

DR Series System 4.0.4

Release Notes

April 2021

These release notes provide information about the DR Series System release.

About this release

The DR Series system is a high-performance, disk-based backup and recovery appliance that is simple to deploy and manage and offers unsurpassed Total Cost of Ownership benefits. Features such as innovative firmware and an all-inclusive licensing model ensure optimal functionality and provide the assurance of no hidden costs for valuable future features.

A purpose-built backup-to-disk appliance, the DR Series system provides advanced deduplication and compression technology to store data most efficiently. The DR Series hardware appliances are 2U, rack-based, system backup storage repositories, that include deduplication and compression technology in their operating systems. A virtual machine (VM) version is also available to provide robust, disk-based data backup capability on Virtual Machine host servers, while taking advantage of replicating to a deduplication-enabled appliance.

DR Series software 4.0.4 is a patch release with security updates and bug fixes. See [What's new in this release](#) for more information.

About this document

These Release Notes are intended to supplement the DR Series system documentation to provide last minute information available for the latest release of the DR Series system software. These Release Notes contain details about the latest updates, known issues, resolutions, and other information. For a complete list of available DR Series system documentation, see [Other information you may need](#) later in this document.

i | **NOTE:** For instructions on configuration of DR Rapid devices, see the *DR Series System Administrator Guide*.

i | **NOTE:** It is recommended that you check for the latest versions of the DR Series system documentation available at support.quest.com/DR-Series.

i **NOTE:** It is recommended you have your service tag handy for licensing and other activities. You can get this service tag from the paperwork that came with the DR Series appliance, or, optionally, you can get it from the back of the physical unit.

What's new in this release

This release includes new features, enhancements, and maintenance fixes for the DR Series system software. (Refer to [Resolutions in this release](#) for detailed information about maintenance fixes.)

Enhancements in this release include:

- Upgraded JQuery from 2.x to 3.5.1
- Updated WAM-2 NVRAM card drivers for 12G and 13G platforms
- Updated 13G platform firmware to improve reliability
- Integrated fixes from previous hotfixes
- Latest version of Apache 2.4.46
- Additional bug fixes to improve performance, reliability, and security

Upgrade notes

This topic contains important information for users who are upgrading to DR Series system software version 4.0 and later.

- **Rapid NFS and Rapid CIFS Drivers** — If you are running the 3.2 driver for Rapid NFS and Rapid CIFS, we recommend that you update it to the 4.0 driver.
- **Seeding** — If you gathered a seed in version 3.x of the DR Series system software, you must complete your seed operation before upgrading to version 4.0.
- **FCVTL changes introduced in version 4.0.3** — Post upgrade, the FC target port WWN on the DR Series system will change. This requires the fabric to be reconfigured (zoning) for FC VTL access.
- **iSCSI VTL changes introduced in version 4.0.3** — Post upgrade, the iSCSI IQN will change and impact iSCSI VTL access. You need to re-login to the target to re-establish the connection.
- **VTL changes introduced in version 4.0.3** — When configuring new VTL containers, you need to use Robot model, Quest DR_L700.
- **NetVault Versions** — You can use NetVault Backup 11.x and 12.x, and NetVault 13.0.x with this DR Series release. If you need the latest RDA fixes, you can install the latest 4.0 standalone plug-in. See the *DR Series System Interoperability Guide* for detailed information about NetVault Backup version support.

Resolutions in this release

The following table lists the defects resolved in this DR Series system release.

ID	Issue	Resolution
33499	Upgrade of the 12G (DR4100, DR6000,) and 13G (DR4300, DR4300e and DR6300) to use WAM-2 1.8.1 and 2.1.99 F/W and 2.1.99 Driver.	This issue has been addressed in this release.
33496	Fix race condition inside replication to avoid stuck fiber in replication start.	This issue has been addressed in this release..
33494	Creating a file name with 256 characters put the system in Maintenance Mode.	Restrict the file name to 255 characters as of this release.
33492	Backup Exec pvlsrv.exe crashed due to Quest OST plug-in.	This issue has been addressed in this release.
33486	DR CIFS user password does not support "." and "-" characters.	This issue has been addressed in this release.
33484	Add support for DR to QoreStor replication using the DR user interface.	This issue has been addressed in this release.
33477	Add new CLI commands for DR-to-QoreStor migration.	CLI support for DR-to-QoreStor migration has been added in this release.
33471	Allow QoreStor to perform DR replication.	This issue has been addressed in this release.
33472	Implement fixes for the RDA-NDMP workflow.	This issue has been addressed in this release.
33457	NDMP-VTL: Failure to locate and restore file spanning multiple tapes near the end of the tape.	This issue has been addressed in this release.
31548	Fix issue in VTL replication during a blockmap rename, which causes the namespace to be inconsistent.	This issue has been addressed in this release.

Resolutions for earlier releases

The following table lists known issues, descriptions, and related solutions or workarounds for previous DR Series system releases.

ID	Issue	Workaround/Solution
32832 33270	Potential Apache vulnerabilities identified	These issues were resolved in the 4.0.3.1b release.
33447	Opdup fails with vRanger 7.6.4	These issues were resolved in the 4.0.3.1b release.

ID	Issue	Workaround/Solution
33443	Support Opdup when using a DR Series appliance as a QoreStor target	These issues were resolved in the 4.0.3.1b release.
33448	User delete failed from UI	These issues were resolved in the 4.0.3.1b release.
26249 29700 33424 28972 32174	Potential vulnerabilities identified in web application.	These issues were resolved in the 4.0.3.1 release.
31103 31647 32209 33415	Fix memory leaks	These issues were resolved in the 4.0.3.1 release.
32153	Replication hangs in rare cases	This issue was resolved in the 4.0.3.1 release.
33108	DR6000 ocafsd crash - Program terminated with signal 6, Aborted	This issue was resolved in the 4.0.3.1 release.
33195	NetVault: Backup - Tape Load Commands fail to produce read status	This issue was resolved in the 4.0.3.1 release.
33226	Update Last Completed Run details if cleaner runs to all phases	This request has been addressed in the 4.0.3.1 release.
33234	System Test: Veeam job hangs and Rapid Cifs drive locks up system when unloading	This issue was resolved in the 4.0.3.1 release.
33275	for 802.3ad configuration of bond wrongly reporting as not connected in gui,omsa	This issue was resolved in the 4.0.3.1 release.
33432	Request to change system --show reason for not ready for I/O, when after system gets upgraded.	This request has been addressed in the 4.0.3.1 release.
33433	The gui is not displaying the 4 10G ethernet ports only 2 are displayed	This issue was resolved in the 4.0.3.1 release.
32710	The DR Series system GUI displays an error on a command for SSL Certificate.	This issue was resolved in the 4.0.3 release.
32663	RM-Reset is not working on the DR4300e-core.	This issue was resolved in the 4.0.3 release.
32616	The system cleaner stops ahead of scheduled end time.	This issue was resolved in the 4.0.3 release.
32331	Ocafsd crash during SG removal due to a race condition.	This issue was resolved in the 4.0.3 release.
31943	The self-signed certificate for the DR Series system GUI needs to be upgraded to SHA-256.	This issue was resolved in the 4.0.3 release.

