



# **Net-Net OS-E**

**Release 3.6.0**

## **System Installation and Commissioning Guide**

---

400-1008-36  
Revision 1.40  
July 31, 2012

---

## Notices

© 2012 Acme Packet, Inc., Bedford, Massachusetts. All rights reserved. Acme Packet, Session Aware Networking, Net-Net, and related marks are trademarks of Acme Packet, Inc. All other brand names are trademarks, registered trademarks, or service marks of their respective companies or organizations.

Patents Pending, Acme Packet, Inc.

The Acme Packet Documentation Set and the Net-Net systems described therein are the property of Acme Packet, Inc. This documentation is provided for informational use only, and the information contained within the documentation is subject to change without notice.

Acme Packet, Inc. shall not be liable for any loss of profits, loss of use, loss of data, interruption of business, nor for indirect, special, incidental, consequential, or exemplary damages of any kind, arising in any way in connection with the Acme Packet software or hardware, third party software or hardware, or the documentation. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusions may not apply. These limitations are independent from all other provisions and shall apply notwithstanding the failure of any remedy provided herein.

Copying or reproducing the information contained within this documentation without the express written permission of Acme Packet, Inc., 100 Crosby Drive, Bedford, MA 01730, USA is prohibited. No part may be reproduced or retransmitted.

---

# Contents

---

|   |           |
|---|-----------|
| <b>Preface .....</b>  | <b>13</b> |
| About Net-Net OS-E® Documentation .....                           | 13        |
| Revision History .....  | 14        |
| Conventions Used in This Manual .....                             | 15        |
| Typographical Conventions .....                                   | 15        |
| Acronyms .....  | 15        |
| Product Support .....   | 20        |
| Contacting Acme Packet, Inc. ....                                 | 20        |
| Product and Technical Support .....                               | 21        |
| Product Damage .....  | 21        |
| <b>Net-Net OS-E® Series Overview .....</b>                        | <b>23</b> |
| About this Chapter .....  | 23        |
| Net-Net OS-E Overview .....                                       | 23        |
| Running the Net-Net OS-E on Other Devices .....                   | 27        |
| Net-Net OS-E 2610 and 2620 Series models .....                    | 27        |
| Information on Net-Net OS-E Software and Licensing .....          | 29        |
| Running License Fetch .....                                       | 30        |
| Prerequisites .....   | 30        |
| Fetching the Signed License From the CLI .....                    | 31        |
| Fetching the Signed License From the OS-E Management System ..... | 32        |
| Adding New Features Later .....                                   | 32        |
| License Expirations and Renewals .....                            | 33        |
| Evaluation Systems .....  | 33        |
| System Management .....   | 33        |

|   |           |
|---|-----------|
| For More Information .....  | 34        |
| <b>Installing the Net-Net OS-E System .....</b>                       | <b>35</b> |
| About This Chapter .....  | 35        |
| Net-Net OS-E Series Models .....                                      | 35        |
| Net-Net OS-E Series specification .....                               | 38        |
| NN2610 Specifications .....   | 38        |
| NN 2620 Specifications .....  | 40        |
| System and Network Connections .....                                  | 41        |
| VGA Video, System Keyboard, and Power .....                           | 41        |
| RS-232 Serial B Port, DB9-to-RJ45 Adapter, and Null Modem Cable ..... | 41        |
| Gigabit Ethernet (IEEE 802.3ab, 1000Base-TX) .....                    | 42        |
| USB 2.0 Port .....  | 43        |
| System Software and Licensing .....                                   | 44        |
| System Components .....   | 44        |
| Intel® SE7520JR2 Server Board .....                                   | 44        |
| System Fans and Cooling .....   | 45        |
| Power Modules .....   | 46        |
| Hard Disk Drives .....  | 47        |
| Removable Bezel .....   | 48        |
| System Control Panel .....  | 48        |
| Push buttons and LEDs .....   | 48        |
| Installing the NN 2610 and 2620 Series .....                          | 51        |
| Required Tools .....  | 51        |
| Unpacking the System .....  | 51        |
| Installing and Removing the Front Bezel .....                         | 52        |
| Mounting the System In a Rack .....                                   | 54        |
| Connecting Console Equipment .....                                    | 55        |
| Using the Serial B Console Port .....                                 | 55        |
| Using the Video and Keyboard Connections .....                        | 57        |
| Connecting the Ethernet Interfaces .....                              | 58        |
| NN 2620 Half- and Full-Height Slots .....                             | 61        |



|   |           |
|---|-----------|
| Ethernet Port Assignments .....                                   | 62..      |
| Moving NICs After Installation .....                              | 62        |
| Connecting AC Power .....   | 62        |
| AC Power Requirements .....                                       | 62        |
| Connecting the AC Power Source .....                              | 63        |
| Inserting the USB Stick .....                                     | 64        |
| Applying Power .....  | 65        |
| Checking the LEDs .....   | 66        |
| Logging On and Starting the CLI .....                             | 68        |
| Additional Information on Net-Net OS-E Licensing .....            | 68        |
| Prerequisites .....   | 68        |
| Fetching the Signed License From the CLI .....                    | 69        |
| Fetching the Signed License From the OS-E Management System ..... | 69        |
| Adding New Features Later .....                                   | 70        |
| License Expirations and Renewals .....                            | 71        |
| Evaluation Systems .....  | 71        |
| Assigning a Management IP Address .....                           | 71        |
| Using the Setup Script .....                                      | 72        |
| Enabling Network Access .....                                     | 73        |
| Defining a Default Route and Gateway IP .....                     | 74        |
| Cluster Installation .....  | 74        |
| <b>Quick Commissioning New Net-Net OS-E Systems .....</b>         | <b>75</b> |
| About This Chapter .....  | 75        |
| Prerequisites to Quick Commissioning .....                        | 75        |
| Building the Configuration File .....                             | 76        |
| Basic Network Topology .....                                      | 77        |
| Step 1. Configuring Basic IP Connectivity .....                   | 78        |
| Using the Setup Script .....                                      | 79        |
| Enabling Network Access .....                                     | 80        |
| Defining a Default Route and Gateway IP .....                     | 80        |
| Launching the OS-E Management System .....                        | 80        |

|  |            |
|--|------------|
| Step 2. Configuring Advanced IP Connectivity .....                         | 82         |
| Step 3. Creating User Accounts for Basic Access .....                      | 84         |
| Step 4. Enabling Master Services .....                                     | 86         |
| Step 5. Configuring Basic Services .....                                   | 87         |
| Step 6. Enabling the Virtual System Partition (VSP) .....                  | 89         |
| Step 7. Configuring the Accounting Environments .....                      | 90         |
| Step 8. Editing the Default Session Configuration .....                    | 92         |
| Step 9. Enabling Registration Services .....                               | 93         |
| Step 10. Reviewing the Configuration .....                                 | 94         |
| <b>Installing Net-Net OS-E Clusters .....</b>                              | <b>97</b>  |
| About This Chapter .....   | 97         |
| Net-Net OS-E Cluster Overview .....  | 97         |
| Cluster Operations and Services .....                                      | 98         |
| Master-Services .....  | 98         |
| Heartbeat Interface, BOOTP, and Messaging .....                            | 103        |
| Event Logging .....  | 103        |
| Network Time Protocol (NTP) .....  | 104        |
| Cluster Redundancy Operations .....  | 104        |
| Notes on Cluster Management .....  | 104        |
| Cluster Installation Prerequisites .....                                   | 105        |
| Cluster Installation Procedure .....                                       | 106        |
| Configuring External Messaging .....                                       | 112        |
| Configuring Cluster Load Balancing .....                                   | 113        |
| Restarting an OS-E Cluster .....   | 114        |
| <b>Installing Certificates and Commissioning TLS Networks .....</b>        | <b>117</b> |
| About This Chapter .....   | 117        |
| TLS Overview .....   | 117        |
| Steps to Configuring TLS .....   | 117        |
| Before Configuring TLS .....   | 119        |
| Step 1. Creating a Self-Signed Certificate and Key Pair from the OS-E .... | 120        |
| Step 2. Generating a Certification Signing Request (CSR) .....             | 124        |

|   |            |
|---|------------|
| Step 3. Signing a CSR Using Either a Valid CA or OpenSSL .....        | 126        |
| Step 4. Updating the Self-Signed Certificate .....                    | 138        |
| Configuring the Certificate on the Net-Net OS-E .....                 | 139        |
| Displaying the Certificates Installed on the OS-E .....               | 139        |
| Other TLS Certificate Settings .....                                  | 140        |
| Using Certificate vs. Default-Outgoing-Settings .....                 | 140        |
| Verifying Peer Certificates .....                                     | 140        |
| Enabling Peer Certificate Verification .....                          | 141        |
| Controlling the CA Files and CRLs to Apply to the Certificate .....   | 142        |
| Setting the Required Peer Name .....                                  | 142        |
| Configuring TLS on Ethernet Interfaces .....                          | 143        |
| <b>Configuring Secure Media (SRTP) Sessions .....</b>                 | <b>145</b> |
| About This Chapter .....  | 145        |
| Anchoring Media Sessions .....  | 145        |
| Configuring Inbound and Outbound Encryption .....                     | 146        |
| Inbound Encryption Mode and Type .....                                | 147        |
| Outbound Encryption Mode, Type, and Require-TLS Setting .....         | 148        |
| Linksys Encryption .....  | 149        |
| <b>Performing Maintenance and System Upgrades to the NN2600 .....</b> | <b>153</b> |
| About This Chapter .....  | 153        |
| Warnings .....  | 153        |
| System Power On/Off .....   | 153        |
| Hazardous Conditions, Devices and Cables .....                        | 153        |
| Electrostatic Discharge (ESD) and ESD Protection .....                | 154        |
| ESD and Handling Boards .....   | 154        |
| Installing or Removing Jumpers .....                                  | 154        |
| Safety Cautions .....   | 154        |
| Attaching an ESD Strap .....  | 159        |
| Installing the Racking Mounting Brackets .....                        | 159        |
| Installing and Removing the Front Bezel .....                         | 160        |
| Removing and Installing the Chassis Cover .....                       | 162        |

|   |     |
|---|-----|
| On the NN2610 .....                                   | 162 |
| On the NN2620 .....                                   | 164 |
| Replacing a System Fan .....                          | 166 |
| On NN 2620 systems only .....                         | 166 |
| Installing or Replacing a Hot-Swap Power Supply ..... | 168 |
| On NN2620 Systems Only .....                          | 168 |
| Installing and Removing a Hard Disk Drive .....       | 169 |
| On NN2610 and NN2620 Systems .....                    | 169 |
| NEBS/ETSI .....                                       | 173 |
| AC Power Cords .....                                  | 173 |
| Safety and EMC Regulatory Compliance (Class A) .....  | 174 |
| Product Regulatory Compliance Markings .....          | 175 |

## **Appendix B: Third Party Licenses .....179**

|                                   |     |
|-----------------------------------|-----|
| Adobe .....                       | 179 |
| Apache Ant Project .....          | 179 |
| Apache Commons Project .....      | 180 |
| Apache License .....              | 185 |
| Astron Software FTP Service ..... | 189 |
| Beanshell .....                   | 190 |
| Belledone Communications .....    | 191 |
| Bidilink-0.1 .....                | 191 |
| Bouncy Castle .....               | 192 |
| Brian Wellington .....            | 192 |
| Broadcom .....                    | 193 |
| BusyBox .....                     | 205 |
| Bzip .....                        | 207 |
| C++ RTMP Server .....             | 207 |
| Candela .....                     | 208 |
| Cewolf .....                      | 211 |
| Cisco .....                       | 212 |
| Code Project .....                | 213 |

|                              |     |
|------------------------------|-----|
| Codehaus .....               | 214 |
| ctags .....                  | 214 |
| Curl .....                   | 214 |
| Debian .....                 | 215 |
| dhcpcd .....                 | 219 |
| Dojo Foundation .....        | 220 |
| Dosfstools .....             | 223 |
| Findutils .....              | 223 |
| Freescale .....              | 223 |
| Freshmeat .....              | 227 |
| Gawk .....                   | 227 |
| Gborg .....                  | 227 |
| GDB .....                    | 228 |
| GDBM .....                   | 228 |
| Gentoo .....                 | 228 |
| Github .....                 | 233 |
| Glassfish .....              | 239 |
| GNU .....                    | 248 |
| Google .....                 | 248 |
| Google Code .....            | 249 |
| GTK .....                    | 250 |
| Gwget .....                  | 250 |
| gzip .....                   | 250 |
| Hibernate .....              | 251 |
| Info-ZIP .....               | 252 |
| Intel .....                  | 253 |
| Invisible-Island .....       | 254 |
| ipsec-tools .....            | 255 |
| iptables/netfilter .....     | 256 |
| irqbalance .....             | 261 |
| Jakarta Apache Project ..... | 261 |
| Java Base64 encoder .....    | 262 |

---

|                              |     |
|------------------------------|-----|
| Java SNMP .....              | 262 |
| Java RADIUS Client .....     | 263 |
| Java Sound Resources .....   | 263 |
| JBoss .....                  | 263 |
| JCraft .....                 | 264 |
| JDOM .....                   | 266 |
| JFree .....                  | 266 |
| jQuery .....                 | 267 |
| JSON .....                   | 267 |
| JSPTags.com .....            | 267 |
| Just Objects B.V. ....       | 268 |
| Kai Toedler .....            | 269 |
| L2FProd .....                | 269 |
| Launch4j .....               | 269 |
| libpcap .....                | 270 |
| libsrtplibssh2 .....         | 270 |
| libssh2 .....                | 271 |
| Libtasn1 .....               | 272 |
| Linphone .....               | 272 |
| The Linux Foundation .....   | 273 |
| Linux Kernel .....           | 274 |
| LKCD .....                   | 274 |
| LSOF .....                   | 275 |
| Microsoft .....              | 276 |
| MKtemp .....                 | 280 |
| Mort Bay Consultations ..... | 281 |
| MPFR .....                   | 281 |
| Mplayer .....                | 281 |
| MTD .....                    | 282 |
| nano .....                   | 282 |
| Net-SNMP .....               | 282 |
| NSIS .....                   | 289 |

---

|  |     |
|--|-----|
| Open Source Initiative OSI - The BSD License: Licensing .....                                | 297 |
| Open Source Initiative OSI - Common Development and Distribution License<br>(CDDL-1.0) ..... | 298 |
| OpenLDAP .....   | 307 |
| OpenSC .....   | 308 |
| OpenSLP .....  | 308 |
| OpenSSH .....  | 309 |
| OpenSSL .....  | 314 |
| Oracle .....   | 318 |
| OW2 .....  | 328 |
| PCRE .....   | 328 |
| PhysTech .....   | 330 |
| PostgreSQL — JDBC Driver .....   | 330 |
| PostgreSQL - 7.4.27 .....  | 331 |
| PostgreSQL - Postgres 8.2 with Installer .....   | 332 |
| Python .....   | 333 |
| Radvision .....  | 340 |
| Redhat .....   | 340 |
| Reiserfsprogs .....  | 342 |
| RPM .....  | 342 |
| rsync .....  | 342 |
| Samba .....  | 342 |
| Saxonica .....   | 343 |
| Sed .....  | 352 |
| Shadow .....   | 352 |
| SitePen .....  | 357 |
| Source Forge .....   | 357 |
| Sun Microsystems, Inc. - Java Media Framework .....  | 373 |
| Sun Microsystems, Inc. - Java SE Runtime Environment 1.5 .....                               | 377 |
| Sun Microsystems, Inc. - Java SE Runtime Environment 1.6 .....                               | 382 |
| Sun Microsystems, Inc. ....  | 383 |
| Sun Microsystems, Inc. - LDAP Booster Pack .....   | 384 |

---

|  |     |
|--|-----|
| SuSe .....   | 390 |
| Thai Open Source Software Center .....               | 391 |
| U-boot .....   | 391 |
| unixODBC .....                                       | 392 |
| Wietse Zweitze Venema .....                          | 392 |
| VIM .....  | 394 |
| which .....  | 396 |
| Wireshark .....                                      | 396 |
| Woodstox .....                                       | 397 |
| XDoclet .....  | 397 |
| Yuval Oren .....                                     | 398 |
| Apache License, Version 2.0 .....                    | 398 |
| GNU Lesser General Public License, Version 2.1 ..... | 403 |
| GNU Lesser General Public License, Version 3 .....   | 413 |
| GNU General Public License, Version 2 .....          | 417 |
| GNU General Public License, Version 3 .....          | 425 |
| Open Source Initiative OSI - The BSD License .....   | 440 |
| Open Source Initiative OSI - The MIT License .....   | 442 |



---

# Preface

---

## About Net-Net OS-E® Documentation

The Net-Net OS-E references in this documentation apply to the Net-Net OS-E operating system software that is used for the following Acme Packet and third-party SBC products:

- Net-Net Application Session Controller (ASC)
- Net-Net OS-E Session Director (SD) Session Border Controller (SBC)
- Net-Net 2600 Session Director (SD) Session Border Controller (SBC)
- Third-party products that license and use Net-Net OS-E software on an OEM basis.

Unless otherwise stated, references to Net-Net OS-E in this document apply to all of the Acme Packet and third-party vendor products that use Net-Net OS-E software.

The following documentation set supports the current release of the OS-E software.

- *Net-Net OS-E – Net-Net 2610/2620 Quick Installation*
- *Net-Net OS-E – Network Interface Card Installation*
- *Net-Net OS-E – USB Creation and Commissioning Instructions*
- *Net-Net OS-E – Slide Rail Kit Installation Instruction*
- *Net-Net OS-E – Virtual Machine Information Guide*
- *Net-Net OS-E – System Installation and Commissioning Guide*
- *Net-Net OS-E – Management Tools*
- *Net-Net OS-E – System Administration Guide*
- *Net-Net OS-E – Session Services Configuration Guide*

- *Net-Net OS-E – Objects and Properties Reference*
- *Net-Net OS-E – System Operations and Troubleshooting*
- *Net-Net ASC — Web Services SOAP/REST API*
- *Net-Net ASC — Web Services Samples Guide*
- *Net-Net OS-E – Release Notes*

See the *Net-Net OS-E – USB Creation and Commissioning Instructions* for information on the supported third-party hardware.

## Revision History

This section contains a revision history for this document.

| Date              | Revision Number | Description   |
|-------------------|-----------------|---|
| December 1, 2009  | Revision 1.00   | <ul style="list-style-type: none"> <li>• FCS Release of OS-E 3.6.0 software.</li> </ul>   |
| December 14, 2009 | Revision 1.01   | <ul style="list-style-type: none"> <li>• GA Release of OS-E 3.6.0 software</li> </ul>   |
| February 9, 2010  | Revision 1.02   | <ul style="list-style-type: none"> <li>• Updates guide with Appendix B: Third Party Licenses.</li> </ul>  |
| March 10, 2010    | Revision 1.10   | <ul style="list-style-type: none"> <li>• Updates Appendix B: Third Party Licenses with current license information.</li> <li>• Removes all references to MX-1 card support.</li> </ul>  |
| July 30, 2010     | Revision 1.11   | <ul style="list-style-type: none"> <li>• Updates Appendix B: Third Party Licenses.</li> </ul>   |
| December 3, 2010  | Revision 1.12   | <ul style="list-style-type: none"> <li>• Updates Acme Packet contact information.</li> <li>• Updates Appendix B: Third Party Licenses.</li> </ul>   |
| June 24, 2011     | Revision 1.20   | <ul style="list-style-type: none"> <li>• Changes references to the software from Net-Net 2600 and NN2600 to Net-Net OS-E and OS-E.</li> <li>• Adds 3.6.0m4 adaptations.</li> <li>• Updates Appendix B: Third Party Licenses.</li> <li>• Removes Chapter 7. Commissioning E911 Networks.</li> <li>• Removes Network RFCs section in Appendix A.</li> <li>• Removes Configuring Media Partners from Chapter 4.</li> </ul> |
| July 14, 2011     | Revision 1.30   | <ul style="list-style-type: none"> <li>• Updates information regarding the installation of multiple NICs.</li> </ul>  |

| Date               | Revision Number | Description   |
|--------------------|-----------------|---|
| September 30, 2011 | Revision 1.31   | <ul style="list-style-type: none"><li>Changes references from Least Cost Routing (LCR) to route-server.</li></ul> |
| July 31, 2012      | Revision 1.40   | <ul style="list-style-type: none"><li>Adds 3.6.0m5 adaptations.</li></ul>   |

# Conventions Used in This Manual

## Typographical Conventions

| Key Convention    | Function  | Example   |
|-------------------|---|---|
| KEY NAME          | Identifies the name of a key to press.  | Type <b>abc</b> , then press [ENTER]  |
| CTRL+x            | Indicates a control key combination.  | Press CTRL+C  |
| brackets [ ]      | Indicates an optional argument.   | [ <i>portNumber</i> ]   |
| braces { }        | Indicates a required argument with a choice of values; choose one.                  | {enabled   disabled}  |
| vertical bar      | Separates parameter values. Same as “or.”   | {TCP   TLS}   |
| Monospaced bold   | In screen displays, indicates user input.   | config> <b>config vsp</b>   |
| Monospaced italic | In screen displays, indicates a variable—generic text for which you supply a value. | config servers> <b>config lcs</b><br><i>name</i>                                |
| bold              | In text, indicates literal names of commands, actions, objects, or properties.      | ...set as the secondary directory service (with the <b>unifier</b> property)... |
| bold italic       | In text, indicates a variable.  | ...set the <b>domain</b> property of the <b><i>directory</i></b> object.        |

## Acronyms

The OS-E manuals contain the following industry-standard and product-specific acronyms:

|     |   |
|-----|---|
| AAA | Authentication, authorization, and accounting |
|-----|---|

|       |  |
|-------|--|
| ALI   | Automatic location identifier                      |
| ANI   | Automatic number identification                    |
| ANSI  | American National Standards Institute              |
| AOR   | Address of record                                  |
| API   | Application programming interface                  |
| ARP   | Address Resolution Protocol                        |
| AVERT | Anti-virus emergency response team                 |
| B2BUA | Back-to-back user agent                            |
| BOOTP | Bootstrap Protocol                                 |
| CA    | Certificate authority                              |
| CAP   | Client application protocol                        |
| CBC   | Cipher block chaining                              |
| CBN   | Call back number                                   |
| CCS   | Converged Communication Server                     |
| CDR   | Call detail record                                 |
| CIDR  | Classless interdomain routing                      |
| CLI   | Command line interface                             |
| CMOS  | Comparison mean opinion score                      |
| CNAME | Canonical name record                              |
| CNI   | Calling number identification                      |
| CODEC | Compressor/decompressor or coder/decoder           |
| CPE   | Customer-premise equipment                         |
| CRL   | Certificate revocation list                        |
| CSR   | Certificate signing request                        |
| CSTA  | Computer-supported telecommunications applications |
| CSV   | Comma-separated values                             |
| DDDS  | Dynamic delegation discovery system                |
| DHCP  | Dynamic Host Configuration Protocol                |
| DMZ   | Demilitarized zone                                 |
| DN    | Distinguished name                                 |
| DNIS  | Dialed number identification service               |
| DNS   | Domain name service                                |

---

|       |   |
|-------|---|
| DOS   | Denial of service   |
| EIM   | Enterprise instant messaging                                |
| ESD   | Electrostatic discharge                                     |
| ESGW  | Emergency services gateway                                  |
| ESQK  | Emergency services query key                                |
| ESRN  | Emergency services routing number                           |
| FQDN  | Fully qualified domain name                                 |
| GUI   | Graphical user interface                                    |
| HTTP  | Hypertext Transfer Protocol                                 |
| HTTPS | Hypertext Transfer Protocol Secure                          |
| I2    | National Emergency Number Association defined VoIP solution |
| ICAP  | Internet Calendar Access Protocol                           |
| ICMP  | Internet Control Message Protocol                           |
| IM    | Instant messaging   |
| IP    | Internet Protocol   |
| JDBC  | Java database connectivity                                  |
| JMX   | Java management extensions                                  |
| JRE   | Java runtime environment                                    |
| LATA  | Local access and transport area                             |
| LCS   | Live Communications Server                                  |
| LCR   | Least-cost routing  |
| LDAP  | Lightweight Directory Access Protocol                       |
| LIS   | Location information service                                |
| MAC   | Media access control  |
| MCS   | Multimedia Communications Server                            |
| MIB   | Management information base                                 |
| MOS   | Mean opinion score  |
| MSAG  | Master street address guide                                 |
| MTU   | Maximum transmission unit                                   |
| NAPTR | Naming authority pointer                                    |
| NAT   | Network address translation                                 |
| NENA  | National Emergency Number Association                       |

---

|         |   |
|---------|---|
| NIC     | Network interface card                                  |
| NS      | Name server   |
| NSE     | Named signaling events                                  |
| NTLM    | NT Lan Manager  |
| NTP     | Network Time Protocol                                   |
| OC      | Office Communicator                                     |
| OCI     | Open Client Interface                                   |
| ODBC    | Open database connectivity                              |
| OTP     | Over temperature protection                             |
| OVP     | Over voltage protection                                 |
| PBX     | Private branch eXchange                                 |
| PEM     | Privacy-enhanced mail                                   |
| PERL    | Practical Extraction and Reporting Language             |
| PING    | Packet internet groper                                  |
| PKCS#12 | Public Key Cryptography Standard #12                    |
| PKI     | Public Key Infrastructure                               |
| PSAP    | Public safety answering point                           |
| PSCP    | PuTTY secure copy                                       |
| PSTN    | Public switched telephone network                       |
| QOP     | Quality of protection                                   |
| QOS     | Quality of service                                      |
| RADIUS  | Remote Authentication Dial-in User Service              |
| RTC     | Real-time collaboration                                 |
| RTCP    | Real-time Control Protocol                              |
| RTP     | Real-time Transport Protocol                            |
| RTT     | Round-trip time   |
| SATA    | Serial ATA  |
| SCSI    | Small computer system interface                         |
| SDK     | Software development kit                                |
| SDP     | Session Description Protocol                            |
| SFTP    | Secure Shell File Transfer Protocol                     |
| SIMPLE  | SIP Instant Messaging and Presence Leveraging Extension |

---

|       |                                      |
|-------|--------------------------------------|
| SIP   | Session Initiation Protocol          |
| SIPS  | Session Initiation Protocol over TLS |
| SLB   | Server load balancing                |
| SMB   | Server message block                 |
| SNMP  | Simple Network Management Protocol   |
| SOA   | Server of authority                  |
| SOAP  | Simple Object Access Protocol        |
| SQL   | Structured Query Language            |
| SRTTP | Secure Real-time Transport Protocol  |
| SRV   | Server resource                      |
| SSH   | Secure Shell                         |
| SSL   | Secure socket layer                  |
| SSRC  | Synchronization source               |
| STUN  | Simple Traversal of UDP over NATs    |
| TCP   | Transmission Control Protocol        |
| TDM   | Time division multiplexing           |
| TGRP  | Trunk group                          |
| TLS   | Transport Layer Security             |
| TOS   | Type of service                      |
| TTL   | Time to live                         |
| UPS   | Uninterruptable power supply         |
| US    | User agent                           |
| UAC   | User agent client                    |
| UAS   | User agent server                    |
| UDP   | User Datagram Protocol               |
| UID   | Unique identifier                    |
| URI   | Uniform resource identifier          |
| URL   | Uniform resource locator             |
| UTC   | Universal coordinated time           |
| VoIP  | Voice over IP                        |
| VLAN  | Virtual local area network           |
| VPC   | VoIP positioning center              |

|      |                                    |
|------|------------------------------------|
| VRRP | Virtual Router Redundancy Protocol |
| VSP  | Virtual system partition           |
| VXID | Virtual router interface ID        |
| WAR  | Web application resource           |
| WAV  | Waveform audio                     |
| WM   | Windows Messenger                  |
| WSDL | Web Services Description Language  |
| XML  | Extensible Markup Language         |
| XSL  | Extensible Stylesheet Language     |

## Product Support

### Contacting Acme Packet, Inc.

Acme Packet, Inc.  
71 Third Avenue  
Burlington, MA 01803 USA  
t: 781-328-4400  
f: 781-425-5077

[www.acmepacket.com](http://www.acmepacket.com)



---

## Product and Technical Support

Toll: +1-781-756-6920

Online: <https://support.acmepacket.com>

E-mail: [support@acmepacket.com](mailto:support@acmepacket.com)

For existing Acme Packet customers, product information, software updates, and documentation are available from the Acme Packet support web site. If you have difficulty logging on to the web site using your existing account, call Acme Packet at 781-756-6920 for assistance.

## Product Damage

If you receive Acme Packet products that are damaged in shipping, contact the carrier immediately and notify Acme Packet for return shipping information and product replacement. Do not return any products until you receive instructions from Acme Packet.



---

# Chapter 1. Net-Net OS-E® Series Overview

---

## About this Chapter

This chapter provides an overview of the Acme Packet OS-E® Series hardware and software. In addition to running on Acme Packet hardware offerings, OS-E software is supported on compatible third-party platforms and blades.

See the *Net-Net OS-E – USB Creation and Commissioning Instructions* for information on the supported third-party devices.

## Net-Net OS-E Overview

The OS-E series of enterprise data and service provider systems provide application level security, control, monitoring and interoperability services for applications based on the Session Initiation Protocol (SIP). The OS-E resides at points in the network where administrators define and enforce fine-grained policies on the SIP-based signaling and media traffic.

### In Enterprise Deployments

In an enterprise deployment, OS-E systems reside in a corporate “Demilitarized Zone” (DMZ), between the SIP-based business applications and the enterprise boundary, such as,

- SIP-enabled IP telephony
- Session border control, real-time collaboration, multi-media conferencing, SIP trunking, third-party call control

- Multivendor interoperability among hosted SIP applications, such as IBM Sametime and Microsoft Live Communications Server (LCS) and Office Communication Server (IOCS)

#### In Service Provider/Carrier Networks

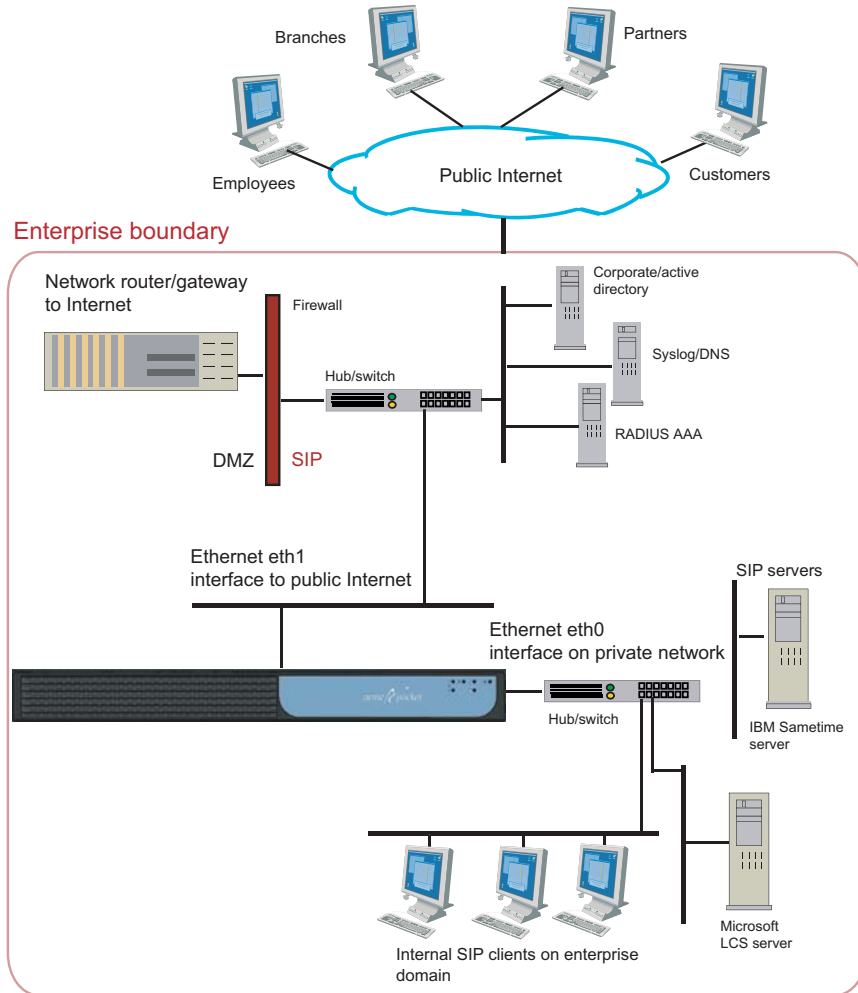
The OS-E provides secure “business class” VoIP and real-time collaboration services for residential, Small and Medium Businesses (SMB), and enterprise subscribers. Service provider deployments include:

- **Subscriber edge**—Where the OS-E terminates secure voice sessions.
- **Customer premises**—Where the OS-E is a managed CPE component for end-to-end VoIP services offered by carriers and service providers.

The OS-E system includes an operating system, application and management software installed on data center and carrier class server systems. The system software includes integrated clustering, synchronization, load balancing, and failover technology that enables enterprises to scale the performance and availability of the system up to carrier class levels simply by adding systems to the cluster.

The OS-E supports an optional, custom-designed media acceleration card for environments that require high media performance under heavy load.

External SIP clients accessing hosted SIP applications



The following image shows a sample OS-E service provider network

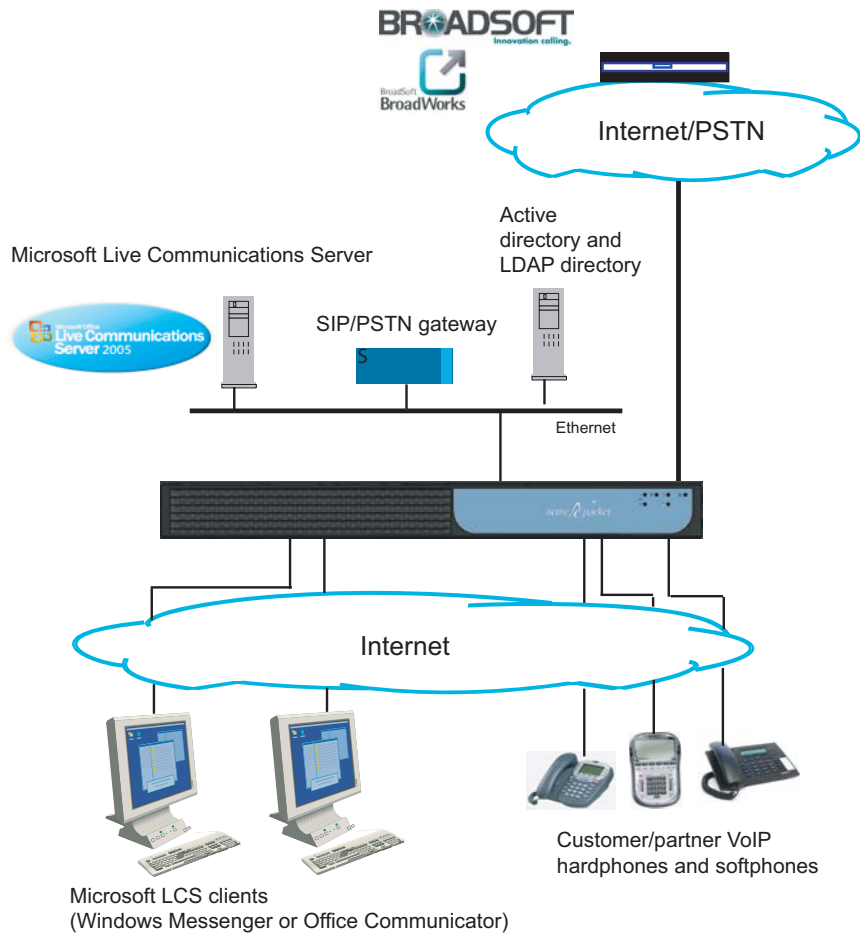


Figure 1

---

## Running the Net-Net OS-E on Other Devices

You can run the OS-E on a number of supported third-party servers.

For complete information on all supported third-party devices and the requirements for installing OS-E software on these products, refer to the *Net-Net OS-E – USB Creation and Commissioning Instructions*.

### Net-Net OS-E 2610 and 2620 Series models

Acme Packet provides the Net-Net OS-E NN 2610 and 2620 series systems in the following configurations:

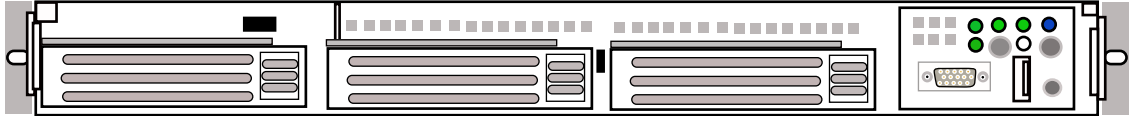
- **NN 2610**— 1U rack-mountable chassis, 120/240V AC powered, dual quad-core processor system with non-redundant power supplies and cooling fans; up to six (6) Ethernet ports with optional network interface cards; 750 GB hard disk drive; standard 8GB memory, multiprocessor upgrade option. Commissioned using an Acme Packet Net-Net OS-E USB stick.
- **NN2620** — 2U rack-mountable chassis, 120/240V AC powered, dual quad-core processor system with redundant, hot swappable power supplies and cooling fans; up to eighteen (18) Ethernet ports using a combination of two optional MX-1 media acceleration cards and network interface cards; 750 GB standard hard disk drive, optional 1.5 TB hard disk drive with RAID; standard 8GB memory, multiprocessor upgrade option. Commissioned using an Acme Packet USB stick

The following image illustrates the NN 2610 series with and without the front bezel installed.

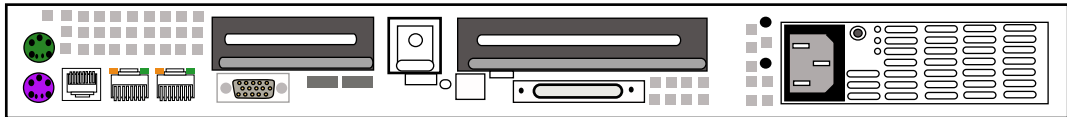
CXC-350 with front bezel



CXC-350 with front bezel removed



CXC-350 back view

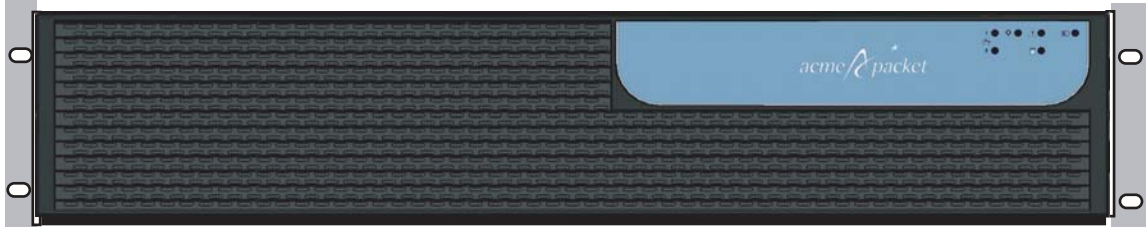


admin\_2

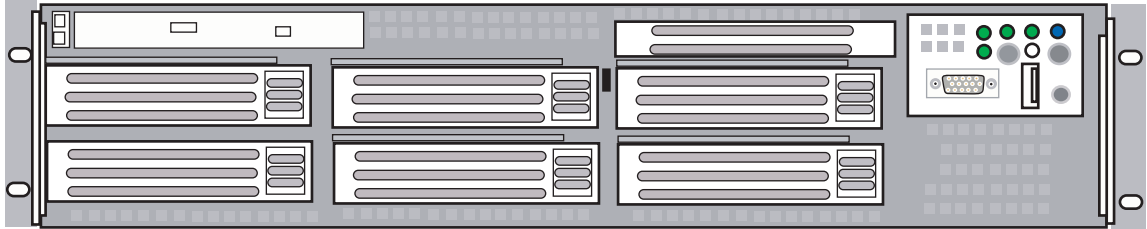


The following image illustrates the NN 2620 (2U) Series chassis.

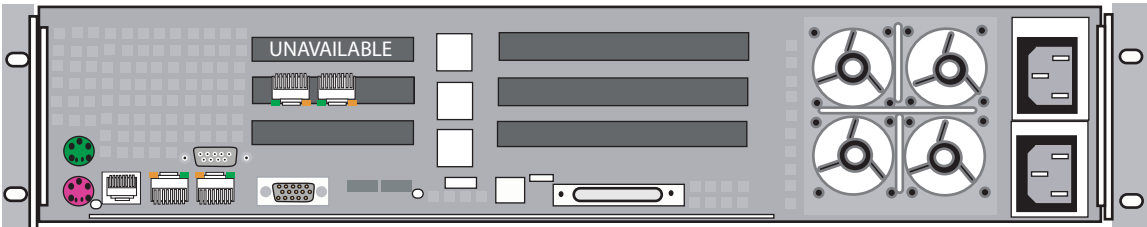
NN 2620 with front bezel



NN 2620 with front bezel removed



NN 2620 back view



admin\_3

## Information on Net-Net OS-E Software and Licensing

Using the Internet and secure Web URLs, Acme Packet provides all necessary software downloads for USB creation, product licensing, and commissioning of your selected hardware.

As part of each download, and depending on your actual requirements, Acme Packet can provide the following:

- Acme Packet USB Creation Utility with the OS-E software
- Feature licenses
- Documentation on how to create an Acme Packet USB stick and commission the OS-E software on your selected hardware
- Standard set of Acme Packet OS-E technical publications

You must provide a USB stick with between 1-4GB storage to handle Acme Packet software downloads. Acme Packet has tested a variety of USB sticks available from current suppliers and manufacturers. Most USB sticks manufactured today will work.

For complete information on accessing the Acme Packet download server, creating an installation USB stick, and commissioning OS-E systems, refer to the *Net-Net OS-E – USB Creation and Commissioning Instructions*.

## Running License Fetch

You will need to run **license fetch** under certain conditions, such as renewing an expired license, and when installing licensed features that you did not originally purchase with the system under the original license.

To “fetch” your customized signed license, you will need a private key. This key, as supplied to you by Acme Packet, will unlock and enable the features that you purchased when you run the **license fetch** command from the Acme Packet CLI or the OS-E Management System.



---

**Note:** If you do not run the **license fetch** command to successfully unlock your customer-specific features, you will not be able to configure the OS-E system with any of the licensed options provided by Acme Packet.

---

## Prerequisites

Before you execute the **license fetch** command,

1. Ensure that you have a connection to the public Internet, and
2. Port 616 is available and not blocked by any firewalls. This allows OS-E connectivity to the Acme Packet license server.

---

## Fetching the Signed License From the CLI

From the CLI prompt, run the following command:

```
NNOS-E> license fetch <license-key-text>  
Success!
```

Where **<license-key-text>** is the private key provided to you by Acme Packet. This command will contact the Acme Packet licensing server, authenticate your unique key, and then install a license on your system. Make sure that the OS-E reports “Success!”



**Note:** If you are unable to fetch an encrypted license using the Acme Packet key, cannot access the Acme Packet licensing server, or if you receive a message other than “Success!,” contact Acme Packet Product Support immediately for assistance.

---

You will need to run **license fetch** for each system that you installed. If you ordered five systems to be installed in a cluster, Acme Packet will provide you with a single license key for the cluster.

Any or all standalone systems outside of a cluster require a separate and unique license.

## Fetching the Signed License From the OS-E Management System

If you are using the OS-E Management System, go the **Actions** tab and select **license->fetch** and paste the Acme Packet key into the key field, as illustrated in the following image. Click **Invoke** to install the signed license.

The screenshot shows the Acme Packet web interface. The top navigation bar includes 'Home', 'Configuration', 'Status', 'Call Logs', 'Event Logs', 'Actions', 'Services', 'Keys', 'Access', 'Tools', and 'Portal'. The 'Actions' tab is selected. On the left, a sidebar lists various actions, with 'license' highlighted. The main content area is titled 'license' and 'apply or revoke a license'. It contains a form with the following fields:

- \* action**: A dropdown menu with 'fetch' selected, with a tooltip that says '(fetch a license)'.
- \* key**: A text input field containing a long alphanumeric key.
- server**: A text input field containing the URL 'https://216.41.24.54:443/'.

An 'Invoke' button is located at the bottom right of the form.

You can also manage licenses with the **Tools** tab, using the **Retrieve License** and the **Upload License** functions. **Retrieve License** operates the same as the **license fetch** command, contacting the Acme Packet license server over the Internet.

If for some reason you are unable to access the Acme Packet license server, and if Acme Packet sends you the license, place the license on your local PC, use **Upload License** to browse for file, check the **Apply License** box, then click **Upload**.

## Adding New Features Later

If you find that you do not have one or more of the features that you purchased, or if you want to add features that you did not originally purchase, contact your Acme Packet Sales Representative or Acme Packet Product Support. Acme Packet will correct the problem and supply you with a new key that you can rerun with the **license fetch** command.

As Acme Packet software becomes available with newly-added features, your Acme Packet Sales Representative will assist you with ordering the software. Acme Packet will then provide you with a new licensing key.

---

## License Expirations and Renewals

If your customer-specific license comes with an expiration date, the OS-E system will generate an event when the license nears the expiration date. You can renew your license by re-executing the **license fetch** command. The Acme Packet license server verifies that there is a valid license renewal associated with your system ID, and then resets the license expiration to a new date.

## Evaluation Systems

For evaluation systems in lab environments without Internet connectivity, Acme Packet will provide you with an alternate method for acquiring the appropriate license to operate and configure the OS-E system. Contact your Acme Packet Sales Representative or Acme Packet Support for details.

## System Management

Before you install the system, you should decide on the management tool(s) that you want to use to configure and monitor the system. This will help you decide where you need to create connections based on your equipment and network resources.

System management capabilities include the following secure management interfaces:

- The OS-E command line interface (CLI) from a local console, Telnet, or SSH connection
- The OS-E Management System, a graphical user interface (GUI) that supports remote management using the Internet Explorer Web browser
- Simple Network Management Protocol (SNMP) using third party SNMP MIB compiler/browser applications
- Web Services Description Language (WSDL) and Simple Object Access Protocol (SOAP) messaging using the software development kit (SDK)

For information on configuring the management options, refer to *Net-Net OS-E – Management Tools*.

## **For More Information**

See Appendix A, “Technical Specifications,” for regulatory information and product data.

---

# Chapter 2. *Installing the Net-Net OS-E System*

---

## About This Chapter

This chapter covers OS-E system installation

## Net-Net OS-E Series Models

Acme Packet provides the OS-E Series systems in the following configurations:

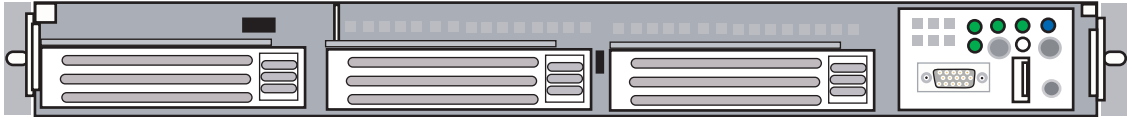
- **NN 2610**— 1U rack-mountable chassis, 120/240V AC powered, dual quad-core processor system with non-redundant power supplies and cooling fans; up to six (6) Ethernet ports with optional network interface cards; 750 GB hard disk drive; standard 8GB memory, multiprocessor upgrade option.
- **NN 2620**— 2U rack-mountable chassis, 120/240V AC powered, dual quad-core processor system with redundant, hot swappable power supplies and cooling fans; up to eighteen (18) Ethernet ports using a combination of two optional MX-1 media acceleration cards and network interface cards; 750 GB standard hard disk drive, optional 1.5 TB hard disk drive with RAID; standard 8GB memory, multiprocessor upgrade option.

The following image illustrates the NN 2610 series with and without the front bezel installed.

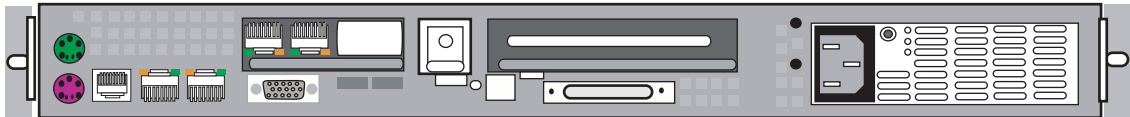
NN 2610 with front bezel



NN 2610 with front bezel removed



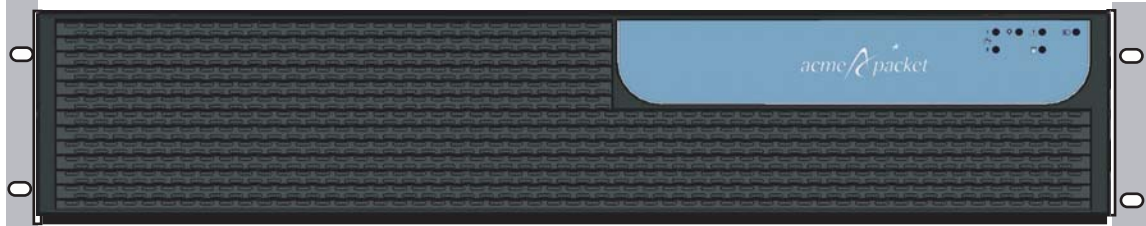
NN 2610 back view



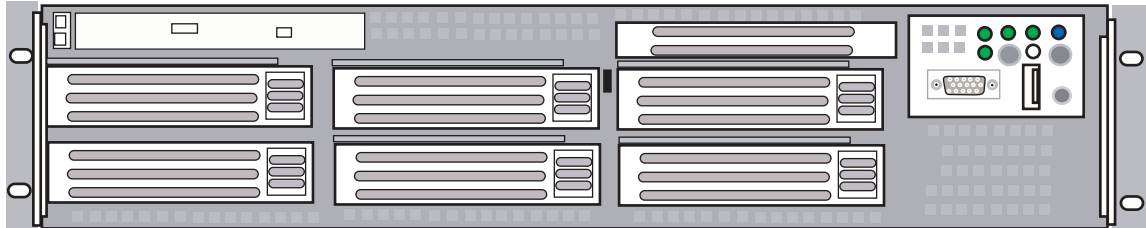


The following image illustrates the NN 2620 (2U) series chassis.

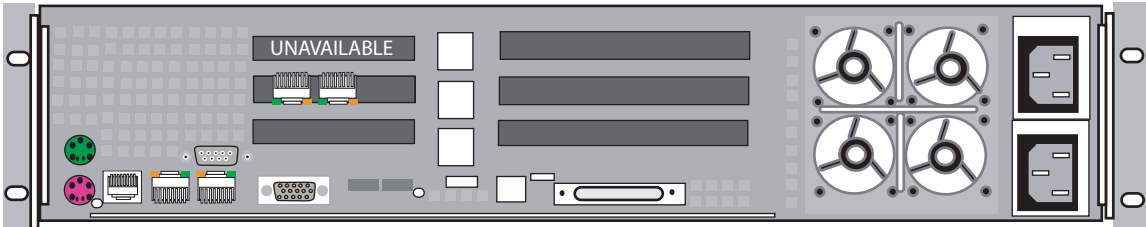
NN 2620 with front bezel



NN 2620 with front bezel removed



NN 2620 back view



# Net-Net OS-E Series specification

## NN2610 Specifications

| Specification                     | Description   |
|-----------------------------------|---|
| <b>Chassis form factor</b>        | 1U rack mount server  |
| <b>Dimensions</b>                 | Height: 1.7" (4.3 cm)<br>Width: 16.93" (43.0 cm)<br>Depth: 26.46" (67.2) cm)<br>Weight: 30 lbs (13.6 kg) approximate  |
| <b>Processors</b>                 | Quad-Core Intel® Xeon® processor 5355, 8M Cache, 2.66 GHz, 1333 FSB   |
| <b>Memory</b>                     | 8 GB DDR2 667 MHz SDRAM   |
| <b>Storage</b>                    | 750 GB non-redundant hard disk storage  |
| <b>Power supply</b>               | Power: Single 600W<br>AC voltage: 100-127/200-240VAC; 6.5 / 3.2A, 43-67 Hz, auto-ranging  |
| <b>Network interfaces</b>         | Up to six (6) 10/100/1000BaseTX (RJ-45) Ethernet ports with dual network interface cards installed.   |
| <b>Power and heat dissipation</b> | NN 2610 with dual Ethernet cards (6 ports):<br>540W input (worst case); 1843 BTUs   |
| <b>Management</b>                 | Policy based management software (CLI, Web GUI, Java (desktop) GUI, SNMP, XML, WSDL   |
| <b>External I/O ports</b>         | One (1) RJ-45 Serial B (DB-9 adapters supplied with product)<br>One (1) PS2 keyboard<br>2 x 15-pin VGA  |
| <b>Fans and cooling</b>           | Four dual-rotor 56mm fans and one single-rotor 28mm fan mounted in tool-less fan module to support cooling for processors, hard drives, and add-in cards.<br><br>Two 28mm fans for power supply cooling.<br><br>All fans monitored and instrumented to provide RPM data for fan-failure prediction and detection. |
| <b>Security</b>                   | Mechanical locking bezel with key   |

| Specification       | Description   |
|---------------------|---|
| Ambient temperature | Operating: 0°C to +40°C (+32°F to 104°F)<br>Non-operating: -20°C to +70°C (-4°F to 158°F) |
| Relative humidity   | Operating and non-operating:<br>5% to 95% relative humidity, non-condensing               |

## NN 2620 Specifications

| Specification                     | Description   |
|-----------------------------------|---|
| <b>Chassis form factor</b>        | 2U rack mount server  |
| <b>Dimensions</b>                 | Height: 3.45" (8.75 cm)<br>Width: 16.93" (43.0 cm)<br>Depth: 26.46" (67.2 cm)<br>Weight: 50 lbs (22.7 kg) approximate   |
| <b>Processors</b>                 | Quad-Core Intel® Xeon® processor 5355, 8M Cache, 2.66 GHz, 1333 FSB   |
| <b>Memory</b>                     | 8 GB DDR2 667 MHz SDRAM   |
| <b>Storage</b>                    | 750 GB non-redundant hard disk storage, or<br>1.5 TB (max) redundant (RAID-10) hard disk storage  |
| <b>Power supply</b>               | Power: 2X redundant, 750W hot swappable<br>AC voltage: 100-127/200-240VAC; 5.4 / 3.2A, 43-67 Hz,<br>auto-ranging; separate power cords  |
| <b>Network interfaces</b>         | Up to eighteen (18) Ethernet 10/100/1000BaseTX (RJ-45) ports<br>using dual network interface cards and dual MX-1 media<br>acceleration cards installed.   |
| <b>Power and heat dissipation</b> | NN 2620 with dual Ethernet cards (6 ports): 660W input (worst<br>case); 2048 BTUs<br><br>NN 2620 with dual Ethernet cards (6 ports), plus dual MX-1<br>Media acceleration cards (8 ports): 730W input (worst case);<br>2491 BTUs  |
| <b>Management</b>                 | Policy based management software (CLI, Web GUI, Java<br>(desktop) GUI, SNMP, XML, WSDL  |
| <b>External I/O ports</b>         | One (1) RJ-45 Serial B (DB-9 adapters supplied with product)<br>One (1) PS2 keyboard<br>2 x 15-pin VGA  |
| <b>Fans and cooling</b>           | 2X redundant sets of four (4) 60mm fans in tool-less fan module;<br>fans provide cooling for the processors, hard drives, and add-in<br>cards; two 40mm fans per power-supply module for cooling the<br>power-supply module<br><br>All fans monitored and instrumented to provide RPM data for<br>fan-failure prediction and detection. |
| <b>Security</b>                   | Mechanical locking bezel with key   |

| Specification       | Description   |
|---------------------|---|
| Ambient temperature | Operating: 0°C to +40°C (+32°F to 104°F)<br>Non-operating: -20°C to +70°C (-4°F to 158°F) |
| Relative humidity   | Operating and non-operating:<br>5% to 95% relative humidity, non-condensing               |

## System and Network Connections

This section summarizes the interface ports and connections that are supported with the OS-E 2600 Series. The image above illustrates the ports and connections on the NN2610. The NN2620 uses these same ports and connections as the NN2610 and are similarly located.

### VGA Video, System Keyboard, and Power

The system provides direct connections for a VGA video monitor, keyboard, and AC power. Connecting these devices allows direct access to the CLI.



**Note:** VGA video connections are available on both the front and rear of the chassis. Only one of the VGA video connections can be used at a time.

### RS-232 Serial B Port, DB9-to-RJ45 Adapter, and Null Modem Cable

The RS-232 Serial B port on the back of the system allows you to connect a PC or terminal directly to the system. Use the RS-232 Serial B port if you want to use Telnet or SSH to access the CLI, or if you are using an SNMP application to manage the system locally.

#### DB9 to RJ-45 Adapter

The system comes with three identical DB9-to-RJ45 cable adapters. While you only need one per system console connection, Acme Packet provides two spare adapters that you can use as needed.

### **Null Modem Serial Cable**

For console and laptop PC connections to the RJ45 RS232 Serial B port, you will need a DB9-to-DB9 null modem cable and one DB9-RJ45 adapter.

### **Note Regarding RS-232 DB-9 Port on NN 2620 Systems**

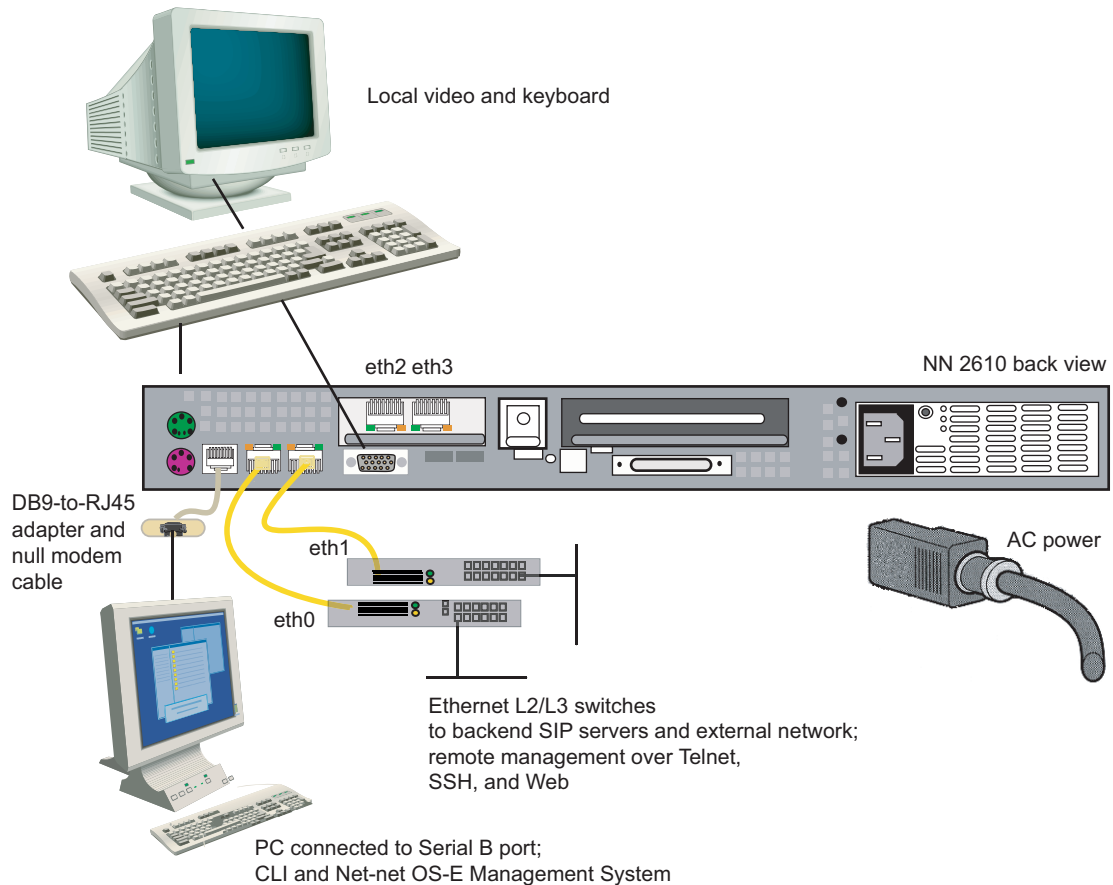
The physical RS-232 DB-9 port, while present on the back of N 2620 systems, is *not* available as an active console port. *Do not* plug the DB-9 end of a null modem console cable into this port.

## **Gigabit Ethernet (IEEE 802.3ab, 1000Base-TX)**

The Ethernet interfaces on the system support auto negotiation 10/100/1000 Mbps copper network interface connections (NIC).

Gigabit Ethernet is the latest version of Ethernet that supports data transfer rates of up to 1 Gigabit (1,000 megabits) per second. The Ethernet ports are IEEE 802.3ab for CAT5 or CAT5e unshielded twisted pair (UTP) cable, with 8-pin NIC connector.

The following image displays OS-E network connections.



admin\_14

## USB 2.0 Port

The Universal Serial Bus (USB) 2.0 ports allow you to perform the following functions:

- Commission and license OS-E software at initial startup.
- Create a system restore USB stick containing the latest system configuration should the system have a catastrophic failure requiring system recovery.

- Create a system utilities USB from which you can run Acme Packet programs to diagnose system problems.

Refer to the *Net-Net OS-E – USB Creation and Commissioning Instructions* for complete information.

## System Software and Licensing

The system software and features license is downloaded to the system hard drive(s) when you insert the Acme Packet USB stick and power up the system for the first time. Software upgrades are available and released by Acme Packet on a regular basis.

For complete information, refer to the *Net-Net OS-E – USB Creation and Commissioning Instructions*

## System Components

This section summarizes the system hardware components provided with the Acme Packet OS-E 2610 and 2620 systems:

- Intel® SE7520JR2 Server Board
- Cooling fans
- Power modules
- Hard disk drives
- Removable bezel

### Intel® SE7520JR2 Server Board

The Intel® SE7520JR2 Server Board controls the following system features:

- Two Ethernet data ports (Ethernet 10/100/1000 Mbps auto negotiation); up to four Ethernet ports on the 2U chassis with the MX-1 media acceleration card.
- RJ-45 Serial B port for terminal or PC hookup
- Light-emitting diode indicators (LEDs) on Ethernet ports



- PS2 ports for a directly-attached keyboard and mouse; video connector for a directly-attached monitor
- System status indicator LEDs on front control panel
- AC power input; dual/redundant AC input in 2U chassis
- 500W power module in 1U chassis; redundant 700W hot-swappable power modules in the 2U chassis
- Over temperature protection (OTP) and over voltage protection (OVP) circuitry

## System Fans and Cooling

Acme Packet OS-E systems require a normal operating environment for computing equipment, using internal fans, air baffles, and air ducts to ensure adequate airflow. When external ambient temperatures remain within specified limits, the system fans provide sufficient airflow through the system, pulling air from the front of the chassis to the back.

The NN 2610 chassis uses a non-redundant multi-system fan module and dual non-redundant power module fans. The NN 2620 chassis supports up to eight system fans in a modular 4+4 configuration.

In addition to the eight system fans, each power module installed provides an additional two non-redundant fans that pull air from inside the chassis to the back. By default, the NN 2620 chassis is equipped with four system fans with no fan redundancy.

During system installation, allow at least 6 inches (150 mm) of unobstructed space at the front and back. The chassis requires no air space above or below.

