

# Veritas™ Volume Replicator Release Notes

Solaris

5.0



# Veritas Volume Replicator Release Notes

Copyright © 2006 Symantec Corporation. All rights reserved.

Veritas Volume Replicator 5.0

Symantec, the Symantec logo, Veritas, and Veritas Storage Foundation are trademarks or registered trademarks of Symantec Corporation or its affiliates in the U.S. and other countries. Other names may be trademarks of their respective owners.

The product described in this document is distributed under licenses restricting its use, copying, distribution, and decompilation/reverse engineering. No part of this document may be reproduced in any form by any means without prior written authorization of Symantec Corporation and its licensors, if any.

THIS DOCUMENTATION IS PROVIDED “AS IS” AND ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE DISCLAIMED, EXCEPT TO THE EXTENT THAT SUCH DISCLAIMERS ARE HELD TO BE LEGALLY INVALID, SYMANTEC CORPORATION SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH THE FURNISHING PERFORMANCE, OR USE OF THIS DOCUMENTATION. THE INFORMATION CONTAINED IN THIS DOCUMENTATION IS SUBJECT TO CHANGE WITHOUT NOTICE.

The Licensed Software and Documentation are deemed to be “commercial computer software” and “commercial computer software documentation” as defined in FAR Sections 12.212 and DFARS Section 227.7202.

Symantec Corporation  
20330 Stevens Creek Blvd.  
Cupertino, CA 95014  
[www.symantec.com](http://www.symantec.com)

## Third-party legal notices

Third-party software may be recommended, distributed, embedded, or bundled with this Symantec product. Such third-party software is licensed separately by its copyright holder. All third-party copyrights associated with this product are listed in the accompanying release notes.

Solaris is a trademark of Sun Microsystems, Inc.

## Licensing and registration

Veritas Volume Replicator is a licensed product. See the *Veritas Volume Replicator Installation Guide* for license installation instructions.

## Technical support

For technical assistance, visit <http://support.veritas.com> and select phone or email support. Use the Knowledge Base search feature to access resources such as TechNotes, product alerts, software downloads, hardware compatibility lists, and our customer email notification service.



# Contents

Chapter 1	Veritas Volume Replicator Release Notes	
	New features .....	8
	Replicating volume sets .....	8
	Cross-platform data sharing .....	8
	Bunker replication .....	8
	Enhanced cluster support .....	8
	VVR VEA features .....	9
	Managing VVR using the Web GUI .....	9
	Centralized management of VVR .....	9
	Veritas Volume Replicator Advisor .....	9
	Required patches .....	10
	No longer supported .....	10
	Installation notes .....	11
	Obtaining a license key .....	11
	Compatibility considerations .....	11
	Fixed issues .....	14
	Installation issues .....	14
	The vradmin issues .....	14
	SRL issues .....	15
	Issues related to replication in a shared environment .....	15
	Known issues .....	16
	Installation issues .....	16
	Support and compatibility issues .....	17
	The vradmin issues .....	17
	RVG and RLINK issues .....	19
	DCM issues .....	19
	SRL issues .....	20
	Takeover issues .....	20
	Issues related to replication in a shared environment .....	21
	VRW issues .....	21
	VVR VEA issues .....	23
	Software limitations .....	23
	Support for local zones .....	23
	Solaris 10 zone feature limitation .....	24
	Unsupported Internet protocol versions .....	24
	RAID-5 volume .....	24

Disk Group Split and Join .....	24
Importing a disk group with VVR objects .....	24
Volumes in boot disk group .....	24
Selecting records using search expressions .....	24
Adding a Secondary .....	24
Issues related to replication in a shared environment .....	25
VRW limitations .....	25
VCS Agents for VVR limitations .....	25
Documentation .....	26

Appendix A Third-party Legal Notices

# Veritas Volume Replicator Release Notes

Veritas™ Volume Replicator by Symantec (VVR) is a licensed product and an add-on feature to Veritas Volume Manager (VxVM). This document provides release information for Veritas Volume Replicator on Solaris and contains information supplemental to the *Veritas Storage Foundation™ Release Notes*.

VVR contains VVR Veritas Enterprise Administrator (VVR VEA), Veritas Volume Replicator Web Console (VRW), and Veritas Cluster Server (VCS) Agents for Veritas Volume Replicator. VVR also provides Veritas Volume Replicator Advisor (VRAdvisor), which is a planning tool that helps you plan an optimum Veritas Volume Replicator configuration. This document provides information about the VVR VEA, VRW, VCS Agents for VVR, and VRAdvisor.

Review this entire document before installing VVR. For additional information about this release, see “[Required patches](#)” on page 10.

Veritas Volume Replicator is supported on 32-bit and 64-bit versions of the Solaris 8, Solaris 9, and Solaris 10 operating systems (SPARC Platforms).

## New features

This release of Veritas Volume Replicator includes the following features:

### Replicating volume sets

VVR now supports replicating volume sets by including the volume set itself as a part of the RVG. When a volume set is included in an RVG, VVR also ensures that the replicated volume set configurations are consistent across the Primary and Secondary.

### Cross-platform data sharing

Veritas Volume Replicator (VVR) is now CDS compliant. VVR uses CDS format to support the following functionality:

- migrating data between heterogeneous systems (either on the Primary or the Secondary) where each system has direct access to the physical devices used to hold the data. Note that CDS does not support simultaneous use of data from more than one platform.

---

**Caution:** Stop all the applications working on that disk group before migrating data between hosts. Failure to do so may result in data loss.

---

- replicating data between heterogeneous systems. That is, the Primary host is a different platform from the Secondary host, and each host is able to access the data in CDS format.

### Bunker replication

Bunker replication enables VVR to achieve complete Recovery Point Objective (RPO) and limited Recovery Time Objective (RTO) without any major impact on the application's performance. Bunker replication uses a bunker site, which maintains a copy of only the Primary SRL without having to maintain additional copies of the data volumes. This feature combines the advantages of synchronous and asynchronous modes of replication.

### Enhanced cluster support

VVR supports 4-node cluster applications.



## VVR VEA features

You can use VVR VEA to replicate to a bunker, which can then be used for disaster recovery.

## Managing VVR using the Web GUI

The VVR Web GUI includes the following new features:

- links to volume views enable you to access detailed information about local volumes in the RDS.
- new look and feel provides consistency among Veritas Storage Foundation products.
- new role-based administration model enables you to control access to administrative tasks according to preassigned roles: Storage Administrator, Storage Operator, and Read Only.

## Centralized management of VVR

VVR can be centrally managed through the Storage Foundation Management Server. For more information, see the documentation for Storage Foundation Management Server.

## Veritas Volume Replicator Advisor

- **Planning the SRL Size for Multiple RVG Configurations**—VRAdvisor now supports SRL size planning for multiple RVGs that share the same network bandwidth within the same configuration. It uses the bandwidth throttling feature to control the maximum network bandwidth to be used by VVR for replication, thus enabling effective usage of the bandwidth by VVR and other applications. The results are displayed in a graphical and summary view.
- **Planning the SRL Size in a Shared Disk Group Environment**—VRAdvisor now supports SRL size planning for a CVM cluster, in a shared disk group environment. For shared disk groups, the data can be collected remotely on each node of the CVM cluster to minimize the write shipping.

---

**Note:** For this release, VRAdvisor is not supported for a non-CVM clusters.

---

- **Enhanced Data Collection Capabilities**—The VRAdvisor data collection wizard has been enhanced to collect data for multiple hosts, simultaneously. These hosts are either standalone hosts or nodes in a CVM cluster.

Depending on whether VxVM is present, and the operating system that is being used, the data collection wizard can automatically select the appropriate data format and also convert the native data formats to the CSV (comma separated variables) formats.

- Collecting Network Statistics—VRAdvisor can now provide network analysis information through an additional option on the VRAdvisor wizard. This option provides information such as, the estimated network latency, packet drop rate and the available network bandwidth along with a comparative network performance data for TCP and UDP protocols.

For more information about the Veritas Volume Replicator Advisor, refer to the *Veritas Volume Replicator Advisor User's Guide* (`vvr_advisor_users.pdf`), which is available in the `VRTSvrdoc` package located under the `dvd1/depot` directory.

## Required patches

Patch information is determined at the time of product release. For the latest information about Solaris patches, contact Sun Microsystems.

- Patches for VVR

For Solaris 10, VVR requires the Solaris patch 119254-06.

For additional Solaris patch requirements, refer to the *Veritas Storage Foundation Release Notes*.

VVR also requires the VVR patch 122058-01. If you use the Veritas product installer or the `installvvr` script to install or upgrade to VVR 5.0, this patch is automatically installed. However, if you use manual steps to install or upgrade using the `pkgadd` command, you must manually install this patch. For more information, refer to the `README-122058-01` file in the `volume_replicator/patches` directory.

- Patches for VCS Agents for VVR

VCS Agents for Veritas Volume Replicator does not require any patches. Refer to the *Veritas Cluster Server Release Notes* for more information.

- Patches for VVR VEA and VRW

VVR VEA and VRW depend on the Java Runtime Engine (JRE) 1.5. Make certain that your operating system has the necessary patches to run the JRE. For more information, visit your operating system vendor's Web site.

## No longer supported

This release of VVR is not supported on the Solaris 7 operating system.

# Installation notes

The following information includes guidelines, tips, and other considerations for installing the product. For details on upgrading and installing VVR, refer to the *Veritas Volume Replicator Installation Guide*.

## Obtaining a license key

Before installing VVR, obtain a license key for Veritas Volume Replicator. Note that even if you have already obtained a Veritas Volume Manager license key, you must obtain a separate license key for VVR. For details, see the section about license information in the *Veritas Storage Foundation Installation Guide*.

