

# CA Embedded Entitlements Manager

## Release Notes

r8.4



This documentation and any related computer software help programs (hereinafter referred to as the "Documentation") is for the end user's informational purposes only and is subject to change or withdrawal by CA at any time.

This Documentation may not be copied, transferred, reproduced, disclosed, modified or duplicated, in whole or in part, without the prior written consent of CA. This Documentation is confidential and proprietary information of CA and protected by the copyright laws of the United States and international treaties.

Notwithstanding the foregoing, licensed users may print a reasonable number of copies of the Documentation for their own internal use, and may make one copy of the related software as reasonably required for back-up and disaster recovery purposes, provided that all CA copyright notices and legends are affixed to each reproduced copy. Only authorized employees, consultants, or agents of the user who are bound by the provisions of the license for the Product are permitted to have access to such copies.

The right to print copies of the Documentation and to make a copy of the related software is limited to the period during which the applicable license for the Product remains in full force and effect. Should the license terminate for any reason, it shall be the user's responsibility to certify in writing to CA that all copies and partial copies of the Documentation have been returned to CA or destroyed.

EXCEPT AS OTHERWISE STATED IN THE APPLICABLE LICENSE AGREEMENT, TO THE EXTENT PERMITTED BY APPLICABLE LAW, CA PROVIDES THIS DOCUMENTATION "AS IS" WITHOUT WARRANTY OF ANY KIND, INCLUDING WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NONINFRINGEMENT. IN NO EVENT WILL CA BE LIABLE TO THE END USER OR ANY THIRD PARTY FOR ANY LOSS OR DAMAGE, DIRECT OR INDIRECT, FROM THE USE OF THIS DOCUMENTATION, INCLUDING WITHOUT LIMITATION, LOST PROFITS, BUSINESS INTERRUPTION, GOODWILL, OR LOST DATA, EVEN IF CA IS EXPRESSLY ADVISED OF SUCH LOSS OR DAMAGE.

The use of any product referenced in the Documentation is governed by the end user's applicable license agreement.

The manufacturer of this Documentation is CA.

Provided with "Restricted Rights." Use, duplication or disclosure by the United States Government is subject to the restrictions set forth in FAR Sections 12.212, 52.227-14, and 52.227-19(c)(1) - (2) and DFARS Section 252.227-7014(b)(3), as applicable, or their successors.

All trademarks, trade names, service marks, and logos referenced herein belong to their respective companies.

Copyright © 2008 CA. All rights reserved.

## CA Product References

This document references the following CA products:

- CA<sup>®</sup> Embedded Entitlements Manager (CA EEM)
- CA<sup>®</sup> Directory
- CA<sup>®</sup> SiteMinder<sup>®</sup> Web Access Manager (CA SiteMinder)
- CA<sup>®</sup> Identity Manager
- CA<sup>®</sup> Security Command Center
- CA<sup>®</sup> Integrated Threat Management
- CA<sup>®</sup> Enterprise Log Manager

## Contact CA

### Contact Technical Support

For your convenience, CA provides one site where you can access the information you need for your Home Office, Small Business, and Enterprise CA products. At <http://ca.com/support>, you can access:

- Online and telephone contact information for technical assistance and customer services
- Information about user communities and forums
- Product and documentation downloads
- CA Support policies and guidelines
- Other helpful resources appropriate for your product

### Provide Feedback

If you have comments or questions about CA product documentation, you can send a message to [techpubs@ca.com](mailto:techpubs@ca.com).

If you would like to provide feedback about CA product documentation, please complete our short [customer survey](#), which is also available on the CA support website, found at <http://ca.com/support>.



# Contents

---

<b>Chapter 1: Welcome</b>	<b>9</b>
<b>Chapter 2: Operating System Support</b>	<b>11</b>
<b>Chapter 3: System Requirements</b>	<b>13</b>
Windows .....	13
UNIX and Linux .....	14
<b>Chapter 4: Installation Considerations</b>	<b>15</b>
Supported Versions of iGateway .....	15
Enable JVM Settings in CA EEM .....	16
<b>Chapter 5: Upgrade Considerations</b>	<b>17</b>
Upgrade to CA EEM r8.4 .....	17
Server Cache Update Time .....	17
Setting Events to Cache .....	17
Default Reports and Panels .....	18
Archive Files Are Converted to Cold Database Files .....	18
MDB Database Migration .....	18
<b>Chapter 6: General Considerations</b>	<b>19</b>
IPv6 Support for C# .....	19
Communication between CA EEM Server and Client Is Broken in an IPv6 Environment .....	20
<b>Chapter 7: New Features</b>	<b>21</b>
Support for SSL Connections to LDAP Directories .....	21
<b>Chapter 8: Changes to Existing Features</b>	<b>23</b>
Changes to the Installer .....	23
JRE Requirement for CA EEM Installation .....	23
Changes to Data Store .....	24
Changes to Event Logging .....	24

---

## Chapter 9: Known Issues 25

Backend Property and findBackendServer Method Do Not Work	26
Cannot Log Into CA EEM Server with a Custom Created User EiamAdmin	26
Delegation Policies	27
Error in Custom Installation	27
Error in CA EEM Server Installation	28
Error Using CA EEM Java SDK	28
Error Using Kerberos Authentication	29
Error Using WebLogic 8.1 Application Server	29
Error Using XACML and SPML Services	30
Export Application Takes Time	30
Unable to Launch CA EEM GUI After Uninstalling CA Audit	31
Unable to Launch CA EEM GUI After Installing CA Integrated Threat Management	32
Unable to Launch CA EEM GUI After Uninstalling CA Integrated Threat Management	33
Custom Reports Fails to Load or Takes a Long Time to Load	34
Application Data is Missing After Connecting to CA SiteMinder	35
Search for Users or Groups When Connected to CA SiteMinder Takes a Long Time to Complete	35
SAML Does Not Work After Upgrading to CA EEM r8.4	36
Event Log Settings Not Displayed	36
Global Group Memberships Are Not Displayed Correctly for Custom Mapped Sun One Directory	37
Archive Query Fails	37
Archive Query Results Are Not Refreshed	37
Storage Folder Field Under Event Log Settings	37
CA EEM Integration Fails with CA SiteMinder r12	38
Event Log Store Settings During Upgrade	38
Memory Size on HP-UX	38
CA EEM Data Is Not Deleted from MDB after Upgrade	39
Authentication to an SSL Enabled Directory over Non-SSL Port Fails	40
CA Directory Install Fails during Upgrade from CA EEM r8.1 MDB to r8.4	41

## Chapter 10: Limitations 43

C# Compact Framework	43
CA Integrated Threat Management r8.0	43
Display Limitations in User Interface	44
CA EEM Server Operating System Requirements for Kerberos Authentication	44
CA EEM SiteMinder Integration	45
Policy Limitation on HP-UX	45

---

<b>Chapter 11: Published Fixes</b>	<b>47</b>
<b>Chapter 12: International Support</b>	<b>49</b>
<b>Chapter 13: Bookshelf</b>	<b>51</b>
<b>Appendix A: Third-Party Acknowledgements</b>	<b>53</b>
Apache .....	54
MIT Kerberos .....	59
Castor .....	63
Expat .....	64
MiniZip .....	64
NUNIT .....	65
OpenLDAP .....	66
OpenSSL .....	81
PCRE .....	86





# Chapter 1: Welcome

---

Welcome to CA Embedded Entitlements Manager (CA EEM). This document contains information about product installation considerations, operating system support, new features, changes to existing features, known issues, third-party acknowledgements, and information about contacting CA Technical Support.