If you install the system in an enclosed equipment rack, be sure there is adequate airflow and the following environmental requirements:

- Operating ambient air temperature: 10°C to +35°C (50° to 95°F)
- Non-operating ambient air temperature: -40°C to +70°C (-40° to 158° F)
- Non-operating humidity: 90% non-condensing @ 35°C
- Power and heat dissipation:
  - NN 2610 with dual Ethernet cards (6 ports): 540W input (worst case); 1843 BTUs

- NN 2620 with dual Ethernet cards (6 ports): 660W input (worst case); 2048 BTUs
- NN 2620 with dual Ethernet cards (6 ports), 730W input (worst case); 2491 BTUs

## **Power Modules**

### **For NN 2610 (1U) Chassis**

The NN 2610 (1U) chassis uses a single non-redundant 500W power module with the following integrated management features:

- Status LED
- Over temperature protection (OTP)
- Over voltage protection (OVP)

The power supply provides two non-redundant 28mm fans for self cooling and system cooling at an airflow rate of 10 CFM. Air moving through the power supply is pre-heated from the system and exhausts out the back.

To protect the equipment, Acme Packet recommends using a conditioned power source or uninterruptable power supply (UPS). The power source must provide a reliable earth ground, and provide the following:

- Voltage: 100 to 127 VAC @ 43 to 67 Hz; 6.5A maximum
- Voltage: 200 to 240 VAC @ 43 to 67 Hz; 3.2A maximum

The power module connector uses a standard 3-prong keyed IEC 320 C-14 receptacle rated for 15A/250VAC. The power cord is supplied with an IEC connector on one end, NEMA 5-15 plug (U.S. domestic) on the other end.

### **For the NN 2620 Chassis**

The NN 2620 chassis uses up to two 700W power supplies. The system can be configured to support a single power module in a non-redundant configuration, or dual power modules in a 1+1 redundant power configuration. In a redundant configuration, a single failed power module can be hot-swapped with the system running. Either configuration supports up to a maximum of 700 watts of power with the following integrated management features:

- Status LED
- Over temperature protection (OTP)
- Over voltage protection (OVP)

Acme Packet recommends using a conditioned power source or uninterruptable power supply (UPS). The power source must provide a reliable earth ground, and provide the following:

- Voltage: 100 to 127 VAC @ 50/60 Hz; 8.9A maximum
- Voltage: 200 to 240 VAC @ 50/60 Hz; 5.4A maximum

The power module connector uses a standard 3-prong keyed IEC 320 C-14 receptacle rated for 15A/250VAC. The power cord is supplied with an IEC connector on one end, NEMA 5-15 plug (U.S. domestic) on the other end.

## Hard Disk Drives

OS-E systems use 500GB and 750GB hard disk drives to store the operating system and the OS-E software.

### NN 2610 (1U) Chassis

The NN 2610 chassis provides three hot-swappable hard drive bays and one slim-line bay at the front of the chassis. The hard drive bays support Serial ATA (SATA)\* hard disk drives.

- For hot swap drive configurations, 3.5" x 1" hard disk drives are mounted to hot swap drive trays for easy insertion and extraction.
- For cabled drive configurations, SATA drives are mounted to non-hot swappable drive trays. Cabled hard drives can only be removed by unlatching the drives from inside the chassis.



**Caution:** All hard drive bays must be populated to maintain system airflow and cooling. Drive trays must have a drive or a drive blank inserted.

## **NN 2620 2U Chassis**

The NN 2620 chassis provides up to five (default) SATA hard disk drives. One slim-line peripheral bay is available for either optical or floppy drive.

- For hot swap drive configurations, 3.5”x 1” hard disk drives are mounted to hot swap drive trays for easy insertion and extraction.
- For cabled drive configurations, SATA drives are mounted to non-hot swappable drive trays. Cabled hard drives can only be removed by unlatching the drives from inside the chassis.



**Caution:** All hard drive bays must be populated to maintain system airflow and cooling. Drive trays must have a drive or a drive blank inserted.

---

## **Removable Bezel**

OS-E Series systems have a removable front bezel. The bezel snaps into the front of the chassis and is secured with a keyed lock. These systems can operate with or without the front bezel. Removing the bezel allows you to access the system control panel and the hard disk drives on the front of the system. Installing the bezel provides a secure way to protect the system from unwanted intrusion and manipulation of the system control panel. For information on removing and installing the bezel, refer to Chapter 7, “Performing Maintenance and System Upgrades.”

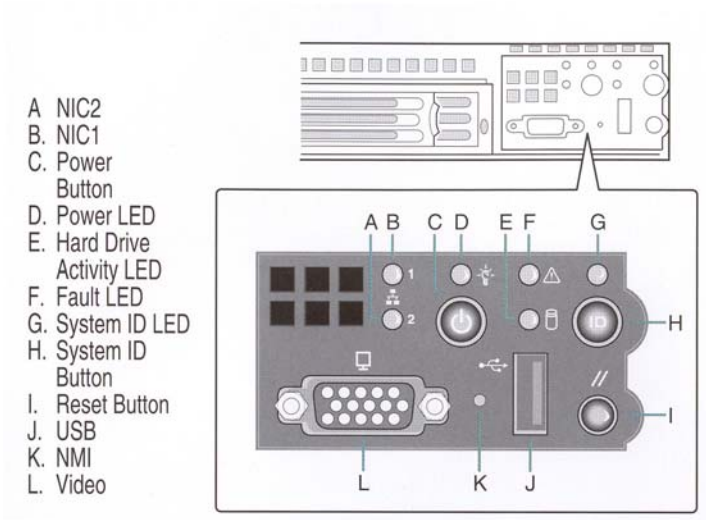
\* SATA is a specification for consumer hard drive connections that boosts the data transfer rate up to 150MB/second. It changes IDE/ATA from a parallel interface requiring 40 separate wires to connect components to a serial interface requiring only 6 wires.

## **System Control Panel**

The system control panel supports several push buttons and status LEDs on the front of the system. OS-E Series systems use the same control panel.

## **Push buttons and LEDs**

The following image illustrates the system control panel push buttons and LEDs.



The following table displays system control panel functions.

| Reference | Feature                      | Function   |
|-----------|------------------------------|--|
| B         | NIC1 (eth0) activity         | Continuous green light indicates a link between the system and the network to which it is connected  |
| A         | NIC2 (eth1) activity         | Blinking green light indicates network activity  |
| C         | Power/Sleep button           | Toggles the system power on/off. This button also functions as a Sleep button if enabled by an ACPI-compliant operating system.  |
| D         | Power/Sleep LED              | Continuous green light indicates the system has power applied to it.<br><br>Blinking green indicates the system is in a sleep state.<br><br>No light indicates the power is off. |
| E         | Hard disk drive activity LED | Random blinking green light indicates hard disk drive activity (SCSI or SATA).<br><br>No light indicates no hard disk drive activity.  |

| Reference          | Feature                      | Function  |
|--------------------|------------------------------|---|
| <b>F</b>           | System Fault LED             | <p>Solid green indicates normal operation.</p> <p>Blinking green indicates degraded performance.</p> <p>Solid amber indicates a critical or non-recoverable condition.</p> <p>Blinking amber indicates a non-critical condition.</p> <p>No light indicates power-on-self-test (POST) is running or the system is off.</p> |
| <b>G</b>           | System Identification LED    | <p>Solid blue indicates system identification is active.</p> <p>No light indicates system identification is not activated.</p>  |
| <b>H</b>           | System Identification button | Toggles the front panel ID LED and the baseboard LED on/off. The baseboard LED is visible through the rear of the chassis and allows you to locate the server you are working on from behind a rack of servers.   |
| <b>I</b>           | Reset button                 | Reboots and initializes the system.   |
| <i>(continued)</i> |                              |   |
| <b>J</b>           | USB 2.0 port                 | Allows you to commission the system using a USB stick. See the <i>Net-Net OS-E – USB Creation and Commissioning Instructions</i> for information.   |
| <b>K</b>           | NMI button                   | Puts the system in a halt state for diagnostic purposes.  |
| <b>L</b>           | Video port                   | Allows you to attach a video monitor to the front of the chassis. The front and rear video ports cannot be used at the same time.   |

---

# Installing the NN 2610 and 2620 Series

This section covers the required information for installing the NN 2610 and NN 2620 Series systems.

## Required Tools

If you are installing the system in a rack, you will need a #2 Phillips screwdriver to install the mounting ears to the front of the chassis. There are no other special tools required for installing the system. Refer to the instructions included with the rack mounting hardware for information.

## Unpacking the System

The system shipping container includes the following items:

- NN 2610 or NN 2620 chassis
- *Net-Net OS-E – Net-Net 2610/2620 Quick Installation* card
- System accessories (front bezel, rack mounting rails, etc.)



**Note:** Hardware needed to mount the system to a rack or cabinet, such as custom mounting screws, nuts and miscellaneous hardware items, are not included due to the many variations available.

If you ordered the tool-less rail kit that allows you to mount the system in a compatible rack or cabinet, the necessary hardware and rack installation instructions are included in the kit.

---

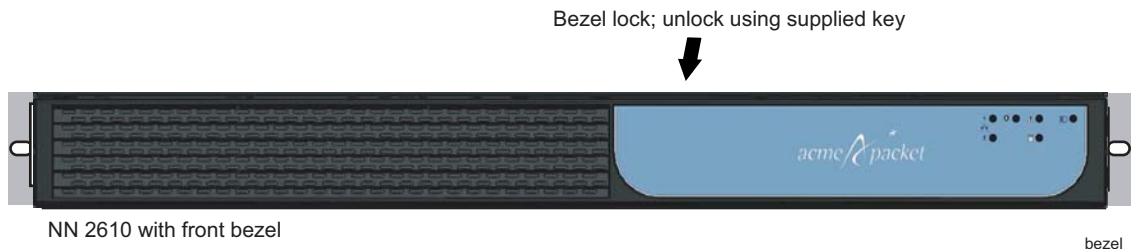
If any of these components are missing, contact Acme Packet. Locate the unpacking instructions included with the shipment for the proper procedures for safely unpacking the system.

## Installing and Removing the Front Bezel

OS-E systems have a removable front bezel. The bezel snaps into the rack mounting brackets at front of the chassis and is secured with a keyed lock, illustrated in the following image. NN 2610 and NN 2620 Series systems can operate with or without the front bezel.

Removing the bezel allows you to access the system control panel and the hard disk drives on the front of the system. Installing the bezel provides a way to protect the system from unwanted intrusion and manipulation of the system.

**Figure 2-1. NN 2610 locking bezel**

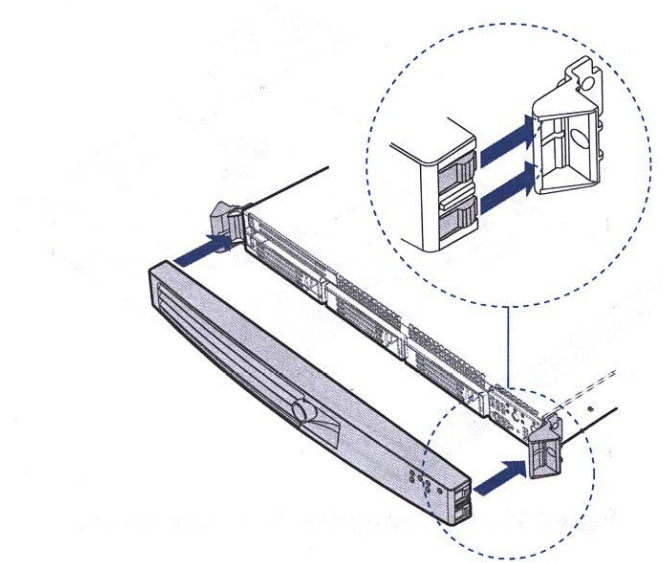


To install the front bezel, perform the following steps:

1. At each end of the bezel, line up the center notch on the bezel with the center guide on the rack handles.
2. Push the bezel onto the front of the chassis until it clicks into place.
3. Connect any necessary cables to the front control panel area at the right side of the chassis.
4. Lock the bezel using the supplied key.

The following image displays the front bezel being installed.

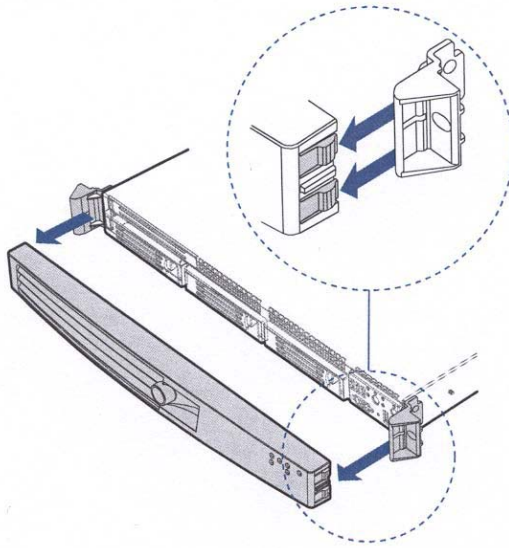




**To remove the bezel, perform the following steps:**

1. Unlock the bezel using the supplied key.
2. Remove any cables that are attached to the front of the system.
3. Pull on the left- and right-most edges of the bezel to pop it out.

The following image displays the front bezel being removed.



## Mounting the System In a Rack

The OS-E 2600 Series chassis installs in any standard 19-inch by 30-inch deep 2- or 4-post computer rack or 4-post EIA-310D compatible server cabinet.

A sliding rail kit allows you to mount the chassis in a standard (19-inch by and up to 30-inch deep) rack. When installing the system in a rack, Acme Packet recommends you install systems from the bottom of the rack to the top. This means that you install the first system in the rack into the bottom position of the rack, the second system in the second position from the bottom, and so on.

Instructions for installing the rack are included with the rail kit in the shipping container as well as in PDF format with the OS-E technical documentation.

# Connecting Console Equipment

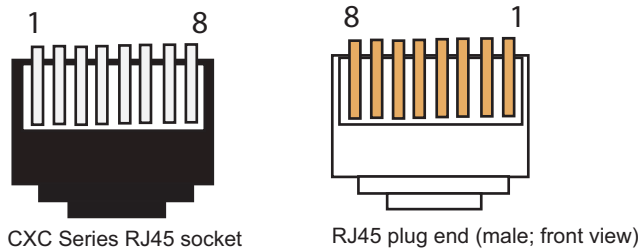
This section shows you how to connect console equipment (PC or terminal) to the system: There are two ways to make a direct local connection:

- Using the Serial B port on the back of the chassis
- Using the video and keyboard connections

## Using the Serial B Console Port

The Serial B console port provides a serial EIA-561 RS232D connection with a DTE interface using a male RJ-45 plug. Attaching a terminal or PC allows you to connect to the system CLI for initial setup at the installation site. To connect a terminal or PC to the RJ-45 Serial B port, you need a DB-9 to DB-9 serial cable and the supplied RJ-45 dongle that connects between the DB-9 cable and the RJ-45 socket.

The following image illustrates the RJ-45 and lists the pin/signal information.



| Pin No. | Signal Name/Description |                                      |
|---------|-------------------------|--------------------------------------|
| 1       | RTS                     | Request to Send                      |
| 2       | DTR                     | Data Terminal Ready                  |
| 3       | TXD(                    | Transmit Data                        |
| 4       | GND                     | Ground                               |
| 5       | RI                      | Ring Indication                      |
| 6       | RXD                     | Receive Data                         |
| 7       | DSR/DCD                 | Data Set Ready/Data Carrier Detect 1 |
| 8       | CTS                     | Clear to Send                        |

admin\_8



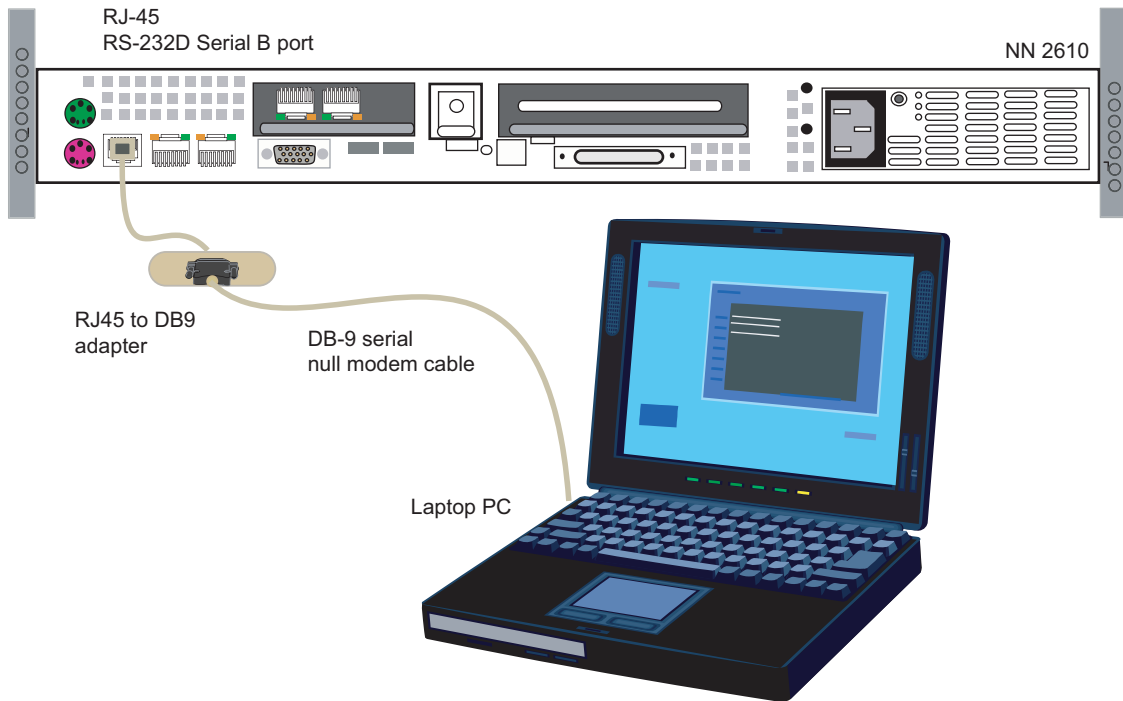
**Note:** The physical RS-232 DB-9 port, while present on the back of NN 2620 systems, is *not* available as an active console port. *Do not* plug the DB-9 end of a null modem console cable into this port.

---

Perform the follow steps to connect a PC or video terminal to the Serial B port:

1. Check the video terminal or PC for the type of serial connector that it uses (either DB-9 or DB-25) and locate the appropriate cable:
  - DB-9 to DB-9 (customer supplied null modem)
  - DB-9 to DB-25
2. Using a DB9- to RJ45 adapter, connect the RJ45 plug end of the cable into the Serial B port.
3. Connect the DB-9 end of the null modem serial cable to the adapter; connect the other end of the cable (DB-9 or DB-25 to the video terminal or PC.
4. Turn the video terminal or PC on.
5. Configure the video terminal or PC (using a terminal emulation program such as HyperTerminal) with the following settings:
  - Baud rate: 115200
  - Terminal type: VT-100 (if prompted)
  - Connect to: COM1
  - Stop bits: 1
  - Data bits: 8
  - Parity: none
  - Flow control: none

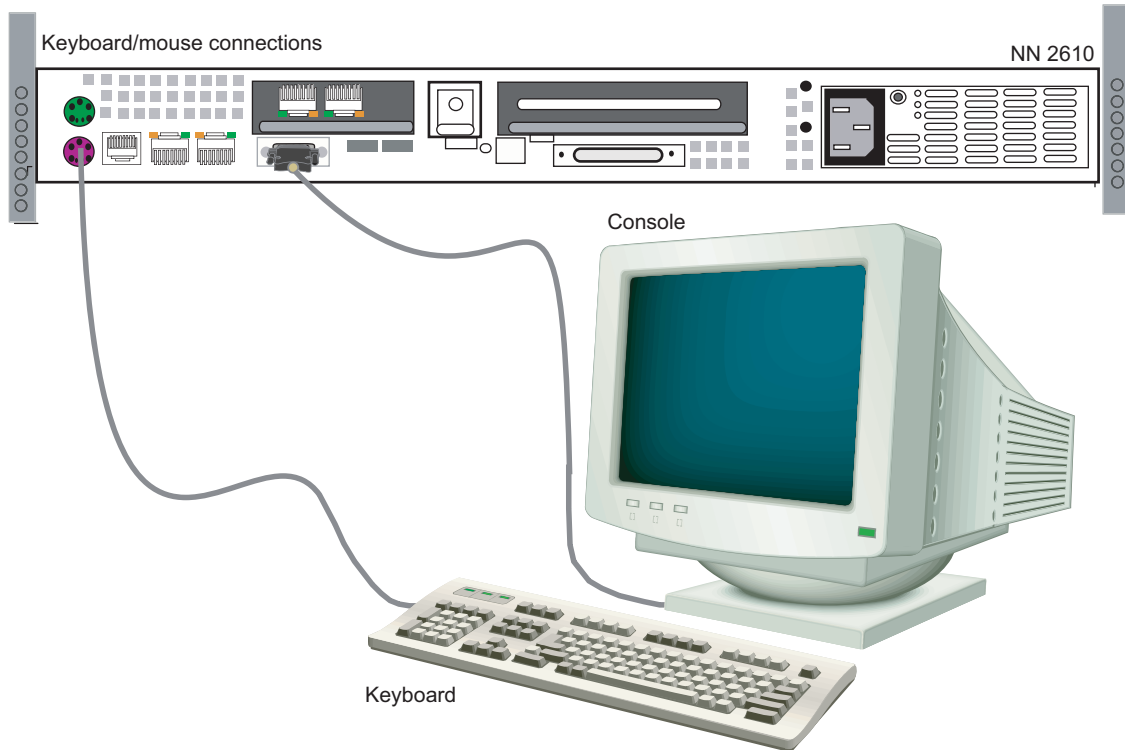
The following image illustrates connecting a PC or terminal.



## Using the Video and Keyboard Connections

You can create direct connections to the system by simply connecting a monitor and keyboard. The system has two video console interfaces that accept a standard 15-pin console cable; one connector on the front of the system, and another on the back. You can only connect one video console at a time. This means that both video connectors cannot be used simultaneously.

The following image illustrates the direct video and keyboard connections. A VGA console is recommended.



## Connecting the Ethernet Interfaces

The Ethernet interfaces on the system support auto negotiation 10/100/1000 Mbps copper network interface connections (NIC). This means that you can connect to Ethernet equipment that supports 10, 100, or 1000 Mbps connections. Ethernet ports label 1 to 4 translate to Ethernet interfaces eth 0 to eth3 in the product software.

The NN 2610 is equipped with up to six Ethernet interfaces, and the NN 2620 is equipped with up to twenty Ethernet interfaces using network interface cards.

To connect to the data network, you need the following:

- For connection to an Ethernet hub or switch, an RJ-45 to RJ-45 straight-through cable (100 ohm, Category 5 or 5E, with a maximum length of 328 feet (100 meters))

- For a direct connection to a PC or laptop computer, an Ethernet cross-over cable (for local Telnet connection or access to the OS-E Management System from your Web browser).
- For links to the external network, a connection to an upstream Layer 2 switch behind the firewall, and a switch that connects to the backend communications servers.

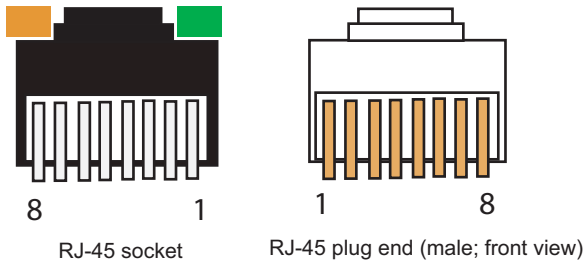


**Caution:** Do not insert an RJ-11 telephone connector into any Ethernet interface on the system. Damage to the interface may occur.



**Note:** Any Ethernet interface can be used for management traffic. However, Acme Packet recommends the use of eth1, as eth0 is reserved for fault-tolerant clustering with other OS-E systems. Management traffic is also supported on any interface that is carrying private or public network traffic. This means that it would be possible to use eth1 to carry SIP traffic and management traffic.

The following image illustrates the Ethernet port associated pin information.



| Pin No. | Signal Description |                  |
|---------|--------------------|------------------|
|         | Fast Ethernet      | Gigabit Ethernet |
| 1       | TX+                | MD0+             |
| 2       | TX-                | MD0-             |
| 3       | RX+                | MD1+             |
| 4       | T45                | MD2+             |
| 5       | T45                | MD2-             |
| 6       | RX-                | MD1-             |
| 7       | T78                | MD3+             |
| 8       | T78                | MD3-             |

Perform the following steps to connect to the Ethernet interfaces:

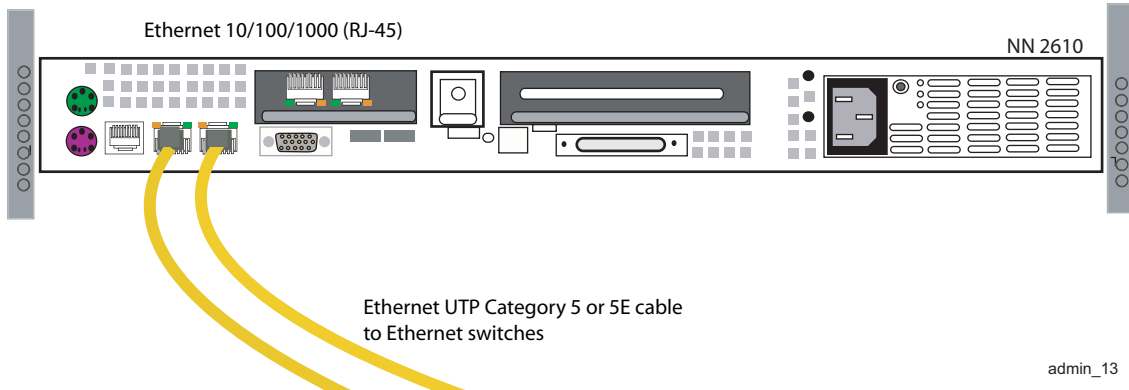
1. Connect one end of the RJ-45 Ethernet straight-through cable to the port labeled 1 or 2. (eth0 and eth1, respectively).



**Note:** Ethernet ports on the system are labeled with numbers, and are oriented left to right, top to bottom. The port labeled “1” is the same as eth0, the port labeled “2” is the same as eth1, and so on.

2. Connect the other end of the cable to an available port on the Ethernet hub or switch. The LEDs should display green (Link) and yellow (Activity).
3. If connecting a PC or laptop computer directly to eth0 or eth1, use an Ethernet crossover cable or crossover adapter to ensure a proper connection to the port.

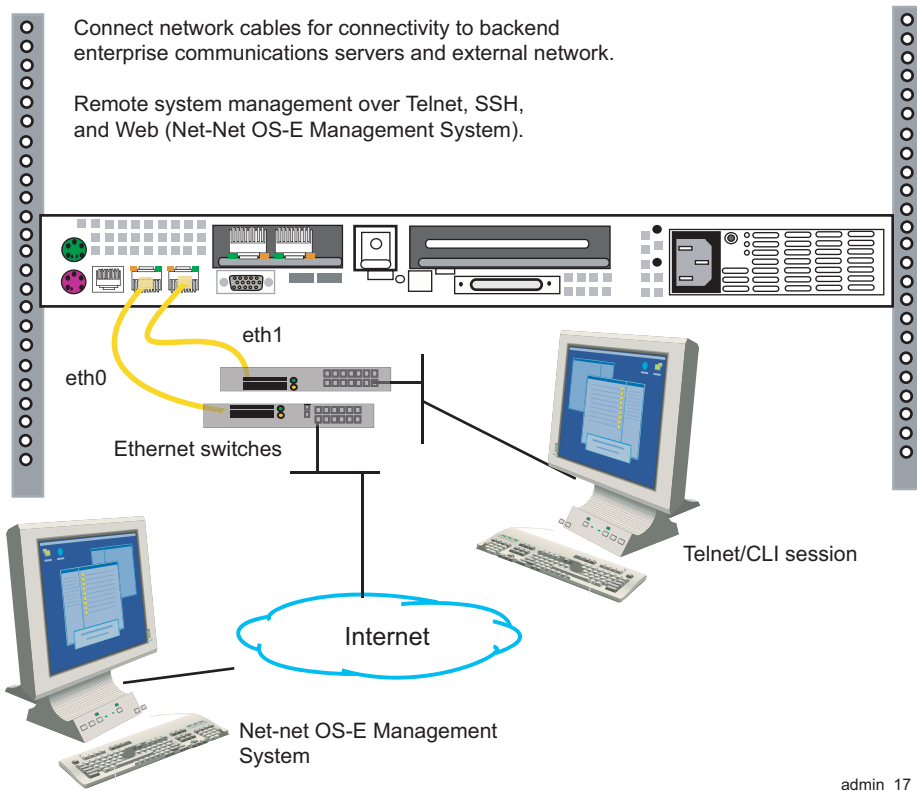
The following image illustrates the OS-E 2600 Series Ethernet connections.



admin\_13

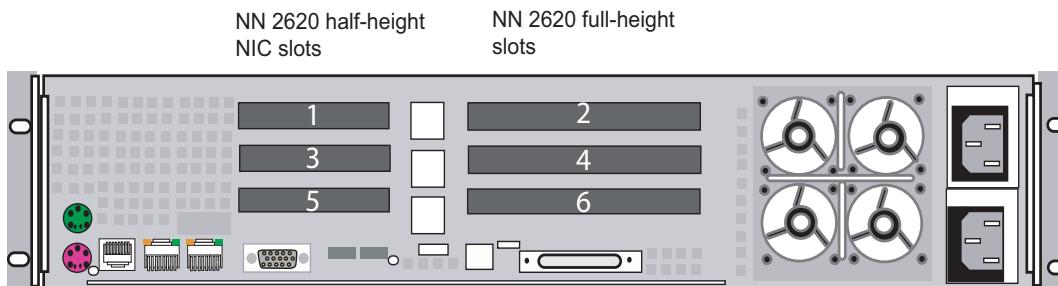


The following image illustrates the Net-Net OS-E Series sample network connections.



## NN 2620 Half- and Full-Height Slots

The following image illustrates the back of the NN 2620 chassis showing the half- and full-height NIC slots, labeled 1 to 6. Both the half- and full-height slots can accommodate the standard Ethernet dual-port NIC.



#### For Standard Dual-Port NIC Installations

Install multiple NICs in the following sequence:

1. Install the first NIC in full-height slot 5.
2. Install the second NIC in full-height slot 3.

### Ethernet Port Assignments

NN 2620 Ethernet port numbering depends on the number of NIC cards that you are using. Looking at the back of the chassis, port numbering runs left to right, and progresses top to bottom.

- Chassis ports: **eth0, eth1**
- Ethernet NIC 1: **eth2, eth3**

### Moving NICs After Installation

There are a number of important considerations if you must relocate NIC cards within the same NN 2620 chassis.

1. Installed NIC cards maintain their port numbering and MAC addressing after initial installation. This means that if you relocate a NIC card from half-height slot 1 to half-height slot 3, the first Ethernet port in slot 3 will be eth2.
2. When relocating a NIC from a half-height slot to a full-height slot, the orientation of the card will be reversed in the new full-height slot installation. This means that the port numbering from the original installation will be reversed in the new slot.
3. Adding NIC cards after the initial installation will result in new port numbers that begin using the highest port number plus 1. For example, if the highest port number is eth11, the first port on the newly added card will be eth12.

## Connecting AC Power

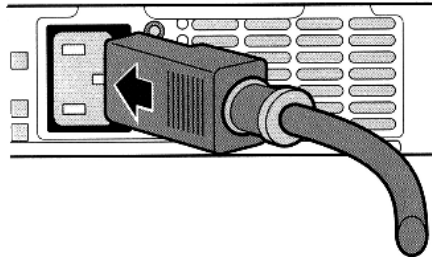
This section shows you how to connect and apply system power to the NN 2600 Series system..

### AC Power Requirements

Before installing the power cable, be sure that your site meets the following AC power requirements:

- Voltage: automatic selection/ranging  
100 to 127 VAC; 8.2 A maximum @ 50/60HZ;  
200 to 240 VAC; 4.1 A max @ 50/60 HZ
- AC power cord — North America (CBL-PWR-USA):  
Power module connector: Standard 3-prong keyed IEC receptacle on power module; cord supplied with IEC connector on one end, NEMA 5-15 plug (U.S. domestic) on the other end.
- Other power cords are available for the following countries:
  - Europe (CBL-PWR-EUR)
  - United Kingdom (CBL-PWR-GBR)

The following image illustrates the NN 2610 power connection at the back of the system.

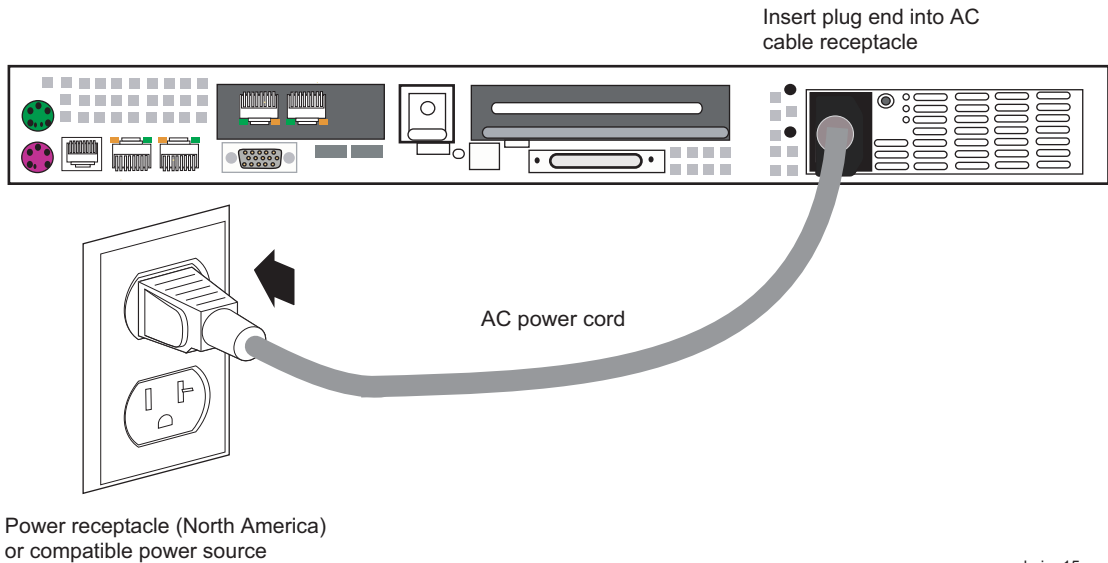


## Connecting the AC Power Source

To connect the AC power cables, perform the following steps

1. Locate the system power cord.
2. Insert the plug end into the AC cable receptacle at the back of the system.
3. Plug the other end of the cable into a compatible power source.
4. Repeat Steps 1 to 3 for the redundant power supply, if installing the NN 2620 with redundant power.

The following image displays the NN 2610 AC power installation.



admin\_15

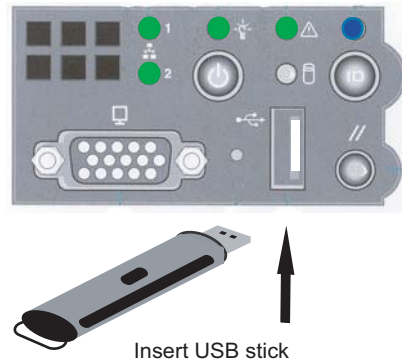
## Inserting the USB Stick

Before proceeding with this step, and if you have not already done so, create an installation USB stick from the OS-E software download. Refer to the *Net-Net OS-E – USB Creation and Commissioning Instructions* for complete information on how to use the software download process, create an installation USB, and then commission the system from the USB stick.

When you install the USB into any of the USB ports and then apply power to a new system, the process will install the license and initialize the system. At the end of the boot-up process, the system rewrites the USB stick so that the box identifier and the installed license are matched to this particular system.

You need to remove the USB stick after the system has successfully booted. Later, and if required, you can use this USB stick to run system utilities to restore the system in the event of a failure. Other functions are also available from the utility USB stick.

The following image illustrates inserting the USB stick.



Refer to the *Net-Net OS-E – USB Creation and Commissioning Instructions* for information on USB commissioning, as well as how to create system utility and system restore USBs.

## Applying Power

To apply power and to initiate system startup, make sure that the USB stick is installed, then press the system power button on the control panel.

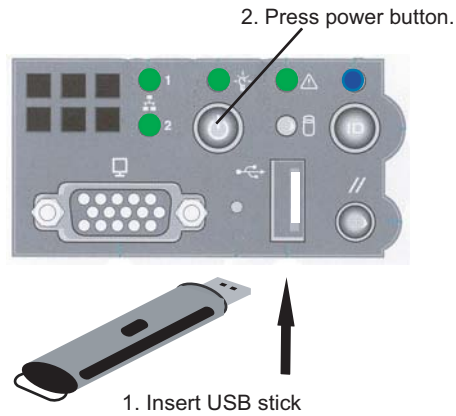


**Note:** Depending on the actual hardware revision that you are running, the system may power up a few seconds after you attach the power cord. This means that the system will start without having to press the system power button.

The system will take several minutes to go through the startup and diagnostics routines before you will see the username and login prompts.

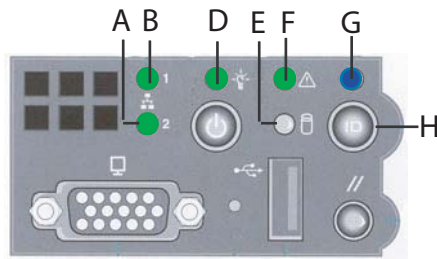
At the NNOS-E prompt, type **umount usb** to properly dismount the USB stick. Physically remove the USB stick from the USB connector.

The following image illustrates the OS-E Series power button.



## Checking the LEDs

After powering the system ON, check the system LEDs to ensure proper cabling and connections. The following image illustrates the control panel.



The following table lists LED States that you should verify after powering the system on.

| Reference | Feature                      | Function   |
|-----------|------------------------------|--|
| B         | NIC1 (eth0) activity         | Continuous green light indicates a link between the system and the network to which it is connected.   |
| A         | NIC2 (eth1) activity         | Blinking green light indicates network activity.   |
| D         | Power/Sleep LED              | Continuous green light indicates the system has power applied to it.<br><br>Blinking green indicates the system is in a sleep state.<br><br>No light indicates the power is off.   |
| E         | Hard disk drive activity LED | Random blinking green light indicates hard disk drive activity (SCSI or SATA).<br><br>No light indicates no hard disk drive activity.  |
| F         | System Fault LED             | Solid green indicates normal operation.<br><br>Blinking green indicates degraded performance.<br><br>Solid amber indicates a critical or non-recoverable condition.<br><br>Blinking amber indicates a non-critical condition.<br><br>No light indicates power-on-self-test (POST) is running or the system is off. |
| G         | System Identification LED    | Solid blue indicates system identification is active.<br><br>No light indicates system identification is not activated.  |
| H         | System Identification button | Toggles the front panel ID LED and the baseboard LED on/off. The baseboard LED is visible through the rear of the chassis and allows you to locate the server you are working on from behind a rack of servers.  |

## Logging On and Starting the CLI

Using a locally attached console with a terminal emulation program, log on to the system for the first time by first pressing the [Enter] key a few times to display the username prompt, and then by responding to the username and password prompts by pressing the [Enter] key. This displays the NNOS-E> prompt on your screen.

```
username: [Enter]  
Password> [Enter]  
NNOS-E>
```

## Additional Information on Net-Net OS-E Licensing

Refer to the *Net-Net OS-E – USB Creation and Commissioning Instructions* for information on commissioning a system with the licensed features that you purchased. However, you will need to run **license fetch** under certain conditions, such as renewing an expired license, and when installing licensed features that you did not originally purchase with the system under the original license.

To “fetch” your customized signed license, you will need a private key. This key, as supplied to you by Acme Packet, unlocks and enables the features that you purchased when you run the **license fetch** command from the Acme Packet CLI or OS-E Management System.



---

**Note:** If you do not run the **license fetch** command to successfully unlock your customer-specific features, you will not be able to configure the device with any of the licensed options provided by Acme Packet.

---

## Prerequisites

Before you execute the **license fetch** command,

1. Ensure that you have a connection to the public Internet, and
2. Port 616 is available and not blocked by any firewalls. This allows connectivity to the Acme Packet license server.



---

## Fetching the Signed License From the CLI

From the CLI prompt, run the following command:

```
NNOS-E> license fetch <license-key-text>  
Success!
```

Where **<license-key-text>** is the private key provided to you by Acme Packet. This command will contact the Acme Packet licensing server, authenticate your unique key, and then install a license on your system. Make sure that the system reports “Success!”



**Note:** If you are unable to fetch an encrypted license using the Acme Packet key, cannot access the Acme Packet licensing server, or if you receive a message other than “Success!,” contact Acme Packet Product Support immediately for assistance.

---

You will need to run **license fetch** for each system that you installed. If you ordered five systems to be installed in a cluster, Acme Packet will provide you with a single license key for the cluster.

Any or all standalone systems outside of a cluster require a separate and unique license.

## Fetching the Signed License From the OS-E Management System

If you are using the OS-E Management System, go the **Actions** tab and select **license->fetch** and paste the Acme Packet key into the key field, as illustrated in the following image. Click **Invoke** to install the signed license.

The screenshot shows the Acme Packet web interface. The top navigation bar includes 'Home', 'Configuration', 'Status', 'Call Logs', 'Event Logs', 'Actions' (selected), 'Services', 'Keys', 'Access', 'Tools', and 'Portal'. The left sidebar lists various actions: 'install', 'install examine', 'intercept-sentinel-create', 'intercept-sentinel-delete', 'intercept-session-begin', 'intercept-session-release', 'internal-session', 'jtapi-control', 'license', 'linksys', 'load-balancing', 'location', 'location-database', 'login', 'loopback', and 'make-usb-bootable'. The main content area is titled 'license' with the subtitle 'apply or revoke a license'. It contains a form with the following fields:
 

- \* action**: (empty)
- \* operation**: A dropdown menu with 'fetch' selected, with a tooltip '(fetch a license)'.
- \* key**: An empty text input field.
- server**: A text input field containing 'https://216.41.24.54:443/'.

 An 'Invoke' button is located at the bottom right of the form.

You can also manage licenses with the OS-E Management System **Tools** tab, using the **Retrieve License** and the **Upload License** functions. **Retrieve License** operates the same as the **license fetch** command, contacting the Acme Packet license server over the Internet.

If for some reason you are unable to access the Acme Packet license server, and if Acme Packet sends you the license, place the license on your local PC, use **Upload License** to browse for file, check the **Apply License** box, then click **Upload**.

## Adding New Features Later

If you find that you do not have one or more of the features that you purchased, or if you want to add features that you did not originally purchase, contact your Acme Packet Sales Representative or Acme Packet Product Support. Acme Packet will correct the problem and supply you with a new key that you can rerun with the **license fetch** command.

As Acme Packet software becomes available with newly-added features, your Acme Packet Sales Representative will assist you with ordering the software. Acme Packet will then provide you with a new licensing key.

---

## License Expirations and Renewals

If your customer-specific license comes with an expiration date, the system generates an event when the license nears the expiration date. You can renew your license by re-executing the **license fetch** command. The Acme Packet license server verifies that there is a valid license renewal associated with your system ID, and then resets the license expiration to a new date.

## Evaluation Systems

For evaluation systems in lab environments without Internet connectivity, Acme Packet will provide you with an alternate method for acquiring the appropriate license to operate and configure the system. Contact your Acme Packet Sales Representative or Product Support for details.

## Assigning a Management IP Address

Before you can manage an OS-E system remotely over the Internet using the OS-E Management System or over a Telnet connection, you need to locally assign an IP address to one of the Ethernet interfaces, **eth0**, **eth1**, **eth2**, or **eth3**. If you are setting up the device remotely, you will also need to configure an IP route, a route to a destination host or network, and a gateway IP address.

If you are using the OS-E Management System, you will also need to know the assigned IP address on one of the Ethernet ports to manage the OS-E configuration. The OS-E Management System application runs directly on the OS-E system over the Internet using the Internet Explorer Web browser.

The following CLI session creates and enables an IP interface named *mgmt-int*, sets the static IP address and network mask, configures an IP route (if connecting remotely), and enables Web access on this IP interface. You will need to enable ICMP on the OS-E IP interface before you can use the **ping** command from your console to test the device as a responding node on the network. Use the **show -v** command to display the configuration.

### CLI Session

```
NNOS-E> config box
config box> set hostname local2610
config box> config interface eth0
config interface eth0> config ip mgmt-int
Creating 'mgmt-int'
config mgmt-int> set admin enabled
config mgmt-int> set ip-address static 192.168.124.5/24
config mgmt-int> config routing
config routing> config route internetGateway
Creating 'route internetGateway'
config route internetGateway> set destination default
config route internetGateway> set gateway 192.168.124.3
config route internetGateway> return
config routing> return
config ip mgmt-int> config web
config web> set admin enabled
config web> set port 80
config web> return
config mgmt-int> config icmp
config icmp> set admin enabled
config icmp> top
config> save
config> show -v
```

### Using the Setup Script

An optional configuration setup script called *cxc.setup* is now included with newly shipped systems. After installing a new system, you can run the script directly from the NNOS-E> prompt, as shown in the example session below.

The script presents a set of questions to help you with the initial system configuration. The information in the script include the following:

- Local hostname
- IP interface names and addresses
- SSH and Web access
- Default route and any additional static routes per interface for remote management
- User-defined CLI prompt

Every OS-E Series system has a minimum of two Ethernet interfaces. Any Ethernet interface on the system can be used for management traffic, however, Acme Packet recommends the use of eth1, as eth0 is reserved for fault-tolerant clustering with other systems. Management traffic is also supported on any interface that is carrying private or public network traffic. This means that it would be possible to use eth1 to carry SIP traffic and management traffic.

## CLI Session

```
NNOS-E> config setup
set box\hostname: <name>
config box\interface: eth1
set box\interface eth1\ip a\ip-address: <ipAddress/mask>
config box\interface eth1\ip a\ssh (y or n)? n
config box\interface eth1\ip a\web (y or n)? y
config box\interface eth1\ip a\routing\route: <routeName>
set box\interface eth1\ip a\routing\route localGateway\gateway:
<ipAddress>
set box\cli\prompt: <newPrompt>
Do you want to commit this setup script (y or n) y
Do you want to update the startup configuration (y or n)? y
```



**Note:** The /cxc directory on the system may include vendor-specific scripts that address unique startup configuration requirements. Specify the name of the script on the command line following the **config setup** command. For example:

```
NNOS-E> config setup vendor.setup
```

Check the /cxc directory for any vendor-specific setup files included with your system.

## Enabling Network Access

To ensure you can manage the system using services such as Telnet or the OS-E Management System, you must configure the system so that it is available on the network. You need to create a default (or static) IP route, a route to a destination host or network, and a gateway IP address.

After you configure the static route, enable ICMP and then use the **ping** command at the top-level of the CLI to test network accessibility.

## Defining a Default Route and Gateway IP

If you are setting the box remotely, you will need to configure an IP route, a route to a destination host or network, and a gateway IP address.

### CLI Session

The example CLI session shows the routing context (in **bold** text) and the route named *internetGateway*. This the default route that uses 192.168.124.3 as the default gateway

```
NNOS-E> config box
config box> set hostname local2610
config box> config interface eth0
config interface eth0> config ip mgmt-int
Creating 'mgmt-int'
config mgmt-int> set admin enabled
config mgmt-int> set ip-address static 192.168.124.5/24
config mgmt-int> config routing
config routing> config route internetGateway
Creating 'route internetGateway'
config route internetGateway> set destination default
config route internetGateway> set gateway 192.168.124.3
config route internetGateway> return
config routing> return
config ip mgmt-int>
```

## Cluster Installation

If you are installing OS-E systems in a network cluster, refer to Chapter 4, “Installing Net-Net OS-E Clusters,” and the *Net-Net OS-E – Release Notes* for the latest information.

---

## Chapter 3. Quick Commissioning New Net-Net OS-E Systems

---

### About This Chapter

The chapter provides the basic information that allows you to configure OS-E software after you have physically installed the system in your network. Commissioning enables an OS-E system or compatible third-party device to process locally registered SIP phone calls.

### Prerequisites to Quick Commissioning

Before using the information in this chapter, make sure that you have properly installed and cabled the system, as covered in Chapter 1. The following OS-E documents provide additional information on configuring Session OS-E services, as well as how manage the system using the OS-E CLI and the OS-E Management System.

- *Net-Net OS-E – System Administration Guide*
- *Net-Net OS-E – Objects and Properties Reference*
- *Net-Net OS-E – Management Tools*

Additionally, the *Net-Net OS-E – Release Notes* provides important information about the software that you should review before commissioning a system in your network.

Steps 1 through 5 cover the tasks and services for getting the system up and running on an IP network so that the Ethernet interfaces can process SIP sessions. When enabled on an IP network, you can manage the system and its configuration remotely over the Internet using the OS-E Management System.

Steps 6 through 10 cover the tasks that allow you to control and monitor SIP sessions, as well as store call detail records and recordings.

## Building the Configuration File

The OS-E configuration file (*cxc.cfg*) is made up of configuration objects and property settings that control how the system processes and manages SIP traffic. As you open these objects and set properties using the CLI or the Net-Net OD-E Management System, the software builds a configuration hierarchy of objects that are applied to SIP sessions. You can display this configuration hierarchy using the **show** and **show -v** (verbose) commands.

For new users, as well as for users who are adding functionality to their configuration, you will need to open configuration objects using the **config** command to enable the default settings for those objects, even if you choose not to edit any of their associated properties. For example, if you need to enable the **ICMP** protocol and its default settings, you simply open the object and execute **return**, as shown in the session below. Notice that the ICMP object has been added to the configuration hierarchy at the end of the session on the eth4 interface.

```
config> config box interface eth4
config interface eth4> config ip 172.26.2.14
config ip 172.26.2.14> config icmp
config ip 172.26.2.14> return
config interface eth4> return
config box> return
config> show -v
  interface eth4
    admin enabled
    mtu 1500
    arp enabled
    speed 1Gb
    duplex full
    autoneg enabled
    ip 172.26.2.14
      admin enabled
      ip-address dhcp
      geolocation 0
      metric 1
      classification-tag
      security-domain
      address-scope
      filter-intf disabled
```



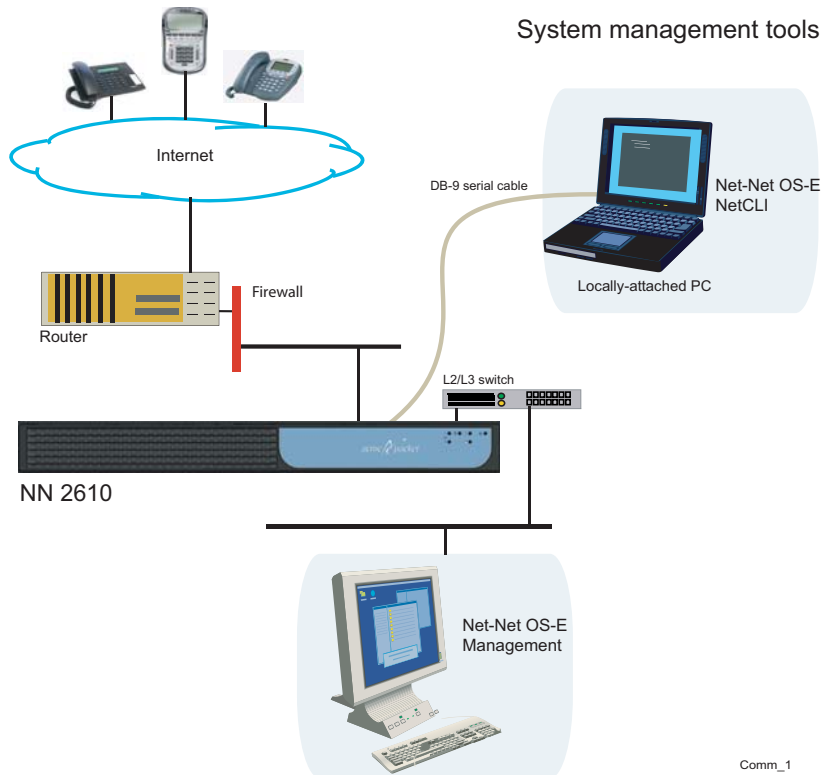
```
icmp
  admin enabled
  limit 10 5
```

To remove an object from the configuration hierarchy, use the CLI or OS-E Management System **delete** command.

## Basic Network Topology

The following image illustrates a network topology using the OS-E with a directly-attached PC for initial setup, and the OS-E Management System for remote access using a graphical user interface.

VoIP phones and softphones



Comm\_1

## Step 1. Configuring Basic IP Connectivity

Before you can manage an OS-E system remotely over the Internet using the OS-E Management System or over a Telnet or SSH connection, you need to locally assign an IP address to one of the Ethernet interfaces, **eth0**, **eth1**, **eth2**, or **eth3**. If you are setting up the device remotely, you will also need to configure an IP route, a route to a destination host or network, and a gateway IP address.

If you are using the OS-E Management System, you will also need to know the assigned IP address on one of the Ethernet ports to manage the OS-E configuration. The OS-E Management System application runs directly on the OS-E system over the Internet using the Internet Explorer Web browser.

The following CLI session creates and enables an IP interface named **192.168.124.5**, sets the static IP address and network mask, configures an IP route (if connecting remotely), and enables Web access on this IP interface. You will need to enable ICMP on the OS-E IP interface before you can use the **ping** command from your console to test the device as a responding node on the network. Use the **show -v** command to display the configuration.

### CLI Session

```
NNOS-E> config box
config box> set hostname local2610
config box> config interface eth1
config interface eth1> config ip mgmt-int
Creating 'mgmt-int'
config mgmt-int> set admin enabled
config mgmt-int> set ip-address static 192.168.124.5/24
config mgmt-int> config routing
config routing> config route internetGateway
Creating 'route internetGateway'
config route internetGateway> set destination default
config route internetGateway> set gateway 192.168.124.3
config route internetGateway> return
config routing> return
config ip mgmt-int> config web
config web> set admin enabled
config web> set port 80
config web> return
config mgmt-int> config icmp
config icmp> set admin enabled
config icmp> top
config> save
config> show -v
```

## Using the Setup Script

An optional configuration setup script called *exc.setup* is now included with newly shipped systems. After installing a new system, you can run the script directly from the NNOS-E> prompt, as shown in the example session below.

The script presents a set of questions to help you with the initial system configuration. The information in the script includes the following:

- Local hostname
- IP interface names and addresses
- SSH and Web access
- Default route and any additional static routes per interface for remote management
- User-defined CLI prompt

Every OS-E system has a minimum of two Ethernet interfaces. Any Ethernet interface on the system can be used for management traffic, however, Acme Packet recommends the use of eth1, as eth0 is reserved for fault-tolerant clustering with other OS-E systems. Management traffic is also supported on any interface that is carrying private or public network traffic. This means that it would be possible to use eth1 to carry SIP traffic and management traffic.

### CLI Session

```
NNOS-E> config setup
set box\hostname: <name>
config box\interface: eth1
set box\interface eth1\ip a\ip-address: <ipAddress/mask>
config box\interface eth1\ip a\ssh (y or n)? n
config box\interface eth1\ip a\web (y or n)? y
config box\interface eth1\ip a\routing\route: <routeName>
set box\interface eth1\ip a\routing\route localGateway\gateway:
<ipAddress>
set box\cli\prompt: <newPrompt>
Do you want to commit this setup script (y or n) y
Do you want to update the startup configuration (y or n)? y
```



**Note:** The `/cxc` directory on the OS-E system may include vendor-specific scripts that address unique startup configuration requirements. Specify the name of the script on the command line following the **config setup** command. For example:

```
NNOS-E> config setup vendor.setup
```

Check the `/cxc` directory for any vendor-specific setup files included with your system.

---

## Enabling Network Access

To ensure you can manage the system using services such as Telnet or the OS-E Management System, you must configure the OS-E system so that it is available on the network. You need to create a default (or static) IP route, a route to a destination host or network, and a gateway IP address.

After you configure the static route, enable ICMP and then use the **ping** command at the top-level of the CLI to test network accessibility.

## Defining a Default Route and Gateway IP

If you are setting the box remotely, you will need to configure an IP route, a route to a destination host or network, and a gateway IP address.

Refer to Step 1. Configuring Basic IP Connectivitythe previous section in this chapter, for the example CLI session that shows the routing context and the route named *internetGateway*. This is the default route that uses 192.168.124.3 as the default gateway.

## Launching the OS-E Management System

In addition to the CLI, you can use the OS-E Management System to configure the OS-E. To access the OS-E using the OS-E Management System, open an HTTP or secure HTTP window (HTTPS) to the IP address of the Eth0 port on the OS-E system. For example:

```
https://192.168.124.5
```

You should see the Acme Packet OS-E Log In window, illustrated in the following image.

### Acme Packet Net-Net OS-E


To access the NNOS-E management interface, you must first log in. Please provide your user name and password.

Username:

Password:

Login

By default, there are no user accounts configured on a new system. This means any value can be entered in for username & password, or leave the fields blank and click **Login**. Once you log in, the OS-E Management System main page appears.

  
[Logout](#) [quest](#)

[Home](#) [Configuration](#) [Status](#) [Call Logs](#) [Event Logs](#) [Actions](#) [Services](#) [Keys](#) [Access](#) [Tools](#) [Portal](#)

Get summary for: Box 1 [Refresh](#) [Help](#)

box-identifier

Loading...

box-status

IPAddress  
State  
build-version  
build-number

master-services

Loading...

up-time

time  
timezone  
uptime

system-info

cpu-usage-one-second

call-info

active-calls

location-info

total-cache-entries  
location-bindings

The remaining steps in this chapter use the OS-E Management System to commission the OS-E.

## Step 2. Configuring Advanced IP Connectivity

Use the **Configuration** tab or the CLI to configure several additional Ethernet interfaces, as covered in Step 1. As a security device, the NN 2600 Series uses a default setting of **disabled** for these objects in the configuration file. This means that you must enable each interface. These objects include:

- **SSH**—To enable SSH client connectivity on the interface
- **Media ports**—To enable a range of port numbers for on the interface
- **SIP**—To enable SIP traffic on the interface)

When editing Ethernet interface and examining each object using the OS-E Management System, note that many of the objects are already visible, but they are not yet enabled. For these objects to actually be enabled on the OS-E system, you must select the object and save the configuration.

After editing an interface configuration, elect **Set**, then **Update & save configuration**, as illustrated in the following image.

The screenshot shows the AcmePacket configuration interface. The top navigation bar includes links for Status Summary, Logout, and various configuration and monitoring tools. The left sidebar displays a tree view of the configuration hierarchy, with 'ip heartbeat' selected. The main panel shows the configuration for 'Configure cluster: AcmePacket, Inc. box 1\interface eth0\ip heartbeat'. The 'general' section includes fields for name, admin, ip-address, geolocation, security-domain, address-scope, filter-intf, and media-ports. The 'other properties' section includes fields for metric, classification-tag, routing-tag, trusted-peer, telnet, ssh, snmp, web, and web-service.

When you select **Configuration/Update and save configuration** you will be asked "Do you want to update the live configuration?" followed by "Do you also want to save the live configuration?" Click **OK** for both questions to ensure that the configuration is properly saved to the OS-E configuration file, *cxn.cfg*.

The following steps are necessary to set some specific parameters for the objects listed above:

1. Select the Configuration **Cluster/ Box 1/Interface Eth0/IP local** object on the left menu tree. Under the **General** field, edit the Media Ports properties as desired, then click **Set**.
2. Under the **Other Properties** field, edit the SSH properties. Accept the defaults by clicking **Set**.

3. Select **SIP** from the menu tree. Enter the following values for each fields:
  - admin: enabled (default)
  - NAT translation: disabled (default)
  - UDP port: Select **Add UDP port**, accept the defaults, then click **Finish->Set**.
  - TCP port: Select **Add UDP port**, accept the defaults, then click **Finish->Set**.
  - TLS port: Select **Add UDP port**, accept the defaults, then click **Finish->Set**.
  - Certificate: blank (default)

When you are finished editing the SIP fields, select **Set->Configuration/Update and save configuration**.

## Step 3. Creating User Accounts for Basic Access

By default, the OS-E does not contain any predefined user accounts. This means it is possible to access the management interfaces without entering any login credentials (username and password). You are not required to create user accounts, but it may be desirable for security reasons. If you want to create a user account at this time, follow the steps below. If not, go directly to Step 4.



1. Using the OS-E Management System, select the **Access** tab, then select **Access** from the left menu pane. The Access Permissions/Configure Access page appears.

**Access Permissions: all**

Configuration Setup View

access

- permissions guest
- permissions jen
- permissions grant
- permissions test
- permissions 1
- users
- radius

**Configure access** Help Index

Set Reset Delete

**permissions**

|             | permissions       | cli      | gui              |
|-------------|-------------------|----------|------------------|
| Edit Delete | permissions.guest | advanced | enabled          |
| Edit Delete | permissions.jen   | advanced | enabled          |
| Edit Delete | permissions.grant | normal   | enabled-web-only |
| Edit Delete | permissions.test  | normal   | enabled          |
| Edit Delete | permissions.1     | normal   | enabled          |

Add permissions

**directories**

|               | directories | admin   |
|---------------|-------------|---------|
| ▼ Edit Delete | users       | enabled |
| ▲ Edit Delete | radius      | enabled |

Add enterprise  
Add radius  
Add users

Set Reset

Help Index

2. Under **permissions**, select **Add permissions** and create a permissions group called *super-user* and accept all default settings with all permission types enabled. Select **Set**, then select **Update and save configuration** from the Configuration pull-down in the left pane.
3. From the **Directories** object, select **Add users**. Accept the default setting of enabled.
4. Select **Add user** and enter the required **name** and **password** of your choice, then re-enter the password to **confirm** your original password entry. In the **permissions** field, choose the permissions group that you just created (*super-user*).
5. Click **Create**. Select **Configuration->Update and save configuration**.

These steps created a username and password for a super-user account. Future attempts to log in to the OS-E (using the CLI or the OS-E Management System) will require that you specify these login credentials. If needed, you can also create user accounts with one or more of the super-user permissions.

## Step 4. Enabling Master Services

The **master-services** configuration enables directory, accounting, database and registration services to run on the system. Perform the following steps to configure these master services:

1. Select the **Services** tab, then select **master-services** from the left menu pane.
2. Accept the default settings for **cluster-master**, **directory**, **accounting**, **database** (with **Show advanced** button selected), and **registration**. Click **Set**.

After you have configured all five services, select Configuration->**Update and save configuration**. The completed Master Services configuration should appear as shown in the following image.

The screenshot shows the 'acme packet' web interface. The top navigation bar includes 'Home', 'Configuration', 'Status', 'Call Logs', 'Event Logs', 'Accounts', 'Services', 'Keys', 'Access', 'Tools', and 'Portal'. The 'Services' tab is selected. On the left, a tree view shows 'Services: all' with sub-items like 'services', 'master-services', 'external-services', 'preferences', and 'features'. The 'master-services' section is expanded, showing 'cluster-master', 'directory', 'accounting', 'authentication', and 'database'. The main area displays the configuration for these services. Each service has a 'Set', 'Reset', and 'Delete' button. The 'cluster-master' service is configured with 'admin' set to 'enablex' (Resource is active), 'host-box' set to 'cluster/box 1', 'group' set to '0' (from 0 to 32, default=0), 'preempt' set to 'false', and 'takeover-timer-value' set to '1000' milliseconds. The 'directory', 'accounting', 'authentication', and 'database' services are also configured with similar settings, all with 'admin' set to 'enablex' and 'host-box' set to 'cluster/box 1'.

## Step 5. Configuring Basic Services

The **Services** configuration enables event logging and virus scanning services to run on the OS-E. Perform the following steps to configure event logging on the system.

1. Select the **Services** tab then select Services from the left menu pane.
2. On the Configure services page, select **event-log** from the menu pane, accept the defaults and click **Set**. Under the **event-log** configuration, additional options are available that you can configure, as illustrated in the following image.