## Compatibility considerations

### VVR

This release of VVR is available for the Solaris 8, Solaris 9, and Solaris 10 operating systems (SPARC Platforms). Solaris 10 provides the Zone feature. VVR is supported in the global zone only. Note that although VVR cannot be executed in a non-global zone, VVR can support applications that run in non-global zones, provided the data resides on VxVM volumes in a global zone. For example, if an application is mounted on Veritas File System in a non-global zone and the file system uses VxVM volumes in a global zone, VVR can be used to replicate such an application's data.

You can replicate between nodes running the 32-bit versions and the 64-bit versions of these operating systems, that is, you can mix 32-bit and 64-bit versions and any of the supported operating systems. VVR has been tested to work with the host operating interchangeably between 32-bit and 64-bit environments.

VVR is not supported with the Internet Protocol (IP) version IPv6. All nodes in a VVR environment must use IPv4.

VVR supports replication between systems running VVR 5.0 and VVR 4.1 MP1 or later. That is, you can replicate between a Primary host using VVR 5.0 and a Secondary host using VVR 4.1 MP1 or vice versa. This enables you to upgrade VVR on your Primary and Secondary at different times.

VVR supports replication in a shared disk group environment. VVR also supports the clustering functionality of Veritas File System (VxFS) and Veritas Storage Foundation for Oracle RAC. Veritas File System (VxFS) and Veritas Storage Foundation for Oracle RAC are separately licensed products. Currently, replication support is limited to 4-node cluster applications.

VVR does not support replication in a SAN disk group environment.

VVR enables you to replicate VxVM ISP volumes, provided that all the volumes in an RVG are ISP volumes.

## VCS Agents for VVR

Veritas Cluster Server (VCS) Agents for Veritas Volume Replicator have been tested to work with VVR running on the 32-bit and 64-bit versions of the Solaris 8, Solaris 9, and Solaris 10 operating systems. These agents are for use with VCS 5.0.

## VVR VEA

VVR VEA is available for installation on the Solaris 8, Solaris 9, and Solaris 10 operating systems. VVR VEA can only be installed on hosts on which VVR 5.0 is installed.

## VRW

VRW is available for installation on the Solaris 8, Solaris 9, and Solaris 10 operating systems.

VRW can only be installed on hosts on which VVR 5.0 is installed. VRW also requires that Web Server for Storage Foundation Host Management is installed.

## Web browser requirements

Depending on the platform, one of the following Web browsers is required to run VRW:

**Table 1-1** Web browsers and their supported platforms

Operating System	Firefox 1.0.7 (or later)	Internet Explorer 5.5 (or later)	Mozilla 1.6 (or later)	Netscape Navigator 7.0 (or later)
AIX			✓	
HP-UX			✓	
Red Hat	✓		✓	✓
Solaris			✓	
SUSE	✓		✓	✓
Windows	✓	✓		✓

Your browser must support either JScript 5.5 (provided with Microsoft Internet Explorer 6 or later) or JavaScript 1.2 (provided with Netscape Navigator 7.x).

Additionally, for Internet Explorer, Secure Sockets Layer (SSL) 3.0 ActiveX scripting must be enabled.

If you are using pop-up blockers (including Yahoo Toolbar or Google Toolbar), either disable them or configure them to accept pop-ups from the Web Server to which you will connect. Note that pop-up blocking is enabled by default in Netscape 7.2.

---

**Note:** For Internet Explorer 6.0 on Windows 2003 (Server and Advanced Server), set the default Intranet zone security level to MEDIUM or lower.

---

## VRAdvisor

Veritas Volume Replicator Advisor (VRAdvisor) for Solaris is compatible with VVR 3.5 for UNIX and later. VRAdvisor requires Windows Installer 2.0 and later for the installation. VRAdvisor is supported on the following operating systems:

- Solaris 8 and later (SPARC platforms)
- Windows XP
- Windows 2000 Professional, Windows 2000 Server, Windows 2000 Advanced Server, Windows 2000 Datacenter Server
- Windows Server 2003: Standard Edition, Web Edition, Enterprise Edition, Datacenter Edition

---

**Note:** If Windows 2000 is installed on your system, you must have Service Pack (SP) 4 installed on it.

---

## Fixed issues

The following incidents were corrected for the 5.0 release.

### Installation issues

#### **Incomplete installation of the VRTSob package leads to problems with VRTSvrpro (284853)**

The `VRTSvrpro` package was not installed properly if the patch 115209-16 for the `VRTSob` package was not installed immediately after installing the `VRTSob` package. This has been fixed.

#### **License package not completely removed from local zones**

Some files from the Veritas licensing package (`VRTSvlic`) might not be removed from a local zone that was created after `VRTSvlic` was originally installed. This problem has been fixed.

### The vradmin issues

#### **Synchronizing volumes and RVG—output may display incorrect volume sizes (306656)**

The output of the `vradmin syncrvg` and the `vradmin syncvol` commands displayed incorrect volume sizes for data volumes that are large in size. This has been fixed.

#### **Resizing the SRL**

The `vradmin resizesrl` command now enables you to increase the size of the SRL on the Secondary while the application is active and replication is in progress. For instructions on resizing the SRL, see the *Veritas Volume Replicator Administrator's Guide*.

#### **VVR Hangs During SRL Resize**

Under certain conditions, VVR would hang while executing the `vradmin resizesrl` command. This has been fixed. [497131]

#### **Performing migration in an RDS with multiple secondaries**

For a Replicated Data Set (RDS) with multiple Secondaries, the `vradmin migrate` command now automatically reconfigures the new RDS.

## SRL issues

### **Limitations in the SRL resize feature**

You can now resize the SRL while automatic synchronization or DCM replay is in progress. Also, the SRL resize operation now preserves checkpoint information. [310204]

## Issues related to replication in a shared environment

### **RLINKs may fail to connect after the logowner fails over to another host (346443)**

Under certain conditions in a shared disk group environment, RLINKs might fail to connect after the logowner fails over to another host in the cluster. This problem has been fixed.

### **Reconfiguring cluster while performing read and writes causes VxVM activity to hang (288062)**

While replicating in a shared disk group, if a cluster reconfiguration was performed while I/Os are still being performed, Volume Manager activity on the master node of the Primary cluster would hang. This problem has been fixed.

### **Reconfiguring cluster while performing automatic synchronization causes VxVM and VVR Operations to hang (283929)**

While replicating in a shared disk group, if the Primary cluster was reconfigured during automatic synchronization, VxVM and VVR operations on the Primary cluster would hang. This problem has been fixed.

### **Slave node occasionally panicked in certain test cases (288061)**

In certain test cases where there is a heavy I/O load and several cluster reconfigurations have taken place, the slave has occasionally panicked, or I/O on the slave has hung. This problem has been fixed.

### **Replication not supported between Solaris and AIX for shared disk groups**

Replication in a shared disk group is now supported between Solaris and AIX.

### **VVR hangs after logowner move**

In a shared environment, if a logowner has been moved repeatedly between the slave and master, VVR may hang. This problem has been fixed. [496922]

## Known issues

Before installing any product, read the following Veritas Technical Support TechNote for the latest information on updates, patches, and software issues regarding this release:

<http://support.veritas.com/docs/281987>

The following incidents were reported for this release.

## Installation issues

### VCS Agents for VVR (42381)

When you try to install VVR on a system that already has a version of VCS Agents for VVR, the `installvvr` script indicates that VVR is already installed on the system. This may be erroneous because the script does not check for the other VVR packages. In this case, some of the packages required by VVR that do not exist on the system may not get installed.

Workaround: Use the `pkgadd` command to manually add the VVR packages that are not installed.

### Permissions on the `/etc` directory change during product installation

Because of a Solaris bug in the `pkgadd` command, the permissions on the `/etc` directory may change during the installation of Symantec product packages. Check after an installation procedure to see if this occurred. Use the `chmod` command to reset the permissions.

### Software disc cannot be ejected during installation

During installation, if any of the products were configured and started, the software disc cannot be ejected. This may prevent installation from continuing in following circumstances:

- If the language pack disc needs be loaded so that the associated packages can be installed.
- A product was installed that did not require a system reboot to complete the installation.

This problem is not an issue if a product was installed or upgraded that required a system reboot to complete the installation.

### To avoid this problem at install time

- 1 Specify the `-installonly` option to the `installer` script in addition to any other options.
- 2 Eject the software disc.



- 3 Run the `installer` script with the `-configure` option specified.

#### If a software disc cannot be ejected

- 1 Stop the event source daemon:

```
# /usr/sbin/vxddladm stop eventsource
```
- 2 Kill the `vxcached`, `vxrelocd` and `vxnotify` processes by using the `kill -9` command with their process IDs as reported by the `ps` command.
- 3 Eject the software disc.
- 4 Restart the VxVM daemon processes:

```
# /usr/sbin/vxddladm start eventsource  
# /etc/vx/bin/vxcached  
# /etc/vx/bin/vxrelocd
```

[622442]

## Support and compatibility issues

### Running VxFS commands (135938)

VxFS commands may execute very slowly and appear to be hung when the following conditions exist:

- The RLINK is in synchronous mode
- The network has a low bandwidth
- VxFS has a very large cache

If you encounter this problem, contact Customer Support.

### VxVM ISP Stripe-mirror Volumes Cannot be Associated to an RVG

You cannot associate VxVM ISP volumes of the type stripe-mirror to an RVG.  
[497136]

## The vradm issues

### Multiple vradm commands (304827)

If a number of `vradm` commands are started at the same time in the background, some of the commands might fail.

### Incorrect configuration (304859)

The `vradm printrvg` command does not display an error message to indicate an incorrect configuration when the `local_host` and `remote_host` attributes contain the names of the hosts that are not in the RDS.

### Invalid license (139302)

The `vradmin` commands that change the configuration may fail before completing if the VVR license has expired. Although an attempt is made to undo the changes, it may not be possible to undo the changes because the license has expired.

### Synchronizing volumes and RVG—user cannot specify an offset (306135)

The `vradmin syncrvg` and the `vradmin syncvol` commands do not allow the user to specify an offset for the synchronization operation. They perform the operations on the entire data volume. If the operation is terminated, it must be restarted.