# Chapter 2: Operating System Support

---

CA EEM requires that you have one of the following operating systems installed:

<b>Platform</b>	<b>Architecture</b>	<b>Version</b>
Windows	x86/32-bit	Microsoft Windows Vista Service Pack 1 (Client only) Microsoft Windows XP Professional Service Pack 3 (Client only) Microsoft Windows Server 2003 Service Pack 2 Microsoft Windows Server 2003 R2 Service Pack 2
Solaris	SPARC/32-bit and 64-bit	Sun Solaris 10 (Ultra SPARC) with GNU tar 1.15.1 Sun Solaris 9 (Ultra SPARC) with GNU tar 1.15.1 Sun Logical Domains (LDOM) (run CA EEM as a 32-bit application)
Linux	x86/32-bit	SUSE Linux Enterprise Server 10, Service Pack 1 (Client only) SUSE Linux Enterprise Server 9.0 Service Pack 3, glibc 2.3.2 Red Hat Enterprise Linux Server 5, Update 1 with libcompat libraries (Client Only) Red Hat Enterprise Linux Server 4, Updates 3 and 6 with libcompat libraries Red Hat Enterprise Linux AS4, Update 3 Red Hat Enterprise Linux 3.0 Update 7, glibc 2.3.2
IBM AIX	Power5/32-bit and 64-bit	IBM AIX 5.3 with Maintenance Level 5, libcompat.1.o library IBM AIX 5.2 with Maintenance Level 6, libcompat.1.o library
HP-UX	PA RISC/32-bit	HP-UX 11iv2, libcompat.1.o library HP-UX 11iv3 HP-UX 11.11 with PHCO_31903 Patch, libcompat.1.o library

CA supports these operating systems for the duration of their life cycle (as determined by the operating system's manufacturer or until CA announces that we are dropping support). Visit our website <http://ca.com/support> for the latest information about supported operating systems.

# Chapter 3: System Requirements

---

## Windows

The minimum system requirements are:

- An Intel Pentium or higher computer with a CD-ROM drive
- At least 256 MB of RAM (1GB recommended)
- 1 GB of hard disk free space, plus enough space for the directory data
- At least 300 MB disk space required under the temporary directory %temp% (C:\Documents and Settings\Administrator\Local Settings\Temp\) where the CA EEM installation files are extracted during installation
- Windows updates applied, that is Windows Installer v3 or later
- Winsock-compatible TCP/IP installed and configured
- Windows administrator access to the system
- 32-bit Java Runtime Environment 1.6 if you are planning to integrate CA EEM with CA SiteMinder

**Note:** CA EEM can be installed and used without JRE. For more information on how to install CA EEM without JRE, see the *Getting Started Guide*.

- Adobe Acrobat Reader 8.0 to view the print format of the documentation
- Internet Browser to run the Web components (Microsoft Internet Explorer 6.0 and higher or Mozilla 1.6).
- Microsoft Internet Explorer 7.0 or Mozilla 2.0 and higher if using IPv6 environment
- Flash to view reports

## UNIX and Linux

The minimum system requirements are:

- At least 256 MB RAM (2 GB recommended)
- 1 GB of hard disk free space, plus enough space for the directory data
- At least 300 MB disk space required under the temporary directory (/tmp) where the CA EEM installation files are extracted during installation.
- 32-bit Java Runtime Environment 1.6 if you are planning to integrate CA EEM with CA SiteMinder

**Note:** CA EEM can be installed and used without JRE. For more information on how to install CA EEM without JRE, see the *Getting Started Guide*.

- Adobe Acrobat Reader to view the print format of the documentation (Reader 5.0.10 for Solaris and Reader 7.0 for Linux)
- Internet Browser to run the Web components (Mozilla 1.6 or higher).
- The person installing CA EEM should have:
  - General UNIX system administration skills
  - Superuser (root) access to the system

# Chapter 4: Installation Considerations

---

Installation and upgrade procedures for this release of CA EEM are described in the *Getting Started* guide. Additionally, ensure you have the following components installed on your computer before you install and configure CA EEM:

- Windows Installer 3.1 before installing CA EEM Server on Windows platform
- Java Runtime Environment (JRE). CA EEM has been certified with JRE 1.6.

## Supported Versions of iGateway

CA EEM supports only x86 versions of iGateway. CA EEM is not compatible with CA products that install 64-bit versions of iGateway on the same computer as CA EEM.

## Enable JVM Settings in CA EEM

If you skipped providing JRE path settings during CA EEM installation and later want to integrate with CA SiteMinder or authenticate using SAML, you must first enable JVM settings in CA EEM.

### To enable JVM settings

1. Install JRE.
2. Set JAVA\_HOME environmental variable.
3. Stop iGateway service.
4. Edit igateway.conf to add the following JVM settings:

```
<JVMSettings>
    <loadjvm>true</loadjvm>
    <javahome>"java path"</javahome>
    <!-- <Properties name="prop-1">
        <system-properties></system-properties>
    </Properties> -->
    <Properties name="eem.endorsed.dirs">
        <system-properties>java.endorsed.dirs=$IGW_LOC/endorsed</system-
properties>
    </Properties>
    <Properties name="eem.ext.dirs">
        <system-properties>java.ext.dirs="java path"/lib/ext</system-
properties>
    </Properties>
</JVMSettings>
```

**Note:** *\$IGW\_LOC* is the install location of iGateway and *java path* is the install location of JRE.

5. Add the following tags to the JVM settings for Linux platforms only:

```
<!-- <Properties name="prop-1">
    <system-properties></system-properties>
<Properties name="jvm_heapsize">
    <jvm-property>-Xmx256m</jvm-property>
</Properties> -->
```

6. Save igateway.conf file.
7. Restart iGateway service.

The JVM settings are enabled in CA EEM.



# Chapter 5: Upgrade Considerations

---

This section contains the following topics:

[Upgrade to CA EEM r8.4](#) (see page 17)

[Server Cache Update Time](#) (see page 17)

[Setting Events to Cache](#) (see page 17)

[Default Reports and Panels](#) (see page 18)

[Archive Files Are Converted to Cold Database Files](#) (see page 18)

[MDB Database Migration](#) (see page 18)

## Upgrade to CA EEM r8.4

We recommend that you back up CA EEM server data, configuration files, events, and iTechnology folders before upgrading to CA EEM r8.4.

**Note:** For more information on how to back up your CA EEM data and configuration files, see the *Getting Started Guide*.

## Server Cache Update Time

CA EEM r8.4 updates the server Cache Update Time to 24 hours. If you have used a different value from the default value for Cache Update Time before the upgrade, the CA EEM r8.4 upgrade overwrites the value.

**Note:** You can modify the Cache Update Time when configuring references to external directory. For more information on configuring references to an external directory, see the *Online Help*.

## Setting Events to Cache

During upgrade, CA EEM r8.4 updates the EventsToCache setting to 100. If you have used a different value from the default value for EventsToCache before the upgrade, the CA EEM r8.4 upgrade overwrites the value.

**Note:** EventsToCache setting is available in the iControl.conf file under iTechnology folder.

## Default Reports and Panels

During upgrade, CA EEM r8.4 overwrites the definitions of default reports and panels. If you have customized the default reports and panels from CA EEM r8.2.1, you must rename your customized reports and panels before upgrading to CA EEM r8.4.

## Archive Files Are Converted to Cold Database Files

When you upgrade from CA EEM r8.2.1 to CA EEM r8.4, the archive files will be converted to cold db files and are stored under your Archived Directory.

## MDB Database Migration

When you upgrade from a CA MDB CA EEM installation to CA EEM r8.4, the data in the CA MDB database is migrated to CA Directory. After the migration, the data in the CA MDB is moved to CA Directory.