The screenshot shows the 'acme packet' web interface. The top navigation bar includes 'Home', 'Configuration', 'Status', 'Call Logs', 'Event Logs', 'Actions', 'Services' (selected), 'Keys', 'Access', 'Tools', and 'Portal'. The left sidebar shows a tree view with 'services' expanded, containing 'event-log' (selected), 'syslog', 'file', 'local-database', 'instrument', 'data-locations', 'storage-device', 'tasks', 'master-services', 'external-services', 'preferences', and 'features'. The main content area is titled 'Configure services/event-log' and includes 'Set', 'Reset', 'Back', and 'Delete' buttons. The 'admin' section shows 'enabled' (checked) with '(Resource is active)'. The 'syslog' section contains a table with columns 'syslog', 'admin', 'filter', 'facility', and 'port'. The 'file' section contains a table with columns 'file', 'admin', 'filter', 'size', and 'count'. The 'local-database' section has a 'Delete' link. The 'external-database' section has an 'Add external-database' link. The 'cli', 'smtp', and 'tivoli' sections have 'Configure', 'Add smtp', and 'Add tivoli' links respectively. At the bottom are 'Set', 'Reset', 'Back', 'Help', and 'Index' buttons.

**Services: all**

Configuration Setup View

services

- event-log
- syslog 192.168.215.1
- syslog citi
- file kernel
- file messages
- file steve
- file admin
- local-database
- instrument
- data-locations
- storage-device
- tasks
- master-services
  - cluster-master
  - directory
  - accounting
  - authentication
  - database
  - registration
  - server-load
  - call-failover
  - load-balancing
  - sampling
- external-services
  - policy-group weblogic
  - event-group 1
- preferences
  - gui-preferences
  - click-to-call
- features

**Configure services/event-log** Help Index

Set Reset Back Delete

admin enabled (Resource is active)

syslog

| syslog   | admin   | filter | facility | port |
|--|---------|--------|----------|------|
| <a href="#">Edit</a> <a href="#">Delete</a> <a href="#">syslog 192.168.215.1</a> | enabled | system | user     | 514  |
| <a href="#">Edit</a> <a href="#">Delete</a> <a href="#">syslog citi</a>          | enabled |        | user     | 514  |

[Add syslog](#)

file

| file  | admin   | filter              | size | count |
|---|---------|---------------------|------|-------|
| <a href="#">Edit</a> <a href="#">Delete</a> <a href="#">file kernel</a>   | enabled | kmisys              | 10   | 5     |
| <a href="#">Edit</a> <a href="#">Delete</a> <a href="#">file messages</a> | enabled | all                 | 10   | 5     |
| <a href="#">Edit</a> <a href="#">Delete</a> <a href="#">file steve</a>    | enabled | access              | 10   | 5     |
| <a href="#">Edit</a> <a href="#">Delete</a> <a href="#">file admin</a>    | enabled | access, cms, radius | 10   | 5     |

[Add file](#)

[local-database](#) [Delete](#)

[external-database](#) [Add external-database](#)

cli [Configure](#)

smtp [Add smtp](#)

tivoli [Add tivoli](#)

Set Reset Back

[Help](#) [Index](#)

You can direct the event logs to one or more of the following locations:

- A syslog server
- An ASCII file in an OS-E directory
- A database on the OS-E system
- An external database

The following image shows a configuration that specifies that logs should be directed to a syslog host (at 192.168.215.1), a local file on the system, and the local database. The syslog system will receive messages of the system severity (or lower). The local file is named *messages* is created in the log directory.

The configuration also shows two filters: the first filter captures events of the *system* class with **debug** severity level, and the second filter captures event messages that match the **error** severity level. Refer to the *Net-Net OS-E – System Administration Guide* for information about event logs, syslog, and event filters.

3. In the **file** object, click **Edit**, then enter the name *event-log* in the text block. Click **Set**.

This configures event logging so that messages are written to the local file named *event-log*.

The screenshot shows the 'acme packet' web interface. The top navigation bar includes links for Home, Configuration, Status, Call Logs, Event Logs, Actions, Services, Keys, Access, Tools, and Portal. The 'Services' section is active, displaying a list of services on the left and a configuration panel for 'event-log' on the right.

**Services: all**

- services
  - event-log**
  - instrument
  - data-locations
  - storage-device
  - tasks
- master-services
  - cluster-master
  - directory
  - accounting
  - authentication
  - database
  - registration
  - server-load
  - call-failover
  - load-balancing
  - sampling
- external-services
  - policy-group weblogic
  - event-group 1
- preferences
  - gui-preferences
  - click-to-call

**Configure services/event-log/file messages** [Help](#) [Index](#)

Buttons: Set, Reset, Back, Copy, Delete

\* file: messages

admin: enabled (Resource is active)

filter:

| filter     | severity |
|------------|----------|
| Edit       | Delete   |
| filter all | error    |

[Add filter](#)

size: 10 Mbytes (from 1 to 100, default=10)

count: 5 (from 1 to 20, default=5)

Buttons: Set, Reset, Back, Copy

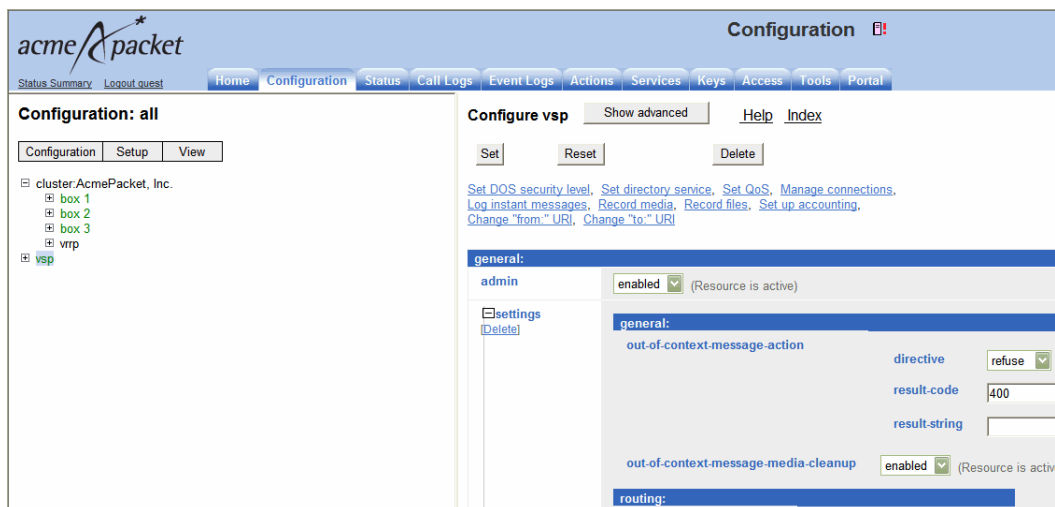
[Help](#) [Index](#)

## Step 6. Enabling the Virtual System Partition (VSP)

The OS-E virtual system partition (VSP) is the part of the system that holds the comprehensive customer-defined configuration that controls how the system processes, stores, directs, and routes SIP traffic. The VSP is where you can create session configurations, registration and dial plans, and policies that handle SIP REGISTER and SIP INVITE traffic (and other SIP methods) that the system will receive and forward to a SIP call destination, authentication and accounting database, VoIP service provider or carrier, enterprise server, and so on.

Using the OS-E Management System, perform the following steps.

1. Select the **Configuration** tab, then select **vsp** from the menu to open the Configure vsp page, as illustrated in the following image.



2. Under the general heading:, change the **admin** state to **enabled**.
3. Click **Set**, then select **Configuration->Update and save configuration**.

# Step 7. Configuring the Accounting Environments

This step is necessary to configure the system to store call detail records and voice call recordings.

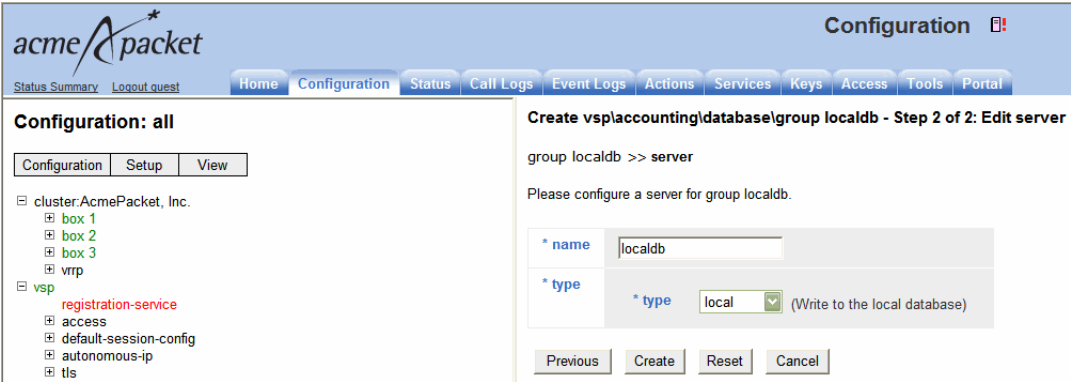
1. Select the OS-E Management System **Configuration** tab, then select **vsp->accounting** from the menu to display the Configure vsp\accounting page, as illustrated in the following image.

The screenshot shows the acmePacket Configuration interface. The top navigation bar includes tabs for Home, Configuration, Status, Call Logs, Event Logs, Actions, Services, Keys, Access, Tools, and Portal. The left sidebar shows a tree view with 'vsp' expanded, and 'accounting' selected. The main panel shows the 'Configure vsp\accounting' page with the following sections:

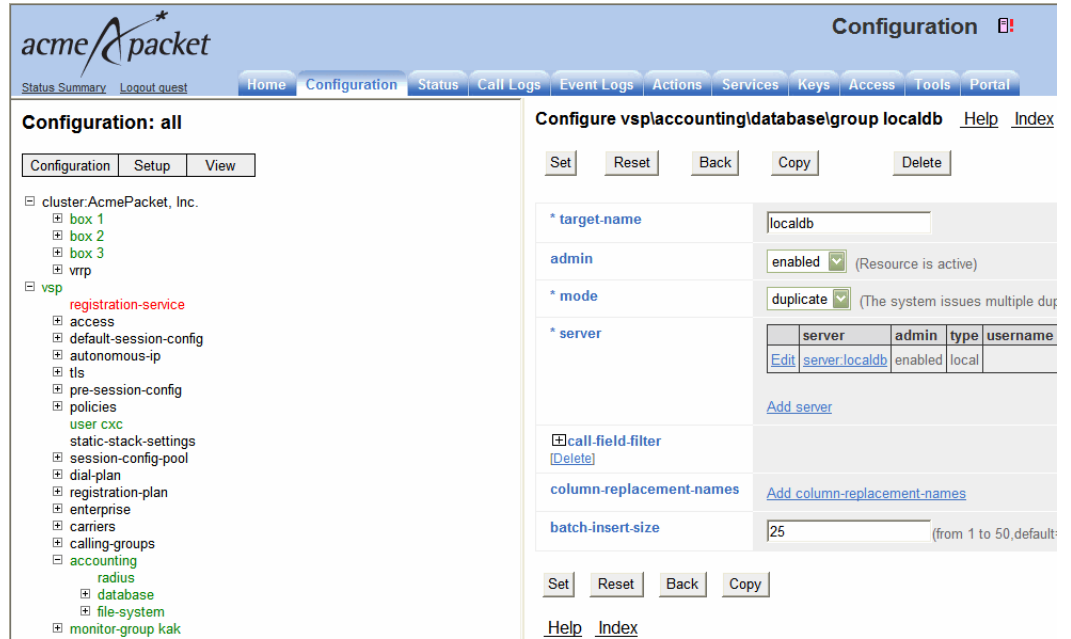
- options:**
  - admin: ☒ enabled (Resource is active)
- targets:**
  - radius: [Configure](#)
  - syslog: [Configure](#)
  - database: [Configure](#)
  - file-system: [Delete](#)
  - external-file-system: [Configure](#)
- archiving:**
  - archiving: [Configure](#)
- purge:**
  - purge-criteria:  (Purge when...)
  - retention-period:  (from 00:00:00 to...)
  - purge-disk-utilization-percent:  % (from 50 to 100)
- other properties:**
  - duration-type: ☒ default (Traditional)
  - subdirectory-size:  records (from 100 to 4,000, default 1000)
  - report: [Add report](#)

Buttons at the bottom of the main panel include Set, Reset, and Back.

2. Under **targets**, go to the **database** and set the **admin** property to enabled.
3. Select the database **Add group** command. The Edit group screen appears, as illustrated in the following image.



4. Enter *localdb* in the **target-name** field and select **Create** to display the Configure database group page, as illustrated in the following image..



5. Click **Edit** and configure the following settings:
- **admin:** enabled
  - **name:** localdb
  - **type:** Select **local**

- **username:** postgres
- **password-tag:** postgres



**Note:** If you set the server **type** to *local*, using the local database as the accounting target, set the **username** and the **password-tag** to *postgres*. If you edit the **username** and **password-tag** properties to anything other than *postgres*, data will not be written to the database.

For information about password tags, refer to the *Net-Net OS-E – Objects and Properties Reference*.

6. Click **Set**, then select **Configuration->Update** and save configuration. The screen appears as illustrated in the following image.

The screenshot shows the acmeApocket Configuration interface. The top navigation bar includes links for Status Summary, Logout, and various configuration tabs. The main content area is titled 'Configuration: all' and shows a tree view of configuration objects. The 'vsp' object is expanded, showing 'registration-service' and 'access'. The 'access' object is selected, and the 'Configure vsplaccounting\database\group localdb\server:localdb' configuration page is displayed. This page has buttons for Set, Reset, Back, and Copy. The configuration fields are as follows:

|              |  |
|--------------|--|
| admin        | enabled (Resource is active)               |
| * name       | localdb                                    |
| * type       | * type local (Write to the local database) |
| username     | postgres                                   |
| password-tag | postgres <a href="#">Manage Password</a>   |

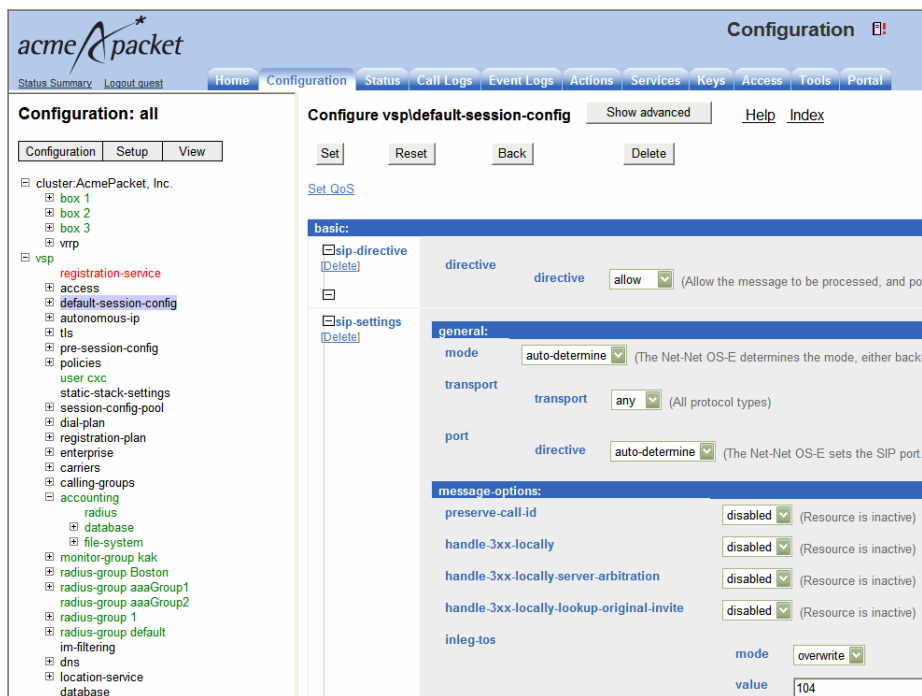
At the bottom of the configuration page are buttons for Set, Reset, Back, and Copy, and links for Help and Index.

## Step 8. Editing the Default Session Configuration

Step 8 configures a default system policy that allows the OS-E to process SIP traffic. By default, and for security purposes, the OS-E does not allow any SIP traffic to pass.



1. Select the Configuration tab, then select **vsp->default-session-config** from the menu to display the vsp/default-session-config page, as illustrated in the following image (top portion).

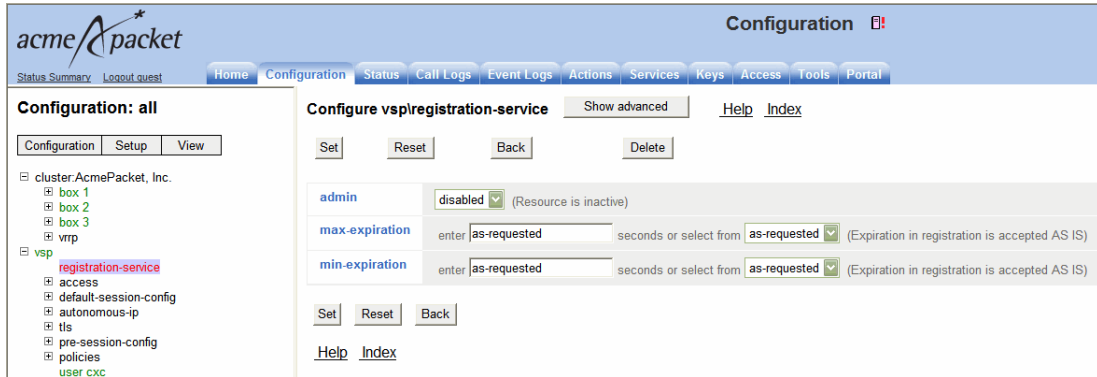


2. In the **sip-directive** object, change the directive policy to **allow**, if not already set. This allows SIP traffic to traverse the OS-E system. Click **Set**.
3. Scroll down to the **media** object. Change the **anchor** and the **recording-policy/record** properties to **enabled**. Accept all other default settings.
4. Click **Set**, then select **Configuration->Update and save configuration**.

## Step 9. Enabling Registration Services

Step 9 enables the OS-E to handle SIP REGISTER sessions, allowing locally registered SIP clients to pass SIP sessions, as well as forward REGISTER sessions to upstream destination registrars.

1. Select the Configuration tab, then select **vsp/ registration-service** from the menu tree to display the vsp/registration-service page, as illustrated in the following image.



2. Accept the default settings and click **Set**. This enables the registration service on the OS-E system.

The OS-E will now provide support for basic SIP calls between locally registered clients.

## Step 10. Reviewing the Configuration

Once you have completed Steps 1 through 9, review the configuration to make sure it is accurate. A quick way to do this is to scan the OS-E Management System navigation tree to make sure there is an entry for each of the objects that you configured.

The following image is a listing of the Configuration and Services objects configured as part of basic OS-E commissioning. If you are using the CLI, run the `show -v` command from the NNOS-E prompt to display the configuration that you just created. The following image displays the configuration and services navigation trees.

Configuration: all

Configuration

Setup

View

cluster:AcmePacket, Inc.

box 1

box 2

box 3

vrp

vsp

registration-service

access

default-session-config

autonomous-ip

tls

pre-session-config

policies

user cxc

static-stack-settings

session-config-pool

dial-plan

registration-plan

enterprise

carriers

calling-groups

accounting

monitor-group kak

radius-group Boston

radius-group aaaGroup1

radius-group aaaGroup2

radius-group 1

radius-group default

im-filtering

dns

acme packet

Status Summary Logout quest

Services: all

Configuration

Setup

View

services

event-log

instrument

data-locations

storage-device

tasks

master-services

cluster-master

directory

accounting

authentication

database

registration

server-load

call-failover

load-balancing

sampling

external-services

preferences

gui-preferences

click-to-call

features



---

# Chapter 4. Installing Net-Net OS-E Clusters

---

## About This Chapter

This chapter provides information on how to install an OS-E cluster, a group of OS-E systems that operate together to support redundancy and failover, high-availability, load balancing, and configuration.

## Net-Net OS-E Cluster Overview

A “high-availability” cluster is a group of OS-E systems that provides a single point of configuration management, and at the same time, expands functionality across multiple devices participating in the cluster. An OS-E *master* manages the configuration for the entire cluster. All members of the cluster share network resources, network load, media ports and streaming, registration, and other processes.

OS-E systems within a cluster may be geographically dispersed in the network. A cluster recovers from the failure of one or more cluster members through health monitoring, shared master services migration, and network redundancy using the Virtual Router Redundancy Protocol (VRRP).

A cluster can be set up to operate as a two-system primary/standby redundant configuration.

## Cluster Operations and Services

In the two-system redundant configuration, one OS-E system is the active master, performing signaling & media processing, and the other OS-E system is available as a standby system for the signaling & media processing if the master fails. Master failover allows another OS-E system to assume the master role in the cluster should the originally configured master become unavailable. VRRP is responsible for handling the failover from the master to the backup device.

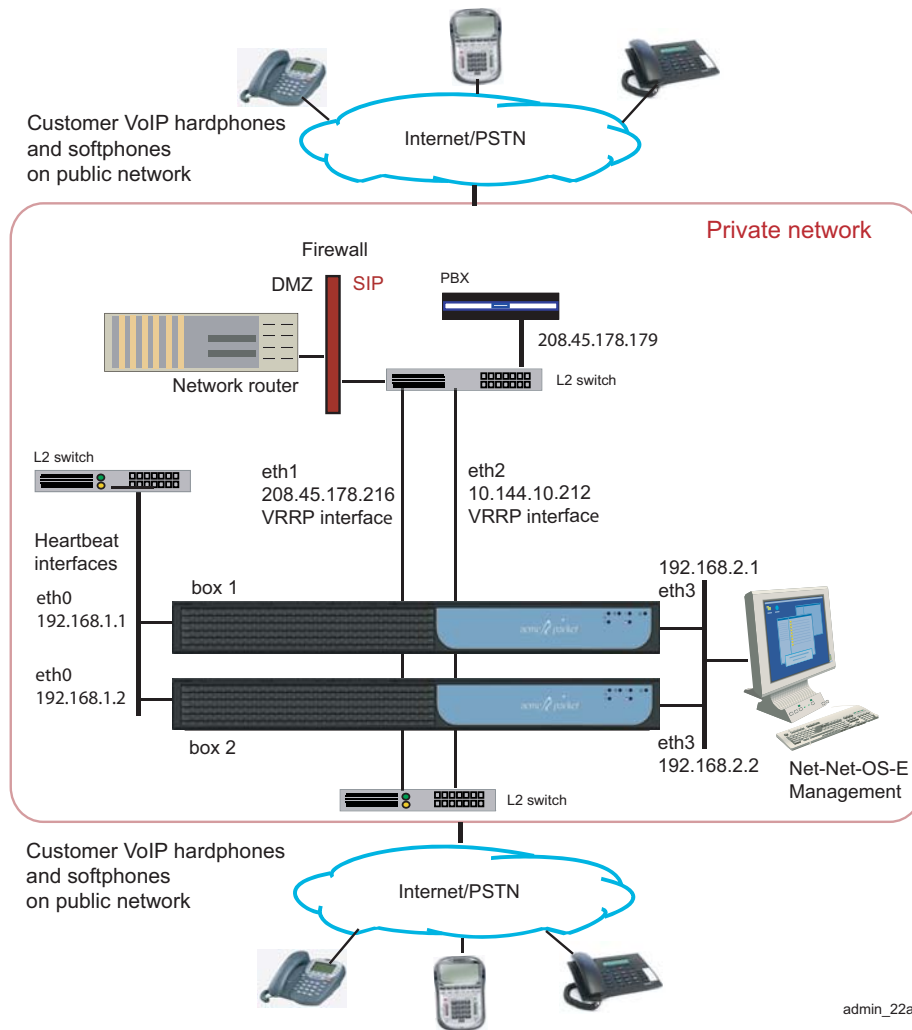
### Master-Services

The **master-services** configuration is responsible for mirroring the state of the cluster to allow reliable failover to a standby device. The following sections describe the suggested settings for the **master-services** objects:

#### Cluster-Master

A **cluster-master** configuration on the OS-E system designated as the master is responsible for passing configuration changes to cluster members. A secondary property called **takeover-timer-value** specifies the number of milliseconds (such as 500) that the master-service stays in “awaiting takeover” mode at boot time.

Use the **show -v** command to display the **current takeover-timer** value. When the OS-E boots, each hosted master-service waits for this period to determine if any existing devices in the cluster are already running that service before assuming mastership.



## Directory

When enabled, directory services allows the OS-E master to use enterprise (or corporate) directories that contain the identities of SIP users who are authorized to access the SIP enterprise communications servers.

In environments running CSTA, it is necessary to link the **directory** master service into a VRRP group with an interface to reach a Broadsoft OCI server. If the directory service is running on an OS-E system that cannot reach the OCI server, the CSTA-to-OCI translation will not function. Use a **takeover-timer-value** of 500 milliseconds.

### **Accounting**

When enabled, accounting services supports RADIUS accounting, system logging (syslog), DIAMETER protocol services, the accounting database, and the accounting file-system

### **Authentication**

Authentication services enables or disables all authentication functions on the OS-E, such as RADIUS and local user profiles. If authentication is disabled, you can still configure the authentication services, but the services do not become active until you enable this master service.

It may be necessary to link the authentication service to VRRP interface(s) using a group configuration if the VRRP interface is used to contact the authentication servers. Use a **takeover-timer-value** of 500 milliseconds for authentication.

### **Database**

The master-services **database** object allows you to configure maintenance and other settings for the OS-E system database. The OS-E database is the local repository for call accounting records and media files

The **database** master service should be on a backup OS-E system, with the secondary property **preempt** set to *true*. This will help maintain the data in one location in the event of a brief service outage.

The **preempt** property specifies whether the master-service should resume the mastership if it has gone down and then returned to operation. If set to *true*, the master resumes its position. If set to *false*, the backup service retains master control.



---

## Server-Load

The master-services **server-load** object configures the OS-E to calculate server load. This object must be enabled if your dial plan arbiter rule settings use **least-load** as the routing algorithm option. (The arbiter rule property sets the criteria by which the OS-E selects the server to which it forwards calls.)

Configure the **server-load** master-service for outbound server load balancing or server based admission\emission control. Currently, the **server-load** master-service should be linked to the VRRP SIP signaling interfaces over a configured group.

## Call-Failover

The **call-failover** master-service configures failover for the media and signaling streams. As a master-service, the configured host OS-E master distributes copies of the media and kernel rules to all backup devices in a cluster. The OS-E uses the database on the host box, but enabling **call-failover** ensures that there is an active copy of the database on another device in the cluster in the event of a failure.

## Registration

Enabling the registration service allows the OS-E to accept SIP REGISTER requests in behalf of other SIP servers (called *registrar peers*) that reside in other domains.

The **registration** master-service configures the registration process for intracuster registration lookups. In a cluster, the registration database runs on the specified master and the selected backups. The **host-box** property establishes the master and selective mirroring. The first OS-E listed is the master, while subsequent devices have mirrored databases. The OS-E systems not configured with the **host-box** property use the local location cache instead of the registration database. The **registration** master-service must be enabled for load-balancing of SIP processing (across backing interfaces configured with the **sip** object) to function correctly.

## Load-Balancing

The master-services **load-balancing** object configures OS-E systems to host the load-balancing master service. For detailed information, see Configuring Cluster Load Balancing.

## **File-Mirror**

The master-services **file-mirror** object sets all participating OS-E systems to share particular files (the types of files shared are preset in the OS-E operating system), such as media recordings, log files, etc. The file-mirror master service distributes files to all OS-E systems listed as hosts for the service.

Once the files are mirrored, you can play them back from any OS-E system that functions as a host.

## **Least-Cost-Routing**

The master-services **route-server** object sets the route-server master service, which manages the server process. The master service handles requests from local or remote OS-E systems for least cost route definitions.

For detailed information on the route-server, see the following manuals:

- *Net-Net OS-E – System Administration Guide*
- *Net-Net OS-E – Objects and Properties Reference*
- *Net-Net OS-E – Session Services Configuration Guide*

## **Sampling**

The master-services **sampling** object opens the mechanism for setting the interval at which the OS-E samples operational aspects of the system for either:

- Display in the OS-E Management System, or
- For sending to an IBM Tivoli server

By setting sampling for a status provider, you can view data for that provider over a specified period of time. The OS-E supports two sampling targets—a Postgres SQL database and an IBM tivoli server. (Set the provider data sent to the target using the **status** and **provider** objects. See *Net-Net OS-E – Objects and Properties Reference* for more information on configuring these objects.)

Once you have enabled **sampling**, the master service stores the samples in its local database.

## Third-Party-Call-Control (3PCC)

The master-services **3pcc** (third-party-call-control) object configures call control, allowing the OS-E or a CSTA client to control (become the third party) in a call. Specifically, this object controls the WAV files that the OS-E should play and the external status events reported to an external server for calls created by the OS-E.

For detailed information on CSTA, see the following manuals:

- *Net-Net OS-E – System Administration Guide*
- *Net-Net OS-E – Objects and Properties Reference*
- *Net-Net OS-E – Session Services Configuration Guide*

## Heartbeat Interface, BOOTP, and Messaging

Use the Ethernet physical interface **eth0** as the heartbeat interface for the OS-E cluster. This interface is used by default for any backup OS-E system that you added to the cluster. The systems will perform a BOOTP request over that interface and you will be able to add these systems by creating an entry for each to the configuration, and then booting them.

Once an OS-E is a member of the cluster, that system will receive a saved configuration file (*cxc.cfg*) from the master. Each time the *cxc.cfg* file is saved on the master, the latest copy of the *cxc.cfg* file is sent to each device in the cluster. You will need to configure a messaging interface on each cluster member so that the master knows the interface over which members of the cluster will receive the *cxc.cfg* file.

## Event Logging

Event logs are stored on each box individually and represent the events that occurred on that particular OS-E system. You configure event logging in the **services/event-logs** configuration object. The recommended event log filters on a cluster are as follows:

- Local-database all error
- File *name* system error
- File *name* krnlsys info
- File *name* system info

- File *name* db info

## Network Time Protocol (NTP)

Ensure that you have NTP configured on all OS-E systems, ensuring that they point to a timeserver which will keep their time synchronized. **DO NOT** use a VRRP interface as your route to the timeserver, since one device will always have the VRRP interfaces down and will not be able to contact the NTP server.

If you do not have access to an external NTP server, configure one of the clustered OS-E systems to be an NTP server for the other cluster members. It is important to run NTP, as the time on all clustered system must be kept synchronized. If the times on the OS-E systems drift apart, the Denial of Service (DOS) software will not function properly, as timestamps are required to make this work across the cluster.

You can configure the NTP-server on the messaging interface on one OS-E system, and have all other devices point to this IP address in their NTP-client configuration.

## Cluster Redundancy Operations

The OS-E cluster redundancy operates as follows:

- Internal messaging is exchanged so that each OS-E system knows the state of the other boxes, either up or down.
- If the active cluster master goes down, the box listed next in the list of cluster masters becomes the active cluster master. (Note that mastership does not automatically go back to the original system when it returns to service.)
- All the other master services work similarly, with an ordered list of devices that can run the service and the active service running on the next device in the list if the active master fails.

If an OS-E system fails, another device in the cluster will assume its network interfaces using VRRP.

## Notes on Cluster Management

The OS-E cluster management operates as follows:

- Within a given cluster, one box functions as the active cluster master.

- Configuration and management of all boxes within a cluster is performed through the cluster master.
- There are no limitations on how many boxes within the cluster can be configured as backup cluster masters or backups for any of the master services.
- The configuration contains a list of boxes that can be cluster masters. The ordering of this list reflects the order in which boxes attempt to become master (i.e. the box listed first becomes the initial master, if that box fails then the next box in the list attempts to become the master, etc.)
- The OS-E Management System connects to the cluster master and provides a single point of management for the following:
  - Configuration
  - Status reports
  - Call logs
  - Accounting data
  - Actions
- The CLI provides single point of management for configuration using the CLI on the cluster master. The CLI is still available on all the other devices in the cluster, so any CLI commands can be executed on individual boxes.
- Note that the management functionality available from a given cluster is dependent on the functionality being performed by that cluster. For example, call logs are available only on clusters where signaling is performed; media recordings are available only on clusters where media streaming is performed.

## Cluster Installation Prerequisites

Before beginning the cluster installation, ensure that any L2/L3 switch supporting the cluster has the Port Fast, Fast Link, or similar feature turned on. This allows the switch to run the Spanning Tree 802.1 protocol so that the switch ports being used by the OS-E go directly to the “forwarding” state. If the switch does not support Port Fast or Fast Link, disable the Spanning Tree protocol for the VLANs associated with the switch ports being used by the OS-E.

---

## Cluster Installation Procedure

There are a number of steps that you need to follow to install an OS-E network cluster. You will need to know certain information about all the systems in the cluster for proper operation.

Each step uses a sample CLI session of commands that best illustrate how to best configure important settings.

1. Determine the specific OS-E system to assume the role of cluster master. Configure **master-services** to specify the device the cluster to assume initial mastership.

```
NNOS-E> config master-services
config master-services> config cluster-master
config cluster-master> set admin enabled
config cluster-master> set host-box cluster\box 1
config cluster-master> set host-box cluster\box 2
config cluster-master> set group 1
config cluster-master> return
```

2. Note the MAC address (identifier) on each device in the cluster. The MAC address is on a sticker on the back of the system. Write down each MAC address on a pad or piece of paper.

On each device, if there is no sticker present, attach a laptop or standard PC to the system console port and perform the following steps:

- a. Power up the system
  - b. At the NNOS-E prompt, execute the **show interface-details eth0** command to display the MAC address.
3. Attach a console to the cluster master and power up the OS-E system.
  4. Configure the cluster master by configuring the Ethernet interfaces, IP addresses, and protocols. Ethernet interface eth0 is the “heartbeat” interface for the cluster. Use the eth0 interface on each OS-E system as the connection to the cluster.

```
NNOS-E> config cluster
config cluster> config box 1
config box 1> set identifier 00:04:23:d7:9f:34
config box 1> config interface eth0
config interface eth0> config ip heartbeat
Creating 'ip heartbeat'
config ip heartbeat> set ip-address static 192.168.1.1/24
config ip heartbeat> config telnet
config telnet> return
config ip heartbeat> config ssh
```

```
config ssh> return
config ip heartbeat> config bootp-server
config bootp-server> return
config ip heartbeat> config vrrp
config vrrp> return
```



**Note:** Optionally, you can run the **config setup** script to configure the IP addresses, management port, and other settings presented in the script.

By configuring messaging on the OS-E master, the master looks through the configurations of all other devices to find out which interface is used for messaging. (If multiple interfaces are configured, the master only communicates with one—the first it finds.) The master then communicates with the identified interface to share configuration and data.

```
config ip heartbeat> config messaging
config messaging> set admin enabled
config messaging> set certificate vsp tls
                    certificate 208.45.178.216.pfx
config messaging> set port 5312
config messaging> set protocol tls
config messaging> return
config ip heartbeat> return
config interface eth0> return
config box 1>
```

Configure the interface and the protocols over which you will run management sessions to the OS-E. This is an “out-of-band” interface that allows you to separate management traffic from SIP signaling and media streams.

```
config box 1> config interface eth3
Creating 'interface eth3'
config interface eth3> config ip mgmt
Creating 'ip mgmt'
config ip mgmt> set ip address static 192.168.2.1/24
config ip mgmt> config ssh
config ssh> return
config ip mgmt> config web
config web> set protocol https 443 0
config web> return
config ip mgmt> config sip
config sip> set udp-port 5060
config sip> return
config ip mgmt> config icmp
config icmp> return
config ip mgmt> config media-ports
config media-ports> return
config ip-mgmt> return
config interface eth3> return
```

```
config box 1> config cli
config cli> set prompt nn2610-1
config cli> set banner ""
config cli> set display paged 50
config cli> return
config box 1> return
config cluster>
```

5. Configure the second OS-E system in the cluster. Note that you also configure eth0 as the “heartbeat” interface to the cluster.

```
config cluster> config box 2
config box 2> set hostname nn2610-2
config box 2> set name ""
config box 2> set contact ""
config box 2> set location ""
config box 2> set identifier 00:04:23:c3:22:f4
config box 2> config interface eth0
config interface eth0> config ip heartbeat
config ip heartbeat> set ip-address static 192.168.1.2/24
config ip heartbeat> config telnet
config telnet> return
config ip heartbeat> config ssh
config ssh> return
config ip heartbeat> config web
config web> set protocol https 443 0
config web> return
config ip heartbeat> config icmp
config icmp> return
config ip heartbeat> config vrrp
config vrrp> return
config ip heartbeat> config messaging
config messaging> set admin enabled
config messaging> set certificate vsp tls
certificate 208.45.178.216.pfx
config messaging> set port 5312
config messaging> set protocol tls
config messaging> return
config ip heartbeat> return
config interface eth0> return
config box 2>
```

Configure the interface and the protocols over which you will run management sessions. This is an “out-of-band” interface that allows you to separate management traffic from SIP signaling and media streams.

```
config box 2> config interface eth3
Creating 'interface eth3'
config interface eth3> config ip mgmt
Creating 'ip mgmt'
config ip mgmt> set ip address static 192.168.2.2/24
```



```
config ip mgmt> config ssh
config ssh> return
config ip mgmt> config web
config web> set protocol https 443 0
config web> return
config ip mgmt> config sip
config sip> set udp-port 5060
config sip> set nat-translation enabled
config sip> return
config ip mgmt> config icmp
config icmp> return
config ip mgmt> config media-ports
config media-ports> return
config ip-mgmt> return
config interface eth3> return
config box 1> config cli
config cli> set prompt NNOS-E-2
config cli> set banner ""
config cli> set display paged 50
config cli> return
config box 1> return
config cluster> set share media-ports true
config cluster> set share signaling-entries true
config cluster> set mirror-media-streams true
```

6. Configure VRRP on the OS-E interfaces to handle the public and private sides of the network. Note that the first VRRP interface connects the public side; the second VRRP interface connects the private side.

A VRRP configuration for IP interfaces includes a list of box/interface pairings. The first pair in this list is the *primary interface*. The second pair in the list is the *backup interface* and will take over if the primary goes down. You can configure additional levels of redundancy by specifying more box/interface pairs of lower priority. Priority is based on the positioning of the **set host-interface** command.

```
config cluster> config vrrp
config vrrp> config vinterface vx0
config vinterface vx0> set group 1
...vinterface vx0> set host-interface cluster box 1 interface eth1
...vinterface vx0> set host-interface cluster box 2 interface eth1
config vinterface vx0> config ip public
Creating 'ip public'
config ip public> set ip-address static 208.45.178.216/28
config ip public> config ssh
config ssh> return
config ip public> config web
config web> set protocol https 443 0
config web> return
config ip public> config sip
config sip> set nat-translation enabled
```

```
config sip> set udp-port 5060
config sip> set tcp-port 5060
config sip> set tls-port 5061
config sip> set certificate vsp\tls\certificate 208.45.178.216.pfx
config sip> return
config ip public> config icmp
config icmp> return
config ip public> config media-ports
config media-ports> return
config ip public> config routing
config routing> config route default
Creating 'route default'
config route default> set gateway 208.45.178.209
config route default> return
config routing> return
config ip public> return
config vinterface vx0> return
config vrrp>

config cluster> config vrrp
config vrrp> config vinterface vx1
config vinterface vx1> set group 1
...vinterface vx1> set host-interface cluster box 1 interface eth2
...vinterface vx1> set host-interface cluster box 2 interface eth2
config vinterface vx1> config ip private
Creating 'ip private'
config ip private> set ip-address static 208.45.178.216/28
config ip private> config ssh
config ssh> return
config ip public> config web
config web> set protocol https 443 0
config web> return
config ip private> config sip
config sip> set nat-translation enabled
config sip> set udp-port 5060
config sip> set tcp-port 5060
config sip> set tls-port 5061
config sip> set certificate vsp\tls\certificate 208.45.178.216.pfx
config sip> return
config ip private> config icmp
config icmp> return
config ip private> config media-ports
config media-ports> return
config ip private> config routing
config routing> config route static-to-asx
Creating 'route static-to-asx'
config route static-to-asx> set destination network 208.45.178.0/24
config route static-to-asx> set gateway 10.144.10.254
config route static-to-asx> return
config routing> return
config ip private> return
```

```
config vinterface vx1> return
config vrrp> return
config cluster> return
```

7. Configure the master-services that you want to run on the cluster.

```
config> config master-services
config master-services> config accounting
config accounting> set host-box cluster\box 1
config accounting> set host-box cluster\box 2
config accounting> set group 1
config accounting> return
config master-services> config database
config database> set host-box cluster\box 1
config database> set host-box cluster\box 2
config database> set group 1
config database> set media enabled
config database> return
config master-services> return
config>
```

8. For TLS, you will need to upload the TLS certificate file on each OS-E system in the cluster. Copy the certificate that you receive from the CA to the OS-E using a compatible file transfer mechanism, such as PuTTY Secure Copy (PSCP). If you have the file on a local network PC, use PSCP to move the file to a directory path on the OS-E.

The following example PSCP command copies the certificate file named **208.45.178.216.pfx** from the PC root directory to the OS-E system at IP address **208.178.216.pfx** in the directory **/cxc/certs/208.45.178.216.pfx**.

```
C:\ pscp -l root -pw sips -P 2200 208.45.178.216.pfx
208.45.178.216:/cxc/certs/208.45.178.216.pfx
```

The following CLI session sets the directory and certificate file name path, specifies the passphrase, and whether to allow SSL Version 2 operability.

```
NNOS-E> config vsp
config vsp> config tls
config tls> config certificate 208.45.178.216.pfx
config certificate 208.45.178.216.pfx> set allow-ssl2 true
config certificate 208.45.178.216.pfx> set certificate-file /cxc/
certs/208.45.178.216.pfx.pfx
config certificate 208.45.178.216.pfx> set passphrase-tag pass
```

By default, the OS-E only supports SSLv3 or TLSv1. If you require SSLv2 for interoperability, set this property **true**. Specify the passphrase-tag associated with the certificate file. Use this property if the certificate file is encrypted to have its private key information protected. This passphrase tag must match the string with which the certificate was encrypted.

9. Power up the other OS-E systems in the cluster and connect them to the network. This initiates a configuration download from the cluster master so the systems acquire their initial configuration (IP addresses, etc.).
10. Use the CLI or OS-E Management System at the cluster master to configure any additional features. These features include the objects and settings under the VSP object, including:
  - default-session-config
  - registration-plan
  - dial-plan
  - enterprise servers, carriers, and gateways

## Configuring External Messaging

Messaging is the mechanism the OS-E uses to communicate among boxes in a cluster. Messaging sets up a listening socket on an interface, enabling the interface to receive messaging traffic and participate in clustering and media partnering.

In a cluster, the master looks through the configurations of all OS-E systems to find out which interface is used for messaging. (If multiple interfaces are configured, the master only communicates with one—the first it finds.) The master then communicates with the identified interface to share configuration and data.

In media partnering, you configure a specific IP address (on a different box) as a partner. On the box that owns that IP address, you need to configure and enable messaging for media partnering to operate.

### CLI Session

The following CLI session configures messaging on box 1, interface eth0.

```
NNOS-E> config cluster
config cluster> config box 1
config box 1> config interface eth0
config interface eth0> config ip boston1
config ip boston1> config messaging
config messaging> set admin enabled
config messaging> set certificate vsp tls certificate name
config messaging> set port 13002
config messaging> set protocol tls
```

---

## Configuring Cluster Load Balancing

Load balancing of SIP processing across cluster interfaces requires both headend and backing interfaces. The *headend* interface is the central distribution point. It does not do any SIP processing, it only forwards the calls to its configured backing interfaces. When you configure a SIP phone, you would configure it to point to the headend interface.

To configure an IP interface as a headend interface, you simply configure the **sip** object with backing interfaces. Their presence contained within the IP configuration results in the interface being treated by the OS-E as a headend interface.

The *backing-interfaces* are identified as such within this **sip** object. In the **backing-interface** property, you reference previously configured IP interfaces. The backing interface is the location at which the OS-E terminates TCP and TLS connections (and where UDP transport messages arrive) and handles SIP processing. The OS-E uses round-robin load-balancing to distribute message across the configured backing interfaces.

To correctly configure load-balancing for SIP processing, you must do the following:

1. Configure the IP interfaces that will be used for both the headend and backing interfaces.
2. The SIP properties of the backing interfaces must match those of the head interface. For example, they must all use the same port assignments, and if you are using TLS, they must all use the same certificate.
3. You must enable the **master-services registration** object so that the interfaces can share the registration database.

To verify your configuration, first ensure that all SIP properties match. From the CLI at the headend, execute the **show load-balance** command. This lists all associated backing interfaces (and statistics). From each box hosting a backing interface, execute **show backing-interface** to display configuration and statistics information.

The following CLI session assumes that you have configured a three-box cluster, with box 1 containing the headend interface, with boxes 2 and 3 containing the backing interfaces over which traffic is load balanced. This session sets the backing interfaces for load balancing SIP traffic that is distributed from the headend interface at IP address 215.2.3.0/24.

### CLI Session

```

config> config cluster
config cluster> config box 1
config box 1> config interface eth1
config interface eth1> config ip public
Creating 'ip public'
config ip public? set ip-address static 215.2.3.0/24
config ip public> config sip
config sip> config load-balancing
config load-balancing> set backing-interface cluster box 2 interface
eth1 ip public
Creating 'cluster\box 2\interface eth1\ip public'
config load-balancing> set backing-interface cluster box 3 interface
eth1 ip public

config sip> show
cluster
box 1
  interface eth1
    ip public
    sip
      admin enabled
      backing-interface cluster\box 2\interface eth1\ip public2
      backing-interface cluster\box 3\interface eth1\ip public3

NNOS-E> show load-balance

Head-end IP 215.2.3.0: undersubscribed:
-----
Backing IP      State      Added      Removed     Maximum     Current     Percent
-----
215.6.7.0      Down       0           0           0           0           0.0%
215.8.9.0      Down       0           0           0           0           0.0%
-----
Totals:         0           0           0           0           0           100.0%

NNOS-E>

```

## Restarting an OS-E Cluster

You can perform a simultaneous warm restart of all systems in a cluster by using the **restart cluster** command. A warm restart simply restarts the OS-E applications on each system without rebooting the operating system.

If you warm restart an individual device in the cluster, the OS-E automatically rejoins the cluster when it comes back up. If that box is hosting a master service or a VRRP interface, the service or interface may fail over to a different OS-E system.

If you need to shut a system down by turning the power off, use the **restart halt** command before pressing the power button or disconnecting the power source. A **restart halt** will properly prepare a system for a shutdown. The OS-E system will rejoin the cluster when it comes back up.





---

# ***Chapter 5. Installing Certificates and Commissioning TLS Networks***

---

## **About This Chapter**

This chapter provides information on commissioning the OS-E to run the Transport Layer Security protocol (TLS) over Ethernet interfaces.

## **TLS Overview**

TLS is an encapsulation (and cryptographic) protocol that provides privacy and security between communicating applications over the Internet. The OS-E uses TLS to authenticate SIP users and to encrypt/decrypt SIP traffic across participating carrier and enterprise SIP applications.

For a complete description of the TLS protocol, refer to the following RFCs:

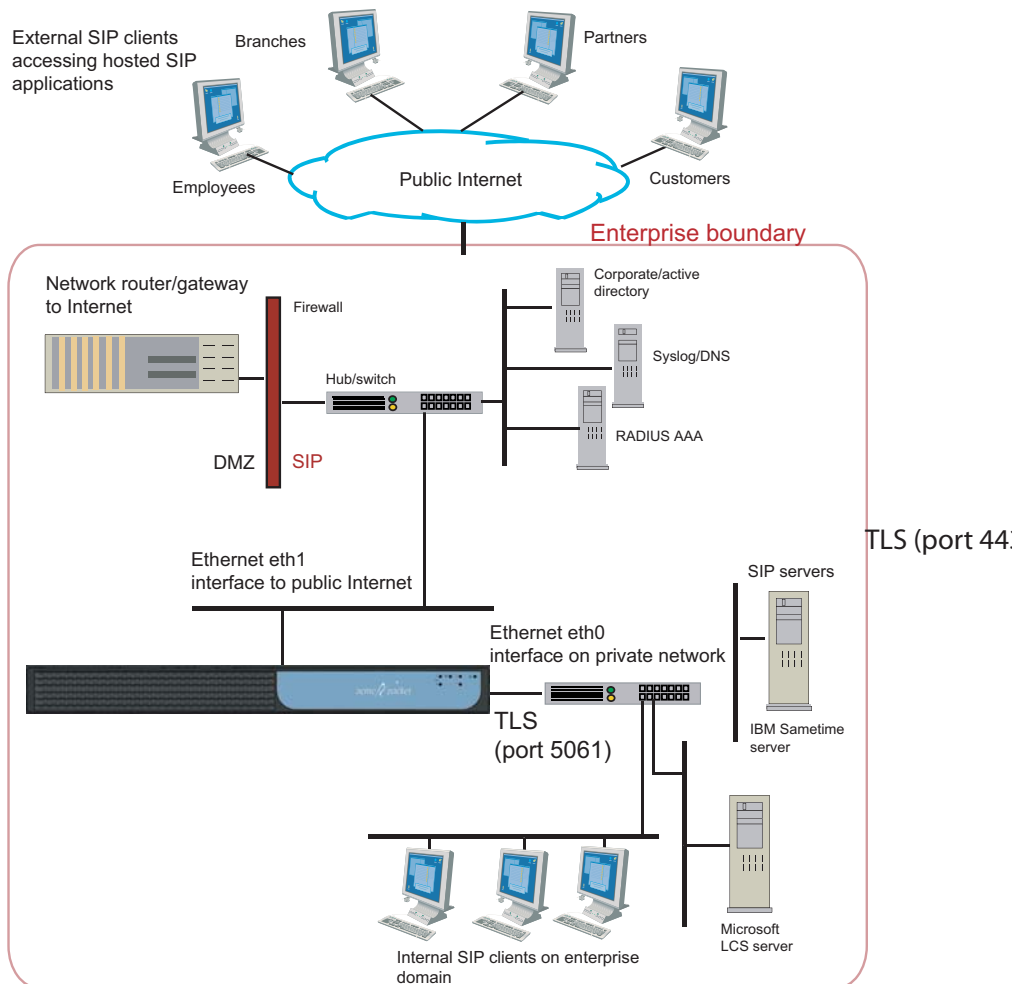
- RFC 2246, The TLS Protocol Version 1.0
- RFC 3261, Session Initiation Protocol (see Section 26.3.1)

The image below illustrates a sample network running TLS on Ethernet interfaces to both the private network and the public Internet.

## **Steps to Configuring TLS**

To configure the private and public network interfaces in the image below, with TLS you need to perform the following steps:

1. If not already done, configure the management interfaces, network routes, protocols, and services using the **cluster/box**, **master-services**, and **services** objects.
2. If not already done, install a signed certificate from a valid Certificate Authority (CA). Go the section, “Before Configuring TLS.”.
3. Configure the certificate using the **tls/vsp** configuration object. Go to the section, “Configuring the Certificate on the OS-E.”
4. Configure the SIP protocol on each interface to use the installed certificate. Go to the section, “Configuring TLS on Ethernet Interfaces.”





**Note:** If you are operating with Microsoft Live Communications Server (LCS), refer to the *Net-Net OS-E – System Administration Guide* for information on installing, importing, and exporting certificates.

## Before Configuring TLS

You will need to install the required X.509 certificate(s) for the TLS protocol and SIP session establishment. A certificate includes the *.cer* certificate file name and the encrypted keys, mathematically related private and public data keys indexed by a unique name. A private key is kept secure—never displayed and never transmitted over the network. A public key, when bound to a fully qualified domain name (FQDN) by an authorized certification authority (CA), becomes an X.509 certificate.

If you do not have a certificate and encrypted key for your network, use this section to create and install a certificate. See the following table below for a summary of required steps.

| Task   | See this section   | CLI command         |
|--|--|---------------------|
| 1. Using the OS-E software, create a self-signed X.509 certificate and encrypted key.  | <i>Creating a self-signed certificate and key pair from the OS-E</i> | <b>cert-gen</b>     |
| 2. Using the self-signed certificate that you created in Step 1, generate a Certification Signing Request (CSR) in PEM format. | <i>Generating a Certification Signing Request (CSR)</i>              | <b>cert-request</b> |

| Task  | See this section  | CLI command        |
|---|---|--------------------|
| <p>3. Sign the CSR using one of these two methods:</p> <ul style="list-style-type: none"><li>• Use a valid CA, like VeriSign (required if a “trusted” certificate is necessary) to sign the CSR</li><li><b>or</b></li><li>• Use OpenSSL to sign the CSR</li></ul> | <i>Signing a CSR using either a valid CA or OpenSSL</i> | N/A                |
| <p>4. When you receive the signed certificate, use the OS-E software to load the signed certificate onto the system.</p>  | <i>Updating the self-signed certificate</i>             | <b>cert-update</b> |

## Step 1. Creating a Self-Signed Certificate and Key Pair from the OS-E

Use the OS-E software to generate a cryptographic key pair and a self-signed X.509 certificate in PKCS#12 format. Once you create a self-signed certificate, you can generate the Certification Signing Request, a portion of which will be required by the CA upon submission of their form.

Under **Actions**, select **cert-gen** from list. The following image illustrates the OS-E Management System **Generate new key and certificate** page.

**cert-gen**

Generate 1024 bit RSA private key and associated X509 certificate.

|                     |  |                                     |
|---------------------|--|-------------------------------------|
| * keyFile           | <input type="text"/>   | <a href="#">Browse System Files</a> |
| * passphrase        | <input type="text"/>   |                                     |
| * alias             | <input type="text"/>   |                                     |
| * common-name       | <input type="text"/>   |                                     |
| days-valid          | <input type="text" value="365"/>   |                                     |
| country             | enter <input type="text" value="US"/> or select from <input type="text" value="US"/> (United States) |                                     |
| alternate-name      | <input type="text"/>   |                                     |
| organization        | <input type="text"/>   |                                     |
| organizational-unit | <input type="text"/>   |                                     |
| state               | <input type="text"/>   |                                     |
| locality            | <input type="text"/>   |                                     |

Important: You must specify the same FQDN for the *alias* and *common name* fields. The values of these two fields must match in order to generate the certificate.

Complete the fields on the **Generate new key and certificates** page, as follows:

**keyFile**—Specify the name and directory path of the resulting key name that you want to use, along with the p12 or .pfx file extension. This is a mandatory field.

Example: /cxc/certs/myNetworkKey.p12

**passphrase**—Specify a password to be associated with the self-signed certificate. The text that you specify will be encrypted in the certificate.

**alias**—Specify the FQDN of the OS-E system using this certificate, such as *nn2610.acmepacket.com*. Omit HTTP:// and HTTPS://. This allows the certificate to be referenced.



**Note:** The value (FQDN) you enter for the **alias** field must be identical to the value you enter for the **common-name** field.

---

**common-name**—Specify the FQDN of the OS-E system using this certificate, such as *nn2610.acmepacket.com*. Omit HTTP:// and HTTPS://. Do not use your personal name in this field. The common name is a component attribute of the certificate's *distinguished name*.

**days-valid**—Enter the number of days for which the certificate is valid. If your certificate is effective for one year, then enter the number 365

**country**—Select the ISO country code: US (United States), AU (Australia), IN (India), IT (Italy), UK (United Kingdom), CA (Canada). The country is a component attribute of the certificate's *distinguished name*.

**alternate-name**—Optional; this usually a name that complies with the ASN.1 specification, such as a DNS name, IP address, URI, etc.

**organization**—Optional. Enter the name under which your business is legally registered. The listed organization must be the legal registrant of the domain name in the certificate request. If you are enrolling as a small business/sole proprietor, enter the certificate requestor's name in the "Organization" field, and the DBA (doing business as) name in the "Organizational Unit" field. The organization is a component attribute of the certificate's *distinguished name*.

**organizational-unit**—Optional. Use this field to differentiate between divisions within an organization. For example, "Engineering" or "Human Resources." If applicable, you may enter the DBA (doing business as) name in this field. The organizational unit is a component attribute of the certificate's *distinguished name*.

**state**—Optional; if in the US, enter one of the fifty state names in full where your organization is located, such as Massachusetts; if outside the US, enter the full name of a province or region.

**locality**—Optional; enter the name of a city.

When you are finished filling out the fields, click **Invoke**. The message line on the **Generate new key and certificate** page should report “Success.”

## Viewing the Certificate

To view the self-signed certificate, select the **Keys** tab from the main menu bar, then select the keyFile that you just created from the Key Stores list on the left. Click View to display the Certificate Properties page, as shown in the following image.

The screenshot shows the Eclipse Key Stores application interface. At the top, there is a navigation bar with tabs: Home, Configuration, Status, Call Logs, Event Logs, Actions, Services, **Keys**, Access, Tools, and Portal. Below the navigation bar, the main content area is divided into two sections. The left section, titled "Key Stores", lists three key stores: netCert, s, and test.p12. Below the list are icons for "New" and "Import". The right section, titled "Manage Key Store netCert", contains a table with columns "Type", "Alias", and "Action". The "Type" column shows a key icon. The "Alias" column is empty. The "Action" column contains links: View, Request, Update, and Delete. Below the table are icons for "Import", "New", "Save", "Passphrase", "Reload", and "Delete". Below the "Manage Key Store netCert" section is a link "View Certificate From netCert". Clicking this link leads to the "Certificate Properties" page. This page has a title bar "Certificate Properties" and a table with columns "Property" and "Value". The table lists the following properties: Type (X.509), Version (3), Subject (CN=www.company.com, C=US), Issuer (CN=www.company.com, C=US), Valid After (May 25, 2006 2:45:41 PM), Valid Until (Jul 24, 2006 2:46:31 PM), Serial Number (-2772902702121902149), and Signature Algorithm (MD5WithRSAEncryption). Below this table is another table titled "Other Properties" with columns "Property" and "Value". It lists: Subject DN (C=US,CN=www.company.com) and Issuer DN (C=US,CN=www.company.com). Below this is a table titled "Extensions" with columns "Critical", "Extension", and "Value". It lists three extensions: Basic Constraints (2.5.29.19) with value #0, Extended Key Usage (2.5.29.37) with value TLS Web Server Authentication (1.3.6.1.5.5.7.3.1), and Key Usage (2.5.29.15) with value #030205A0.

Logout guest

Eclipse Key Stores

Home Configuration Status Call Logs Event Logs Actions Services **Keys** Access Tools Portal

**Key Stores**

netCert  
s  
steve  
test.p12

New Import

**Manage Key Store netCert**

| Type | Alias | Action                              |
|------|-------|-------------------------------------|
|      |       | View<br>Request<br>Update<br>Delete |

Import New Save Passphrase Reload Delete

**View Certificate From netCert**

**Certificate Properties**

| Property            | Value                    |
|---------------------|--------------------------|
| Type                | X.509                    |
| Version             | 3                        |
| Subject             | CN=www.company.com, C=US |
| Issuer              | CN=www.company.com, C=US |
| Valid After         | May 25, 2006 2:45:41 PM  |
| Valid Until         | Jul 24, 2006 2:46:31 PM  |
| Serial Number       | -2772902702121902149     |
| Signature Algorithm | MD5WithRSAEncryption     |

**Other Properties**

| Property   | Value                   |
|------------|-------------------------|
| Subject DN | C=US,CN=www.company.com |
| Issuer DN  | C=US,CN=www.company.com |

**Extensions**

| Critical                            | Extension                      | Value   |
|-------------------------------------|--------------------------------|---|
| <input checked="" type="checkbox"/> | Basic Constraints (2.5.29.19)  |   |
| <input checked="" type="checkbox"/> | Extended Key Usage (2.5.29.37) | TLS Web Server Authentication (1.3.6.1.5.5.7.3.1) |
| <input checked="" type="checkbox"/> | Key Usage (2.5.29.15)          | #030205A0   |

## Step 2. Generating a Certification Signing Request (CSR)

After you create the self-signed certificate from Step 1, you need to generate a certification signing request (CSR) that you can submit to the CA for the X.509 certificate. Select the **request** action.

The following image illustrates the Generate Certificate Signing Request page and the resulting certificate signing request. Enter the password that you created in Step 1 in the passphrase text box and click on **Generate Certificate Signing Request**.

The top screenshot shows the Eclipse Key Stores interface. The 'Keys' tab is selected. Under 'Key Stores', 'netCert' and 'test.p12' are listed. A 'Passphrase:' text box and a 'Generate Certificate Signing Request' button are visible.

The bottom screenshot shows the resulting Certificate Signing Request for the 'netCert' key store. The CSR text is as follows:

```
-----BEGIN CERTIFICATE REQUEST-----
MIIBZDCBzgIBADAnM0swCQYDVQGEwJVUzEYMBYGA1UEAxMPd3d3LmNhbXBhbnku
Y291MIGMA0GCSqGSIb3DQEBAQUAA4GNADCBiQKBgQCKmFPpBtxe3YnFtQVDbqJ
NU3R0L9WoORoR5xYTK1nO1rkNtwOCVApHzbBM1J51m+Lc6u3mw7aSRG5AU+smeBG
V8gGGwe9Vh5+cc2wWVRID13Qe6YTGIAA559K03UzwaA641489FB5cQZJNmYdAMC
Rk9soetED44PRy71k6tulbQIDAQABMA0GCSqGSIb3DQEBAQUAA4GBAAFP9PTJz1d7
7THqVDC1BvAdA6boS6fmX64ikeTjghbk9rLuVwD7yDQ2VCGrR6mUq5h6uOvp
ZC7BEqNSW4Ffwlc8DiiNjGR1MPZLNETNQBURxVbixzKISjgO4I+wSGyjdjW2h3x1e
n4LBeg3n9/91zxW0F56tNIH+Rb5995VO -----END CERTIFICATE REQUEST-----
```

Follow the instructions on the Certificate Signing Request page to copy and paste the text into the certificate application form provided by the CA.



If you choose to create a CSR in a PEM-formatted file, select the **cert-request** action. The file will contain the same request as shown in the following image.

The screenshot shows the Eclipse Action console interface. At the top, there's a navigation bar with tabs: Home, Configuration, Status, Call Logs, Event Logs, Actions (selected), Services, Keys, Access, Tools, and Ports. Below the navigation bar, the 'Actions' section is active, displaying a list of actions on the left and the configuration for the 'cert-request' action on the right. The 'cert-request' action is selected, and its configuration fields are visible: 'key-file', 'passphrase', 'alias', and 'csr-file'. Each field has a text input box and a 'Browse System Files' button. The 'Invoke' button is located at the bottom right of the configuration area.

| Field        | Value | Action              |
|--------------|-------|---------------------|
| * key-file   |       | Browse System Files |
| * passphrase |       |                     |
| * alias      |       |                     |
| * csr-file   |       | Browse System Files |

Invoke

Complete the fields on the **Generate Certification Request** page, using the same settings that you invoked from Step 1, as follows:

**key-file**—Specify the name and OS-E directory path of the resulting key name that you want to use, along with the p12 or .pfx file extension. This is a mandatory field. Example: /cxc/certs/myNetworkKey.p12

**passphrase**—Specify a password to be associated with the certificate issued by the CA. The text that you specify will be encrypted in the CSR.

**alias**—Optional. However, the value you enter for the **alias** field must be identical to the value you enter for the **common-name** field.

**csr-file**—Specify the name and directory path of the resulting CSR file. This is the file from which you will cut and paste the required information for the CA at the time that you submit the certificate request. By default, the CSR file resides in the directory named /cxc/certs.

When you are finished filling out the fields, click **Invoke**. The message line on the Generate Certification Request page should report “Success.”

## Viewing the .CSR File

Since the .cer file is in PEM format, you can open the view the file using a text editor.

## Step 3. Signing a CSR Using Either a Valid CA or OpenSSL

After you generate the CSR, you need to sign the CSR using *one* of two methods. You can either:

- Sign the CSR using a well-known CA, for example, VeriSign. (*See the instructions below*).

