**Stac**

# Replica README File

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# Setting Up Replica

Before setting up Replica on a server, make sure a drive letter is mapped to the server's SYS volume and that you are logged into the server with supervisor privileges.

**To install Replica:**

1.  At a client workstation under Windows 3.1, Windows for Workgroups, or Windows 95, insert Replica Disk 1 in the floppy disk drive.
2.  From the Program Manager File menu or the Start menu, choose Run.
3.  Type A:SETUP or B:SETUP and choose OK.
4.  Follow the instructions on the screen.

Chapter 1 of the Replica User's Guide includes more detailed information about setting up Replica.

**NOTE:** To uninstall Replica, you must map the same drive letter to the server's SYS volume.

## Upgrade Resulting in Database Errors

If you upgraded from Replica 2.0 to Replica 2.1 without using the required /U switch (SETUP /U), when you try to use Replica you will experience database errors on both the console and the Administrative PC. Your databases are still intact, but they have not been converted to the Replica 2.1 format.

To solve the problem, unload Replica.nlm, then copy the file DBUPDT.NLM from Replica 2.1 Disk 1 to the SYS/SYSTEM directory on the server. Load Replica at the server console and your data will be fine.

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# Late Breaking Information

## 7/24 Live Server Replication

Replica 2.1 includes new *7/24 Live Server Replication* to protect your servers and volumes while allowing access by users. Users can login and read and write to volumes being replicated without impacting on the replication process or their work. Because Replica requires substantial network resources, it is not recommended that you schedule 7/24 Live Server Replication jobs during peak server utilization. For more details on cache memory requirements, see Technical note 5009 on Stac's Web Site.

For new replication jobs, *7/24 Live Server Replication* is the default.

Replication jobs scheduled under Replica 2.0 use the previous method, now called *Limited live server access with spanning*. Upgrading Replica does not change any jobs previously scheduled. You may want to edit these jobs (through the Status window) and choose *7/24 Live Server Replication* on the Options tab of the resulting Replicate window.

## User's Guide Correction

During disaster recovery, Replica no longer asks before overwriting any existing partition data. In the Disaster Recovery explanation on page 44 of your User's Guide (in the IMPORTANT note), only the first two sentences are correct. Delete the rest of the paragraph.

## Tape Errors

Your tapes and tape devices are the most likely cause of problems you encounter in replicating data. You can use the REPLICA UTILITIES command at the NetWare console to test a tape and make sure it can replicate and recover data. The process overwrites any data already on the tape.

If your tape devices have not been used with the servers before, use your SCSI controller interface utilities to verify that the SCSI connections and termination are correct if you have any trouble using them with Replica.

If Replica produces tape errors (can't label a tape, can't erase one, can't read one), try the same task with a new tape, fresh from the wrapping. If your tape devices are old, have them serviced. It's a good idea to regularly clean the tape heads according to the device manufacturer's specifications.

## Mounting Tape Speed

When Replica mounts a tape created with *7/24 Live Server Replication* as a NetWare volume, it must first scan to the end of the tape volume being mounted in order to ensure that it displays valid data.

If speed of tape mounting is more important to you than unlimited server access during replication, you can modify replication jobs by choosing *Limited live server access with spanning* on the Options tab. Replica will still allow some server access. If the cache buffers fill up during replication, however, the volume will be frozen until it is completely replicated. The result is a tape with all its volume information at the beginning, which mounts much faster.

Replication tapes created while *Dismount volumes before replication* is checked also mount quickly because the volume information is all at the beginning of the tape session.

## Autoloader Magazine Changes

If you change a tape loaded in a magazine for a different tape, Replica must rescan the autoloader to identify the new tape label.

▪ From the console, type REP SCAN FOR NEW DEVICES

▪ From the UI, open the Utilities window, then choose *Refresh* from the Window menu.

If you add or remove any tapes changing the number or position of the filled autoloader slots, run REP_STOP to unload Replica, then REPLOAD to load it again. This forces Replica to rescan the device and correctly identify the tape labels.

## Autoloaders with NetWare 3.12 Servers

On NetWare 3.12 servers, autoloaders are fully functional for standard replication and recovery operations. For tape mounting and file recovery, however, insert the tape manually and mount it at the server console with the REPLICA MOUNT command.

## Tape Labeling with NetWare 3.12 Patch Manager

When you are using the PM312 module loaded before Replica, all characters entered at the server console are transmitted as uppercase letters. This may prevent Replica from recognizing the labels on your tapes.

Here are three ways to avoid any problems:

- Use all upper case for tape labels

- Don't use PM312.NLM

- Load Replica before PM312.NLM

## NetWare Modules and Specifications

Replica supports all NetWare 4.1 modules. For NetWare 3.12 and NetWare 4.02, Replica requires updated modules.