# Chapter 6: General Considerations

---

## IPv6 Support for C#

For .NET Framework version 1.1 and earlier, IPv6 is disabled by default. As a result, C# (C Sharp) SDK does not work in a .NET Framework version 1.1 in an IPv6 environment. For C# SDK to work, you must configure support for IPv6 on a .NET Framework version 1.1.

### To enable IPv6 Support

1. Open the machine.config file located at the following location on your computer.

```
%windir%\Microsoft.NET\Framework
```

2. Edit the machine.config file as follows:

- Modify the following entry:

```
<!-- <ipv6 enabled="false"/> -->
```

- To read:

```
<ipv6 enabled="true"/>
```

**Note:** For more information on configuring .NET Framework version 1.1 for IPv6, see the following article:

[http://msdn2.microsoft.com/en-us/library/8db2058t\(VS.80\).aspx?wt.slv=RightRail](http://msdn2.microsoft.com/en-us/library/8db2058t(VS.80).aspx?wt.slv=RightRail)

## Communication between CA EEM Server and Client Is Broken in an IPv6 Environment

**Valid on Windows XP Professional SP2 and Windows 2003 Server SP 2**

**Symptom:**

The communication between a client and its server is broken in an IPv6 environment.

**Solution:**

In an IPv6 environment, the aforementioned platforms cannot communicate with the DNS server to resolve IPv6 addresses to host names. Hence, the communication between a client and its server is broken. You must perform the following steps to enable communication:

1. Open the hosts file located in the following folder:

*<Windows\_install\_drive>\WINDOWS\system32\drivers\etc*

2. Add the IP address and host name of the destination computer to the existing IP addresses and host names in the following format:

*IPv6\_Address Hostname*

For example, 2002:9b23:2d52::b892:c8f3:5695:fd5c GPC00015, where 2002:9b23:2d52::b892:c8f3:5695:fd5c is the IP Address and GPC00015 is the host name of the corresponding computer.

3. Save and close the hosts file.

The IPv6 address of the destination computer is mapped to the host name of the destination computer.

**Note:** You must repeat this procedure on all client and their corresponding server computers. For more information on IPv6 and Windows, see the following link: <http://www.microsoft.com/technet/network/ipv6/ipv6faq.mspx>

# Chapter 7: New Features

---

This section contains the following topics:

[Support for SSL Connections to LDAP Directories](#) (see page 21)

## Support for SSL Connections to LDAP Directories

CA EEM supports SSL connections to LDAP directories for user authentication and authorization.

**Note:** For more information on configuring SSL connections to external directory servers, see the *Getting Started Guide*.



# Chapter 8: Changes to Existing Features

---

This section contains the following topics:

[Changes to the Installer](#) (see page 23)

[JRE Requirement for CA EEM Installation](#) (see page 23)

[Changes to Data Store](#) (see page 24)

[Changes to Event Logging](#) (see page 24)

## Changes to the Installer

In the previous releases of CA EEM, there were separate installers for MDB and non-MDB installations. Whereas, in this release of CA EEM, there is only one installer and there is no differentiation in the installations as MDB and non-MDB installers.

Installation parameters related to Ingres are no longer supported with the CA EEM installer. Further, the CA EEM installer now supports new installation parameters related to CA Directory.

This release of CA EEM lets you run CA Directory services under non-local user accounts in UNIX. You can identify the user account with which you want to run CA Directory services by using the following parameter during CA EEM installation:

-dxuser

**Note:** For more information on server installation parameters, see the *Getting Started Guide*.

## JRE Requirement for CA EEM Installation

In the current release of CA EEM, JRE is no longer a mandatory requirement to install or use CA EEM. A new server installation parameter javahome is added to CA EEM installation; if javahome is set to "None", the CA EEM installer lets you install CA EEM without any dependency on JRE.

**Note:** If you intend to integrate CA EEM with CA SiteMinder, JRE is a mandatory prerequisite for CA EEM installation.

## Changes to Data Store

This release of CA EEM uses CA Directory r12 SP1, which is an upgraded version of CA Directory compared to earlier releases. This release of CA Directory has the following features:

The DSA process, DXserver, no longer uses an Ingres database for persistent storage. Instead, it uses a memory-mapped file. It reads from, and writes to, the memory image, and uses the memory mapping routines in the operating system to store the directory data in a datastore on disk.

This results in very fast performance, and much simpler administration of the persistent data (backups, restoration, startup, shutdown, and so on). It also means that CA Directory does not need, or allow, special indexes (not-searchable, wide, and hash indexes) or cache-only DSAs.

**Note:** For more information on how to upgrade to CA EEM with CA Directory, see the *Getting Started Guide*.

## Changes to Event Logging

In the previous releases of CA EEM, when you performed an administrative action such as inserting, removing, or modifying a SafeStoredObject or folder in the policy server store, an admin event was generated for each of the changed attributes. In this release of CA EEM, for an administrative action, all the attributes that are updated, inserted, or removed are logged as one admin event.

Also, in this release of CA EEM, events generated during authorization log the named attributes against which the authorization has been done. The following method is added to the Safe::Context class to implement this behavior:

```
void submitAuthorizationEvent(const char *identity, const char *action, const char *resourcename, Safe::ErrorCode errorcode, const char *delegator, const char *policyname, Safe::AttrQ &namedattrq);
```



# Chapter 9: Known Issues

---

This section contains the following topics:

[Backend Property and findBackendServer Method Do Not Work](#) (see page 26)  
[Cannot Log Into CA EEM Server with a Custom Created User EiamAdmin](#) (see page 26)

[Delegation Policies](#) (see page 27)

[Error in Custom Installation](#) (see page 27)

[Error in CA EEM Server Installation](#) (see page 28)

[Error Using CA EEM Java SDK](#) (see page 28)

[Error Using Kerberos Authentication](#) (see page 29)

[Error Using WebLogic 8.1 Application Server](#) (see page 29)

[Error Using XACML and SPML Services](#) (see page 30)

[Export Application Takes Time](#) (see page 30)

[Unable to Launch CA EEM GUI After Uninstalling CA Audit](#) (see page 31)

[Unable to Launch CA EEM GUI After Installing CA Integrated Threat Management](#) (see page 32)

[Unable to Launch CA EEM GUI After Uninstalling CA Integrated Threat Management](#) (see page 33)

[Custom Reports Fails to Load or Takes a Long Time to Load](#) (see page 34)

[Application Data is Missing After Connecting to CA SiteMinder](#) (see page 35)

[Search for Users or Groups When Connected to CA SiteMinder Takes a Long Time to Complete](#) (see page 35)

[SAML Does Not Work After Upgrading to CA EEM r8.4](#) (see page 36)

[Event Log Settings Not Displayed](#) (see page 36)

[Global Group Memberships Are Not Displayed Correctly for Custom Mapped Sun One Directory](#) (see page 37)

[Archive Query Fails](#) (see page 37)

[Archive Query Results Are Not Refreshed](#) (see page 37)

[Storage Folder Field Under Event Log Settings](#) (see page 37)

[CA EEM Integration Fails with CA SiteMinder r12](#) (see page 38)

[Event Log Store Settings During Upgrade](#) (see page 38)

[Memory Size on HP-UX](#) (see page 38)

[CA EEM Data Is Not Deleted from MDB after Upgrade](#) (see page 39)

[Authentication to an SSL Enabled Directory over Non-SSL Port Fails](#) (see page 40)

[CA Directory Install Fails during Upgrade from CA EEM r8.1 MDB to r8.4](#) (see page 41)

## Backend Property and findBackendServer Method Do Not Work

### Symptom:

On the C# Compact Framework, when I use Active Sync to synchronize the host computer with a mobile device, the Backend property and the findBackendServer method do not work if an IP Address is passed as an argument.