**or**

- Sign the CSR using OpenSSL.

This section describes how to sign the CSR using either method.



**Note:** If your network requires a “trusted” certificate, then follow the instructions below to sign the CSR using a valid, well-known CA.

---

### Using a Certification Authority to Sign the CSR (Method 1)

You get the signed X.509 certificate from a valid CA, such as VeriSign. The CA issues a certificate stating and guaranteeing that the key contained in the certificate belongs to the person or organization noted in the certificate. The CA verifies the identity of the applicant's so that users can trust certificates issued by that CA to belong to the people and data identified in it, and not to an imposter

#### Certificate Formats

The OS-E certificate file can be in the following formats:

- PKCS#12—Public Key Cryptography Standard #12 format from Microsoft IIS Version 5 (binary)
- PEM—Privacy-enhanced mail (PEM) encoded format from any OpenSSL-based Web server (ASCII)

### Using OpenSSL to Sign the CSR (Method 2)

This section provides information on how you can generate a self-signed certificate for testing TLS with the OS-E using OpenSSL. This is an alternative method to using a valid CA to sign the CSR.

This section describes how to do the following things:

- Create an OpenSSL Certificate Authority (CA).
- Generate a private key and CSR on the OS-E system and sign in with the OpenSSL CA.
- Generate a Private Key and CSR without the OS-E system (not supported).
- Use OpenSSL to convert an X.509 certificate and/or RSA key to a Public-Key Cryptography Standard #12 (PKCS#12) format.



**Note:** Before using this method, download the OpenSSL program and install it on a Unix/Linux or Windows system. You also need to add the location of the OpenSSL executables to the PATH. In a Windows environment, this will need to do this manually, requiring a reboot to take effect.

## Creating an OpenSSL Certificate Authority (CA)

To create an Open SSL Certificate Authority (CA) on a Unix/Linux system, perform all steps as “root.” On a Windows system, perform all steps as “Administrator.”

### 1. Create directories to store certificates.

The main CA folder is the directory where the Certificate Authority files will reside. The “private” directory stores the private keys. The “certs” directory stores the certificates (or public keys). The “csrs” directory stores the Certificate Signing Requests.

#### On Unix:

```
mkdir /CA
mkdir /CA/private
mkdir /CA/csrs
mkdir /CA/certs
```

#### Windows (cmd):

```
mkdir C:\CA
mkdir C:\CA\private
mkdir C:\CA\csrs
mkdir C:\CA\certs
```

### 2. Create files to support the generation process.

Create the “index.txt” file with no contents. This is the database to which OpenSSL keeps track of generated certificates generated. Create the “serial” file with a number so that each generated certificate is labeled with a number for tracking purposes.

**Unix:**

```
touch /CA/index.txt
echo 01 > /CA/serial
```

**Windows (cmd):**

```
copy con C:\CA\index.txt
echo 01 > C:\CA\serial
```

**3. Create the OpenSSL configuration file.****Unix:**

Using a text editor, create “/CA/openssl.cnf.”

```
[ ca ]
default_ca      = local_ca

[ local_ca ]
dir             = /CA
certificate     = $dir/certs/ca.cer
database       = $dir/index.txt
new_certs_dir  = $dir/certs
private_key    = $dir/private/ca.key
serial         = $dir/serial

default_crl_days    = 365
default_days        = 365
default_md          = md5

policy             = local_ca_policy
x509_extensions    = local_ca_extensions

[ local_ca_policy ]
commonName         = supplied
```

```

stateOrProvinceName      = optional
countryName              = optional
emailAddress              = optional
organizationName         = optional
organizationalUnitName   = optional

[ local_ca_extensions ]
basicConstraints          = CA:true
nsCertType               = server

[ root_ca_extensions ]
basicConstraints          = CA:true
nsCertType               = server

[ req ]
default_bits             = 2048
default_keyfile           = /CA/private/ca.key
default_md               = md5

prompt                   = yes
distinguished_name       = root_ca_distinguished_name
x509_extensions          = root_ca_extensions

[ root_ca_distinguished_name ]
countryName              = Country Name (2 letter code)
countryName_default      = US
countryName_min          = 2
countryName_max          = 2

stateOrProvinceName      = State or Province Name (full name)
stateOrProvinceName_default = MA

localityName              = Locality Name (eg, city)
localityName_default      = Maynard

0.organizationName        = Organization Name (eg, company)
0.organizationName_default = Acme Packet, Inc.

organizationalUnitName    = Organizational Unit Name
                           (eg, section)
organizationalUnitName_default = Support

commonName                = Common Name (eg, YOUR name)
commonName_max            = 64

emailAddress              = Email Address
emailAddress_default      = jgentile@acmepacket.com

```

```

emailAddress_max           = 64

[ req_attributes ]
challengePassword          = A challenge password
challengePassword_min      = 4
challengePassword_max      = 20

unstructuredName           = An optional company name

```

### Windows:

Using a text editor, create “C:\CA\openssl.cnf.”

```

[ ca ]
default_ca      = local_ca

[ local_ca ]
dir             = C:\CA
certificate      = $dir\certs\ca.cer
database        = $dir\index.txt
new_certs_dir   = $dir\certs
private_key     = $dir\private\ca.key
serial          = $dir\serial

default_crl_days      = 365
default_days          = 365
default_md            = md5

policy               = local_ca_policy
x509_extensions      = local_ca_extensions

[ local_ca_policy ]
commonName           = supplied
stateOrProvinceName = optional
countryName          = optional
emailAddress         = optional
organizationName     = optional
organizationalUnitName = optional

[ local_ca_extensions ]
basicConstraints      = CA:false
nsCertType           = server

[ root_ca_extensions ]
basicConstraints      = CA:true

```

```
nsCertType                = server

[ req ]
default_bits              = 2048
default_keyfile            = C:\CA\private\ca.key
default_md                 = md5

prompt                    = yes
distinguished_name        = root_ca_distinguished_name
x509_extensions            = root_ca_extensions

[ root_ca_distinguished_name ]
countryName                = Country Name (2 letter code)
countryName_default        = US
countryName_min            = 2
countryName_max            = 2

stateOrProvinceName        = State or Province Name (full name)
stateOrProvinceName_default = MA

localityName               = Locality Name (eg, city)
localityName_default        = Maynard

0.organizationName         = Organization Name (eg, company)
0.organizationName_default = Acme Packet, Inc.

organizationalUnitName     = Organizational Unit Name (eg,
                           section)
organizationalUnitName_default = Support

commonName                 = Common Name (eg, YOUR name)
commonName_max             = 64

emailAddress               = Email Address
emailAddress_default        = jgentile@acmepacket.com
emailAddress_max           = 64

[ req_attributes ]
challengePassword          = A challenge password
challengePassword_min      = 4
challengePassword_max      = 20

unstructuredName           = An optional company name
```

#### 4. Generate the CA's private key and Master Certificate (public key).

This step will generate two files:

- **CA/private/ca.key** (C:\CA\private\ca.key on Windows) – This is the CA's private key used to sign certificates. Keep this secure. If this key is compromised, it can be used to create certificates for malicious purposes.
- **CA/private/ca.cer** (C:\CA\private\ca.cer on Windows) – This is the CA's certificate (public key). This is the file that would be distributed to client's "Trusted Root" stores to trust any certificates signed by this CA's private key.

##### Unix:

```
openssl req -x509 -new -config /CA/openssl.cnf -days 3000 -out /CA/certs/ca.cer
```

##### Windows (cmd):

```
openssl req -x509 -new -config C:\CA\openssl.cnf -days 3000 -out C:\CA\certs\ca.cer
```

The **ca.key** is created automatically based on the configuration file.

Enter a strong passphrase for the CA key. Remember it, as this helps protect the security of your CA.

Fill in the following fields:

```
Country Name (2 letter code) [US]: <your country>
State or Province Name (full name) [MA]: <your state/province>
Locality Name (eg, city) [Maynard]: <your locale>
Organization Name (eg, company) [Acme Packet]: <your company>
Organizational Unit Name (eg, section) [Support]: <your department>
Common Name (eg, YOUR name) []: <Use the FQDN of the CA system
running OpenSSL>
Email Address []: <your email address>
```



---

**Note:** The "Common Name" field is the most important. This is the name that will be provided to the CA, so use the Fully Qualified Domain Name (FQDN) of the system on which you are running OpenSSL.

---

#### 5. Change permissions on the CA's key to only allow "root" access:



### Unix:

```
chmod 700 /CA/private/ca.key
```

### Windows (cmd):

```
echo y | cacls C:\CA\private\ca.key /G %COMPUTERNAME%\Administrator:F
```



**Note:** You should only need to complete the process for setting up the CA once, while the processes for signing Certificates must be repeated every time a certificate needs to be generated.

## Generating a Private Key and Certificate Signing Request (CSR) with the OS-E

To generate a private key and CSR on the OS-E and sign in with the OpenSSL CA, perform the following steps:

### 1. Create a CSR on the OS-E.

Refer to the section in the chapter, “Before Configuring TLS.”:

- Use the **cert-gen** utility to generate a Self-Signed Certificate (known as a private key) in PKCS#12 format. In this example, the file name is *cxc.pfx*.
- Use the **cert-request** utility to generate a Certificate Signing Request (CSR) in PEM format on the appropriate OS-E system. In this example, the file name is *cxc.csr*.



**Note:** The “common-name” field on the “cert-gen” page is the most important. This is the name that will be used to validate the certificate. Use the Fully Qualified Domain Name (FQDN) of the appropriate OS-E system, such as *nnose.acmepacket.com*.

Currently, some phones, such as Eyebeam do not support wildcard certificates where the common-name uses an asterisk character (\*) in the domain name, such as *\*.acmepacket.com*.

These files are created in the */cxc/certs/* directory on the OS-E.

### 2. Copy the CSR to the OS-E.

Download the .csr file generated on the OS-E, and then copy it to the CA system into the /CA/csrs/ directory. For a Windows system, copy it to the C:\CA\csrs\ directory.

### 3. Sign the CSR with your OpenSSL CA.

#### Unix

```
openssl ca -config /CA/openssl.cnf -in /CA/csrs/cxc.csr -out /CA/certs/cxc.pem
```

#### Windows

```
openssl ca -config C:\CA\openssl.cnf -in C:\CA\csrs\cxc.csr -out C:\CA\certs\cxc.pem
```

Enter the pass phrase for the CA key

Respond “y” to the questions to generate and commit.

### 4. Update the private key (cxc.pfx) with the signed public key (cxc.pem) on the system.

Upload the newly generated *cxc.pem* file back to the OS-E , as covered earlier in this chapter. Refer to the section in the chapter, “Before Configuring TLS.”

- Use the **cert-update** utility to update the “/cxc/certs/cxc.pfx” file on the OS-E with the “/cxc/certs/cxc.pem” file.
- Configure a TLS certificate, as covered earlier in this chapter. Be sure to associate it with the SIP protocol on the appropriate network interface.



**Note:** You can use the /CA/certs/ca.cer (C:\CA\certs\ca.cer on Windows) file to import into a “Trusted Root Store.” For example, you can install this in Windows (Internet Explorer) for use with Soft Phones, such as Eyebeam. If you deploy the ca.cer file to multiple systems into the “Trusted Root Store”, then those systems will “trust” any certificates signed by this CA.

---

### Generating a Private Key and Certificate Signing Request (CSR) without the OS-E

Instead of generating the private key and CSR on the OS-E, you can generate it using OpenSSL exclusively. This is not the supported method.

#### 1. Create a CSR and Private Key for the OS-E System

**Unix:**

```
openssl req -new -config /CA/openssl.cnf -out /CA/csrs/cxc_csr.pem  
-keyout /CA/certs/cxc_pk.pem
```

**Windows (cmd:)**

```
openssl req -new -config C:\CA\openssl.cnf -out  
C:\CA\csrs\cxc_csr.pem -keyout C:\CA\certs\cxc_pk.pem
```

Use the OpenSSL “req” utility to generate a Self-Signed Certificate (private key) and the Certificate Signing Request (CSR) in PEM format. In this example, the file names are *cxc\_pk.pem* for the private key, and *cxc\_csr.pem* for the CSR.

Enter a pass phrase for the CA key, and complete the following fields::

```
Country Name (2 letter code) [US]: <your country>  
State or Province Name (full name) [MA]: <your state/province>  
Locality Name (eg, city) [Maynard]: <your locale>  
Organization Name (eg, company) [Acme Packet]: <your company>  
Organizational Unit Name (eg, section) [Support]: <your department>  
Common Name (eg, YOUR name) []: <Use the FQDN of the CXC>  
Email Address []: <your email address>
```



**Note:** The “common-name” field is the most important entry. This is the name that will be used to validate the certificate. Use the Fully Qualified Domain Name (FQDN) of the appropriate OS-E system, such as *nnose.acmepacket.com*.

Currently, some phones, such as Eyebeam do not support wildcard certificates where the common-name uses an asterisk character (\*) in the domain name, such as *\*.acmepacket.com*

**2. Sign the CSR with your OpenSSL CA.****Unix**

```
openssl ca -config /CA/openssl.cnf -in /CA/csrs/cxc_csr.pem -out /  
CA/certs/cxc.pem
```

**Windows**

```
openssl ca -config C:\CA\openssl.cnf -in C:\CA\csrs\cxc_csr.pem
```

```
-out C:\CA\certs\cxc.pem
```

Enter the pass phrase for the CA key, then respond “y” to the questions to generate and commit.

### 3. Merge the Private Key and Signed Public Key into one file.

#### Unix

```
cat /CA/certs/cxc.pem /CA/certs/cxc_pk.pem > /CA/certs/cxc.list.pem
```

#### Windows (cmd)

```
copy /CA/certs/cxc.pem + /CA/certs/cxc_pk.pem /CA/certs/  
cxc.list.pem
```

4. Upload the newly generated *cxc.list.pem* file back to the OS-E, then configure a TLS certificate, as covered earlier in this chapter. Be sure to associate it with the SIP protocol on the appropriate network interface.



**Note:** You can use the */CA/certs/ca.cer* (C:\CA\certs\ca.cer on Windows) file to import into a “Trusted Root Store.” For example, you can install this in Windows (Internet Explorer) for use with Soft Phones, such as Eyebeam. If you deploy the *ca.cer* file to multiple systems into the “Trusted Root Store”, then those systems will “trust” any certificates signed by this CA.

---

## Using OpenSSL to Convert X.509 and RSA Keys

This section describes how to use OpenSSL to convert an X.509 certificate and/or RSA key to a Public-Key Cryptography Standard #12 (PKCS#12) format.

### Requirements

You must have a working installation of the OpenSSL software and be able to execute OpenSSL from the command line.

Refer to “CTX106627 - How to Install the OpenSSL Toolkit,” for more information on obtaining and installing OpenSSL.

The PKCS#12 specifies a portable format for storing and transporting certificates, private keys, and miscellaneous secrets. It is the preferred format for many certificate handling operations and is supported by most browsers and recent releases of the Windows family of operating systems. It has the advantage of being able to store the certificate and corresponding key, root certificate, and any other certificates in the chain in a single file.

### Procedure

1. Ensure that the certificate(s) and key are in PEM format.

- **To convert a certificate from DER to PEM:**

```
x509 -in input.crt -inform DER -out output.crt -outform PEM
```

- **To convert a key from DER to PEM:**

```
rsa -in input.key -inform DER -out output.key -outform PEM
```

- **To convert a key from NET to PEM:**

```
rsa -in input.key -inform NET -out output.key -outform PEM
```



**Note:** The obsolete NET (Netscape server) format is encrypted using an unsalted RC4 symmetric cipher so a passphrase will be requested. If you do not have access to this passphrase it is unlikely you will be able to recover the key

2. Use the **openssl** command to read the PEM encoded certificate(s) and key and export to a single PKCS#12 file as follows:

```
openssl pkcs12 -export -in input.crt -inkey input.key -out  
bundle.p12
```



**Note:** By default, the key will be encrypted with Triple DES so you will be prompted for an export password (which may be blank).

The PEM formatted root certificate and any other certificates in the chain can be merged into a single file such as root.crt, and included in the PKCS#12 file as follows:

```
openssl pkcs12 -export -in input.crt -inkey input.key -certfile  
root.crt -out bundle.p12
```

## Step 4. Updating the Self-Signed Certificate

The **cert-update** action allows you to load the signed certificate that you receive from the CA. Once you have received the file, perform the following steps:

1. Upload the file to the OS-E using the **Tools/Upload file** function to browse for CA's certificate. Specify the destination path on the OS-E system, such as `/cxc/certs`, and specify the destination name of the certificate, as illustrated in the following image.

The screenshot shows the Eclipse web interface. At the top, there is a navigation bar with tabs: Home, Configuration, Status, Call Logs, Event Logs, Actions, Services, Keys, Access, Tools (selected), and Portal. Below the navigation bar, the 'Tools' section is active, displaying a list of tools on the left and a form titled 'Upload A File To Eclipse' on the right. The form includes the following fields and controls:

- File:** A text input field with a 'Browse...' button next to it.
- Destination Path:** A text input field containing the value '/cxc'.
- Overwrite Existing File:** A checkbox that is currently unchecked.
- Destination Name:** A text input field with a yellow highlight.
- Upload:** A button located below the Destination Name field.

Below the form, there is a list of tools: Update Software, Retrieve License, Upload License, File, Upload File, Download File, Download, Saved, Configuration, File, and View Call.

2. Select the **Keys** tab and select the appropriate key from the Key Stores list to display the Manage Key Store page.
3. Click **Update** to browse for the file that you uploaded in Step 1.
4. Click **Update** to load the signed certificate to the CXC.

If you choose to update the certificate using the **cert-update** action rather than from the **Keys** tab, complete the fields as follows:

**keyFile**—Specify the name and directory path of the key that you want to update.

Example: `/cxc/certs/myNetworkKey.p12`

**alias**—Optional. Specify the alias for the keyFile name, if previously created.

**password**—Specify the password associated with the keyFile, as specified previously.

**certFile**—Specify the name and directory path of the signed certificate that you received from the CA and uploaded to the OS-E using the OS-E Management System **Tools/Upload File** function or other file transfer mechanism.

## Configuring the Certificate on the Net-Net OS-E

Once you have imported the certificate to a directory on the OS-E system, configure the settings that control how the OS-E uses the certificate.

### CLI session

The following CLI session sets the directory and certificate destination file name path, specifies the passphrase, and whether to allow SSL Version 2 operability.

```
NNOS-E> config vsp
config vsp> config tls
config tls> config certificate myNetworkCert.pfx
Creating 'certificate myNetworkCert.pfx'
config certificate myNetworkCert.pfx> set allow-ssl2 true
config certificate myNetworkCert.pfx> set allow-null-cipher enabled
config certificate myNetworkCert.pfx> set certificate-file /cxc/certs/
    myNetworkCert.pfx
config certificate myNetworkCert.pfx> set passphrase-tag pass
```

By default, the OS-E only supports SSLv3 or TLSv1. If you require SSLv2 for interoperability, set this property **true**. Specify the **passphrase-tag** associated with the certificate file. Use this property if the certificate file is encrypted to have its private key information protected. This **passphrase-tag** must match the string with which the certificate was encrypted.

## Displaying the Certificates Installed on the OS-E

Use the **show certificates** to command to display the list of installed certificates on the system.

## Other TLS Certificate Settings

### Using Certificate vs. Default-Outgoing-Settings

The OS-E uses a certificate configuration to identify the certificate file and the characteristics of the certificate. There are two types of certificate configuration—a named certificate entry that can be applied to specific TLS connects and a default certificate settings for use when a specific entry was not identified.

The entry created by the **certificate** object is used when the OS-E functions as a server in a TLS connection. Or, it can be used in an OS-E-as-client setup, if you have configured the connection to use a specific certificate. For example, when you set the connection type to the LDAP server to TLS in the **directory** object, you are required to enter a named certificate.

The entry created by the **default-outgoing-settings** object is used when the OS-E is a client with an unspecified certificate. For example, if you set the protocol that the DNS resolver server uses to TLS, you are not prompted for a certificate name. In this case, the OS-E uses either:

- The certificate identified in the **sip-settings** object, if the session matched a configured policy.
- The **default-outgoing-settings** if the session did not match a configured policy or the policy did not have a certificate specified.

Refer to the *Net-Net OS-E – Objects and Properties Reference* for detailed information on the default-outgoing-settings object under TLS.

### Verifying Peer Certificates

The OS-E allows you to verify peer certificates. By default, the OS-E accepts all peer certificates. However, you can configure the OS-E to reject a connection if a peer's certificate does not meet the requirements of the network. Basic verification checks that the certificate's chain is valid, that it was signed by a trusted CA, and that the certificate has not expired.

To verify a peer's certificate, the appropriate CA file must be installed on the OS-E. For example, to connect to an LCS server, there are four requirements,

1. A client certificate that Session Presents presents to LCS at connection time,



2. A CA file (in PEM or PKCS#12) to verify the server's certificate when it is presented to the OS-E,
3. A Certificate Revocation List (CRL) in PEM format, a list of certificates that a CA has revoked, and thus can no longer be trusted. If any of the certificates in the chain presented to the OS-E appear in the CRL, the OS-E rejects the connection. This is an optional step. And,
4. A valid, verifiable host name that is presenting the certificate. If the host name doesn't match what the OS-E expects, the OS-E rejects the connection, even if the chain is valid.

## CLI Session

The following CLI session defines multiple default CA files, and multiple default CRL files:

```
NNOS-E> config vsp tls
config tls> config default-ca
config default-ca> set ca-file /cxc/certs/ca1.pem tag1
config default-ca> set ca-file /cxc/certs/ca2.pem tag2
config default-ca> return
config tls> config default-crl
config default-crl> set crl-file /cxc/certs/crl1.pem tag3
config default-crl> set crl-file /cxc/certs/crl2.pem tag4
config default-crl>
```

## Enabling Peer Certificate Verification

The **peer-certificate-verification** property allows you to control whether the OS-E validates a peer's certificate.

```
NNOS-E> config vsp tls
config tls> config certificate myNetworkCert.pfx
config myNetworkCert.pfx> set peer-certificate verification {none |
    if-presented | required}
```

**None**—The OS-E will not request a certificate from the peer, and will verify a certificate if presented with one. This is the default setting.

**IfPresented**—If a peer presents a certificate, the OS-E verifies it, or rejects the connection if the certificate fails verification. If no certificate is presented, the OS-E allows the connection.

**Required**—If a peer presents a certificate, the OS-E verifies it, or rejects the connection if the certificate fails verification. If no certificate is presented, the OS-E rejects the connection.



**Note:** TLS treats clients (initiators) and servers (answerers) differently. In a typical TLS connection, only the server presents a certificate; the client is only allowed to present a certificate if it is requested to do so by the server. Therefore, the **IfPresented** option applies only for a client connection.

---

## Controlling the CA Files and CRLs to Apply to the Certificate

Configure each certificate entry to use or ignore the default CA and CRL settings.

```
config> config vsp tls certificate myNetworkCert.pfx
config certificate myNetworkCert.pfx> set use-default-ca true
config certificate myNetworkCert.pfx> set use-default-crl false
```

Optionally, you can configure each certificate entry to use an extra CA and an extra CRL, independent of the default settings, using the file path and passphrase tag.

```
config certificate myNetworkCert> set specific-ca-file /cxc/certs/
    ca9.pem tag9
config certificate myNetworkCert> set specific-crl-file /cxc/certs/
    crl9.pem tag10
```

## Setting the Required Peer Name

The **required-peer-name** property specifies the name that appears in the presented certificate.

- If you do not configure a peer name, then the OS-E does not check the presented name.
- If you do configure a peer name, then that name must appear in the DNS field of the **alternateName** field, or in the **commonName** field for the certificate.

The **required-peer-name** can include wildcards, such as `".*.acmepacket.com"`. If the presented name does not match the required name, the OS-E rejects the connection.

---

## Configuring TLS on Ethernet Interfaces

Referring to the network illustrated in the “Steps to Configuring TLS,” section, note that one Ethernet interface is connected to public Internet on port 443, and other Ethernet interface connects to the enterprise or service provider’s private network on the known TLS port 5061. Using port 443 on the public side of the network allows HTTPS requests to pass through the network firewall to the OS-E system.

### CLI Session

The following CLI session configures IP on the public and private OS-E interfaces, and the SIP protocol, ports, and TLS certificate destination name references.

```
NNOS-E> config cluster
config cluster> config box 1
config box 1> config interface eth0
config interface eth0> config ip private
Creating 'ip private'
config ip private> set ip-address static 10.1.1.1/24
config ip private> config sip
config sip> set udp-port 5060
config sip> set tcp-port 5060
config sip> set tls-port 5061
config sip> set certificate vsp tls certificate myNetworkCert.pfx
Creating 'vsp\tls\certificate myNetworkCert.pfx'
config sip> return
config ip public> return
config interface eth0> return
config box 1>

config box 1> config interface eth1
config interface eth1> config ip public
Creating 'ip public'
config ip public> set ip-address static 216.1.1.1/24
config ip public> config sip
config sip> set udp-port 5060
config sip> set tcp-port 5060
config sip> set tls-port 443
config sip> set certificate vsp tls certificate myNetworkCert.pfx
Creating 'vsp\tls\certificate myNetworkCert.pfx'
config sip> return
config ip public> return
config interface eth1> return
config box 1>
```



---

# Chapter 6. Configuring Secure Media (SRTP) Sessions

---

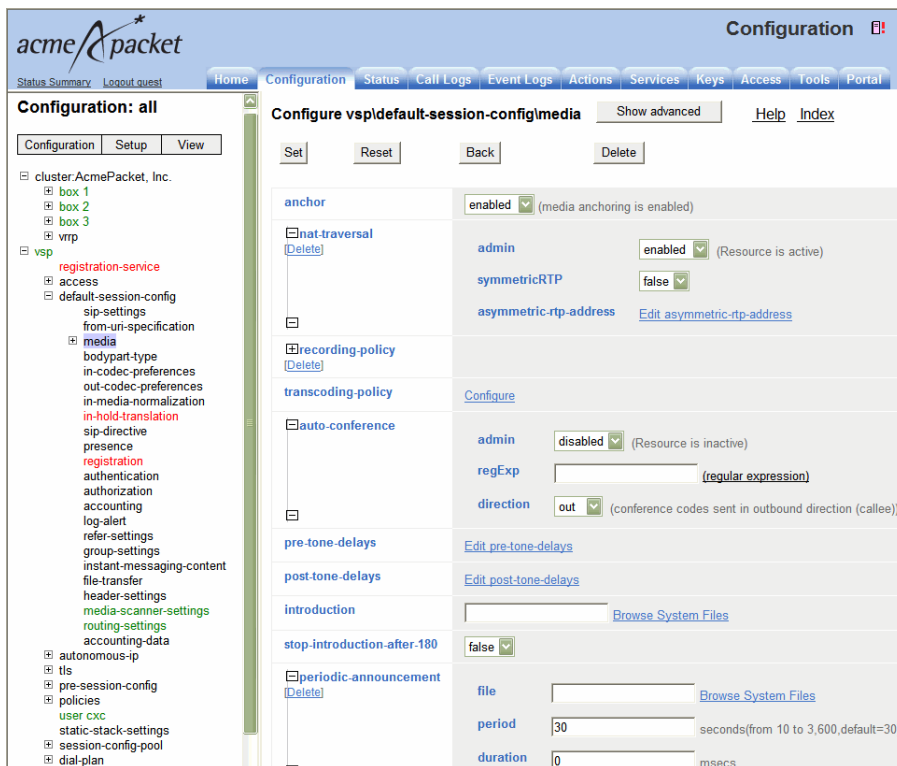
## About This Chapter

This chapter provides information on configuring inbound and outbound encryption on SIP media sessions anchored by the OS-E.

## Anchoring Media Sessions

Media anchoring forces the SIP media session to traverse the OS-E system. The **auto** setting enables conditional anchoring where the OS-E uses its auto-anchoring algorithms to determine anchoring necessity based on a variety of criteria, including whether you have configured smart anchoring via the **autonomous-ip** object and whether the calling devices are behind a firewall.

The following image shows an OS-E Management System session where you enable media anchoring in the default-session-config.



## Configuring Inbound and Outbound Encryption

For secure inbound and outbound media sessions, you need to configure OS-E **in-encryption** and **out-encryption** settings. Inbound encryption handles the portion of the call from the initiator to the OS-E using a specified encryption method. Similarly, outbound encryption handles the portion of the call from the OS-E to the call recipient using a specified encryption method.

The following image shows the inbound encryption configuration page.

Status Summary Logout guest

Configuration

Home Configuration Status Call Logs Event Logs Actions Services Keys Access Tools Portal

Configuration: all

Configuration Setup View

cluster:asterisk

- box 1
- box 2
- box 3
- vrp

vsp

- registration-service
- access
- default-session-config
  - sip-settings
    - from-uri-specification
    - media
      - in-encryption
      - bodypart-type
      - in-codec-preferences
      - out-codec-preferences
      - in-media-normalization
      - sip-directive
      - presence
      - authentication

Configure vspdefault-session-config-in-encryption

Show basic Help Index

Set Reset Back Delete

|                                  |          |                           |
|----------------------------------|----------|---------------------------|
| mode                             | none     | (Do not allow encryption) |
| type                             | RFC-3711 | (RFC-3711 compliant SRTP) |
| priority-AES-128-CM-HMAC-SHA1-32 | 1        | (from 0 to 5, default=1)  |
| priority-AES-128-CM-HMAC-SHA1-80 | 2        | (from 0 to 5, default=2)  |
| require-tls                      | false    |                           |
| mki-length                       | 0        | (from 0 to 4, default=0)  |

Set Reset Back

Help Index

## Inbound Encryption Mode and Type

Set the inbound encryption mode to one of the following settings:

- none**—The OS-E disables the encryption put forth by the incoming endpoint. (That is, it responds “no” to the encryption portion of the authentication handshake.) If the outbound endpoint requires encryption, then the call is dropped.
- allow**—The OS-E passes the call through, leaving the encryption setting unchanged.
- require**—The call must come in with encryption specified or the OS-E drops it.

Set the inbound encryption type to one of the following settings:

- RFC-1889**—Use encryption as defined in RFC 1889, RTP: A Transport Protocol for Real-Time Applications. This mode is used for compatibility with Windows Messenger and Microsoft Office Communicator, neither of which currently support RFC-3711 encryption. Instead, it uses a DES-CBC encryption of the entire UDP payload (including RTP headers) with no authentication.
- RFC-3711**—Use encryption as defined in RFC 3711, The Secure Real-time Transport Protocol (SRTP). This is the same encryption as used in the OS-E setting.

- **Linksys**—Use Linksys/Sipura encryption over Linksys phones. Refer to Linksys Encryption for more information

The following image shows the inbound encryption configuration page.

The screenshot displays the configuration page for 'vspdefault-session-config/out-encryption'. The interface includes a top navigation bar with tabs like Home, Configuration, Status, Call Logs, Event Logs, Actions, Services, Keys, Access, Tools, and Portal. A left sidebar shows a tree view of the configuration hierarchy, with 'vsp' expanded to show 'registration-service', 'access', 'default-session-config', 'sip-settings', 'from-un-specification', 'media', 'in-encryption', 'out-encryption', 'bodypart-type', 'in-codec-preferences', 'out-codec-preferences', 'in-media-normalization', 'sip-directive', and 'presence'. The main content area has a title 'Configure vspdefault-session-config/out-encryption' and buttons for 'Set', 'Reset', 'Back', and 'Delete'. Below the title is a table of settings:

|                                  |          |                           |
|----------------------------------|----------|---------------------------|
| mode                             | none     | (Do not allow encryption) |
| type                             | RFC-3711 | (RFC-3711 compliant SRTP) |
| priority-AES-128-CM-HMAC-SHA1-32 | 0        | (from 0 to 5, default=0)  |
| priority-AES-128-CM-HMAC-SHA1-80 | 1        | (from 0 to 5, default=1)  |
| require-tls                      | false    |                           |
| mki-length                       | 0        | (from 0 to 4, default=0)  |

At the bottom of the settings table are buttons for 'Set', 'Reset', and 'Back', along with links for 'Help' and 'Index'.

## Outbound Encryption Mode, Type, and Require-TLS Setting

Set the out-encryption mode to one of the following settings:

- **none**—The OS-E disables the encryption put forth by the outbound endpoint. (That is, it responds “no” to the encryption portion of the authentication handshake.) If the inbound endpoint requires encryption, then the call is dropped.
- **offer**—The OS-E changes or establishes the encryption type to the value specified in the **type** property, below.
- **follow**—If the inbound endpoint offered encryption, the OS-E offers that type to the outbound endpoint.
- **require**—The call must come in with encryption specified or the OS-E drops it.

Set the out-encryption type to one of the following settings:

- **RFC-1889**—Use encryption as defined in RFC 1889, RTP: A Transport Protocol for Real-Time Applications. This mode is used for compatibility with Windows Messenger and Microsoft Office Communicator, neither of which currently support RFC-3711 encryption. Instead, it uses a DES-CBC encryption of the entire UDP payload (including RTP headers) with no authentication.



- **RFC-3711**—Use encryption as defined in RFC 3711, The Secure Real-time Transport Protocol (SRTP). This is the same encryption as used in the OS-E setting.
- **Linksys**—Use Linksys/Sipura encryption over Linksys phones. Refer to Linksys Encryption for more information.



**Note:** Because the OS-E does not always know on the outbound leg the encryption method expected by the recipient (because that recipient isn't in the registry), you must manually set the type of encryption to offer.

## Require TLS

The **require-tls** property specifies the requirements of the signaling protocol for a call's outbound leg. That is, it defines whether the OS-E offers SRTP over a non-secure (TCP or UDP) signaling connection. The action of this property depends on the setting of the mode property. When this property is set to:

- **true**—The OS-E only offers encryption when talking to a TLS client. If TLS and SRTP are required (**mode** is set to **require**), the OS-E fails calls going to TCP/UDP clients. If the mode property is set to **offer** or **follow**, the OS-E forwards the call without SRTP.
- **false**—The OS-E offers SDP messages according to the mode setting without regard for the signaling transport. This allows keys to be exchanged in an insecure message.

Most phones follow [RFC 4568, SDP Security Descriptions for media Streams](#), and thus require that this property be set to *true*.

## Linksys Encryption

The **linksys** action allows you to generate a Linksys/Sipura mini-certificate and private key which, after loaded into the phone, will be used to exchange the symmetric key. You must execute this action and load the result into both phone parties.

Linksys equipment supports a proprietary version of SRTP. It uses SIP INFO messages to exchange credentials (in mini-certificates) and securely distribute the key used to encrypt/decrypt the RTP packets. The RTP encryption is a variation of RFC-3711; the encryption algorithm is the same (AES-CM-128), but uses HMAC-MD5 instead of HMAC-SHA1 for authentication.

The CLI syntax for the **linksys mini-certificate** action is:

```
linksys mini-certificate user-id display-name expires [filename]
```

The following image shows the linksys mini-certificate page.

The screenshot shows the acme4packet web interface. The top navigation bar includes links for Home, Configuration, Status, Call Logs, Event Logs, Actions, Services, Keys, Access, Tools, and Portal. The main content area is titled 'linksys' and 'Generate or check Linksys/Sipura SRTP encryption parameters'. It features a form with the following fields:

- \* cert**: A dropdown menu set to 'mini-certificate' with a tooltip that reads '(Generate Linksys/Sipura mini-certificate and phone private key)'.
- \* cert\_type**: A dropdown menu set to 'mini-certificate'.
- \* user-id**: A text input field.
- \* display-name**: A text input field.
- \* expires**: A text input field with an example value '23:05:45 2004-11-25'.
- filename**: A text input field with a 'Browse System Files' link.

An 'Invoke' button is located at the bottom right of the form.

The **linksys** action provides three tools:

- **mini-certificate**—Creates a mini-certificate, which will later be used by a Linksys phone to exchange an encrypted symmetric key. When both phones in a call support cryptographic exchange, use this action to create a mini-certificate that is sent in an INFO message to the other phone. (You must execute this action for both phones.) After exchanging mini-certificate, the phones can then exchange an encrypted symmetric key.

Enter the following fields to generate a mini-certificate:

- **userID**—A name that identifies this phone (subscriber) to the other party. The user ID can be up to 32 characters.
- **displayName**—A name used by the caller to verify that the callee is the intended call recipient. Enter the user ID field in the Request URI of the INVITE message sent to the proxy server by the caller UAC when making a call to this subscriber (UAS). The display name can be up to 16 characters.
- **expiration**—The date and time at which this mini-certificate expires. Enter the date in the format *hh:mm:ss yyyy-mm-dd*.

- **filename**—A name for an output file that will contain the mini-certificate and private key. If you do not specify a file name, the output is not written to a file.

Once you execute this option, the OS-E returns the content of the mini-certificate and the SRTP private key. You can copy and paste each of these fields into your phones Web GUI (or other software interface), as well as test the certificate using the **check-mini-cert** option.

- **generate-ca-key**—Generates a Linksys/Sipura CA key. This is the public/private key pair that acts as the Sipura certificate authority. It is needed to generate the mini-certificates for each phone and during the key exchange.

The key is stored in **/cxc/certs/linksys\_ca.pem**. When executing this action, you can specify whether to overwrite any previous CA key. The default setting, **false**, does not overwrite the key. Set the field to **true** to force an overwrite.

- **check-mini-cert**—Verifies the contents of a certificate created with the mini-certificate option. When executed, the OS-E checks the expiration date and signature of the certificate. Enter the content of the mini-certificate to invoke this option.



**Note:** You must have a root certificate loaded on the OS-E system for this action to be successful. The default location for the root certificate is **/cxc/certs/linksys\_ca.pem**.

The following CLI session generates the mini-certificate and private key for the Linksys phones.

### CLI Session

```
NNOS-E> linksys mini-certificate ?
```

```
Generate or load Linksys/Sipura SRTP encryption parameters
```

```
syntax: linksys mini-certificate user-id display-name expires
[filename]
```

```
linksys generate-ca-key [force]
linksys check-mini-cert minicert
```

```
NNOS-E> linksys mini-certificate 9577 9577-display "23:05:45
2004-11-25"
```

```
Mini Certificate:
```

```
OTU3Ny1kdWVyb2QAAAAAAAAAAAAAAAAAAAAAAAAAAAAA5NTc3AAAAAAAAAAAAAAAAAMDMwNT
Q1MjYxMTA0ybYgG8IeaYz225GrS7sDJflnfyJxARPEhQ+CO6WisAZ77U2zBi8TCapI
wqcDhNXwgYKZxljAET3dFnzAxs2ze1/
kEHCqvUmDIEjaYL+1WTySaIlTGKy15FbyZb6dQXtbPF+fXiRP//
caFfKUBTUuwtjExxaAz0H3u8Tc2YT/wH7a0+snpUTFeK/
Sv9vd7aAUbufSxewlL2GeTdOu0v2i4R25/
RH6iOHYChGpVt2EJ3BHAlLgXTfJibiwwkrMSelgrSibsCy0D825ezAt66AVKTA/
hOmSBvdZvdamJIsbP89vnAJPiOfWNet8T40/wOYyylAE5JDJ/2+G/
MDyc5ImzFTvifKvIQ55T7Jr5E0RUbacDZilHy5oW+x4sfawCiQZunnb1lqlAgYhvOeuo
4f3JGUKJAld0GRjHfvjRhb3c=
```

S RTP Private Key:

```
Oxq38oJqjhe++yBTtTotoMndnZXulkgnnxFQPd0v96oc8lIZ5dug9Szob9ZYQXsPkWAXSb
Oxq38oJqjhe++BVpyxz2P2qtZEg==
```

NNOS-E> **linksys check-mini-cert**

```
OTU3NwAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA5NTc3AAAAAAAAAAAAAAAA
AAAMTU1ODQ4MTEyNTA0z1TBkpXzjmR6PFX5K4S7G5SxdpozH460T14KpwOxZ8
ly4KWpFlcC2rTTWEU6WnOufcj5Bfif7cdsAF/
89kZu83NFceK2ZBRGrJ4cbxREtuPwy1FqkXpBQcztTFXjeyFaq8K7OESebQay
FetBEceIupuzxfedlJPRsMRhsHNluKpomc/
tdJFHJhxszn+fx+GTACrXQEHzi+oDL+iQvzhJ1zk/
gXTGuk761kJG2XLvSvdjTp8RjQX/F5h0GnBa02d3bQ51n7IBvJnTeaGKp/U/
e5pQvW5u6vD/uHkqkTGkZDZzOyIISIdgWVxdjA9cpaSa2D5nPhr8G/
WhOadLZ08fmb0kPwEFjJ0h0dojjknjNJp/
qVjR5NEEzuj5kH7Q1vxk2510MThhydCYpbxShy2GSno7apnyCA02YBQCRlGBO
s=
```

Certificate has expired

NNOS-E> **linksys generate-ca-key**

Unable to overwrite Linksys CA key

---

# ***Chapter 7. Performing Maintenance and System Upgrades to the NN2600***

---

## **About This Chapter**

This chapter describes the Net-Net OS-E 2610 and 2620 hardware maintenance and upgrade tasks that you can perform at your installation site. You do not need onsite assistance from Acme Packet personnel to perform these tasks.

Before performing any type of maintenance or upgrade activity, make sure that you first read the Warnings and Safety Cautions sections at the beginning of this chapter.

## **Warnings**

### **System Power On/Off**

The power button DOES NOT turn off the system AC power. To remove power from system, you must unplug the AC power cord from the wall outlet. Make sure the AC power cord is unplugged before you open the chassis, add, or remove any components.

### **Hazardous Conditions, Devices and Cables**

Hazardous electrical conditions may be present on power, telephone, and communication cables. Turn off the server and disconnect the power cord, telecommunications systems, networks, and modems attached to the server before opening it. Otherwise, personal injury or equipment damage can result.

## **Electrostatic Discharge (ESD) and ESD Protection**

ESD can damage disk drives, boards, and other parts. We recommend that you perform all procedures in this chapter only at an ESD workstation. If one is not available, provide some ESD protection by wearing an antistatic wrist strap attached to chassis ground — any unpainted metal surface—on your server when handling parts.

Refer to *Attaching an ESD Strap* for more information.

## **ESD and Handling Boards**

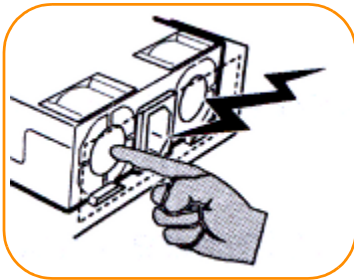
Always handle boards carefully. They can be extremely sensitive to ESD. Hold boards only by their edges. After removing a board from its protective wrapper or from the server, place the board component side up on a grounded, static free surface. Use a conductive foam pad if available but not the board wrapper. Do not slide board over any surface.

## **Installing or Removing Jumpers**

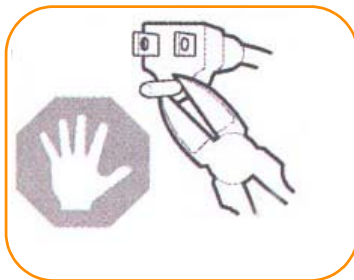
A jumper is a small plastic encased conductor that slips over two jumper pins. Some jumpers have a small tab on top that you can grip with your fingertips or with a pair of fine needle nosed pliers. If your jumpers do not have such a tab, take care when using needle nosed pliers to remove or install a jumper; grip the narrow sides of the jumper with the pliers, never the wide sides. Gripping the wide sides can damage the contacts inside the jumper, causing intermittent problems with the function controlled by that jumper. Take care to grip with, but not squeeze, the pliers or other tool you use to remove a jumper, or you may bend or break the stake pins on the board.

## **Safety Cautions**

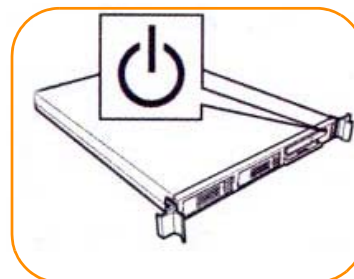
Read all caution and safety statements in this document before performing any of the instructions.



The power supply in this product contains no user-serviceable parts. Refer servicing only to qualified Acme Packet support personnel.

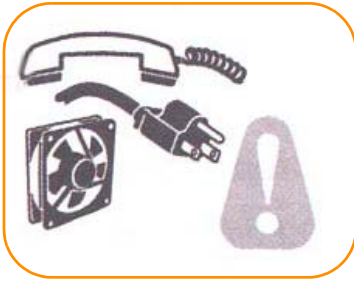


Do not attempt to modify or use the supplied AC power cord if it is not the exact type required. A product with more than one power supply will have a separate AC power cord for each supply.



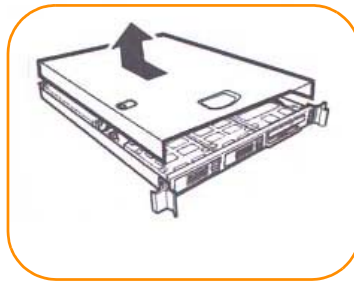
The power button on the system does not turn off system AC power. To remove AC power from the system, you must unplug each AC power cord from the wall outlet or power supply.

The power cord(s) is considered the disconnect device to the main (AC) power. The socket outlet that the system plugs into shall be installed near the equipment and shall be easily accessible



**SAFETY STEPS:** Whenever you remove the chassis covers to access the inside of the system, follow these steps:

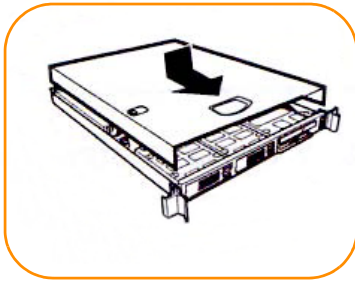
1. Turn off all peripheral devices connected to the system.
2. Turn off the system by pressing the power button.
3. Unplug all AC power cords from the system or from wall outlets.
4. Label and disconnect all cables connected to I/O connectors or ports on the back of the system.
5. Provide some electrostatic discharge (ESD) protection by wearing an antistatic wrist strap attached to chassis ground of the system—any unpainted metal surface—when handling components.
6. Do not operate the system with the chassis covers removed.



After you have completed the six SAFETY steps above, you can remove the system covers. To do this:

1. Unlock and remove the padlock from the back of the system if a padlock has been installed.
2. Remove and save all screws from the covers.
3. Remove the covers.

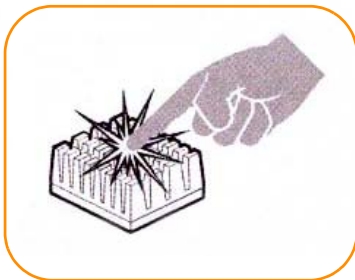




For proper cooling and airflow, always reinstall the chassis covers before turning on the system. Operating the system without the covers in place can damage system parts.

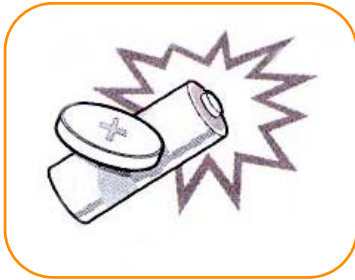
To install the covers:

1. Check first to make sure you have not left loose tools or parts inside the system.
2. Check that cables, add-in boards, and other components are properly installed.
3. Attach the covers to the chassis with the screws removed earlier, and tighten them firmly.
4. Insert and lock the padlock to the system to prevent unauthorized access inside the system.
5. Connect all external cables and the AC power cord(s) to the system.



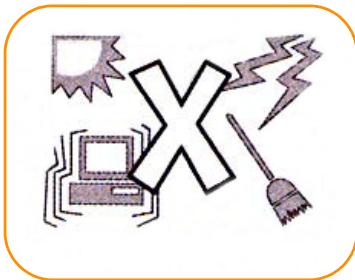
A microprocessor and heat sink may be hot if the system has been running. Also, there may be sharp pins and edges on some board and chassis parts

Contact should be made with care.  
Consider wearing protective gloves.



Danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer.

Dispose of used batteries according to manufacturer's instructions.



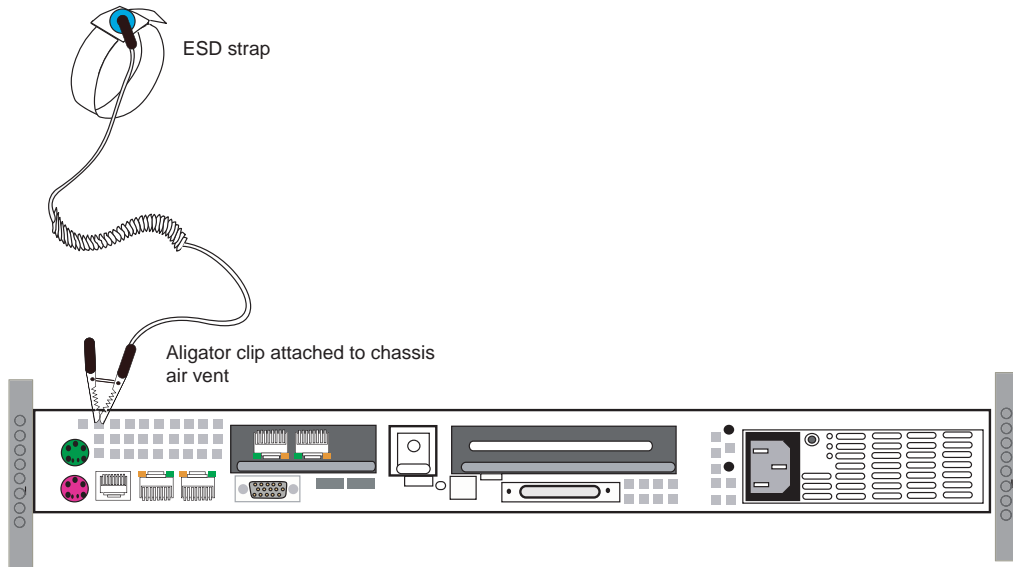
The system is designed to operate in a typical office, service provider, or Telco environment.

Choose a site that is:

- Clean and free of airborne particles (other than normal room dust.
- Well ventilated and away from sources of heat including direct sunlight.
- Away from sources of vibration and shock.
- Isolated from strong electromagnetic fields produced by electrical forces.
- In regions that are susceptible to electrical storms, we recommend you plug your system into a surge suppressor and disconnect telecommunication lines during an electrical storm.
- Provided with a properly grounded wall outlet.
- Provided with sufficient space at access the power supply cord(s), because they serve as the product's main power disconnect.

## Attaching an ESD Strap

Make sure that you attach an electrostatic discharge (ESD) strap to the system anytime you perform any maintenance that involves removing the top cover. ESD straps usually have an alligator-style clip that allows you to easily attach the strap to the system sheet metal. Air vents holes in the sheet metal allow for easy attachment of an ESD strap, as illustrated in the following image.



## Installing the Racking Mounting Brackets

### On NN2610 and NN2620 Systems

NN 2610 and NN 2620 systems include rack mounting brackets that secure the front bezel and to allow installation in a rack. You will need a #2 Phillips screwdriver to install the brackets.

If you have not already installed the brackets (as described in Chapter 2, “Installing the NN2610 and NN2620 Series Systems”), locate the two brackets and the four screws in the accessory box included in the shipping container. Install the brackets at the front sides of the chassis, using two screws required for each bracket.

The following image illustrates the bracket. Note that both brackets are identical, so you can start with either bracket on the either side.



## Installing and Removing the Front Bezel

### On NN2610 and NN2620 Systems

OS-E Series systems have a removable front bezel. The bezel snaps into the rack mounting brackets at front of the chassis and is secured with a keyed lock, illustrated in the following image. OS-E Series systems can operate with or without the front bezel.

Removing the bezel allows you to access the system control panel and the hard disk drives on the front of the system. Installing the bezel provides a way to protect the system from unwanted intrusion and manipulation of the system.

Bezel lock; unlock using supplied key



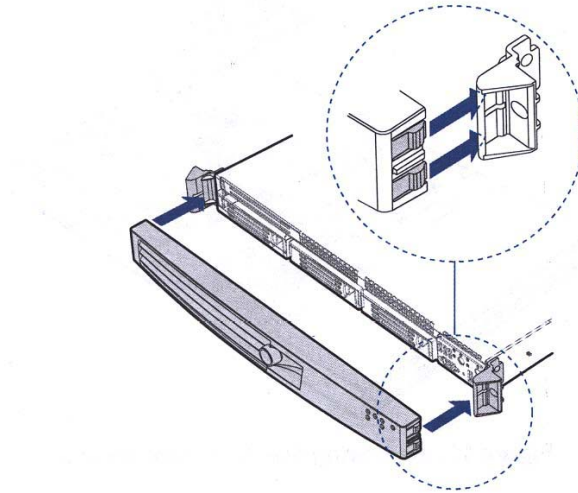
NN 2610 with front bezel

bezel

### To install the front bezel, perform the following steps:

1. At each end of the bezel, line up the center notch on the bezel with the center guide on the rack handles.
2. Push the bezel onto the front of the chassis until it clicks into place.

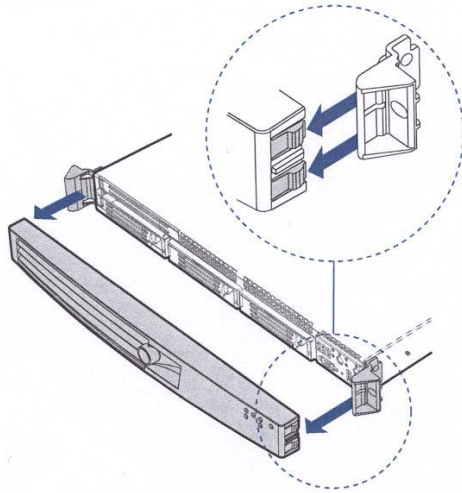
3. Connect any necessary cables to the front control panel area at the right side of the chassis.
4. Lock the bezel using the supplied key.



**To remove the bezel, perform the following steps:**

1. Unlock the bezel using the supplied key.
2. Remove any cables that are attached to the front of the system.

3. Pull on the left- and right-most edges of the bezel to pop it out.



## Removing and Installing the Chassis Cover

### On the NN2610

#### Removing the Chassis Cover

The NN 2610 must have the top cover in place to ensure proper cooling. You will need to remove the top cover to add or replace components inside of the platform. Before removing the top cover, power down the server and unplug all peripheral devices and the AC power cable. None of the components inside the chassis are hot-swappable.

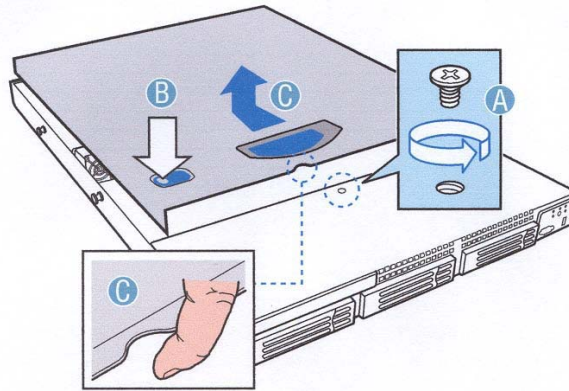


**Note:** A nonskid surface or a stop behind the chassis may be needed to prevent the chassis from sliding on your work surface.

Perform the following steps:

1. Observe the warnings and cautions covered at the beginning of this chapter.
2. Turn off all peripheral devices connected to the NN 2610, then turn off the NN 2610.

3. Disconnect the AC power cord.
4. Remove the shipping screw (if installed). See letter “A” in the figure below.
5. While holding in the blue button at the top of the chassis in (see letter “B”), slide the top cover back until it stops (See letter “C”).
6. Lift the cover upward to remove it.

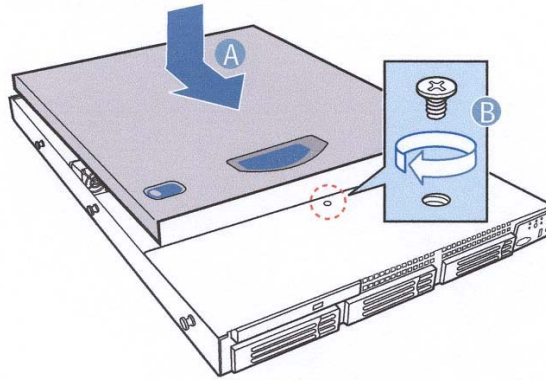


### **Installing the Chassis Cover on the NN2610**

Perform the following steps:

1. Place the cover over the chassis so that the side edges of the cover sit just inside the chassis sidewalls.
2. Slide the cover forward until it clicks into place. See letter “A” in the figure below.
3. (Optional) Insert the shipping screw at the center of the top cover. See letter “B” in the figure.

4. Reconnect all peripheral devices and the AC power cord.



## On the NN2620

### Removing the Chassis Cover

The NN 2620 must have the top cover in place to ensure proper cooling. You will need to remove the top cover to add or replace components inside of the chassis. Before removing the top cover, power down the server and unplug all peripheral devices and the AC power cable. Except for the redundant power supply, none of the components inside the chassis are hot-swappable.



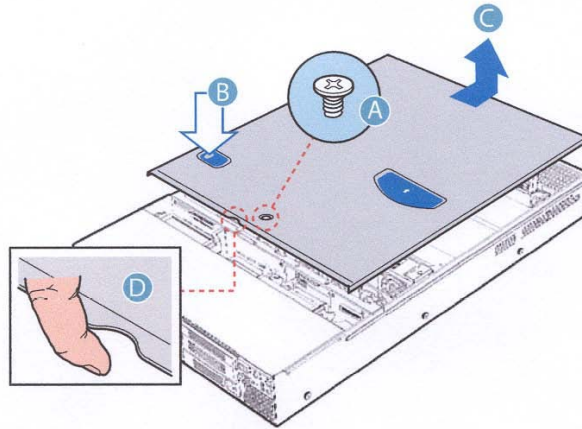
**Note:** A nonskid surface or a stop behind the chassis may be needed to prevent the chassis from sliding on your work surface.

Perform the following steps:

1. Observe the safety and ESD precautions at the beginning of this book. See “Safety Information.”
2. Turn off all peripheral devices connected to the NN 2620, then turn off the NN 2620.
3. Disconnect the AC power cord.
4. Remove the shipping screw (if installed). See letter “A” in the figure below.
5. While holding in the blue button at the top of the chassis in (see letter “B”), slide the top cover back until it stops (see letter “C”).



6. Lift the cover upward and remove it. A notch in the cover is provided to help lift it upward to remove it (see letter “D”).

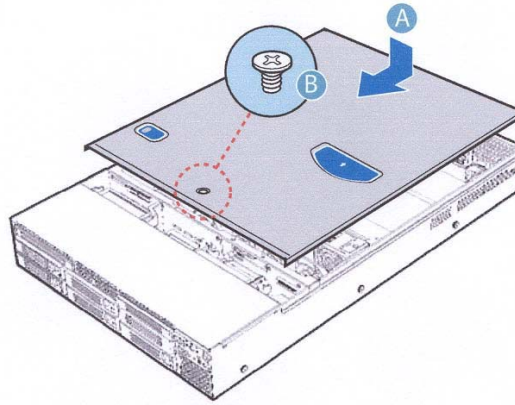


### Installing the Chassis Cover on the NN2620

Perform the following steps:

1. Place the cover over the chassis so that the side edges of the cover sit just inside the chassis sidewalls.
2. Slide the cover forward until it clicks into place. See letter “A” in the figure below.
3. (Optional): Insert the shipping screw at the center of the top cover. See letter “B” in the figure.

4. Reconnect all peripheral devices and the AC power cord.



## Replacing a System Fan

### On NN 2620 systems only

---



**Note:** For NN 2610 fan replacement, refer servicing to qualified Acme Packet support personnel.

---

The system fans at the front of the NN 2620 can be individually replaced if one of them fails. You must have four fans installed in the back four positions of the fan module.

The chassis also allows you to install four redundant fans. The redundant fans must be installed as a set of four and are installed in the four front fan sockets of the fan module. The instructions for installing a redundant fan are the same as the instructions for installing a replacement fan, except that when you are first installing the redundant set of fans, you do not need to remove any fans.

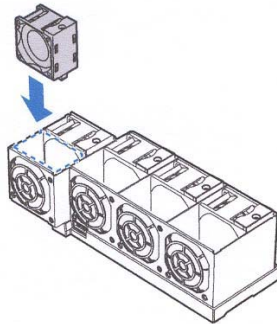
The fans that are integrated into the power supply cannot be replaced separately. If one of these fans fails, the power supply module must be replaced.

To replace a system fan, perform the following instructions. To install the redundant fans, perform the following instructions, but disregard step 4.



**Caution:** Fans are NOT hot swappable. Before removing or replacing a fan, you must first take the server out of service, turn off all peripheral devices connected to the system, turn off the system by pressing the power button, and unplug the AC power cord from the system or wall outlet.

1. Observe the warnings and cautions covered at the beginning of this chapter.
2. Power down the server system and unplug all peripheral devices and the AC power cable.
3. Remove the chassis cover. For instructions, see Removing and Installing the Chassis Cover.
4. There are no screws to loosen. Lift the failed fan from the module. An LED should indicate the failed fan(s).
5. Position the fan so the connector on the fan is at the right and pointing down.
6. With the fan oriented correctly, insert the fan into the fan module, engaging the connector on the fan into the matching connector on the fan module.
7. Install the chassis cover. For instructions, see Removing and Installing the Chassis Cover.



# Installing or Replacing a Hot-Swap Power Supply

## On NN2620 Systems Only

The power supply can be replaced if it, or one of the fans integrated into it, fails. If your server uses a redundant power supply, you do not need to power down your system to replace the failed power supply, as long as the remaining power supply is plugged into an AC power source and is functioning. If you do not have a redundant power supply installed, you must power down your server system before replacing the power supply.



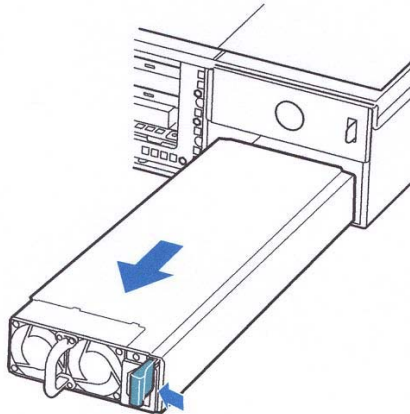
**Note:** For NN 2610 power supply replacement, refer servicing to qualified Acme Packet support personnel.

---

## Removing a Hot-Swap Power Supply

To replace the power supply, perform the following steps.

1. (Non-redundant power supply only) Power down the server.
2. Remove the AC power cable from the failed power supply.
3. Press the green latch at the rear of power supply and pull the power supply from the chassis.



## Installing a Hot-Swap Power Supply

To install a replacement power supply or to add a redundant power supply, use the following instructions.

1. (Replacing power supply only) Remove the failed power supply. For instructions, see Removing a Hot-Swap Power Supply.
2. (Installing redundant power supply only): Remove the filler panel from the upper power supply bay by pulling it out.
3. Slide the new power supply into the opening until it clicks into place. The latch on the rear of the power supply must be at the right.
4. Plug in the AC power cable for the new power supply.

# Installing and Removing a Hard Disk Drive

## On NN2610 and NN2620 Systems

The NN 2610 supports up to three SATA hot-swap hard drives, and the NN 2620 supports up to six SATA hard drives.



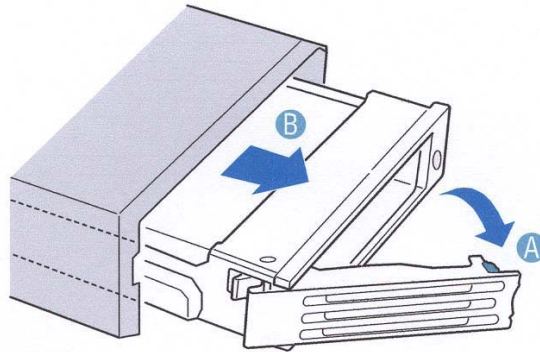
**Caution:** If you need to replace one or more disk drives, contact your Acme Packet sales representative for ordering information. Disk drives provided by Acme Packet are the only compatible models. Do not install disk drives that are not supplied by Acme Packet.