For NetWare 3.12, SMDR requires at least the versions listed below for various NetWare NLMs. For example, if your NetWare 3.12 Host Replica Server has an earlier version of after311.nlm, you won't be able to do a full server replication of a remote server running NetWare 4.1.

You can get later versions from Novell or your distributor.

| NetWare 3.x | At least this version: | | |
|---|---|---|---|
| A3112.NLM | 16268 | 10-10-95 | 6:19p |
| AFTER311.NLM | 14952 | 10-10-95 | 6:19p |
| CLIB.NLM | 344994 | 12-20-95 | 11:30a |
| MATHLIB.NLM | 12458 | 12-20-95 | 10:27a |
| MATHLIBC.NLM | 16832 | 12-20-95 | 10:27a |
| NWSNUT.NLM | 175546 | 10-17-94 | 2:14p |
| NWSNUT.MSG | 2984 | 04-04-94 | 8:42a |
| TLI.NLM | 12474 | 09-14-93 | 10:43A |
| STREAMS.NLM | 53673 | 08-01-95 | 5:08P |
| SPXS.NLM | 24238 | 05-17-94 | 9:58A |
| IPXS.NLM | 8149 | 08-10-93 | 7:53A |
| | | | |
| NetWare 4.x | At least this version: | | |
| CLIB.NLM | 216430 | 10-27-95 | 5:45p |
| MATHLIB.NLM | 9155 | 10-27-95 | 4:55p |
| MATHLIBC.NLM | 11731 | 10-27-95 | 4:55p |

| NWSNUT.NLM | 54575 | 10-17-94 | 2:14p |
| AFTER311.NLM | 446 | 10-21-94 | 12:17p |
| TLI.NLM | 24751 | 01-30-95 | 9:33A |
| STREAMS.NLM | 63344 | 08-01-95 | 11:46A |
| SPXS.NLM | 40860 | 11-01-95 | 11:58A |
| IPXS.NLM | 10134 | 10-20-94 | 1:53P |

In addition, make sure you are using the latest versions (at least 1994) of any SCSI or ASPItran drivers.

## Installing Administrative PC UI Only

If necessary, you can install the Replica UI to a client workstation without installing the storage management engine to a server. Just choose *None* in the list of servers while running Setup.

## Login Problems

### Server Login Problems (NetWare 4.*x*)
If you have Replica installed under NetWare 4.*x* and are using NDS, you may occasionally encounter problems logging in to servers. If you get an "Invalid Password" message, log in using the full context name, as in CN=ADMIN.OU=OPERATIONS.O=STAC or ADMIN.OPERATIONS.STAC.

You can use Novell's CX.EXE utility at the workstation to identify the user's context.

You may also experience problems logging into a NetWare 4.x Replica Server that does not have Bindery Emulation Mode enabled. Type the user's full context name to log in to the server.

**Note:** You need Bindery Emulation for the full benefits of Replica. Without it, a server may not appear in your network list. To make a server appear in Replica's network list, set a bindery emulation context for the server. See your NetWare documentation for details.

### Concurrent Logins
Replica requires a login to the server when you access it from the console or the Admininstrative PC. Replicate and recover jobs also log into the server temporarily when each job begins. Make sure each protected server allows enough concurrent supervisor logins for effective processing.

## Memory Error on Mounting a Tape Volume

Replica uses NetWare memory. If you get a message indicating that there is no "cache memory" available when mounting a tape volume, you may not have enough or it may not be configured correctly.

Your NetWare documentation includes information about calculating how much memory you need; a mounted tape volume uses the same amount of memory as a disk volume of the same size. For a summary of how to calculate the NetWare memory requirements and configure it so that it is all available for use, you can download Stac Technical Note 5007 or retrieve StacFAX 5007. The website address and StacFAX phone number are available in the SUPPORT.WRI file.

## NetWare Compression

If your Host Replica Server is NetWare 4.x, make sure that Replica jobs don't occur at the same time as NetWare compression. Both use cache memory and should not run simultaneously.

## Unloading RE_AGENT.NLM

If you unload RE_AGENT.NLM, you may see this message:

> Module currently in use. Unload anyway?

Press **N** and try again. The Replica software polls servers regularly for various reasons. The second time you try, the module will probably not be in use.

Unloading modules while they are in use can cause your server to "abend."

## Allowing Tape Spanning

Replica can span an object across tapes if you choose either of these options for the Replication job:

- *Limited live server access with spanning*

- *Dismount volume before replicating*

When are using *7/24 Live Server Replication*, Replica displays a message and terminates the job if tape spanning is required.

## Recovery Size

Replica always protects all the data in an object and recovers all the data from a replicated object. During recovery, you will see the total volume size on the Status Progress page, but the time to recover the data is determined by the amount of actual data replicated.

