

Oracle Communications IP Service Activator
Version 5.2.4

Release Notes

First Edition
December 2008

ORACLE®

Copyright © 1997, 2008, Oracle. All rights reserved.

The Programs (which include both the software and documentation) contain proprietary information; they are provided under a license agreement containing restrictions on use and disclosure and are also protected by copyright, patent, and other intellectual and industrial property laws. Reverse engineering, disassembly, or decompilation of the Programs, except to the extent required to obtain interoperability with other independently created software or as specified by law, is prohibited.

The information contained in this document is subject to change without notice. If you find any problems in the documentation, please report them to us in writing. This document is not warranted to be error-free. Except as may be expressly permitted in your license agreement for these Programs, no part of these Programs may be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose.

If the programs are delivered to the United States Government or anyone licensing or using the Programs on behalf of the United States Government, the following notice is applicable:

U.S. GOVERNMENT RIGHTS Programs, software, databases, and related documentation and technical data delivered to U.S. Government customers are "commercial computer software" or "commercial technical data" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the Programs, including documentation and technical data, shall be subject to the licensing restrictions set forth in the applicable Oracle license agreement, and, to the extent applicable, the additional rights set forth in FAR 52.227-19, Commercial Computer Software--Restricted Rights (June 1987). Oracle USA, Inc., 500 Oracle Parkway, Redwood City, CA 94065.

The Programs are not intended for use in any nuclear, aviation, mass transit, medical, or other inherently dangerous applications. It shall be the licensee's responsibility to take all appropriate fail-safe, backup, redundancy and other measures to ensure the safe use of such applications if the Programs are used for such purposes, and we disclaim liability for any damages caused by such use of the Programs.

The Programs may provide links to Web sites and access to content, products, and services from third parties. Oracle is not responsible for the availability of, or any content provided on, third-party Web sites. You bear all risks associated with the use of such content. If you choose to purchase any products or services from a third party, the relationship is directly between you and the third party. Oracle is not responsible for: (a) the quality of third-party products or services; or (b) fulfilling any of the terms of the agreement with the third party, including delivery of products or services and warranty obligations related to purchased products or services. Oracle is not responsible for any loss or damage of any sort that you may incur from dealing with any third party.

Oracle, JD Edwards, and PeopleSoft are registered trademarks of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners.

Contents

Preface	v
Before contacting Oracle Global Customer Support (GCS)	v
Contacting Oracle Global Customer Support (GCS)	vi
Downloading products and documentation	vi
Downloading a media pack	vi
Service Activator publications	vii
Chapter 1 Service Activator New Features	11
What's new in Service Activator releases	11
Deployment, installation, and upgrade	18
Deployment	18
Installation	19
Upgrade considerations	19
Supported environments in this release	19
Certified Service Activator platform	19
ASAP-IPSA process integration pack	20
Third-Party integration	20
Supported devices and operating systems	21
Not supported in this release of Service Activator	24
VLAN Manager module	24
Extreme Device Driver	24
Other features not supported in this release	24
Not supported in next release of Service Activator	24
CISCO IOS Device Driver	25
Cisco IOS iBGP capability	25
Cisco IOS BGP Dampening capability	25
Behaviors and Limitations	25

Chapter 2 Issues	29
Customer issues fixed in Service Activator 5.2.4	29
Known issues in Service Activator 5.2.4	37
Appendix A	39
Third-Party Websites, Content, Products and Services Disclaimer	39

Preface

This document contains the following information:

- **Chapter 1: *Service Activator New Features*** This chapter lists new features and product enhancements in Oracle Communications IP Service Activator 5.2.4, 5.2.3, 5.2.2, 5.2.1, and 5.2.0. It also includes deployment and installation considerations for Service Activator and related software. This chapter also lists the supported versions of system components and the supported combinations of routing devices and their operating systems.
- **Chapter 2: *Issues*** This chapter provides a list of all customer issues fixed in this release.
- **Appendix A: *Third-Party Websites, Content, Products and Services Disclaimer*** This appendix lists the third-party copyright and trademark acknowledgements for software utilized in the products.