## Removing a SATA Hot-Swap Hard Disk Drive

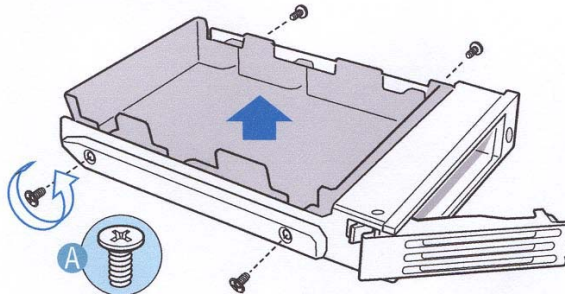
Perform the following steps:

1. Remove the front bezel if it is installed. For instructions, see Installing and Removing the Front Bezel.
2. Press in on the green latch at the front of the hard drive carrier. See letter “A” in the image below

3. Pull out on the black lever and slide the carrier from the chassis. See letter “B” in the figure below.



4. Remove the four screws that attach the plastic retention device or the previously installed hard drive to the drive carrier. Two screws are at each side of the retention device or the hard drive. If required, store the plastic retention device for future use.

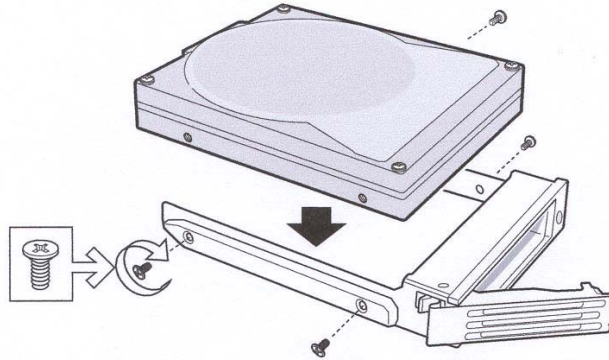


### Installing a SATA Hot-Swap Hard Disk Drive

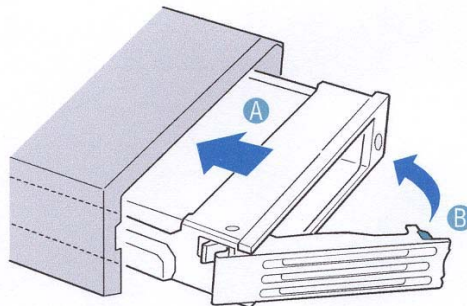
Perform the following steps:

1. Remove the hard drive from its wrapper and place it on an antistatic surface.
2. Set any jumpers and/or switches on the drive according to the drive manufacturer's instructions.
3. With the drive circuit-side down, position the connector end of the drive so that it is facing the rear of the drive carrier. See the image below.

4. Align the holes in the drive to the holes in the drive carrier and attach it to the carrier with the screws that were attached to the plastic retention device.



5. With the black lever in the fully open position, slide the drive assembly into the chassis. The green latch at the front of the drive carrier must be to the right. Do not push on the black drive carrier lever until the lever begins to close by itself.
6. When the black drive carrier lever begins to close by itself, push on it to lock the drive assembly into place.



7. (Optional) Install the front bezel. For instructions, see Installing and Removing the Front Bezel.





---

# ***Appendix A. Technical Specifications***

---

## **NEBS/ETSI**

- Bellcore GR-63, Physical Protection Requirements
- Bellcore GR-1089, Electromagnetic Compatibility and Electrical Safety Req.
- ETSI 300 386, Telecommunication Network, Electromagnetic Compatibility
- ETSI 300 019, Environmental Conditions and Environmental Tests
- ETSI 753, Acoustic Noise

## **AC Power Cords**






North America, Europe, United Kingdom, Japan, China, Korea, Australia


## Safety and EMC Regulatory Compliance (Class A)

| Country               | Certification<br>(Safety and/or EMC) | Regulatory Mark (Safety and/or EMC) |
|-----------------------|--------------------------------------|-------------------------------------|
| Argentina             | IRAM                                 | Not applicable                      |
| Australia/New Zealand | ACA, MED                             | C-Tick                              |
| Belarus               | Bellis                               | Not applicable                      |
| Canada                | UL / Industry Canada                 | cURus / ICES                        |
| China                 | CNCA                                 | CCC                                 |
| Europe                | European Directives                  | CE                                  |
| Germany               | GS                                   | GS                                  |
| International         | CB Repor / CISPR 22                  | Not applicable                      |
| Japan                 | VCCI                                 | VCCI                                |
| Korea                 | RRL                                  | MIC                                 |
| Russia                | GOST                                 | GOST                                |
| Taiwan                | BSMI RPC                             | BSMI                                |
| United States         | UL / FCC                             | CULus / FCC                         |

## Product Regulatory Compliance Markings

This product is marked with the following Product Certification Markings:

| Regulatory Compliance  | Country    | Marking   |
|------------------------|------------|---|
| cULus Listing Marks    | USA/Canada |    |
| GS Mark                | Germany    |    |
| CE Mark                | Europe     |    |
| FCC Marking (Class A)  | USA        | This device complies with Part 15 of the FCC Rules. Operation of this device is subject to the following two conditions:<br>(1) This device may not cause harmful interference, and<br>(2) This device must accept any interference received, including interference that may cause undesired operation.<br>Manufactured by Intel Corporation |
| EMC Marking (Class A)  | Canada     | CANADA ICES-003 CLASS A<br>CANADA NMB-003 CLASSE A  |
| VCCI Marking (Class A) | Japan      | この装置は、クラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。VCCI-A  |
| C-Tick                 | Australia  | <br>N12213  |

| Regulatory Compliance                             | Country | Marking   |
|---|---------|---|
| BSMI Certification<br>Number & Class A<br>Warning | Taiwan  |  |
|   |         | 警告使用者：<br>這是甲類的資訊產品，在居住的環境中使用時，<br>可能會造成射頻干擾，在這種情況下，使用者會<br>被要求採取某些適當的對策          |
| GOST R Marking                                    | Russia  |  |
| RRL MIC Mark                                      | Korea   |  |
| China Compulsory<br>Certification Mark            | China   |  |

## Electromagnetic Compatibility Notices

### FCC (USA)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For questions related to the EMC performance of this product, contact:

Intel Corporation  
5200 N.E. Elam Young Parkway  
Hillsboro, OR 97124  
1-800-628-8686

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit other than the one to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment. The customer is responsible for ensuring compliance of the modified product.

Only peripherals (computer input/output devices, terminals, printers, etc.) that comply with FCC Class A or B limits may be attached to this computer product. Operation with noncompliant peripherals is likely to result in interference to radio and TV reception.

All cables used to connect to peripherals must be shielded and grounded. Operation with cables, connected to peripherals, that are not shielded and grounded may result in interference to radio and TV reception.

## Industry Canada (ICES-003)

Cet appareil numérique respecte les limites bruits radioélectriques applicables aux appareils numériques de Classe A prescrites dans la norme sur le matériel brouilleur: "Appareils Numériques", NMB-003 édictée par le Ministre Canadien des Communications.

### English translation of the notice above:

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the interference-causing equipment standard entitled "Digital Apparatus," ICES-003 of the Canadian Department of Communications.

## Europe (CE Declaration of Conformity)

This product has been tested in accordance too, and complies with the Low Voltage Directive (73/23/EEC) and EMC Directive (89/336/EEC). The product has been marked with the CE Mark to illustrate its compliance.

## VCCI (Japan)

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

### English translation of the notice above:

This is a Class A product based on the standard of the Voluntary Control Council for Interference (VCCI) from Information Technology Equipment. If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

## BSMI (Taiwan)

**警告使用者：**  
這是甲類的資訊產品，在居住的環境中使用時，  
可能會造成射頻干擾，在這種情況下，使用者會  
被要求採取某些適當的對策

The BSMI Certification Marking and EMC warning is located on the outside rear area of the product.

## Korean RRL Compliance



1. 기기의 명칭(모델명) :
2. 인증번호 :
3. 인증받은 자의 상호 :
4. 제조년월일 :
5. 제조자/제조국가 :

### English translation of the notice above:

1. Type of Equipment (Model Name): On License and Product
2. Certification No.: On RRL certificate. Obtain certificate from local Intel representative
3. Name of Certification Recipient: Intel Corporation
4. Date of Manufacturer: Refer to date code on product
5. Manufacturer/Nation: Intel Corporation/Refer to country of origin marked on product

---

## ***Appendix B: Third Party Licenses***

---

Acme Packet products contain and use software under license from other sources and organizations. Acme Packet provides links to third-party sites, which are not under the control of Acme Packet and Acme Packet is not responsible for the contents of any linked third-party site. Acme Packet provides these links to third-party sites to you only as a convenience, and the inclusion of any link to a third-party site does not imply endorsement by Acme Packet of such third-party site.

Acme Packet's products are comprised of a proprietary code base and a set of open source and third party code modules, which are identified below. Acme Packet uses these components in an unaltered form except where noted. Code changes to open source components are strictly limited to bug fixes and functional enhancements. Acme Packet complies with all redistribution/contribution obligations with respect to such open source components where required. Code changes to third party modules comply with all licensing agreements for those modules.

The following companies and services provide source licensing information associated with third-party products that have been integrated with or used in developing Acme Packet products.

### **Adobe**

- [http://www.adobe.com/products/eula/third\\_party/acrobat/9/Acrobat9\\_copyright\\_readme.pdf](http://www.adobe.com/products/eula/third_party/acrobat/9/Acrobat9_copyright_readme.pdf)

Copyright 2008 Adobe Systems Incorporated and its Licensors.

### **Apache Ant Project**

- <http://ant.apache.org/license.html>

The Apache License Version 2.0 applies to all releases of Ant starting with ant 1.6.1

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

The License is accompanied by a NOTICE

NOTICE file corresponding to the section 4 d of the Apache License, Version 2.0, in this case for the Apache Ant distribution.

This product includes software developed by The Apache Software Foundation (<http://www.apache.org/>).

This product includes also software developed by :

- the W3C consortium (<http://www.w3c.org>) ,
- the SAX project (<http://www.saxproject.org>)

Please read the different LICENSE files present in the root directory of this distribution. The names "Ant" and "Apache Software Foundation" must not be used to endorse or promote products derived from this software without prior written permission. For written permission, please contact [apache@apache.org](mailto:apache@apache.org).

## Apache Commons Project

### Commons EL, Commons Net, jxpath

© 2011 The Apache Software Foundation

- <http://commons.apache.org/license.html>

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:

You must give any other recipients of the Work or Derivative Works a copy of this License; and

You must cause any modified files to carry prominent notices stating that You changed the files; and

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

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.

---

## Apache License

### Apache CXF, Apache Geronimo, Direct Web Remoting, Lucene, XMLBeans

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

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:

You must give any other recipients of the Work or Derivative Works a copy of this License; and

You must cause any modified files to carry prominent notices stating that You changed the files; and

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

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.

-----  
Copyright © 2008 The Apache Software Foundation, Licensed under the Apache License, Version 2.0.

## Astron Software FTP Service

- <ftp://ftp.astron.com/pub/tcsh/>

Unauthorized access prohibited. All activity may be logged.

File utility:     /pub/file

Tcsh shell:       /pub/tcsh

The software in this server 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 ASTRON.COM 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.

- <ftp://ftp.astron.com/pub/tcsh/README>

Feel free to use it. These changes to csh may only be included in a commercial product if the inclusion or exclusion does not change the purchase price, level of support, etc. Please respect the individual authors by giving credit where credit is due (in other words, don't claim that you wrote portions that you haven't, and don't delete the names of the authors from the source code or documentation).

## Beanshell

- <http://www.beanshell.org/license.html>

BeanShell is a free software project. It's continued development depends on the interest and support of users and developers like you. The source code is available for you to use and extend or integrate into your software freely under either the terms of the Sun Public License or the GNU Lesser Public License (see below).

The "cost" of this software is simply to let us know how you are using BeanShell. You can do this by filling out the [BeanShell User Info Form](#). Please feel free to wait until you have started using BeanShell to do this.

Dual Licensing: Sun Public License / Gnu Lesser Public License

BeanShell is dual licensed under both the SPL and LGPL. You may use and develop BeanShell under either license.

---

Please [see the Sun Public License](#) for details.

About the LGPL

*Note: the LGPL has become the "Lesser Gnu Public License" and BeanShell has adopted the new version...*

A quick note about the LGPL:

The LGPL is less restrictive than the ordinary GNU Public License in that it does not force you to distribute your own applications under the terms of the GPL. It primarily requires that you include a notice that you are using the software in your documentation and provide access to the original source code. It also essentially requires that if you modify or extend BeanShell itself that you make those changes available separately, under the terms of either the LGPL or the GPL. I would ask that you accomodate this by simply sending me your bug fixes and improvement to allow me to incorporate them into the general BeanShell release. Please [see the LGPL](#) for the details.

*If you have a more precise, brief explanation please let me know! Thanks! - Pat*

Please also feel free to contact me: ([Pat Niemeyer pat@pat.net](mailto:Pat.Niemeyer@pat.net)) about other licensing arrangements.

## Belledone Communications

### Linphone

- <http://www.gnu.org/licenses/gpl-2.0.html>

See the GNU General Public License, Version 2, at the end of this document.  
You can also access this license through the link provided above.

### Bidilink-0.1

Copyright 2003 Lennart Poettering

- <http://www.gnu.org/copyleft/gpl.html>

See the GNU General Public License, Version 2, at the end of this document.  
You can also access this license through the link provided above.

## Bouncy Castle

### jce-129

- <http://www.bouncycastle.org/licence.html>

### License

Copyright (c) 2000 - 2008 The Legion Of The Bouncy Castle (<http://www.bouncycastle.org>)

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.

## Brian Wellington

- <http://www.xbill.org/dnsjava/dnsjava-current/README>

License: dnsjava is placed under the BSD license. Several files are also under additional licenses; see the individual files for details.

Copyright (c) 1999-2005, Brian Wellington All rights reserved.

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

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* 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.
- \* Neither the name of the dnsjava project 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 COPYRIGHT HOLDERS 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 COPYRIGHT OWNER 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.

## **Broadcom**

STRATASWITCH (TM) SOFTWARE LICENSE AND PRODUCT USE  
AGREEMENT

ATTENTION

BY USING ANY OF THE DATA CONTAINED IN THIS SOURCE DISTRIBUTION, YOU ("LICENSEE") ARE ENTERING INTO A BINDING AGREEMENT (THE "AGREEMENT") WITH BROADCOM CORPORATION ("BROADCOM"). THE TERMS OF THE AGREEMENT ARE SET FORTH BELOW. AMONG OTHER THINGS, THE TERMS CONTAIN DISCLAIMERS OF WARRANTY AND LIABILITY. REVIEW ALL OF THE TERMS

CAREFULLY. IF YOU DO NOT AGREE TO BE BOUND BY THESE TERMS, YOU MUST NOT USE THE DATA CONTAINED IN THIS SOURCE DISTRIBUTION, AND YOU MAY RETURN THIS SOURCE DISTRIBUTION FOR A FULL REFUND BY CALLING BROADCOM AT (949) 450-8700.

RECITALS WHEREAS, Broadcom has developed the StrataSwitch(TM) BCM56xx (the "IC" or "ICs"), a family of proprietary integrated circuits that incorporates wire-speed, multi-layer switches with Fast Ethernet, Gigabit Ethernet, Ten-Gigabit Ethernet, and/or Multi-Gigabit Fabric ports, and is providing Licensee with the IC(s) and various other hardware components solely for internal evaluation of the IC(s) (the IC(s) and such other hardware components are collectively referred to herein as the "Hardware"); WHEREAS, the IC(s) can be operated in conjunction with certain computer software that is proprietary to Broadcom (the "Broadcom Software", as described below) and certain computer software that is proprietary to various third parties (the "Third Party Software", as described below); WHEREAS, in connection with Licensee's evaluation of the IC(s), and in connection with Licensee's development and distribution of products containing one or more of the ICs ("Licensee Products"), Licensee desires to receive from Broadcom, and Broadcom desires to grant to Licensee, certain license rights to the Broadcom Software and to certain Third Party Software in accordance with the terms of this Agreement; NOW, THEREFORE, in consideration of the foregoing and the mutual covenants contained herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereby agree as follows:

## 1. DEFINITIONS

1.1 "Broadcom Documentation" means all written technical documentation furnished by Broadcom to Licensee during the term of this Agreement that relates to the Broadcom Software.

1.2 "Broadcom Software" means (a) the BCM56xx Device Drivers, (b) the Broadcom Command Monitor (also known as the "BCM" application), in both computer source code and object code form, including any updates, improvements, or modifications thereof furnished to Licensee by Broadcom, and the Broadcom Documentation. All Broadcom Software is proprietary to Broadcom.

1.3 "Derivative Work" means any discrete modification to the Broadcom Software, any modified, altered, enhanced, translated, or adapted version of the Broadcom Software, and any work that constitutes a derivative work of the Broadcom Software pursuant to the United States Copyright Act of 1976.

1.4 "Distributor" means any reseller, original equipment manufacturer, or other distributor who is authorized to distribute Licensee Products to End Users or to other such distributors.

1.5 "End User" means any third party who acquires a Licensee Product from Licensee or a Distributor solely for internal use and not for further distribution.

1.6 "End User Agreements" has the meaning ascribed to that term in Section 3.1.

1.7 "Product Software" has the meaning ascribed to that term in Section 2.1.

1.8 "Section" refers to a numbered section in this Agreement.

1.9 "Software" refers to the Broadcom Software and the Third Party Software.

1.10 "Third Party Agreements" has the meaning ascribed to that term in Section 4.3.

1.11 "Third Party Software" means computer software that is owned by third parties and is provided to Licensee by Broadcom in connection with Licensee's evaluation of the IC(s), including but not limited to the WRS Software.

1.12 "WRS Software" means those portions of Wind River Systems, Inc.'s VXWorks (TM) Development Software, in computer object code form only, that are provided to Licensee by Broadcom in connection with Licensee's evaluation of the IC.

## 2. BROADCOM SOFTWARE

2.1 License Grant for Broadcom Software. Subject to all terms and conditions in this Agreement, Broadcom hereby grants to Licensee, under all of Broadcom's intellectual and industrial property rights in and to the Broadcom Software, a personal, non-exclusive, non-transferable, royalty-free, limited license to: (a) use and create Derivative Works of the Broadcom Software only in connection with the development of Licensee Products, and allow Licensee's contractors to do the same; and (b) reproduce the Broadcom Software and any Derivative Works created by Licensee and/or its contractors, in the form of computer object code only, and distribute those reproductions to Distributors and End Users only pursuant to the limitations set forth in Section 3 below. Such reproductions are referred to herein as "Product Software."

2.2 Ownership of Broadcom Software. Broadcom shall retain all right, title, and interest in and to the Broadcom Software and all intellectual and industrial property rights therein, subject only to the license rights expressly granted to Licensee in this Section 2.

Licensee shall own all right, title, and interest in and to any improvements, modifications, or enhancements to the Broadcom Software made by Licensee, subject to Broadcom's ownership rights in and to the underlying Broadcom Software and the restrictions on use of the Broadcom Software and Product Software contained herein; provided, however, that Licensee hereby grants to Broadcom and its subsidiaries and affiliates a perpetual, irrevocable, world-wide, non-exclusive, sub-licensable, royalty-free right and license to make, use, sell, offer for sale, export, copy, perform, display, create derivative works of, and otherwise exploit such improvements, modifications, or enhancements for any purpose whatsoever.

2.3 No Other Rights Granted in Broadcom Software. Apart from the licenses and rights expressly enumerated in this Section 2, Broadcom grants, and Licensee receives, no license nor any other right, title, or interest in or to any intellectual or industrial property rights relating to the Broadcom Software or any copy of any part thereof. Licensee shall not modify, copy, license, sub-license, sell, or otherwise distribute the Broadcom Software or any Derivative Work to any third party except as expressly permitted in this Agreement, nor allow any third party to do any of the foregoing.

### 3. END USER AND DISTRIBUTOR AGREEMENTS

3.1 End User Agreements. Licensee may distribute the Product Software to End Users only for use in connection with a Licensed Product and only pursuant to legally enforceable agreements ("End User Agreements") that, at a minimum: (a) prohibit End Users from: (1) copying the Product Software (except for one copy for backup



purposes only), (2) transferring the Product Software to any third party apart from the associated Licensee Product, (3) modifying the Product Software, (4) removing or altering any proprietary notices or legends that are on or in the Product Software or its packaging, (5) reverse compiling, reverse assembling, reverse translating, reverse engineering, or otherwise attempting to derive the computer source code of the Product Software, (6) exporting the Product Software or underlying technology in contravention of applicable United States' or foreign export laws and regulations, (7) using the Product Software other than in connection with the operation of the associated Licensee Product, or (8) allowing third parties to do that which is prohibited under (1) through (7); (b) stipulate that the Product Software is licensed, not sold, and that neither title to nor ownership of the Product Software or any portion thereof or any intellectual or industrial property rights embodied therein is transferred; (c) include a disclaimer as to any implied warranties of merchantability, fitness for a particular purpose, or non-infringement; (d) exclude liability for any special, indirect, punitive, exemplary, incidental, or consequential damages; and (e) stipulate that Broadcom is an intended third party beneficiary of such agreement with the right to enforce the terms of same.

3.2 Distributor Agreements. Licensee may distribute Product Software to Distributors only in connection with the redistribution of Licensed Products and only pursuant to legally enforceable agreements ("Distributor Agreements") that, at a minimum: (a) require Distributors to only distribute the Product Software to End Users pursuant to End User Agreements; (b) prohibit Distributors from (1) modifying the Product Software, (2) distributing the Product Software other than in connection with the Licensed Product, (3) removing or altering any proprietary notices or legends that are on or in the Product Software or its packaging, (4) reverse compiling, reverse assembling, reverse translating, reverse engineering, or otherwise attempting to derive the computer source code of the Product Software, (5) exporting the Product Software or underlying technology in contravention of applicable United States' or foreign export laws and regulations, or (6) allowing third parties to do that which is prohibited under (1) through (5); (c) contain the terms and conditions identified in Section 3.1(b) through (e); and (d) require Distributors to only distribute the Product Software to sub-Distributors who agree to be bound by the substantive terms of this Section 3.2.

#### 4. THIRD PARTY SOFTWARE

4.1. License Grant for WRS Software. Subject to all terms and conditions in this Agreement, Broadcom hereby grants to Licensee a personal, non-transferable, non-exclusive, limited license to: (a) use the WRS Software solely for Licensee's internal evaluation of the IC(s); and (b) make one (1) copy of the WRS Software solely for backup purposes.

4.2 No Other Rights Granted in WRS Software. Apart from the license rights expressly enumerated in Section 4.1, Broadcom grants, and Licensee receives, no license nor any other right, title, or interest in or to any intellectual or industrial property rights relating to the WRS Software or any copy of any part thereof. Licensee shall not modify, copy, license, sub-license, sell, or otherwise distribute the WRS Software to any third party except as expressly permitted in this Agreement.

4.3 Agreements Regarding Third Party Software. From time to time, Broadcom may provide Licensee with Third Party Software in addition to the WRS Software. Licensee shall abide by all terms and conditions in any and all agreements pursuant to which such software is provided to Broadcom and/or Licensee (all of which are referred to collectively herein as the "Third Party Agreements"), or Licensee must immediately return the unused software with written notice to Broadcom stating that Licensee will not accept such software.

4.4 No Reverse Engineering of Third Party Software. Licensee may not reverse compile, reverse assemble, reverse translate, reverse engineer, or otherwise attempt to derive the computer source code of the Third Party Software, nor let any third party do any of the foregoing.

4.5 Ownership of Third Party Software. As between Licensee and the owners of the Third Party Software, such owners shall own all right, title, and interest in and to their respective Third Party Software and all intellectual and industrial property rights therein, subject only to the express license rights granted to Licensee herein or granted from time to time by Broadcom or such owners.

## 5. NO WARRANTY OR SUPPORT

---

5.1 DISCLAIMER OF WARRANTY. THE HARDWARE, SOFTWARE, AND ANY OTHER GOODS OR SERVICES THAT LICENSEE MAY RECEIVE FROM BROADCOM IN CONNECTION WITH THIS AGREEMENT, ARE PROVIDED "AS IS." BROADCOM GRANTS AND LICENSEE RECEIVES NO REPRESENTATIONS OR WARRANTIES WHATSOEVER, EITHER EXPRESS OR IMPLIED. BROADCOM SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A SPECIFIC PURPOSE, OR NON-INFRINGEMENT. NO INFORMATION OR ADVICE GIVEN BY BROADCOM OR ITS AGENTS, EMPLOYEES, OR REPRESENTATIVES, WHETHER ORAL OR WRITTEN, SHALL CREATE ANY REPRESENTATION OR WARRANTY.

5.2 No Support. Nothing in this Agreement shall obligate Broadcom to provide any support for the Hardware or Software. Broadcom may, but shall be under no obligation to, correct defects in the Broadcom Software and/or make available updates thereto. Licensee shall make reasonable efforts to provide defect reports and copies of any modifications to the Broadcom Software to Broadcom, as an aid to creating improved versions of the Broadcom Software. Licensee shall, at its own expense, be solely responsible for providing technical support and training to its Distributors and End Users for Licensee Products, and Broadcom shall have no obligation with respect thereto.

5.3 Licensee Warranties. Licensee shall be solely responsible for, and neither Broadcom nor any owner of Third Party Software shall have any obligation to honor, any warranties that Licensee provides to any third parties with respect to the Software or Derivative Works. Licensee agrees to defend, indemnify, and hold Broadcom and the owners of Third Party Software harmless from and against any and all liabilities, losses, damages, costs, and expenses (including legal fees) associated with any claim or action brought against Broadcom or the owners of Third Party Software in connection with any such warranties, whether express, implied, statutory, or otherwise.

5.4 LIMITATION OF LIABILITY. THE LIABILITY OF BROADCOM OR ANY OWNER OF THIRD PARTY SOFTWARE FOR ANY CLAIMS ARISING OUT OF THIS AGREEMENT OR USE OF THE HARDWARE OR SOFTWARE, REGARDLESS OF THE FORM OF ACTION, SHALL NOT EXCEED \$500 IN U.S. CURRENCY. IN NO EVENT SHALL BROADCOM OR ANY OWNER OF THIRD PARTY SOFTWARE HAVE ANY LIABILITY FOR ANY INDIRECT, INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES, HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER FOR BREACH OF CONTRACT, TORT (INCLUDING NEGLIGENCE) OR OTHERWISE, ARISING OUT OF THIS AGREEMENT OR USE OF THE HARDWARE OR SOFTWARE, INCLUDING BUT NOT LIMITED TO LOSS OF ANTICIPATED PROFITS, EVEN IF BROADCOM OR SAID OWNER OF THIRD PARTY SOFTWARE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THESE LIMITATIONS SHALL APPLY NOTWITHSTANDING ANY FAILURE OF ESSENTIAL PURPOSE OF ANY LIMITED REMEDY.

6. TRADEMARKS AND PROPRIETARY NOTICES  
6.1 Trademarks. Licensee acknowledges that any symbols, trademarks, trade names, copyrights and service marks (referred to collectively as "Marks") adopted by Broadcom to identify the Broadcom Software belong to Broadcom and Licensee shall have no rights therein. Likewise, Licensee acknowledges that any Marks adopted by any third party to identify its Third Party Software belong to that third party and Licensee shall have no rights therein.

6.2 Proprietary Notices. Licensee agrees that each copy of the Software shall include reproductions of their respective copyright notices and other proprietary notices and legends in the same location as the original. Licensee shall not remove, alter, efface, or obscure any copyright notice or other proprietary notice or legend from the Software. Licensee further agrees that each copy of any Derivative Work shall include reproductions of the copyright notice and other appropriate proprietary notices and legends from the corresponding Broadcom Software, in computer object code format or otherwise.

## 7. TERM AND TERMINATION

7.1 Term and Termination. This Agreement shall become effective on the date first set forth above and shall remain in effect perpetually unless terminated as provided below. If Licensee defaults in a material obligation under this Agreement and continues in default for a period of thirty (30) days after written notice of default is given to it by Broadcom, Broadcom may terminate and cancel this Agreement upon written notice of termination given to Licensee.

7.2 Effect Of Termination. Except for those sub-licenses properly granted to End Users pursuant to Section 3, all rights and licenses granted under or pursuant to this Agreement shall immediately terminate upon any termination of this Agreement. Upon termination of this Agreement for any reason, Licensee shall destroy or return to Broadcom within thirty (30) days, at Broadcom's option, all tangible items in Licensee's possession or control which contain proprietary or confidential materials provided to Licensee by Broadcom pursuant to this Agreement (including but not limited to all copies of the Software and any Derivative Works).

7.3 Survivals. The provisions of Sections 1, 2.2, 2.3, 4.2, 4.3, 4.5, 5, 6, 7.2, 7.3, 8, and 9 shall survive the termination of this Agreement for any reason.

## 8. CONFIDENTIALITY

8.1 Obligations. Licensee acknowledges and agrees that, except as expressly provided in this Agreement, the Hardware, Software, and all other materials and information provided to Licensee by Broadcom hereunder is confidential and proprietary to Broadcom and/or third parties and shall constitute and be treated as "Confidential Information" under that certain Joint Nondisclosure Agreement previously entered into by and between Broadcom and Licensee (the "JNDA"). The JNDA is incorporated into this Agreement by reference and by this reference.

8.2 Source Code Protection. Licensee shall not under any circumstances copy, duplicate, or otherwise reproduce the computer source code of the Broadcom Software (the "Source Code") in any manner except as expressly provided herein. Licensee is granted the right to make only one (1) archival or backup copy of the Source Code, which shall be marked as an archival copy and as the confidential and proprietary property of Broadcom to which access is restricted. Licensee agrees to inform all employees who are given access by Licensee to the Broadcom Documentation or the Source Code that such materials are confidential and trade secrets of Broadcom, and licensed to Licensee as such. Licensee shall be fully responsible for the conduct of all its employees, agents, and representatives who may in any way breach this Agreement or the JNDA.

8.3 Contractor Confidentiality Agreements. Notwithstanding anything in this Agreement to the contrary, before any contractor gains access to any materials or information that are confidential pursuant to this Agreement, such contractor shall enter into a confidentiality agreement with Licensee sufficient to protect such confidential information from unauthorized use or disclosure pursuant to the terms of this Agreement and the JNDA, and to assign all right, title, and interest in any Derivative Work to Licensee.

## 9. MISCELLANEOUS

9.1 Assignment. This Agreement shall be binding upon, and inure to the benefit of, the parties and their respective successors and assigns, provided however that Licensee may not assign this Agreement or any rights or obligation hereunder, directly or indirectly, by operation of law or otherwise, without the prior written consent of Broadcom, and any such attempted assignment shall be void. Notwithstanding the foregoing, (a) Licensee may assign this Agreement to a successor to all or substantially all of its business or assets to which this Agreement relates (provided that such successor is not a competitor of Broadcom nor a competitor of the owner of any Third Party Software, as determined solely by Broadcom), and (b) Licensee shall have the right to transfer its rights hereunder to any company which is wholly owned by Licensee provided such company agrees in writing to be bound by all the terms and conditions of this Agreement that are applicable to Licensee and such company is not a competitor of Broadcom nor a competitor of the owner of any Third Party software, as determined solely by Broadcom.

9.2 Notices. All notices, requests, demands, or communications required hereunder (collectively referred to herein as "Notices") shall be made in writing and delivered personally, by certified or registered mail (return receipt requested), or by an internationally-recognized, private express courier to the receiving party's address as first set forth in the JNDA. All Notices to Broadcom shall be directed to the attention of David Dull, Esq., Vice President of Business Affairs and General Counsel. Notices

shall be deemed effective upon receipt or, if delivery is not effected by reason of some fault of the addressee, when tendered.

---

**9.3 Governing Law.** This Agreement shall be governed by, and construed and enforced in accordance with, the laws of California, without reference to the conflict of laws rules of California or any other jurisdiction. All disputes arising out of this Agreement are subject to the exclusive jurisdiction of either the state or federal courts located in Los Angeles, California, and the parties agree and submit to the personal and exclusive jurisdiction and venue of these courts. Both parties hereby expressly reject the application of the United Nations Convention on Contracts for the International Sale of Goods.

**9.4 Severability.** All terms and provisions of this Agreement shall, if possible, be construed in a manner which makes them valid, but in the event any term or provision of this Agreement is found by a court of competent jurisdiction to be illegal or unenforceable, the validity or enforceability of the remainder of this Agreement shall not be affected if the illegal or unenforceable provision does not materially affect the intent of this Agreement. If the illegal or unenforceable provision materially affects the intent of the parties to this Agreement, the parties shall negotiate in good faith to replace such provision. If the parties cannot replace such provision within two (2) months after the illegality of unenforceability of such provision had been finally determined by a court of competent jurisdiction, this Agreement shall become terminated.

**9.5 Export Regulations.** Licensee understands that Broadcom is subject to regulation by agencies of the United States government, including but not limited to the U.S. Department of Commerce, which prohibit export or diversion of certain technical products to certain countries. Any and all obligations of, or undertakings by, Broadcom to provide Software, any media in which such Software is contained, or any other technical assistance, shall be subject in all respects to such United States laws and regulations as shall from time to time govern the license and delivery of technology and products abroad by persons subject to the jurisdiction of the United States, including the Export Administration Act of 1979, as amended, any successor legislation, and the Export Administration Regulations issued by the Department of Commerce, Bureau of Export Administration. Licensee warrants that it will comply in all respects with the Export Administration Regulations and all other export and re-export restrictions applicable to the technology and documentation provided hereunder.

9.6 Government Customers. If any of the rights or licenses granted hereunder are acquired by or on behalf of a unit or agency of the United States Government, this Section 7.6 applies. The WRS Software is a trade secret of Wind River Systems, Inc. for all purposes of the Freedom of Information Act and is, in all respects, proprietary data belonging solely to Wind River Systems, Inc. The Broadcom Software is a trade secret of Broadcom for all purposes of the Freedom of Information Act and is, in all respects, proprietary data belonging solely to Broadcom. Both the WRS Software and the Broadcom Software: (i) were developed at private expense, is existing computer software, and no part of it was developed with government funds, (ii) are "restricted computer software" submitted with restricted rights in accordance with subparagraphs (a) through (d) of the Commercial Computer Software-Restricted Rights clause at 48 CFR 52.227-19 and its successors, (iii) are unpublished and all rights are reserved under the copyright laws of the United States. For units of the Department of Defense (DoD), the WRS Software and the Broadcom Software is licensed only with "Restricted Rights" as that term is defined in the DoD Supplement to the Federal Acquisition Regulation ("DFARS"), 252.227-7013(c)(1)(ii), Rights in Technical Data and Computer Software and its successors, and use, duplication, or disclosure is subject to the restrictions set forth in subdivision (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.227-7013. Contractor/manufacturer of the WRS Software is Wind River Systems, Inc., 500 Wind River Way, Alameda, CA 94501. Contractor/manufacturer of the Broadcom Software is Broadcom Corporation, 16215 Alton Parkway, Irvine, CA 92619. If the WRS Software or the Broadcom Software is acquired under a GSA Schedule, Licensee agrees to refrain from: (a) changing or removing any insignia or lettering from such software or the documentation that is provided; (b) producing copies of related manuals or media (except for backup purposes); and (c) allowing any third party to do that which is prohibited in 9.6(a) and (b).

9.7 Waiver. The waiver of, or failure to enforce, any breach or default hereunder shall not constitute the waiver of any other or subsequent breach or default.

9.8 Headings. The Section headings in this Agreement are inserted only as a matter of convenience, and in no way define, limit, extend, or interpret the scope of this Agreement or of any particular Section.

9.9 Further Assurances. Each party hereto agrees to execute and deliver any and all further documents, and to perform such other acts, as may be necessary or expedient to carry out and make effective this Agreement.



9.10 Relationship of Parties. Nothing in this Agreement shall be construed to place the parties in the relationship of partners, joint venturers, principal and agent, or employer and employee, and neither party shall have the power to obligate or bind the other party in any manner whatsoever.

9.11 Third Party Beneficiaries. Licensee acknowledges and agrees that each owner of Third Party Software is an intended third party beneficiary of this Agreement and may enforce those term and conditions of this Agreement that are applicable to the Third Party Software, provided that such enforcement may only be in connection with the Third Party Software that is proprietary to the owner seeking enforcement.

9.12 Counterparts. This Agreement may be executed in one or more counterparts, each of which will be deemed an original but all of which together will constitute one and the same instrument.

9.13 Entire Agreement. This Agreement, the JNDA, and any and all present and future Third Party Agreements, all of which are incorporated herein by reference and by this reference, sets forth the entire Agreement between the parties and supersedes any and all prior proposals, agreements, and representations between them regarding this transaction, whether written or oral. This Agreement may be changed only by mutual agreement of the parties in writing.

## BusyBox

- <http://www.busybox.net/license.html>

Copyright © 1999-2008 Erik Andersen

BusyBox is licensed under the GNU General Public License version 2, which is often abbreviated as GPLv2. (This is the same license the Linux kernel is under, so you may be somewhat familiar with it by now.)

A complete copy of the license text is included in the file LICENSE in the BusyBox source code.

Anyone thinking of shipping BusyBox as part of a product should be familiar with the licensing terms under which they are allowed to use and distribute BusyBox. Read the full text of the GPL (either through the above link, or in the file LICENSE in the busybox tarball), and also read the Frequently Asked Questions about the GPL.

Basically, if you distribute GPL software the license requires that you also distribute the source code to that GPL-licensed software. So if you distribute BusyBox without making the source code to the version you distribute available, you violate the license terms, and thus infringe on the copyrights of BusyBox. (This requirement applies whether or not you modified BusyBox; either way the license terms still apply to you.) Read the license text for the details.

### A note on GPL versions

Version 2 of the GPL is the only version of the GPL which current versions of BusyBox may be distributed under. New code added to the tree is licensed GPL version 2, and the project's license is GPL version 2.

Older versions of BusyBox (versions 1.2.2 and earlier, up through about svn 16112) included variants of the recommended "GPL version 2 or (at your option) later versions" boilerplate permission grant. Ancient versions of BusyBox (before svn 49) did not specify any version at all, and section 9 of GPLv2 (the most recent version at that time) says those old versions may be redistributed under any version of GPL (including the obsolete V1). This was conceptually similar to a dual license, except that the different licenses were different versions of the GPL.

However, BusyBox has apparently always contained chunks of code that were licensed under GPL version 2 only. Examples include applets written by Linus Torvalds (util-linux/mkfs\_minix.c and util\_linux/mkswap.c) which stated they "may be redistributed as per the Linux copyright" (which Linus clarified in the 2.4.0-pre8 release announcement in 2000 was GPLv2 only), and Linux kernel code copied into libbb/loop.c (after Linus's announcement). There are probably more, because all we used to check was that the code was GPL, not which version. (Before the GPLv3 draft proceedings in 2006, it was a purely theoretical issue that didn't come up much.)

To summarize: every version of BusyBox may be distributed under the terms of GPL version 2. New versions (after 1.2.2) may **only** be distributed under GPLv2, not under other versions of the GPL. Older versions of BusyBox might (or might not) be distributable under other versions of the GPL. If you want to use a GPL version other than 2, you should start with one of the old versions such as release 1.2.2 or SVN 16112, and do your own homework to identify and remove any code that can't be licensed under the GPL version you want to use. New development is all GPLv2.

## License enforcement

BusyBox's copyrights are enforced by the Software Freedom Law Center (you can contact them at [gpl@busybox.net](mailto:gpl@busybox.net)), which "accepts primary responsibility for enforcement of US copyrights on the software... and coordinates international copyright enforcement efforts for such works as necessary." If you distribute BusyBox in a way that doesn't comply with the terms of the license BusyBox is distributed under, expect to hear from these guys. Their entire reason for existing is to do pro-bono legal work for free/open source software projects. (We used to list people who violate the BusyBox license in The Hall of Shame, but these days we find it much more effective to hand them over to the lawyers.)

Our enforcement efforts are aimed at bringing people into compliance with the BusyBox license. Open source software is under a different license from proprietary software, but if you violate that license you're still a software pirate and the law gives the vendor (us) some big sticks to play with. We don't want monetary awards, injunctions, or to generate bad PR for a company, unless that's the only way to get somebody that repeatedly ignores us to comply with the license on our code.

## A Good Example

These days, Linksys is doing a good job at complying with the GPL, they get to be an example of how to do things right. Please take a moment and check out what they do with distributing the firmware for their WRT54G Router. Following their example would be a fine way to ensure that you have also fulfilled your licensing obligations.

## Bzip

Copyright © 1996 - 2010 [julian@bzip.org](mailto:julian@bzip.org)

- <http://www.opensource.org/licenses/bsd-license.php>

A copy of the Open Source Initiative OSI - The BSD License is provided at the end of this document. You can also access this license through the link provided above.

## C++ RTMP Server

Copyright © 2007-2010

- <http://www.gnu.org/licenses/gpl-3.0.html>

The GNU General Public License, Version 3, is provided at the end of this document, or can be accessed from the link provided above.

## Candela

- <http://www.candelatech.com/~greetar/>

The GNU Project was launched in 1984 to develop a complete Unix-like operating system which is free software: the GNU system.

Free software is a matter of the users' freedom to run, copy, distribute, study, change and improve the software. More precisely, it refers to four kinds of freedom, for the users of the software:

- The freedom to run the program, for any purpose (freedom 0).
- The freedom to study how the program works, and adapt it to your needs (freedom 1). Access to the source code is a precondition for this.
- The freedom to redistribute copies so you can help your neighbor (freedom 2).
- The freedom to improve the program, and release your improvements to the public, so that the whole community benefits (freedom 3). Access to the source code is a precondition for this.

A program is free software if users have all of these freedoms. Thus, you should be free to redistribute copies, either with or without modifications, either gratis or charging a fee for distribution, to anyone anywhere. Being free to do these things means (among other things) that you do not have to ask or pay for permission.

You should also have the freedom to make modifications and use them privately in your own work or play, without even mentioning that they exist. If you do publish your changes, you should not be required to notify anyone in particular, or in any particular way.

The freedom to run the program means the freedom for any kind of person or organization to use it on any kind of computer system, for any kind of overall job and purpose, without being required to communicate about it with the developer or any other specific entity. In this freedom, it is the user's purpose that matters, not the developer's purpose; you as a user are free to run a program for your purposes, and if you distribute it to someone else, she is then free to run it for her purposes, but you are not entitled to impose your purposes on her.

---

The freedom to redistribute copies must include binary or executable forms of the program, as well as source code, for both modified and unmodified versions. (Distributing programs in runnable form is necessary for conveniently installable free operating systems.) It is ok if there is no way to produce a binary or executable form for a certain program (since some languages don't support that feature), but you must have the freedom to redistribute such forms should you find or develop a way to make them.

In order for the freedoms to make changes, and to publish improved versions, to be meaningful, you must have access to the source code of the program. Therefore, accessibility of source code is a necessary condition for free software.

One important way to modify a program is by merging in available free subroutines and modules. If the program's license says that you cannot merge in an existing module, such as if it requires you to be the copyright holder of any code you add, then the license is too restrictive to qualify as free.

In order for these freedoms to be real, they must be irrevocable as long as you do nothing wrong; if the developer of the software has the power to revoke the license, without your doing anything to give cause, the software is not free.

However, certain kinds of rules about the manner of distributing free software are acceptable, when they don't conflict with the central freedoms. For example, copyleft (very simply stated) is the rule that when redistributing the program, you cannot add restrictions to deny other people the central freedoms. This rule does not conflict with the central freedoms; rather it protects them.

You may have paid money to get copies of free software, or you may have obtained copies at no charge. But regardless of how you got your copies, you always have the freedom to copy and change the software, even to sell copies.

Free software does not mean non-commercial. A free program must be available for commercial use, commercial development, and commercial distribution. Commercial development of free software is no longer unusual; such free commercial software is very important.

Rules about how to package a modified version are acceptable, if they don't substantively block your freedom to release modified versions, or your freedom to make and use modified versions privately. Rules that if you make your version available in this way, you must make it available in that way also can be acceptable too, on the same condition. (Note that such a rule still leaves you the choice of whether to publish your version at all.) Rules that require release of source code to the users for versions that you put into public use are also acceptable. It is also acceptable for the license to require that, if you have distributed a modified version and a previous developer asks for a copy of it, you must send one, or that you identify yourself on your modifications.

In the GNU project, we use copyleft to protect these freedoms legally for everyone. But non-copylefted free software also exists. We believe there are important reasons why it is better to use copyleft, but if your program is non-copylefted free software, we can still use it.

See Categories of Free Software for a description of how free software, copylefted software and other categories of software relate to each other.

Sometimes government export control regulations and trade sanctions can constrain your freedom to distribute copies of programs internationally. Software developers do not have the power to eliminate or override these restrictions, but what they can and must do is refuse to impose them as conditions of use of the program. In this way, the restrictions will not affect activities and people outside the jurisdictions of these governments.

Most free software licenses are based on copyright, and there are limits on what kinds of requirements can be imposed through copyright. If a copyright-based license respects freedom in the ways described above, it is unlikely to have some other sort of problem that we never anticipated (though this does happen occasionally). However, some free software licenses are based on contracts, and contracts can impose a much larger range of possible restrictions. That means there are many possible ways such a license could be unacceptably restrictive and non-free.

We can't possibly list all the ways that might happen. If a contract-based license restricts the user in an unusual way that copyright-based licenses cannot, and which isn't mentioned here as legitimate, we will have to think about it, and we will probably conclude it is non-free.

When talking about free software, it is best to avoid using terms like give away or for free, because those terms imply that the issue is about price, not freedom. Some common terms such as piracy embody opinions we hope you won't endorse. See *Confusing Words and Phrases that are Worth Avoiding* for a discussion of these terms. We also have a list of translations of free software into various languages.

Finally, note that criteria such as those stated in this free software definition require careful thought for their interpretation. To decide whether a specific software license qualifies as a free software license, we judge it based on these criteria to determine whether it fits their spirit as well as the precise words. If a license includes unconscionable restrictions, we reject it, even if we did not anticipate the issue in these criteria. Sometimes a license requirement raises an issue that calls for extensive thought, including discussions with a lawyer, before we can decide if the requirement is acceptable. When we reach a conclusion about a new issue, we often update these criteria to make it easier to see why certain licenses do or don't qualify.

If you are interested in whether a specific license qualifies as a free software license, see our list of licenses. If the license you are concerned with is not listed there, you can ask us about it by sending us email at <licensing@gnu.org>.

If you are contemplating writing a new license, please contact the FSF by writing to that address. The proliferation of different free software licenses means increased work for users in understanding the licenses; we may be able to help you find an existing Free Software license that meets your needs.

If that isn't possible, if you really need a new license, with our help you can ensure that the license really is a Free Software license and avoid various practical problems.

## Cewolf

**batik-awt-util-1.6.jar, batik-dom-1.6.jar, batik-svggen-1.6.jar,  
batik-util-1.6.jar, batik-xml-1.6.jar, cewolf-0.12.0.jar**

- <http://www.gnu.org/copyleft/lesser.html>

Copyright (c) 2003 Guido Laures

A copy of the GNU Lesser General Public License is provided at the end of this document. You can also access this license through the link provided above.

## Cisco

- <http://srtp.sourceforge.net/license.html>

The srtp library and the test drivers distributed with it are licensed under the following BSD-based license.

Copyright (c) 2001-2005 Cisco Systems, Inc.  
All rights reserved.

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

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

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.

Neither the name of the Cisco Systems, Inc. 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 COPYRIGHT HOLDERS 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 COPYRIGHT HOLDERS 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.



---

## Code Project

### LCS diff

- <http://www.mathertel.de/License.aspx>

Copyright (c) 2005-2009 by Matthias Hertel, <http://www.mathertel.de/>

All rights reserved.

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

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 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.
- Neither the name of the copyright owners 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 COPYRIGHT HOLDERS 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 COPYRIGHT OWNER 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.

## Codehaus

### Jaxen Xpath support

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

© 2006 Codehaus Foundation. Original design by Andreas Viklund

See the Apache License, Version 2.0 at the end of this document. This license can also be viewed at the link provided above.

## ctags

- <http://ctags.sourceforge.net/>

Darren Hiebert <dhiebert at users.sourceforge.net>

<http://DarrenHiebert.com/>

Freely available under the terms of the GNU General Public License

See the GNU Lesser General Public License, Version 3, at the end of this document. You can also access this license through the link provided above.

## Curl

- <http://curl.haxx.se/docs/copyright.html>

Curl and libcurl are true Open Source/Free Software and meet all definitions as such. It means that you are free to modify and redistribute all contents of the curl distributed archives. You may also freely use curl and libcurl in your commercial projects.

Curl and libcurl are licensed under a MIT/X derivate license, see below.

### COPYRIGHT AND PERMISSION NOTICE

Copyright (c) 1996 - 2008, Daniel Stenberg, <daniel@haxx.se>.

All rights reserved.

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", 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 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.

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.

## Debian

- <http://packages.debian.org/changelogs/pool/main/d/debianutils/current/copyright>  
This is the Debian GNU/Linux package debianutils.

It is an original Debian package. Programs in it were maintained by Guy Maor <maor@debian.org>, and are now maintained by Clint Adams <schizo@debian.org>.

All its programs except savelog, and which may be redistributed under the terms of the GNU GPL, Version 2 or later, found on Debian systems in the file /usr/share/common-licenses/GPL, which is in the public domain.

savelog may be redistributed under the following terms: (The rest of this file consists of savelog's distribution terms.)

#ident"@(##)mail:RELEASE-3\_2:COPYING,v 1.2 1996/06/14 18:59:10 woods  
Exp"

SMAIL GENERAL PUBLIC LICENSE

(Clarified 11 Feb 1988)

Copyright (C) 1988 Landon Curt Noll & Ronald S. Karr

Copyright (C) 1992 Ronald S. Karr

Copyright (GNU) 1988 Landon Curt Noll & Ronald S. Karr

Everyone is permitted to copy and distribute verbatim copies of this license, but changing it is not allowed. You can also use this wording to make the terms for other programs.

The license agreements of most software companies keep you at the mercy of those companies. By contrast, our general public license is intended to give everyone the right to share SMAIL. To make sure that you get the rights we want you to have, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. Hence this license agreement.

Specifically, we want to make sure that you have the right to give away copies of SMAIL, that you receive source code or else can get it if you want it, that you can change SMAIL or use pieces of it in new free programs, and that you know you can do these things.

To make sure that everyone has such rights, we have to forbid you to deprive anyone else of these rights. For example, if you distribute copies of SMAIL, 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 tell them their rights.

Also, for our own protection, we must make certain that everyone finds out that there is no warranty for SMAIL. If SMAIL is modified by someone else and passed on, we want its recipients to know that what they have is not what we distributed, so that any problems introduced by others will not reflect on our reputation.

Therefore we (Landon Curt Noll and Ronald S. Karr) make the following terms which say what you must do to be allowed to distribute or change SMAIL.

---

## COPYING POLICIES

1. You may copy and distribute verbatim copies of SMAIL source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy a valid copyright notice "Copyright (C) 1988 Landon Curt Noll & Ronald S. Karr" (or with whatever year is appropriate); keep intact the notices on all files that refer to this License Agreement and to the absence of any warranty; and give any other recipients of the SMAIL program a copy of this License

Agreement along with the program. You may charge a distribution fee for the physical act of transferring a copy.

2. You may modify your copy or copies of SMAIL or any portion of it, and copy and distribute such modifications under the terms of Paragraph 1 above, provided that you also do the following:

a) cause the modified files to carry prominent notices stating that you changed the files and the date of any change; and

b) cause the whole of any work that you distribute or publish, that in whole or in part contains or is a derivative of SMAIL or any part thereof, to be licensed at no charge to all third

parties on terms identical to those contained in this License Agreement (except that you may choose to grant more extensive warranty protection to some or all third parties, at your option).

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

Mere aggregation of another unrelated program with this program (or its derivative) on a volume of a storage or distribution medium does not bring the other program under the scope of these terms.

3. You may copy and distribute SMAIL (or a portion or derivative of it, under Paragraph 2) in object code or executable form under the terms of Paragraphs 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 Paragraphs 1 and 2 above; or,
- b) accompany it with a written offer, valid for at least three years, to give any third party free (except for a nominal shipping charge) a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Paragraphs 1 and 2 above; or,
- c) accompany it with the information you received as to where the corresponding source code may be obtained. (This alternative is allowed only for non-commercial distribution and only if you received the program in object code or executable form alone.)

For an executable file, complete source code means all the source code for all modules it contains; but, as a special exception, it need not include source code for modules which are standard libraries that accompany the operating system on which the executable file runs.

4. You may not copy, sublicense, distribute or transfer SMAIL except as expressly provided under this License Agreement. Any attempt otherwise to copy, sublicense, distribute or transfer SMAIL is void and your rights to use the program under this License agreement shall be automatically terminated. However, parties who have received computer software programs from you with this License Agreement will not have their licenses terminated so long as such parties remain in full compliance.

5. If you wish to incorporate parts of SMAIL into other free programs whose distribution conditions are different, write to Landon Curt Noll & Ronald S. Karr via the Free Software Foundation at 51 Franklin St, Fifth Floor, Boston, MA 02110-1301, USA. We have not yet worked out a simple rule that can be stated here, but we will often permit this. We 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.

Your comments and suggestions about our licensing policies and our software are welcome! This contract was based on the contract made by the Free Software Foundation. Please contact the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301, USA, or call (617) 542-5942 for details on copylefted material in general.

---

## NO WARRANTY

BECAUSE SMAIL IS LICENSED FREE OF CHARGE, WE PROVIDE ABSOLUTELY NO WARRANTY, TO THE EXTENT PERMITTED BY APPLICABLE STATE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING, LANDON CURT NOLL & RONALD S. KARR AND/OR OTHER PARTIES PROVIDE SMAIL "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 SMAIL IS WITH YOU. SHOULD SMAIL PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW WILL LANDON CURT NOLL & RONALD S. KARR AND/OR ANY OTHER PARTY WHO MAY MODIFY AND REDISTRIBUTE SMAIL AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY LOST PROFITS, LOST MONIES, OR OTHER SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS) SMAIL, EVEN IF YOU HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, OR FOR ANY CLAIM BY ANY OTHER PARTY.

### **dhcpcd**

- <http://www.freebsd.org/copyright/freebsd-license.html>

Copyright 1992-2011 The FreeBSD 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.

THIS SOFTWARE IS PROVIDED BY THE FREEBSD PROJECT ``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 FREEBSD PROJECT 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 views and conclusions contained in the software and documentation are those of the authors and should not be interpreted as representing official policies, either expressed or implied, of the FreeBSD Project.

## Dojo Foundation

### CometD

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

See the Apache License, Version 2.0 at the end of this document. You can also access this license through the link provided above.

### Dojo Javascript toolkit

- <http://dojotoolkit.org/license>

Copyright (c) 2005-2009, The Dojo Foundation  
All rights reserved.

License

You may:



- 
- Freely use Dojo to build applications and services
  - Distribute Dojo as a part of commercial products
  - Modify Dojo, make extensions to the toolkit, and produce your own add-on components with no requirement that you give your code away or contribute it back to the project

Just to re-iterate, you can build commercial software with Dojo without obtaining a separate license or incurring any other obligations.

Dojo is available under either the terms of the modified BSD license or the Academic Free License version 2.1. Both licenses grant you broad rights to use and build on and with Dojo in both Open Source and commercial settings.

### Licensing Goals

The licensing goals of the Dojo Foundation are to:

- Encourage adoption
- Discourage political contention
- Encourage collaboration and integration with other projects and products
- Be transparent and responsive to the community

Dojo's licensing is designed to be simple understand and accept. The toolkit is not encumbered by opaque intellectual property statements, questionable code lineages, or IP compatibility concerns. The AFL and BSD licenses we use gives you the right to build both Open Source and commercial products without owning anyone anything or potentially running afoul of "viral" licensing clauses.

Dojo's "dual licensing" is different than that of many Open Source projects in that the terms of both licenses are Open Source and extremely permissive. There are no royalties or commercial use clauses to complicate things. In almost every case, you will not need to choose anything other than the AFL and in the common case you need not do anything to denote this choice of license. Many people and organizations are more familiar with the BSD license, and we encourage those people to use Dojo under those terms if it suits them better. If you have questions regarding Dojo licensing, please do not hesitate to contact Alex Russell, current President of the Dojo Foundation.

Software licensing, and Open Source licensing in particular, is nothing short of a political and legal mine-field. Dojo's explicit licensing goal is to reduce barriers to adoption, therefore politically charged licenses are unacceptable and contributions offered under such terms aren't accepted. The Academic Free License was originally selected as it is close to "public domain" terms, does not require contributing changes back to the project, and has passed muster with corporate lawyers when used in previous projects. The BSD license was later added to avoid the problem of artificial ambiguity the FSF has created regarding the compatibility of the AFL and the (L)GPL.

#### Foundation Policies That Protect Your Rights

To ensure that the licenses used for Foundation projects (including Dojo) fully protect users of our projects from legal risk:

All contributors must sign an Contributors License Agreement.

Commit privileges are only extended when CLAs have been submitted and committers are responsible for vetting the CLA status of all contributions they may commit, as per the Contributor IP Policies.

All Dojo Foundation projects must release their code under the terms of the Academic Free License v2.1.

Foundation projects may release their code under other (parallel) terms with the agreement of the community and so long as they are compatible with the Foundation's licensing goals (as stated above) and with the OSI's Open Source Definition. Such dual-licensing agreements must be approved by the Foundation's Board of Directors.

#### The Role of the Foundation

Dojo is Open Source software, distributed by the non-profit Dojo Foundation which has been set up for the purpose of providing a vendor-neutral owner of Dojo intellectual property. In order to ensure to users of Foundation projects that there is no ambiguity or hidden liability regarding the use of Foundation code, all contributors are required to provide signed CLAs which ensure that the Dojo Foundation has airtight rights to all of the contributions which comprise Foundation projects. The result is that users of projects hosted at the Dojo Foundation can rest easier knowing that there aren't intellectual property time-bombs lurking below the surface.

All committers on Dojo Foundation projects have a vote in Foundation matters, including those regarding licensing decisions. There is no chance for "surprise" license changes or for a single entity to "take Dojo commercial" by unilaterally changing the licensing terms. The Foundation is run by contributors, operates in a transparent way, and is funded exclusively by donations. See the Foundation page for more information.

## Dosfstools

- <http://www.daniel-baumann.ch/legal.html>

Copyright © 2001-2007

Daniel Baumann <daniel@debian.org>

This information is free; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version. This work is distributed in the hope that it will be useful, but **WITHOUT ANY WARRANTY**; without even the implied warranty of **MERCHANTABILITY** or **FITNESS FOR A PARTICULAR PURPOSE**.

See the GNU General Public License, Version 2 at the end of this document. This license can also be viewed at the link provided above.

## Findutils

- <http://www.gnu.org/copyleft/gpl.html>
- [http://cvs.savannah.gnu.org/viewvc/\\*checkout\\*/findutils/findutils/AUTHORS?revision=HEAD](http://cvs.savannah.gnu.org/viewvc/*checkout*/findutils/findutils/AUTHORS?revision=HEAD)

See the GNU General Public License, Version 3, at the end of this document. This license can also be viewed at the link provided above.

## Freescal

SEC 2.0 Device Drivers

**IMPORTANT.** Read the following Freescale Semiconductor Software License Agreement ("Agreement") completely. By selecting the "I Accept" button at the end of this page, you indicate that you accept the terms of this Agreement. You may then download the file.

**FREESCALE SEMICONDUCTOR SOFTWARE LICENSE AGREEMENT** This is a legal agreement between you (either as an individual or as an authorized representative of your employer) and Freescale Semiconductor, Inc. ("Freescale"). It concerns your rights to use this file and any accompanying written materials (the "Software"). In consideration for Freescale allowing you to access the Software, you are agreeing to be bound by the terms of this Agreement. If you do not agree to all of the terms of this Agreement, do not download the Software. If you change your mind later, stop using the Software and delete all copies of the Software in your possession or control. Any copies of the Software that you have already distributed, where permitted, and do not destroy will continue to be governed by this Agreement. Your prior use will also continue to be governed by this Agreement.

**LICENSE GRANT.** Freescale grants to you, free of charge, the non-exclusive, non-transferable right (1) to use the Software, (2) to reproduce the Software, (3) to prepare derivative works of the Software, (4) to distribute the Software and derivative works thereof in object (machine-readable) form only, and (5) to sublicense to others the right to use the distributed Software. You must prohibit your sublicensees from translating, reverse engineering, decompiling, or disassembling the Software except to the extent applicable law specifically prohibits such restriction. If you violate any of the terms or restrictions of this Agreement, Freescale may immediately terminate this Agreement, and require that you stop using and delete all copies of the Software in your possession or control.

**COPYRIGHT.** The Software is licensed to you, not sold. Freescale owns the Software, and United States copyright laws and international treaty provisions protect the Software. Therefore, you must treat the Software like any other copyrighted material (e.g. a book or musical recording). You may not use or copy the Software for any other purpose than what is described in this Agreement. Except as expressly provided herein, Freescale does not grant to you any express or implied rights under any Freescale or third-party patents, copyrights, trademarks, or trade secrets. Additionally, you must reproduce and apply any copyright or other proprietary rights notices included on or embedded in the Software to any copies or derivative works made thereof, in whole or in part, if any.

---

**SUPPORT.** Freescale is NOT obligated to provide any support, upgrades or new releases of the Software. If you wish, you may contact Freescale and report problems and provide suggestions regarding the Software. Freescale has no obligation whatsoever to respond in any way to such a problem report or suggestion. Freescale may make changes to the Software at any time, without any obligation to notify or provide updated versions of the Software to you.

**NO WARRANTY.** TO THE MAXIMUM EXTENT PERMITTED BY LAW, FREESCALE EXPRESSLY DISCLAIMS ANY WARRANTY FOR THE SOFTWARE. THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. YOU ASSUME THE ENTIRE RISK ARISING OUT OF THE USE OR PERFORMANCE OF THE SOFTWARE, OR ANY SYSTEMS YOU DESIGN USING THE SOFTWARE (IF ANY). NOTHING IN THIS AGREEMENT MAY BE CONSTRUED AS A WARRANTY OR REPRESENTATION BY FREESCALE THAT THE SOFTWARE OR ANY DERIVATIVE WORK DEVELOPED WITH OR INCORPORATING THE SOFTWARE WILL BE FREE FROM INFRINGEMENT OF THE INTELLECTUAL PROPERTY RIGHTS OF THIRD PARTIES.

**INDEMNITY.** You agree to fully defend and indemnify Freescale from any and all claims, liabilities, and costs (including reasonable attorney's fees) related to (1) your use (including your sublicensee's use, if permitted) of the Software or (2) your violation of the terms and conditions of this Agreement.

**LIMITATION OF LIABILITY.** IN NO EVENT WILL FREESCALE BE LIABLE, WHETHER IN CONTRACT, TORT, OR OTHERWISE, FOR ANY INCIDENTAL, SPECIAL, INDIRECT, CONSEQUENTIAL OR PUNITIVE DAMAGES, INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR ANY LOSS OF USE, LOSS OF TIME, INCONVENIENCE, COMMERCIAL LOSS, OR LOST PROFITS, SAVINGS, OR REVENUES TO THE FULL EXTENT SUCH MAY BE DISCLAIMED BY LAW.

**COMPLIANCE WITH LAWS; EXPORT RESTRICTIONS.** You must use the Software in accordance with all applicable U.S. laws, regulations and statutes. You agree that neither you nor your licensees (if any) intend to or will, directly or indirectly, export or transmit the Software to any country in violation of U.S. export restrictions.