ID	Issue	Workaround/Solution
31770	The time stamp indicated by hardware events is one hour earlier.	This issue was resolved in the 4.0.3 release.
29254	Containers with a client access list might block NFS access.	This issue was resolved in the 4.0.3 release.
28883	Estimated Logical Bytes are displayed even though the cleaner is in a "Done" state, and incorrect values are displayed in the Last Completed Run.	This issue was resolved in the 4.0.3 release.
17427	A customer requested to change the default alert email sender.	This issue was resolved in the 4.0.3 release.
32866	Replication is not supported between Quest and Dell VTL devices. This issue got resolved in 4.0.3	This issue was resolved in the 4.0.3 release.
32574	When trying to delete LSU from NetVault Backup, it is marked for deletion but is not removed even after space reclamation. This issue impacted the NVBU 11.4 RDA LSU configuration when performed from NVBU UI.	This issue was resolved in the 4.0.0.3a release.
32568	RDA v2 data structures need to be packed, but add backward compatibility for older RDA v2 clients (Rapid Recovery tiering to DR Series system).	This issue, introduced in 4.0.0.3 release, was resolved in the 4.0.0.3a release.
32307	NetVault Backup 11.4 - RDA V2 integration: Solaris Sparc backup jobs are failing on the DR Series system.	This issue was resolved in the 4.0.0.3a release. This release updated the RDA plugin for NVBU 11.4 SPARC clients. Please use the standalone plugin installer to deploy it.
32255	DS corruption on replication target--System goes to maintenance mode after powering up.	When the DR Series appliance boots, the contents in the WAM card are compared with the saved-content on the RAID6 vdisk. When they are different, the RAID6 contents are used. The system goes to maintenance mode to verify data integrity. The 4.0.0.3 release resolved an issue in the DR appliance shutdown process.
31341	After upgrading to version 4.0, error occurs that "allow_unsupported_sfp" is not a valid option. This issue impacted DR systems with Intel 10G NICs in 11/12G systems.	This issue was resolved in the 4.0.0.3a release by loading compatible network driver (ixgbe).
32157	Samba negotiation request goes through the smb1.	This issue was resolved in release 4.0.0.3.
32061	Remote code execution from a writable share "SambaCry" vulnerability (CVE-2017-7494)	A Samba patch was applied to address this issue in release 4.0.0.3.
32041	Email notifications should be allowed to be	This issue was resolved in release 4.0.0.3. In this

ID	Issue	Workaround/Solution
	sent from a custom user account and not from root.	release, email notifications can be sent from the administrator or from other custom accounts.
31890	When executing the mount command, you might receive the following error message: mount.nfs: requested NFS version or transport protocol is not supported.	This issue was resolved in the 4.0.0.3 release.
31848	Upgrade to 4.0.0.1 might fail when multiple roles are assigned to the backup_user.	This issue was resolved in the 4.0.0.3 release.
31844	The system cleaner is not triggered when the low space threshold is met on a 12TB DR2000V.	This issue was resolved in the 4.0.0.3 release.
31817	"Post encryption bytes" is displayed incorrectly.	This issue was resolved in the 4.0.0.3 release.
31741	10G cards are not recognized in the 4.0.0.1 release of the DR Series software.	This issue was resolved in the 4.0.0.3 release.
31583	Various issues with editing NFS/CIFS connection offline on a container in the DR Series system GUI.	This issue was resolved in the 4.0.0.3 release.
30986	Earlier versions of the software included the ability to configure arcfour256 and arcfour128.	As of the 4.0.0.3 release, Arcfour ciphers are no longer accepted for ssh connections.
30440, 24597	CIFS traffic is showing up in the usage graphs when only running iSCSI.	This issue was resolved in the 4.0.0.3 release.
27931	Cannot shut down the system from the GUI.	This issue was resolved in the 4.0.0.3 release.
31461	When the dictionary is being upgraded from DR Series system software version 4.0 to a later hot-fix release, it can take several minutes to a few hours (depending on the dictionary size), but no indication of status is given. Containers may not appear on the Containers page in the DR Series system GUI during the upgrade. The system should notify the user of status during the dictionary upgrade. (Note: This upgrade is a one-time action taken for upgrade to version 4.0.0.1.)	This issue was addressed in the 4.0.0.1 release. Proper communication is now given with notifications of upgrade, initialization, and installation of container. Once the upgrade is complete, all containers and associated statistics are listed on the Containers page of the GUI.
31252 31126	Savings/performance issue occurs in release 4.0 of the DR Series system software after upgrade. After upgrading to 4.0, you may see a slight decrease in savings percentage on the next update; over time, this savings will come back in line as the old data stream is aged out.	This issue was addressed in the 4.0.0.1 release.
31114 30895	Cleaner schedules that span multiple days are not retained upon upgrade to 4.0.	This issue was addressed in the 4.0.0.1 release.

ID	Issue	Workaround/Solution
30964	The DR Series 4.0 OST plugin does not support BE16 or NetBackup 8.0.	This issue was addressed in the 4.0.0.1 release.
30910 30820	Network graph in the GUI used "read/write" for "transmit/receive."	This issue was addressed in the 4.0.0.1 release.
30902	Critical alerts incorrectly generated and displayed before the DR Series system finishes initializing.	This issue was addressed in the 4.0.0.1 release.
31243	Error on DR4000 after upgrade when backing up to 1.0 data store.	Resolved in the 4.0.0278.0a release. This issue only impacted a DR4000 that still contained release 1.0 backup data.
31059	Loop in self-healing routine in specific failure scenario.	Resolved in the 4.0.0278.0a release.
31017	Replication error upon bringing system into maintenance mode when using older data format from a 2.x release.	Resolved in the 4.0.0278.0a release.
27538	Secure connection error "Error code: sec_error_reused_issuer_and_serial" in firefox	This issue was addressed in the 4.0 release.
30375	New Quest DLV license support.	This feature was added in version 4.0 to support Quest and Dell license formats.
30440, 24597	CIFS traffic is showing up in the usage graphs when only running iSCSI.	This issue was fixed in version 4.0.
30422	CIFS Administrator password migration from DR Series system software version 3.x to 4.x.	<p data-bbox="839 1155 1214 1178">During the upgrade to version 4.0:</p> <ol data-bbox="879 1189 1398 1756" style="list-style-type: none"> <li data-bbox="879 1189 1398 1310">1. Users corresponding to local workgroup users used for CIFS authentication will be created with the CIFS role and a default password (St0r@ge!). <li data-bbox="879 1332 1398 1489">2. A Message will inform the users of the above and request him/her to set the password of these users to the password of the corresponding local workgroup accounts. <li data-bbox="879 1512 1398 1756">3. For local workgroup accounts for which the migration has failed, a message will be displayed asking users to delete these accounts with "authenticate --delete" commands, and then create users with the CIFS role and appropriate CIFS authentication information manually.
29936	Domain users that are not in login group can	This issue was addressed in version 4.0.

