 2002  15:14:29  Session Terminated by
Server Rejection
    Database Initialisation Failed 2008
```

Running **perror 2008** would report:

```
Error  2008: RFE_INVACCPASS          Invalid logon attempt
```

Upgrading from an Earlier Release

There are two ways in which you can upgrade to Reality V14.2:

- If you have a Windows system with Reality Release 8.0 or later, you can upgrade directly to V14.2 (see *Software Upgrade* below).

  Note: You can run two versions of Reality on a host at the same time – the latest installed version and the previous version. You cannot run V14.2 together with V9.1 or any earlier version.

- If you have a Series 18/19 system, or a UNIX system with RealityX, you might wish to replace your old system with a new Windows system with Reality V14.2 (hardware upgrade). To do this, you will need to install Reality V14.2 on the new system and then transfer your database(s) from the old system to the new. For details, see the separate document Transferring a Database.

  Note: To ensure that your databases operate at maximum efficiency, you should periodically save the files to tape and then restore to a new database. It can be convenient to carry this out when upgrading the Reality software.

Software Upgrade

Caution

Before starting the upgrade, make sure you have the Reality V14.2 software keys available. A complete new set of keys is essential. Also, if you are upgrading from V9.1 or earlier, these keys must be installed during the main installation – they cannot be installed separately.

Pre-upgrade

1. Install the latest Reality updates; see *Installing Updates* on page 22.

2. Back up the *Drive*:\realman host folder (where *Drive* is the drive on which Reality is installed).

3. Use the regedit host utility to export the Northgate branch of the Registry:

   32-bit hosts HKEY_LOCAL_MACHINE\SOFTWARE\NorthgateIS.

   64-bit hosts HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\NorthgateIS.

   Back up the export file.

4. For each Reality database:

   - Save to elsewhere in the database any system file items that you have customised. Files that might have been customised include SYSPROG-PL, PROCLIB, BP, SYSBP, SYSBP.MSGS, SYSPL, SYS.BASLIB, BASIC.COMPILERS and NEWAC.

   - Ensure that all users are logged off.

- Carry out FILE-SAVE and VERIFY-SAVE.
- Save the contents of the configs host folder.

5. If Transaction handling or any other Resilience feature is in use, a RawLog is required:
   - If the new release will replace the current release, the current RawLog can be used. Save the Windows file *Drive*:\Realman*RealityVersion*\bin\RawLog (where *Drive* is the drive on which Reality is installed and *RealityVersion* is the version number of the current Reality release).
   - If V14.2 is to be used in parallel with the previous release, a new RawLog must be created after V14.2 is installed.
6. Save any customised configuration files. These are located in the Windows folder *Drive*:\Realman*RealityVersion*\files (where *Drive* is the drive on which Reality is installed and *RealityVersion* is the version number of the current Reality release).
7. Shut down the Reality remote tape server if you have this installed (run the command **`Realrts -e`**).

Installing the New Release

Follow the **Custom** procedure described in the section *Loading the Reality Software* on page 8. On the Installation Menus, components are marked as **Upgrade** if an earlier version of that component is installed and can be upgraded, or as **Overwrite**, if the installed version is the same as the version on the installation CD.

The installation program detects the version(s) of Reality currently installed on your system and indicates the current default (live) version. You are asked if you want to remove the previous version(s).

Note: You can only run two Reality versions on a system – the latest installed version and the previous version. However, you cannot run V14.2 together with V9.1 or any earlier version.

When installation of V14.2 is complete, you are given the option to make this the default version of Reality. It is recommended that you click **No** at this point – you can make V14.2 live once configuration is complete (see *Changing the Live Version* on page 21).

Then do the following:

1. Restore any customised configuration, as saved in step 6 of the previous section, by editing the configuration files in the Windows folder *Drive*:\realman*RealityVersion*\files (where *Drive* is the disk on which Reality is installed and *RealityVersion* is the version number of the current Reality release).
2. If Transaction Handling or any other Resilience feature is in use, you will need to remake the rawlog:
   - If this version is to replace the previous version, the current RawLog can be used. Copy the rawlog configuration file saved in step 5 of the previous

section into the folder *Drive*:\Realman*RealityVersion*\bin\RawLog (where *Drive* is the drive on which Reality is installed and *RealityVersion* is the version number of the current Reality release). Then stop and restart the Reality services.

- If this release is to run in parallel with the previous release, a new RawLog must be created – see *Configuring Resilience Features* on page 14.

Post-Upgrade

On each Reality database:

1. Log on to the database as the database owner and enter the following commands:
2. **INHIBIT-LOGONS ***
3. If applicable, run **TL-STOP** to stop Transaction handling.
4. If upgrading from a version earlier than Reality V9.1, load the system tools. Enter the following commands:

```
T-DEVICE 4 %REALROOT%\files\upgfile.rti
ASSIGN = TAPE 4
T-REW
INSTALL
```

   Follow the prompts to install the upgrade bootstrap.

```
CLEAR-ASSIGN
```

5. Run **SYS-UPDATE**, entering the release of Reality from which you are upgrading (see *SYS-UPDATE Details* below).
6. Log into the database and integrate any customised changes made in SYSPROG-PL, PROCLIB, BP, SYSBP, SYSBP.MSGS, etc. (saved in *Pre-upgrade step 4* – see page 17). Note that customised changes to NEWAC must be moved to the USER data section of that file.
7. Carry out FILE-SAVE and VERIFY-SAVE.
8. Start Transaction Processing, if applicable.
9. **ENABLE-LOGONS ***

If you shut down the Reality remote tape server before upgrading, restart it by running the command **Realrts -s**.

SYS-UPDATE Details

This section gives details of the prompts you might see when running the SYS-UPDATE utility from TCL.

When you make a selection on the System Conversion Facility screen, the following prompt is displayed:

```
Restore from a different machine type? (Y/N) :
```

At this prompt enter **Y** if you are restoring from a save from a system with a different binary format; otherwise, enter **N**. This is to indicate to the update process that the byte order of the binary data has changed, enabling it to correctly update the system. The systems on which Reality is supported have the following binary formats:

Byte normal:	Solaris, AIX.
Byte reversed:	Windows, Linux.

Therefore, when restoring a save from a Solaris system onto an AIX system, for example, enter **N**. When restoring a save from an AIX system onto a Linux system, however, enter **Y**. If the platform is the same - for example, from one Solaris system to another- enter **N**.

During the SYS-UPDATE procedure, cataloged DataBasic programs in the POINTER-FILE will be upgraded if necessary. Two accounts are also populated during this procedure: BASIC.CONVERSION and UPGRADE.ACCOUNT. These two accounts are quite large and will only be required if a problem had occurred during the SYS-UPDATE. An explanation of this process is given in the separate document Transferring a Database.

Data/Basic Conversion

If the database being upgraded is a release prior to RealityX 4.0 or ROS 7.2, the DataBasic object code will be converted. For more information, see the separate document Transferring a Database.

Changing Lower- to Upper-Case Dates

From RealityX 5.0 onwards, Reality has used mixed-case month names. If you have older applications that rely on having all upper case month names for date verification, you will have to force dates into upper case. This is described in the separate document Transferring a Database.

Upgrading FailSafe

Please refer to the Resilience section of the on-line documentation.

Installing Database Overlays

If you want to install database overlays – for example, ALL, RPL, or Wordmate – you should install these by running **CDINSTALL** from within Reality.

Remote Tape Server

It is recommended that you reinstall the Remote Tape server on all systems that provide this service.

Running Multiple Versions of Reality

You can run different versions of Reality on the same system provided the system has enough disk space. In addition to the different versions of the Reality software, if you are using transaction handling or any other resilience feature, you will require a separate rawlog for each version.

Notes:

1. You can run two versions of Reality on a host at the same time – the latest installed version and the previous version. However, you cannot run V14.2 together with V9.1 or any earlier version.

2. Additional versions of Reality are limited to 8 concurrent users (across all databases used).

3. Each Reality database is associated with a particular Reality version, set with the netadmin utility's Local Databases option and must only be accessed when running that version. If no version is specified, the current live version must be used.

Running Reality Locally

To run a version of Reality other than the live version locally, enter the following at the command prompt:

realroot *n.n*

where *n.n* is the version number of the required version. Then start the Reality services by entering:

```
realserv -s
```

You can then run Reality in the normal way.

Running Reality Remotely

When connecting to a Reality database via the network (whether locally or remotely), you will automatically use the Reality version specified using netadmin.

Changing the Live Version

You can change the live version of the Reality as follows:

1. Log on as an administrator and start the Control Panel.

2. Select **Add or Remove Programs** or **Programs and Features** (depending on your version of Windows).

3. Select **Reality** from the list of programs and click Change/Remove.

4. Select the version you want to make live from the list and click the **Set Default** button. Follow the prompts that appear.

   Note: This dialog also allows you to remove earlier versions of Reality and to install additional software keys.

5. Wait until the Reality services have been restarted before closing the dialog. Then log off and on again to refresh the environment variables.

Installing Updates

Updates to Reality are made available on the Northgate web site in the Reality Knowledge Base (*http://www.northgate-reality.com/support.php*). These are normally supplied as a service pack containing the latest recommended updates.

To download the latest service pack, select the **V14.2 support** link on the left of the page. Then click the pack for Windows platform and save the file.

Before downloading, please read the documents *Description of Recommended Updates* and *Installation Info File* for details of the contents of the updates and any additional configuration that might be necessary.

Caution

Before you install an update, ensure that you have an up-to-date backup of your existing data.

Note that to install a service pack, you must have at least 150Mb available on the drive containing the realman folder.

Other support information is available on the Reality web pages (*http://www.northgate-is.com/reality/*).

Procedure

1. For each Reality database to be updated:
   - Save to elsewhere in the database any system file items that you have customised. Files that might have been customised include SYSPROG-PL, PROCLIB, BP, SYSBP, SYSBP.MSGS, SYSPL, SYS.BASLIB and BASIC.COMPILERS.
   - Ensure that all users are logged off.
   - Carry out FILE-SAVE and VERIFY-SAVE.
2. Log on to Windows as an administrator.
3. Ensure that no users are logged into Reality. If necessary use the LOGOFF command.
4. From the Northgate web site, download and run the required service pack.
5. Follow the on-screen prompts. **install_fix** will ask you for your name or initials and then display a description of each update to be installed and ask you to confirm installation.

   Note: If the process detects that the current version of the update is already loaded, a message is displayed and the update is not installed.

6. The Reality services must be shut down before the reality executables can be rebuilt. You are therefore asked if you want to shut down the Reality services so that the rebuild can proceed:

   - If you answer yes, the services are shut down and the executables are rebuilt. You are then asked if you want to restart the services; Reality cannot be used until this is done.

   - If you answer no, you must complete the update at a later time by running **install_fix** with the **-b** option.

   The installation process then rebuilds Reality if necessary and/or informs you that you should logon to each database to complete the installation.

7. On each database to be updated:

   - command"Log on as the database owner. From the SYSMAN account run:

     DBUPDATE {*updateNumber*}

     where *updateNumber* is the number of the update you have installed (for example, `14.2.0.0001`); omit the update number to process all updates. Follow the on-screen prompts.

   - Integrate any customised changes made in SYSPROG-PL, PROCLIB, BP, SYSBP, SYSBP.MSGS, etc. (saved in step 1 above).

   - Carry out FILE-SAVE and VERIFY-SAVE.

netadmin Utility

Note: For a more detailed description of netadmin, refer to User's Reference: Administration.

The Network Administration Utility **netadmin** allows you to configure Reality networking by adding, editing and deleting Reality routing entries.

To run the utility, enter **`netadmin`** at the Command Prompt.

Note: Only users with Administrator privilege are allowed to execute **netadmin.**

The following main menu is displayed:

```
NORTHGATE NETWORK ADMINISTRATION - MAIN

1. Destination Hosts
2. Alternative Host Lists
3. Listening Ports
4. Remote Databases
5. Local Databases
6. Session Manager Options
7. Refresh Session Manager
8. Defaults

Select option [1-8 / q] :
```

This menu lists the Reality routing entries which can be administered using **netadmin.**

`1. Destination Hosts`
A Destination Host entry defines a route to a particular remote system, allowing outgoing connections to be built to it.

`2. Alternative Host Lists`
An Alternative Host entry contains a list of equivalent destination systems, in the order in which connection is to be attempted.

`3. Listening Ports`
A Listening Entry defines a route to the local system allowing **smanager** to accept incoming calls.

`4. Remote Databases`
A Remote Database entry identifies a Reality database on a local or remote host.

`5. Local Databases`
A Local Database entry specifies the version of Reality to be used when logging in remotely.

`6. Session Manager Options`
To change Reality *session manager options* (see page 25).

`7. Refresh Session Manager`
To request **smanager** to restart its listening ports. This must be used after changes to listening entries.

8. Defaults — To display and change the default database, realman folder and the default version of Reality.

q — To exit the utility.

Session Manager Options

Network Administration Utility **netadmin** option 6 - 'Session Manager Options' allows you to change the options which control the working functionality of **smanager.**

```
Selecting this option displays a list of current smanager values.
For example:
Default protocol : TELNET
Default Interface : SOCKETS
Default Transport : TCP
Default port : 23
Default login prompt : %m% (%d%) : Login please :
Default login timeout : 6
Event log, in REALROOT\files : Event.log
Switch-over size of event log : 1048576
Session log, in REALROOT\files : Session.log
Switch-over size of session log : 1048576
```

Note: 'Default Interface' and 'Default transport' are currently fixed and are consequently not prompted for.

First you are prompted to change the default applications protocol used to communicate with the remote software:

```
1. TELNET
2. DDA
Select protocol [1-2 / (1) / q] :
```

Enter a menu number to select the applications protocol required to communicate with the remote software. Press RETURN to retain the current value.

```
2. Enter the port number [PortNumber / (23) / q] :
```

Enter the port to be used by Destination host and Listening port entries which use the protocol selected above and for which no port has been specified, or press RETURN to retain displayed value.

The default, if no value is given, depends on the default protocol: if the default protocol is TELNET, the default is "23"; if the default protocol is DDA, the default is "1203"

```
3. Enter default login prompt [Prompt/(Welcome to %m% (%d%) : Login
please : ) / q] :
```

Enter the logon prompt message to be used by Listening entries for which no prompt has been specified, or press RETURN to retain displayed value.

The message should be a alphanumeric text string containing '\r' for a carriage return and '\n' for a line feed. %m% specifies the machine system name. %d% specifies the default database name.

```
4. Enter login timeout [ Seconds / (6) / q] :
```

Enter the timeout in seconds. This is the period of time within which a user must login to the system, after the login prompt has been displayed, before the terminal is disconnected. The default, if no value is given, is 60 seconds. Press RETURN to retain displayed value.

```
5. Enter event log name [(Event.log) / q] :
```

Enter the name of the event log file in %REALROOT%\files. Press RETURN to retain displayed value.

```
6. Enter switch-over size of event log [Bytes /1048576/ q]:
```

Enter the maximum size (in bytes) of the event log. The default value is 1,048,576. If the existing file is larger than this maximum, the existing file is renamed with the prefix "Old_" and a new file created.

Note: Session manager switches when the log reaches the maximum size.