### Verifying data (306479)

The `vradmin verifydata` command may hang if certain events occur, for example, if the network disconnects, or a large number of writes on the Primary cause the RLINK to go in to DCM mode after the command is issued and before it completes.

Workaround: Kill the `vradmin verifydata` command using the SIGTERM signal. Press **^C** on the command line, and then perform the following steps on Secondary host:

- 1 Issue the command:  

```
# vxibc -g dg_name status rvg_name
```

The output displays one or more application IDs.
- 2 Choose the application ID that begins with `VD` and use this `app-id` in the following steps.
- 3 Issue the command:  

```
# vxibc -g dg_name stoprecv app-id rvg_name
```
- 4 Issue the command:  

```
# vxibc -g dg_name unregister app-id rvg_name
```

The output of the command `vxibc -g dg_name status rvg_name` should no longer display the `app-id`.

### Resizing the SRL

The `vradmin resizesrl` command enables you to increase the size of the SRL while the application is active and replication is in progress. The `vradmin resizesrl` command does not allow you to decrease the size of the SRL. For instructions on resizing the SRL, see the *Veritas Volume Replicator Administrator's Guide*.

**Separator display in the vradmin output (306642)**

The separator in the output of `vradmin -l printrvg` is not localized; it always displays as a comma (,).

**Adding a 5.0 Secondary to an RDS with a 4.1 Primary (423878)**

If the RDS has a 4.1 Primary and a 5.0 Secondary, you cannot use the `vradmin addsec` command to add an additional 5.0 Secondary to the RDS. First, upgrade the Primary to 5.0, and then add the Secondary.

## RVG and RLINK issues

**RVG name size (304979)**

If the total number of characters in the name of the RVG name and the name of the remote host exceeds 26 characters, the default RLINK names created by the `vradmin addsec` command are truncated. This may result in a conflict with other RLINK names and cause an error.

To avoid this error, use the `prlink` and `srlink` attributes with the `vradmin addsec` command.

**RLINK name (151336)**

The `vxmake rlink` command fails if the host name is longer than 31 characters.

**Output from the vxrlink stats command (583456)**

In some cases, you may see garbled output in the Blocks Sent column of the `vxrlink stats` command. This problem is due to VVR accessing freed memory, and can be safely ignored.

## DCM issues

**Converting DCM volumes to layered volumes (147490)**

Converting a volume with a DCM to a layered layout completes successfully but incorrectly prints the following error messages:

```
vxvm:vxplex: ERROR: Failed to obtain locks:
temp-P05: no such object in the configuration
temp-P06: no such object in the configuration
vxvm:vxassist: ERROR: Could not attach log plex(es) to volume
<volume-name>
```

**Error when logging writes to DCM (146293)**

When writes are being logged to the DCM, the output of the `vxrlink updates` command is as follows:

```
vxvm:vxrlink: INFO: DCM is in use on rlink <rlinkname>. DCM contains  
<number> Kbytes.
```

The message is confusing because the number could be larger than the physical size of the DCM object. The number of kilobytes indicated is the amount of data that requires resynchronization.

#### **DCM is removed during relayout (156244)**

If you perform a relayout that adds a column to a striped volume that has a DCM, the DCM is removed. There is no message indicating this has happened. The DCM can be replaced using the command:

```
# vxassist addlog vol logtype=dcm
```

## SRL issues

#### **SRL overflow (152276)**

If the SRL overflows on the Primary, any IBC message that exists on the Primary SRL is dropped and therefore not delivered to the Secondary.

#### **Secondary SRL failure during IBC could cause pending writes to be lost (541265)**

When an IBC suspends writes to the Secondary data volumes, the writes are stored in the Secondary SRL. These pending writes in the SRL could potentially be lost if all the mirrors of the SRL fail.

## Takeover issues

#### **Fast-failback synchronization after an SRL failure on the original Primary may cause data corruption on the new Secondary (284372)**

After a takeover if fast-failback synchronization is performed and the new Secondary, which was the original Primary, has recovered from an SRL failure, the synchronization may not synchronize the updates that were lost because of SRL failure. This results in data corruption on the new Secondary. To recover, synchronize the Secondary completely.

#### **Secondary hangs while taking over as failback Primary after receiving in-flight updates from a bunker (598288)**

If the bunker SRL write latency is comparable with the Primary SRL write latency, it is possible for the bunker to be ahead of the Primary in terms of the data logged. Such data termed as "in-flight writes" is logged on the Secondary when the Secondary is synchronized using the bunker after a Primary crash.

If such a Secondary which has logged in-flight data writes is promoted to failback Primary, the logged writes are flushed to its data volumes. However,

because of uninitialized log end pointers, this can sometimes result in VxVM hanging on this Secondary node.

## Issues related to replication in a shared environment

### Secondary checkpoint problem (607703)

In rare situations, when lots of Secondary checkpoints have been created and deleted, VVR can panic when you run the `vxrlink cplist` command.

### Using `verifydata` command with the `cachesize` attribute (615728)

The following situation may occur when you use the `vradm verifydata` command with the `cachesize` attribute while there is I/O on the Primary. If the Secondary receives an IBC while the snapshot is being taken on the Primary, `vxconfigd` may hang on the Secondary.

Workaround: Specify the `cache` attribute instead of the `cachesize` attribute to the `vradm verifydata` command.

### Restoring snapshots when the logowner is the slave node

In rare cases, when the logowner is the slave node, the `vxrvg snaprestore` command may result in data corruption on the Primary volume. After the restore command completes, the data volumes are resynchronized to the snapshot volumes in the background. The problem occurs if the application performs I/O to the data volumes during this resynchronization. To avoid the problem, avoid doing application I/O until the background resynchronization completes.

To view the status of the resynchronization, do the following:

- 1 To display the taskid and the type, use the following command:

```
# vxtask -g dname list
```

- 2 To track the progress of the task, use the following command:

```
# vxtask -g dname monitor taskid
```

See the `vxtask` manual page for more information.

## VRW issues

### Limitation in the search feature in the Japanese version of the VRW online help

In the Japanese version of the VRW online help, the search feature does not always result in a successful match. Although corresponding terms may exist in the online help, the search results may indicate that the term could not be found. The search results vary, depending on the character set being used in the search.

**Primary RVG in a private disk group on a master not displayed (615758)**

If a CVM master node contains a private disk group, a Primary RVG created in that disk group is not displayed in the VVR Web GUI.

Workaround: use the VVR command line or the VVR VEA GUI to view the RVG.

**Volume sizes display incorrectly when replicating between VVR versions on HP-UX (603945)**

The VVR Web GUI may display the sizes of the SRL and data volumes incorrectly for an RDS replicating between VVR 4.1 and VVR 5.0 on the HP-UX operating system.

**In a CVM cluster, Create Primary wizard does not display private disk groups (615769)**

When you create a Primary with the VVR Web GUI while connected to the master node of a CVM cluster, the Create Primary wizard does not display private disk group names in the disk group selection list.

Workaround: To create a Primary RVG in a private disk group on the master node, use the VVR command line or the VVR VEA GUI.

**After migration, the Secondaries tab does not show information about the Secondary (575992)**

In some cases, after you migrate the Primary role to the Secondary, the Secondaries tab does not show the information about the Secondary RVG. The RVG, SRL and Data Volume information may be blank.

Workaround: To display the information, navigate to the Summary tab and then select the Secondaries tab again.

**Associate Volume wizard shows associated volume sets (612927)**

The Associate Volume wizard may show volume sets that are already associated to an RVG. A volume set cannot be associated to multiple RVGs.

**Secondary disk group view may not display correctly (615834)**

In a shared disk group environment, in some cases, clicking on the link for a Secondary disk group may not display the view of the disk group. This may happen if the Secondary cluster contains a deported disk group with the same name as the imported disk group. Clicking on the link may show the view for the deported disk group.

Workaround: If possible, remove the deported disk group with the same name. To avoid the problem, make sure disk group names are unique.

## VVR VEA issues

### **Volume sizes display incorrectly when replicating between VVR versions on HP-UX (612565)**

The VVR VEA GUI may display the sizes of the SRL and data volumes incorrectly for an RDS replicating between VVR 4.1 and VVR 5.0 on the HP-UX operating system.

### **Overview views display incorrect layout and mirror information for certain volume layouts (600485)**

For volumes with the layouts concatenated mirrored or mirrored concatenated, the overview views of the Primary and Secondary RVGs show the layout incorrectly as concatenated. The number of mirrors may also be incorrect.

### **In Japanese locale, Create RDS wizard checkboxes do not appear correctly (616618)**

In Japanese locale, the Important Prerequisites page of the Create RDS wizard does not display correctly. The checkbox next to each question is not displayed because the dialog is truncated.

Workaround: Use mnemonic keys to answer the question.

- For the 1st question use Alt+p.
- For the 2nd question use Alt+d.
- For the 3rd question use Alt+s.

## Software limitations

### Support for local zones

VVR is supported in the global zone only. Note that although VVR cannot be executed in a non-global zone, VVR can support applications that run in non-global zones, provided the data resides on VxVM volumes in a global zone. For example, if an application is mounted on Veritas File System in a non-global zone and the file system uses VxVM volumes in a global zone, VVR can be used to replicate such an application's data.

VVR and VxVM commands must be executed in the global zone. If you are replicating an application running in a non-global zone, the global zone administrator requires application context to perform tasks such as snapshots and IBCs.

## Solaris 10 zone feature limitation

### Limitation in tasks requiring application context

VVR and VxVM commands must be executed in the global zone. If you are replicating an application running in a non-global zone, the global zone administrator requires application context to perform tasks such as snapshots and IBCs.

## Unsupported Internet protocol versions

VVR does not support IPv6. All nodes in a VVR environment must use IPv4.

## RAID-5 volume

VVR does not support Volume Manager RAID-5 volumes as part of RVGs. Hardware RAID-5 is supported.