Before contacting Oracle Global Customer Support (GCS)

If you have an issue or question, Oracle recommends reviewing the product documentation and articles on MetaLink in the Top Technical Documents section to see if you can find a solution. MetaLink is located at <http://metalink.oracle.com>.

In addition to MetaLink, product documentation can also be found on the product CDs and in the product set on Oracle E-Delivery.

Within the product documentation, the following publications may contain problem resolutions, work-arounds and troubleshooting information:

- Release Notes
- Oracle Installation and User's Guide
- README files

Contacting Oracle Global Customer Support (GCS)

You can submit, update, and review service requests (SRs) of all severities on MetaLink, which is available 24 hours a day, 7 days a week. For technical issues of an urgent nature, you may call Oracle Global Customer Support (GCS) directly.

Oracle prefers that you use MetaLink to log your SR electronically, but if you need to contact GCS by telephone regarding a new SR, a support engineer will take down the information about your technical issue and then assign the SR to a technical engineer. A technical support representative for the Oracle and/or former MetaSolv products will then contact you.

Note that logging a new SR in a language other than English is only supported during your local country business hours. Outside of your local country business hours, technical issues are supported in English only. All SRs not logged in English outside of your local country business hours will be received the next business day. In order to obtain the broadest access to skilled technical support, Oracle advises you to log new SRs in English.

Oracle GCS can be reached locally in each country. Refer to the Oracle website for the support contact information in your country. The Oracle support website is located at <http://www.oracle.com/support/contact.html>.

Downloading products and documentation

To download the Oracle and/or former MetaSolv products and documentation, go to the Oracle E-Delivery site, located at <http://edelivery.oracle.com>.

You can purchase a hard copy of Oracle product documentation on the Oracle store site, located at <http://oraclestore.oracle.com>.

For a complete selection of Oracle documentation, go to the Oracle documentation site, located at <http://www.oracle.com/technology/documentation>.

Downloading a media pack

To download a media pack from Oracle E-Delivery

1. Go to <http://edelivery.oracle.com>.
2. Select the appropriate language and click **Continue**.
3. Enter the appropriate **Export Validation** information, accept the license agreements and click **Continue**.
4. For **Product Pack**, select **Oracle Communications Applications**.
5. For **Platform**, select the appropriate platform for your installation.

6. Click **Go**.
7. Select the appropriate media pack and click **Continue**.
8. Click **Download** for the items you wish to download.
9. Follow the installation documentation for each component you wish to install.

Service Activator publications

Brief description of Service Activator publications

- The *Product Overview* is the first document you should read. It provides an outline of the key features and benefits of Service Activator, an overview of the distributed architecture, an explanation of the basic concepts of VPN services, policy-based services and of the capabilities extended by the Configuration Development Kit.
- The *Release Notes* are updated for every release and provide:
 - a list of new features and product enhancements
 - lists of fixed customer issues and known internal issues
 - installation, upgrade, and deployment considerations
 - lists of supported versions of system components, routing devices, and operating systems
 - a summary of available publications
 - contact information for Global Customer Care.
- The *ReadMe* document is updated for each EFix. It provides information about the customer issue(s) fixed, and installation instructions. The *ReadMe* contains a cumulative listing of all EFixes solved in a release line-up.
- The *Setup Guide* provides information about installing Service Activator, upgrading to a new release, and troubleshooting.
- The *Migration Guide* describes how to migrate QoS device configurations from the Service Activator device driver to cartridges
- The *Administrator's Guide* provides details about daily operations and general administrative tasks, including user setup, system backup and restoration, system monitoring, database maintenance, and troubleshooting.
- The *Online Help* is delivered with the software release and provides context-sensitive help, procedures, and reference topics about Service Activator.
- The *Network Discovery and Basic Setup Guide* provides detailed step-by-step information on setting up the Service Activator system as well as discovering and representing the network topology.