**GOVERNMENT USE.** Use of the Software and any corresponding documentation, if any, is provided with **RESTRICTED RIGHTS**. Use, duplication or disclosure by the Government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of The Rights in Technical Data and Computer Software clause at DFARS 252.227-7013 or subparagraphs (c)(1) and (2) of the Commercial Computer Software--Restricted Rights at 48 CFR 52.227-19, as applicable. Manufacturer is Freescale Semiconductor, Inc., 6501 William Cannon Drive West, Austin, TX, 78735.

**HIGH RISK ACTIVITIES.** You acknowledge that the Software is not fault tolerant and is not designed, manufactured or intended by Freescale for incorporation into products intended for use or resale in on-line control equipment in hazardous, dangerous to life or potentially life-threatening environments requiring fail-safe performance, such as in the operation of nuclear facilities, aircraft navigation or communication systems, air traffic control, direct life support machines or weapons systems, in which the failure of products could lead directly to death, personal injury or severe physical or environmental damage ("High Risk Activities"). You specifically represent and warrant that you will not use the Software or any derivative work of the Software for High Risk Activities.

**CHOICE OF LAW; VENUE; LIMITATIONS.** You agree that the statutes and laws of the United States and the State of Texas, USA, without regard to conflicts of laws principles, will apply to all matters relating to this Agreement or the Software, and you agree that any litigation will be subject to the exclusive jurisdiction of the state or federal courts in Texas, USA. You agree that regardless of any statute or law to the contrary, any claim or cause of action arising out of or related to this Agreement or the Software must be filed within one (1) year after such claim or cause of action arose or be forever barred.

**PRODUCT LABELING.** You are not authorized to use any Freescale trademarks, brand names, or logos.

**ENTIRE AGREEMENT.** This Agreement constitutes the entire agreement between you and Freescale regarding the subject matter of this Agreement, and supersedes all prior communications, negotiations, understandings, agreements or representations, either written or oral, if any. This Agreement may only be amended in written form, executed by you and Freescale.

**SEVERABILITY.** If any provision of this Agreement is held for any reason to be invalid or unenforceable, then the remaining provisions of this Agreement will be unimpaired and, unless a modification or replacement of the invalid or unenforceable provision is further held to deprive you or Freescale of a material benefit, in which case the Agreement will immediately terminate, the invalid or unenforceable provision will be replaced with a provision that is valid and enforceable and that comes closest to the intention underlying the invalid or unenforceable provision.

**NO WAIVER.** The waiver by Freescale of any breach of any provision of this Agreement will not operate or be construed as a waiver of any other or a subsequent breach of the same or a different provision.

## **Freshmeat**

### **kbd, Imsensors2.9.2**

- <http://www.gnu.org/licenses/old-licenses/gpl-2.0.html>

See the GNU General Public License, Version 3 at the end of this document.  
This license can also be viewed at the link provided above.

## **Gawk**

- <http://www.gnu.org/copyleft/gpl.html>

See the GNU General Public License, Version 3 at the end of this document.  
This license can also be viewed at the link provided above.

Copyright © 2009 Free Software Foundation, Inc.

Verbatim copying and distribution of this entire article are permitted worldwide, without royalty, in any medium, provided this notice, and the copyright notice, are preserved.

## **Gborg**

- <http://www.opensource.org/licenses/lgpl-2.1.php>

Copyright © 1996 – 2010 PostgreSQL Global Development Group

See the Apache License, Version 2.0, at the end of this document. You can also access this license through the link provided above.

## GDB

- <http://www.gnu.org/copyleft/gpl.html>

See the GNU General Public License, Version 3 at the end of this document. This license can also be viewed at the link provided above.

Copyright Free Software Foundation, Inc., 51 Franklin St - Fifth Floor, Boston, MA 02110-1301 USA.

Verbatim copying and distribution of this entire article are permitted worldwide, without royalty, in any medium, provided this notice, and the copyright notice, are preserved.

## GDBM

- <http://www.gnu.org/licenses/old-licenses/gpl-2.0.html>

See the GNU General Public License, Version 2 at the end of this document. This license can also be viewed at the link provided above.

Copyright (C) 1998 Free Software Foundation, Inc., 59 Temple Place - Suite 330, Boston, MA 02111, USA

Verbatim copying and distribution of this entire article is permitted in any medium, provided this notice is preserved.

## Gentoo

Copyright © 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011 Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.

Verbatim copying and distribution of this entire article is permitted in any medium, provided this notice is preserved.

**acl, autoconf, autoconf-wrapper, automake, automake-wrapper, baselayout, bison, com\_err, gettext, gmp, gpm, groff, hashalot, hdparm, hdparm, kbd, less, libgpg-error, m4, man, metalog, nano, pam, patch, pax-utils, pciutils, pkg-config, portage, pwdb, sandbox,**



---

**sed, ss, sysvinit, texinfo, util-linux, wget, which, psqIODB-08.02.0200, udev**

- <http://www.gnu.org/licenses/old-licenses/gpl-2.0.html>

The packages listed above are registered under the GNU General Public License, Version 2. The GNU General Public License, Version 2, is provided at the end of this document, or can be accessed from the link provided above.

**bash, binutils, coreutils, diffutils, ethtool, glibc, grep, grub, eselect, libgcc-3.4.3, libstdc++ 3.4.3, libtool, OpenIPMI, popt, psmisc, Unix ODBC, xfsprogs**

- <http://www.gnu.org/licenses/gpl.html>

The packages listed above are registered under the GNU General Public License, Version 3. The GNU General Public License, Version 3, is provided at the end of this document, or can be accessed from the link provided above.

**attr, cpio, cracklib, libgcrypt, mpfr, syslog4j**

- <http://www.gnu.org/licenses/old-licenses/lgpl-2.1.html>

The packages listed above are registered under the GNU Lesser General Public License, Version 2.1. The GNU Lesser General Public License, Version 2.1, is provided at the end of this document, or can be accessed from the link provided above.

**db**

- <http://www.oracle.com/technology/software/products/berkeley-db/htdocs/oslicense.html>

The package listed above is listed under the Berkeley DB License and is provided under the Berkeley DB section of this document.

**e2fsprogs, gpg, iproute2. module-init-tools, ncurses, net-tools, procs, readline, resiser4progs, tar**

- <http://www.gnu.org/copyleft/gpl.html>

See the GNU General Public License, Version 2, at the end of this document. You can also access this license through the link provided above.

- <http://www.gnu.org/copyleft/lesser.html>

A copy of the GNU Lesser General Public License - version 3 - is provided at the end of this document. You can also access this license through the link provided above.

## **less**

- <http://www.opensource.org/licenses/bsd-license.php>

AJAXSLT is an implementation of XSLT in JavaScript. Because XSLT uses XPath, it is also an implementation of XPath that can be used independently of XSLT. This implementation has the advantage that it makes XSLT uniformly available on more browsers than natively provide it, and that it can be extended to yet more browsers if necessary.

Copyright (c) 2005,2006 Google Inc. All rights reserved. Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 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.
- Neither the name of Google Inc. 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 COPYRIGHT HOLDERS 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 COPYRIGHT OWNER 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.

### **flex**

- <http://sources.gentoo.org/viewcvs.py/gentoo-x86/licenses/FLEX?view=markup>

Flex carries the copyright used for BSD software, slightly modified because it originated at the Lawrence Berkeley (not Livermore!) Laboratory, which operates under a contract with the Department of Energy: Copyright (c) 1990 The Regents of the University of California. All rights reserved. This code is derived from software contributed to Berkeley by Vern Paxson. The United States Government has rights in this work pursuant to contract no. DE-AC03-76SF00098 between the United States Department of Energy and the University of California. Redistribution and use in source and binary forms with or without modification are permitted provided that: (1) source distributions retain this entire copyright notice and comment, and (2) distributions including binaries display the following acknowledgement: ``This product includes software developed by the University of California, Berkeley and its contributors" in the documentation or other materials provided with the distribution and in all advertising materials mentioning features or use of this software. 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 WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. This basically says "do whatever you please with this software except remove this notice or take advantage of the University's (or the flex authors') name". Note that the "flex.skl" scanner skeleton carries no copyright notice. You are free to do whatever you please with scanners generated using flex; for them, you are not even bound by the above copyright.

**lkcdutil**

- <http://srtp.sourceforge.net/license.html>

**License**

The srtp library and the test drivers distributed with it are licensed under the following BSD-based license.

Copyright (c) 2001-2005 Cisco Systems, Inc.

All rights reserved.

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

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* 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.
- \* Neither the name of the Cisco Systems, Inc. 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 COPYRIGHT HOLDERS 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 COPYRIGHT HOLDERS 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.

---

## ncurses

- <http://www.opensource.org/licenses/mit-license.php>

The MIT License

Copyright (c) <year> <copyright holders>

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.

## Github

- <https://help.github.com/articles/github-terms-of-service>

© 2012 GitHub Inc. All rights reserved.

GitHub Terms of Service

By using the GitHub.com web site ("Service"), or any services of GitHub Inc ("GitHub"), you are agreeing to be bound by the following terms and conditions ("Terms of Service"). IF YOU ARE ENTERING INTO THIS AGREEMENT ON BEHALF OF A COMPANY OR OTHER LEGAL ENTITY, YOU REPRESENT THAT YOU HAVE THE AUTHORITY TO BIND SUCH ENTITY, ITS AFFILIATES AND ALL USERS WHO ACCESS OUR SERVICES THROUGH YOUR ACCOUNT TO THESE TERMS AND CONDITIONS, IN WHICH CASE THE TERMS "YOU" OR "YOUR" SHALL REFER TO SUCH ENTITY, ITS AFFILIATES AND USERS ASSOCIATED WITH IT. IF YOU DO NOT HAVE SUCH AUTHORITY, OR IF YOU DO NOT AGREE WITH THESE TERMS AND CONDITIONS, YOU MUST NOT ACCEPT THIS AGREEMENT AND MAY NOT USE THE SERVICES.

GitHub reserves the right to update and change the Terms of Service from time to time without notice. Any new features that augment or enhance the current Service, including the release of new tools and resources, shall be subject to the Terms of Service. Continued use of the Service after any such changes shall constitute your consent to such changes. You can review the most current version of the Terms of Service at any time at: <http://github.com/site/terms>

Violation of any of the terms below will result in the termination of your Account. While GitHub prohibits such conduct and Content on the Service, you understand and agree that GitHub cannot be responsible for the Content posted on the Service and you nonetheless may be exposed to such materials. You agree to use the Service at your own risk.

#### A. Account Terms

You must be 13 years or older to use this Service.

You must be a human. Accounts registered by "bots" or other automated methods are not permitted.

You must provide your legal full name, a valid email address, and any other information requested in order to complete the signup process.

Your login may only be used by one person - a single login shared by multiple people is not permitted. You may create separate logins for as many people as your plan allows.

You are responsible for maintaining the security of your account and password. GitHub cannot and will not be liable for any loss or damage from your failure to comply with this security obligation.

You are responsible for all Content posted and activity that occurs under your account (even when Content is posted by others who have accounts under your account).

One person or legal entity may not maintain more than one free account.

You may not use the Service for any illegal or unauthorized purpose. You must not, in the use of the Service, violate any laws in your jurisdiction (including but not limited to copyright or trademark laws).

## B. API Terms

Customers may access their GitHub account data via an API (Application Program Interface). Any use of the API, including use of the API through a third-party product that accesses GitHub, is bound by these Terms of Service plus the following specific terms:

You expressly understand and agree that GitHub shall not be liable for any direct, indirect, incidental, special, consequential or exemplary damages, including but not limited to, damages for loss of profits, goodwill, use, data or other intangible losses (even if GitHub has been advised of the possibility of such damages), resulting from your use of the API or third-party products that access data via the API.

Abuse or excessively frequent requests to GitHub via the API may result in the temporary or permanent suspension of your account's access to the API. GitHub, in its sole discretion, will determine abuse or excessive usage of the API. GitHub will make a reasonable attempt via email to warn the account owner prior to suspension.

GitHub reserves the right at any time to modify or discontinue, temporarily or permanently, your access to the API (or any part thereof) with or without notice.

## C. Payment, Refunds, Upgrading and Downgrading Terms

All paid plans must enter a valid credit card. Free accounts are not required to provide a credit card number.

**An upgrade from the free plan to any paying plan will immediately bill you.**

**The Service is billed in advance on a monthly basis and is non-refundable. There will be no refunds or credits for partial months of service, upgrade/downgrade refunds, or refunds for months unused with an open account. In order to treat everyone equally, no exceptions will be made.**

All fees are exclusive of all taxes, levies, or duties imposed by taxing authorities, and you shall be responsible for payment of all such taxes, levies, or duties, excluding only United States (federal or state) taxes.

For any upgrade or downgrade in plan level, your credit card that you provided will automatically be charged the new rate on your next billing cycle.

Downgrading your Service may cause the loss of Content, features, or capacity of your Account. GitHub does not accept any liability for such loss.

#### D. Cancellation and Termination

**You are solely responsible for properly canceling your account. An email or phone request to cancel your account is not considered cancellation. You can cancel your account at any time by clicking on the Account link in the global navigation bar at the top of the screen. The Account screen provides a simple no questions asked cancellation link.**

All of your Content will be immediately deleted from the Service upon cancellation. This information can not be recovered once your account is cancelled.

If you cancel the Service before the end of your current paid up month, your cancellation will take effect immediately and you will not be charged again.

GitHub, in its sole discretion, has the right to suspend or terminate your account and refuse any and all current or future use of the Service, or any other GitHub service, for any reason at any time. Such termination of the Service will result in the deactivation or deletion of your Account or your access to your Account, and the forfeiture and relinquishment of all Content in your Account. GitHub reserves the right to refuse service to anyone for any reason at any time.

#### E. Modifications to the Service and Prices

GitHub reserves the right at any time and from time to time to modify or discontinue, temporarily or permanently, the Service (or any part thereof) with or without notice.

Prices of all Services, including but not limited to monthly subscription plan fees to the Service, are subject to change upon 30 days notice from us. Such notice may be provided at any time by posting the changes to the GitHub Site ([github.com](https://github.com)) or the Service itself.

GitHub shall not be liable to you or to any third party for any modification, price change, suspension or discontinuance of the Service.



## F. Copyright and Content Ownership

We claim no intellectual property rights over the material you provide to the Service. Your profile and materials uploaded remain yours. However, by setting your pages to be viewed publicly, you agree to allow others to view your Content. By setting your repositories to be viewed publicly, you agree to allow others to view and fork your repositories.

GitHub does not pre-screen Content, but GitHub and its designee have the right (but not the obligation) in their sole discretion to refuse or remove any Content that is available via the Service.

You shall defend GitHub against any claim, demand, suit or proceeding made or brought against GitHub by a third party alleging that Your Content, or Your use of the Service in violation of this Agreement, infringes or misappropriates the intellectual property rights of a third party or violates applicable law, and shall indemnify GitHub for any damages finally awarded against, and for reasonable attorney's fees incurred by, GitHub in connection with any such claim, demand, suit or proceeding; provided, that GitHub (a) promptly gives You written notice of the claim, demand, suit or proceeding; (b) gives You sole control of the defense and settlement of the claim, demand, suit or proceeding (provided that You may not settle any claim, demand, suit or proceeding unless the settlement unconditionally releases GitHub of all liability); and (c) provides to You all reasonable assistance, at Your expense.

The look and feel of the Service is copyright ©2010 GitHub Inc. All rights reserved. You may not duplicate, copy, or reuse any portion of the HTML/CSS, Javascript, or visual design elements or concepts without express written permission from GitHub.

## G. General Conditions

Your use of the Service is at your sole risk. The service is provided on an "as is" and "as available" basis.

Technical support is only provided to paying account holders and is only available via email. Support is only available in English.

You understand that GitHub uses third party vendors and hosting partners to provide the necessary hardware, software, networking, storage, and related technology required to run the Service.

You must not modify, adapt or hack the Service or modify another website so as to falsely imply that it is associated with the Service, GitHub, or any other GitHub service.

You may use GitHub subdomains (e.g., yourname.github.com) solely as permitted and intended by the GitHub Pages tool to host your company pages, personal pages, or open source project pages, and for no other purpose. You may not use GitHub subdomains in violation of GitHub's trademark or other rights or in violation of applicable law. GitHub reserves the right at all times to reclaim any GitHub subdomain without liability to you.

You agree not to reproduce, duplicate, copy, sell, resell or exploit any portion of the Service, use of the Service, or access to the Service without the express written permission by GitHub.

We may, but have no obligation to, remove Content and Accounts containing Content that we determine in our sole discretion are unlawful, offensive, threatening, libelous, defamatory, pornographic, obscene or otherwise objectionable or violates any party's intellectual property or these Terms of Service.

Verbal, physical, written or other abuse (including threats of abuse or retribution) of any GitHub customer, employee, member, or officer will result in immediate account termination.

You understand that the technical processing and transmission of the Service, including your Content, may be transferred unencrypted and involve (a) transmissions over various networks; and (b) changes to conform and adapt to technical requirements of connecting networks or devices.

You must not upload, post, host, or transmit unsolicited email, SMSs, or "spam" messages.

You must not transmit any worms or viruses or any code of a destructive nature.

If your bandwidth usage significantly exceeds the average bandwidth usage (as determined solely by GitHub) of other GitHub customers, we reserve the right to immediately disable your account or throttle your file hosting until you can reduce your bandwidth consumption.

GitHub does not warrant that (i) the service will meet your specific requirements, (ii) the service will be uninterrupted, timely, secure, or error-free, (iii) the results that may be obtained from the use of the service will be accurate or reliable, (iv) the quality of any products, services, information, or other material purchased or obtained by you through the service will meet your expectations, and (v) any errors in the Service will be corrected.

You expressly understand and agree that GitHub shall not be liable for any direct, indirect, incidental, special, consequential or exemplary damages, including but not limited to, damages for loss of profits, goodwill, use, data or other intangible losses (even if GitHub has been advised of the possibility of such damages), resulting from: (i) the use or the inability to use the service; (ii) the cost of procurement of substitute goods and services resulting from any goods, data, information or services purchased or obtained or messages received or transactions entered into through or from the service; (iii) unauthorized access to or alteration of your transmissions or data; (iv) statements or conduct of any third party on the service; (v) or any other matter relating to the service.

The failure of GitHub to exercise or enforce any right or provision of the Terms of Service shall not constitute a waiver of such right or provision. The Terms of Service constitutes the entire agreement between you and GitHub and govern your use of the Service, superseding any prior agreements between you and GitHub (including, but not limited to, any prior versions of the Terms of Service). You agree that these Terms of Service and Your use of the Service are governed under California law.

Questions about the Terms of Service should be sent to [support@github.com](mailto:support@github.com).

## Glassfish

### GlassFish Server, JAX-WS RI

- <https://glassfish.dev.java.net/public/CDDL+GPL.html>

### COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL) Version 1.0

#### 1. Definitions.

1.1. “Contributor” means each individual or entity that creates or contributes to the creation of Modifications.

1.2. “Contributor Version” means the combination of the Original Software, prior Modifications used by a Contributor (if any), and the Modifications made by that particular Contributor.

1.3. “Covered Software” means (a) the Original Software, or (b) Modifications, or (c) the combination of files containing Original Software with files containing Modifications, in each case including portions thereof.

1.4. “Executable” means the Covered Software in any form other than Source Code.

1.5. “Initial Developer” means the individual or entity that first makes Original Software available under this License.

1.6. “Larger Work” means a work which combines Covered Software or portions thereof with code not governed by the terms of this License.

1.7. “License” means this document.

1.8. “Licensable” means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently acquired, any and all of the rights conveyed herein.

1.9. “Modifications” means the Source Code and Executable form of any of the following:

A. Any file that results from an addition to, deletion from or modification of the contents of a file containing Original Software or previous Modifications;

B. Any new file that contains any part of the Original Software or previous Modification; or

C. Any new file that is contributed or otherwise made available under the terms of this License.

1.10. “Original Software” means the Source Code and Executable form of computer software code that is originally released under this License.

1.11. “Patent Claims” means any patent claim(s), now owned or hereafter acquired, including without limitation, method, process, and apparatus claims, in any patent Licensable by grantor.

1.12. “Source Code” means (a) the common form of computer software code in which modifications are made and (b) associated documentation included in or with such code.

1.13. “You” (or “Your”) means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, “You” includes any entity which controls, is controlled by, or is under common control with You. For purposes of this definition, “control” means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## **2. License Grants.**

### **2.1. The Initial Developer Grant.**

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, the Initial Developer hereby grants You a world-wide, royalty-free, non-exclusive license:

- (a) under intellectual property rights (other than patent or trademark) Licensable by Initial Developer, to use, reproduce, modify, display, perform, sublicense and distribute the Original Software (or portions thereof), with or without Modifications, and/or as part of a Larger Work; and
- (b) under Patent Claims infringed by the making, using or selling of Original Software, to make, have made, use, practice, sell, and offer for sale, and/or otherwise dispose of the Original Software (or portions thereof).
- (c) The licenses granted in Sections 2.1(a) and (b) are effective on the date Initial Developer first distributes or otherwise makes the Original Software available to a third party under the terms of this License.
- (d) Notwithstanding Section 2.1(b) above, no patent license is granted: (1) for code that You delete from the Original Software, or (2) for infringements caused by: (i) the modification of the Original Software, or (ii) the combination of the Original Software with other software or devices.

### **2.2. Contributor Grant.**

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:

(a) under intellectual property rights (other than patent or trademark) Licensable by Contributor to use, reproduce, modify, display, perform, sublicense and distribute the Modifications created by such Contributor (or portions thereof), either on an unmodified basis, with other Modifications, as Covered Software and/or as part of a Larger Work; and

(b) under Patent Claims infringed by the making, using, or selling of Modifications made by that Contributor either alone and/or in combination with its Contributor Version (or portions of such combination), to make, use, sell, offer for sale, have made, and/or otherwise dispose of: (1) Modifications made by that Contributor (or portions thereof); and (2) the combination of Modifications made by that Contributor with its Contributor Version (or portions of such combination).

(c) The licenses granted in Sections 2.2(a) and 2.2(b) are effective on the date Contributor first distributes or otherwise makes the Modifications available to a third party.

(d) Notwithstanding Section 2.2(b) above, no patent license is granted: (1) for any code that Contributor has deleted from the Contributor Version; (2) for infringements caused by: (i) third party modifications of Contributor Version, or (ii) the combination of Modifications made by that Contributor with other software (except as part of the Contributor Version) or other devices; or (3) under Patent Claims infringed by Covered Software in the absence of Modifications made by that Contributor.

### **3. Distribution Obligations.**

#### **3.1. Availability of Source Code.**

Any Covered Software that You distribute or otherwise make available in Executable form must also be made available in Source Code form and that Source Code form must be distributed only under the terms of this License. You must include a copy of this License with every copy of the Source Code form of the Covered Software You distribute or otherwise make available. You must inform recipients of any such Covered Software in Executable form as to how they can obtain such Covered Software in Source Code form in a reasonable manner on or through a medium customarily used for software exchange.

#### **3.2. Modifications.**

---

The Modifications that You create or to which You contribute are governed by the terms of this License. You represent that You believe Your Modifications are Your original creation(s) and/or You have sufficient rights to grant the rights conveyed by this License.

### 3.3. Required Notices.

You must include a notice in each of Your Modifications that identifies You as the Contributor of the Modification. You may not remove or alter any copyright, patent or trademark notices contained within the Covered Software, or any notices of licensing or any descriptive text giving attribution to any Contributor or the Initial Developer.

### 3.4. Application of Additional Terms.

You may not offer or impose any terms on any Covered Software in Source Code form that alters or restricts the applicable version of this License or the recipients' rights hereunder. You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, you may do so only on Your own behalf, and not on behalf of the Initial Developer or any Contributor. You must make it absolutely clear that any such warranty, support, indemnity or liability obligation is offered by You alone, and You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of warranty, support, indemnity or liability terms You offer.

### 3.5. Distribution of Executable Versions.

You may distribute the Executable form of the Covered Software under the terms of this License or under the terms of a license of Your choice, which may contain terms different from this License, provided that You are in compliance with the terms of this License and that the license for the Executable form does not attempt to limit or alter the recipient's rights in the Source Code form from the rights set forth in this License. If You distribute the Covered Software in Executable form under a different license, You must make it absolutely clear that any terms which differ from this License are offered by You alone, not by the Initial Developer or Contributor. You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of any such terms You offer.

### 3.6. Larger Works.

You may create a Larger Work by combining Covered Software with other code not governed by the terms of this License and distribute the Larger Work as a single product. In such a case, You must make sure the requirements of this License are fulfilled for the Covered Software.

#### **4. Versions of the License.**

##### **4.1. New Versions.**

Sun Microsystems, Inc. is the initial license steward and may publish revised and/or new versions of this License from time to time. Each version will be given a distinguishing version number. Except as provided in Section 4.3, no one other than the license steward has the right to modify this License.

##### **4.2. Effect of New Versions.**

You may always continue to use, distribute or otherwise make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. If the Initial Developer includes a notice in the Original Software prohibiting it from being distributed or otherwise made available under any subsequent version of the License, You must distribute and make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. Otherwise, You may also choose to use, distribute or otherwise make the Covered Software available under the terms of any subsequent version of the License published by the license steward.

##### **4.3. Modified Versions.**

When You are an Initial Developer and You want to create a new license for Your Original Software, You may create and use a modified version of this License if You: (a) rename the license and remove any references to the name of the license steward (except to note that the license differs from this License); and (b) otherwise make it clear that the license contains terms which differ from this License.

#### **5. DISCLAIMER OF WARRANTY.**



---

COVERED SOFTWARE IS PROVIDED UNDER THIS LICENSE ON AN “AS IS” BASIS, WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES THAT THE COVERED SOFTWARE IS FREE OF DEFECTS, MERCHANTABLE, FIT FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE COVERED SOFTWARE IS WITH YOU. SHOULD ANY COVERED SOFTWARE PROVE DEFECTIVE IN ANY RESPECT, YOU (NOT THE INITIAL DEVELOPER OR ANY OTHER CONTRIBUTOR) ASSUME THE COST OF ANY NECESSARY SERVICING, REPAIR OR CORRECTION. THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF ANY COVERED SOFTWARE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER.

## **6. TERMINATION.**

6.1. This License and the rights granted hereunder will terminate automatically if You fail to comply with terms herein and fail to cure such breach within 30 days of becoming aware of the breach. Provisions which, by their nature, must remain in effect beyond the termination of this License shall survive.

6.2. If You assert a patent infringement claim (excluding declaratory judgment actions) against Initial Developer or a Contributor (the Initial Developer or Contributor against whom You assert such claim is referred to as “Participant”) alleging that the Participant Software (meaning the Contributor Version where the Participant is a Contributor or the Original Software where the Participant is the Initial Developer) directly or indirectly infringes any patent, then any and all rights granted directly or indirectly to You by such Participant, the Initial Developer (if the Initial Developer is not the Participant) and all Contributors under Sections 2.1 and/or 2.2 of this License shall, upon 60 days notice from Participant terminate prospectively and automatically at the expiration of such 60 day notice period, unless if within such 60 day period You withdraw Your claim with respect to the Participant Software against such Participant either unilaterally or pursuant to a written agreement with Participant.

6.3. In the event of termination under Sections 6.1 or 6.2 above, all end user licenses that have been validly granted by You or any distributor hereunder prior to termination (excluding licenses granted to You by any distributor) shall survive termination.

## **7. LIMITATION OF LIABILITY.**

UNDER NO CIRCUMSTANCES AND UNDER NO LEGAL THEORY, WHETHER TORT (INCLUDING NEGLIGENCE), CONTRACT, OR OTHERWISE, SHALL YOU, THE INITIAL DEVELOPER, ANY OTHER CONTRIBUTOR, OR ANY DISTRIBUTOR OF COVERED SOFTWARE, OR ANY SUPPLIER OF ANY OF SUCH PARTIES, BE LIABLE TO ANY PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOST PROFITS, LOSS OF GOODWILL, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, OR ANY AND ALL OTHER COMMERCIAL DAMAGES OR LOSSES, EVEN IF SUCH PARTY SHALL HAVE BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. THIS LIMITATION OF LIABILITY SHALL NOT APPLY TO LIABILITY FOR DEATH OR PERSONAL INJURY RESULTING FROM SUCH PARTY'S NEGLIGENCE TO THE EXTENT APPLICABLE LAW PROHIBITS SUCH LIMITATION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS EXCLUSION AND LIMITATION MAY NOT APPLY TO YOU.

## **8. U.S. GOVERNMENT END USERS.**

The Covered Software is a “commercial item,” as that term is defined in 48 C.F.R. 2.101 (Oct. 1995), consisting of “commercial computer software” (as that term is defined at 48 C.F.R. § 252.227-7014(a)(1)) and “commercial computer software documentation” as such terms are used in 48 C.F.R. 12.212 (Sept. 1995). Consistent with 48 C.F.R. 12.212 and 48 C.F.R. 227.7202-1 through 227.7202-4 (June 1995), all U.S. Government End Users acquire Covered Software with only those rights set forth herein. This U.S. Government Rights clause is in lieu of, and supersedes, any other FAR, DFAR, or other clause or provision that addresses Government rights in computer software under this License.

## **9. MISCELLANEOUS.**

This License represents the complete agreement concerning subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable.

This License shall be governed by the law of the jurisdiction specified in a notice contained within the Original Software (except to the extent applicable law, if any, provides otherwise), excluding such jurisdiction's conflict-of-law provisions. Any litigation relating to this License shall be subject to the jurisdiction of the courts located in the jurisdiction and venue specified in a notice contained within the Original Software, with the losing party responsible for costs, including, without limitation, court costs and reasonable attorneys' fees and expenses. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not apply to this License. You agree that You alone are responsible for compliance with the United States export administration regulations (and the export control laws and regulation of any other countries) when You use, distribute or otherwise make available any Covered Software.

## **10. RESPONSIBILITY FOR CLAIMS.**

As between Initial Developer and the Contributors, each party is responsible for claims and damages arising, directly or indirectly, out of its utilization of rights under this License and You agree to work with Initial Developer and Contributors to distribute such responsibility on an equitable basis. Nothing herein is intended or shall be deemed to constitute any admission of liability.

## **NOTICE PURSUANT TO SECTION 9 OF THE COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL)**

The code released under the CDDL shall be governed by the laws of the State of California (excluding conflict-of-law provisions). Any litigation relating to this License shall be subject to the jurisdiction of the Federal Courts of the Northern District of California and the state courts of the State of California, with venue lying in Santa Clara County, California.

## **GNU General Public License (GPL) Version 2, June 1991**

See the GNU General Public License, Version 2 at the end of this document. You can also access this license through the link provided above.

"CLASSPATH" EXCEPTION TO THE GPL VERSION 2

Certain source files distributed by Sun Microsystems, Inc. are subject to the following clarification and special exception to the GPL Version 2, but only where Sun has expressly included in the particular source file's header the words

"Sun designates this particular file as subject to the "Classpath" exception as provided by Sun in the License file that accompanied this code."

Linking this library statically or dynamically with other modules is making a combined work based on this library. Thus, the terms and conditions of the GNU General Public License Version 2 cover the whole combination.

As a special exception, the copyright holders of this library give you permission to link this library with independent modules to produce an executable, regardless of the license terms of these independent modules, and to copy and distribute the resulting executable under terms of your choice, provided that you also meet, for each linked independent module, the terms and conditions of the license of that module.? An independent module is a module which is not derived from or based on this library.? If you modify this library, you may extend this exception to your version of the library, but you are not obligated to do so.? If you do not wish to do so, delete this exception statement from your version.

## GNU

- <http://www.gnu.org/copyleft/gpl.html>

See the GNU General Public License, Version 2, at the end of this document.  
You can also access this license through the link provided above.

### GNU Unix Socket Support

- <http://www.gnu.org/licenses/old-licenses/gpl-2.0.html>

See the GNU General Public License, Version 2, at the end of this document.  
You can also access this license through the link provided above.

## Google

### GSON

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

---

A copy of the Apache License, Version 2.0, is provided at the end of this document. You can also access this license through the link provided above.

## GWT

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

A copy of the Apache License, Version 2.0, is provided at the end of this document. You can also access this license through the link provided above.

## Google Code

### jsdoc

- <http://www.opensource.org/licenses/bsd-license.php>

AJAXSLT is an implementation of XSLT in JavaScript. Because XSLT uses XPath, it is also an implementation of XPath that can be used independently of XSLT. This implementation has the advantage that it makes XSLT uniformly available on more browsers than natively provide it, and that it can be extended to yet more browsers if necessary.

Copyright (c) 2005,2006 Google Inc. All rights reserved. Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 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.
- Neither the name of Google Inc. 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 COPYRIGHT HOLDERS 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 COPYRIGHT OWNER 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.

## GTK

### **glib**

Copyright 2007-2008 The GTK+ Team

- <http://www.gnu.org/copyleft/lesser.html>

A copy of the GNU Lesser General Public License - version 3 - is provided at the end of this document. You can also access this license through the link provided above.

## Gwget

Copyright © 2005-2010 The GNOME Project.

- <http://www.gnu.org/licenses/old-licenses/gpl-2.0.html>

See the GNU General Public License, Version 2, at the end of this document. This license can also be viewed at the link provided above.

## gzip

### **ZLIB license**

- [http://www.gzip.org/zlib/zlib\\_license.html](http://www.gzip.org/zlib/zlib_license.html)

zlib.h -- interface of the 'zlib' general purpose compression library  
version 1.2.2, October 3rd, 2004

Copyright (C) 1995-2004 Jean-loup Gailly and Mark Adler

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 in the product documentation would be appreciated but is not required.
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.

Jean-loup Gailly [jloup@gzip.org](mailto:jloup@gzip.org)  
Mark Adler [madler@alumni.caltech.edu](mailto:madler@alumni.caltech.edu)

### **gzip1.3.5**

- <http://www.gnu.org/copyleft/lesser.html>

See the GNU General Public License, Version 3, at the end of this document. You can also access this license through the link provided above.

## **Hibernate**

- <https://www.hibernate.org/356.html>

© Copyright 2009, Red Hat Middleware, LLC. All rights reserved. JBoss and Hibernate are registered trademarks and servicemarks of Red Hat, Inc.

Hibernate is Free Software.

Hibernate is licensed under the LGPL v2.1. The LGPL is sufficiently flexible to allow the use of Hibernate in both open source and commercial projects. The LGPL guarantees that Hibernate and any modifications made to Hibernate will stay open source, protecting our and your work. Anyone who wanted to release Hibernate under a different license would have to obtain permission from hundreds of people who have contributed code to Hibernate, which would be impractical. Hibernate is and will be open source distributed under the LGPL.

Using Hibernate (by importing Hibernate's public interfaces in your Java code), and extending Hibernate (by subclassing or implementation of an extension interface) is considered by the authors of Hibernate to be dynamic linking. Hence our interpretation of the LGPL is that the use of the unmodified Hibernate source does not affect the license of your application code.

The use of the unmodified Hibernate binary of course never affects the license of your application or distribution. The LGPL also forbids distribution for profit, so you will never have to pay money to any commercial entity for using or integrating Hibernate.

If you modify Hibernate and redistribute your modifications, the LGPL applies. Please submit any modifications to our JIRA issue tracking system.

A copy of the GNU Lesser General Public License - version 2.1 - is provided at the end of this document. You can also access this license through the link provided above.

## **Info-ZIP**

- <http://www.info-zip.org/license.html>

Copyright (c) 1990-2007 Info-ZIP. All rights reserved.

For the purposes of this copyright and license, "Info-ZIP" is defined as the following set of individuals:

Mark Adler, John Bush, Karl Davis, Harald Denker, Jean-Michel Dubois, Jean-loup Gailly, Hunter Goatley, Ed Gordon, Ian Gorman, Chris Herborth, Dirk Haase, Greg Hartwig, Robert Heath, Jonathan Hudson, Paul Kienitz, David Kirschbaum, Johnny Lee, Onno van der Linden, Igor Mandrichenko, Steve P. Miller, Sergio Monesi, Keith Owens, George Petrov, Greg Roelofs, Kai Uwe Rommel, Steve Salisbury, Dave Smith, Steven M. Schweda, Christian Spieler, Cosmin Truta, Antoine Verheijen, Paul von Behren, Rich Wales, Mike White.

This software is provided "as is," without warranty of any kind, express or implied. In no event shall Info-ZIP or its contributors be held liable for any direct, indirect, incidental, special or consequential damages arising out of the use of or inability to use 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 above disclaimer and the following restrictions:

Redistributions of source code (in whole or in part) must retain the above copyright notice, definition, disclaimer, and this list of conditions.

Redistributions in binary form (compiled executables and libraries) must reproduce the above copyright notice, definition, disclaimer, and this list of conditions in documentation and/or other materials provided with the distribution. The sole exception to this condition is redistribution of a standard UnZipSFX binary (including SFXWiz) as part of a self-extracting archive; that is permitted without inclusion of this license, as long as the normal SFX banner has not been removed from the binary or disabled.

Altered versions--including, but not limited to, ports to new operating systems, existing ports with new graphical interfaces, versions with modified or added functionality, and dynamic, shared, or static library versions not from Info-ZIP--must be plainly marked as such and must not be misrepresented as being the original source or, if binaries, compiled from the original source. Such altered versions also must not be misrepresented as being Info-ZIP releases--including, but not limited to, labeling of the altered versions with the names "Info-ZIP" (or any variation thereof, including, but not limited to, different capitalizations), "Pocket UnZip," "WiZ" or "MacZip" without the explicit permission of Info-ZIP. Such altered versions are further prohibited from misrepresentative use of the Zip-Bugs or Info-ZIP e-mail addresses or the Info-ZIP URL(s), such as to imply Info-ZIP will provide support for the altered versions.

Info-ZIP retains the right to use the names "Info-ZIP," "Zip," "UnZip," "UnZipSFX," "WiZ," "Pocket UnZip," "Pocket Zip," and "MacZip" for its own source and binary releases.

## Intel

### e1000

- <http://www.gnu.org/copyleft/gpl.html>

©Intel Corporation

See the GNU General Public License, Version 3, at the end of this document.  
You can also access this license through the link provided above.

## Intel IPP

- [http://software.intel.com/sites/products/documentation/EULA/Intel\\_SW\\_Dev\\_Products\\_EULA.pdf](http://software.intel.com/sites/products/documentation/EULA/Intel_SW_Dev_Products_EULA.pdf)

Copyright © Intel Corporation. All rights reserved. Intel Corporation, 2200 Mission College Blvd., Santa Clara, CA 95052-8119, USA.

## Invisible-Island

- [http://invisible-island.net/ncurses/ncurses.faq.html#copyright\\_text](http://invisible-island.net/ncurses/ncurses.faq.html#copyright_text)

Copyright © 1997-2009,2010 by Thomas E. Dickey  
<dickey@invisible-island.net>. All Rights Reserved.

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 the above listed copyright holder(s) not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

THE ABOVE LISTED COPYRIGHT HOLDER(S) DISCLAIM ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL THE ABOVE LISTED COPYRIGHT HOLDER(S) 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 TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

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, distribute with modifications, 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 ABOVE 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.

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

## **ipsec-tools**

Copyright (C) 1995, 1996, 1997, 1998, and 1999 WIDE 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. Neither the name of the project 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 PROJECT 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 PROJECT 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.

## iptables/netfilter

- <http://www.gnu.org/copyleft/gpl.html>
- <http://www.iptables.org/about.html#license>

Copyright © 1999-2008 The netfilter webmaster

### License terms of the netfilter/iptables software

netfilter/iptables is - like all of the Linux Kernel - Free Software (sometimes referred to as Open Source Software), distributed under the terms of the GNU GPLv2 only. Please, note that some source code files might differ, and in that case it is explicitly stated in the header of every file.

The GPL also contains some obligations. If you distribute netfilter/iptables code in binary form, you have to offer the source code, too.

The netfilter/iptables project has made available some more detailed information on this subject:

- The remainder of this page as pdf (An Article on the licensing of netfilter/iptables by Harald Welte
- An Example disclaimer to be used as an appendix in a product manual.

The TeX source code of those documents can be found via our ViewCVS interface.

---

**Contact the coreteam in case you have any further questions.**

## **An article about netfilter licensing**

### **Introduction**

As netfilter/iptables is increasingly used by commercial vendors as part of their network security products, we'd like to give some explanations on how to comply with the license terms of this software.

The target audience for this document is somebody who re-distributes any software published by the netfilter/iptables project, independent of the medium of distribution (cd-rom, floppy disk, firmware image in flash/rom, internet download, ...).

### **Free Software ?!?**

netfilter/iptables is, like the Linux operating system kernel itself, “free software”. Free refers to free as in freedom. It doesn't necessarily make a statement about the cost. Free does explicitly NOT mean “free of any obligations”.

### **Important**

Free software is copyrighted material, very much like almost all software. You might have heard about freeware or public domain software. They are totally different concepts that do not apply to free software!

### **The GNU GPL Version 2**

As many free software, netfilter/iptables is licensed under the terms of the GNU General Public License (GPL), Version 2. You can find the full text of this license at <http://www.gnu.org/licenses/old-licenses/gpl-2.0.txt>. There's also a comprehensive list of frequently asked questions available.

### **Important**

The license enables you to distribute netfilter/iptables software **ONLY IF** you adhere to **ALL** conditions of this license. If you fail to do so, you are infringing our copyright in no different way of copying any other copyrighted material (e.g. proprietary software)!

In any doubt, feel free to contact the netfilter core team at [<coreteam@netfilter.org>](mailto:coreteam@netfilter.org) BEFORE you ship any product containing our source code.

### **Obligations for distributing the original source code**

According to Section 1 of the GNU GPLv2, you have the following obligations when distributing the original source code as published by the netfilter/iptables project:

- Provide a copyright notice and disclaimer of warranty
- Keep intact all notices that refer to the license
- Give a copy of the GPL license along with the program

### **Obligations for distributing modified source code**

According to Section 2 of the GNU GPLv2, you have the following obligations when distributing or publishing modified versions of the source code:

- Every modified file has to carry a statement about the change, including the date of any change
- You must make available any modified version available to be licensed as a whole at no charge to all parties under the terms of GNU GPLv2

### **Obligations for distributing object code / executable form**

According to section 3 of the GNU GPLv2, when distributing or publishing either original or modified version of the program, you have to fulfill all the obligations of Section 1 and 2, plus one out of the two possible options:

- Accompany it with the complete corresponding machine-readable source-code
- Alternatively, 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

---

## Example case of an embedded firewall vendor

Let's assume you are a vendor that sells embedded firewalling devices, using any of the netfilter/iptables code. Let's assume you are shipping this device with pre-installed object code of the software (sometimes referred to as firmware), but also offer software updates via the internet.

Because of your specific needs, you had to modify parts of the original netfilter/iptables code to make it fit your requirements.

The GPL gives you two different ways of complying with the license. You can choose between both. However, the netfilter project prefers the option described first in this document:

### Immediate source code offering

You have to accompany the device (as well as any version of a firmware update) with

A copy of the license text

A copy of the GNU GPLv2 License text along with your documentation, including a copyright notice (e.g. "(C) Copyright 2000-2004 netfilter project <http://www.netfilter.org/>") and the disclaimer of warranty (Section 11/12 of the GNU GPLv2).

If you ship printed documentation, please print the license, too. If you only ship electronic documentation (on CD-ROM or any other medium), please include an electronic version of the GNU GPL license text. If you ship GPL licensed code bundled with code subject to a different license, you have to indicate which parts of the resulting product are covered by which license.

Full copy of the modified source code

Please remember that modifications from the original source need to be identified as modifications.

Any scripts used to control compilation and installation of the object code

This specifically means you need to ship the makefiles used to control the build process and any tools needed for building the firmware image from the source code.

### Written offer for source code shipping

In this case, you have to accompany the device (as well as any firmware update) with:

A copy of the license text

A copy of the GNU GPLv2 License text along with your documentation, including a copyright notice (e.g. "(C) Copyright 2000-2004 netfilter project <http://www.netfilter.org/>") and the disclaimer of warranty (Section 11/12 of the GNU GPLv2).

If you ship printed documentation, please print the license, too. If you only ship electronic documentation (on CD-ROM or any other medium), please include an electronic version of the GNU GPL license text. If you ship GPL licensed code bundled with code subject to a different license, you have to indicate which parts of the resulting product are covered by which license.

A written offer to provide the source code

It is important to note, that you have to offer the source code to any third party, not just to the customer who has bought your appliance. You are not allowed to charge more money than the cost of copying the media and shipping it to the requesting party. The source code has to oblige to the same criteria in the previous example (i.e. include makefiles, tools for building the firmware image, ...).

### Notes on the development process

netfilter/iptables is a community based effort. This means that if it weren't for volunteers contributing source code to the project, it wouldn't exist and you wouldn't be able to build products based on it.

So as long as you want to continue selling netfilter/iptables products, it is in your own vital interest that the netfilter/iptables project flourishes. Contributions to the project are the most important part in the development of our project.

### Important

All of this is optional. You are not required to support the netfilter/iptables project. We're just kindly asking you to do so.

Vendors are welcome to contribute their modifications and/or new features back to the project. This way we can consider to include them into one of our next releases, and thus increasing the value of our software.



There are lots of other ways how you can support and encourage further development of the netfilter/iptables software. Possible options include:

- Monetary donations
- Donations of hardware
- Donations of rackspace, hosting, bandwidth, traffic
- Directly funding the development of certain new features
- Advertisement. Tell people that you are using our software
- Bug fixing. Inform us if you have found and/or fixed any bugs in the software

If you are interested in supporting the netfilter/iptables project in any way, maybe even one not listed above, please don't hesitate to contact us at <coreteam@netfilter.org>.

## irqbalance

- <http://irqbalance.org/license.php>

irqbalance is licensed under the terms of the GNU General Public License (GPL) version 2.

The text of this license can be found in the COPYING file in the source releases.

See the GNU General Public License, Version 2, at the end of this document. This license can also be viewed at the link provided above.

## Jakarta Apache Project

**Commons BeanUtils-1.6, Commons DBCP-1.2.1, Commons EL, Commons FileUpload-1.0, Commons FileUpload-1.2, Commons HttpClient-3.0 RC3, Commons IO-1.0, Commons IO-1.3.1, Commons Net, Commons Pool-1.2.1, Jakarta RegExp Matcher, ORO-2.0.8, Taglibs Lang-2.0, Taglibs Standard-1.0.5, Taglibs Standard 1.1.2, Taglibs String-1.1.0, Tomcat**

- <http://jakarta.apache.org/commons/license.html>
- <http://www.apache.org/licenses/LICENSE-2.0.html>

The Jakarta project is a collection of sub-projects that provide server-side solutions using the Java language. The Apache Software Foundation also hosts projects written in Java which are not managed as part of the Jakarta project

A list of licences other than the Apache v1 and v2 licences, and whether they may be used by Jakarta (and other ASF projects by implication) sub-projects.

For a full range of potential open-source licences, see <http://www.opensource.org/licenses/>. Also see <http://wiki.apache.org/old/Licensing>.

© 2010 The Apache Software Foundation

## Java Base64 encoder

©1996-2011 Roedy Green, Canadian Mind Products

- <http://www.mindprod.com/index.html#TITLE>

## Java SNMP

SNMP Package

Copyright (C) 2003, Jonathan Sevy <jsevy@mcs.drexel.edu>

This is free software. 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. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

---

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``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 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.

## Java RADIUS Client

- <http://www.gnu.org/licenses/lgpl.html>

See the GNU General Public License, Version 3, at the end of this document.  
You can also access this license through the link provided above.

## Java Sound Resources

- <http://www.gnu.org/copyleft/gpl.html>

See the GNU General Public License, Version 2, at the end of this document.  
You can also access this license through the link provided above.

## JBoss

- <http://www.jboss.org/projects>
- <http://www.gnu.org/licenses/lgpl.html>

Copyright © 2010 Red Hat, Inc. All rights reserved

See the GNU General Public License, Version 3 at the end of this document.  
You can also access this license through the link provided above.

## JCraft

### JSCH

- <http://www.jcraft.com/jsch/LICENSE.txt>

JSch 0.0.\* was released under the GNU LGPL license. Later, we have switched over to a BSD-style license.

-----  
Copyright (c) 2002,2003,2004,2005,2006,2007,2008 Atsuhiko Yamanaka, JCraft, Inc.

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. The names of the authors may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED ``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 JCRAFT, INC. OR ANY CONTRIBUTORS TO THIS 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.

## JZlib

- <http://www.jcraft.com/jzlib/LICENSE.txt>

JZlib 0.0.\* were released under the GNU LGPL license. Later, we have switched over to a BSD-style license.

-----  
Copyright (c) 2000-2011 ymnk, JCraft,Inc. 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. The names of the authors may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED ``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 JCRAFT,

INC. OR ANY CONTRIBUTORS TO THIS 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.

## JDOM

- <http://www.jdom.org/docs/faq.html#a0030>

JDOM is a Java representation of an XML document. JDOM provides a way to represent that document for easy and efficient reading, manipulation, and writing. It has a straightforward API, is a lightweight and fast, and is optimized for the Java programmer. It's an alternative to DOM and SAX, although it integrates well with both DOM and SAX.

JDOM is available under an Apache-style open source license, with the acknowledgment clause removed. This license is among the least restrictive license available, enabling developers to use JDOM in creating new products without requiring them to release their own products as open source. This is the license model used by the Apache Project, which created the Apache server. The license is available at the top of every source file and in LICENSE.txt in the root of the distribution.

## JFree

**jcommon-1.0.0-rc1.jar. jfreechart-1.0.0-rc1.jar**

- <http://www.jfree.org/lgpl.php>

© 2005-2009 Object Refinery Limited

See the Apache License, Version 2.0 at the end of this document. You can also access this license through the link provided above.

---

## jQuery

- <http://jquery.com/>  
© 2012 The jQuery Foundation

## JSON

- <http://www.json.org/license.html>

Copyright (c) 2002 JSON.org

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 shall be used for Good, not Evil.

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.

## JSPTags.com

Copyright © 2000 JSPTags.com. All Rights Reserved.

- <http://www.gnu.org/copyleft/lesser.html>

See the GNU Lesser General Public License, Version 3, at the end of this document. You can also access this license through the link provided above.

## Just Objects B.V.

### Pushlets

### License

March 28, 2000.

Copyright (C) 2000 by Just Objects B.V. <just[AT]justobjects.nl> All rights reserved.

The license for the Pushlet framework is according to the GNU LGPL as described in <http://www.gnu.org/copyleft/lesser.html>.

The source code, object code, and documentation on this site, to be called the "material", is copyright and owned by Just Objects B.V.

Feel free to use any of this material in the development of any non-commercial project. For this use you are granted a non-exclusive, non-transferable limited license at no cost, i.e. for free.

If you are interested in using the package to benefit a commercial project, be sure to adhere to the conditions described in <http://www.gnu.org/copyleft/lesser.html>.

Redistribution of the material is permitted provided that you reproduce the above copyright notice, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.

Note that the Pushlet framework is provided "as is" and the author will not be liable for any damages suffered as a result of your use. Furthermore, you understand the material comes without any formal technical support (though feedback is welcome).

You can always find the latest version of the material at <http://www.pushlets.com>.

And finally.



---

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``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.

## **Kai Toedler**

### **JCalendar**

© Kai Tödter 2010

- <http://www.toedter.com/en/jcalendar/license.html>

A copy of the GNU Lesser General Public License - version 3 - is provided at the end of this document. You can also access this license through the link provided above.

## **L2FProd**

Copyright © 2004-2006 L2FProd.com

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

A copy of the Apache License, Version 2.0, is provided at the end of this document. You can also access this license through the link provided above.

## **Launch4j**

Copyright © 2005-2008 Grzegorz Kowal

- <http://www.opensource.org/licenses/bsd-license.html>

A copy of the Open Source Initiative OSI - The BSD License is provided at the end of this document. You can also access this license through the link provided above.

## **libpcap**

- <http://www.tcpdump.org/#>

(c) 2010 Tcpdump/Libpcap. Designed by Luis MartinGarcia; based on a template by Free CSS Templates.

## **libsrtplib**

- <http://srtplib.sourceforge.net/license.html>

### **License**

The srtplib library and the test drivers distributed with it are licensed under the following BSD-based license.

Copyright (c) 2001-2005 Cisco Systems, Inc.

All rights reserved.

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

\* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

\* 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.

\* Neither the name of the Cisco Systems, Inc. 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 COPYRIGHT HOLDERS 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 COPYRIGHT HOLDERS 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.

## libssh2

- [http://git.libssh2.org/?p=libssh2.git;a=blob\\_plain;f=COPYING;hb=HEAD](http://git.libssh2.org/?p=libssh2.git;a=blob_plain;f=COPYING;hb=HEAD)

Copyright (c) 2004-2007 Sara Golemon <sarag@libssh2.org>

Copyright (c) 2005,2006 Mikhail Gusarov <dottedmag@dottedmag.net>

Copyright (c) 2006-2007 The Written Word, Inc.

Copyright (c) 2007 Eli Fant <elifantu@mail.ru>

Copyright (c) 2009 Daniel Stenberg

Copyright (C) 2008, 2009 Simon Josefsson

All rights reserved.

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

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

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.

Neither the name of the copyright holder nor the names of any other contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS 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 COPYRIGHT OWNER 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.

## Libtasn1

Copyright © 2009 Free Software Foundation, Inc.

- <http://www.gnu.org/licenses/lgpl-2.1.html>

See the GNU Lesser General Public License, Version 2.1 at the end of this document. This license can also be viewed at the link provided above.

## Linphone

© 2010 Linphone All Rights Reserved

- <http://www.gnu.org/licenses/lgpl-2.1.html>

See the GNU Lesser General Public License, Version 2.1 at the end of this document. This license can also be viewed at the link provided above.

---

## The Linux Foundation

- <http://creativecommons.org/licenses/by/3.0/>

Copyright © 2010 Linux Foundation. All rights reserved.

You are free:

**to Share** — to copy, distribute and transmit the work

**to Remix** — to adapt the work

Under the following conditions:

**Attribution** — You must attribute the work in the manner specified by the author or licensor (but not in any way that suggests that they endorse you or your use of the work).

What does "Attribute this work" mean?

The page you came from contained embedded licensing metadata, including how the creator wishes to be attributed for re-use. You can use the [HTML](#) here to cite the work. Doing so will also include metadata on your page so that others can find the original work as well.

With the understanding that:

**Waiver** — Any of the above conditions can be waived if you get permission from the copyright holder.

**Public Domain** — Where the work or any of its elements is in the public domain under applicable law, that status is in no way affected by the license.

**Other Rights** — In no way are any of the following rights affected by the license:

Your fair dealing or fair use rights, or other applicable copyright exceptions and limitations;

The author's moral rights;

Rights other persons may have either in the work itself or in how the work is used, such as publicity or privacy rights.

**Notice** — For any reuse or distribution, you must make clear to others the license terms of this work. The best way to do this is with a link to this web page.

## **iputils**

By Linux Foundation - November 19, 2009

- <http://www.linuxfoundation.org/collaborate/workgroups/networking/iputils>

## **Linux Kernel**

### **Legal Notices**

#### **Copyright**

Copyright 1997-2007 The Linux Kernel Organization, Inc.

Distributed software is copyrighted by their respective contributors and are distributed under their own individual licenses.

#### **Legal Disclaimer**

This site is provided as a public service by The Linux Kernel Organization Inc., a California 501(c)3 nonprofit corporation. Our servers are located in San Francisco, CA, USA; Palo Alto, CA, USA; Corvallis, OR, USA; Amsterdam, Netherlands; and Umeå, Sweden. Use in violation of any applicable laws is strictly prohibited.

Neither the Linux Kernel Organization nor any of its sponsors make any guarantees, explicit or implicit, about the contents of this site. Use at your own risk.

#### **Trademarks**

Linux is a Registered Trademark of Linus Torvalds. All trademarks are property of their respective owners.

## **LKCD**

© 2005 LKCD Team

- <http://srtp.sourceforge.net/license.html>

The srtp library and the test drivers distributed with it are licensed under the following BSD-based license.

---

Copyright (c) 2001-2005 Cisco Systems, Inc.  
All rights reserved.

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

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

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.

Neither the name of the Cisco Systems, Inc. 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 COPYRIGHT HOLDERS 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 COPYRIGHT HOLDERS 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.

## LSOF

- <ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof/FAQ>

Lsof is a UNIX-specific tool. Its name stands for LiSt Open Files, and it does just that. It lists information about files that are open by the processes running on a UNIX system.

The only restriction on the use or redistribution of lsof is contained in this copyright statement, found in every lsof source file. (The copyright year in or format of the notice may vary slightly.)

\* Copyright 2002 Purdue Research Foundation, West Lafayette, \* Indiana 47907. All rights reserved.

\* Written by Victor A. Abell

This software is not subject to any license of the American Telephone and Telegraph Company or the Regents of the University of California.

Permission is granted to anyone to use this software for any purpose on any computer system, and to alter it and redistribute it freely, subject to the following restrictions:

- Neither the authors nor Purdue University are responsible for any consequences of the use of this software.
- The origin of this software must not be misrepresented, either by explicit claim or by omission. Credit to the authors and Purdue University must appear in documentation and sources.
- Altered versions must be plainly marked as such, and must not be misrepresented as being the original software.
- This notice may not be removed or altered.

## Microsoft

© 2010 Microsoft Corporation. All rights reserved.

- <http://www.microsoft.com/downloads/details.aspx?FamilyID=99b21b65-e98f-4a61-b811-19912601fdc9&displaylang=en#Overview>

**Note:** In order to download the SQL Server JDBC Driver 2.0, you must agree to the End-User License Agreement (EULA). Start by clicking the **Download** button at the top of this page and the EULA will appear. Read the EULA and click the **Accept** link to download the package. Please print a copy of the EULA for your records.

## SQL Server JDBC Driver

MICROSOFT SOFTWARE LICENSE TERMS



---

## MICROSOFT SQL SERVER JDBC DRIVER 2.0

These license terms are an agreement between Microsoft Corporation (or based on where you live, one of its affiliates) and you. Please read them. They apply to the software named above, which includes the media on which you received it, if any. The terms also apply to any Microsoft

- \* updates,
- \* supplements,
- \* Internet-based services, and
- \* support services

for this software, unless other terms accompany those items. If so, those terms apply.

**BY USING THE SOFTWARE, YOU ACCEPT THESE TERMS. IF YOU DO NOT ACCEPT THEM, DO NOT USE THE SOFTWARE.**

If you comply with these license terms, you have the rights below.

1. **INSTALLATION AND USE RIGHTS.** You may install and use any number of copies of the software on your devices.

2. **SCOPE OF LICENSE.** The software is licensed, not sold. This agreement only gives you some rights to use the software. Microsoft reserves all other rights. Unless applicable law gives you more rights despite this limitation, you may use the software only as expressly permitted in this agreement. In doing so, you must comply with any technical limitations in the software that only allow you to use it in certain ways. You may not

- \* disclose the results of any benchmark tests of the software to any third party without Microsoft's prior written approval;

- \* work around any technical limitations in the software;
- \* reverse engineer, decompile or disassemble the software, except and only to the extent that applicable law expressly permits, despite this limitation;
- \* make more copies of the software than specified in this agreement or allowed by applicable law, despite this limitation;
- \* publish the software for others to copy;
- \* rent, lease or lend the software; or
- \* use the software for commercial software hosting services.

3. **BACKUP COPY.** You may make one backup copy of the software. You may use it only to reinstall the software.

4. **DOCUMENTATION.** Any person that has valid access to your computer or internal network may copy and use the documentation for your internal, reference purposes.

5. **TRANSFER TO A THIRD PARTY.** The first user of the software may transfer it and this agreement directly to a third party. Before the transfer, that party must agree that this agreement applies to the transfer and use of the software. The first user must uninstall the software before transferring it separately from the device. The first user may not retain any copies.

6. **EXPORT RESTRICTIONS.** The software is subject to United States export laws and regulations. You must comply with all domestic and international export laws and regulations that apply to the software. These laws include restrictions on destinations, end users and end use. For additional information, see [www.microsoft.com/exporting](http://www.microsoft.com/exporting).

7. **SUPPORT SERVICES.** Because this software is “as is,” we may not provide support services for it.

---

8. ENTIRE AGREEMENT. This agreement, and the terms for supplements, updates, Internet-based services and support services that you use, are the entire agreement for the software and support services.

9. APPLICABLE LAW.

a. United States. If you acquired the software in the United States, Washington state law governs the interpretation of this agreement and applies to claims for breach of it, regardless of conflict of laws principles. The laws of the state where you live govern all other claims, including claims under state consumer protection laws, unfair competition laws, and in tort.

b. Outside the United States. If you acquired the software in any other country, the laws of that country apply.

10. LEGAL EFFECT. This agreement describes certain legal rights. You may have other rights under the laws of your country. You may also have rights with respect to the party from whom you acquired the software. This agreement does not change your rights under the laws of your country if the laws of your country do not permit it to do so.

11. DISCLAIMER OF WARRANTY. THE SOFTWARE IS LICENSED "AS-IS." YOU BEAR THE RISK OF USING IT. MICROSOFT GIVES NO EXPRESS WARRANTIES, GUARANTEES OR CONDITIONS. YOU MAY HAVE ADDITIONAL CONSUMER RIGHTS UNDER YOUR LOCAL LAWS WHICH THIS AGREEMENT CANNOT CHANGE. TO THE EXTENT PERMITTED UNDER YOUR LOCAL LAWS, MICROSOFT EXCLUDES THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT.

12. LIMITATION ON AND EXCLUSION OF REMEDIES AND DAMAGES. YOU CAN RECOVER FROM MICROSOFT AND ITS SUPPLIERS ONLY DIRECT DAMAGES UP TO U.S. \$5.00. YOU CANNOT RECOVER ANY OTHER DAMAGES, INCLUDING CONSEQUENTIAL, LOST PROFITS, SPECIAL, INDIRECT OR INCIDENTAL DAMAGES.

This limitation applies to

- \* anything related to the software, services, content (including code) on third party Internet sites, or third party programs; and
- \* claims for breach of contract, breach of warranty, guarantee or condition, strict liability, negligence, or other tort to the extent permitted by applicable law.

It also applies even if Microsoft knew or should have known about the possibility of the damages. The above limitation or exclusion may not apply to you because your country may not allow the exclusion or limitation of incidental, consequential or other damages.

## MKtemp

- <http://www.mktemp.org/mktemp/license.html>

Mktemp is distributed under the following ISC-style license:

Copyright (c) 1996-1997, 2000-2001, 2008 Todd C. Miller  
<Todd.Miller@courtesan.com> Copyright (c) 1996, David Mazieres  
<dm@uun.org> Copyright (c) 2008, Damien Miller <djm@openbsd.org>

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 THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR 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.

## **Mort Bay Consultations**

### **Jetty**

Copyright © 1995-2009 Mort Bay Consulting. All Rights Reserved

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

A copy of the Apache License, Version 2.0, is provided at the end of this document. You can also access this license through the link provided above.

## **MPFR**

<http://www.gnu.org/copyleft/lesser.html>

See the GNU General Public License, Version 3 at the end of this document. This license can also be viewed at the link provided above.

## **Mplayer**

### **librtmp**

- <http://www.gnu.org/licenses/lgpl-2.1.html>

See the GNU Lesser General Public License, Version 2.1 at the end of this document. This license can also be viewed at the link provided above.

License: GPLv2

Copyright (C) 2009 Andrej Stepanchuk

Copyright (C) 2010-2011 Howard Chu

## MTD

- <http://www.gnu.org/copyleft/gpl.html>

See the GNU General Public License, Version 3 at the end of this document. You can also access this license through the link provided above.

## nano

- <http://www.gnu.org/licenses/old-licenses/gpl-2.0.html>

See the GNU General Public License, Version 2 at the end of this document. This license can also be viewed at the link provided above.