```
7. Enter session log name [File / (Session.log) / q] :
```

Enter the name of the session log file in %REALROOT%\files. Press RETURN to retain displayed value.

```
8. Enter switch-over size of session log [Bytes / (1048576) / q]:
```

Enter the maximum size (in bytes) of the session log.

The default value is 1,048,576. If the existing file is larger than this maximum, the existing file is renamed with the prefix "Old_" and a new file created.

Note: Session manager switches when the log reaches the maximum size.

The complete set of **smanager** options is then displayed

```
9. Default protocol : TELNET
Default Interface : SOCKETS
Default Transport : TCP
Default port : 23
Default login prompt : %m% (%d%) : Login please
Default login timeout : 6
Event log, in REALROOT\files : Event.log
Switch-over size of event log : 1048576
Session log, in REALROOT\files : Session.log
Switch-over size of session log : 1048576
Do you wish to commit this [y / (n)] :
```

Enter **y** to save these changed options or **n** to abort the changes. You are then returned to the main menu.

Specifying Defaults

Network Administration Utility **netadmin** option 8 - 'Defaults' allows you to set default Reality parameters.

Selecting this option displays the menu:

```
Northgate NETWORK ADMINISTRATION – DEFAULTS

1. Default database           : DefaultDatabaseName
2. Path to realman directory  : RealmanDirectory
3. Default release of reality : DefaultRelease

Select action [1-3 / q] :
```

The parameters requiring set up are as follows:

`Default database`
: The database to which **smanager** connects, unless the `@database` syntax is used.

`Path to realman directory`
: The folder containing the Reality software on the Windows system.

`Default release of Reality`
: The default (live) version of Reality.

At the `Select action [1-3 / q]` prompt on the 'Northgate Network Administration - Defaults' screen, enter **1** to set up the default database.

The following sequence of prompts is displayed. Database names are displayed in lists of up to 20, followed by a prompt. For example:

```
1. admin
2. personnel
3. payroll
Select database [1-3 / 0:db / n:none / q] :
```

The last list of entries is followed by `End of list`.

Enter the number of the listed database you require as the default, or press RETURN to display the next list. Enter **0** to select the current default database, or **'n'** for no default.

Having entered a number e.g. number 3, the value is saved and you are returned to the' Northgate Network Administration - Defaults' menu which now displays the selected default. For example:

```
1. Default database           : payroll
2. Path to realman directory  : realmanDirectory
3. Default release of reality : DefaultRelease
```

At the Select action [1-3 / q] prompt on the 'Northgate Network Administration - Defaults' screen, enter **2** to set up the path to the Reality folder.

The following prompt is displayed.

```
Enter the absolute path to the realman directory
[Path/(CurrentDefault)/q)
>>
```

Enter the requested path, for example, **d:\realman**, or press RETURN. The path entered is verified to exist, then is saved and you are returned to the' Northgate

Network Administration - Defaults' menu which displays the selected path to the Reality folder. For example:

```
1. Default database           : DefaultDatabaseName
2. Path to realman directory  : d:\realman
3. Default release of reality : DefaultRelease
```

At the Select action [1-3 / q] prompt on the 'Northgate Network Administration - Defaults' screen, enter **3** to set up the default release of Reality.

The following sequence of prompts is displayed. Database names are displayed in lists of up to 20, followed by a prompt. For example:

```
1. 8.1{x}
2. 9.0{x}
Select default release [1-2 / q] :
```

The last list of entries is followed by `End of list`.

Enter the number for the required release, or press RETURN to display the next list.

Having entered a listed number e.g. 2, you are returned to the' Northgate Network Administration - Defaults' menu which now displays the selected default. For example:

```
1. Default database           : DefaultDatabaseName
2. Path to realman directory  : realmanDirectory
3. Default release of reality : 14.2
```