ID	Issue	Workaround/Solution
	still log on.	
29769	BE15 is unable to detect NDMP VTL devices mapped to NetApp C Mode filer when NetApp filer is configured in vserver scope mode.	Configure NetApp for 7 Mode or for NetApp C Mode for node scope mode. The Node IP used is the NDMP host to the BE server.
29704	File system crash.	This issue was addressed in version 4.0.
29696	Creating any new username containing "administrator" substring as leading characters in the username and CIFS role causes administrator login via the GUI to be locked out.	This issue was addressed in version 4.0.
29672	DR4300e maxing out at 4 million files on some configurations.	This issue was addressed in version 4.0. The DR4300e now supports 64 million files.
29576, 25733	Replication failure under some rare corner cases.	This issue was addressed in version 4.0.
29356	When upgrading from DR Series system software version 3.x to 4.0, the backup_user is migrated based on backup_user configuration in version 3.x. This is to minimize post-upgrade configuration.	<p>Configuration 1 - When RDA and OST are configured in 3.x., the backup_user password is reset to default during the 4.0 upgrade.</p> <p>Configuration 2 - When only RDA is configured in 3.x, the backup_user password is set to RDA during 4.0 upgrade.</p> <p>Configuration 3 - When only OST is configured in 3.x, the backup_user password is set to OST during 4.0 upgrade.</p>
29255	GUI: After upgrading the DR Series system software from 3.0.0.2 to 4.0, DR Series members are not listed in the Global View page.	<p>Only Global View member lists from software version 3.1 and later will be migrated.</p> <p>GV Members which were added in 3.0.x.x builds should be added/re-entered manually after upgrading the DR to 4.0.</p>
28862	Time-out during seed copy to some slower USB devices.	Contact Technical Support to help you reduce the seeding threads so that the DR Series system does not overwhelm the client and USB device.
28561	Hyper-V client unable to discover VTL on higher-mapped LUN.	You must have a LUN 0-7 mapped to discover high-mapped LUN numbers. This is a Hyper-V issue.
28287	Unable to seed 3.x data to a 4.x system.	If you gathered a seed in 3.x you must finish your seed operation before upgrading to version 4.0.
28187	Setting a replication relationship with a target container has poor savings compared to the source.	If you create a replication relationship with a target container that already exists make sure the marker type is set to the correct type to match the source container.
27735, 27727	Deletion of replication pair with millions of files can take a very long time on target. This	Make sure replication is in sync before deleting the replication pair, or turn off replication before

ID	Issue	Workaround/Solution
	can also occur when reestablishing a relationship between a source and target container with a very large number of files.	deleting the relationship. This will reduce the amount of unnecessary housekeeping needed if you are planning to delete the replication target.
27175	Upgrading from 1.x or 2.x to 4.0 is not prevented.	Your system should have 3.x before upgrading to 4.0. See the upgrade section at the beginning of these release notes.
26137	Under some conditions seeding job does not get removed from DR Series system when job is removed via CLI.	This issue was addressed in version 4.0.
25105	Unable to change the IP from Static to DHCP if using the same IP address.	You must first enter a temporary IP address with a different number and then change to the IP you wish to use.
23767,21084	Disconnect under heavy load with Veeam, SQL, and other CIFS workflows.	This issue was addressed in version 4.0.
21715,24242	Cleaner improvements in laundry processing size.	This issue was addressed in the 3.2.0.2 maintenance release as well as version 4.0.
21496	On a DR2000v with ESX 5.5, web pages, pinging operations, etc. are timing out using TLB bonding.	Disable the second bond to work around this issue.
17216	The DR Series system is not Beast/Crime-vulnerable out of the box.	To keep this security intact, you should run one of the modern browsers that supports TLS 1.2 or greater.
16280	When you try to get replication statistics, the system displays the Software error: Use of uninitialized value in division (/) at helper.pl line 3548 error.	This issue was addressed in version 4.0.
30465	New Quest DLV license support.	This feature was added in release 3.2.6.2 and 3.2.0.3 to support Quest and Dell license formats.
29733	Incorrect output was displayed when using the command cleaner --show_log_files.	This issue was addressed in release 3.2.6.2 and 3.2.0.3.
29618	Login issue with login groups.	This issue was addressed in release 3.2.6.2 and 3.2.0.3.
29540	Incorrect stats included in daily report for replication target.	This issue was addressed in release 3.2.6.2 and 3.2.0.3.
29421	Need to increase RPC client timeout for node start/stop.	This issue was addressed in release 3.2.6.2 and 3.2.0.3.
29266	Need to add cleaner tunable parameter for laundry size.	This feature was added to release 3.2.6.2 and 3.2.0.3. Note that this parameter must be tuned by Technical Support.
28499	Add cleaner GUI usage graph for cleaner details.	This feature was added to release 3.2.6.2 and 3.2.0.3.

ID	Issue	Workaround/Solution
28484	DR4300 systems displayed incorrect drive sizes/capacity for 4TB drives when using RM factor reset.	This was fixed in the release 3.2.6.1 RM package.
27625, 27555	Replication was encountering system crashes in some rare cases.	This was fixed in release 3.2.6.1.
26721	NDMP VTL device appears offline.	This was fixed in release 3.2.6.1.
26685, 25675	ocafsd was crashing on cleaner code in some rare instances.	This was fixed in release 3.2.6.1.
25908	NDMP restore fails when backup is restarted with CommVault Simpana with large amounts of data.	This was fixed in release 3.2.6.1, and NDMP Backup Restartable Extensions (BRE) are now supported.
28032	The DR4000 crashes when breaking a replication relationship and running fsck.	This issue was addressed in 3.2.0.2.
27847	RDNFS plugin issue with Oracle Linux 7.0.	This issue was addressed in 3.2.0.2.
27736, 27671	Replication fix for large configurations.	This issue was addressed in 3.2.0.2.
26191	System cleaner timeout fix.	This issue was addressed in 3.2.0.2.
28439	After updating to release 3.2.0.1, the fan speed was 8K but should be 10K by default.	This was fixed in release 3.2.0.2.
23879	Backup spanning across multiple tapes fail when 10 GB tape is used for Microsoft DPM.	Recommendations for backups spanning multiple tapes are documented in the DR Series best practices guide for Microsoft DPM available for your specific DR Series system at support.quest.com .
23641	Cannot join into the domain by adding a DR Series system to multiple OUs. In the authenticate command type the format as follows:--ou topLevelOU/middleLevelOU/LowerLevelOU/TargetOU This format for adding OUs is now documented in the latest <i>Dell DR Series System CLI Guide</i> .	This was addressed and documented in release 3.2.6.
20870	RPC replication errors may be seen during replication from source DR Series system to target DR Series system. The primary and secondary replication target should have the same MTU setting. Replication proceeds once the MTU is set to the same as the replica target. This recommendation has been added to the section, "Managing Replication Operations," in the latest <i>Dell DR Series System Administrator's Guide</i> .	This was addressed and documented in release 3.2.6.

ID	Issue	Workaround/Solution
20539	After installing Rapid CIFS Filter Driver, an incorrect driver version is displayed.	Addressed and documented in release 3.2.6. If at the end of successful installation, the version of the driver loaded (which can be checked using rdcifsctl.exe driver -q) is lower than the version of the installed package (listed under Control Panel > Installed products), then you should restart the machine. This issue can occur if the system fails to rename/delete driver files under the system folder.
20456	Installation of SSL Certificate file in the GUI failed on Internet Explorer (IE) when using Remote Desktop.	Addressed and documented in release 3.2.6. When uploading the certificate file, the GUI uses the file name with the whole path, which works when uploading on a local system. When using RDP, in the IE browser settings, you need to disable the "Include local directory path .." setting, as follows. <ol style="list-style-type: none"> <li data-bbox="879 770 1396 851">1. Under Internet Options > Security, in the "Internet" or "Intranet" area, click Custom Level. <li data-bbox="879 882 1396 1003">2. In the Security settings, scroll down to Include local directory path when uploading files to a server and ensure it is not selected. <li data-bbox="879 1016 1396 1048">3. Click OK and the refresh the browser.
20424	The following message may appear on the console: "vx_nospace..." even if the system still has space.	Addressed and documented in release 3.2.6. This message is a result of trying to allocate a large contiguous block. The allocation of the contiguous block might fail, in which case, allocation continues without trying to keep the file contiguous. The vx_nospace error may appear, and this message can be safely ignored.
20188	When using cascaded replication for a large number of files (1M+), it may appear to take some time to see the actual files on the secondary target.	Addressed and documented in release 3.2.6. Namespace resync has to complete on the source and primary target and then data transfer has to start on both before transferring to the secondary target. Once the namespace resync completes on the first replication pair, resync then starts on the second replication pair. Until the namespace resync completes on the second pair, no data is transferred. This ensures the namespace resync completes faster and the snapshot can be deleted faster.
20009	User is able to create/write a file/directory in the share/container even though the user has only read permissions (file-level/security-level) on the share.	Addressed and documented in release 3.2.6. You can block write/create operations for a particular domain user by adding an extra 'Deny' 'write' acl for that user. (This issue occurs on the Windows 2008 client.)