## Disk Group Split and Join

VVR does not support Disk Group Split and Join. This means that you cannot use Disk Group Split and Join on data volumes in an RVG. However, you can take snapshots of data volumes and use DGSJ on the snapshots.

## Importing a disk group with VVR objects

If a private disk group containing VVR objects is imported on two nodes, as well as the problems documented for VxVM objects, the SRL is corrupted and a full resynchronization of the Secondary is required.

## Volumes in boot disk group

It is not recommended to have replicated volumes in the boot disk group (`bootdg`).

## Selecting records using search expressions

The `vxprint -e pattern` command: Selecting RVG and RLINK records using search expressions is not supported.

## Adding a Secondary

When adding a Secondary to the RDS, the `vradmin addsec` command cannot be entered from the host being added. If the RDS contains the Primary only, the command must be entered on the Primary.



## Issues related to replication in a shared environment

### **Creating a Primary RVG when the data volumes and SRL are on a shared disk**

When creating a Primary whose data volumes and SRL are located on a shared disk group, the `vradmin createpri` command must be issued on the master node of the cluster.

### **Creating a Secondary RVG when the data volumes and SRL are on a shared disk**

When adding a Secondary whose data volumes and SRL are located on a shared disk group to a RDS, the `vradmin addsec` command requires the Secondary host name must be resolvable and up on the master node of the Secondary cluster.

### **Replication not supported between Solaris and HP-UX for shared disk groups**

Replication in a shared disk group is not supported between Solaris and HP-UX. (592349)

## VRW limitations

### **Increasing font size**

Increasing the font size may cause problems in viewing and navigating the wizards.

### **IBC messaging support**

This release of VRW does not support In-Band Control (IBC) messaging.

## VCS Agents for VVR limitations

### **Onlining and offlining the RVG resources**

Currently a problem with Veritas Volume Manager affects the RVG resources. When many RVGs are defined, the number of requests to the Volume Manager to `online` or `offline` can overload the `vxconfigd` process of VxVM, preventing some RVGs from going online or offline.

Workaround: The RVG resources have been set to allow only a single instance of an RVG resource to be brought online or offline. This slows down the onlining and offlining of service groups containing RVGs.

**Limitations in the RVGSnapshot agent**

Fire drill setup (fdsetup) supports applications using one disk group only. The RVGSnapshot agent does not support volume sets.

## Documentation

Product guides are available on the documentation disc in PDF and HTML formats. We recommend copying pertinent information, such as installation guides and release notes, from the disc to your system directory `/opt/VRTS/docs` for reference.

**Table 1-2** Veritas Volume Replicator and Veritas Volume Manager documentation sets

Title	File Name
<i>Veritas Volume Replicator Release Notes</i> (this document)	<code>vvr_notes.pdf</code>
<i>Veritas Volume Replicator Installation Guide</i>	<code>vvr_install.pdf</code>
<i>Veritas Volume Replicator Administrator's Guide</i>	<code>vvr_admin.pdf</code>
<i>Veritas Volume Replicator Planning and Tuning Guide</i>	<code>vvr_planning.pdf</code>
<i>Veritas Volume Replicator Advisor User's Guide</i>	<code>vvr_advisor_users.pdf</code>
<i>Veritas Volume Replicator Web Console Administrator's Guide</i>	<code>vvr_web_admin.pdf</code>
<i>Veritas Cluster Server Agents for Veritas Volume Replicator Configuration Guide</i>	<code>vvr_agents_config.pdf</code>
<b>Veritas Storage Foundation</b>	
<i>Veritas Storage Foundation Release Notes</i>	<code>sf_notes.pdf</code>
<i>Veritas Storage Foundation Installation Guide</i>	<code>sf_install.pdf</code>
<i>Veritas Storage Foundation Intelligent Storage Provisioning Administrator's Guide</i>	<code>sf_isp_admin.pdf</code>
<i>Veritas Storage Foundation Intelligent Storage Provisioning Solutions Guide</i>	<code>sf_isp_solutions.pdf</code>
<i>Veritas Storage Foundation Cross-Platform Data Sharing Administrator's Guide</i>	<code>sf_cds_admin.pdf</code>

**Table 1-2** Veritas Volume Replicator and Veritas Volume Manager documentation sets

<b>Title</b>	<b>File Name</b>
<i>Veritas FlashSnap Point-In-Time Copy Solutions Administrator's Guide</i>	flashsnap_admin.pdf
<i>Veritas Enterprise Administrator User's Guide</i>	vea6x_users.pdf
<b>Veritas Volume Manager</b>	
<i>Veritas Volume Manager Administrator's Guide</i>	vxvm_admin.pdf
<i>Veritas Volume Manager Troubleshooting Guide</i>	vxvm_tshoot.pdf



# Third-party Legal Notices

Certain third-party software may be distributed, embedded, or bundled with this Symantec product, or recommended for use in conjunction with Symantec product installation and operation. Such third-party software is separately licensed by its copyright holder. This appendix contains the license agreements that govern the use of third-party software and its copyright holder's proprietary notices. Use of the third-party software must be in accordance with its license terms. Symantec makes no representation or warranty of any kind regarding such third-party software. Symantec offers no support for such third-party software and shall have no liability associated with its use.

## ACE (The Adaptive Communication Environment)

### TAO

Douglas C. Schmidt and his research group at Washington University and University of California, Irvine and Vanderbilt University.

ACE™ is copyrighted by Douglas C. Schmidt and his research group at Washington University, University of California, Irvine, and Vanderbilt University Copyright (c) 1993-2003, all rights reserved.

TAO™ is copyrighted by Douglas C. Schmidt and his research group at Washington University, University of California, Irvine, and Vanderbilt University Copyright (c) 1993-2003, all rights reserved.

Copyright and Licensing Information for ACE™, TAO™, CIAO™, and CoSMIC™.

ACE™, TAO™, CIAO™, and CoSMIC™ (henceforth referred to as "DOC software") are copyrighted by Douglas C. Schmidt and his research group at Washington University, University of California, Irvine, and Vanderbilt University, Copyright (c) 1993-2005, all rights reserved. Since DOC software is open-source, free software, you are free to use, modify, copy, and distribute--perpetually and irrevocably--the DOC software source code and object code produced from the source, as well as copy and distribute modified versions of this software. You must, however, include this copyright statement along with code built using DOC software.

You can use DOC software in proprietary software and are under no obligation to redistribute any of your source code that is built using DOC software. Note, however, that you may not do anything to the DOC software code, such as copyrighting it yourself or claiming authorship of the DOC software code, that will prevent DOC software from being distributed freely using an open-source development model. You needn't inform anyone that you're using DOC software in your software, though we encourage you to let us know so we can promote your project in the DOC software success stories.

DOC software is provided as is with no warranties of any kind, including the warranties of design, merchantability, and fitness for a particular purpose, noninfringement, or arising from a course of dealing, usage or trade practice. Moreover, DOC software is provided with no support and without any obligation on the part of Washington University, UC Irvine, Vanderbilt University, their employees, or students to assist in its use, correction, modification, or enhancement. A number of companies around the world provide commercial support for DOC software, however. DOC software is Y2K-compliant, as long as the underlying OS platform is Y2K-compliant.

Washington University, UC Irvine, Vanderbilt University, their employees, and students shall have no liability with respect to the infringement of copyrights, trade secrets or any patents by DOC software or any part thereof. Moreover, in no event will Washington University, UC Irvine, or Vanderbilt

University, their employees, or students be liable for any lost revenue or profits or other special, indirect and consequential damages.

The ACE, TAO, CIAO, and CoSMIC web sites are maintained by the DOC Group at the Institute for Software Integrated Systems (ISIS) and the Center for Distributed Object Computing of Washington University, St. Louis for the development of open-source software as part of the open-source software community. By submitting comments, suggestions, code, code snippets, techniques (including that of usage), and algorithms, submitters acknowledge that they have the right to do so, that any such submissions are given freely and unreservedly, and that they waive any claims to copyright or ownership. In addition, submitters acknowledge that any such submission might become part of the copyright maintained on the overall body of code, which comprises the DOC software. By making a submission, submitter agree to these terms. Furthermore, submitters acknowledge that the incorporation or modification of such submissions is entirely at the discretion of the moderators of the open-source DOC software projects or their designees.

The names ACE™, TAO™, CIAO™, and CoSMIC™, Washington University, UC Irvine, and Vanderbilt University, may not be used to endorse or promote products or services derived from this source without express written permission from Washington University, UC Irvine, or Vanderbilt University. Further, products or services derived from this source may not be called ACE™, TAO™, CIAO™, and CoSMIC™ nor may the name Washington University, UC Irvine, or Vanderbilt University appear in their names, without express written permission from Washington University, UC Irvine, and Vanderbilt University.

If you have any suggestions, additions, comments, or questions, please let me know.

Douglas C. Schmidt

## Apache Commons-Collections

## Apache Commons-dbc

## Apache Common Logging

## Apache Jakarta Commons

## Apache Lucene

## Apache Portable Runtime

## Apache Snmp4j - The Object Oriented SNMP API for Java

## Apache Spring Framework

## Apache Struts

## Apache Tomcat

## Xerces C++

### Apache Software Foundation

Portions of this program contain components from the Apache Software Foundation. These components are made available under the Apache License 2.0, a copy of which is provided herein.

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, sell, offer to 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

APPENDIX: How to apply the Apache License to your work

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets “[ ]” replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same “printed page” as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the “License”); you may not use this file except in compliance with the License. You may obtain a copy of the License at

<http://www.apache.org/licenses/LICENSE-2.0>

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an “AS IS” BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## BSD dump and restore programs

The Regents of the University of California.

Source redistribution must retain the entire BSD copyright and license terms (exact text below).

Binary redistribution must include the entire BSD copyright and license terms in documentation and/or other materials provided with the distribution. Advertising materials must contain the following acknowledgement: This product includes software developed by the University of California, Berkeley and its contributors.