- The Configuration Guides provide detailed step-by-step information on configuring policies and services:
 - *Configuring VPN Services* explains how to configure RFC2547 MPLS-based VPNs, Martini Layer 2 VPNs, Transparent LAN Services, Metro Ethernet VLANs, Circuit Cross Connects, MPLS Label Switched Paths (LSPs), and Internet Protocol Security (IPsec) tunnels.
 - *Configuring Policy Services* explains how to configure quality of service (QoS) and access control policies.
- The *Device Support guides* provide feature and support information about communicating with devices using the vendor-specific device driver. Technical details include supported features, configuration requirements and detailed examples. Guides include:
 - Cisco IOS Device Support Guide
 - Juniper E-series Device Support Guide
 - Juniper M-series Device Support Guide
- The *Cartridge guides* provide feature and support information about managing devices using the vendor/OS-specific cartridge. Guides include:
 - Cisco IOS Cartridge Guide
 - Cisco CatOS Cartridge Guide
 - Juniper JUNOS Cartridge Guide
 - Huawei Cartridge Guide
 - Foundry IronWare Cartridge Guide
 - Alcatel 5620 SAM Cartridge Guide
- The *OSS Integration Manager Guide* is for designers writing interfaces to Service Activator. It provides details of the API, including command syntax and detailed examples.
- The *OSS Java Development Library Guide* provides information for developing application programming interfaces to Service Activator.
- The *Event Handler Guide* explains how faults and events reported by Service Activator can be delivered to external subscribing systems and integrated with fault reporting systems.
- The *Network & SLA Monitoring Guide* is for users of third-party SLA monitoring and reporting tools. It explains the different measurement techniques available and how to configure Service Activator to measure service levels.
- The *ASAP-IPSA Process Integration Pack Guide* is for flow-through task users who create work orders in ASAP to perform service activation tasks using Service Activator.

- The SDK documentation suite provides complete information for developers to install the Software Development Kit, and to create new cartridges and configuration policies which extend Service Activator functionality. Guides include:
 - Software Development Kit Installation and Setup Guide
 - Software Development Kit Overview Guide
 - Base Cartridge Developer Guide
 - Service Cartridge Developer Guide
 - SDK Configuration Policy Extension Developer Guide
 - Configuration Management Developer Guide

Chapter 1

Service Activator New Features

This chapter lists new features and product enhancements in Oracle Communications IP Service Activator 5.2.4, 5.2.3, 5.2.2, 5.2.1, and 5.2.0. It also includes deployment and installation considerations for Service Activator and related software. This chapter also lists the supported versions of system components and the supported combinations of routing devices and their operating systems.

What's new in Service Activator releases

Service Activator 5.2.4 introduces the following new features and product enhancements:

Interface Registration Policy Object Enhancements

Allows interface policies to be registered using a regular expression for the interface name, as well as a list of SNMP interface types. Previous functionality only allowed for registration against a single SNMP interface type, which could have resulted in a large set of registration objects. The new behavior allows all interface types to be set up with far fewer registration objects and with greatly increased simplicity.

IPv6 Support Phase I: MQC-PHB & Interface Creation (Cisco IOS)

This feature supports the application of QoS to IPv6 traffic using MQC-PHBs. IPv6 addresses are supported as new global classification criteria which may be used by MQC-PHBs.

For Cisco IOS devices, this corresponds to the configuration of named IPv6 ACLs on the device and their reference in a class-map using a "match access-group" statement. The classification criteria currently supported within IPv4 ACLs is supported within IPv6 ACLs, but no additional IPv6-specific criteria aside from the IPv6 address are supported.

In addition to MQC-PHB, Phase I of IPv6 support also enables all interface creation/decoration policies to support the configuration of an IPv6 address against the interface and enables IPv6 support for the Static Route Config Policy.

Cartridge support for this functionality is provided for Cisco IOS.

Cisco IOS Cartridge VPN support for OSPF Routing

This feature adds Open Shortest Path First (OSPF) routing support for L3 Multiprotocol Label Switching (MPLS) VPNs and VRF-Lite to the Cisco cartridge.

Cisco IOS LSP, and PWE Cartridge

Introduces cartridge based functionality equivalent to that supported on the Cisco Device Driver for Label Switched Path (LSP) and Pseudowire Emulation (PWE) services.

L3 QoS Classification enhancements for Cisco cartridge

Support is added for additional Access Control Lists (ACL) and Match Criteria for the Cisco QoS Cartridge:

- ACL Port Range keyword: gt
- ACL ICMP Message types: administratively-prohibited
- Match Criteria: match ip rtp <port range> <port>

Transaction status monitoring

This feature introduces concrete activation status monitoring information into the IP Service Activator object model. The concrete activation status directly indicates whether a transaction's configuration changes, corresponding to each individual concrete, have been successfully activated on the network.