### Solution:

To use the IP address as an argument, do the following on the mobile device:

1. Tap Start, Settings.
2. Tap the Connections tab and tap the Connection icon.
3. Tap the Advanced tab and tap Exceptions.
4. Tap Add new URL.
5. Enter the URL pattern.

**Example:** 155.35.\*/\*

6. Tap OK.

The Backend property and the findBackendServer method will now work if you use the IP address as an argument.

## Cannot Log Into CA EEM Server with a Custom Created User EiamAdmin

### Valid on Windows and Linux

### Symptom:

I cannot log into CA EEM server with a custom created user "EiamAdmin". I receive an incorrect password error message.

### Solution:

By default, CA EEM creates a user 'EiamAdmin' with administrative privileges during installation. When you try to login as "EiamAdmin", CA EEM always tries to authenticate based on the credentials of the default "EiamAdmin" user. Therefore, if you have a custom user "EiamAdmin" in your external directory or CA MDB, you cannot log into CA EEM with the custom "EiamAdmin" credentials.

## Delegation Policies

### Symptom:

When I delete or disable users who have delegated permissions (using delegation policies) to other users, I find that the delegated permissions remain effective.

### Solution:

You must explicitly delete the delegation policies created by the deleted or disabled user.

## Error in Custom Installation

### Valid on Windows

#### Symptom:

When I install CA Directory and iTechnology in a customized location, I receive the following error:

```
Error Executing Specified program
```

#### Solution:

You may receive this error due to the restriction on the InstallShield command length.

On a computer with Microsoft Windows XP or Windows Server 2003, the maximum length of the string that you can use at the command prompt is 8,191 characters. With Microsoft Windows 2000, the maximum length of the string that you can use at the command prompt is 2,047 characters.

To avoid this error, use the cmdfile parameter:

```
EEMServer_[releasenumbr].[builddate]_win32.exe -s -a /s /f1"location of response file" /z"cmdfile=location of cmdfile "
```

#### Example:

```
EEMServer_8.4.0.55_win32.exe -s -a /s /f1"c:\resp.iss" /z"cmdfile=c:\cmd.txt "
```

**Important!** For the cmdfile parameter, enter a single space character only before the end quotes.

The cmdfile contains the custom installation paths for CA Directory and iGateway as shown in the following example:

```
etdirpath=Custom installation path for CA Directory;igpath=Custom installation path for iGateway;
```

## Error in CA EEM Server Installation

### Valid on HP-UX

#### Symptom:

When I Install CA EEM Server, I receive a message 'One or more installation sanity tests failed' and the installation fails.

#### Solution:

You receive this error if the swlist binary file is not accessible. The swlist binary file is used to check for HP-UX patches.

To avoid this, update the PATH environment variable with the folder containing the swlist binary file using the export command. For example:

```
export PATH=/usr/sbin/:$PATH
```

After updating the path, restart the installation.

## Error Using CA EEM Java SDK

#### Symptom:

When I use the CA EEM Java SDK on a computer with Tomcat 4.1, I receive the following browser error:

HTTP 404 Error

In the Tomcat log, I see the following exception:

```
org.apache.commons.logging.LogConfigurationException: Invalid class loader hierarchy. You have more than one version of 'org.apache.commons.logging.Log' visible, which is not allowed.
```

#### Solution:

To use the CA EEM Java SDK on a computer with Tomcat 4.1, do the following:

1. Stop Tomcat Server.
2. Delete the commons-logging-api.jar and commons-logging.jar files from the webapps/application\_name/WEB-INF/lib/ directory.
3. Restart Tomcat Server.

## Error Using Kerberos Authentication

### Valid on SUSE Linux 9

#### Symptom:

When I perform Kerberos authentication, I receive an "EE\_Authentication" error.

#### Solution:

Enable trace in the CA EEM to capture the details of the error in the iPoz log file. If you receive the error message 'libkrb5.so file does not exist' in the iPoz.log file, create a link from the existing libkrb5.so.\* file to the libkrb5.so file.

You receive this error if the authentication process is unable to locate the libkrb5.so file in the LD\_LIBRARY\_PATH.

**Note:** The iPoz.log file logs the error only if you enable trace on CA EEM. For information on how to enable tracing, see the *Programming Guide*.

#### Example: Create a link

The following example searches for the available version of libkrb5.so file and creates a link:

```
# find / -name libkrb5.so.*  
/usr/lib/libkrb5.so.17.3.0  
# ln -s /usr/lib/libkrb5.so.17.3.0 /usr/lib/libkrb5.so
```

## Error Using WebLogic 8.1 Application Server

#### Symptom:

When I deploy an application that uses the CA EEM Java SDK, on a WebLogic 8.1 Application server, I receive a ClassCastException.

#### Solution:

You receive this error if the WebLogic server is configured to use its own implementation of HttpURLConnection for HTTP handlers.

To avoid this error, configure the WebLogic server to use the SUN handlers by adding the -DUseSunHttpHandler=true parameter to the JVM options.

For information on how to set the parameters, see the JVM documentation.

## Error Using XACML and SPML Services

### Symptom:

When I use XACML and SPML services with JRE1.5 installed, I receive the following error:

```
java.lang.NullPointerException
```

### Solution:

To use XACML and SPML services with JRE1.5, do the following:

1. Stop Tomcat Server.
2. Copy the xercesImpl.jar file from the WEB-INF/lib directory of oasis.war to the jre/lib/ext directory.
3. Start Tomcat server.

For more information about this issue, see

[http://bugs.sun.com/bugdatabase/view\\_bug.do?bug\\_id=6219364](http://bugs.sun.com/bugdatabase/view_bug.do?bug_id=6219364).

## Export Application Takes Time

### Valid on Linux

### Symptom:

The Export Application feature takes a long time to export an application.

### Solution:

To optimize the time taken to export an application, do the following:

1. Stop iGateway.
2. Open the /opt/CA/SharedComponents/iTechnology/ directory.
3. Edit the S99igateway script file as follows:
  - Modify the following entry:

```
LD_ASSUME_KERNEL=2.4.1
```
  - To read:

```
# LD_ASSUME_KERNEL=2.4.1
```
4. Start iGateway.

## Unable to Launch CA EEM GUI After Uninstalling CA Audit

**Symptom:**

I am unable to launch CA EEM GUI after uninstalling CA Audit that is installed on the same server as CA EEM.

**Solution:**

You may be unable to launch CA EEM GUI if there are any references to CA Audit spindles in the Spin.conf files even after uninstalling CA Audit. You must delete all CA Audit related spindles from the Spin.conf to launch CA EEM GUI.

## Unable to Launch CA EEM GUI After Installing CA Integrated Threat Management

### Valid on Windows Server 2003 SP2

#### Symptom:

I am unable to launch CA EEM GUI after installing CA Integrated Threat Management on the same server as CA EEM.

#### Solution:

You may be unable to launch CA EEM GUI because CA Integrated Threat Management during installation removes a <Spindle> tag from the Spin.conf file.

You must add the <Spindle> tag before the following section in the Spin.conf file to launch CA EEM GUI:

```
<version>8.1</version>  
<directory/>  
<config/>  
<redirecthttps>>true</redirecthttps>  
<sendevents>>true</sendevents>  
  
</Spindle>
```

To look like:

```
<Spindle>  
  
<version>8.1</version>  
<directory/>  
<config/>  
<redirecthttps>>true</redirecthttps>  
<sendevents>>true</sendevents>  
  
</Spindle>
```



## Unable to Launch CA EEM GUI After Uninstalling CA Integrated Threat Management

### Valid on Windows Server 2003 SP2

#### Symptom:

I am unable to launch CA EEM GUI after uninstalling CA Integrated Threat Management that is installed on the same server as CA EEM.