Copyright © 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010 Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.

Verbatim copying and distribution of this entire article is permitted in any medium, provided this notice is preserved.

## Net-SNMP

- <http://www.net-snmp.org/about/license.html>

### License

Various copyrights apply to this package, listed in various separate parts below. Please make sure that you read all the parts. Up until 2001, the project was based at UC Davis, and the first part covers all code written during this time. From 2001 onwards, the project has been based at SourceForge, and Networks Associates Technology, Inc hold the copyright on behalf of the wider Net-SNMP community, covering all derivative work done since then. An additional copyright section has been added as Part 3 below also under a BSD license for the work contributed by Cambridge Broadband Ltd. to the project since 2001. An additional copyright section has been added as Part 4 below also under a BSD license for the work contributed by Sun Microsystems, Inc. to the project since 2003.

Code has been contributed to this project by many people over the years it has been in development, and a full list of contributor can be found in the README file under the THANKS section.

----- Part 1: CMU/UCD copyright notice: (BSD like) -----

Copyright 1989, 1991, 1992 by Carnegie Mellon University

Derivative Work - 1996, 1998-2000

Copyright 1996, 1998-2000 The Regents of the University of California

All Rights Reserved

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 appears in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of CMU and The Regents of the University of California not be used in advertising or publicity pertaining to distribution of the software without specific written permission.

CMU AND THE REGENTS OF THE UNIVERSITY OF CALIFORNIA DISCLAIM ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL CMU OR THE REGENTS OF THE UNIVERSITY OF CALIFORNIA BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM THE 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.

----- Part 2: Networks Associates Technology, Inc copyright notice (BSD) -----

Copyright (c) 2001-2003, Networks Associates Technology, Inc

All rights reserved.

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

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 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.

- Neither the name of the Networks Associates Technology, Inc 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 COPYRIGHT HOLDERS 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 COPYRIGHT HOLDERS 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.

---- Part 3: Cambridge Broadband Ltd. copyright notice (BSD) ----

Portions of this code are copyright (c) 2001-2003, Cambridge Broadband Ltd.  
All rights reserved.

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

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 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.
- The name of Cambridge Broadband Ltd. may not be used to endorse or promote products derived from this software without specific prior written permission.



---

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDER ``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 COPYRIGHT HOLDER 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.

---- Part 4: Sun Microsystems, Inc. copyright notice (BSD) ----

Copyright © 2003 Sun Microsystems, Inc., 4150 Network Circle, Santa Clara, California 95054, U.S.A. All rights reserved.

Use is subject to license terms below.

This distribution may include materials developed by third parties.

Sun, Sun Microsystems, the Sun logo and Solaris are trademarks or registered trademarks of Sun Microsystems, Inc. in the U.S. and other countries.

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

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 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.
- Neither the name of the Sun Microsystems, Inc. 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 COPYRIGHT HOLDERS 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 COPYRIGHT HOLDERS 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.

---- Part 5: Sparta, Inc copyright notice (BSD) -----

Copyright (c) 2003-2006, Sparta, Inc  
All rights reserved.

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

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 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.
- Neither the name of Sparta, Inc 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 COPYRIGHT HOLDERS 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 COPYRIGHT HOLDERS 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.

---- Part 6: Cisco/BUPTNIC copyright notice (BSD) ----

Copyright (c) 2004, Cisco, Inc and Information Network  
Center of Beijing University of Posts and Telecommunications.  
All rights reserved.

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

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 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.
- Neither the name of Cisco, Inc, Beijing University of Posts and Telecommunications, nor the names of their contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS 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 COPYRIGHT HOLDERS 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.

---- Part 7: Fabasoft R&D Software GmbH & Co KG copyright notice (BSD) ----

Copyright (c) Fabasoft R&D Software GmbH & Co KG, 2003

oss@fabasoft.com

Author: Bernhard Penz

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

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 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.
- The name of Fabasoft R&D Software GmbH & Co KG or any of its subsidiaries, brand or product names may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDER ``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 COPYRIGHT HOLDER 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.

## NSIS

- <http://nsis.sourceforge.net/License>

### COPYRIGHT

Copyright (C) 1995-2007 Contributors

More detailed copyright information can be found in the individual source code files.

### APPLICABLE LICENSES

All NSIS source code, plug-ins, documentation, examples, header files and graphics, with the exception of the compression modules and where otherwise noted, are licensed under the zlib/libpng license.

The zlib compression module for NSIS is licensed under the zlib/libpng license.

The bzip2 compression module for NSIS is licensed under the bzip2 license.

The LZMA compression module for NSIS is licensed under the Common Public License version 1.0.

### ZLIB/LIBPNG LICENSE

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 in the product documentation would be appreciated but is not required.
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.

#### BZIP2 LICENSE

This program, "bzip2" and associated library "libbzip2", are copyright (C) 1996-2000 Julian R Seward. 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. 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 in the product documentation would be appreciated but is not required.
3. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
4. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``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 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.

Julian Seward, Cambridge, UK.

[jseward@acm.org](mailto:jseward@acm.org)

#### COMMON PUBLIC LICENSE VERSION 1.0

THE ACCOMPANYING PROGRAM IS PROVIDED UNDER THE TERMS OF THIS COMMON PUBLIC LICENSE ("AGREEMENT"). ANY USE, REPRODUCTION OR DISTRIBUTION OF THE PROGRAM CONSTITUTES RECIPIENT'S ACCEPTANCE OF THIS AGREEMENT.

#### 1. DEFINITIONS

"Contribution" means:

a) in the case of the initial Contributor, the initial code and documentation distributed under this Agreement, and

b) in the case of each subsequent Contributor:

i) changes to the Program, and

ii) additions to the Program;

where such changes and/or additions to the Program originate from and are distributed by that particular Contributor. A Contribution 'originates' from a Contributor if it was added to the Program by such Contributor itself or anyone acting on such Contributor's behalf. Contributions do not include additions to the Program which: (i) are separate modules of software distributed in conjunction with the Program under their own license agreement, and (ii) are not derivative works of the Program.

"Contributor" means any person or entity that distributes the Program.

"Licensed Patents" mean patent claims licensable by a Contributor which are necessarily infringed by the use or sale of its Contribution alone or when combined with the Program.

"Program" means the Contributions distributed in accordance with this Agreement.

"Recipient" means anyone who receives the Program under this Agreement, including all Contributors.

## 2. GRANT OF RIGHTS

a) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free copyright license to reproduce, prepare derivative works of, publicly display, publicly perform, distribute and sublicense the Contribution of such Contributor, if any, and such derivative works, in source code and object code form.

b) Subject to the terms of this Agreement, each Contributor hereby grants Recipient a non-exclusive, worldwide, royalty-free patent license under Licensed Patents to make, use, sell, offer to sell, import and otherwise transfer the Contribution of such Contributor, if any, in source code and object code form. This patent license shall apply to the combination of the Contribution and the Program if, at the time the Contribution is added by the Contributor, such addition of the Contribution causes such combination to be covered by the Licensed Patents. The patent license shall not apply to any other combinations which include the Contribution. No hardware per se is licensed hereunder.

c) Recipient understands that although each Contributor grants the licenses to its Contributions set forth herein, no assurances are provided by any Contributor that the Program does not infringe the patent or other intellectual property rights of any other entity. Each Contributor disclaims any liability to Recipient for claims brought by any other entity based on infringement of intellectual property rights or otherwise. As a condition to exercising the rights and licenses granted hereunder, each Recipient hereby assumes sole responsibility to secure any other intellectual property rights needed, if any. For example, if a third party patent license is required to allow Recipient to distribute the Program, it is Recipient's responsibility to acquire that license before distributing the Program.

d) Each Contributor represents that to its knowledge it has sufficient copyright rights in its Contribution, if any, to grant the copyright license set forth in this Agreement.



---

### 3. REQUIREMENTS

A Contributor may choose to distribute the Program in object code form under its own license agreement, provided that:

- a) it complies with the terms and conditions of this Agreement; and
- b) its license agreement:
  - i) effectively disclaims on behalf of all Contributors all warranties and conditions, express and implied, including warranties or conditions of title and non-infringement, and implied warranties or conditions of merchantability and fitness for a particular purpose;
  - ii) effectively excludes on behalf of all Contributors all liability for damages, including direct, indirect, special, incidental and consequential damages, such as lost profits;
  - iii) states that any provisions which differ from this Agreement are offered by that Contributor alone and not by any other party; and
  - iv) states that source code for the Program is available from such Contributor, and informs licensees how to obtain it in a reasonable manner on or through a medium customarily used for software exchange.

When the Program is made available in source code form:

- a) it must be made available under this Agreement; and
- b) a copy of this Agreement must be included with each copy of the Program.

Contributors may not remove or alter any copyright notices contained within the Program.

Each Contributor must identify itself as the originator of its Contribution, if any, in a manner that reasonably allows subsequent Recipients to identify the originator of the Contribution.

### 4. COMMERCIAL DISTRIBUTION

Commercial distributors of software may accept certain responsibilities with respect to end users, business partners and the like. While this license is intended to facilitate the commercial use of the Program, the Contributor who includes the Program in a commercial product offering should do so in a manner which does not create potential liability for other Contributors. Therefore, if a Contributor includes the Program in a commercial product offering, such Contributor ("Commercial Contributor") hereby agrees to defend and indemnify every other Contributor ("Indemnified Contributor") against any losses, damages and costs (collectively "Losses") arising from claims, lawsuits and other legal actions brought by a third party against the Indemnified Contributor to the extent caused by the acts or omissions of such Commercial Contributor in connection with its distribution of the Program in a commercial product offering. The obligations in this section do not apply to any claims or Losses relating to any actual or alleged intellectual property infringement. In order to qualify, an Indemnified Contributor must: a) promptly notify the Commercial Contributor in writing of such claim, and b) allow the Commercial Contributor to control, and cooperate with the Commercial Contributor in, the defense and any related settlement negotiations. The Indemnified Contributor may participate in any such claim at its own expense.

For example, a Contributor might include the Program in a commercial product offering, Product X. That Contributor is then a Commercial Contributor. If that Commercial Contributor then makes performance claims, or offers warranties related to Product X, those performance claims and warranties are such Commercial Contributor's responsibility alone. Under this section, the Commercial Contributor would have to defend claims against the other Contributors related to those performance claims and warranties, and if a court requires any other Contributor to pay any damages as a result, the Commercial Contributor must pay those damages.

## 5. NO WARRANTY

---

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, THE PROGRAM IS PROVIDED 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. Each Recipient is solely responsible for determining the appropriateness of using and distributing the Program and assumes all risks associated with its exercise of rights under this Agreement, including but not limited to the risks and costs of program errors, compliance with applicable laws, damage to or loss of data, programs or equipment, and unavailability or interruption of operations.

#### 6. DISCLAIMER OF LIABILITY

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, NEITHER RECIPIENT NOR ANY CONTRIBUTORS SHALL HAVE ANY LIABILITY FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING WITHOUT LIMITATION LOST PROFITS), 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 OR DISTRIBUTION OF THE PROGRAM OR THE EXERCISE OF ANY RIGHTS GRANTED HEREUNDER, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### 7. GENERAL

If any provision of this Agreement is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this Agreement, and without further action by the parties hereto, such provision shall be reformed to the minimum extent necessary to make such provision valid and enforceable.

If Recipient institutes patent litigation against a Contributor with respect to a patent applicable to software (including a cross-claim or counterclaim in a lawsuit), then any patent licenses granted by that Contributor to such Recipient under this Agreement shall terminate as of the date such litigation is filed. In addition, if Recipient institutes patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Program itself (excluding combinations of the Program with other software or hardware) infringes such Recipient's patent(s), then such Recipient's rights granted under Section 2(b) shall terminate as of the date such litigation is filed.

All Recipient's rights under this Agreement shall terminate if it fails to comply with any of the material terms or conditions of this Agreement and does not cure such failure in a reasonable period of time after becoming aware of such noncompliance. If all Recipient's rights under this Agreement terminate, Recipient agrees to cease use and distribution of the Program as soon as reasonably practicable. However, Recipient's obligations under this Agreement and any licenses granted by Recipient relating to the Program shall continue and survive.

Everyone is permitted to copy and distribute copies of this Agreement, but in order to avoid inconsistency the Agreement is copyrighted and may only be modified in the following manner. The Agreement Steward reserves the right to publish new versions (including revisions) of this Agreement from time to time. No one other than the Agreement Steward has the right to modify this Agreement. IBM is the initial Agreement Steward. IBM may assign the responsibility to serve as the Agreement Steward to a suitable separate entity. Each new version of the Agreement will be given a distinguishing version number. The Program (including Contributions) may always be distributed subject to the version of the Agreement under which it was received. In addition, after a new version of the Agreement is published, Contributor may elect to distribute the Program (including its Contributions) under the new version. Except as expressly stated in Sections 2(a) and 2(b) above, Recipient receives no rights or licenses to the intellectual property of any Contributor under this Agreement, whether expressly, by implication, estoppel or otherwise. All rights in the Program not expressly granted under this Agreement are reserved.

This Agreement is governed by the laws of the State of New York and the intellectual property laws of the United States of America. No party to this Agreement will bring a legal action under this Agreement more than one year after the cause of action arose. Each party waives its rights to a jury trial in any resulting litigation.

#### **SPECIAL EXCEPTION FOR LZMA COMPRESSION MODULE**

Igor Pavlov and Amir Szekely, the authors of the LZMA compression module for NSIS, expressly permit you to statically or dynamically link your code (or bind by name) to the files from the LZMA compression module for NSIS without subjecting your linked code to the terms of the Common Public license version 1.0. Any modifications or additions to files from the LZMA compression module for NSIS, however, are subject to the terms of the Common Public License version 1.0.

---

## Open Source Initiative OSI - The BSD License: Licensing

- <http://www.opensource.org/licenses/bsd-license.php>

### The BSD License

The following is a BSD license template. To generate your own license, change the values of OWNER, ORGANIZATION and YEAR from their original values as given here, and substitute your own. Also, you may optionally omit clause 3 and still be OSD conformant.

Note: On January 9th, 2008 the OSI Board approved the "Simplified BSD License" variant used by FreeBSD and others, which omits the final "no-endorsement" clause and is thus roughly equivalent to the MIT License.

Historical Note: The original license used on BSD Unix had four clauses. The advertising clause (the third of four clauses) required you to acknowledge use of U.C. Berkeley code in your advertising of any product using that code. It was officially rescinded by the Director of the Office of Technology Licensing of the University of California on July 22nd, 1999. He states that clause 3 is "hereby deleted in its entirety." The four clause license has not been approved by OSI. The license below does not contain the advertising clause.

This prelude is not part of the license.

<OWNER> = Regents of the University of California

<ORGANIZATION> = University of California, Berkeley

<YEAR> = 1998

In the original BSD license, both occurrences of the phrase "COPYRIGHT HOLDERS AND CONTRIBUTORS" in the disclaimer read "REGENTS AND CONTRIBUTORS".

Here is the license template:

Copyright (c) <YEAR>, <OWNER>

All rights reserved.

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

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

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.

Neither the name of the <ORGANIZATION> 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 COPYRIGHT HOLDERS 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 COPYRIGHT OWNER 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.

## **Open Source Initiative OSI - Common Development and Distribution License (CDDL-1.0)**

- <http://opensource.org/comment/983>

### **1. Definitions:**

1.1. Contributor means each individual or entity that creates or contributes to the creation of Modifications.

1.2. Contributor Version means the combination of the Original Software, prior Modifications used by a Contributor (if any), and the Modifications made by that particular Contributor.

1.3. Covered Software means (a) the Original Software, or (b) Modifications, or (c) the combination of files containing Original Software with files containing Modifications, in each case including portions thereof.

---

1.4. Executable means the Covered Software in any form other than Source Code.

1.5. Initial Developer means the individual or entity that first makes Original Software available under this License.

1.6. Larger Work means a work which combines Covered Software or portions thereof with code not governed by the terms of this License.

1.7. License means this document.

1.8. Licensable means having the right to grant, to the maximum extent possible, whether at the time of the initial grant or subsequently acquired, any and all of the rights conveyed herein.

1.9. Modifications means the Source Code and Executable form of any of the following:

A. Any file that results from an addition to, deletion from or modification of the contents of a file containing Original Software or previous Modifications;

B. Any new file that contains any part of the Original Software or previous Modification; or

C. Any new file that is contributed or otherwise made available under the terms of this License.

1.10. Original Software means the Source Code and Executable form of computer software code that is originally released under this License.

1.11. Patent Claims means any patent claim(s), now owned or hereafter acquired, including without limitation, method, process, and apparatus claims, in any patent Licensable by grantor.

1.12. Source Code means (a) the common form of computer software code in which modifications are made and (b) associated documentation included in or with such code.

1.13. You (or Your) means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License. For legal entities, You includes any entity which controls, is controlled by, or is under common control with You. For purposes of this definition, control means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of more than fifty percent (50%) of the outstanding shares or beneficial ownership of such entity.

## 2. License Grants.

### 2.1. The Initial Developer Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, the Initial Developer hereby grants You a world-wide, royalty-free, non-exclusive license:

(a) under intellectual property rights (other than patent or trademark) Licensable by Initial Developer, to use, reproduce, modify, display, perform, sublicense and distribute the Original Software (or portions thereof), with or without Modifications, and/or as part of a Larger Work; and

(b) under Patent Claims infringed by the making, using or selling of Original Software, to make, have made, use, practice, sell, and offer for sale, and/or otherwise dispose of the Original Software (or portions thereof).

(c) The licenses granted in Sections 2.1(a) and (b) are effective on the date Initial Developer first distributes or otherwise makes the Original Software available to a third party under the terms of this License.

(d) Notwithstanding Section 2.1(b) above, no patent license is granted: (1) for code that You delete from the Original Software, or (2) for infringements caused by: (i) the modification of the Original Software, or (ii) the combination of the Original Software with other software or devices.

### 2.2. Contributor Grant.

Conditioned upon Your compliance with Section 3.1 below and subject to third party intellectual property claims, each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license:



(a) under intellectual property rights (other than patent or trademark) Licensable by Contributor to use, reproduce, modify, display, perform, sublicense and distribute the Modifications created by such Contributor (or portions thereof), either on an unmodified basis, with other Modifications, as Covered Software and/or as part of a Larger Work; and

(b) under Patent Claims infringed by the making, using, or selling of Modifications made by that Contributor either alone and/or in combination with its Contributor Version (or portions of such combination), to make, use, sell, offer for sale, have made, and/or otherwise dispose of: (1) Modifications made by that Contributor (or portions thereof); and (2) the combination of Modifications made by that Contributor with its Contributor Version (or portions of such combination).

(c) The licenses granted in Sections 2.2(a) and 2.2(b) are effective on the date Contributor first distributes or otherwise makes the Modifications available to a third party.

(d) Notwithstanding Section 2.2(b) above, no patent license is granted: (1) for any code that Contributor has deleted from the Contributor Version; (2) for infringements caused by: (i) third party modifications of Contributor Version, or (ii) the combination of Modifications made by that Contributor with other software (except as part of the Contributor Version) or other devices; or (3) under Patent Claims infringed by Covered Software in the absence of Modifications made by that Contributor.

### 3. Distribution Obligations.

#### 3.1. Availability of Source Code.

Any Covered Software that You distribute or otherwise make available in Executable form must also be made available in Source Code form and that Source Code form must be distributed only under the terms of this License. You must include a copy of this License with every copy of the Source Code form of the Covered Software You distribute or otherwise make available. You must inform recipients of any such Covered Software in Executable form as to how they can obtain such Covered Software in Source Code form in a reasonable manner on or through a medium customarily used for software exchange.

#### 3.2. Modifications.

The Modifications that You create or to which You contribute are governed by the terms of this License. You represent that You believe Your Modifications are Your original creation(s) and/or You have sufficient rights to grant the rights conveyed by this License.

### 3.3. Required Notices.

You must include a notice in each of Your Modifications that identifies You as the Contributor of the Modification. You may not remove or alter any copyright, patent or trademark notices contained within the Covered Software, or any notices of licensing or any descriptive text giving attribution to any Contributor or the Initial Developer.

### 3.4. Application of Additional Terms.

You may not offer or impose any terms on any Covered Software in Source Code form that alters or restricts the applicable version of this License or the recipients rights hereunder. You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Software. However, you may do so only on Your own behalf, and not on behalf of the Initial Developer or any Contributor. You must make it absolutely clear that any such warranty, support, indemnity or liability obligation is offered by You alone, and You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of warranty, support, indemnity or liability terms You offer.

### 3.5. Distribution of Executable Versions.

You may distribute the Executable form of the Covered Software under the terms of this License or under the terms of a license of Your choice, which may contain terms different from this License, provided that You are in compliance with the terms of this License and that the license for the Executable form does not attempt to limit or alter the recipients rights in the Source Code form from the rights set forth in this License. If You distribute the Covered Software in Executable form under a different license, You must make it absolutely clear that any terms which differ from this License are offered by You alone, not by the Initial Developer or Contributor. You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of any such terms You offer.

### 3.6. Larger Works.

---

You may create a Larger Work by combining Covered Software with other code not governed by the terms of this License and distribute the Larger Work as a single product. In such a case, You must make sure the requirements of this License are fulfilled for the Covered Software.

#### 4. Versions of the License.

##### 4.1. New Versions.

Sun Microsystems, Inc. is the initial license steward and may publish revised and/or new versions of this License from time to time. Each version will be given a distinguishing version number. Except as provided in Section 4.3, no one other than the license steward has the right to modify this License.

##### 4.2. Effect of New Versions.

You may always continue to use, distribute or otherwise make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. If the Initial Developer includes a notice in the Original Software prohibiting it from being distributed or otherwise made available under any subsequent version of the License, You must distribute and make the Covered Software available under the terms of the version of the License under which You originally received the Covered Software. Otherwise, You may also choose to use, distribute or otherwise make the Covered Software available under the terms of any subsequent version of the License published by the license steward.

##### 4.3. Modified Versions.

When You are an Initial Developer and You want to create a new license for Your Original Software, You may create and use a modified version of this License if You: (a) rename the license and remove any references to the name of the license steward (except to note that the license differs from this License); and (b) otherwise make it clear that the license contains terms which differ from this License.

#### 5. DISCLAIMER OF WARRANTY.

COVERED SOFTWARE IS PROVIDED UNDER THIS LICENSE ON AN AS IS BASIS, WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES THAT THE COVERED SOFTWARE IS FREE OF DEFECTS, MERCHANTABLE, FIT FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE COVERED SOFTWARE IS WITH YOU. SHOULD ANY COVERED SOFTWARE PROVE DEFECTIVE IN ANY RESPECT, YOU (NOT THE INITIAL DEVELOPER OR ANY OTHER CONTRIBUTOR) ASSUME THE COST OF ANY NECESSARY SERVICING, REPAIR OR CORRECTION. THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF ANY COVERED SOFTWARE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER.

## 6. TERMINATION.

6.1. This License and the rights granted hereunder will terminate automatically if You fail to comply with terms herein and fail to cure such breach within 30 days of becoming aware of the breach. Provisions which, by their nature, must remain in effect beyond the termination of this License shall survive.

6.2. If You assert a patent infringement claim (excluding declaratory judgment actions) against Initial Developer or a Contributor (the Initial Developer or Contributor against whom You assert such claim is referred to as Participant) alleging that the Participant Software (meaning the Contributor Version where the Participant is a Contributor or the Original Software where the Participant is the Initial Developer) directly or indirectly infringes any patent, then any and all rights granted directly or indirectly to You by such Participant, the Initial Developer (if the Initial Developer is not the Participant) and all Contributors under Sections 2.1 and/or 2.2 of this License shall, upon 60 days notice from Participant terminate prospectively and automatically at the expiration of such 60 day notice period, unless if within such 60 day period You withdraw Your claim with respect to the Participant Software against such Participant either unilaterally or pursuant to a written agreement with Participant.

6.3. In the event of termination under Sections 6.1 or 6.2 above, all end user licenses that have been validly granted by You or any distributor hereunder prior to termination (excluding licenses granted to You by any distributor) shall survive termination.

## 7. LIMITATION OF LIABILITY.

---

UNDER NO CIRCUMSTANCES AND UNDER NO LEGAL THEORY, WHETHER TORT (INCLUDING NEGLIGENCE), CONTRACT, OR OTHERWISE, SHALL YOU, THE INITIAL DEVELOPER, ANY OTHER CONTRIBUTOR, OR ANY DISTRIBUTOR OF COVERED SOFTWARE, OR ANY SUPPLIER OF ANY OF SUCH PARTIES, BE LIABLE TO ANY PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOST PROFITS, LOSS OF GOODWILL, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, OR ANY AND ALL OTHER COMMERCIAL DAMAGES OR LOSSES, EVEN IF SUCH PARTY SHALL HAVE BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. THIS LIMITATION OF LIABILITY SHALL NOT APPLY TO LIABILITY FOR DEATH OR PERSONAL INJURY RESULTING FROM SUCH PARTY'S NEGLIGENCE TO THE EXTENT APPLICABLE LAW PROHIBITS SUCH LIMITATION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS EXCLUSION AND LIMITATION MAY NOT APPLY TO YOU.

#### 8. U.S. GOVERNMENT END USERS.

The Covered Software is a commercial item, as that term is defined in 48 C.F.R. 2.101 (Oct. 1995), consisting of commercial computer software (as that term is defined at 48 C.F.R. 252.227-7014(a)(1)) and commercial computer software documentation as such terms are used in 48 C.F.R. 12.212 (Sept. 1995). Consistent with 48 C.F.R. 12.212 and 48 C.F.R. 227.7202-1 through 227.7202-4 (June 1995), all U.S. Government End Users acquire Covered Software with only those rights set forth herein. This U.S. Government Rights clause is in lieu of, and supersedes, any other FAR, DFAR, or other clause or provision that addresses Government rights in computer software under this License.

#### 9. MISCELLANEOUS.

This License represents the complete agreement concerning subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. This License shall be governed by the law of the jurisdiction specified in a notice contained within the Original Software (except to the extent applicable law, if any, provides otherwise), excluding such jurisdictions conflict-of-law provisions. Any litigation relating to this License shall be subject to the jurisdiction of the courts located in the jurisdiction and venue specified in a notice contained within the Original Software, with the losing party responsible for costs, including, without limitation, court costs and reasonable attorneys fees and expenses. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not apply to this License. You agree that You alone are responsible for compliance with the United States export administration regulations (and the export control laws and regulation of any other countries) when You use, distribute or otherwise make available any Covered Software.

#### 10. RESPONSIBILITY FOR CLAIMS.

As between Initial Developer and the Contributors, each party is responsible for claims and damages arising, directly or indirectly, out of its utilization of rights under this License and You agree to work with Initial Developer and Contributors to distribute such responsibility on an equitable basis. Nothing herein is intended or shall be deemed to constitute any admission of liability.

Comments

Mon, 2009-04-27 17:03 — administrator

Wording For Sections 2.1b and 2.2b

Using 2.1b as an example: "under Patent Claims infringed by the making, using, or selling of Original Software, to ..." Consider changing the text to this (CHANGES CAPITALIZED) to clarify its intent: "under Patent Claims THAT WOULD, IN THE ABSENCE OR NON-ACCEPTANCE OF THIS LICENSE, BE INFRINGED by the making, using, or selling of Original Software, to ..." To infringe literally means "to break into" or "to break in." Frangere means "to break." The message this license conveys grants a party who accepts it the patent claims. Specifically which patent claims does it grant? Well, those that would otherwise be infringed if this license didn't exist or was not accepted by the party. So the definition of "infringement" breaks down when the license is accepted, because the license specifically allows the party to exercise the claims! --Gerrit

## OpenLDAP

- <http://www.openldap.org/software/release/license.html>

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.

## OpenSC

Created 2006 OpenSC Team & contributors

- <http://www.opensource.org/licenses/lgpl-3.0.html>

See the GNU General Public License, Version 2, at the end of this document.  
You can also access this license through the link provided above.

## OpenSLP

- <http://www.openslp.org/license.html>



---

Copyright (C) 2000 Caldera Systems, Inc  
All rights reserved.

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

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

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.

Neither the name of Caldera Systems 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 COPYRIGHT HOLDERS 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 CALDERA SYSTEMS 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.

## OpenSSH

- <http://www.openbsd.org/cgi-bin/cvsweb/src/usr.bin/ssh/LICENCE?rev=HEAD>

This file is part of the OpenSSH software.

The licences which components of this software fall under are as follows.

First, we will summarize and say that all components are under a BSD licence, or a licence more free than that. OpenSSH contains no GPL code.

1) Copyright (c) 1995 Tatu Ylonen <ylo@cs.hut.fi>, Espoo, Finland All rights reserved. As far as I am concerned, the code I have written for this software can be used freely for any purpose. Any derived versions of this software must be clearly marked as such, and if the derived work is incompatible with the protocol description in the RFC file, it must be called by a name other than "ssh" or "Secure Shell". [Tatu continues] However, I am not implying to give any licenses to any patents or copyrights held by third parties, and the software includes parts that are not under my direct control. As far as I know, all included source code is used in accordance with the relevant license agreements and can be used freely for any purpose (the GNU license being the most restrictive); see below for details.

[However, none of that term is relevant at this point in time. All of these restrictively licenced software components which he talks about have been removed from OpenSSH, i.e., - RSA is no longer included, found in the OpenSSL library - IDEA is no longer included, its use is deprecated - DES is now external, in the OpenSSL library - GMP is no longer used, and instead we call BN code from OpenSSL - Zlib is now external, in a library - The make-ssh-known-hosts script is no longer included - TSS has been removed - MD5 is now external, in the OpenSSL library - RC4 support has been replaced with ARC4 support from OpenSSL - Blowfish is now external, in the OpenSSL library [The licence continues] Note that any information and cryptographic algorithms used in this software are publicly available on the Internet and at any major bookstore, scientific library, and patent office worldwide. More information can be found e.g. at "<http://www.cs.hut.fi/crypto>". The legal status of this program is some combination of all these permissions and restrictions. Use only at your own responsibility. You will be responsible for any legal consequences yourself; I am not making any claims whether possessing or using this is legal or not in your country, and I am not taking any responsibility on your behalf. NO WARRANTY 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. 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.

2) The 32-bit CRC compensation attack detector in deattack.c was contributed by CORE SDI S.A. under a BSD-style license. Cryptographic attack detector for ssh - source code \* \* Copyright (c) 1998 CORE SDI S.A., Buenos Aires, Argentina. \* \* All rights reserved. Redistribution and use in source and binary forms, with or without modification, are permitted provided that this copyright notice is retained. THIS SOFTWARE IS PROVIDED ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES ARE DISCLAIMED. IN NO EVENT SHALL CORE SDI S.A. BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR MISUSE OF THIS SOFTWARE. Ariel Futoransky <futo@core-sdi.com> <<http://www.core-sdi.com>>

3) ssh-keyscan was contributed by David Mazieres under a BSD-style license. Copyright 1995, 1996 by David Mazieres <dm@lcs.mit.edu>. Modification and redistribution in source and binary forms is permitted provided that due credit is given to the author and the OpenBSD project by leaving this copyright notice intact.

4) The Rijndael implementation by Vincent Rijmen, Antoon Bosselaers and Paulo Barreto is in the public domain and distributed with the following license: @version 3.0 (December 2000) Optimised ANSI C code for the Rijndael cipher (now AES) @author Vincent Rijmen <vincent.rijmen@esat.kuleuven.ac.be> @author Antoon Bosselaers <antoon.bosselaers@esat.kuleuven.ac.be> @author Paulo Barreto <paulo.barreto@terra.com.br> This code is hereby placed in the public domain. THIS SOFTWARE IS PROVIDED BY THE AUTHORS "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 AUTHORS 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.

5) One component of the ssh source code is under a 3-clause BSD license, held by the University of California, since we pulled these parts from original Berkeley code. Copyright (c) 1983, 1990, 1992, 1993, 1995 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. 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. 6) Remaining components of the software are provided under a standard 2-term BSD licence with the following names as copyright holders: Markus Friedl Theo de Raadt Niels Provos Dug Song Aaron Campbell Damien Miller Kevin Steves Daniel Kouril Wesley Griffin Per Allansson Nils Nordman Simon Wilkinson 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. THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``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 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.

## OpenSSL

- <http://www.openssl.org/source/license.html>

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

### 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) 1998-2008 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 Netscape's 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).



---

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 publicly 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.]

## Oracle

### Berkeley DB

- <http://www.oracle.com/technology/software/products/berkeley-db/htdocs/oslicense.html>

### Open Source License for Oracle Berkeley DB

The following is the license that applies to this copy of the Berkeley DB software. For a license to use the Berkeley DB software under conditions other than those described here, or to purchase support for this software, please contact [berkeleydb-info\\_us@oracle.com](mailto:berkeleydb-info_us@oracle.com).

If you were looking for the license that applies to Berkeley DB XML, [click here](#).

If you were looking for the license that applies to Berkeley DB Java Edition, [click here](#).

Copyright (c) 1990-2009

Oracle Corporation. 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. Redistributions in any form must be accompanied by information on how to obtain complete source code for the DB software and any accompanying software that uses the DB software. The source code must either be included in the distribution or be available for no more than the cost of distribution plus a nominal fee, and must be freely redistributable under reasonable conditions. For an executable file, complete source code means the source code for all modules it contains. It does not include source code for modules or files that typically accompany the major components of the operating system on which the executable file runs.

THIS SOFTWARE IS PROVIDED BY ORACLE CORPORATION ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT, ARE DISCLAIMED. IN NO EVENT SHALL ORACLE CORPORATION 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.

Copyright (c) 1990, 1993, 1994, 1995

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. 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 NY 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.

Copyright (c) 1995, 1996

The President and Fellows of Harvard University. 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. 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 HARVARD AND ITS 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 HARVARD 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.

### **JBDC, thin JDBC driver-1.2**

- [http://www.oracle.com/technology/software/tech/java/sqlj\\_jdbc/htdocs/jdbc101040.html](http://www.oracle.com/technology/software/tech/java/sqlj_jdbc/htdocs/jdbc101040.html)

### **Oracle Technology Network Development and Distribution License Terms**

Export Controls on the Programs

Selecting the "Accept License Agreement" button is a confirmation of your agreement that you comply, now and during the trial term, with each of the following statements:

-You are not a citizen, national, or resident of, and are not under control of, the government of Cuba, Iran, Sudan, Libya, North Korea, Syria, nor any country to which the United States has prohibited export.

-You will not download or otherwise export or re-export the Programs, directly or indirectly, to the above mentioned countries nor to citizens, nationals or residents of those countries.

-You are not listed on the United States Department of Treasury lists of Specially Designated Nationals, Specially Designated Terrorists, and Specially Designated Narcotic Traffickers, nor are you listed on the United States Department of Commerce Table of Denial Orders.

You will not download or otherwise export or re-export the Programs, directly or indirectly, to persons on the above mentioned lists.

You will not use the Programs for, and will not allow the Programs to be used for, any purposes prohibited by United States law, including, without limitation, for the development, design, manufacture or production of nuclear, chemical or biological weapons of mass destruction.

#### EXPORT RESTRICTIONS

You agree that U.S. export control laws and other applicable export and import laws govern your use of the programs, including technical data; additional information can be found on Oracle®'s Global Trade Compliance web site (<http://www.oracle.com/products/export>).

You agree that neither the programs nor any direct product thereof will be exported, directly, or indirectly, in violation of these laws, or will be used for any purpose prohibited by these laws including, without limitation, nuclear, chemical, or biological weapons proliferation.

Oracle Employees: Under no circumstances are Oracle Employees authorized to download software for the purpose of distributing it to customers. Oracle products are available to employees for internal use or demonstration purposes only. In keeping with Oracle's trade compliance obligations under U.S. and applicable multilateral law, failure to comply with this policy could result in disciplinary action up to and including termination.

Note: You are bound by the Oracle Technology Network ("OTN") License Agreement terms. The OTN License Agreement terms also apply to all updates you receive under your Technology Track subscription.

---

The OTN License Agreement terms below supercede any shrinkwrap license on the OTN Technology Track software CDs and previous OTN License terms (including the Oracle Program License as modified by the OTN Program Use Certificate).

Oracle Technology Network Development and Distribution License Agreement

"We," "us," and "our" refers to Oracle America, Inc., for and on behalf of itself and its subsidiaries and affiliates under common control. "You" and "your" refers to the individual or entity that wishes to use the programs from Oracle.

"Programs" refers to the software product you wish to download and use and program documentation. "License" refers to your right to use the programs under the terms of this agreement. This agreement is governed by the substantive and procedural laws of California. You and Oracle agree to submit to the exclusive jurisdiction of, and venue in, the courts of San Francisco, San Mateo, or Santa Clara counties in California in any dispute arising out of or relating to this agreement.

We are willing to license the programs to you only upon the condition that you accept all of the terms contained in this agreement. Read the terms carefully and select the "Accept" button at the bottom of the page to confirm your acceptance. If you are not willing to be bound by these terms, select the "Do Not Accept" button and the registration process will not continue.

### License Rights

We grant you a nonexclusive, nontransferable limited license to use the programs: (a) for purposes of developing, testing, prototyping and running applications you have developed for your own internal data processing operations; (b) to distribute the programs with applications you have developed to your customers provided that each such licensee agrees to license terms consistent with the terms of this Agreement, you do not charge your end users any additional fees for the use of the programs, and your end users may only use the programs to run your applications for their own business operations; and (c) to use the programs to provide third party demonstrations and training. You are not permitted to use the programs for any purpose other than as permitted under this Agreement. If you want to use the programs for any purpose other than as expressly permitted under this agreement you must contact us, or an Oracle reseller, to obtain the appropriate license. We may audit your use and distribution of the programs. Program documentation is either shipped with the programs, or documentation may accessed online at <http://otn.oracle.com/docs>.

### Ownership and Restrictions

We retain all ownership and intellectual property rights in the programs. You may make a sufficient number of copies of the programs for the licensed use and one copy of the programs for backup purposes.

You may not:

- use the programs for any purpose other than as provided above;
- distribute the programs unless accompanied with your applications;
- charge your end users for use of the programs;
- remove or modify any program markings or any notice of our proprietary rights;
- use the programs to provide third party training on the content and/or functionality of the programs, except for training your licensed users;
- assign this agreement or give the programs, program access or an interest in the programs to any individual or entity except as provided under this agreement;
- cause or permit reverse engineering (unless required by law for interoperability), disassembly or decompilation of the programs;
- disclose results of any program benchmark tests without our prior consent.



### Program Distribution

We grant you a nonexclusive, nontransferable right to copy and distribute the programs to your end users provided that you do not charge your end users for use of the programs and provided your end users may only use the programs to run your applications for their business operations. Prior to distributing the programs you shall require your end users to execute an agreement binding them to terms consistent with those contained in this section and the sections of this agreement entitled "License Rights," "Ownership and Restrictions," "Export," "Disclaimer of Warranties and Exclusive Remedies," "No Technical Support," "End of Agreement," "Relationship Between the Parties," and "Open Source." You must also include a provision stating that your end users shall have no right to distribute the programs, and a provision specifying us as a third party beneficiary of the agreement. You are responsible for obtaining these agreements with your end users.

You agree to: (a) defend and indemnify us against all claims and damages caused by your distribution of the programs in breach of this agreements and/or failure to include the required contractual provisions in your end user agreement as stated above; (b) keep executed end user agreements and records of end user information including name, address, date of distribution and identity of programs distributed; (c) allow us to inspect your end user agreements and records upon request; and, (d) enforce the terms of your end user agreements so as to effect a timely cure of any end user breach, and to notify us of any breach of the terms.

### Export

You agree that U.S. export control laws and other applicable export and import laws govern your use of the programs, including technical data; additional information can be found on Oracle's Global Trade Compliance web site located at <http://www.oracle.com/products/export/index.html?content.html>. You agree that neither the programs nor any direct product thereof will be exported, directly, or indirectly, in violation of these laws, or will be used for any purpose prohibited by these laws including, without limitation, nuclear, chemical, or biological weapons proliferation.

### Disclaimer of Warranty and Exclusive Remedies

THE PROGRAMS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND. WE FURTHER DISCLAIM ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NONINFRINGEMENT.

IN NO EVENT SHALL WE BE LIABLE FOR ANY INDIRECT, INCIDENTAL, SPECIAL, PUNITIVE OR CONSEQUENTIAL DAMAGES, OR DAMAGES FOR LOSS OF PROFITS, REVENUE, DATA OR DATA USE, INCURRED BY YOU OR ANY THIRD PARTY, WHETHER IN AN ACTION IN CONTRACT OR TORT, EVEN IF WE HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. OUR ENTIRE LIABILITY FOR DAMAGES HEREUNDER SHALL IN NO EVENT EXCEED ONE THOUSAND DOLLARS (U.S. \$1,000).

#### No Technical Support

Our technical support organization will not provide technical support, phone support, or updates to you for the programs licensed under this agreement.

#### Restricted Rights

If you distribute a license to the United States government, the programs, including documentation, shall be considered commercial computer software and you will place a legend, in addition to applicable copyright notices, on the documentation, and on the media label, substantially similar to the following:

##### NOTICE OF RESTRICTED RIGHTS

"Programs delivered subject to the DOD FAR Supplement are 'commercial computer software' and use, duplication, and disclosure of the programs, including documentation, shall be subject to the licensing restrictions set forth in the applicable Oracle license agreement. Otherwise, programs delivered subject to the Federal Acquisition Regulations are 'restricted computer software' and use, duplication, and disclosure of the programs, including documentation, shall be subject to the restrictions in FAR 52.227-19, Commercial Computer Software-Restricted Rights (June 1987). Oracle America, Inc., 500 Oracle Parkway, Redwood City, CA 94065."

#### End of Agreement

You may terminate this agreement by destroying all copies of the programs. We have the right to terminate your right to use the programs if you fail to comply with any of the terms of this agreement, in which case you shall destroy all copies of the programs.

### Relationship Between the Parties

The relationship between you and us is that of licensee/licensor. Neither party will represent that it has any authority to assume or create any obligation, express or implied, on behalf of the other party, nor to represent the other party as agent, employee, franchisee, or in any other capacity. Nothing in this agreement shall be construed to limit either party's right to independently develop or distribute software that is functionally similar to the other party's products, so long as proprietary information of the other party is not included in such software.

### Open Source

"Open Source" software - software available without charge for use, modification and distribution - is often licensed under terms that require the user to make the user's modifications to the Open Source software or any software that the user 'combines' with the Open Source software freely available in source code form. If you use Open Source software in conjunction with the programs, you must ensure that your use does not: (i) create, or purport to create, obligations of us with respect to the Oracle programs; or (ii) grant, or purport to grant, to any third party any rights to or immunities under our intellectual property or proprietary rights in the Oracle programs. For example, you may not develop a software program using an Oracle program and an Open Source program where such use results in a program file(s) that contains code from both the Oracle program and the Open Source program (including without limitation libraries) if the Open Source program is licensed under a license that requires any "modifications" be made freely available. You also may not combine the Oracle program with programs licensed under the GNU General Public License ("GPL") in any manner that could cause, or could be interpreted or asserted to cause, the Oracle program or any modifications thereto to become subject to the terms of the GPL.

### Entire Agreement

You agree that this agreement is the complete agreement for the programs and licenses, and this agreement supersedes all prior or contemporaneous agreements or representations. If any term of this agreement is found to be invalid or unenforceable, the remaining provisions will remain effective.

Last updated: 01/24/09

Should you have any questions concerning this License Agreement, or if you desire to contact Oracle for any reason, please write:

Oracle America, Inc.  
500 Oracle Parkway,  
Redwood City, CA 94065

Oracle may contact you to ask if you had a satisfactory experience installing and using this OTN software download.

## OW2

### **javaservice**

- <http://forge.ow2.org/projects/javaservice/>
- <http://www.gnu.org/licenses/lgpl.html>

Copyright (C) 2004 Multiplan Consultants Ltd.

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., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Information about the JavaService software is available at the ObjectWeb web site. Refer to <http://javaservice.objectweb.org> for more details.

This software is derived from earlier work by Alexandria Software Consulting, (no longer contactable) which was released under a BSD-style license in 2001. The text of that original license is reproduced below for reference.

## PCRE

- <http://www.pcre.org/licence.txt>

PCRE is a library of functions to support regular expressions whose syntax and semantics are as close as possible to those of the Perl 5 language.

---

Release 8 of PCRE is distributed under the terms of the "BSD" licence, as specified below. The documentation for PCRE, supplied in the "doc" directory, is distributed under the same terms as the software itself.

The basic library functions are written in C and are freestanding. Also included in the distribution is a set of C++ wrapper functions.

### THE BASIC LIBRARY FUNCTIONS

Written by: Philip Hazel

Email local part: ph10

Email domain: cam.ac.uk

University of Cambridge Computing Service, Cambridge, England.

Copyright (c) 1997-2010 University of Cambridge

All rights reserved.

### THE C++ WRAPPER FUNCTIONS

Contributed by: Google Inc. Copyright (c) 2007-2010, Google Inc.

All rights reserved.

### THE "BSD" LICENCE

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

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

- \* 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.

- \* Neither the name of the University of Cambridge nor the name of Google Inc. nor the names of their contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS 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 COPYRIGHT OWNER 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.

End

## PhysTech

©1998 PhysTech, Inc. All rights reserved.

- <http://www.gnu.org/copyleft/gpl.html>

See the GNU General Public License, Version 3 at the end of this document.  
You can also access this license through the link provided above.

## PostgreSQL — JDBC Driver

- <http://jdbc.postgresql.org/license.html>

### BSD License

The PostgreSQL JDBC driver is distributed under the BSD license, same as the server. The simplest explanation of the licensing terms is that you can do whatever you want with the product and source code as long as you don't claim you wrote it or sue us. You should give it a read though, it's only half a page.

Copyright (c) 1997-2008, PostgreSQL Global Development Group  
All rights reserved.

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

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 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.
- Neither the name of the PostgreSQL Global Development Group 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 COPYRIGHT HOLDERS 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 COPYRIGHT OWNER 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.

## PostgreSQL - 7.4.27

### **postgresql, postgresql-lib, postgresql-server**

- <http://www.postgresql.org/docs/7.4/interactive/LEGALNOTICE.html>

### **Legal Notice**

PostgreSQL is Copyright © 1996-2002 by the PostgreSQL Global Development Group and is distributed under the terms of the license of the University of California below.

Postgres95 is Copyright © 1994-5 by the Regents of the University of California.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose, without fee, and without a written agreement is hereby granted, provided that the above copyright notice and this paragraph and the following two paragraphs appear in all copies.

IN NO EVENT SHALL THE UNIVERSITY OF CALIFORNIA BE LIABLE TO ANY PARTY FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING LOST PROFITS, ARISING OUT OF THE USE OF THIS SOFTWARE AND ITS DOCUMENTATION, EVEN IF THE UNIVERSITY OF CALIFORNIA HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

THE UNIVERSITY OF CALIFORNIA SPECIFICALLY DISCLAIMS ANY WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE SOFTWARE PROVIDED HEREUNDER IS ON AN "AS-IS" BASIS, AND THE UNIVERSITY OF CALIFORNIA HAS NO OBLIGATIONS TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR MODIFICATIONS.

## PostgreSQL - Postgres 8.2 with Installer

- <http://www.postgresql.org/docs/8.2/interactive/LEGALNOTICE.html>

### Legal Notice

PostgreSQL is Copyright © 1996-2006 by the PostgreSQL Global Development Group and is distributed under the terms of the license of the University of California below.

Postgres95 is Copyright © 1994-5 by the Regents of the University of California.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose, without fee, and without a written agreement is hereby granted, provided that the above copyright notice and this paragraph and the following two paragraphs appear in all copies.



IN NO EVENT SHALL THE UNIVERSITY OF CALIFORNIA BE LIABLE TO ANY PARTY FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING LOST PROFITS, ARISING OUT OF THE USE OF THIS SOFTWARE AND ITS DOCUMENTATION, EVEN IF THE UNIVERSITY OF CALIFORNIA HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

THE UNIVERSITY OF CALIFORNIA SPECIFICALLY DISCLAIMS ANY WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE SOFTWARE PROVIDED HEREUNDER IS ON AN "AS-IS" BASIS, AND THE UNIVERSITY OF CALIFORNIA HAS NO OBLIGATIONS TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR MODIFICATIONS.

## Python

Copyright © 1990-2010, Python Software Foundation

- <http://www.python.org/download/releases/2.6/license/>

### Python 2.6 license

This is the official license for the Python 2.6 release:

#### A. HISTORY OF THE SOFTWARE

=====

Python was created in the early 1990s by Guido van Rossum at Stichting Mathematisch Centrum (CWI, see <http://www.cwi.nl>) in the Netherlands as a successor of a language called ABC. Guido remains Python's principal author, although it includes many contributions from others.

In 1995, Guido continued his work on Python at the Corporation for National Research Initiatives (CNRI, see <http://www.cnri.reston.va.us>) in Reston, Virginia where he released several versions of the software.

In May 2000, Guido and the Python core development team moved to BeOpen.com to form the BeOpen PythonLabs team. In October of the same year, the PythonLabs team moved to Digital Creations (now Zope Corporation, see <http://www.zope.com>). In 2001, the Python Software Foundation (PSF, see <http://www.python.org/psf/>) was formed, a non-profit organization created specifically to own Python-related Intellectual Property. Zope Corporation is a sponsoring member of the PSF.

All Python releases are Open Source (see <http://www.opensource.org> for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases.

| Release        | Derived            | Year      | Owner      | GPL- from |     |
|----------------|--------------------|-----------|------------|-----------|-----|
| compatible?    | (1) 0.9.0 thru 1.2 |           | 1991-1995  | CWI       | yes |
| 1.3 thru 1.5.2 | 1.2                | 1995-1999 | CNRI       | yes       |     |
| 1.6            | 1.5.2              | 2000      | CNRI       | no        |     |
| 2.0            | 1.6                | 2000      | BeOpen.com | no        |     |
| 1.6.1          | 1.6                | 2001      | CNRI       | yes (2)   |     |
| 2.1            | 2.0+1.6.1          | 2001      | PSF        | no        |     |
| 2.0.1          | 2.0+1.6.1          | 2001      | PSF        | yes       |     |
| 2.1.1          | 2.1+2.0.1          | 2001      | PSF        | yes       |     |
| 2.2            | 2.1.1              | 2001      | PSF        | yes       |     |
| 2.1.2          | 2.1.1              | 2002      | PSF        | yes       |     |
| 2.1.3          | 2.1.2              | 2002      | PSF        | yes       |     |
| 2.2.1          | 2.2                | 2002      | PSF        | yes       |     |
| 2.2.2          | 2.2.1              | 2002      | PSF        | yes       |     |
| 2.2.3          | 2.2.2              | 2003      | PSF        | yes       |     |
| 2.3            | 2.2.2              | 2002-2003 | PSF        | yes       |     |
| 2.3.1          | 2.3                | 2002-2003 | PSF        | yes       |     |
| 2.3.2          | 2.3.1              | 2002-2003 | PSF        | yes       |     |
| 2.3.3          | 2.3.2              | 2002-2003 | PSF        | yes       |     |
| 2.3.4          | 2.3.3              | 2004      | PSF        | yes       |     |

---

|       |       |      |     |     |
|-------|-------|------|-----|-----|
| 2.3.5 | 2.3.4 | 2005 | PSF | yes |
| 2.4   | 2.3   | 2004 | PSF | yes |
| 2.4.1 | 2.4   | 2005 | PSF | yes |
| 2.4.2 | 2.4.1 | 2005 | PSF | yes |
| 2.4.3 | 2.4.2 | 2006 | PSF | yes |
| 2.5   | 2.4   | 2006 | PSF | yes |

#### Footnotes:

(1) GPL-compatible doesn't mean that we're distributing Python under the GPL. All Python licenses, unlike the GPL, let you distribute a modified version without making your changes open source. The GPL-compatible licenses make it possible to combine Python with other software that is released under the GPL; the others don't.

(2) According to Richard Stallman, 1.6.1 is not GPL-compatible, because its license has a choice of law clause. According to CNRI, however, Stallman's lawyer has told CNRI's lawyer that 1.6.1 is "not incompatible" with the GPL.

Thanks to the many outside volunteers who have worked under Guido's direction to make these releases possible.

## B. TERMS AND CONDITIONS FOR ACCESSING OR OTHERWISE USING PYTHON

### PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2

1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using this software ("Python") in source or binary form and its associated documentation.

2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python

alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright, i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006 Python Software Foundation; All Rights Reserved" are retained in Python alone or in any derivative version prepared by Licensee.

3. In the event Licensee prepares a derivative work that is based on or incorporates Python or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python.

4. PSF is making Python available to Licensee on an "AS IS"

basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.

7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.

8. By copying, installing or otherwise using Python, Licensee agrees to be bound by the terms and conditions of this License Agreement.

BEOPEN.COM LICENSE AGREEMENT FOR PYTHON 2.0

---

## BEOPEN PYTHON OPEN SOURCE LICENSE AGREEMENT VERSION 1

1. This LICENSE AGREEMENT is between BeOpen.com ("BeOpen"), having an office at 160 Saratoga Avenue, Santa Clara, CA 95051, and the Individual or Organization ("Licensee") accessing and otherwise using this software in source or binary form and its associated documentation ("the Software").
2. Subject to the terms and conditions of this BeOpen Python License Agreement, BeOpen hereby grants Licensee a non-exclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use the Software alone or in any derivative version, provided, however, that the BeOpen Python License is retained in the Software, alone or in any derivative version prepared by Licensee.
3. BeOpen is making the Software available to Licensee on an "AS IS" basis. BEOPEN MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, BEOPEN MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF THE SOFTWARE WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
4. BEOPEN SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF THE SOFTWARE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THE SOFTWARE, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
5. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
6. This License Agreement shall be governed by and interpreted in all respects by the law of the State of California, excluding conflict of law provisions. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between BeOpen and Licensee. This License Agreement does not grant permission to use BeOpen trademarks or trade names in a trademark sense to endorse or promote products or services of Licensee, or any third party. As an exception, the "BeOpen Python" logos available at <http://www.pythonlabs.com/logos.html> may be used according to the permissions granted on that web page.
7. By copying, installing or otherwise using the software, Licensee agrees to be bound by the terms and conditions of this License Agreement.

## CNRI LICENSE AGREEMENT FOR PYTHON 1.6.1

1. This LICENSE AGREEMENT is between the Corporation for National Research Initiatives, having an office at 1895 Preston White Drive, Reston, VA 20191 ("CNRI"), and the Individual or Organization ("Licensee") accessing and otherwise using Python 1.6.1 software in source or binary form and its associated documentation.
2. Subject to the terms and conditions of this License Agreement, CNRI hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python 1.6.1 alone or in any derivative version, provided, however, that CNRI's License Agreement and CNRI's notice of copyright, i.e., "Copyright (c) 1995-2001 Corporation for National Research Initiatives; All Rights Reserved" are retained in Python 1.6.1 alone or in any derivative version prepared by Licensee. Alternately, in lieu of CNRI's License Agreement, Licensee may substitute the following text (omitting the quotes): "Python 1.6.1 is made available subject to the terms and conditions in CNRI's License Agreement. This Agreement together with Python 1.6.1 may be located on the Internet using the following unique, persistent identifier (known as a handle): 1895.22/1013. This Agreement may also be obtained from a proxy server on the Internet using the following URL: <http://hdl.handle.net/1895.22/1013>".
3. In the event Licensee prepares a derivative work that is based on or incorporates Python 1.6.1 or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python 1.6.1.
4. CNRI is making Python 1.6.1 available to Licensee on an "AS IS" basis. CNRI MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, CNRI MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON 1.6.1 WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

5. CNRI SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON 1.6.1 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON 1.6.1, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.

7. This License Agreement shall be governed by the federal intellectual property law of the United States, including without limitation the federal copyright law, and, to the extent such U.S. federal law does not apply, by the law of the Commonwealth of Virginia, excluding Virginia's conflict of law provisions. Notwithstanding the foregoing, with regard to derivative works based on Python 1.6.1 that incorporate non-separable material that was previously distributed under the GNU General Public License (GPL), the law of the Commonwealth of Virginia shall govern this License Agreement only as to issues arising under or with respect to Paragraphs 4, 5, and 7 of this License Agreement. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between CNRI and Licensee. This License Agreement does not grant permission to use CNRI trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.

8. By clicking on the "ACCEPT" button where indicated, or by copying, installing or otherwise using Python 1.6.1, Licensee agrees to be bound by the terms and conditions of this License Agreement.

ACCEPT

CWI LICENSE AGREEMENT FOR PYTHON 0.9.0 THROUGH 1.2

Copyright (c) 1991 - 1995, Stichting Mathematisch Centrum Amsterdam,  
The Netherlands. All rights reserved.

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 Stichting Mathematisch Centrum or CWI not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

STICHTING MATHEMATISCH CENTRUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL STICHTING MATHEMATISCH CENTRUM 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 TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

## Radvision

### **SIP Server Tool Kit, Back to Back User Agent, Presence Module, SIP Toolkit**

The licenses for these products are on file with Acme Packet's legal counsel.

## Redhat

### **bzip2**

- [ftp://sources.redhat.com/pub/bzip2/docs/manual.html#SEC\\_Top](ftp://sources.redhat.com/pub/bzip2/docs/manual.html#SEC_Top)

This program, bzip2, and associated library libbzip2, are Copyright (C) 1996-2002 Julian R Seward. All rights reserved.

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

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.



---

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 in the product documentation would be appreciated but is not required.

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

The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR "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 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.

Julian Seward, Cambridge, UK.

[jseward@acm.org](mailto:jseward@acm.org)

bzip2/libbzip2 version 1.0.2 of 30 December 2001.

## **crash**

- [http://people.redhat.com/anderson/crash\\_whitepaper/#GFDL](http://people.redhat.com/anderson/crash_whitepaper/#GFDL)

by David Anderson

[<anderson@redhat.com>](mailto:anderson@redhat.com)

Copyright © 2003, 2008 by Red Hat Software, Inc.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.2 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts. A copy of the license is included in the section entitled "GNU Free Documentation License".

See the GNU General Public License, Version 2, at the end of this document. You can also access this license through the link provided above.

## Reiserfsprogs

- <http://www.gnu.org/copyleft/gpl.html>

See the GNU General Public License, Version 3 at the end of this document. You can also access this license through the link provided above.

## RPM

RPM is released as free software under the GNU LGPL distribution license.

- <http://www.gnu.org/copyleft/lesser.html>

See the GNU General Public License, Version 3 at the end of this document. This license can also be viewed at the link provided above.

## rsync

- <http://rsync.samba.org/GPL.html>

See the GNU General Public License, Version 3 at the end of this document. This license can also be viewed at the link provided above.

## Samba

- <http://www.gnu.org/copyleft/lesser.html>

A copy of the GNU Lesser General Public License is provided at the end of this document. You can also access this license through the link provided above.

---

## Saxonica

### Saxonb Xquery Processor

- <http://www.mozilla.org/MPL/MPL-1.0.html>

Michael H. Kay 27 January 2010

### Mozilla

#### Version 1.0

##### 1. Definitions.

**1.1. ``Contributor``** means each entity that creates or contributes to the creation of Modifications.

**1.2. ``Contributor Version``** means the combination of the Original Code, prior Modifications used by a Contributor, and the Modifications made by that particular Contributor.

**1.3. ``Covered Code``** means the Original Code or Modifications or the combination of the Original Code and Modifications, in each case including portions thereof.

**1.4. ``Electronic Distribution Mechanism``** means a mechanism generally accepted in the software development community for the electronic transfer of data.

**1.5. ``Executable``** means Covered Code in any form other than Source Code.

**1.6. ``Initial Developer``** means the individual or entity identified as the Initial Developer in the Source Code notice required by **Exhibit A**.

**1.7. ``Larger Work``** means a work which combines Covered Code or portions thereof with code not governed by the terms of this License.

**1.8. ``License``** means this document.

**1.9. ``Modifications``** means any addition to or deletion from the substance or structure of either the Original Code or any previous Modifications. When Covered Code is released as a series of files, a Modification is:

**A.** Any addition to or deletion from the contents of a file containing Original Code or previous Modifications.

**B.** Any new file that contains any part of the Original Code or previous Modifications.

**1.10. ``Original Code''** means Source Code of computer software code which is described in the Source Code notice required by **Exhibit A** as Original Code, and which, at the time of its release under this License is not already Covered Code governed by this License.

**1.11. ``Source Code''** means the preferred form of the Covered Code for making modifications to it, including all modules it contains, plus any associated interface definition files, scripts used to control compilation and installation of an Executable, or a list of source code differential comparisons against either the Original Code or another well known, available Covered Code of the Contributor's choice. The Source Code can be in a compressed or archival form, provided the appropriate decompression or de-archiving software is widely available for no charge.

**1.12. ``You''** means an individual or a legal entity exercising rights under, and complying with all of the terms of, this License or a future version of this License issued under Section 6.1. For legal entities, ``You" includes any entity which controls, is controlled by, or is under common control with You. For purposes of this definition, ``control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of fifty percent (50%) or more of the outstanding shares or beneficial ownership of such entity.

## **2. Source Code License.**

### **2.1. The Initial Developer Grant.**

The Initial Developer hereby grants You a world-wide, royalty-free, non-exclusive license, subject to third party intellectual property claims:

**(a)** to use, reproduce, modify, display, perform, sublicense and distribute the Original Code (or portions thereof) with or without Modifications, or as part of a Larger Work; and

**(b)** under patents now or hereafter owned or controlled by Initial Developer, to make, have made, use and sell (``Utilize") the Original Code (or portions thereof), but solely to the extent that any such patent is reasonably necessary to enable You to Utilize the Original Code (or portions thereof) and not to any greater extent that may be necessary to Utilize further Modifications or combinations.

---

## **2.2. Contributor Grant.**

Each Contributor hereby grants You a world-wide, royalty-free, non-exclusive license, subject to third party intellectual property claims:

(a) to use, reproduce, modify, display, perform, sublicense and distribute the Modifications created by such Contributor (or portions thereof) either on an unmodified basis, with other Modifications, as Covered Code or as part of a Larger Work; and

(b) under patents now or hereafter owned or controlled by Contributor, to Utilize the Contributor Version (or portions thereof), but solely to the extent that any such patent is reasonably necessary to enable You to Utilize the Contributor Version (or portions thereof), and not to any greater extent that may be necessary to Utilize further Modifications or combinations.

## **3. Distribution Obligations.**

### **3.1. Application of License.**

The Modifications which You create or to which You contribute are governed by the terms of this License, including without limitation Section 2.2. The Source Code version of Covered Code may be distributed only under the terms of this License or a future version of this License released under Section 6.1, and You must include a copy of this License with every copy of the Source Code You distribute. You may not offer or impose any terms on any Source Code version that alters or restricts the applicable version of this License or the recipients' rights hereunder. However, You may include an additional document offering the additional rights described in Section 3.5.

### **3.2. Availability of Source Code.**

Any Modification which You create or to which You contribute must be made available in Source Code form under the terms of this License either on the same media as an Executable version or via an accepted Electronic Distribution Mechanism to anyone to whom you made an Executable version available; and if made available via Electronic Distribution Mechanism, must remain available for at least twelve (12) months after the date it initially became available, or at least six (6) months after a subsequent version of that particular Modification has been made available to such recipients. You are responsible for ensuring that the Source Code version remains available even if the Electronic Distribution Mechanism is maintained by a third party.

**3.3. Description of Modifications.**

You must cause all Covered Code to which you contribute to contain a file documenting the changes You made to create that Covered Code and the date of any change. You must include a prominent statement that the Modification is derived, directly or indirectly, from Original Code provided by the Initial Developer and including the name of the Initial Developer in (a) the Source Code, and (b) in any notice in an Executable version or related documentation in which You describe the origin or ownership of the Covered Code.