The system now maintains the concrete activation status for all client transactions, including those committed or scheduled through the GUI and the OSS Integration Manager (OIM). The concrete activation status is observable through the GUI and exposed through the OIM. This new transaction status monitoring functionality is maintained in the Policy Server.

This IP Service Activator core feature replaces the Transaction Monitor module. The Transaction Monitor is still supported in IP Service Activator 5.2.4 but will be discontinued in a future release.

IP Service Activator installation process enhancement

This release includes a completely new IP Service Activator installer. Using the Oracle Universal Installer technology, it greatly unifies and simplifies the installation of all product components as well as configuration of these components, including the introduction of a new product configuration user interface.

For more information on the installer, refer to the *Setup Guide*. For more information on the configuration GUI, refer to the *Administrator's Guide*.

URL-based Access Rule Classification for Cisco IOS QoS cartridge

This release adds Access Rule Classification criteria based on URL to the Quality of Service (QoS) feature of the Cisco IOS cartridge. The Cisco Device Driver continues to support this feature.

Configuration Policy enhancements

The configuration policy GUI extensions now uses a registration model. This enhances the installation, setup, administration, and use of the GUI extensions. The registration model also segregates interface management configuration policies from service configuration policies, and streamlines their selection and application to a target.

WRR configuration policy integrated in main CU implementation

The Weighted Round Robin (WRR) hardware queuing mechanism configuration policy has been integrated in the main Cartridge Unit (CU) implementation in Service Activator 5.2.4. As a result, the cartridge unit "cu4" has been consolidated in "cu1".

Service Activator 5.2.4 introduces the following product branding changes:

Oracle Product Branding

IP Service Activator is updated to reflect the new product identity within Oracle. This includes replacement of all customer-visible occurrences of "MetaSolv" with appropriate Oracle branding. Software graphical user interface (GUI) elements, customer documentation, and courseware have all been updated.

Service Activator 5.2.3 introduced the following new features and product enhancements:

Alcatel 5620 SAM Cartridge

This feature supports the Alcatel Ethernet Multi-Service Platforms 7750 and 7450. This cartridge supports discovery of Alcatel devices and interactions with the 5620 SAM application using SOAP. Domain support includes L3 MPLS VPN with static and eBGP routing protocols.

Alcatel 5620 SAM QoS Cartridge

This feature introduces support for Alcatel 5620 SAM QoS for layer 2 and layer 3 services on the Alcatel Ethernet Multi-Service Platforms 7750 and 7450. Alcatel provides a template mechanism for defining base QoS configurations, and Service Activator provides the capability to override these templates with specific values, on a per-site basis. The role-based policy mechanism allows a single Service Activator

Alcatel QoS policy to be defined at a certain level, such as the VPN level, and have its configuration inherited by each targeted VPN site, providing improved usability and automation over using the Alcatel 5620 SAM application in a standalone mode.

IP Activation Flowthrough Enhancements

The Service Activator ASAP Cartridge applies the powerful flowthrough capabilities of ASAP to the IP services supported by Service Activator. The cartridge has been enhanced in the following areas:

- Transaction feedback reporting and tracking in the SARM
- Service Activator configuration policy support via XML parameters
- Dynamic query and find interactions with Service Activator
- Support of update operations that conditionally modify or create an object
- Support of indexed parameters in ASDLs
- Consolidation of the Configuration Template Module (CTM) and core Service Activator support into a single cartridge

For more information, refer to the *ASAP-IPSA Process Integration Pack Guide*.

Unidirectional Link Permissions

This feature refines the Service Activator security model by introducing a new restrictive Link (Reference Only) permission that allows an object to be referenced, but prevents its definition from being changed, by linking other objects to it. The behavior of the existing Link permission is not affected.

Folders for Policy Objects

This feature provides the capability to arrange policy objects into customer-defined folders. The following object folders are supported: classification folders, role folders, traffic groups, and class of service folders. These new folders are similar to pre-existing customer-defined folder types, like PHB Group folders.