#### Solution:

You may be unable to launch CA EEM GUI because CA Integrated Threat Management during uninstallation removes a <Spindle> tag from the Spin.conf file.

You must add the <Spindle> tag before the following section in the Spin.conf file to launch CA EEM GUI:

```
        <version>8.1</version>  
        <directory/>  
        <config/>  
        <redirecthttps>>true</redirecthttps>  
        <sendevents>>true</sendevents>  
  
</Spindle>
```

To look like:

```
<Spindle>  
  
        <version>8.1</version>  
        <directory/>  
        <config/>  
        <redirecthttps>>true</redirecthttps>  
        <sendevents>>true</sendevents>  
  
</Spindle>
```

## Custom Reports Fails to Load or Takes a Long Time to Load

**Symptom:**

When I create a custom report and later try to view the custom report, it fails to load or takes 10 to 15 minutes or longer to load.

**Solution:**

You must restart the igateway service to load the custom report.

Note: For more information on how to start and stop iGateway services, see the *Getting Started Guide*.

## Application Data is Missing After Connecting to CA SiteMinder

### Valid on SUSE Linux 9.0

#### Symptom:

When I attach my application having more than 30,000 policies to CA EEM server and try to connect to CA SiteMinder, I receive the following error and I lose my application data:

```
EE_NOTALLOWED
```

#### Solution:

You may receive this error due to low JVM memory. To increase JVM memory, you must use the ConfigTool.exe to add the following lines of code to the igateway.conf file:

```
<JVMSettings>
    <loadjvm>true</loadjvm>
<!-- Increasing the jvm heap memory -->
    <Properties name="test">
        <jvm-property>-Xmx256M</jvm-property>
    </Properties>
</JVMSettings>
```

To add the preceding code, open the iTechnology folder and run the ConfigTool.exe as follows:

```
./ConfigTool.exe -merge -comp igateway -xml "<JVMSettings><Properties
name=\"MaxJVMHeap\"><jvm-property>-Xmx[memory_size]</jvm-
property></Properties></JVMSettings>"
```

Where

#### [memory\_size]

Specifies the memory that the JVM uses. You must set this value based on your requirements.

## Search for Users or Groups When Connected to CA SiteMinder Takes a Long Time to Complete

When you use a regular expression \* (asterisk) to search for users or groups through CA SiteMinder, CA EEM may take 20 minutes to 45 minutes, based on your system configuration, to display the results.

## SAML Does Not Work After Upgrading to CA EEM r8.4

**Symptom:**

SAML does not work after I upgrade from CA EEM r8.2.1 to CA EEM r8.4.

**Solution:**

You must perform the following steps to ensure that SAML works after upgrade to CA EEM r8.4:

1. Delete the following files from the iTechnology folder:
  - jaxp-api.jar
  - dom.jar
2. Restart iGateway

## Event Log Settings Not Displayed

**Symptom:**

I am unable to view the Event Log Settings page when I do the following steps:

1. Click any other option in CA EEM server to navigate to another page from the Event Log Settings page.
2. Click Event Log Settings.

**Solution:**

If you have navigated away from the Event Log Settings page and want to go back to the same page, click Manage Reports, Configuration, Services, Event Log Settings.

## Global Group Memberships Are Not Displayed Correctly for Custom Mapped Sun One Directory

When you connect to a custom mapped Sun One directory, the global group memberships may not be displayed correctly. When you connect to a custom mapped Sun One directory, the global group membership is determined by the following parameters under custom mapping:

### **Use Group As Container**

If you select this option, CA EEM will display only the group membership of the user. The extended group membership of the user and the group membership of the groups is not displayed.

### **Use Group As Attribute**

If you select this option with Group Membership Attribute as uniqueMember, CA EEM will display group memberships of the groups, but CA EEM will not display the group membership of the user.

## Archive Query Fails

### **Valid on Red Hat Linux Enterprise Server**

When you append a blank space at the end of your search query, the archive query fails and CA EEM will not display any query results.

## Archive Query Results Are Not Refreshed

When your archive query fails, CA EEM displays the appropriate error message, but the Archive Query Results pane may not be refreshed; the Archive Query Results pane may display the results from an earlier archive query.

## Storage Folder Field Under Event Log Settings

This release of CA EEM does not support Storage Folder parameter in Event Log Settings, though the Storage Folder field is visible in CA EEM server.

**Note:** For more information about Event Log Settings, see the *Online Help*.

## CA EEM Integration Fails with CA SiteMinder r12

### **Valid on Solaris and AIX**

When you integrate CA EEM with CA SiteMinder r12, the integration may fail displaying the following error message:

```
SmApiexception Unable to get server configuration
```

## Event Log Store Settings During Upgrade

When you upgrade from CA EEM r8.2.1 or CA EEM r8.4 beta build to CA EEM r8.4 GA build, the following Event Log Store settings are displayed on the CA EEM user interface though the fields are not supported in CA EEM r8.4:

- Archive Directory
- Catalog Directory

**Note:** In a CA EEM r8.4 fresh install, the Archive Directory and Catalog Directory fields will not be displayed under Event Log Store settings.

## Memory Size on HP-UX

By default, HP-UX allocates 256 MB of memory for processes such as iGateway. CA EEM will run out of memory and iGateway may crash if you perform tasks using CA EEM that may require memory of more than 256 MB. So, you must increase the memory size allocated by HP-UX to iGateway process based on your requirement.

## CA EEM Data Is Not Deleted from MDB after Upgrade

### Symptom:

The CA EEM data in MDB is not deleted when I upgrade CA EEM server from r8.1 to r8.4.

### Solution:

You must do the following steps if you want to delete CA EEM data in an MDB when you upgrade from CA EEM r8.1 to r8.4:

1. Create a .sql extension text file with the following text:

```
delete from alias;  
delete from attr;  
delete from blob;  
delete from disp;  
delete from dispmoddn;  
delete from dit;  
delete from entry;  
delete from info;  
delete from name;  
delete from search;  
delete from subattr;  
delete from subsearch;  
delete from tree;  
commit;  
pgq
```

2. Run the following command from the command prompt:

```
% sql -umdbadmin mdb < filename.sql > filename.log
```

The CA EEM data in the MDB is deleted.

## Authentication to an SSL Enabled Directory over Non-SSL Port Fails

### Symptom:

When I disable SSL connections to an external directory and later try connecting to that external directory using SSL port 636, the authentication fails, and I am unable to login to CA EEM GUI.

### Solution:

You cannot use an SSL port to connect to an external directory even if the SSL connection is disabled. To connect to an external directory that is configured for SSL connections, over non-SSL ports, you must do the following:

1. Open iPoz.conf file and edit the following entry to reflect any valid non-SSL port:

```
<ExternalDirPort>non-SSL port</ExternalDirPort>
```

2. Restart iGateway

You can now connect to an SSL enabled external directory over non-SSL ports. The authentication is successful and you can login to CA EEM GUI.