ID	Issue	Workaround/Solution
19884	RDA plugin logging is not generated by default on physical hosts protected by vRanger because the plugin log service delldrlogsvc.exe is not installed by default.	<p>Addressed and documented in release 3.2.6. To enable RDA plugin logging on physical hosts:</p> <ol style="list-style-type: none"> 1. Copy %INSTALLDIR\Dell\RDA\dynlib\delldrlogsvc.exe from the vRanger server to the %INSTALLDIR\Dell\vRangerPhysicalClient\<timestamp>rofs directory on the physical host. 2. Change the directory to: %INSTALLDIR\Dell\vRangerPhysicalClient\<timestamp>rofs 3. Run the command: delldrlogsvc.exe install 4. Run the command: delldrlogsvc.exe start
19552	When there is no data to replicate (for example, replication state is INSYNC), replication statistics might indicate a target is running out of disk space even though the target has enough space.	<p>Addressed and documented in release 3.2.6. This occurs because the replication process detected target space full condition when there is pending data to be replicated, but, at a later time, that pending data was removed and replication was insync. We do not query target disk state when replication is idle. On a similar note, we might not indicate target space full condition when there is no data to replicate as well. An error state in the replication statistics makes sense only when replication is not in sync.</p>
19485	Adding a host name does not work if you use a FQDN and the host name has letters in it.	<p>Addressed and documented in release 3.2.6. You can add names as long as the name is made only of numbers and it is not a FQDN where a period is used in the name string.</p>
19186	If you change the hostname or the domain name after setting up the DR Rapid plug-in, then you may get the wrong backup mode pass-through or de-dupe.	<p>Addressed and documented in release 3.2.6. Uninstall and then reinstall the DR Rapid plug-in for this information to be set correctly.</p>
19023	Events information is not captured in the GUI when the date and time under System Configuration is changed to a date and time in the past.	<p>Addressed and documented in release 3.2.6. This type of event information is captured in the CLI, by using the <code>–show –alerts more</code> command.</p>
18848	In the Internet Explorer 9 and 10 browsers, when you navigate to a DR Series system from within Global View, and then log out of that system and return to Global View, you are logged out of the machine running the Global View.	<p>Addressed and documented in release 3.2.6. This issue does not occur with any other supported browser. For browser information, see the <i>DR Series System Interoperability Guide</i>.</p>
18178	The AIO-Stress tool fails when using Rapid NFS.	<p>Addressed and documented in release 3.2.6. Rapid NFS, which uses FUSE, does not support AIO.</p>
18501	Rapid NFS performance drops significantly	<p>Addressed and documented in release 3.2.6.</p>

ID	Issue	Workaround/Solution
	with parallel NFS ingest from same client.	When using Rapid NFS on your client, it is suggested that you do not run NFS from the same client to the DR Series system in parallel as this will affect your overall performance.
18144	A File name too long error is displayed after trying to create a directory structure that exceeded 522 directories.	Addressed and documented in release 3.2.6. The limit on a path within a mount point is 4096 bytes.
18022	Windows 2008 and newer servers cannot assign local users (other than administrator) to Access Control Lists (ACLs). Windows 2008 and later does not query the local users on the DR Series platform.	Addressed and documented in release 3.2.6. Assign ACLs to the built-in Administrator user on the DR Series platform if using Windows 2008 and later.
17661	If the cable is removed from a network interface and the network is restarted, the interface does not get an IP. If you then reinsert the cable, you must restart the network to get an IP.	Addressed and documented in release 3.2.6. Ensure that the interfaces that you want to add or modify are connected when making Advanced Networking changes. To restart the network, type <code>network --restart</code> at the CLI command line.
17193	DR Rapid critical message <code>Alert RDS Restore failed</code> reported on DR4x00 system. In addition to the error, an event is generated internally in the DR Rapid plug-in when the read operation fails	Addressed and documented in release 3.2.6. The DR Rapid plug-in generates events for any kind of read failures.
16745, 17621	If you have the same client for OST and RDS operations and you manually update the client connections, unexpected messages are displayed as: <pre>[root@swwsys-49 ~]# stats -- clients --type RDA RDA Client(s) Type plug-in OS Backup Software Last Access Connection(s) Mode r310-sys-39 RDS -- -- -- -- 0 Default</pre> <pre>[root@swwsys-49 ~]# ost -- update_client --name r310- sys-39 --mode auto Client is connected with default values. Please update to non-default values.</pre> In Linux systems, the RDS plug-in installation fails if the OST plug-in is already installed in the system	Addressed and documented in release 3.2.6. To work around the issue, use a different client for OST and RDS rather than sharing the same machine for both protocols.
16660	When BE has an issue connecting to the server, it may not return detailed errors to the OST plug-in.	Addressed and documented in release 3.2.6. See the client log files for the detailed information on the connection failure.
16427	When upgrading your system using the iDRAC, if the upgrade package also contains new iDRAC firmware, the upgrade fails to complete.	Addressed and documented in release 3.2.6. Upgrade the DR code using the CLI or GUI using the normal network interface and not the iDRAC.
16053	After you install the Rapid CIFS plugin and replication operations are performed, you	Addressed and documented in release 3.2.6. This is a Microsoft bug that occurs on shared network

ID	Issue	Workaround/Solution
	receive a blue screen and the following error: STOP 0x00000027 (parameter1, parameter2, parameter3, parameter4) RDR_FILE_SYSTEM	resources on a computer that is running Windows Server 2008 R2 or Windows 7. To fix, see the Microsoft KB2584874.
9433	The dedicated hot spare is not automatically configured after replacing the hot spare drive in slot 0.	Addressed and documented in release 3.2.6. If the hot spare is replaced, run maintenance by using the <code>--make_standby</code> command.
27074	iSCSI VTL configuration with IBM Tivoli Storage Manager 7.1.1 fails at audit tape library.	Corrected in release 3.2.0.1.
27074	Symantec Backup Exec inventory issue.	Corrected in release 3.2.0.1.
27013	Issue with an ofsck refcount record boundary calculation.	Corrected in release 3.2.0.1.
26721	NDMP VTL device offline issue.	Corrected in release 3.2.0.1.
26548	Kernel panic fix for VTL running in parallel with other protocol heavy replication.	Addressed in release 3.2.0.1.
26493	Option added to increase RDA retry capability in registry working with Tech Support.	Addressed in release 3.2.0.1.
26282	Support for RDA for Sparc.	Addressed in release 3.2.0.1.
26265	DR plugin DelIDRLogSvc service does not always stop when uninstalling NetVault.	Corrected in release 3.2.0.1.
26190	Various VTL updates for release 3.2.6 ported to 3.2.0.1 code.	Addressed in release 3.2.0.1.
26128	RFE: OFSCK: re-organized refcnt record structure to optimize disk space.	Addressed in release 3.2.0.1.
26113	NFS fix for moujnt during stats call.	Corrected in release 3.2.0.1.
25958	Veeam ingest and replication issue for large file overwrite corner case.	Corrected in release 3.2.0.1.
25860	NetVault Backup stats file takes a long time in closing.	Corrected in release 3.2.0.1.
25675	ocafsd crashed on cleaner code due to corner case.	Corrected in release 3.2.0.1.
25591	Space handling improvements related to global space thresholds and per enclosure thresholds for Rapid NFS and Rapid CIFS.	Addressed in release 3.2.0.1.
25584	Improved seeding for CIFS on slow networks	Addressed in release 3.2.0.1.