Cisco Cartridge enhancements

Enhancements in 5.2.3 include the following features:

- The Cisco IOS Cartridge adds QoS support for Cisco 12000-series devices.
- Cisco pre-checks — in particular, support is provided for Manual Configuration Overlap Detection.
- The Cisco IOS Cartridge adds support for L2 QoS features.
- The new Cisco CatOS L2 QoS Cartridge is introduced.

Cartridge Installer

A new GUI tool is provided for installing and uninstalling standard cartridges.

Cartridge SDK: Base Cartridge SDK

The Base Cartridge SDK allows third-party developers such as network engineers and system integrators to design and deploy cartridges to provide support of vendor devices not directly supported by Service Activator. Base cartridges support a standard set of fundamental operations for interacting with a device.

Base cartridges enable the use of the Configuration Template Module (CTM) and of basic configuration management functionality, and they can be built on to deploy additional services created using the Configuration Policy SDK, Service Cartridge SDK and the Configuration Management SDK.

Cartridge SDK: Service Cartridge SDK

The Service Cartridge SDK allows third-party developers such as network engineers and system integrators to design and deploy vendor-specific implementations of services in their network. This enables the activation of services for vendor-specific devices on which the service is not directly supported by Service Activator. The cartridges implemented using the SDK can be standard product cartridges or cartridges developed using the Base Cartridge SDK. This feature includes documentation (procedures and a reference) and samples and templates to enable the design, generation, and deployment of new service cartridges.

Cartridge SDK: Configuration Policy SDK

The Configuration Policy SDK allows third-party developers such as network engineers and system integrators to design and deploy configuration extensions in their network. This enables the activation of new services using new configuration commands not directly supported by Service Activator.

The cartridges implemented using the SDK can be standard product cartridges or cartridges developed using the Base Cartridge SDK. This feature includes documentation (procedures and a reference) and samples and templates to enable the design, generation, and deployment of new configuration policies.

Service Activator 5.2.3 removed support for the following device drivers and modules

The following device drivers and modules are not supported in this version of Service Activator:

- Riverstone Device Driver
- Alcatel 7670 Device Driver
- Cisco CatOS Device Driver
- IPsec VPN module

Service Activator 5.2.2 introduced the following new features and product enhancements:**Synchronization and Recovery**

This feature enables the detection and correction of mismatches between the policy service object model, the network processor view of device configurations, and the actual device configuration, which is especially helpful in disaster recovery scenarios. A version identifier is introduced to ensure the configuration on the device and the corresponding configuration in Service Activator are the same.

In addition, the network processor view of the device configuration is now stored in the database to ensure it is always synchronized with the policy service object model backup and restore operations.

Network Processor Scalability

With the network processor view of the device configuration stored in the database, it is now possible to run multiple network processor instances within a Service Activator deployment. This allows more devices to be managed and distributed between multiple network processors and also allows the movement of devices from one network processor to another for load-balancing purposes.

Cisco IOS Service Assurance Cartridge

This cartridge introduces support for the following features:

- **Flexibility for IOS Variations** — This feature enables the selection of Cisco IOS SAA command variations and registration to IOS versions using the options framework, allowing for easier configuration and maintainability.
- **NetFlow and SAA Service Enhancements** — This feature displays the configuration state of all SAA and NetFlow services, by way of concretes, in the Service Activator GUI. The concrete state can also be queried in the Integration Manager/OJDL. In addition, NetFlow services have been introduced with the network processor, by way of configuration policies.

Cisco IOS Cartridge - other enhancements

- **Cartridge Unit Consolidation** — The different Cisco cartridge units have been consolidated into a single one, with options used to control configuration patterns.
- **Configuration Tool** — This new command-line tool automatically generates a set of production-ready options files for services supported by the Cisco IOS cartridge. The tool can also generate a registry file and capabilities files.