## CA Directory Install Fails during Upgrade from CA EEM r8.1 MDB to r8.4

### Valid on UNIX and Linux

#### Symptom:

During the upgrade from CA EEM r8.1 MDB to r8.4, the CA Directory installation fails and displays the following message:

```
"CA Directory Install Failed"
```

#### Solution:

The CA Directory installation fails as the database dump fails during upgrade. To successfully upgrade from CA EEM r8.1 MDB to r8.4, do the following before installing CA EEM r8.4:

1. Login as dsa user as follows:

```
su -dsa
```

2. Verify if the II\_SYSTEM environmental variable is set. Also, verify if the environmental variable LIBPATH/ LD\_LIBRARY\_PATH is set to \$II\_SYSTE/ingres/lib directory by running the following commands:

```
echo $LIBPATH
```

```
echo $LD_LIBRARY_PATH
```

**Note:** If II\_SYSTEM or LIBPATH/ LD\_LIBRARY\_PATH are not set, then proceed to step 3.

3. Open the login profile file that is used by the su -dsa command, and set the value of environmental variable LIBPATH/ LD\_LIBRARY\_PATH to \$II\_SYSTE/ingres/lib by running the following command:

```
setenv LD_LIBRARY_PATH $II_SYSTEM/ingres/lib
```

**Note:** The login profile file has a .cshrc extension if it is a csh shell; .profile or .bashrc if it is bash shell.

4. Log out and log in to the shell with a dsa account.
5. Verify if the environmental variables LIBPATH/ LD\_LIBRARY\_PATH is set to \$II\_SYSTE/ingres/lib directory. Also, verify if II-SYSTEM variable is set properly.

6. Run the following command:

```
su - dsa -c 'dxlistdb'
```

If no errors are displayed, the workaround is successful.

7. Run the CA EEM r8.4 installer.

The upgrade is successful.



# Chapter 10: Limitations

---

## C# Compact Framework

The C# (C Sharp) SDK is compatible with Windows Mobile platform 5.0. On other Windows Mobile platforms, certificate features are not available. This is because Compact Framework 2.0 does not support the Public-Key Cryptography Standards 12 (PKCS#12).

The following certificate features are not available:

- Issue certificate
- Issue certificate for session
- Issue certificate for user
- Authenticate with certificate
- Fast authenticate with certificate

## CA Integrated Threat Management r8.0

CA EEM r8.4 is incompatible with CA Integrated Threat Management r8.0. Therefore, if you need to run the CA EEM r8.4 Server on the same computer as the CA Integrated Threat Management product, you must upgrade your computer to CA Integrated Threat Management r8.1.

## Display Limitations in User Interface

The use of non-alphanumeric characters, such as double quotes, \ or / cause display problems in the user interface. Use only alphanumeric characters for the following objects:

- Actions
- Calendars
- Custom Mapped Directory Label
- Global Groups
- Global Users
- Folders
- Named Attributes
- Obligation Names
- Policies
- Resource Classes
- Users
- User Attributes
- User Groups

## CA EEM Server Operating System Requirements for Kerberos Authentication

For Kerberos authentication from any CA EEM-supported client, the CA EEM Server must be installed on any of the following operating systems:

- AIX 5.2 or 5.3 with krb.client packages installed
- Red Hat Enterprise Linux 4 or 5
- Solaris 10 with kernel patch level 120011-14 or later

**Important!** CA EEM does not support Kerberos authentication on the HP-UX platform.

## CA EEM SiteMinder Integration

CA EEM does not support integration with CA SiteMinder on the following platforms:

- HP-UX
- SUSE Linux

## Policy Limitation on HP-UX

CA EEM supports up to 20,000 policies on the HP-UX platform.



# Chapter 11: Published Fixes

---

The complete list of published bug fixes for this product can be found through Published Solutions on CA Support Online.





# Chapter 12: International Support

---

An *internationalized* product is an English product that runs correctly on local language versions of the required operating system and required third-party products, and supports local language data for input and output. Internationalized products also support the ability to specify local language conventions for date, time, currency and number formats.

A *translated* product (sometimes referred to as a *localized* product) is an internationalized product that includes local language support for the product's user interface, online help and other documentation, as well as local language default settings for date, time, currency, and number formats.

**Note:** The CA EEM SDK is neither localized nor translated.

In addition to the English release of this product, CA supports *only* those languages listed in the following table.

Language	Internationalized	Translated
Brazilian-Portuguese	No	No
Chinese (Simplified)	No	No
Chinese (Traditional)	No	No
French	No	No
German	No	No
Italian	No	No
Japanese	No	No
Korean	No	No
Spanish	No	No

**Note:** If you run the product in a language environment *not* listed in the table, you may experience problems.



# Chapter 13: Bookshelf

---

The Bookshelf provides access to all CA EEM documentation from a central location. The Bookshelf includes the following:

- Single expandable list of contents for all guides in HTML format
- Full text search across all guides with search terms highlighted in the content and ranked search results
- Breadcrumbs that link you to higher level topics
- Single index across all guides
- Links to PDF versions of guides for printing

Viewing the Bookshelf requires Internet Explorer 6 or 7 or Mozilla Firefox 2. For bookshelf links to PDF guides you can print, Adobe Reader 7 or 8 is required. You can download a supported version of Adobe Reader at [www.adobe.com](http://www.adobe.com).

The PDF guides for this product are as follows:

- Getting Started
- Programming Guide
- Release Notes
- Online Help

## **To use the Bookshelf**

1. Locate and open the documentation folder from the product installation folder.
2. Choose one of the following methods to open the bookshelf:
  - Open the Bookshelf.hta file if the bookshelf is on the local system and you are using Internet Explorer.
  - Open the Bookshelf.html file if the bookshelf is on a remote system or if you are using Mozilla Firefox.



# Appendix A: Third-Party Acknowledgements

---

This section contains the following topics:

[Apache](#) (see page 54)

[MIT Kerberos](#) (see page 59)

[Castor](#) (see page 63)

[Expat](#) (see page 64)

[MiniZip](#) (see page 64)

[NUNIT](#) (see page 65)

[OpenLDAP](#) (see page 66)

[OpenSSL](#) (see page 81)

[PCRE](#) (see page 86)

## Apache

Portions of this product include software developed by the Apache Software Foundation. The Apache software is distributed in accordance with the following license agreement.

Apache License

Version 2.0, January 2004

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

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

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

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

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

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

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

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

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

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

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

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

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

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - a. You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - b. You must cause any modified files to carry prominent notices stating that You changed the files; and
  - c. You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - d. If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

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



5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

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.

## MIT Kerberos

Portions of this product include software developed by the Kerberos Contributors. The MIT Kerberos software is distributed in accordance with the following license agreement.

Copyright (c) 1985-2005 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. 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.

THIS SOFTWARE 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.

Individual source code files are copyright MIT, Cygnus Support, OpenVision, Oracle, Sun Soft, FundsXpress, and others.

Project Athena, Athena, Athena MUSE, Discuss, Hesiod, Kerberos, Moira, and Zephyr are trademarks of the Massachusetts Institute of Technology (MIT). No commercial use of these trademarks may be made without prior written permission of MIT.

"Commercial use" means use of a name in a product or other for-profit manner. It does NOT prevent a commercial firm from referring to the MIT trademarks in order to convey information (although in doing so, recognition of their trademark status should be given).

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.

Portions contributed by Matt Crawford were work performed at Fermi National Accelerator Laboratory, which is operated by Universities Research Association, Inc., under contract DE-AC02-76CHO3000 with the U.S. Department of Energy.

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 , 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.

The implementation of the `RPCSEC_GSS` authentication flavor in `src/lib/rpc` has the following copyright:

Copyright (c) 2000 The Regents of the University of Michigan.

All rights reserved.

Copyright (c) 2000 Dug Song.

All rights reserved, all wrongs reversed.

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. 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 ``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.

## Castor

Portions of this product include software provided by Intalio, Inc. and is distributed in accordance with the following license agreement.

Exolab; Intalio Inc.

Copyright 1999-2003 (C) Intalio Inc. All Rights Reserved.

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 of source code must retain copyright statements and notices. Redistributions must also contain a copy of this document.
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. The name "ExoLab" must not be used to endorse or promote products derived from this Software without prior written permission of Intalio Inc. For written permission, please contact [info@exolab.org](mailto:info@exolab.org).
4. Products derived from this Software may not be called "Castor" nor may "Castor" appear in their names without prior written permission of Intalio Inc. Exolab, Castor and Intalio are trademarks of Intalio Inc.
5. Due credit should be given to the ExoLab Project

(<http://www.exolab.org/>).