ID	Issue	Workaround/Solution
25393	Cleaner is now set to run during idle time even when not in schedule. Since the machine is idle cleaning will occur; it will be stopped if I/O is started.	Addressed in release 3.2.0.1.
25135	Let cleaner finish if it is in runonce mode even if there is a cleaner schedule stop.	Addressed in release 3.2.0.1.
25091	cifs_jobuf_alloc fix for iSCSI.	Addressed in release 3.2.0.1.
24998	Fixed complex replication deadlock scenario involving overwrites and aborts.	Addressed in release 3.2.0.1.
24855	VTL subsystem starts if container name contains "ISCSI" or "NDMP" even though the container type is not 'vtl'.	Corrected in release 3.2.0.1.
24809	Corner case fix for cascaded replication.	Addressed in release 3.2.0.1.
24738	Validate the timestamps in mds supplied by user.	Addressed in release 3.2.0.1.
24701	DR VTL was showing support for hardware encryption, which is not accurate. Removed this option as Symantec was allowing encryption setting. (SPIN, SPOUT and publishing in MODE SENSE)	Corrected in release 3.2.0.1.
24689	Some of the documentation PDF links were not working in the DR Series system GUI.	Corrected in release 3.2.0.1.
24579	Unable to log in using domain user starting with letter "j".	Corrected in release 3.2.0.1.
24571	Enclosure showing as "Not Configured" when another enclosure is added, which changed ID numbers.	Corrected in release 3.2.0.1.
23887	Corner case where cleaner schedule will not stop cleaner from running, nor does the cleaner stop command.	Corrected in release 3.2.0.1.
23797	NDMP user name must be changed to ndmp_user in GUI.	Addressed in release 3.2.0.1.
24312	Certain hypervisor host NICs will perform poorly and may require a driver update to fully support VMQ feature.	Note that this works as designed. To resolve this issue you should check on your Hypervisor host NIC feature list and update the driver to the latest version. For example, Broadcom NetXtreme I and NetXtreme II Ethernet adapter needs to get driver update to 17.6.0 or above to add VMQ support, otherwise you may experience performance

ID	Issue	Workaround/Solution
		<p>degradation during normal operations.</p> <p>Driver for NetXtreme I and NetXtreme II Ethernet adapter</p> <p>Firmware for NetXtreme I and NetXtreme II Ethernet adapter</p>
20539	After installing Rapid CIFS Filter Driver, an incorrect driver version is displayed.	If at the end of successful installation, the version of the driver loaded (which can be checked using <code>rdcifsctl.exe driver -q</code>) is lower than the version of the installed package (listed under Control Panel > Installed products), then you should restart the machine. This issue can occur if the system fails to rename/delete driver files under the system folder.
20456	Installation of SSL Certificate file in the GUI failed on Internet Explorer (IE) when using Remote Desktop.	<p>When uploading the certificate file, the GUI uses the file name with the whole path, which works when uploading on a local system. When using RDP, in the IE browser settings, you need to disable the "Include local directory path .." setting, as follows.</p> <ol style="list-style-type: none"> 1. Under Internet Options > Security, in the "Internet" or "Intranet" area, click Custom Level. 2. In the Security settings, scroll down to Include local directory path when uploading files to a server and ensure it is not selected. 3. Click OK and then refresh the browser.
20424	The following message may appear on the console: "vx_nospace..." even if the system still has space.	This message is a result of trying to allocate a large contiguous block. The allocation of the contiguous block might fail, in which case, allocation continues without trying to keep the file contiguous. The <code>vx_nospace</code> error may appear, and this message can be safely ignored.
20009	User is able to create/write a file/directory in the share/container even though the user has only read permissions (file-level/security-level) on the share.	You can block write/create operations for a particular domain user by adding an extra 'Deny' 'write' acl for that user. (This issue occurs on the Windows 2008 client.)
19485	Adding a host name does not work if you use a FQDN and the host name has letters in it.	You can add names as long as the name is made only of numbers and it is not a FQDN where a period is used in the name string.
19186	If you change the hostname or the domain name after setting up the DR Rapid plug-in, then you may get the wrong backup mode pass-through or de-dupe.	Uninstall and then reinstall the DR Rapid plug-in for this information to be set correctly.
18848	In the Internet Explorer 9 and 10 browsers, when you navigate to a DR Series system from within <i>Global View</i> , and then log out of	This issue does not occur with any other supported browser. For browser information, see the <i>DR Series System Interoperability Guide</i> .

ID	Issue	Workaround/Solution
	that system and return to Global View, you are logged out of the machine running the Global View.	
18178	The AIO-Stress tool fails when using Rapid NFS.	Rapid NFS, which uses FUSE, does not support AIO.
18501	Rapid NFS performance drops significantly with parallel NFS ingest from same client.	When using Rapid NFS on your client, it is suggested that you do not run NFS from the same client to the DR Series system in parallel as this will affect your overall performance.
18144	A File name too long error is displayed after trying to create a directory structure that exceeded 522 directories.	The limit on a path within a mount point is 4096 bytes.
18022	Windows 2008 and newer servers cannot assign local users (other than administrator) to Access Control Lists (ACLs). Windows 2008 and later does not query the local users on the DR Series platform.	Assign ACLs to the built-in Administrator user on the DR Series platform if using Windows 2008 and later.
17661	If the cable is removed from a network interface and the network is restarted, the interface does not get an IP. If you then reinsert the cable, you must restart the network to get an IP.	Ensure that the interfaces that you want to add or modify are connected when making Advanced Networking changes. To restart the network, type <code>network --restart</code> at the CLI command line.
17193	DR Rapid critical message Alert RDS Restore failed reported on DR4x00 system. In addition to the error, an event is generated internally in the DR Rapid plug-in when the read operation fails	The DR Rapid plug-in generates events for any kind of read failures.
16745, 17621	If you have the same client for OST and RDS operations and you manually update the client connections, unexpected messages are displayed as: <pre>[root@swwsys-49 ~]# stats -- clients --type RDA RDA Client(s) Type plug-in OS Backup Software Last Access Connection(s) Mode r310-sys-39 RDS -- -- -- -- 0 Default</pre> <pre>[root@swwsys-49 ~]# ost -- update_client --name r310- sys-39 --mode auto Client is connected with default values. Please update to non-default values.</pre> In Linux systems, the RDS plug-in installation fails if the OST plug-in is already installed in the system	To work around the issue, use a different client for OST and RDS rather than sharing the same machine for both protocols.
16660	When BE has an issue connecting to the server, it may not return detailed errors to the OST plug-in.	See the client log files for the detailed information on the connection failure.
16427	When upgrading your system using the	Upgrade the DR code using the CLI or GUI using

ID	Issue	Workaround/Solution
	iDRAC, if the upgrade package also contains new iDRAC firmware, the upgrade fails to complete.	the normal network interface and not the iDRAC.
9433	Global hot spare is not automatically configured after replacing the GHS drive in slot 0.	If the global hot spare is replaced, run maintenance by using the <code>--make_standby</code> command to make the drive a global hot spare.