**3.4. Intellectual Property Matters****(a) Third Party Claims.**

If You have knowledge that a party claims an intellectual property right in particular functionality or code (or its utilization under this License), you must include a text file with the source code distribution titled ``LEGAL" which describes the claim and the party making the claim in sufficient detail that a recipient will know whom to contact. If you obtain such knowledge after You make Your Modification available as described in Section 3.2, You shall promptly modify the LEGAL file in all copies You make available thereafter and shall take other steps (such as notifying appropriate mailing lists or newsgroups) reasonably calculated to inform those who received the Covered Code that new knowledge has been obtained.

**(b) Contributor APIs.**

If Your Modification is an application programming interface and You own or control patents which are reasonably necessary to implement that API, you must also include this information in the LEGAL file.

---

### **3.5. Required Notices.**

You must duplicate the notice in **Exhibit A** in each file of the Source Code, and this License in any documentation for the Source Code, where You describe recipients' rights relating to Covered Code. If You created one or more Modification(s), You may add your name as a Contributor to the notice described in **Exhibit A**. If it is not possible to put such notice in a particular Source Code file due to its structure, then you must include such notice in a location (such as a relevant directory file) where a user would be likely to look for such a notice. You may choose to offer, and to charge a fee for, warranty, support, indemnity or liability obligations to one or more recipients of Covered Code. However, You may do so only on Your own behalf, and not on behalf of the Initial Developer or any Contributor. You must make it absolutely clear than any such warranty, support, indemnity or liability obligation is offered by You alone, and You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of warranty, support, indemnity or liability terms You offer.

### **3.6. Distribution of Executable Versions.**

You may distribute Covered Code in Executable form only if the requirements of Section **3.1-3.5** have been met for that Covered Code, and if You include a notice stating that the Source Code version of the Covered Code is available under the terms of this License, including a description of how and where You have fulfilled the obligations of Section **3.2**. The notice must be conspicuously included in any notice in an Executable version, related documentation or collateral in which You describe recipients' rights relating to the Covered Code. You may distribute the Executable version of Covered Code under a license of Your choice, which may contain terms different from this License, provided that You are in compliance with the terms of this License and that the license for the Executable version does not attempt to limit or alter the recipient's rights in the Source Code version from the rights set forth in this License. If You distribute the Executable version under a different license You must make it absolutely clear that any terms which differ from this License are offered by You alone, not by the Initial Developer or any Contributor. You hereby agree to indemnify the Initial Developer and every Contributor for any liability incurred by the Initial Developer or such Contributor as a result of any such terms You offer.

### **3.7. Larger Works.**

You may create a Larger Work by combining Covered Code with other code not governed by the terms of this License and distribute the Larger Work as a single product. In such a case, You must make sure the requirements of this License are fulfilled for the Covered Code.

#### **4. Inability to Comply Due to Statute or Regulation.**

If it is impossible for You to comply with any of the terms of this License with respect to some or all of the Covered Code due to statute or regulation then You must: (a) comply with the terms of this License to the maximum extent possible; and (b) describe the limitations and the code they affect. Such description must be included in the LEGAL file described in Section 3.4 and must be included with all distributions of the Source Code. Except to the extent prohibited by statute or regulation, such description must be sufficiently detailed for a recipient of ordinary skill to be able to understand it.

#### **5. Application of this License.**

This License applies to code to which the Initial Developer has attached the notice in **Exhibit A**, and to related Covered Code.

#### **6. Versions of the License.**

##### **6.1. New Versions.**

Netscape Communications Corporation ("Netscape") may publish revised and/or new versions of the License from time to time. Each version will be given a distinguishing version number.

##### **6.2. Effect of New Versions.**

Once Covered Code has been published under a particular version of the License, You may always continue to use it under the terms of that version. You may also choose to use such Covered Code under the terms of any subsequent version of the License published by Netscape. No one other than Netscape has the right to modify the terms applicable to Covered Code created under this License.

##### **6.3. Derivative Works.**

If you create or use a modified version of this License (which you may only do in order to apply it to code which is not already Covered Code governed by this License), you must (a) rename Your license so that the phrases "Mozilla", "MOZILLAPL", "MOZPL", "Netscape", "NPL" or any confusingly similar phrase do not appear anywhere in your license and (b) otherwise make it clear that your version of the license contains terms which differ from the Mozilla Public License and Netscape Public License. (Filling in the name of the Initial Developer, Original Code or Contributor in the notice described in **Exhibit A** shall not of themselves be deemed to be modifications of this License.)

#### **7. DISCLAIMER OF WARRANTY.**



---

COVERED CODE IS PROVIDED UNDER THIS LICENSE ON AN ``AS IS" BASIS, WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES THAT THE COVERED CODE IS FREE OF DEFECTS, MERCHANTABLE, FIT FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE COVERED CODE IS WITH YOU. SHOULD ANY COVERED CODE PROVE DEFECTIVE IN ANY RESPECT, YOU (NOT THE INITIAL DEVELOPER OR ANY OTHER CONTRIBUTOR) ASSUME THE COST OF ANY NECESSARY SERVICING, REPAIR OR CORRECTION. THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF ANY COVERED CODE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER.

#### **8. TERMINATION.**

This License and the rights granted hereunder will terminate automatically if You fail to comply with terms herein and fail to cure such breach within 30 days of becoming aware of the breach. All sublicenses to the Covered Code which are properly granted shall survive any termination of this License. Provisions which, by their nature, must remain in effect beyond the termination of this License shall survive.

#### **9. LIMITATION OF LIABILITY.**

UNDER NO CIRCUMSTANCES AND UNDER NO LEGAL THEORY, WHETHER TORT (INCLUDING NEGLIGENCE), CONTRACT, OR OTHERWISE, SHALL THE INITIAL DEVELOPER, ANY OTHER CONTRIBUTOR, OR ANY DISTRIBUTOR OF COVERED CODE, OR ANY SUPPLIER OF ANY OF SUCH PARTIES, BE LIABLE TO YOU OR ANY OTHER PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF GOODWILL, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, OR ANY AND ALL OTHER COMMERCIAL DAMAGES OR LOSSES, EVEN IF SUCH PARTY SHALL HAVE BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. THIS LIMITATION OF LIABILITY SHALL NOT APPLY TO LIABILITY FOR DEATH OR PERSONAL INJURY RESULTING FROM SUCH PARTY'S NEGLIGENCE TO THE EXTENT APPLICABLE LAW PROHIBITS SUCH LIMITATION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THAT EXCLUSION AND LIMITATION MAY NOT APPLY TO YOU.

#### **10. U.S. GOVERNMENT END USERS.**

The Covered Code is a ``commercial item," as that term is defined in 48 C.F.R. 2.101 (Oct. 1995), consisting of ``commercial computer software" and ``commercial computer software documentation," as such terms are used in 48 C.F.R. 12.212 (Sept. 1995). Consistent with 48 C.F.R. 12.212 and 48 C.F.R. 227.7202-1 through 227.7202-4 (June 1995), all U.S. Government End Users acquire Covered Code with only those rights set forth herein.

#### **11. MISCELLANEOUS.**

This License represents the complete agreement concerning subject matter hereof. If any provision of this License is held to be unenforceable, such provision shall be reformed only to the extent necessary to make it enforceable. This License shall be governed by California law provisions (except to the extent applicable law, if any, provides otherwise), excluding its conflict-of-law provisions. With respect to disputes in which at least one party is a citizen of, or an entity chartered or registered to do business in, the United States of America: (a) unless otherwise agreed in writing, all disputes relating to this License (excepting any dispute relating to intellectual property rights) shall be subject to final and binding arbitration, with the losing party paying all costs of arbitration; (b) any arbitration relating to this Agreement shall be held in Santa Clara County, California, under the auspices of JAMS/EndDispute; and (c) any litigation relating to this Agreement shall be subject to the jurisdiction of the Federal Courts of the Northern District of California, with venue lying in Santa Clara County, California, with the losing party responsible for costs, including without limitation, court costs and reasonable attorneys fees and expenses. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded. Any law or regulation which provides that the language of a contract shall be construed against the drafter shall not apply to this License.

## **12. RESPONSIBILITY FOR CLAIMS.**

Except in cases where another Contributor has failed to comply with Section 3.4, You are responsible for damages arising, directly or indirectly, out of Your utilization of rights under this License, based on the number of copies of Covered Code you made available, the revenues you received from utilizing such rights, and other relevant factors. You agree to work with affected parties to distribute responsibility on an equitable basis.

### **EXHIBIT A.**

``The contents of this file are subject to the Mozilla Public License Version 1.0 (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.mozilla.org/MPL/>

Software distributed under the License is distributed on an "AS IS" basis, WITHOUT WARRANTY OF ANY KIND, either express or implied. See the License for the specific language governing rights and limitations under the License.

The Original Code is \_\_\_\_\_.

The Initial Developer of the Original Code is \_\_\_\_\_.  
Portions created by \_\_\_\_\_ are Copyright (C) \_\_\_\_\_  
\_\_\_\_\_. All Rights Reserved.

Contributor(s): \_\_\_\_\_."

## Sed

Copyright © 2000 - 2010 Free Software Foundation, Inc., 51 Franklin Street, 5th Floor, Boston, MA 02110-1301, USA

The copyright licensing notice below applies to this text. Any software described in this text has its own copyright notice and license, which can usually be found in the distribution itself.

Permission is granted to copy, distribute, and/or modify this document under the terms of the GNU Free Documentation License, Version 1.2 or any later version published by the Free Software Foundation; with no Invariant Sections, with no Front-Cover Texts, and with no Back-Cover Texts.

- <http://www.gnu.org/licenses/old-licenses/gpl-2.0.html>

See the GNU General Public License, Version 2, at the end of this document. This license can also be viewed at the link provided above.

## Shadow

- <http://svn.debian.org/wsvn/pkg-shadow/upstream/tags/4.0.18.2/>  
COPYINGNOTE:

This license has been obsoleted by the change to the BSD-style copyright.

You may continue to use this license if you wish, but you are under no obligation to do so.

(\*

This document is freely plagiarised from the 'Artistic Licence', distributed as part of the Perl v4.0 kit by Larry Wall, which is available from most major archive sites. I stole it from CrackLib.

---

\$Id: COPYING,v 1.1 2005/12/11 16:55:40 kloczek Exp \$

\*)

This documents purpose is to state the conditions under which this Package (See definition below) viz: "Shadow", the Shadow Password Suite which is held by Julianne Frances Haugh, 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.

So there.

\*\*\*\*\*  
\*\*\*\*\*

Definitions:

A "Package" refers to the collection of files distributed by the Copyright Holder, and derivatives of that collection of files created through textual modification, or segments thereof.

"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.

"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 AND WHY 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 separate documentation 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) accompany any non-standard executables with their corresponding Standard Version executables, giving the non-standard executables non-standard names, and clearly documenting 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.

6. The name of the Copyright Holder may not be used to endorse or promote products derived from this software without specific prior written permission.

7. THIS PACKAGE IS PROVIDED "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED

WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF



---

MERCHANTIBILITY AND FITNESS FOR A PARTICULAR PURPOSE.

The End

## SitePen

### Direct Web Remoting

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

See the Apache License, Version 2.0 at the end of this document. You can also access this license through the link provided above.

## Source Forge

### NSIS Installer

Copyright (C) 1995-2009 Contributors

- <http://nsis.sourceforge.net/License>

### h264bitstream

- <http://geek.net/terms-of-use>

TERMS OF USE

1. ACCEPTANCE OF TERMS

Geeknet, Inc. comprised of the internet sites Geek.net, Sourceforge.net, Slashdot.org, ThinkGeek.com, and freecode.com (the "Sites"), provides the information and services on the Sites to you, the user, conditioned upon your acceptance, without modification, of the terms and conditions of use applicable to such Sites. Your use of any of the other Sites constitutes agreement with the terms and conditions of use set forth herein (the "Terms"). Before using Geeknet Sites, please carefully read this agreement relating to your use of Geeknet Sites. By using Geeknet Sites, you agree to be bound by these terms and conditions. If you do not agree to these terms and conditions, please do not use Geeknet Sites. Geeknet reserves the right, at Geeknet's sole discretion, to change, modify, add or remove portions of these Terms periodically. Such modifications shall be effective immediately upon posting of the modified agreement to the website unless provided otherwise (e.g., when implementing major, substantive changes, Geeknet intends to provide users with up to fourteen days of advance notice). Your continued use of the Geeknet Sites following the posting of changes to these Terms will mean that you accept those changes. Use of Geeknet Sites constitutes full acceptance of and agreement to the Terms; if a user does not accept Geeknet's Terms, he or she is not granted rights to use Geeknet Sites as defined herein, and should refrain from accessing Geeknet Sites. Geeknet reserves the right at any time and from time to time to modify or discontinue, temporarily or permanently, any or all Geeknet Sites (or any part thereof). Geeknet shall not be liable to any user or other third party for any such modification, suspension or discontinuance except as expressly provided herein.

## 2. NO UNLAWFUL OR PROHIBITED USE

By using Geeknet Sites, you warrant to Geeknet that you will not use Geeknet Sites, or any of the content obtained from Geeknet Sites, for any purpose that is unlawful or prohibited by these Terms. If you violate any of these Terms, your permission to use the Geeknet Sites automatically terminates.

## 3. DESCRIPTION OF SERVICES

The Geeknet Sites are owned and operated by Geeknet for the purpose of software development, discussion, implementation and innovation (the "Purpose"). The Geeknet Sites provide technology news, tools, products and education for the IT and developer community.

## 4. REGISTRATION OBLIGATIONS

When requested, each Geeknet Site user must: (1) personally provide true, accurate, current and complete information on the Geeknet Site's registration form (collectively, the "Registration Data") and (2) maintain and promptly update the Registration Data as necessary to keep it true, accurate, current and complete. If, after investigation, Geeknet has reasonable grounds to suspect that any user's information is untrue, inaccurate, not current or incomplete, Geeknet may suspend or terminate that user's account and prohibit any and all current or future use of the Geeknet Sites (or any portion thereof) by that user other than as expressly provided herein. Each user will receive passwords and account designations upon completing certain Geeknet Site registration processes and is wholly responsible for maintaining the confidentiality thereof and wholly liable for all activities occurring thereunder. Geeknet cannot and will not be liable for any loss or damage arising from a user's failure to comply with this Section 4, including any loss or damage arising from any user's failure to: (1) immediately notify Geeknet of any unauthorized use of his or her password or account or any other breach of security; and (2) ensure that he or she exits from his or her account at the end of each session. You represent and warrant that you are of legal age in your jurisdiction to create binding contractual and financial obligations and to assume any liability that you may incur as a result of your use of SourceForge.net. You must be 13 years of age or older to use SourceForge.net. If you are at least 13 years of age, but under the age of 18, your parent or legal guardian, as applicable, must expressly consent to your use of SourceForge.net. SourceForge.net is not intended for those under the age of 13. Use of SourceForge.net is void where prohibited. For users of Sourceforge.net, you represent you are not a person on a list barring you from receiving services under U.S. laws or other applicable jurisdiction, including without limitations, the Denied Persons List and the Entity List, and other lists issued by the U.S. Department of Commerce, Bureau of Industry and Security, detailed at <http://www.bis.doc.gov/complianceandenforcement/ListsToCheck.htm> (or successor sites thereto). Users residing in countries on the United States Office of Foreign Assets Control sanction list, including Cuba, Iran, North Korea, Sudan and Syria, may not post Content to, or access Content available through, SourceForge.net. Geeknet handles user Registration Data in accordance with the Geeknet Sites' Privacy Policy .

## 5. CONTENT

All information, data, text, software, music, sound, photographs, graphics, video, messages, or any other materials whatsoever (collectively, "Content"), whether publicly posted or privately transmitted, is the sole responsibility of the person from whom such Content originated. This means that the user, and not Geeknet, is entirely responsible for all Content that he or she uploads, posts, emails or otherwise transmits via the Geeknet Sites. No user shall transmit Content or otherwise conduct or participate in any activities on Geeknet Sites that, in the judgment of Geeknet, is likely to be prohibited by law in any applicable jurisdiction, including laws governing the encryption of software, the export of technology, the transmission of obscenity, or the permissible uses of intellectual property. Geeknet reserves the right to refuse or delete any Content of which it becomes aware and reasonably deems not to fulfill the Purpose. In addition, Geeknet shall have the right (but not the obligation) in its sole discretion to refuse or delete any Content that it reasonably considers to violate the Terms or be otherwise illegal. Geeknet, in its sole and absolute discretion, may preserve Content and may also disclose Content if required to do so by law or judicial or governmental mandate or as reasonably determined useful by Geeknet to protect the rights, property, or personal safety of Geeknet Sites' users and the public. Geeknet does not control the Content posted to the Geeknet Sites and, as such, does not guarantee the accuracy, integrity or quality of such Content. Under no circumstances will Geeknet be liable in any way for any Content, including, but not limited to, liability for any errors or omissions in any Content or for any loss or damage of any kind incurred as a result of the use of any Content posted, emailed or otherwise transmitted via Geeknet Sites. Each user, by using Geeknet Sites, may be exposed to Content that is offensive, indecent or objectionable. Each user must evaluate, and bear all risks associated with the use of any Content, including any reliance on the accuracy, completeness, or usefulness of such Content.

#### 6. LICENSING AND OTHER TERMS APPLYING TO CONTENT POSTED ON THE Geeknet SITES:

Use, reproduction, modification, and other intellectual property rights to data stored on the Geeknet Sites will be subject to licensing arrangements that may be approved by Geeknet as applicable to such Content. With respect to text or data entered into and stored by publicly-accessible site features such as forums, comments and bug trackers ("Geeknet Public Content"), the submitting user retains ownership of such Geeknet Public Content; with respect to publicly-available statistical content which is generated by the site to monitor and display content activity, such content is owned by Geeknet. In each such case, the submitting user grants Geeknet the royalty-free, perpetual, irrevocable, non-exclusive, transferable license to use, reproduce, modify, adapt, publish, translate, create derivative works from, distribute, perform, and display such Content (in whole or part) worldwide and/or to incorporate it in other works in any form, media, or technology now known or later developed, all subject to the terms of any applicable license. With respect to Content posted to private areas of the Geeknet Site Sourceforge.net (e.g., private development tools or mail), the submitting user may grant to Geeknet or other Sourceforge.net users such rights and licenses as the submitting Sourceforge.net user deems appropriate. Content located on any Geeknet-hosted subdomain which is subject to the sole editorial control of the owner or licensee of such subdomain, shall be subject to the appropriate license applicable to such Content, or to such other licensing arrangements as may be approved by Geeknet as applicable to such Content. For the purposes of these Terms, "Code" means any software code you submit, post, display or distribute via: any of our software configuration management ("SCM") repositories (including, CVS, Subversion, Git, Bazaar and Mercurial) or SourceForge.net's file release system, and "Associated Content" means any text, data, music, sound, photograph, graphic, video, message or material, whether publicly posted or privately transmitted via SourceForge.net, but does not include Code. "SourceForge Content" means any Code or Associated Content.

When you submit, post, upload or otherwise provide Code to SourceForge.net, you must designate promptly the software license pursuant to which licensees (including Geeknet) obtain rights with respect to such Code. Except as otherwise expressly permitted by these Terms, any Code submitted to SourceForge.net must be licensed to Geeknet and other licensees under a license that is: compliant with the Open Source Initiative ("OSI")'s Open Source Definition (<http://www.opensource.org/docs/osd>) or certified as an "OSI-Approved License" (<http://opensource.org/licenses>).

Please note that Geeknet is not affiliated with the OSI.

Notwithstanding anything to the contrary in these Terms, once you have selected the OSI-Approved or compliant license applicable to your Code, Geeknet shall be a licensee of such Code under the applicable OSI-Approved or compliant license that you have chosen. You shall promptly notify Geeknet in writing if you do not have the right to grant Geeknet or any other user an OSI-Approved or compliant license to your Code. Until such time as you have selected the OSI-Approved or compliant license applicable to your Code, Geeknet shall be a licensee of such Code under the license terms applicable to Associated Content.

When you create or make available your SourceForge Content on Sourceforge.net, you represent and warrant that:

you own or have sufficient rights to post or make available your SourceForge Content on or through SourceForge.net;

the posting or making available of your SourceForge Content on or through SourceForge.net does not violate the privacy rights, publicity rights, copyrights, contract rights or any other rights, including intellectual property rights, of any person or entity;

you have fully complied with any third-party licenses relating to your SourceForge Content, agree to pay for all royalties, fees and any other monies owing any person by reason of any of your SourceForge Content that you posted on or through SourceForge.net;

your SourceForge Content does not contain any viruses, worms, Trojan horses, malicious code or other harmful or destructive content;

your SourceForge Content is not obscene, lewd, lascivious, excessively violent, harassing, libelous or slanderous, does not advocate the violent overthrow of the government of the United States, does not incite, encourage or threaten immediate physical harm against another;

your SourceForge Content does not endorse or promote racism, bigotry, hatred, or physical harm of any kind against another group or individual, and does not discriminate, incite harassment or advocate harassment of any group or individual;

your SourceForge Content does not contain material that solicits personal information from anyone under 18 or exploit people under the age of 18 in a sexual or violent manner, and does not violate any federal or state law concerning child pornography or otherwise intended to protect the health and well-being of minors;

---

if your employer has rights to intellectual property you create, you have either received permission from your employer to make available your SourceForge Content, or secured from your employer a waiver as to all rights in or to your SourceForge Content;

your SourceForge Content does not constitute, contain, install or attempt to install or promote spyware or malware or any other computer code (whether on Geeknet's or others computers or equipment) intended to, or that does, enable you or others to gather information about or monitor the online or other activities of another party, unless it discloses such functionality to the user in a clear and conspicuous manner and the user affirmatively consents to such use; and, your SourceForge Content does not otherwise violate, or link to material that violates, any provision of these Terms or any local, state, or federal law or regulation, including any law designed to regulate electronic advertising.

By submitting Code to SourceForge.net, you certify that your Code is in compliance with the OSI-Approved or compliant license that you designate, and you hereby represent and warrant that you have all rights, licenses and consents necessary to grant Geeknet and other users the rights and licenses granted herein, and under the OSI-Approved or compliant license you designate, without infringement of any third party rights. In addition, the Code that you submit must also be made available in human-readable (i.e., "Source Code") form. Whenever reasonably feasible, you agree that you will make Source Code available on or via SourceForge.net corresponding to Code that you post, submit, display or distribute. You must make Source Code available for all portions of Code that you have modified, enhanced or otherwise created derivative works from (with any such modification or derivative work being a "Change"). Geeknet acknowledges that there may be situations where posting Source Code is not reasonably feasible; examples of such situations are when you are posting Code that: (a) is ancillary to other Code that you have Changed but such Code is only available to you in binary or executable form (such as closed-source device drivers or closed-source software frameworks); (b) is otherwise readily available in Source Code form online as part of an Open Source distribution, and where you notify users that the Source Code for such distribution is available elsewhere on the Internet (and you also provide a link to that location); or (c) Geeknet agrees in writing does not need to be posted in Source Code form.

For users posting on Sourceforge.net, you are aware that all postings of open source encryption code controlled under U.S. Export Control Classification Number (ECCN) 5D002 must be simultaneously reported by email to the U.S. government. You are responsible for submitting this email report to the U.S. government in accordance with procedures described in: <http://www.bis.doc.gov/encryption/PubAvailEncSourceCodeNotify.html> and Section 740.13(e) of the Export Administration Regulations ("EAR") 15 C.F.R. Parts 730-772.

#### 7. NO RESALE OF SERVICE

You agree not to sell, resell, or offer for any commercial purposes, any portion of the Geeknet Sites, use of the Geeknet Sites, or access to the Geeknet Sites.

#### 8. GENERAL PRACTICES REGARDING USE AND STORAGE

Geeknet may establish general practices and limits concerning use of the Geeknet Sites. While Geeknet will use reasonable efforts to back up site data and make such data available in the event of loss or deletion, Geeknet has no responsibility or liability for the deletion or failure to store any messages and other communications or other Content maintained or transmitted by any Geeknet Site. Geeknet reserves the right to mark as "inactive" and archive accounts and/or Content that are inactive for an extended period of time. Geeknet reserves the right to change these general practices at any time, in its sole discretion, with notice to users and the public as described in Section 1 above. In addition, you will use the Sites in compliance with all applicable international, state, federal and local laws and in accordance with these Terms. In addition to the above, you may not access or use SourceForge.net for any purpose other than that for which Geeknet makes it available. Without limiting any other remedies, Geeknet may suspend or terminate your SourceForge.net account if we suspect that you have engaged in unlawful or prohibited activity in connection with SourceForge.net. Geeknet reserves the right, in its sole discretion to investigate and take appropriate legal action against anyone who, in Geeknet's sole discretion violates this provision. Prohibited activity includes, but is not limited to: illegal or tortious activity, including child pornography, fraud, trafficking in obscene material, drug dealing, gambling, harassment, stalking (including using any information



obtained on or via SourceForge.net to harass, abuse, stalk, or harm another person), spamming, copyright infringement, patent infringement, or theft of trade secrets; using any information obtained from SourceForge.net in order to contact, advertise to, solicit, or sell to any user without such user's prior explicit consent (including non-commercial contacts like chain letters); compiling or collecting Associated Content, Site Materials, or Sponsor Content from SourceForge.net as part of a database or other work; interfering with, disrupting, or creating an undue burden on SourceForge.net or the networks or services connected to SourceForge.net, including, without limitation, any attempt to circumvent the access controls or security measures of SourceForge.net; accessing SourceForge.net by any means other than through interfaces provided by Geeknet, unless otherwise specifically authorized by Geeknet in a separate, prior written agreement; circumventing, disabling or otherwise interfering with security-related features of SourceForge.net, or features that prevent or restrict use or copying of any Materials or enforce limitations on use of SourceForge.net or the Materials therein; attempting to impersonate another user or person, using the user account of another person, and selling or otherwise transferring your user account, or otherwise misrepresenting your affiliation with a person or entity; and, selling, reselling or offering for any commercial purposes, any portion of, use of, or access to SourceForge.net, except where specifically endorsed or approved by Geeknet.

## 9. TERMINATION

Geeknet may terminate a user's account in Geeknet's absolute discretion and for any reason. Geeknet is especially likely to terminate for reasons that include, but are not limited to, the following: (1) violation of these Terms; (2) abuse of site resources or attempt to gain unauthorized entry to the site or site resources; (3) use of an Geeknet Site in a manner inconsistent with the Purpose; (4) a user's request for such termination; or (4) as required by law, regulation, court or governing agency order. Geeknet's termination of any user's access to any or all Geeknet Sites may be effected without notice and, on such termination, Geeknet may immediately deactivate or delete user's account and/or bar any further access to such files. Geeknet shall not be liable to any user or other third party for any termination of that user's access or account hereunder. In addition, a user's request for termination will result in deactivation but not necessarily deletion of the account. Geeknet reserves the right to delete, or not delete, a user's account at Geeknet's sole discretion, as well as to delete, or not delete, content at Geeknet's sole discretion.

## 10. LINKS

Geeknet, any Geeknet Site or a third party may provide links to other websites. Geeknet exercises no control whatsoever over such other websites and web-based resources and is not responsible or liable for the availability thereof or the Content, advertising, products or other materials thereon. Geeknet shall not be responsible or liable, directly or indirectly, for any damage or loss incurred or suffered by any user in connection therewith. Your access and use of linked websites, including information, material, products and services therein, is solely at your own risk. The Geeknet Sites' Privacy Statement is applicable only when you are on an Geeknet Site. Once you choose to link to another website, you should read that website's privacy statement before disclosing any personal information.

#### 11. INDEMNITY; DISCLAIMER; LIMITATIONS OF LIABILITY

Each user shall indemnify, defend and hold harmless Geeknet, and its parent corporation and affiliates and their respective officers, employees and agents, and each of Geeknet's website partners, from any and all claims, demands, damages, costs, and liabilities including reasonable attorneys' fees, made by any third party due to or arising out of that user's acts or omissions, including claims arising out of that user's use of the Geeknet Sites; his or her submission, posting or transmission of Content or his or her violation of the Terms. EACH USER'S USE OF THE Geeknet SITES IS AT HIS OR HER SOLE RISK. THE Geeknet SITES ARE PROVIDED ON AN "AS IS" AND "AS AVAILABLE" BASIS AND Geeknet ASSUMES NO RESPONSIBILITY FOR THE TIMELINESS, DELETION, MIS-DELIVERY OR FAILURE TO STORE ANY USER COMMUNICATIONS OR PERSONALIZATION SETTINGS. EACH USER WILL BE SOLELY RESPONSIBLE FOR ANY DAMAGE TO HIS OR HER COMPUTER SYSTEM OR LOSS OF DATA THAT RESULTS FROM THE DOWNLOAD OF ANY SUCH MATERIAL. Geeknet EXPRESSLY DISCLAIMS ALL WARRANTIES OF ANY KIND, WHETHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT. SPECIFICALLY, Geeknet MAKES NO WARRANTY THAT (i) THE Geeknet SITES OR ANY SERVICE THEREON WILL MEET YOUR REQUIREMENTS, (ii) ANY USER ACCESS WILL BE UNINTERRUPTED, TIMELY, SECURE OR ERROR-FREE, (iii) THE QUALITY OF ANY CONTENT, PRODUCTS, SERVICES, INFORMATION OR OTHER MATERIAL OBTAINED BY ANY USER WILL MEET HIS OR HER EXPECTATIONS, AND (iv) ANY ERRORS IN THE SOFTWARE WILL BE CORRECTED. EXCLUDING ONLY DAMAGES ARISING OUT OF Geeknet'S GROSS NEGLIGENCE OR WILLFUL

---

MISCONDUCT, Geeknet SHALL NOT BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, CONSEQUENTIAL OR EXEMPLARY DAMAGES, INCLUDING BUT NOT LIMITED TO DAMAGES FOR LOSS OF PROFITS, GOODWILL, USE, DATA OR OTHER INTANGIBLE LOSSES (EVEN IF Geeknet HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES), RESULTING FROM ANY USER'S USE OR INABILITY TO USE ANY Geeknet SITES OR SERVICES THEREON; THE COST OF PROCUREMENT OF SUBSTITUTE SERVICES; UNAUTHORIZED ACCESS TO OR ALTERATION OF YOUR TRANSMISSIONS OR DATA; STATEMENTS OR CONDUCT OF ANY THIRD PARTY ON THE Geeknet SITES; OR ANY OTHER MATTER RELATING TO THE Geeknet SITES. IN NO EVENT SHALL Geeknet'S TOTAL CUMULATIVE LIABILITY TO ANY USER OR OTHER PARTY UNDER THESE TERMS OF SERVICE OR OTHERWISE EXCEED \$1,000.00. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OF CERTAIN WARRANTIES OR THE LIMITATION OR EXCLUSION OF LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. ACCORDINGLY, SOME OF THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU. NOTHING HEREIN SHALL BE DEEMED TO CREATE AN AGENCY, PARTNERSHIP, JOINT VENTURE, EMPLOYEE-EMPLOYER OR FRANCHISOR-FRANCHISEE RELATIONSHIP OF ANY KIND BETWEEN Geeknet AND ANY USER OR OTHER PERSON OR ENTITY NOR DO THESE TERMS OF SERVICE EXTEND RIGHTS TO ANY THIRD PARTY. AS NOTED ABOVE, Geeknet DOES NOT AND CANNOT CONTROL THE ACTIONS OF Geeknet SITE USERS, VISITORS OR LINKED THIRD PARTIES. WE RESERVE THE

RIGHT TO REPORT ANY MALFEASANCE THAT COMES TO OUR ATTENTION TO THE APPROPRIATE AUTHORITIES. WE DO NOT GUARANTEE CONTINUOUS UNINTERRUPTED OR SECURE ACCESS TO Geeknet SITES. OPERATION OF Geeknet SITES MAY BE SUBJECT TO INTERFERENCE FROM NUMEROUS FACTORS OUTSIDE OUR CONTROL. FURTHER, SCHEDULED AND PREVENTIVE MAINTENANCE AS WELL AS REQUIRED AND EMERGENCY MAINTENANCE WORK MAY TEMPORARILY INTERRUPT SERVICES OR ACCESS TO THE WEBSITE. THE DISCLAIMERS OF WARRANTY AND LIMITATIONS OF LIABILITY APPLY, WITHOUT LIMITATION, TO ANY DAMAGES OR INJURY CAUSED BY THE FAILURE OF PERFORMANCE, ERROR, OMISSION, INTERRUPTION, DELETION, DEFECT, DELAY IN OPERATION OR TRANSMISSION, COMPUTER VIRUS, COMMUNICATION LINE FAILURE, THEFT OR DESTRUCTION OR UNAUTHORIZED ACCESS TO, ALTERATION OF OR USE OF ANY ASSET, WHETHER ARISING OUT OF BREACH OF CONTRACT, TORTIOUS BEHAVIOUR, NEGLIGENCE OR ANY OTHER COURSE OF ACTION BY Geeknet. Any claim or cause of action arising out of or related to use of the Sites or the Terms must be filed within one (1) year after such claim or cause of action arose or be forever barred.

## 12. TRADEMARK INFORMATION

Geeknet, the Geeknet logo and other Geeknet trademarks including "SLASHDOT," "NEWS FOR NERDS, STUFF THAT MATTERS," "FREECODE," "SOURCEFORGE.NET," the Sourceforge.net logo, service marks, and product and service names are Geeknet trademarks or registered trademarks in the United States and in other countries (the "Geeknet Marks"). All other names and designs may be trademarks of their respective owners. Users may display or use the Geeknet Marks only in accordance with Geeknet's Trademark Use Guidelines posted at <http://geek.net/trademark-usage>.

Geeknet is generally unable to evaluate the merits of trademark disputes because trademark rights may be based on registration or common law use, exist only for certain categories of goods or services and may differ internationally. Therefore, Geeknet expects you to resolve trademark disputes directly with the project administrator(s) rather than utilize Geeknet as an intermediary.

## 13. COPYRIGHTS

---

Geeknet respects the intellectual property rights of others, and requires that the people who use the Geeknet Sites do the same. It is our policy to respond promptly to claims of intellectual property misuse. Our procedures for responding to alleged copyright infringement are consistent with the form suggested by the United States Digital Millennium Copyright Act, the text of which can be found at the U.S. Copyright Office web site <http://www.copyright.gov/legislation/dmca.pdf>. Please note that you will be liable for damages (including costs and attorneys' fees) if you make any material misrepresentations when making or countering a copyright infringement claim. If you believe that your work has been copied and is accessible on this site in a way that constitutes copyright infringement, you may notify us by providing our copyright agent with the following information in writing:

- a. Identification of the copyrighted work claimed to have been infringed, or, if multiple copyrighted works at a single online site are covered by a single notification, a representative list of such works at that site.
- b. Identification of the material that is claimed to be infringing or to be the subject of infringing activity and that is to be removed or access to which is to be disabled, and information reasonably sufficient to permit Geeknet to locate the material (e.g., URL).
- c. Information reasonably sufficient to permit Geeknet to contact you, such as name, postal address, telephone number, and, if available, an email address at which you may be contacted.
- d. Include the following statement: "I have a good faith belief that use of the material described above in the manner complained of is not authorized by the copyright owner, its agent, or the law."
- e. Include the following statement: "The information in the notification is accurate, and under penalty of perjury, I am the copyright owner or am authorized to act on behalf of the owner of an exclusive right that is allegedly infringed."
- f. A physical, electronic or digital signature, in a form reasonably acceptable to Geeknet, of a person authorized to act on behalf of the owner of an exclusive right that is allegedly infringed.
- g. Send written communication to the following contact:

Geeknet, Inc.  
Attn: Legal Services, DMCA Notifications  
11216 Waples Mill Rd., Suite 100  
Fairfax, VA 22030  
Fax: (650) 425-3798

i. Send electronically-signed communication to [dmca@sourceforge.net](mailto:dmca@sourceforge.net). A copy of your notice (with your personal contact information removed) may be forwarded to Chilling Effects (<http://www.chillingeffects.org>) for publication. A link to your published notice may also be displayed in SourceForge.net's search results in place of the removed material. DMCA Counter-Notification Procedure:

After receiving a notification of alleged infringement, Geeknet will remove or disable access to the material claimed to be infringing or claimed to be the subject of infringing activity. At the same time, Geeknet will provide the project administrator(s) of the affected project or the provider of affected material with a copy of the notice. The administrator of an affected project or the provider of affected material may make a counter notification pursuant to sections 512(g)(2) and (3) of the Digital Millennium Copyright Act. Please be advised that you may be held liable for damages if you make material misrepresentations pursuant to federal law in the counter notification. When we receive a counter notification, we may reinstate the material in question. To file a counter notification with us, the administrator of an affected site or the provider of affected material must provide a written communication (by fax, postal mail, overnight mail, or, when digitally-signed, by email) that sets forth the items specified below. (A sample counter notification may be found at [www.chillingeffects.org/dmca/counter512.pdf](http://www.chillingeffects.org/dmca/counter512.pdf).) To expedite our ability to process your counter notification, please use the following format (including section numbers):

- a. Identify the material that Geeknet has removed or to which Geeknet has disabled access and the location at which the material appeared before it was removed or access to it was disabled.
- b. Provide your name, postal address, telephone number, email address, and a statement that you consent to the jurisdiction of Federal District Court for the judicial district in Santa Clara County, California (if your address is outside of the United States, for any judicial district in which Geeknet may be found), and that you will accept service of process from the person who provided the initial notification of infringement or an agent of such person.

c. Include the following statement: "I swear, under penalty of perjury, that I have a good faith belief that the removed material was removed or disabled as a result of a mistake or misidentification of the material to be removed or disabled."

d. Sign the paper or affix an electronic or digital signature to the communication in a form reasonably acceptable to Geeknet.

e. Send written communication to the following address:

Geeknet, Inc.

Attn: Legal Services, DMCA Notifications

11216 Waples Mill Rd., Suite 100

Fairfax, VA 22030

Fax: (650) 425-3798

f. Send electronically- or digitally-signed communication to [dmca@sourceforge.net](mailto:dmca@sourceforge.net) Upon receipt of a counter notification in substantial compliance with the DMCA, Geeknet will provide the person who provided the initial notification of claimed infringement with a copy of the counter notification promptly. After receipt of the counter notification, Geeknet will generally replace the removed material and cease disabling access to it, unless Geeknet's designated agent first receives notice from the person who submitted the initial notification that such person has filed an action seeking a court order regarding the removed material.

#### 14. GENERAL

The Terms constitute the entire agreement between each user and Geeknet and govern each user's use of Geeknet Sites, superseding any prior and contemporaneous agreements. Each user may be subject to additional terms and conditions that may apply when that user uses affiliate services, third party content or third party software. The Terms and the relationship between each user and Geeknet shall be governed by the laws of the State of California without regard to its conflict of law provisions and each party shall submit to the personal and exclusive jurisdiction of the courts located within the county of Santa Clara, California. If any provision of the Terms is found by a court of competent jurisdiction to be invalid, the parties nevertheless agree that the court should endeavor to give effect to the parties' intentions as reflected in the provision, and the other provisions of the Terms remain in full force and effect. In our sole discretion, we may assign these Terms, in whole or in part, by providing notice in accordance with the notice provision in this Section should Geeknet ever file for bankruptcy or in the event of a sale, merger, acquisition or other transfer of all or substantially all of SourceForge.net. You may not assign these Terms, in whole or in part, without Geeknet's prior written consent.

#### 15. VIOLATIONS

Please report any violations of the Terms (except for claims of intellectual property infringement) to the Geeknet Site Director at [admin@geek.net](mailto:admin@geek.net).

#### 16. PROJECT WEB

SourceForge.net offers a web hosting service that permits project teams to share information among developers and end users ("Project Web"). Your use of the Project Web must comply with all applicable laws, regulations and ordinances, including any laws regarding the export of data or software.

You agree that you will protect the privacy and legal rights of the end users of your Project Web application. You must provide legally adequate privacy notice and protection for end users and are responsible for the security of such information, as such data only impacts end users of your Project Web application. If end users provide you with user names, passwords, or other login information or personally identifiable information, you must make the users aware that the information will be available to your application and to Geeknet.

You agree that Geeknet has no responsibility or liability for the deletion or failure to store any Project Web content and other communications maintained or transmitted through use of the Project Web service. You further acknowledge that you are solely responsible for securing and backing up your applications and any Project Web content.



---

## Sun Microsystems, Inc. - Java Media Framework

- <http://java.sun.com/javase/technologies/desktop/media/jmf/2.1.1/license.html>

**READ THE TERMS OF THIS AGREEMENT AND ANY PROVIDED SUPPLEMENTAL LICENSE TERMS (COLLECTIVELY "AGREEMENT") CAREFULLY BEFORE OPENING THE SOFTWARE MEDIA PACKAGE.** BY OPENING THE SOFTWARE MEDIA PACKAGE, YOU AGREE TO THE TERMS OF THIS AGREEMENT. IF YOU ARE ACCESSING THE SOFTWARE ELECTRONICALLY, INDICATE YOUR ACCEPTANCE OF THESE TERMS BY SELECTING THE "ACCEPT" BUTTON AT THE END OF THIS AGREEMENT. IF YOU DO NOT AGREE TO ALL THESE TERMS, PROMPTLY RETURN THE UNUSED SOFTWARE TO YOUR PLACE OF PURCHASE FOR A REFUND OR, IF THE SOFTWARE IS ACCESSED ELECTRONICALLY, SELECT THE "DECLINE" BUTTON AT THE END OF THIS AGREEMENT.

**License to Use.** Sun Microsystems, Inc. ("Sun") grants you a non-exclusive and non-transferable license for the internal use only of the accompanying software and documentation and any error corrections provided by Sun (collectively "Software"), by the number of users and the class of computer hardware for which the corresponding fee has been paid.

**Restrictions.** Software is confidential and copyrighted. Title to Software and all associated intellectual property rights is retained by Sun and/or its licensors. Except as specifically authorized in any Supplemental License Terms, you may not make copies of Software, other than a single copy of Software for archival purposes. Unless enforcement is prohibited by applicable law, you may not modify, decompile, or reverse engineer Software. You acknowledge that Software is not designed or intended for use in the design, construction, operation or maintenance of any nuclear facility. Sun 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.

**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.

**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.

**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.

**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. Upon Termination, you must destroy all copies of Software.

**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.

**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 C.F.R. 227.7202-4 (for Department of Defense (DOD) acquisitions) and with 48 CFR 2.101 and 12.212 (for non-DOD acquisitions)

**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.

**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.

**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.

### **Java Media Framework (JMF) 2.1.1 - Supplemental License Terms**

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

**Software Internal Use and Development License Grant.** Subject to the terms and conditions of this Agreement, including, but not limited to Section 3 (Java Technology Restrictions) of these Supplemental Terms, Sun grants you a non-exclusive, non-transferable, limited license to reproduce internally and use internally the binary form of the Software, complete and unmodified, for the sole purpose of designing, developing and testing your Java applets and applications ("Programs").

**License to Distribute Software.** In addition to the license granted in Section 1 (Software Internal Use and Development License Grant) of these Supplemental Terms, subject to the terms and conditions of this Agreement, including but not limited to, Section 3 (Java Technology Restrictions) of these Supplemental Terms, Sun grants you a non-exclusive, non-transferable, limited license to reproduce and distribute the Software in binary code form only, provided that you:

distribute the Software complete and unmodified, except that you may omit those files specifically identified as "optional" in the Software "README" file, which include samples, documents, and bin files, or that are removable by using the Software customizer tool provided, only as part of and for the sole purpose of running your Program into which the Software is incorporated;

do not distribute additional software intended to replace any components of the Software;

do not remove or alter any proprietary legends or notices contained in the Software;

only distribute the Software subject to a license agreement that protects Sun's interests consistent with the terms contained in this Agreement; and

agree to defend and indemnify Sun and its licensors from and against any damages, costs, liabilities, settlement amounts 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 or Software.

**Java Technology Restrictions.** You may not modify the Java Platform Interface ("JPI", identified as classes contained within the "java" package or any subpackages of the "java" package), by creating additional classes within the JPI or otherwise causing the addition to or modification of the classes in the JPI. In the event that you create an additional class and associated API's, which:

extends the functionality of the Java platform, and

is exposed to third party software developers for the purpose of developing additional software which invokes such additional API, you must promptly publish broadly an accurate specification for such API for free use by all developers. You may not create, or authorize your licensees to create additional classes, interfaces, packages or subpackages that are in any way identified as "java", "javax", "sun" or similar convention as specified by Sun in any class file naming convention designation.

**Java Runtime Availability.** Refer to the appropriate version of the Java Runtime Environment binary code license (currently located at <http://www.java.sun.com/jdk/index.html>) for the availability of runtime code which may be distributed with Java applets and applications.

**Trademarks and Logos.** You acknowledge and agree as between you and Sun that Sun owns the SUN, SOLARIS, JAVA, JINI, FORTE, STAROFFICE, STARPORTAL and iPLANET trademarks and all SUN, SOLARIS, JAVA, JINI, FORTE, STAROFFICE, STARPORTAL 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.

**Source Code.** Software may contain source code that 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.

**Termination for Infringement.** 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.

For inquiries please contact: Sun Microsystems, Inc.  
901 San Antonio Road, Palo Alto, California 94303

## Sun Microsystems, Inc. - Java SE Runtime Environment 1.5

- [http://java.sun.com/j2se/1.5.0/jre-1\\_5\\_0\\_15-license.txt](http://java.sun.com/j2se/1.5.0/jre-1_5_0_15-license.txt)

Sun Microsystems, Inc. Binary Code License Agreement for the JAVA 2 PLATFORM STANDARD EDITION RUNTIME ENVIRONMENT 5.0

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. "General Purpose Desktop Computers and Servers" means computers, including desktop, laptop and tablet computers, or servers, used for general computing functions under end user control (such as but not specifically limited to email, general purpose Internet browsing, and office suite productivity tools). The use of Software in systems and solutions that provide dedicated functionality (other than as mentioned above) or designed for use in embedded or function-specific software applications, for example but not limited to: Software embedded in or bundled with industrial control systems, wireless mobile telephones, wireless handheld devices, kiosks, TV/STB, Blu-ray Disc devices, telematics and network control switching equipment, printers and storage management systems, and other related systems is excluded from this definition and not licensed under this Agreement. "Programs" means Java technology applets and applications intended to run on the Java 2 Platform Standard Edition (J2SE) 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.** 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 incorporated herein by reference, 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.

F. Termination for Infringement. 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.

G. Installation and Auto-Update. The Software's installation and auto-update processes transmit a limited amount of data to Sun (or its service provider) about those specific processes to help Sun understand and optimize them. Sun does not associate the data with personally identifiable information. You can find more information about the data Sun collects at <http://java.com/data/>.

For inquiries please contact: Sun Microsystems, Inc., 4150 Network Circle, Santa Clara, California 95054, U.S.A. (LFI#143333/Form ID#011801)

## **Sun Microsystems, Inc. - Java SE Runtime Environment 1.6**

- <http://java.sun.com/javase/6/jre-6u13-license.txt>

---

## Sun Microsystems, Inc.

### Java Telephony API, Pet Store

- [http://developers.sun.com/license/berkeley\\_license.html](http://developers.sun.com/license/berkeley_license.html)

**Copyright © 2008, 2010 Oracle and/or its affiliates. All rights reserved. Use is subject to license terms.**

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

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

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.

Neither the name of Oracle Corporation 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 COPYRIGHT HOLDERS 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 COPYRIGHT OWNER 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.

You acknowledge that this software is not designed, licensed or intended for use in the design, construction, operation or maintenance of any nuclear facility.

## Sun Microsystems, Inc. - LDAP Booster Pack

- <http://java.com/en/download/license.jsp>

Sun Microsystems, Inc

Binary Code License Agreement

for the JAVA SE RUNTIME ENVIRONMENT (JRE) VERSION 6 and JAVAFX  
RUNTIME VERSION 1

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 USING THE SOFTWARE YOU ACKNOWLEDGE THAT YOU HAVE READ THE TERMS AND AGREE TO THEM. IF YOU ARE AGREEING TO THESE TERMS ON BEHALF OF A COMPANY OR OTHER LEGAL ENTITY, YOU REPRESENT THAT YOU HAVE THE LEGAL AUTHORITY TO BIND THE LEGAL ENTITY TO THESE TERMS. IF YOU DO NOT HAVE SUCH AUTHORITY, OR IF YOU DO NOT WISH TO BE BOUND BY THE TERMS, THEN YOU MUST NOT USE THE SOFTWARE ON THIS SITE OR ANY OTHER MEDIA ON WHICH THE SOFTWARE IS CONTAINED.

---

**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. "General Purpose Desktop Computers and Servers" means computers, including desktop and laptop computers, or servers, used for general computing functions under end user control (such as but not specifically limited to email, general purpose Internet browsing, and office suite productivity tools). The use of Software in systems and solutions that provide dedicated functionality (other than as mentioned above) or designed for use in embedded or function-specific software applications, for example but not limited to: Software embedded in or bundled with industrial control systems, wireless mobile telephones, wireless handheld devices, netbooks, kiosks, TV/STB, Blu-ray Disc devices, telematics and network control switching equipment, printers and storage management systems, and other related systems are excluded from this definition and not licensed under this Agreement. "Programs" means (a) Java technology applets and applications intended to run on the Java Platform Standard Edition (Java SE) platform on Java-enabled General Purpose Desktop Computers and Servers, and (b) JavaFX technology applications intended to run on the JavaFX Runtime on JavaFX-enabled General Purpose Desktop Computers and Servers.

**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.

**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.

**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.

**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.

**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.

---

**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.

**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.

**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.

**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).

**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.

**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.

**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.

**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 incorporated herein by reference, 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.



---

**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 (except for the JavaFX Runtime), 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.

**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.

**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.

**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.

**Termination for Infringement.** 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.

**Installation and Auto-Update.** The Software's installation and auto-update processes transmit a limited amount of data to Sun (or its service provider) about those specific processes to help Sun understand and optimize them. Sun does not associate the data with personally identifiable information. You can find more information about the data Sun collects at <http://java.com/data/>.

For inquiries please contact: Sun Microsystems, Inc., 4150 Network Circle, Santa Clara, California 95054, U.S.A.

## SuSe

© 2011 Novell, Inc. and others. All content is made available under the terms of the GNU Free Documentation License version 1.2 ("GFDL") unless expressly indicated otherwise.

- <http://www.novell.com/products/linuxpackages/opensuse11.1/permissions.html>  
Except for packages subject to a commercial license, the license identified below is the license designated by the open source project.  
Version: 2008.11.25  
Release: 1.5  
Medium:  
Path: suse/i586/permissions-2008.11.25-1.5.i586.rpm  
Group: Productivity/Security  
License: GPL v2 or later
- <http://www.gnu.org/copyleft/gpl.html>  
See the [GNU General Public License, Version 3](#) at the end of this document. You can also access this license through the link provided above.

## Thai Open Source Software Center

**expat, xpat**

- <http://www.jclark.com/xml/copying.txt>

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.

## U-boot

- <http://www.gnu.org/licenses/old-licenses/gpl-2.0.html>

See the GNU General Public License, Version 2 at the end of this document. This license can also be viewed at the link provided above.

- [http://git.denx.de/?p=u-boot.git;a=blob\\_plain;f=README;hb=HEAD](http://git.denx.de/?p=u-boot.git;a=blob_plain;f=README;hb=HEAD)

(C) Copyright 2000 - 2009

Wolfgang Denk, DENX Software Engineering, wd@denx.de.

See file CREDITS for list of people who contributed to this project.

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

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

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

## unixODBC

### Unix ODBC

- <http://www.opensource.org/licenses/lgpl-license.php>

## Wietse Zweitze Venema

### TCP Wrapper

- [ftp://ftp.porcupine.org/pub/security/tcp\\_wrappers\\_license](ftp://ftp.porcupine.org/pub/security/tcp_wrappers_license)  
-----BEGIN PGP SIGNED MESSAGE-----

As of June 1, 2001, the text below constitutes the TCP Wrappers license.

```
/
*****
*****
* Copyright 1995 by Wietse Venema. All rights reserved. Some individual
* files may be covered by other copyrights.
*
* This material was originally written and compiled by Wietse Venema at
* Eindhoven University of Technology, The Netherlands, in 1990, 1991,
* 1992, 1993, 1994 and 1995.
```

\*

\* Redistribution and use in source and binary forms, with or without  
 \* modification, are permitted provided that this entire copyright notice  
 \* is duplicated in all such copies.

\*

\* This software is provided "as is" and without any expressed or implied  
 \* warranties, including, without limitation, the implied warranties of  
 \* merchantability and fitness for any particular purpose.

\*\*\*\*\*  
 \*\*\*\*\*/

-----BEGIN PGP SIGNATURE-----

Version: 2.6.3i

Charset: noconv

iQCVAwUBOxo3X9yA8qbVMny5AQHT8wP9FZOtWxEM4SMj4Sj9QezMERz  
 3ln5fd0pC

jUDnyzmosOudM/  
 iFlv6YfyR820aNvNNI+AdtgWYRPVHocVNOOrZcmu7IADO8hlU//

v8BeBE0bdjeVmOQYRQfXgt3J2q0b8x8Q5a/  
 LCLVLh8k6DFGg8AfEbLDQWhi1JiXC

0JsaB8crR3M=

=0AMW

-----END PGP SIGNATURE-----

## VIM

- <http://vimdoc.sourceforge.net/html/doc/uganda.html#copyright>

I) There are no restrictions on distributing unmodified copies of Vim except that they must include this license text. You can also distribute unmodified parts of Vim, likewise unrestricted except that they must include this license text. You are also allowed to include executables that you made from the unmodified Vim sources, plus your own usage examples and Vim scripts.

II) It is allowed to distribute a modified (or extended) version of Vim, including executables and/or source code, when the following four conditions are met:

- 1) This license text must be included unmodified.
- 2) The modified Vim must be distributed in one of the following five ways:
  - a. If you make changes to Vim yourself, you must clearly describe in the distribution how to contact you. When the maintainer asks you in any way) for a copy of the modified Vim you distributed, you must make your changes, including source code, available to the maintainer without fee. The maintainer reserves the right to include your changes in the official version of Vim. What the maintainer will do with your changes and under what license they will be distributed is negotiable. If there has been no negotiation then this license, or a later version, also applies to your changes. The current maintainer is Bram Moolenaar <Bram@vim.org>. If this changes it will be announced in appropriate places (most likely vim.sf.net, www.vim.org and/or comp.editors). When it is completely impossible to contact the maintainer, the obligation to send him your changes ceases. Once the maintainer has confirmed that he has received your changes they will not have to be sent again.
  - b. If you have received a modified Vim that was distributed as mentioned under a) you are allowed to further distribute it unmodified, as mentioned at I). If you make additional changes the text under a) applies to those changes.
  - c. Provide all the changes, including source code, with every copy of the modified Vim you distribute. This may be done in the form of a context diff. You can choose what license to use for new code you add. The changes and their license must not restrict others from making their own changes to the official version of Vim.
  - d. When you have a modified Vim which includes changes as mentioned under c), you can distribute it without the source code for the changes if the following three conditions are met:

- The license that applies to the changes permits you to distribute the changes to the Vim maintainer without fee or restriction, and permits the Vim maintainer to include the changes in the official version of Vim without fee or restriction.
  - You keep the changes for at least three years after last distributing the corresponding modified Vim. When the maintainer or someone who you distributed the modified Vim to asks you (in any way) for the changes within this period, you must make them available to him.
  - You clearly describe in the distribution how to contact you. This contact information must remain valid for at least three years after last distributing the corresponding modified Vim, or as long as possible.
- e. When the GNU General Public License (GPL) applies to the changes, you can distribute the modified Vim under the GNU GPL version 2 or any later version.
- 3) A message must be added, at least in the output of the ":version" command and in the intro screen, such that the user of the modified Vim is able to see that it was modified. When distributing as mentioned under 2)e) adding the message is only required for as far as this does not conflict with the license used for the changes.
- 4) The contact information as required under 2)a) and 2)d) must not be removed or changed, except that the person himself can make corrections.

III) If you distribute a modified version of Vim, you are encouraged to use the Vim license for your changes and make them available to the maintainer, including the source code. The preferred way to do this is by e-mail or by uploading the files to a server and e-mailing the URL. If the number of changes is small (e.g., a modified Makefile) e-mailing a context diff will do. The e-mail address to be used is <maintainer@vim.org>.

IV) It is not allowed to remove this license from the distribution of the Vim sources, parts of it or from a modified version. You may use this license for previous Vim releases instead of the license that they came with, at your option.

**Note:**

- According to Richard Stallman the Vim license is GNU GPL compatible. A few minor changes have been made since he checked it, but that should not make a difference.
- If you link Vim with a library that goes under the GNU GPL, this limits further distribution to the GNU GPL. Also when you didn't actually change anything in Vim.
- Once a change is included that goes under the GNU GPL, this forces all further changes to also be made under the GNU GPL or a compatible license.
- If you distribute a modified version of Vim, you can include your name and contact information with the "--with-modified-by" configure argument or the `MODIFIED_BY` define.

**which**

which --version GNU which v2.20, Copyright (C) 1999 - 2008 Carlo Wood. GNU which comes with ABSOLUTELY NO WARRANTY; This program is free software; your freedom to use, change and distribute this program is protected by the GPL.

- <http://www.gnu.org/licenses/old-licenses/gpl-2.0.html>

See the GNU General Public License, Version 2 at the end of this document. This license can also be viewed at the link provided above.

**Wireshark**

The license under which Wireshark is issued is the GNU General Public License.

- <http://www.gnu.org/licenses/old-licenses/gpl-2.0.html>

See the GNU General Public License, Version 2 at the end of this document. This license can also be viewed at the link provided above.

**Woodstox**

- <http://woodstox.codehaus.org/Licensing>



---

## XDoclet

- <http://xdoclet.sourceforge.net/xdoclet/licenses/xdoclet-license.html>

Copyright (c) 2000-2004, XDoclet Team

All rights reserved.

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

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

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.

Neither the name of the XDoclet team 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 COPYRIGHT HOLDERS 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.

## Yuval Oren

### Poccolo SAX Parser

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

See the Apache License, Version 2.0 at the end of this document. This license can also be viewed at the link provided above.

© Copyright 2002 Yuval Oren. All rights reserved.

## Apache License, Version 2.0

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

Apache License

Version 2.0, January 2004

### 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:

You must give any other recipients of the Work or Derivative Works a copy of this License; and

You must cause any modified files to carry prominent notices stating that You changed the files; and

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

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.

## GNU Lesser General Public License, Version 2.1

- <http://www.gnu.org/licenses/old-licenses/lgpl-2.1.html>

---

Version 2.1, February 1999

Copyright (C) 1991, 1999 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.

[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.

## **GNU Lesser General Public License, Version 3**

- <http://www.gnu.org/copyleft/lesser.html>

### **GNU LESSER GENERAL PUBLIC LICENSE**

Version 3, 29 June 2007

Copyright © 2007 Free Software Foundation, Inc. <<http://fsf.org/>>

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

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

#### **0. Additional Definitions.**

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

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

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

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

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

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

### **1. Exception to Section 3 of the GNU GPL.**

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

### **2. Conveying Modified Versions.**

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

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

### **3. Object Code Incorporating Material from Library Header Files.**

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

- a) Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License.

- b) Accompany the object code with a copy of the GNU GPL and this license document.

#### **4. Combined Works.**

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

- a) Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the Combined Work with a copy of the GNU GPL and this license document.
- c) For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document.
- d) Do one of the following:
  - 0) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.
  - 1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.

- e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

## **5. Combined Libraries.**

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

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

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

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

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

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

## GNU General Public License, Version 2

- <http://www.gnu.org/licenses/gpl-2.0.html>

Version 2, June 1991

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

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA

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

### Preamble

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

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

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

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

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

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

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

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

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

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

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

---

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

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

**2.** You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

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

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

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

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

**3.** You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

**a)** Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

**b)** Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

**c)** Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

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

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



---

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

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

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

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

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

**8.** If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

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

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

**10.** If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

## NO WARRANTY

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

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

END OF TERMS AND CONDITIONS

## How to Apply These Terms to Your New Programs

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

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

one line to give the program's name and an idea of what it does.

Copyright (C) yyyy *name of author*

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

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

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA. Also add information on how to contact you by electronic and paper mail.

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

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

Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type ``show w'`. This is free software, and you are welcome to redistribute it under certain conditions; type ``show c'` for details.

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

---

## GNU General Public License, Version 3

- <http://www.gnu.org/copyleft/gpl.html>

### GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright © 2007 Free Software Foundation, Inc. <<http://fsf.org/>>

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

### Preamble

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

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

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

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

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

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

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

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

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

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

## TERMS AND CONDITIONS

### 0. Definitions.

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

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

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

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

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

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

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

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

### **1. Source Code.**

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

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

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

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

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

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

## **2. Basic Permissions.**

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

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

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

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

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



---

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

#### **4. Conveying Verbatim Copies.**

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

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

#### **5. Conveying Modified Source Versions.**

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

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

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

## **6. Conveying Non-Source Forms.**

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

- a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.
- b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
- c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and non-commercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

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

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

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

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

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

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

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

---

## 7. Additional Terms.

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

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

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

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

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

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

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

## **8. Termination.**

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

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

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

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

---

## **9. Acceptance Not Required for Having Copies.**

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

## **10. Automatic Licensing of Downstream Recipients.**

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

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

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

## **11. Patents.**

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

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

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

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

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

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



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

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

## **12. No Surrender of Others' Freedom.**

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

## **13. Use with the GNU Affero General Public License.**

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

**14. Revised Versions of this License.**

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

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

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

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

**15. Disclaimer of Warranty.**

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

---

## **16. Limitation of Liability.**

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

## **17. Interpretation of Sections 15 and 16.**

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

END OF TERMS AND CONDITIONS

## **How to Apply These Terms to Your New Programs**

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

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

<one line to give the program's name and a brief idea of what it does.>

Copyright (C) <year> <name of author>

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

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

You should have received a copy of the GNU General Public License along with this program. If not, see <<http://www.gnu.org/licenses/>>. Also add information on how to contact you by electronic and paper mail.

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

```
<program> Copyright (C) <year> <name of author>
```

This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'. This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

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

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

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

## Open Source Initiative OSI - The BSD License

- <http://www.opensource.org/licenses/bsd-license.php>

The following is a BSD license template. To generate your own license, change the values of OWNER, ORGANIZATION and YEAR from their original values as given here, and substitute your own. Also, you may optionally omit clause 3 and still be OSD conformant.

---

*Note:* On January 9th, 2008 the OSI Board approved the "Simplified BSD License" variant used by FreeBSD and others, which omits the final "no-endorsement" clause and is thus roughly equivalent to the MIT License.

*Historical Note:* The original license used on BSD Unix had four clauses. The advertising clause (the third of four clauses) required you to acknowledge use of U.C. Berkeley code in your advertising of any product using that code. It was officially rescinded by the Director of the Office of Technology Licensing of the University of California on July 22nd, 1999. He states that clause 3 is "hereby deleted in its entirety." The four clause license has not been approved by OSI. The license below does not contain the advertising clause.

This prelude is not part of the license.

<OWNER> = Regents of the University of California  
<ORGANIZATION> = University of California, Berkeley  
<YEAR> = 1998

In the original BSD license, both occurrences of the phrase "COPYRIGHT HOLDERS AND CONTRIBUTORS" in the disclaimer read "REGENTS AND CONTRIBUTORS".

Here is the license template:

Copyright (c) <YEAR>, <OWNER>  
All rights reserved.

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

- Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 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.
- Neither the name of the <ORGANIZATION> 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 COPYRIGHT HOLDERS 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 COPYRIGHT HOLDER 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.

## Open Source Initiative OSI - The MIT License

- <http://www.opensource.org/licenses/mit-license.php>

The MIT License

Copyright (c) <year> <copyright holders>

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.