Service Activator 5.2.1 introduced the following new features and product enhancements:

Cisco IOS Service Assurance Cartridge

This cartridge introduces support for the following features:

- Cisco Service Assurance Agent (SAA), including:
 - Management of Cisco IP SLA probes
 - A standard driver interface that enables cartridge-based command delivery
 - IP SLA command syntax in Cisco IOS release 12.4
- Cisco IOS NetFlow, including:
 - New object model functionality that provides explicit control of source address and source port values in the Service Activator GUI

Cisco IOS QoS Cartridge Enhancements

This cartridge introduces support for the following features:

- PHB: regular CoS mechanisms, including WFQ
- PHB: VC mechanisms with ATM and FRTS support for:
 - Frame Relay hold queue depth control
 - ATM hold queue depth control
 - ATM buffers control
- MQC-PHB: Full support of LLQ and CBWFQ
- MQC-PHB: Nested MQC PHB
- MQC-PHB: RTP header compression
- Explicit GUI control of inbound FRTS shaping
- Explicit control of named/numbered ACL for access rules, policing rules, and classification rules

Cisco IOS L3 VPN Cartridge Enhancements

This cartridge introduces support for the following features:

- VPN support for RIP routing
- RIP activation for the VRF-Lite service - individual interfaces connected to the VRF instance providing VRF-Lite may be configured to exchange routing information using the RIPv2 protocol

Juniper JUNOS Interface Configuration Management Cartridge Enhancements

This cartridge introduces support for Ethernet subinterface creation.

Cartridge Audit Synonyms

This feature enhances the audit process with support for equivalent commands (or synonyms), extending the cartridge applicability to a wider range of device OS variants. This feature allows administrators the flexibility to reconfigure command equivalence on a deployed system.

Concrete Audit State

This feature enables you to determine the network configuration consistency for services activated by Service Activator cartridges by comparing the current device configuration with the most recently activated service data. The configuration consistency state is represented as a specific pass/fail indication at the service (concrete) level, and is aggregated for all services at the device level. This feature also includes logging functionality for audit failure isolation.

Interface Level Command Delivery Modes

This feature extends the existing device-level control of command delivery available on devices managed by Service Activator cartridges by providing a finer granularity of control. You can now specify command delivery modes on a per-interface or subinterface level. You can also choose between two device operating modes: Online Mode and Offline Maintenance Mode.

Service Activator 5.2.0 introduced the following new features and product enhancements:

- Cisco IOS Cartridge: L3 QoS and EBGP enhancements
- Support of QoS configuration migration from the Device Driver to the Cisco Cartridge
- INA Policy Services integration: support of overlapping IP address allocation support
- Support of Solaris 10

Deployment, installation, and upgrade

Deployment

Refer to the Service Activator *Planning Guide* for information on how to plan a Service Activator deployment.

Installation

Refer to the Service Activator *Setup Guide* for installation instructions.

Upgrade considerations

Refer to the Service Activator *Setup Guide* for upgrade instructions.

Supported environments in this release

This section lists the supported environment for the Service Activator platform (server and client), vendor devices and operating systems, and integrated third-party applications.

Certified Service Activator platform

The IP Service Activator 5.2.4 release has been certified against the following environments:

Server

- Solaris 8, Maintenance Update 7, and Jan 26/07 or later recommended patch cluster
 - or
 - Solaris 9 Maintenance Update 4, and Jan 26/07 or later recommended patch cluster
 - or
 - Solaris 10, and Jan 26/07 or later recommended patch cluster

To ensure that Service Activator works correctly, install the full OEM version of Solaris.

- Oracle10g (version 10.2.0.1.0 or higher) – Use the WE8ISO8859P1 character set with Oracle10g database versions
 - or
 - Oracle 11g – Use the WE8ISO8859P1 character set

For information about installing Oracle for Service Activator, refer to the Service Activator *Setup Guide*. To obtain detailed Oracle installation information, refer to [Downloading products and documentation on page vi](#).