THIS SOFTWARE IS PROVIDED BY INTALIO AND 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 INTALIO 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.

## Expat

'Portions of this product include software developed by the Thai Open Source Software Center Ltd. The EXPAT software is distributed in accordance with the following license agreement.'

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.

## MiniZip

This product includes zlib developed by Jean-loup Gailly and Mark Adler and MiniZip developed by Gilles Vollant.



## NUNIT

The CA Licensed Product uses NUNIT r.2.2.8. Copyright © 2002-2004 James W. Newkirk, Michael C. Two, Alexei A. Vorontsov, Charlie Poole or Copyright © 2000-2004 Philip A. Craig. The terms and conditions governing use of such component are as follows:

Copyright © 2002-2004 James W. Newkirk, Michael C. Two, Alexei A. Vorontsov, Charlie Poole

Copyright © 2000-2004 Philip A. Craig

This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment (see the following) in the product documentation is required.

Portions Copyright © 2002 James W. Newkirk, Michael C. Two, Alexei A. Vorontsov or Copyright © 2000-2002 Philip A. Craig

2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.

3. This notice may not be removed or altered from any source distribution.

## OpenLDAP

This product includes software developed by The OpenLDAP Foundation. The software is distributed in accordance with the following license agreement.

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.

Copyright 1998-2006 The OpenLDAP Foundation

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted only as authorized by the OpenLDAP Public License.

A copy of this license is available in the file LICENSE in the top-level directory of the distribution or, alternatively, at .

OpenLDAP is a registered trademark of the OpenLDAP Foundation.

Individual files and/or contributed packages may be copyright by other parties and/or subject to additional restrictions.

This work is derived from the University of Michigan LDAP v3.3 distribution. Information concerning this software is available

at .

This work also contains materials derived from public sources.

Additional information about OpenLDAP can be obtained at

.

---

Portions Copyright 1998-2006 Kurt D. Zeilenga.

Portions Copyright 1998-2006 Net Boolean Incorporated.

Portions Copyright 2001-2006 IBM Corporation.

All rights reserved.

Redistribution and use in source and binary forms, with or without  
modification, are permitted only as authorized by the OpenLDAP  
Public License.

---

Portions Copyright 1999-2005 Howard Y.H. Chu.

Portions Copyright 1999-2005 Symas Corporation.

Portions Copyright 1998-2003 Hallvard B. Furuseth.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that this notice is preserved. The names of the copyright holders may not be used to endorse or promote products derived from this software without their specific prior written permission. This software is provided 'as is' without express or implied warranty.

---

Portions Copyright (c) 1992-1996 Regents of the University of Michigan.  
All rights reserved.

Redistribution and use in source and binary forms are permitted provided that this notice is preserved and that due credit is given to the University of Michigan at Ann Arbor. The name of the University may not be used to endorse or promote products derived from this software without specific prior written permission. This software is provided 'as is' without express or implied warranty.

-----

/\* Portions Copyright (c) 1995 Regents of the University of Michigan.  
\* All rights reserved.  
\*  
\* Redistribution and use in source and binary forms are permitted  
\* provided that this notice is preserved and that due credit is given

\* to the University of Michigan at Ann Arbor. The name of the University  
\* may not be used to endorse or promote products derived from this  
\* software without specific prior written permission. This software  
\* is provided 'as is' without express or implied warranty.  
\*/

-----  
/\* Portions Copyright 1999, Juan C. Gomez, All rights reserved.

\* This software is not subject to any license of Silicon Graphics  
\* Inc. or Purdue University.

\*

\* Redistribution and use in source and binary forms are permitted  
\* without restriction or fee of any kind as long as this notice  
\* is preserved.

\*/

-----  
/\* Copyright (c) 1991, 1993

\* The 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.
- \*  
\* 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.

\*

\* @(#)queue.h 8.5 (Berkeley) 8/20/94

\* \$FreeBSD: src/sys/sys/queue.h,v 1.32.2.5 2001/09/30 21:12:54 luigi Exp \$

\*

\* See also: ftp://ftp.cs.berkeley.edu/pub/4bsd/README.Impt.License.Change

\*/

/\* ACKNOWLEDGEMENTS:

\* This work is derived from FreeBSD queue.h work. Adapted for use in

\* OpenLDAP Software by Kurt D. Zeilenga.

\*/

-----  
/\* Portions (C) Copyright PADL Software Pty Ltd. 1999

\* Redistribution and use in source and binary forms, with or without

\* modification, are permitted provided that this notice is preserved

\* and that due credit is given to PADL Software Pty Ltd. This software

\* is provided 'as is' without express or implied warranty.

\*/

-----  
/\* This notice applies to changes, created by or for Novell, Inc.,



\* to preexisting works for which notices appear elsewhere in this file.

\*

\* Copyright (C) 1999, 2000 Novell, Inc. All Rights Reserved.

\*

\* THIS WORK IS SUBJECT TO U.S. AND INTERNATIONAL COPYRIGHT LAWS AND TREATIES.

\* USE, MODIFICATION, AND REDISTRIBUTION OF THIS WORK IS SUBJECT TO VERSION

\* 2.0.1 OF THE OPENLDAP PUBLIC LICENSE, A COPY OF WHICH IS AVAILABLE AT

\* [HTTP://WWW.OPENLDAP.ORG/LICENSE.HTML](http://www.openldap.org/license.html) OR IN THE FILE "LICENSE" IN THE

\* TOP-LEVEL DIRECTORY OF THE DISTRIBUTION. ANY USE OR EXPLOITATION OF THIS

\* WORK OTHER THAN AS AUTHORIZED IN VERSION 2.0.1 OF THE OPENLDAP PUBLIC

\* LICENSE, OR OTHER PRIOR WRITTEN CONSENT FROM NOVELL, COULD SUBJECT THE

\* PERPETRATOR TO CRIMINAL AND CIVIL LIABILITY.

\*---

\* Note: A verbatim copy of version 2.0.1 of the OpenLDAP Public License

\* can be found in the file "build/LICENSE-2.0.1" in this distribution

\* of OpenLDAP Software.

\*/

/\* Portions Copyright (C) The Internet Society (1997)

\* ASN.1 fragments are from RFC 2251; see RFC for full legal notices.

\*/

-----

/\* ACKNOWLEDGEMENT:

\* This program was initially developed by Pierangelo Masarati

\* for inclusion in OpenLDAP Software.

\*/

-----

/\* This work is part of OpenLDAP Software .

\*

\* Copyright 2000-2006 The OpenLDAP Foundation.

\* Portions Copyright 2000-2003 Pierangelo Masarati.

\* All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without

\* modification, are permitted only as authorized by the OpenLDAP

\* Public License.

\*

\* A copy of this license is available in file LICENSE in the

\* top-level directory of the distribution or, alternatively, at

\* .

\*/

/\* This work is part of OpenLDAP Software .

\*

\* Copyright 1998-2006 The OpenLDAP Foundation.

\* Portions Copyright 1999 Lars Uffmann.

\* All rights reserved.

\*  
\* Redistribution and use in source and binary forms, with or without  
\* modification, are permitted only as authorized by the OpenLDAP  
\* Public License.  
\*  
\* A copy of this license is available in the file LICENSE in the  
\* top-level directory of the distribution or, alternatively, at  
\* .  
\*/  
/\* Portions Copyright (c) 1995 Regents of the University of Michigan.  
\* All rights reserved.  
\*/  
/\* Significant additional contributors include:  
\* Lars Uffman  
\*/  
-----  
/\* This work is part of OpenLDAP Software .  
\*  
\* Copyright 2004-2006 The OpenLDAP Foundation.  
\* Portions Copyright 2004 Hewlett-Packard Company.  
\* Portions Copyright 2004 Howard Chu, Symas Corp.  
\* All rights reserved.  
\*  
\* Redistribution and use in source and binary forms, with or without  
\* modification, are permitted only as authorized by the OpenLDAP

\* Public License.