## Recovering Files to Server with Different NetWare Version

Replica recovers objects to servers of the NetWare version from which they were replicated or any later supported version.

To recover individual files (using **Selective file recovery (Mount Tape)**) to a later version than the one from which the data was replicated, you must use the Replica console command to mount the tape rather than the Windows application. Use a command in this format:

> REPLICA MOUNT *volumename*

The tape currently in the device will be mounted using the name you supply. Map a drive letter to it and

recover or use your files.

**Note:** Replica cannot recover data replicated from a 4.1 server to a 4.01 or 3.12 server because of the NetWare compression used.


## Creating Disaster Recovery Disks without DOS

Replica must be able to find certain files within the DOS partition while creating Disaster Recovery disks. If you have used NetWare's REMOVE DOS or SECURE CONSOLE command, Replica won't be able to reach the DOS partition to find the files it needs.

If you see this message after you click *Create Disks* to create Disaster Recovery disks:

> Unknown engine error.
> Unable to access server resources

make sure you haven't made the DOS components inacessible.

## Disaster Recovery of Mirrored System

Normal replication of a mirrored system replicates only the primary volumes. Normal volume recovery is mirrored automatically.

Disaster Recovery, however, recovers only the primary system. You'll have to use Novell's INSTALL utility to remirror the system.

## IBM PS2OPT Microchannel SCSI Controllers

The IBM PS2OPT Microchannel SCSI controller is not supported by this version of Replica. Please use a different SCSI controller, such as Adaptec 1640 or Buslogic 640.

## QLogic SCSI Controllers

If you are using a QLogic SCSI controller, your server may occasionally abort tape operations as a result of a faulty device string created by the QLogic controller. To avoid this, use QLogic's EXCLUDE option when loading the driver, as shown below:

> Load QL40NWR3.DSK PORT=330  EXCLUDE[00100000]

This example excludes SCSI ID 2 from QLogic's SCSi I/O support, causing the device to use ASPI support only.


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# Technical Information

# Replica Supported Devices

Replica supports most SCSI-based tape devices. Here's a list of devices:

| **Type** | **Manufacturer** | **Model** |
|---|---|---|
| *DAT* | Conner/Seagate | Archive Python  (All models) |
| | Compaq | Archive 4326 |
| | Exabyte | EXB-4200<br>EXB-4200C |
| | Hewlett Packard | HP C-1533A<br>HP C-1534A<br>HP C-1536A<br>HP 35450A<br>HP 35470A<br>HP 35480A |
| | IBM | IBM 4326 |
| | Sony | SDT-2000<br>SDT-4000<br>SDT-5000<br>SDT-5200<br>SDT-7000 |
| | WangDat | 1300<br>3100<br>3200<br>3400DX |
| | Wangtek | 6130_HS |
| *8mm* | Exabyte | EXB-8205<br>EXB-8500<br>EXB-8500C<br>EXB-8505<br>CTS-8510<br>EXB-8900  (Needs Replica High-Performance Option) |
| *QIC* | Conner/Seagate | CTMS-3200<br>Anaconda<br>Archive_V150<br>Viper 2525 |
| | HP/Colorado | HP T4000s |
| | Tandberg | TDC 3500<br>TDC 3700<br>TDC 3800 |

                                              TDC 4100
                                              TDC 4200
                                              TDC 4220
                                              TDC 4222
                                              TDC 6100


*DLT  (Replica High-Performance Option required)*

             Cipher                T826s
                                   L860s

             Digital Equipment     DEC DLT-2000
                                   DEC TZ87
                                   DEC TZ88

             Quantum               TLZ06
                                   DLT 2000
                                   DLT 4000

*Autoloaders  (Replica High-Performance Option required)*
             Aiwa                  AL-D1XX
                                   AL-D2XX

             ADIC                  1200
                                   VLS DAT
                                   VLS DLT
                                   VLS 8mm

             Conner/Seagate        Python 27460-XXX
                                   Python 28209-001
                                   Python 28388-XXX

             BHTI                  Quad 7

             Digital Equipment     TZ Media Changer
                                   TZ Media Changer 9410
                                   TZ Media Changer 930
                                   DLT 2500
                                   DLT 2700
                                   TZ 885
                                   TZ 887

             Dilog                 SA100

             Exabyte               EXB-10i
                                   EXB-10e
                                   EXB-210

             Hewlett Packard       C-1550A
                                   C-1553A
                                   SureStore 12000

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|              | Overland Data | LXB |
|--------------|---------------|-----|
|              | Quantum       | DLT 2500 |
|              |               | DLT 2700 |

*Generic devices*     **If your device is not on this list, Replica may still support it. Replica has a built-in generic support driver for SCSI-2 interface drives.**

**Note: For the very latest information on devices supported or planned, see the Replica section of Stac's web site (www.stac.com).**

# Replica Files and Locations

Replica Setup stores files on your workstation as well as on the server to be protected. Normally, you don't have to be concerned with the files. Just for reference, these are the Replica files.