- Oracle Instant Client version 10g, packaged with Service Activator (for Solaris operating system [SPARC] 32-bit version)

Client

- Windows 2000 Professional SP4

- Windows XP Professional

ASAP-IPSA process integration pack

The following Oracle Communications products are supported when using the ASAP-IPSA process integration pack:

- IP Service Activator 5.2.4
- ASAP 5.2.4
- Service Creation Environment 3.0.1

Third-Party integration

The following applications support or are supported by this Service Activator release:

- For InfoVista Integration Module:
 - InfoVista version 2.3 (service pack 1 or higher)
 - InfoVista Production Server
 - VistaProvisioner
 - VistaMart
 - VistaPortal
- For MicroMuse Integration Module:
 - Micromuse Netcool Impact Server version 2.3 with XML DSA
 - Micromuse Netcool Omnibus version 3.6
- For the OSS Java Development Library:
 - Java 2 SDK, Standard Edition version 1.4.2_13
- Other applications used by Service Activator:
 - Python 2.2
 - OpenSSL version 0.9.7c
 - OpenSSH version 3.7p1
 - JRE 1.6.0_02
 - JRE 1.4.2_13
- Supplemental software components required by Service Activator:
 - omniORB 2.8.0 and omniORBpy 1.4.0
 - GCC run-time libraries 3.2.2

- Saxon-B 8.8, Java platform
- Software Development Kit (SDK) environment applications:
 - JDK 1.4.2
 - junit 3.8.1
 - ant 1.6.2
 - velocity 1.4
 - Saxon-B 8.8, Java platform

Supported devices and operating systems

The following tables list Service Activator support for vendor devices and operating systems in this release. For more information about which services are supported on each device and OS combination, refer to the respective cartridge guide or device support guide.

Cisco IOS cartridge

Devices supported by Service Activator	Cisco IOS version
Cisco 1000, 2000, 3000, 4000, 6000, 7000, 10000, 12000 series devices	IOS 12.0-12.4

Cisco CatOS cartridge

Devices supported by Service Activator	Cisco CatOS version
Cisco 5500, 6500 series devices	CatOS 7.6, 8.5

Alcatel-Lucent 5620SAM cartridge

Devices supported by Service Activator	Service Aware Manager version
Alcatel-Lucent 7450 series devices	5620 SAM
Alcatel-Lucent 7750 series devices	version 5.0 R2

Juniper JUNOS cartridge

Note: This cartridge is customer-specific and not generally supported

Devices supported by Service Activator	JUNOS or JUNOSe version
Juniper M-Series	JUNOS 7.4, 8.4,
Juniper T-Series	9.0, and 9.1
Juniper J-Series	

Huawei cartridge

Devices supported by Service Activator	VRP Version
Huawei Quidway Series Routers AR18-xx, AR28-xx, AR46-xx	3.4
Huawei Quidway NetEngine 05/08/16	5.10
Huawei Quidway NetEngine 16E, 40-2, 40-4, 40-8, 80	5.10
Huawei Quidway NetEngine 40E, 80E	5.3
Huawei Quidway Eudemon 500, 1000	3.1

Foundry cartridge

Devices supported by Service Activator	IronWare Version
Foundry NetIron MLX series	3.7, 3.8
Foundry NetIron XMR series	

Cisco Device Driver

Devices supported by Service Activator	Cisco IOS version
Cisco 1000, 2000, 3000, 4000, 6000, 7000, 10000, 12000 series devices	IOS 12.0-12.4

Juniper M, T, and J-Series Device Driver

Devices supported by Service Activator	JUNOS or JUNOSe version
Juniper M-Series	JUNOS 7.4, 8.4,
Juniper T-Series	9.0, and 9.1
Juniper J-Series	

Juniper E-series Device Driver

Supported by Service Activator	
Devices	E-series 700 E-series 1410
Operating Systems	JUNOS 5.0.1 JUNOS 5.2 JUNOS 7.0.1

Not supported in this release of Service Activator**VLAN Manager module**

Effective with IP Service Activator release 5.2.4, the VLAN Manager module is not supported. The VLAN Manager module is no longer required given the introduction of the VLAN Configuration Policies. The VLAN Configuration Policies provide service data persistence and also enable VLAN policy inheritance for effective cross-network Ethernet VLAN management.

Extreme Device Driver

Effective with IP Service Activator release 5.2.4, the Extreme Device Driver is not supported. Any future requirement for service activation on Extreme Networks equipment shall be fulfilled with the Cartridge Software Development Kit (SDK).

Other features not supported in this release

The following features are currently not supported on the Service Activator Cisco IOS Cartridge:

- Override Route Distinguisher at the VPN level
- WRED on the PVC level

Not supported in next release of Service Activator

Several features will no longer be supported in releases after Service Activator 5.2.4. If you have any additional questions regarding the features listed below, please contact Oracle Global Customer Support (GCS).