Exact text to include: COPYRIGHT:

All of the documentation and software included in the 4.BSD and 4.4BSD-Lite Releases is copyrighted by The Regents of the University of California.

Copyright 1979, 1980, 1983, 1986, 1988, 1989, 1991, 1992, 1993, 1994 The Regents of the University of California. All rights reserved.

LICENSE:

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 acknowledgement: This product includes software developed by the University of California, Berkeley and its contributors.
4. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS “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 REGENTS 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.



## Digital Encryption Standard (DES) - MIT

MIT and Dennis Ferguson

Copyright (c) 1990 Dennis Ferguson. All rights reserved.

Commercial use is permitted only if products which are derived from or include this software are made available for purchase and/or use in Canada. Otherwise, redistribution and use in source and binary forms are permitted.

Copyright 1985, 1986, 1987, 1988, 1990 by the Massachusetts Institute of Technology.

All Rights Reserved.

Export of this software from the United States of America may require a specific license from the United States Government. It is the responsibility of any person or organization contemplating export to obtain such a license before exporting.

WITHIN THAT CONSTRAINT, permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of M.I.T. not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. M.I.T. makes no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

## DomAPI Library

Nebiru Software Inc. (dba DomAPI)

Copyright Nebiru Software, 2001-2005

DomAPI is distributed under click-wrap terms. Please note the specific restrictions implemented by Management regarding modifications to DomAPI.

\*\*\*\*\*

DOMAPI DHTML LIBRARY

LICENSE AGREEMENT

rev. 04092002-0503 - Architect Edition

### DEFINITIONS

"Library" refers to the complete source code of the DomAPI distribution. Any included graphics or binary executables are excluded from this license agreement.

"Company" refers to Nebiru Software Inc. DBA DomAPI, as distributors of the Library.

"User" refers to yourself or any individuals in your employ who make use of the Library.

"Work that uses the Library" is any plug-in, extension or component to the Library that is developed by a third party, Plug-ins, extensions and components developed by the Company become part of the Library and fall under its definition. Plug-ins, extensions and components developed by third parties remain the intellectual property of that party.

Third parties may elect to allow their work to be included in the official DomAPI distribution. When this occurs, the work remains the property of the original third party and is used by the Company under permission. Such permission exists for the lifetime of the Library and cannot be repealed. At no time whatsoever can an included third party's license override any portion the DomAPI DHTML Library License Agreement. DomAPI reserves the right to remove third party works from itself at will.

"Product that uses the Library" is any product that makes use of the Library by linking to it, but is itself not a plug-in, extension or component to the Library.

"Purpose" of the Library covered under this license is to function as a DHTML Application Layer to HTML, XHTML and XML based applications.

The intent of this license agreement is to grant the User the maximum rights available when using the Library, while at the same time maintaining control over the distribution and evolution of the Library. Company seeks in no way to limit your rights when using the Library, but only to maintain control over its direction.

### TERMS AND CONDITIONS

1. You may freely copy and distribute verbatim copies of the Library's complete source code as you receive it, to any system within your private or public network providing you keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library. The terms of distribution are as follows:

a) You may freely make use of the Library on your websites or on a distributed medium (such as a CD-ROM) to be used solely for Purpose as defined above.

b) ALL copyright notices within the libraries source files MUST BE LEFT INTACT.

2. You may freely modify your copy of the Library or any portion of it. YOU MAY NOT REDISTRIBUTE your modified version of the Library, NOR MAKE IT AVAILABLE FOR DOWNLOAD except for use in your pages and/or application.

3. YOU MAY NOT PRODUCE SPIN-OFFS or a public work based on the Libraries source code. Company is to maintain full rights of the core Library. This constraint does not extend to “work that uses the Library”, of which you are free to develop and distribute as your own work.

4. While you may freely create and distribute a “work that uses the Library”, you may not under any circumstances include any portion of the Library with this work. Users of your “work that uses the Library” must always get the official distribution of the DomAPI library from Company.

This is done to satisfy sections 1 and 2. This does apply to a “product that uses the Library”, the distribution of which is covered in section 5.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being linked with it, is called a “work that uses the Library”. Such a work, in isolation, is called a “product that uses the Library”. You may distribute the Library with a “product that uses the Library” so long as you include a copy of this license in your electronic materials along with the appropriate copyright notices. Please note that section 2 still applies to this distribution.

It is not the intent of section 4 and section 5 to contest your rights to work written entirely by you; rather, the intent is solely to exercise the right to control the point of distribution of the Library.

You are not required to give notice in your applications that the Library is used in it.

6. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library 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.

7. 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 Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

#### NO WARRANTY

8. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY “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 LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

9. 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 LIBRARY 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 LIBRARY (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 LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

### Expat XML Parsing Library

Author: James Clark.

Copyright (c) 1998, 1999, 2000 Thai Open Source Software Center Ltd.

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.

Global.h

MD5c.c

MD5.h

Certain portions of this Symantec product contain components derived from the RSA DataSecurity, Inc. MD5 Message-Digest Algorithm.

Copyright (C) 1991-2, RSA Data Security, Inc. Created 1991. All rights reserved.

Global.h, MD5c.c, and MD5.h are governed by the same license terms set forth below:

License to copy and use this software is granted provided that it is identified as the "RSA Data Security, Inc. MD5 Message-Digest Algorithm" in all material mentioning or referencing this software or this function.

License is also granted to make and use derivative works provided that such works are identified as "derived from the RSA Data Security, Inc. MD5 Message-Digest Algorithm" in all material mentioning or referencing the derived work.

RSA Data Security, Inc. makes no representations concerning either the merchantability of this software or the suitability of this software for any particular purpose. It is provided "as is" without express or implied warranty of any kind.

These notices must be retained in any copies of any part of this documentation and/or software.

ICU

IBM

Copyright (c) 1995-2003 International Business Machines Corporation and others. All rights reserved.

ICU License - ICU 1.8.1 and later

COPYRIGHT AND PERMISSION NOTICE

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, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, provided that the above copyright notice(s) and this permission notice appear in all copies of the Software and that both the above copyright notice(s) and this permission notice appear in supporting documentation.

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 OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization of the copyright holder.

All trademarks and registered trademarks mentioned herein are the property of their respective owners.

JacORB

Jacorb.org

GNU LIBRARY GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1991 Free Software Foundation, Inc. 675 Mass Ave, Cambridge, MA 02139, USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the library GPL. It is numbered 2 because it goes with version 2 of the ordinary GPL.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Library General Public License, applies to some specially designated Free Software Foundation software, and to any other libraries whose authors decide to use it. You can use it for your libraries, 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 library, or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link a program with the library, you must provide complete object files to the recipients so that they can relink them with the library, after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

Our method of protecting your rights has two steps: (1) copyright the library, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the library.

Also, for each distributor's protection, we want to make certain that everyone understands that there is no warranty for this free library. If the library is modified by someone else and passed on, we want its recipients to know that what they have is not the original version, 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 companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

#### GNU LIBRARY GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, (either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".))

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, 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 library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete 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 distribute a copy of this License along with the Library. 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 Library or any portion of it, thus forming a work based on the Library, 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) The modified work must itself be a software library. b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change. c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License. d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful. (For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, 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 Library, 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 Library.

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

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you 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.

If distribution of 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 satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a “work that uses the Library”. Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a “work that uses the Library” with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a “work that uses the library”. The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a “work that uses the Library” uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a “work that uses the Library” with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things: a) Accompany the work with the complete corresponding machine-readable source

code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable “work that uses the Library”, as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.) b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution. c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place. d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the “work that uses the Library” must include any data and utility programs needed for reproducing the executable from it. 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.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. 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 not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things: a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above. b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library 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.

9. 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 Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library 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.

11. 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 Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library 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 Library.

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.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library 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.

13. The Free Software Foundation may publish revised and/or new versions of the Library 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 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 Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, 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

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY “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 LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. 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 LIBRARY 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 LIBRARY (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 LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. END OF TERMS AND CONDITIONS

#### Appendix: How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. 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. Copyright (C) <year> <name of author>

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

This library 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 Library General Public License for more details.

You should have received a copy of the GNU Library General Public License along with this library; if not, write to the Free Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

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

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

Yoyodyne, Inc., hereby disclaims all copyright interest in the library ‘Frob’ (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990 Ty Coon, President of Vice

## Java Development Kit (JDK)

## Java 2 Runtime Environment

## Java Access Bridge

Java Development Kit Copyright 2005 Sun Microsystems, Inc.,

Java 2 Runtime Environment © 2005 Sun Microsystems, Inc. All rights reserved

Java Access Bridge Copyright (c) 2004 Sun Microsystems, Inc. All rights reserved

Sun Microsystems, Inc. Binary Code License Agreement

SUN MICROSYSTEMS, INC. (“SUN”) IS WILLING TO LICENSE THE SOFTWARE IDENTIFIED BELOW TO YOU ONLY UPON THE CONDITION THAT YOU ACCEPT ALL OF THE TERMS CONTAINED IN THIS BINARY CODE LICENSE AGREEMENT AND SUPPLEMENTAL LICENSE TERMS (COLLECTIVELY “AGREEMENT”). PLEASE READ THE AGREEMENT CAREFULLY. BY DOWNLOADING OR INSTALLING THIS SOFTWARE, YOU ACCEPT THE TERMS OF THE AGREEMENT. INDICATE ACCEPTANCE BY SELECTING THE “ACCEPT” BUTTON AT THE BOTTOM OF THE AGREEMENT. IF YOU ARE NOT

WILLING TO BE BOUND BY ALL THE TERMS, SELECT THE "DECLINE" BUTTON AT THE BOTTOM OF THE AGREEMENT AND THE DOWNLOAD OR INSTALL PROCESS WILL NOT CONTINUE.