**On the Administrative PC (your workstation)**

The files that make up Replica's Windows application reside in the directory you chose during installation, usually C:\REPLICA.

**In the REPLICA directory:**

REPLICA.EXE   The application
HDRCTRL.DLL
MREPLICA.DLL
SPINCTRL.DLL
DEISL1.ISU     Uninstall script
REPLICA.LOG   Log file of workstation events; created after Setup
REPLICA.HLP   The help file
REPLICA.CNT   Windows 95 help contents file
REPLICA.GID   Windows 95 help support file
STARTUP.REP   One line to be copied into STARTUP.NCF on server
README.WRI   This file
SUPPORT.WRI   Support information

The DR_DISKS subdirectory contains special files that Replica uses in creating Disaster Recovery disks. Unless otherwise noted, they are copied to Disk 1 of each set of Disaster Recovery disks you create.
REPLOAD.NLM
STARTUP.NCF
IBMBIO.COM
IBMDOS.COM
COMMAND.COM
CONFIG.SYS
BOOT.REC                Used as boot record for all created disks.
REPCONT.NLM             Copied to Disk 2 and all subsequent disks.
AUTOEXEC.BAT

**In the WINDOWS\SYSTEM directory:**
The following files are copied only if the version number or date is equal to or later than on the file already there. Other Windows applications may also use these DLLs.

README.WRI                                                    Stac Replica for NetWare

       NWCALLS.DLL           NetWare DLL
       NWIPXSPX.DLL          NetWare DLL
       NWLOCALE.DLL          NetWare DLL
       NWNET.DLL             NetWare DLL
       NWPNW.DLL             NetWare DLL
       NWPSRV.DLL            NetWare DLL
       MFC250.DLL            Microsoft Windows DLL
       PCTREE16.DLL

**On the NetWare Server (Host Replica Server)**

  **Server SYS:System directory**
       STACDAI.DSK           NetWare tape driver
       STACOSM.DSK           NetWare partition and volume interface
       REPLICA.MSG           Host message file; contains replication engine messages
       REPLOAD.NCF           For loading Replica from the NetWare console
       REP_STOP.NCF          For unloading all Replica components
       DBE.NLM               Replica database engine
       RE_AGENT.NLM          Remote server agent
       REPLICA.NLM           Host Replica Server replication engine
       STACSDI.NLM           Storage device interface
       STACTLI.NLM           Support use only. Not normally loaded
       REPCHECK.NLM          Checks required memory on server

Any additional NetWare modules to update your system. Replica uses NetWare's SMDR (Storage Management Data Requestor) in its processing. The Setup disks include the appropriate SMDR.NLM. All NLMs in NetWare 4.1 or later work well with SMDR. Just in case you don't have the latest version, the Replica distribution disks include the files in the table below. During Setup, these NLMs replace earlier files of the same names in SYS:System on your server.
          SMDR.NLM      (10-30-95)
          TSA312.NLM    (10-31-95) (NetWare 3.12 only)
          TSA400.NLM    (10-31-95) (NetWare 4.02 only)
          TSA410.NLM    (10-31-95) (NetWare 4.1 only)
          TSANDS.NLM    (11-3-95)

SYS:System\replica contains these subdirectories:
       DBFS              Replica's tape database records
       QUEUES            Replica's device queue records
       LOGFILE           REPLICA.LOG; the history file

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# Multi-Server Agent 5-Pack

Replica's Multi-Server Agent lets you protect up to five remote servers over the wire using the same Host Replica Server. Replica for NetWare must already be installed on the Host Replica Server.

After you install the Multi-Server Agent on remote servers, restart each server to make sure it is using the updated TSAs and load Replica. If it is not convenient to restart the server, unload, then reload any of these NLMs that are loaded on the server:
          SMDR.NLM      (10-30-95)

>               TSA312.NLM    (10-31-95) (NetWare 4.02 only)
>               TSA400.NLM    (10-31-95) (NetWare 4.02 only)
>               TSA410.NLM    (10-31-95) (NetWare 4.02 only)
>               TSANDS.NLM   (11-3-95)

Finally, type LOAD RE_AGENT at the remote server console to load Replica.

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# High-Performance Option

Replica's High-Performance option lets you use high-performance devices such as DLT and autoloaders.
Specific devices are listed earlier in this document. The High-Performance Option also supports use of
more than one device at a time, so you can replicate to several tape devices or disks simultaneously.

See your distributor for more information.

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