Open issues

ID	Issue	Description/Workaround
33060, 32612, 33156	The current releases of NetBackup and Backup Exec do not support Quest OST devices.	For NetBackup 8, apply the patch from Veritas. Contact Quest support for patch details. For Backup Exec 16, create a VTL container with the Robot model as "Dell DR_L700." Configure OST storage server as Dell. Support for Quest OST and VTL devices is planned in BE 20.
32274	Unable to access RDA device after changing RDA user password.	You should restart the NetVault Backup services.
31999	On the DR4300e Core system, backup job failures might be observed for OST, RDA, RDCIFS and RDNFS while cleaner is running.	Contact the Quest support team for assistance in tuning the DR4300e Core system.
31951	If the cleaner or replication schedule is set to end at 24:00, the same will not be honored.	You should set the end time to 23:59.
31123	At the end of an upgrade, you might see the alert: "SVDC reserved alert ##."	If you see this alert, the last part of the upgrade failed. Please contact Quest Support, or run the upgrade again.
30813	The OST Accelerator option (synthetic backups) can perform poorly under heavy load conditions.	While you can continue to use OST, disable the Accelerator option in these scenarios. This issue will be resolved in a future release.
27278	On Solaris, the standalone RDA package installation conflicts with existing packages.	If you are trying to upgrade the RDA plugin on Solaris, the command, <code>pkgadd</code> , will prompt for conflicting files. Respond 'y' for yes to the following prompts for installation to complete successfully. Do you want to install these conflicting files [y,n,?,q] y Do you want to continue with the installation of <DellRDSPlugin-64bit> [y,n,?]y
25832	RDNFS binary upgrade fails in RHEL 7 client.	Uninstall any existing RDNFS package and then install the new one.

ID	Issue	Description/Workaround
23641	Cannot join into domain by adding the DR Series system into multiple OUs	Contact Quest support to add unit to multiple OUs using the authenticate command type as follows: <code>--ou topLevelOU/middleLevelOU/LowerLevelOU/TargetOU</code>
20553	Specific umount options do not work for Rapid NFS.	The -l and -f options are not supported in the rdnfs umount procedure.
20426	Replication traffic that is configured to go through an assigned bond may still run through the default bond (bond0).	If you want to run replication traffic through another bond interface, contact Technical Support to update the route.
17206	Do not allow changing IP of an interface that is a part of a replication link.	Understand your current configuration before adding new advanced networking configuration so that you do not impact the current system configuration.

Product licensing

If you purchased the DR Series system prior to November 2016 and require licensing assistance, visit the Dell Support site at <https://support.dell.com> or contact your Dell DR Series representative. If you purchased the DR Series system after November 2016, and require Quest licensing assistance, please visit:

<https://support.quest.com/contact-us/licensing>

i | **NOTE:** The only DR Series system models that require specific additional licensing to be added are expansion shelves, the DR2000v, and the DR4300e.

Supported software and hardware

For a complete list of the supported hardware and software for the DR Series system, see the *DR Series System Interoperability Guide*. You can download this guide by visiting: <http://support.quest.com/DR-Series> and selecting your specific DR Series system, which opens the product support page to view product documentation for your system.

Checking system information

Before troubleshooting issues with a DR Series system, ensure that the installed DR Series system software is up to date. The related drivers, software, and firmware are available at support.quest.com/DR-Series. You will need to know your service tag to download the latest updates. Also, confirm that you have the correct product to begin the search for all the related drivers, software, and firmware.

For information about how to check the current version of the DR Series system software installed, see the *DR Series System Administrator Guide* or the *DR Series System Command Line Reference Guide*.

Other information you may need

The following table lists the documentation available for the DR Series systems. The documents listed are available at support.quest.com/DR-Series by selecting your specific DR Series system. For more information about DR Series system hardware, see the safety and regulatory information that shipped with your DR Series system. Warranty information may be included as a separate document.

Document	Description
DR Series System Getting Started Guide	Provides an overview of how to set up the physical DR Series system hardware and includes technical specifications.
DR Series System Owner's Manual	Provides information about applicable physical DR Series system features, troubleshooting the DR Series system, and installing or replacing the DR Series system components.
DR2000v Deployment Guide	Provides information about deploying the virtual DR Series system, DR2000v, on supported virtual platforms.
DR Series System Administrator Guide	Provides information about managing backup and replication operations using the DR Series system GUI.
DR Series System Interoperability Guide	Provides information on supported hardware and software for the DR Series systems.
DR Series System Command Line Reference Guide	Provides information about managing DR Series system data backup and replication operations using the DR Series system command line interface (CLI).
DR Series System Release Notes	Provides the latest information about new features and known issues with a specific product release.

i **NOTE:** Always check for the latest documentation updates and release notes at support.quest.com/dr-series, and read the release notes first because they contain the most recently documented information about known issues with a specific product release.

Third party components

This product contains the third-party components listed below.

Source code for some components can be found at <http://opensource.quest.com>.

Copyright notices can be found in the section [Copyright Notices](#).

Component	License	Notes
Angular.js 1.4.7	MIT	A copy of the license can be found below at The MIT License (MIT)
Apache 2.4.46	Apache 2.0	Copyright 2021 The Apache Software Foundation. A copy of the license can be found below at Apache 2.0
Footable 2.0	MIT	Copyright 2012 Steven Usher & Brad Vincent A copy of the license can be found below at The MIT License (MIT)
keyutils-libs 1.2	GPL (GNU General Public License) 2.0	This product is not used by the DR Series Software, but provided for customer convenience. Copyright (C) 1989, 1991 Free Software Foundation, Inc., A copy of the license can be found below at GPL (GNU General Public License) 2.0
libsigc++20 2.0.17.1	LGPL (GNU Lesser General Public License) 2.1	Copyright (C) 1991, 1999 Free Software Foundation, Inc. The full text of the license may be found on our website .
libtalloc2 2.0.8.24.1	GPL (GNU General Public License) 3.0	Copyright (C) Andrew Tridgell 2004-2005 Copyright (C) Stefan Metzmacher 2006 Copyright (C) Jelmer Vernooij <jelmer@samba.org> 2008 A copy of the license can be found below at GNU (Lesser General Public License) 3.0
libxml++ 2.19.1.1	GPL (GNU General Public License) 2.0	Copyright (C) 1992, 1993, 1994, 1995, 1996, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006 Free Software Foundation, Inc. A copy of the license can be found below at GPL (GNU General Public License) 2.0
OpenSSL 1.0.1g	OpenSSL License	This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (http://www.openssl.org/)

Component	License	Notes
		Copyright (c) 1998-2011 The OpenSSL Project. All rights reserved. A copy of the license can be found below at Open SSL License
QLogic FC HBA driver Target Mode qla2x00t 3.1	GPL (GNU General Public License) 2.0	2004 - 2016 Vladislav Bolkhovitin <vst@vlnb.net> Copyright (C) 2004 - 2005 Leonid Stoljar Copyright (C) 2006 Nathaniel Clark <nate@misrule.us> Copyright (C) 2007 - 2016 SanDisk Corporation A copy of the license can be found below at GPL (GNU General Public License) 2.0
Samba 3.5	GPL (GNU General Public License) 3.0	Copyright (C) 2007 Free Software Foundation, Inc. < http://fsf.org/ > A copy of the license can be found below at GNU (Lesser General Public License) 3.0
SCSI List Utility 0.17.3.e15	GPL (GNU General Public License) 2.0	Copyright (C) 2006-2007 FUJITA Tomonori < tomof@acm.org > Copyright (C) 2006-2007 Mike Christie < michaelc@cs.wisc.edu > A copy of the license can be found below at GPL (GNU General Public License) 2.0
SCST 3.1	GPL (GNU General Public License) 2.0	This product is not used by the DR Series Software, but provided for customer convenience. Copyright (C) 2004-2006 Vladislav Bolkhovitin <vst@vlnb.net> and Leonid Stoljar A copy of the license can be found below at GPL (GNU General Public License) 2.0
spin.js 1.3.3	MIT	A copy of the license can be found below at The MIT License (MIT)
TimeZone 1	Apache 2.0	Copyright 2010 Matthew Eernisse (mde@fleegix.org) and Open Source Applications Foundation A copy of the license can be found below at Apache 2.0
Vis.js 1	MIT	Copyright (c) 2014-2015 Almende B.V. A copy of the license can be found below at The MIT License (MIT)
Xmlsec1 1.2.9.8.1.2	MIT	A copy of the license can be found below at The MIT License (MIT)

Apache 2.0

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

GPL (GNU General Public License) 2.0

GNU GENERAL PUBLIC LICENSE VERSION 2

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program).

Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:
 - a. You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
 - b. You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
 - c. If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:
 - a. Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
 - b. Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
 - c. Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.
5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.
6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.
9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.
Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.
10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

[one line to give the program's name and a brief idea of what it does.] Copyright (C) [year] [name of author]

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author

Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.

This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program `Gnomovision' (which makes passes at compilers) written by James Hacker.

[signature of Ty Coon], 1 April 1989

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

GNU (General Public License) 3.0

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. [<http://fsf.org/>] Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a. The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b. The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c. You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.
- d. If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

- a. Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.
- b. Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
- c. Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
- d. Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

- e. Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a. Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b. Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c. Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d. Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e. Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f. Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

[one line to give the program's name and a brief idea of what it does.] Copyright (C) [year] [name of author]

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program. If not, see [<http://www.gnu.org/licenses/>].

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

[program] Copyright (C) [year] [name of author] This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'. This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see [<http://www.gnu.org/licenses/>].

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read [<http://www.gnu.org/philosophy/why-not-lgpl.html>].

GNU (Lesser General Public License) 3.0

GNU LESSER GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. [<http://fsf.org/>] Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates the terms and conditions of version 3 of the GNU General Public License, supplemented by the additional permissions listed below.

0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser General Public License, and the "GNU GPL" refers to version 3 of the GNU General Public License.

"The Library" refers to a covered work governed by this License, other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided by the Library, but which is not otherwise based on the Library. Defining a subclass of a class defined by the Library is deemed a mode of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an Application with the Library. The particular version of the Library with which the Combined Work was made is also called the "Linked Version".

The "Minimal Corresponding Source" for a Combined Work means the Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work.

1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License without being bound by section 3 of the GNU GPL.

2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

- a. under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or
- b. under the GNU GPL, with none of the additional permissions of this License applicable to that copy.

3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates (ten or fewer lines in length), you do both of the following:

- a. Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License.
- b. Accompany the object code with a copy of the GNU GPL and this license document.

4. Combined Works.

You may convey a Combined Work under terms of your choice that, taken together, effectively do not restrict modification of the portions of the Library contained in the Combined Work and reverse engineering for debugging such modifications, if you also do each of the following:

- a. Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License.
- b. Accompany the Combined Work with a copy of the GNU GPL and this license document.
- c. For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document.
- d. Do one of the following:
 - a. Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.
 - b. Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.
- e. Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

- a. Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.
- b. Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library as you received it specifies that a certain numbered version of the GNU Lesser General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that published version or of any later version published by the Free Software Foundation. If the Library as you received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

Open SSL License

/* =====

Copyright (c) 1998-2011 The OpenSSL Project. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgment: "This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (<http://www.openssl.org/>)"
4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to endorse or promote products derived from this software without prior written permission. For written permission, please contact openssl-core@openssl.org.
5. Products derived from this software may not be called "OpenSSL" nor may "OpenSSL" appear in their names without prior written permission of the OpenSSL Project.
6. Redistributions of any form whatsoever must retain the following acknowledgment: "This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (<http://www.openssl.org/>)"

THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT ``AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

* =====

This product includes cryptographic software written by Eric Young (eay@cryptsoft.com). This product includes software written by Tim Hudson (tjh@cryptsoft.com).

Original SSLeay License

Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com)

All rights reserved.

This package is an SSL implementation written by Eric Young (eay@cryptsoft.com). The implementation was written so as to conform with Netscapes SSL.

This library is free for commercial and non-commercial use as long as the following conditions are aheared to. The following conditions apply to all code found in this distribution, be it the RC4, RSA, lhash, DES, etc., code; not just the SSL code. The SSL documentation included with this distribution is covered by the same copyright terms except that the holder is Tim Hudson (tjh@cryptsoft.com).

Copyright remains Eric Young's, and as such any Copyright notices in the code are not to be removed. If this package is used in a product, Eric Young should be given attribution as the author of the parts of the library used.

This can be in the form of a textual message at program startup or in documentation (online or textual) provided with the package.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgement: "This product includes cryptographic software written by Eric Young (eay@cryptsoft.com)" The word 'cryptographic' can be left out if the routines from the library being used are not cryptographic related :-).
4. If you include any Windows specific code (or a derivative thereof) from the apps directory (application code) you must include an acknowledgement: "This product includes software written by Tim Hudson (tjh@cryptsoft.com)"

THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE

OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The license and distribution terms for any publically available version or derivative of this code cannot be changed. i.e. this code cannot simply be copied and put under another distribution licence [including the GNU Public Licence.]

*/

The MIT License (MIT)

The MIT License (MIT)

Copyright (c) 2007 James Newton-King

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions: The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE. THE SOFTWARE.

Copyright Notices

Components

Footable 2.0 Copyright 2012 Steven Usher & Brad Vincent

libtalloc2 Copyright (C) Andrew Tridgell 2004-2005
utility Copyright (C) Stefan Metzmacher 2006
Copyright (C) Jelmer Vernooij <jelmer@samba.org> 2008

Libxml2 Copyright (C) 1992, 1993, 1994, 1995, 1996, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006 Free Software Foundation, Inc.
Copyright (C) 2000 Gary Pennington and Daniel Veillard.
Copyright 1991 by the Massachusetts Institute of Technology
Copyright (C) 2000 Bjorn Reese and Daniel Veillard.

mhVTL Copyright (C) 2009 - 2010 Kevan Rehm
Copyright (C) 2005 - 2013 Mark Harvey
Copyright (C) 1992 Eric Youngdale

OpenSSL Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com). All rights reserved. Copyright remains Eric Young's
Copyright 2005 Nokia. All rights reserved.

Components

Copyright (C) 2006, Network Resonance, Inc.
Copyright (C) 2011, RTFM, Inc.
(c) Copyright 1999 Bodo Moeller. All rights reserved.
(c) Copyright 1999 Bodo Moeller. All rights reserved
Copyright (c) 1999-2002 The OpenSSL Project. All rights reserved.
Copyright (c) 2004, Richard Levitte <richard@levitte.org> All rights reserved.
Copyright (c) 1999-2010 The OpenSSL Project. All rights reserved.
(C) Copyright Microsoft Corp. 1993. All rights reserved.
Copyright (C) 1995-1997 Eric Young (eay@cryptsoft.com) All rights reserved.
Copyright (c) 2003 The OpenSSL Project. All rights reserved.
Copyright (c) 2007 KISA(Korea Information Security Agency). All rights reserved.
Copyright (c) 2004 Kungliga Tekniska HxvF6gskolan (Royal Institute of Technology, Stockholm, Sweden).
Copyright (c) 2005 The OpenSSL Project. All rights reserved
Copyright (c) 2008 Andy Polyakov appro@openssl.org
Copyright 2006 NTT (Nippon Telegraph and Telephone Corporation) . ALL RIGHTS RESERVED.
Copyright (c) 2002 Bob Beck <beck@openbsd.org>
Copyright (c) 2002 Theo de Raadt
Copyright (c) 2002 Markus Friedl All rights reserved.
Copyright (c) 2010-2010 Intel Corp. Author: Vinodh.Gopal@intel.com
Copyright (c) 1986 by Sun Microsystems, Inc.
Copyright 2011 Google Inc.
Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com) All rights reserved.
Copyright (c) 2005 Hewlett-Packard Development Company, L.P.