1. DEFINITIONS. "Software" means the identified above in binary form, any other machine readable materials (including, but not limited to, libraries, source files, header files, and data files), any updates or error corrections provided by Sun, and any user manuals, programming guides and other documentation provided to you by Sun under this Agreement. "Programs" mean Java applets and applications intended to run on the Java 2 Platform Standard Edition (J2SE platform) platform on Java-enabled general purpose desktop computers and servers.

2. LICENSE TO USE. Subject to the terms and conditions of this Agreement, including, but not limited to the Java Technology Restrictions of the Supplemental License Terms, Sun grants you a non-exclusive, non-transferable, limited license without license fees to reproduce and use internally Software complete and unmodified for the sole purpose of running Programs. Additional licenses for developers and/or publishers are granted in the Supplemental License Terms.

3. RESTRICTIONS. Software is confidential and copyrighted. Title to Software and all associated intellectual property rights is retained by Sun and/or its licensors. Unless enforcement is prohibited by applicable law, you may not modify, decompile, or reverse engineer Software. You acknowledge that Licensed Software is not designed or intended for use in the design, construction, operation or maintenance of any nuclear facility. Sun Microsystems, Inc. disclaims any express or implied warranty of fitness for such uses. No right, title or interest in or to any trademark, service mark, logo or trade name of Sun or its licensors is granted under this Agreement. Additional restrictions for developers and/or publishers licenses are set forth in the Supplemental License Terms.

4. LIMITED WARRANTY. Sun warrants to you that for a period of ninety (90) days from the date of purchase, as evidenced by a copy of the receipt, the media on which Software is furnished (if any) will be free of defects in materials and workmanship under normal use. Except for the foregoing, Software is provided "AS IS". Your exclusive remedy and Sun's entire liability under this limited warranty will be at Sun's option to replace Software media or refund the fee paid for Software. Any implied warranties on the Software are limited to 90 days. Some states do not allow limitations on duration of an implied warranty, so the above may not apply to you. This limited warranty gives you specific legal rights. You may have others, which vary from state to state.

5. DISCLAIMER OF WARRANTY. DISCLAIMER OF WARRANTY. UNLESS SPECIFIED IN THIS AGREEMENT, ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT ARE DISCLAIMED, EXCEPT TO THE EXTENT THAT THESE DISCLAIMERS ARE HELD TO BE LEGALLY INVALID.

6. LIMITATION OF LIABILITY. TO THE EXTENT NOT PROHIBITED BY LAW, IN NO EVENT WILL SUN OR ITS LICENSORS BE LIABLE FOR ANY LOST REVENUE, PROFIT OR DATA, OR FOR SPECIAL, INDIRECT, CONSEQUENTIAL, INCIDENTAL OR PUNITIVE DAMAGES, HOWEVER CAUSED REGARDLESS OF THE THEORY OF LIABILITY, ARISING OUT OF OR RELATED TO THE USE OF OR INABILITY TO USE SOFTWARE, EVEN IF SUN HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. In no event will Sun's liability to you, whether in contract, tort (including negligence), or otherwise, exceed the amount paid by you for Software under this Agreement. The foregoing limitations will apply even if the above stated warranty fails of its essential purpose. Some states do not allow the exclusion of incidental or consequential damages, so some of the terms above may not be applicable to you.

7. TERMINATION. This Agreement is effective until terminated. You may terminate this Agreement at any time by destroying all copies of Software. This Agreement will terminate immediately without notice from Sun if you fail to comply with any provision of this Agreement. Either party may terminate this Agreement immediately should any Software become, or in either party's opinion be likely to become, the subject of a claim of infringement of any intellectual property right. Upon Termination, you must destroy all copies of Software.

8. EXPORT REGULATIONS. All Software and technical data delivered under this Agreement are subject to US export control laws and may be subject to export or import regulations in other countries. You agree to comply strictly with all such laws and regulations and acknowledge that you have the responsibility to obtain such licenses to export, re-export, or import as may be required after delivery to you.

9. TRADEMARKS AND LOGOS. You acknowledge and agree as between you and Sun that Sun owns the SUN, SOLARIS, JAVA, JINI, FORTE, and iPLANET trademarks and all SUN, SOLARIS, JAVA, JINI, FORTE, and iPLANET-related trademarks, service marks, logos and other brand designations ("Sun Marks"), and you agree to comply with the Sun Trademark and Logo Usage Requirements currently located at <http://www.sun.com/policies/trademarks>. Any use you make of the Sun Marks inures to Sun's benefit.

10. U.S. GOVERNMENT RESTRICTED RIGHTS. If Software is being acquired by or on behalf of the U.S. Government or by a U.S. Government prime contractor or subcontractor (at any tier), then the Government's rights in Software and accompanying documentation will be only as set forth in this Agreement; this is in accordance with 48 CFR 227.7201 through 227.7202-4 (for Department of Defense (DOD) acquisitions) and with 48 CFR 2.101 and 12.212 (for non-DOD acquisitions).

11. GOVERNING LAW. Any action related to this Agreement will be governed by California law and controlling U.S. federal law. No choice of law rules of any jurisdiction will apply.

12. SEVERABILITY. If any provision of this Agreement is held to be unenforceable, this Agreement will remain in effect with the provision omitted, unless omission would frustrate the intent of the parties, in which case this Agreement will immediately terminate.



13. INTEGRATION. This Agreement is the entire agreement between you and Sun relating to its subject matter. It supersedes all prior or contemporaneous oral or written communications, proposals, representations and warranties and prevails over any conflicting or additional terms of any quote, order, acknowledgment, or other communication between the parties relating to its subject matter during the term of this Agreement. No modification of this Agreement will be binding, unless in writing and signed by an authorized representative of each party.

#### SUPPLEMENTAL LICENSE TERMS

These Supplemental License Terms add to or modify the terms of the Binary Code License Agreement. Capitalized terms not defined in these Supplemental Terms shall have the same meanings ascribed to them in the Binary Code License Agreement. These Supplemental Terms shall supersede any inconsistent or conflicting terms in the Binary Code License Agreement, or in any license contained within the Software.

A. Software Internal Use and Development License Grant. Subject to the terms and conditions of this Agreement and restrictions and exceptions set forth in the Software "README" file, including, but not limited to the Java Technology Restrictions of these Supplemental Terms, Sun grants you a non-exclusive, non-transferable, limited license without fees to reproduce internally and use internally the Software complete and unmodified for the purpose of designing, developing, and testing your Programs.

B. License to Distribute Software. Subject to the terms and conditions of this Agreement and restrictions and exceptions set forth in the Software README file, including, but not limited to the Java Technology Restrictions of these Supplemental Terms, Sun grants you a non-exclusive, non-transferable, limited license without fees to reproduce and distribute the Software, provided that (i) you distribute the Software complete and unmodified and only bundled as part of, and for the sole purpose of running, your Programs, (ii) the Programs add significant and primary functionality to the Software, (iii) you do not distribute additional software intended to replace any component(s) of the Software, (iv) you do not remove or alter any proprietary legends or notices contained in the Software, (v) you only distribute the Software subject to a license agreement that protects Sun's interests consistent with the terms contained in this Agreement, and (vi) you agree to defend and indemnify Sun and its licensors from and against any damages, costs, liabilities, settlement amounts and/or expenses (including attorneys' fees) incurred in connection with any claim, lawsuit or action by any third party that arises or results from the use or distribution of any and all Programs and/or Software.

C. Java Technology Restrictions. You may not create, modify, or change the behavior of, or authorize your licensees to create, modify, or change the behavior of, classes, interfaces, or subpackages that are in any way identified as "java", "javax", "sun" or similar convention as specified by Sun in any naming convention designation.

D. Source Code. Software may contain source code that, unless expressly licensed for other purposes, is provided solely for reference purposes pursuant to the terms of this Agreement. Source code may not be redistributed unless expressly provided for in this Agreement.

E. Third Party Code. Additional copyright notices and license terms applicable to portions of the Software are set forth in the THIRDPARTYLICENSEREADME.txt file. In addition to any terms and conditions of any third party opensource/freeware license identified in the THIRDPARTYLICENSEREADME.txt file, the disclaimer of warranty and limitation of liability provisions in paragraphs 5 and 6 of the Binary Code License Agreement shall apply to all Software in this distribution.

For inquiries please contact: Sun Microsystems, Inc., 4150 Network Circle, Santa Clara, California 95054, U.S.A. (LFI#141623/Form ID#011801)

#### JavaTip87: Automate the Hourglass Cursor

Kyle Davis

Portions of this code taken from an article available as of 2/02/02 on the JavaWorld Internet site, entitled Javatip87: Automate the HourGlass Cursor" by Kyle Davis.

#### JFreeChart

JFree.org

This software incorporates JFreeChart, Copyright 2000-2004 by

Object Refinery Limited and Contributors

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc. 51 Franklin St, 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. [This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, 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 and use pieces of it in new free programs; and that you are informed that you can do these things.

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

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

#### TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

**0.** This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The “Library”, below, refers to any such software library or work which has been distributed under these terms. A “work based on the Library” means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term “modification”.)

“Source code” for a work means the preferred form of the work for making modifications to it. For a library, 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 library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

**1.** You may copy and distribute verbatim copies of the Library's complete 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 distribute a copy of this License along with the Library. 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 Library or any portion of it, thus forming a work based on the Library, 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)** The modified work must itself be a software library.

**b)** You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

**c)** You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

**d)** If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, 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 Library, 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 Library.

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

**3.** You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

**4.** You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you 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.

If distribution of 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 satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

**5.** A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a “work that uses the Library”. Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a “work that uses the Library” with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a “work that uses the library”. The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a “work that uses the Library” uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

**6.** As an exception to the Sections above, you may also combine or link a “work that uses the Library” with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer’s own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

**a)** Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable “work that uses the Library”, as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

**b)** Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user’s computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

**c)** Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

**d)** If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

**e)** Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the “work that uses the Library” must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be 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.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

**7.** 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 not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

**a)** Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

**b)** Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

**8.** You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library 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.