\*

\* A copy of this license is available in the file LICENSE in the

\* top-level directory of the distribution or, alternatively, at

\* .

\*/

/\* ACKNOWLEDGEMENTS:

\* This work was developed by Howard Chu for inclusion in

\* OpenLDAP Software, based on prior work by Neil Dunbar (HP).

\* This work was sponsored by the Hewlett-Packard Company.

\*/

-----

/\* This work is part of OpenLDAP Software .

\*

\* Copyright 1998-2006 The OpenLDAP Foundation.

\* Portions Copyright 1998 A. Hartgers.

\* All rights reserved.

\*

\* Redistribution and use in source and binary forms, with or without

\* modification, are permitted only as authorized by the OpenLDAP

\* Public License.

\*

\* A copy of this license is available in the file LICENSE in the

\* top-level directory of the distribution or, alternatively, at

\* .

\*/

/\* ACKNOWLEDGEMENTS:

\* This work was initially developed by Bart Hartgers for inclusion in

\* OpenLDAP Software.

\*/

-----

/\* Copyright 1997, 1998, 1999 Computing Research Labs,

\* New Mexico State University

\*

\* 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 COMPUTING RESEARCH LAB OR NEW MEXICO STATE UNIVERSITY 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.

\*/

-----

/\* Portions Copyright (c) 1996, 1998 by Internet Software Consortium.

\*

\* Permission to use, copy, modify, and distribute this software for any

\* purpose with or without fee is hereby granted, provided that the above

\* copyright notice and this permission notice appear in all copies.

\*

\* THE SOFTWARE IS PROVIDED "AS IS" AND INTERNET SOFTWARE CONSORTIUM DISCLAIMS

\* ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES

\* OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL INTERNET SOFTWARE

\* CONSORTIUM BE LIABLE FOR ANY SPECIAL, DIRECT, 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.

\*/

```
/* This work is based upon Base64 routines (developed by IBM) found
 * Berkeley Internet Name Daemon (BIND) as distributed by ISC. They
 * were adapted for inclusion in OpenLDAP Software by Kurt D. Zeilenga.
 */
```

```
-----
```

```
/* Portions Copyright 2000, John E. Schimmel, All rights reserved.
 * This software is not subject to any license of Mirapoint, Inc.
 *
 * This is free software; you can redistribute and use it
 * under the same terms as OpenLDAP itself.
 */
```

```
/* This work was developed by John E. Schimmel and adapted for
 * inclusion in OpenLDAP Software by Kurt D. Zeilenga.
 */
```

```
-----
```

```
/* This work is part of OpenLDAP Software .
 *
 * Copyright 1998-2006 The OpenLDAP Foundation.
 * Portions Copyright 2000 Mark Adamson, Carnegie Mellon.
 * All rights reserved.
 *
 * Redistribution and use in source and binary forms, with or without
 * modification, are permitted only as authorized by the OpenLDAP
 * Public License.
 *

```

```
* A copy of this license is available in the file LICENSE in the
* top-level directory of the distribution or, alternatively, at
* .
*/
-----

/* This work is part of OpenLDAP Software .
*
* Copyright 1998-2006 The OpenLDAP Foundation.
* Portions Copyright 1999 PM Lashley.
* All rights reserved.
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted only as authorized by the OpenLDAP
* Public License.
*
* A copy of this license is available in the file LICENSE in the
* top-level directory of the distribution or, alternatively, at
* .
*/
-----
```



# OpenSSL

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (<http://www.openssl.org/>). This product also includes libraries from an SSL implementation written by Eric Young (eay@cryptsoft.com).

## LICENSE ISSUES

=====

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

-----

```
/*
=====
=====
```

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

\*

\* Redistribution and use in source and binary forms, with or without

\* modification, are permitted provided that the following conditions

\* are met:

\*

\* 1. Redistributions of source code must retain the above copyright

\* notice, this list of conditions and the following disclaimer.

\*

\* 2. Redistributions in binary form must reproduce the above copyright

\* notice, this list of conditions and the following disclaimer in

\* the documentation and/or other materials provided with the

- \* distribution.
- \*
- \* 3. All advertising materials mentioning features or use of this software must display the following acknowledgment:
  - \* "This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (<http://www.openssl.org/>)"
  - \*
- \* 4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to
  - \* endorse or promote products derived from this software without prior written permission. For written permission, please contact [openssl-core@openssl.org](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). This product includes software written by Tim  
\* Hudson (tjh@cryptsoft.com).

\*  
\*/

Original SSLeay License

-----

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

- \* All rights reserved.
- \*  
\* This package is an SSL implementation written
- \* by Eric Young (eay@cryptsoft.com).
- \* The implementation was written so as to conform with Netscapes SSL.
- \*  
\* This library is free for commercial and non-commercial use as long as
- \* the following conditions are aheared to. The following conditions
- \* apply to all code found in this distribution, be it the RC4, RSA,
- \* lhash, DES, etc., code; not just the SSL code. The SSL documentation
- \* included with this distribution is covered by the same copyright terms
- \* except that the holder is Tim Hudson (tjh@cryptsoft.com).
- \*  
\* Copyright remains Eric Young's, and as such any Copyright notices in
- \* the code are not to be removed.
- \* If this package is used in a product, Eric Young should be given attribution
- \* as the author of the parts of the library used.
- \* This can be in the form of a textual message at program startup or
- \* in documentation (online or textual) provided with the package.
- \*  
\* Redistribution and use in source and binary forms, with or without
- \* modification, are permitted provided that the following conditions
- \* are met:
- \* 1. Redistributions of source code must retain the copyright
- \* notice, this list of conditions and the following disclaimer.

- 
- \* 2. Redistributions in binary form must reproduce the above copyright
  - \* notice, this list of conditions and the following disclaimer in the
  - \* documentation and/or other materials provided with the distribution.
  - \* 3. All advertising materials mentioning features or use of this software
  - \* must display the following acknowledgement:
  - \* "This product includes cryptographic software written by
  - \* Eric Young (eay@cryptsoft.com)"
  - \* The word 'cryptographic' can be left out if the routines from the library
  - \* being used are not cryptographic related :-).
  - \* 4. If you include any Windows specific code (or a derivative thereof) from
  - \* the apps directory (application code) you must include an
  - \* acknowledgement:
  - \* "This product includes software written by Tim Hudson
  - \* (tjh@cryptsoft.com)"
  - \*  
\* THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS'' AND
  - \* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED
  - \* TO, THE
  - \* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A
  - \* PARTICULAR PURPOSE
  - \* ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS
  - \* BE LIABLE
  - \* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
  - \* CONSEQUENTIAL
  - \* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
  - \* SUBSTITUTE GOODS
  - \* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
  - \* INTERRUPTION)

\* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT

\* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY

\* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF

\* SUCH DAMAGE.

\*

\* The licence and distribution terms for any publically available version or

\* derivative of this code cannot be changed. i.e. this code cannot simply be

\* copied and put under another distribution licence

\* [including the GNU Public Licence.]

\*/

## PCRE

Regular expression support is provided by the PCRE library package, which is open source software, written by Philip Hazel, and copyright by the University of Cambridge, England. Source can be found at <ftp://ftp.csx.cam.ac.uk/pub/software/programming/pcre/>.