QLogic FC HBA driver Target Mode qla2x00t 3.1	2004 - 2016 Vladislav Bolkhovitin <vst@vlb.net> Copyright (C) 2004 - 2005 Leonid Stoljar Copyright (C) 2006 Nathaniel Clark <nate@misrule.us> Copyright (C) 2007 - 2016 SanDisk Corporation
--	---

Samba	Copyright (c) 2003 SuSE Linux AG, Nuernberg, Germany. All rights reserved. Copyright (C) Stefan (metze) Metzmacher 2002 Copyright (C) Andrew Tridgell 2004 Copyright (C) Andrew Tridgell 2001-2003 Copyright (C) Andrew Bartlett <abartlet@samba.org> 2009 Copyright (C) Andrew Tridgell 2005 Copyright (C) Andrew Tridgell 2003-2005 Copyright (C) Stefan (metze) Metzmacher 2004 Copyright (C) Stefan (metze) Metzmacher 2004 Copyright (C) Andrew Tridgell 2005 Copyright (C) Andrew Tridgell 1992-2005 Copyright (C) Martin Pool 2002 Copyright (C) Jelmer Vernooij 2002 Copyright (C) James J Myers 2003 <myersjj@samba.org> Copyright (C) Stefan (metze) Metzmacher 2004 Copyright (C) Andrew Tridgell 1998 Copyright (C) Andrew Tridgell 1992-2003 Copyright (C) James J Myers 2003 <myersjj@samba.org> Copyright (C) Andrew Tridgell 2003 Copyright (C) James J Myers 2003 <myersjj@samba.org> Copyright (C) Andrew Tridgell 1992-2005 Copyright (C) James J Myers 2003 <myersjj@samba.org> Copyright (C) Stefan (metze) Metzmacher 2004-2005 Copyright (C) David Disseldorp 2008 <ddiss@sgi.com> Copyright (C) Stefan (metze)
-------	--

Components

Metzmacher 2008 Copyright (C) 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008 Copyright (C) 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008 Free Software Foundation, Inc. Copyright tridge@samba.org 2002-2003 Copyright metze@samba.org 2004 Copyright (C) tridge@samba.org Copyright (C) metze@samba.org Copyright (C) 2001 by Martin Pool <mbp@samba.org> Copyright (C) Jim McDonough (jmc@us.ibm.com) 2003. Copyright (C) Stefan Metzmacher 2003 Copyright (C) Andrew Tridgell 2009 Copyright (C) Andrew Tridgell 2004 Copyright (C) Andrew Bartlett <abartlet@samba.org> 2004-2005 Copyright (C) Stefan Metzmacher 2008 Copyright (C) Jelmer Vernooij 2006 Copyright (C) Tim Potter 2004 Copyright (C) Stefan Metzmacher 2005 Copyright (C) 2004 Jelmer Vernooij, jelmer@samba.org Copyright (C) 2008 Matthias Dieter Wallnöfer, mwallnoefer@yahoo.de Copyright (C) Anatoliy Atanasov 2009 Copyright (C) Andrew Tridgell 2009 Copyright (C) Stefan Metzmacher 2004 Copyright (C) Stefan Metzmacher 2009 Copyright (C) Andrew Tridgell 2009 Copyright (C) Volker Lendecke 2005 Copyright (C) Andrew Bartlett <abartlet@samba.org> 2004-2008 Copyright (C) Stefan Metzmacher <metze@samba.org> 2005 Copyright (C) Matthias Dieter Wallnöfer 2009 Copyright (C) Jelmer Vernooij <jelmer@samba.org> 2004,2007 Copyright (C) Andrew Bartlett <abartlet@samba.org> 2004-2005 Copyright (C) Matthias Dieter Wallnöfer 2009 Copyright (C) Stefan (metze) Metzmacher 2006 Copyright (C) Stefan (metze) Metzmacher 2004-2006 Copyright (C) Stefan (metze) Metzmacher 2005 Copyright (C) 2008 Jelmer Vernooij, jelmer@samba.org Copyright (C) 2008 Wilco Baan Hofman, wilco@baanhofman.nl Copyright (C) Guenther Deschner 2006 Copyright (C) Wilco Baan Hofman 2008 Copyright (C) 2001 Andrew Tridgell (from samba3 ads.c) Copyright (C) 2001 Remus Koos (from samba3 ads.c) Copyright (C) 2001 Andrew Bartlett (from samba3 ads.c) Copyright (C) 2008 Jelmer Vernooij, jelmer@samba.org Copyright (C) 2008 Wilco Baan Hofman, wilco@baanhofman.nl Copyright © Jelmer Vernooij <jelmer@samba.org> 2008 Copyright (C) Andrew Tridgell 2005 Copyright © Jelmer Vernooij <jelmer@samba.org> 2008 Copyright (C) Stefan Metzmacher 2006 Copyright (C) Andrew Tridgell 2005 Copyright (C) Andrew Bartlett <abartlet@samba.org> 2008

SCSI List
Utility
0.17.3.e15

Software iSCSI target over TCP/IP Data-Path
Copyright (C) 2006-2007 FUJITA Tomonori <tomof@acm.org>
Copyright (C) 2006-2007 Mike Christie <michaelc@cs.wisc.edu>
This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, version 2 of the License.
This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details. You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

SCST 3.1 Copyright (C) 2004-2006 Vladislav Bolkhovitin <vst@vlhb.net> and Leonid Stoljar

spin.js 1.3.3 Copyright (c) 2011-2013 Felix Gnass

TimeZone 1 Copyright 2010 Matthew Eernisse (mde@fleegix.org) and Open Source Applications Foundation

Vis.js 1 Copyright (c) 2014-2015 Almende B.V.

About us

We are more than just a name

We are on a quest to make your information technology work harder for you. That is why we build community-driven software solutions that help you spend less time on IT administration and more time on business innovation. We help you modernize your data center, get you to the cloud quicker and provide the expertise, security and accessibility you need to grow your data-driven business. Combined with Quest's invitation to the global community to be a part of its innovation, and our firm commitment to ensuring customer satisfaction, we continue to deliver solutions that have a real impact on our customers today and leave a legacy we are proud of. We are challenging the status quo by transforming into a new software company. And as your partner, we work tirelessly to make sure your information technology is designed for you and by you. This is our mission, and we are in this together. Welcome to a new Quest. You are invited to Join the Innovation™.

Our brand, our vision. Together.

Our logo reflects our story: innovation, community and support. An important part of this story begins with the letter Q. It is a perfect circle, representing our commitment to technological precision and strength. The space in the Q itself symbolizes our need to add the missing piece — you — to the community, to the new Quest.

Contacting Quest

For sales or other inquiries, visit www.quest.com/contact.

Technical support resources

Technical support is available to Quest customers with a valid maintenance contract and customers who have trial versions. You can access the Quest Support Portal at <https://support.quest.com>.

The Support Portal provides self-help tools you can use to solve problems quickly and independently, 24 hours a day, 365 days a year. The Support Portal enables you to:

- Submit and manage a Service Request
- View Knowledge Base articles
- Sign up for product notifications
- Download software and technical documentation
- View how-to-videos
- Engage in community discussions
- Chat with support engineers online
- View services to assist you with your product