**9.** 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 Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

**10.** Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library 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 with this License.

**11.** 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 Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library 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 Library.

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.

**12.** If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library 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.

**13.** The Free Software Foundation may publish revised and/or new versions of the 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 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 Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

**14.** If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, 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**

**15.** BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "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 LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

**16.** 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 LIBRARY 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 LIBRARY (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 LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), 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 Libraries**

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. 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 library's name and an idea of what it does.*

Copyright (C) year name of author

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

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

Also add information on how to contact you by electronic and paper mail. You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

*signature of Ty Coon, 1 April 1990*

Ty Coon, President of Vice

## Kerberos

Massachusetts Institute of Technology.

Copyright © 1985 - 2002 by the Massachusetts Institute of Technology.

Copyright, OpenVision Technologies, Inc., 1996, All Rights Reserved.

Copyright 2000 by Zero-Knowledge Systems, Inc.

Copyright (c) 2001, Dr. Brian Gladman <brg@gladman.uk.net>, Worcester, UK. All rights reserved.

Copyright © 1983 Regents of the University of California. All rights reserved.

Copyright © 1985-2002 by the Massachusetts Institute of Technology.

Export of software employing encryption from the United States of America may require a specific license from the United States Government. It is the responsibility of any person or organization contemplating export to obtain such a license before exporting.

WITHIN THAT CONSTRAINT, permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of M.I.T. not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. Furthermore if you modify this software you must label your software as modified software and not distribute it in such a fashion that it might be confused with the original MIT software. M.I.T. makes no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

The following copyright and permission notice applies to the OpenVision Kerberos Administration system located in kadmin/create, kadmin/dbutil, kadmin/passwd, kadmin/server, lib/kadm5, and portions of lib/rpc:

Copyright, OpenVision Technologies, Inc., 1996, All Rights Reserved

WARNING: Retrieving the OpenVision Kerberos Administration system source code, as described below, indicates your acceptance of the following terms. If you do not agree to the following terms, do not retrieve the OpenVision Kerberos administration system.

You may freely use and distribute the Source Code and Object Code compiled from it, with or without modification, but this Source Code is provided to you "AS IS" EXCLUSIVE OF ANY WARRANTY, INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ANY OTHER WARRANTY, WHETHER EXPRESS OR IMPLIED. IN NO EVENT WILL OPENVISION HAVE ANY LIABILITY FOR ANY LOST PROFITS, LOSS OF DATA OR COSTS OF PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES, OR FOR ANY SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THIS AGREEMENT, INCLUDING, WITHOUT LIMITATION, THOSE RESULTING FROM THE USE OF THE SOURCE CODE, OR THE FAILURE OF THE SOURCE CODE TO PERFORM, OR FOR ANY OTHER REASON.

OpenVision retains all copyrights in the donated Source Code. OpenVision also retains copyright to derivative works of the Source Code, whether created by OpenVision or by a third party. The OpenVision copyright notice must be preserved if derivative works are made based on the donated Source Code.

OpenVision Technologies, Inc. has donated this Kerberos Administration system to MIT for inclusion in the standard Kerberos 5 distribution. This donation underscores our commitment to continuing Kerberos technology development and our gratitude for the valuable work which has been performed by MIT and the Kerberos community.

The implementation of the Yarrow pseudo-random number generator in `src/lib/crypto/yarrow` has the following copyright:

Copyright 2000 by Zero-Knowledge Systems, Inc.

Permission to use, copy, modify, distribute, and sell this software and its documentation for any purpose is hereby granted without fee, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Zero-Knowledge Systems, Inc. not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. Zero-Knowledge Systems, Inc. makes no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

ZERO-KNOWLEDGE SYSTEMS, INC. DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL ZERO-KNOWLEDGE SYSTEMS, INC. BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTUOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

The implementation of the AES encryption algorithm in `src/lib/crypto/aes` has the following copyright:

Copyright (c) 2001, Dr. Brian Gladman <brg@gladman.uk.net>, Worcester, UK. All rights reserved.

LICENSE TERMS

The free distribution and use of this software in both source and binary form is allowed (with or without changes) provided that:

1. distributions of this source code include the above copyright notice, this list of conditions and the following disclaimer;
2. distributions in binary form include the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other associated materials;
3. the copyright holder's name is not used to endorse products built using this software without specific written permission.

DISCLAIMER

This software is provided "as is" with no explicit or implied warranties in respect of any properties, including, but not limited to, correctness and fitness for purpose.

Kerberos V5 includes documentation and software developed at the University of California at Berkeley, which includes this copyright notice:

Copyright © 1983 Regents of the University of California.

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 acknowledgement:

This product includes software developed by the University of California, Berkeley and its contributors.

4. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

Permission is granted to make and distribute verbatim copies of this manual provided the copyright notices and this permission notice are preserved on all copies.

Permission is granted to copy and distribute modified versions of this manual under the conditions for verbatim copying, provided also that the entire resulting derived work is distributed under the terms of a permission notice identical to this one.

Permission is granted to copy and distribute translations of this manual into another language, under the above conditions for modified versions.

## Libstdc++ (GNU Standard C++ Library)

The Code: Runtime GPL

The source code of `libstdc++-v3` is distributed under version 2 of the GNU General Public License, with the so-called "runtime exception," as follows (or see any header or implementation file):

As a special exception, you may use this file as part of a free software library without restriction. Specifically, if other files instantiate templates or use macros or inline functions from this file, or you compile this file and link it with other files to produce an executable, this file does not by itself cause the resulting executable to be covered by the GNU General Public License. This exception does not however invalidate any other reasons why the executable file might be covered by the GNU General Public License.

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 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 Library 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

## OpenLDAP

The OpenLDAP Foundation.

Copyright 1999-2003 The OpenLDAP Foundation, Redwood City, California, USA. All Rights Reserved.

“The OpenLDAP Public License Version 2.8, 17 August 2003

Redistribution and use of this software and associated documentation (“Software”), with or without modification, are permitted provided that the following conditions are met:

1. Redistributions in source form must retain copyright statements and notices,
2. Redistributions in binary form must reproduce applicable copyright statements and notices, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution, and
3. Redistributions must contain a verbatim copy of this document.

The OpenLDAP Foundation may revise this license from time to time. Each revision is distinguished by a version number. You may use this Software under terms of this license revision or under the terms of any subsequent revision of the license.

THIS SOFTWARE IS PROVIDED BY THE OPENLDAP FOUNDATION AND ITS CONTRIBUTORS “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 OPENLDAP FOUNDATION, ITS CONTRIBUTORS, OR THE AUTHOR(S) OR OWNER(S) OF THE SOFTWARE 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 names of the authors and copyright holders must not be used in advertising or otherwise to promote the sale, use or other dealing in this Software without specific, written prior permission. Title to copyright in this Software shall at all times remain with copyright holders.

OpenLDAP is a registered trademark of the OpenLDAP Foundation.

Copyright 1999-2003 The OpenLDAP Foundation, Redwood City, California, USA. All Rights Reserved. Permission to copy and distribute verbatim copies of this document is granted.

## OpenSSL

### The OpenSSL Project

Copyright (c) 1998-2003 The OpenSSL Project. All rights reserved.

This is a copy of the current LICENSE file inside the CVS repository.

The OpenSSL toolkit stays under a dual license, i.e. both the conditions of the OpenSSL License and the original SSLeay license apply to the toolkit.

See below for the actual license texts. Actually both licenses are BSD-style Open Source licenses. In case of any license issues related to OpenSSL please contact [openssl-core@openssl.org](mailto:openssl-core@openssl.org).

### OpenSSL License

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](mailto: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](mailto:eay@cryptsoft.com)). This product includes software written by Tim Hudson ([tjh@cryptsoft.com](mailto:tjh@cryptsoft.com)).

### Original SSLeay License

Copyright (C) 1995-1998 Eric Young ([eay@cryptsoft.com](mailto:eay@cryptsoft.com)) All rights reserved.

This package is an SSL implementation written by Eric Young ([eay@cryptsoft.com](mailto: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 adhered 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](mailto: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](mailto: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](mailto: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 publicly available version or derivative of this code cannot be changed. i.e. this code cannot simply be copied and put under another distribution license [including the GNU Public License.]

Perl

Algorithm-Diff-1.1901

Archive-Tar-1.24

Compress-Zlib-1.41

Crypt-CBC-2.17

File-Spec-0.90

IO-String-1.06

IO-Tty-1.02

libnet-1.19

List-Compare-0.31

Log dispatch perl module

Logfile rotate perl module

Module-Build-0.2611

MIME-Base64-3.07

HTML-Tagset-3.10

HTML-Parser-3.50

Net-DNS-0.49

Net-DNS-SEC-0.12

Net-Netmask-1.9011

Net-Telnet-3.03

Params validate perl module

Proc-Background-1.08

Test-Plan-0.02

Test-Simple-0.60

Time-Date-1.16

Time zone info

URI-1.35

XML-Parser-2.34

Perl Copyright (c) 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, by Larry Wall and others. All rights reserved.

Algorithm-Diff-1.1901 Copyright 1998 M-J.Dominus. (mjd-perl-diff@plover.com).

Archive-Tar-1.24 Copyright © 2002 Jos Boumans <kane@cpan.prg>. All rights reserved

Compress-Zlib-1.41 Copyright © 1995-2005 Paul Marquess. All rights reserved.

Crypt-CBC-2.17

File-Spec-0.90 Copyright © 1998 Kenneth Albanowski. All rights reserved. Copyright © 1999, 2000 Barrie Slaymaker. All rights reserved. Copyright © 2003 Ken Williams. All rights reserved  
 HTML-Parser-3.50 Copyright © 1995-2006 Gisle Aas. All rights reserved. Copyright © 1999-2000 Michael A. Chase. All rights reserved.  
 HTML-Tagset-3.10 Copyright 1999, 2000 Sean M. Burke <sburke@cpan.org>; Copyright 1995-2000 Gisle Aas; all rights reserved.  
 IO-String-1.06 Copyright 1998-2003 Gisle Aas. <gisle@as.no>  
 IO-Tty-1.02 Copyright graham Barr; Copyright Nick Ing-Simmons; Copyright Roland Giersig; Copyright Tatu Ylonen, Markus Friedl, and Todd C. Miller.  
 libnet-1.19 © 1996-2004 Graham Barr. All rights reserved.  
 List-Compare-0.31 Copyright © 2002-04 James E. Keenan. United States. All rights reserved.  
 Log dispatch perl module Copyright (c) Dave Rolsky, autarch@urth.org.  
 Logfile rotate perl module Copyright (c) 1997-99 Paul Gampe. All rights reserved.  
 Module-Build-0.2611  
 MIME-Base64-3.07 Copyright 1995-1999, 2001-04 Gisle Aas <gisle@ActiveState.com>  
 Net-DNS-0.49 Copyright © 1997-2002 Michael Fuhr. Portions Copyright © 2002-2004 Chris Reinhardt. Portion Copyright © 2005 Olaf Kolkman (RIPE NCC) All rights reserved.  
 Net-DNS-SEC-0.12 Copyright © 2001, 2002, 2003, 2004 RIPE NCC. Author Olaf M. Kolkman <net-dns-sec@ripe.net> All Rights Reserved  
 Net-Netmask-1.9011 Copyright © 1998-2003 David Muir Sharnoff.  
 Net-Telnet-3.03 Copyright © 1997, 2000, 2002 Jay Rogers. All rights reserved.  
 Params validate perl module Copyright (c) 2000-2004 Dave Rolsky All rights reserved.  
 Proc-Background-1.08 Copyright © 1998-2002 Blair Zajac. All rights reserved.  
 Test-Plan-0.02 Copyright © 2005, Geoffrey Young All rights reserved.  
 Test-Simple-0.60  
 Time-Date-1.16 Copyright 1996-2000 Graham Barr. All rights reserved.  
 Time zone info Copyright (c) 2002 Scott Penrose <scott@dd.com.au> - <http://linux.dd.com.au/>  
 URI-1.35 Copyright 1998-2003 Gisle Aas. Copyright 1998 Graham Barr  
 XML-Parser-2.34 Copyright © 1998-2000 Larry Wall and Clark Cooper. All rights reserved.

Above listed modules are governed by the same license terms set forth below:

This library is free software; you can redistribute it and/or modify it under the same terms as Perl itself.  
 The Artistic License  
 August 15, 1997

#### Preamble

The intent of this document is to state the conditions under which a Package may be copied, such that the Copyright Holder maintains some semblance of artistic control over the development of the package, while giving the users of the package the right to use and distribute the Package in a more-or-less customary fashion, plus the right to make reasonable modifications.

#### Definitions:

“Package” refers to the collection of files distributed by the Copyright Holder, and derivatives of that collection of files created through textual modification.

“Standard Version” refers to such a Package if it has not been modified, or has been modified in accordance with the wishes of the Copyright Holder as specified below.

“Copyright Holder” is whoever is named in the copyright or copyrights for the package.

“You” is you, if you're thinking about copying or distributing this Package.

“Reasonable copying fee” is whatever you can justify on the basis of media cost, duplication charges, time of people involved, and so on. (You will not be required to justify it to the Copyright Holder, but only to the computing community at large as a market that must bear the fee.)

“Freely Available” means that no fee is charged for the item itself, though there may be fees involved in handling the item. It also means that recipients of the item may redistribute it under the same conditions they received it.

1. You may make and give away verbatim copies of the source form of the Standard Version of this Package without restriction, provided that you duplicate all of the original copyright notices and associated disclaimers.
2. You may apply bug fixes, portability fixes and other modifications derived from the Public Domain or from the Copyright Holder. A Package modified in such a way shall still be considered the Standard Version.

3. You may otherwise modify your copy of this Package in any way, provided that you insert a prominent notice in each changed file stating how and when you changed that file, and provided that you do at least ONE of the following:
- a) place your modifications in the Public Domain or otherwise make them Freely Available, such as by posting said modifications to Usenet or an equivalent medium, or placing the modifications on a major archive site such as uunet.uu.net, or by allowing the Copyright Holder to include your modifications in the Standard Version of the Package.
  - b) use the modified Package only within your corporation or organization.
  - c) rename any non-standard executables so the names do not conflict with standard executables, which must also be provided, and provide a separate manual page for each non-standard executable that clearly documents how it differs from the Standard Version.
  - d) make other distribution arrangements with the Copyright Holder.
4. You may distribute the programs of this Package in object code or executable form, provided that you do at least ONE of the following:
- a) distribute a Standard Version of the executables and library files, together with instructions (in the manual page or equivalent) on where to get the Standard Version.
  - b) accompany the distribution with the machine-readable source of the Package with your modifications.
  - c) give non-standard executables non-standard names, and clearly document the differences in manual pages (or equivalent), together with instructions on where to get the Standard Version.
  - d) make other distribution arrangements with the Copyright Holder.
5. You may charge a reasonable copying fee for any distribution of this Package. You may charge any fee you choose for support of this Package. You may not charge a fee for this Package itself. However, you may distribute this Package in aggregate with other (possibly commercial) programs as part of a larger (possibly commercial) software distribution provided that you do not advertise this Package as a product of your own. You may embed this Package's interpreter within an executable of yours (by linking); this shall be construed as a mere form of aggregation, provided that the complete Standard Version of the interpreter is so embedded.
6. The scripts and library files supplied as input to or produced as output from the programs of this Package do not automatically fall under the copyright of this Package, but belong to whoever generated them, and may be sold commercially, and may be aggregated with this Package. If such scripts or library files are aggregated with this Package via the so-called "undump" or "unexec" methods of producing a binary executable image, then distribution of such an image shall neither be construed as a distribution of this Package nor shall it fall under the restrictions of Paragraphs 3 and 4, provided that you do not represent such an executable image as a Standard Version of this Package.
7. C subroutines (or comparably compiled subroutines in other languages) supplied by you and linked into this Package in order to emulate subroutines and variables of the language defined by this Package shall not be considered part of this Package, but are the equivalent of input as in Paragraph 6, provided these subroutines do not change the language in any way that would cause it to fail the regression tests for the language.
8. Aggregation of this Package with a commercial distribution is always permitted provided that the use of this Package is embedded; that is, when no overt attempt is made to make this Package's interfaces visible to the end user of the commercial distribution. Such use shall not be construed as a distribution of this Package.
9. The name of the Copyright Holder may not be used to endorse or promote products derived from this software without specific prior written permission.
10. THIS PACKAGE IS PROVIDED "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.
- The End.

### Sockets++ library

University of Texas

Copyright 1992, 1993, 1994 Gnanasekaran Swaminathan Permission is granted to use at your own risk and distribute this software in source and binary forms provided the above copyright notice and this paragraph are preserved on all copies. This software is provided "as is" with no express or implied warranty.

### SQLite

SQLite.org.

The original author of SQLite has dedicated the code to the public domain. Anyone is free to copy, modify, publish, use, compile, sell, or distribute the original SQLite code, either in source code form or as a compiled binary, for any purpose, commercial or non-commercial, and by any means.

### STL Port

Boris Fomitchev

Copyright 1999,2000 Boris Fomitchev

Boris Fomitchev grants Licensee a nonexclusive, non-transferable, royalty-free license to use STLport and its documentation without fee.

By downloading, using, or copying STLport or any portion thereof, Licensee agrees to abide by the intellectual property laws and all other applicable laws of the United States of America, and to all of the terms and conditions of this Agreement.

Licensee shall maintain the following copyright and permission notices on STLport sources and its documentation unchanged:

Copyright 1999,2000 Boris Fomitchev

This material is provided "as is", with absolutely no warranty expressed or implied. Any use is at your own risk. Permission to use or copy this software for any purpose is hereby granted without fee, provided the above notices are retained on all copies. Permission to modify the code and to distribute modified code is granted, provided the above notices are retained, and a notice that the code was modified is included with the above copyright notice.

The Licensee may distribute binaries compiled with STLport (whether original or modified) without any royalties or restrictions. The Licensee may distribute original or modified STLport sources, provided that:

- The conditions indicated in the above permission notice are met;
- The following copyright notices are retained when present, and conditions provided in accompanying permission notices are met:

Copyright 1994 Hewlett-Packard Company

Copyright 1996,97 Silicon Graphics Computer Systems, Inc.

Copyright 1997 Moscow Center for SPARC

Permission to use, copy, modify, distribute and sell this software and its documentation for any purpose is hereby granted without fee, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation. Hewlett-Packard Company makes no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

Permission to use, copy, modify, distribute and sell this software and its documentation for any purpose is hereby granted without fee, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation. Silicon Graphics makes no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty. Permission to use, copy, modify, distribute and sell this software and its documentation for any purpose is hereby granted without fee, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation. Moscow Center for SPARC Technology makes no representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

Sysdep.c

Sysdep.h

UUID.c

UUID.h

Copyright (c) 1990–1993, 1996 Open Software Foundation, Inc., Copyright (c) 1989 by Hewlett-Packard Company, Palo Alto, Ca. & Digital Equipment Corporation, Maynard, Mass. Copyright (c) 1998 Microsoft.

Sysdep.c, Sysdep.h, UUID.c, and UUID.h are governed by the same license terms set forth below:

To anyone who acknowledges that this file is provided "AS IS" without any express or implied warranty: permission to use, copy, modify, and distribute this file for any purpose is hereby granted without fee, provided that the above copyright notices and this notice appears in all source code copies, and that none of the names of Open Software Foundation, Inc., Hewlett-Packard Company, or Digital Equipment Corporation be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission. Neither Open Software Foundation, Inc., Hewlett-Packard Company, Microsoft, nor Digital Equipment Corporation makes any representations about the suitability of this software for any purpose.