CISCO IOS Device Driver

IP Service Activator 5.2.4 is the final release to support the Cisco IOS Device Driver. Customers using Cisco IOS Device Driver will continue to be supported on Service Activator 5.2.4 and earlier releases in accordance with Oracle GCS policies.

In order to upgrade from Service Activator 5.2.3 or 5.2.4 to the next major release beyond Service Activator 5.2.4, Service Providers will be required to migrate all Cisco Device Driver managed devices to the Cisco IOS Cartridge technology. This will allow Service Providers to benefit from the latest features and functions available on the Cartridge technology (subject to having the appropriate software license rights).

Some of these additional capabilities include Interface Configuration, Multicast VPNs, VRF Lite, VRF-aware IPsec, base configurations (banner, SNMP, and so on), as well as the possibility to deploy our leading-edge Service-Aware Configuration Management capabilities.

Cisco IOS iBGP capability

IP Service Activator release 5.2.4 is the final release to support Cisco IOS iBGP (Interior Border Gateway Protocol). Customers using this functionality on the Cisco IOS Device Driver will continue to be supported on Service Activator 5.2.4 and earlier releases in accordance with Oracle GCS policies.

Cisco IOS BGP Dampening capability

IP Service Activator release 5.2.4 is the final release to support Cisco IOS VPN-level BGP Dampening. Customers using this functionality on the Cisco IOS Device Driver will continue to be supported on Service Activator 5.2.4 and earlier releases in accordance with Oracle GCS policies.

Behaviors and Limitations

This section lists specific behaviors and limitations in Service Activator.

- The following configuration policies are not supported for use when decorating subinterfaces in this release:
 - atmSubinterfaceData
 - frSubinterfaceData
 - vlanSubinterfaceData

If you attempt to use these configuration policies, Service Activator raises the following validation error:

```
SubInterface creation policy cannot be currently used as a
decoration
```

- If you manage a device using the Cisco cartridge, apply services on the device successfully, and then delete the device from Service Activator, the cartridge will purge its knowledge of the device without removing services from the device. You must delete the service instances explicitly before deleting the device - this will ensure the corresponding configuration is removed from the device. (This is different from the behavior of the Cisco Device Driver, which would remove all managed services from the device before purging its knowledge of the device).
- For a device managed by a cartridge, an existing manually configured VRF will be deleted if the same IP VRF table name is then used on the Site dialog, VRF property page, for the same device. When specifying VRF table names for a cartridge-managed device, ensure that the same name is not already used on the device.

You can alter this behavior so that no VRF is removed from Cisco devices by modifying the value of `manualVrfProtection` parameter, in the Network Processor's `default.properties` file. A value of `true` means VRFs will not be deleted. The default value is `false`.

- When launching the MPLS LSP module from an interface other than the loopback interface in a bi-directional tunnel, you are forced to use the loopback interface of the destination device.
- There is no direct migration path from the existing device driver scripted implementation (CDK) of the Label Switched Path (LSP) to the new LSP Configuration Policy. Contact Oracle GCS if you require assistance with this migration.
- When a device is discovered, the proxy agent that discovers the device is indeterminate. While running multiple proxy agents (Network Processor and/or device driver proxies) on a domain, you cannot determine which proxy agent will discover a device. This behavior applies only to device discovery or device-proxy agent load balancing. To avoid this behavior, assign a device driver proxy agent

as the default in the Domain properties. Manually load balance devices across the active proxy agents.

- In a rollback scenario, some cases of manual configuration on a device can cause the network processor to not apply new device configurations, and then fail rollback. You cannot provision the device until you clear the manual configuration causing the failure. To resolve this issue, remove the manual configuration and then proceed with the device configuration.
- Service Activator does not report all possible errors from the network for a given transaction. If the transaction has data resulting in multiple errors, such as duplicate LAN and duplicate WAN prefix list and sequence number when they are done in the same step, the error reported is generic.
- The cartridges sometimes send duplicate interface commands to the router. The extra commands are generated to ensure that the router context is reset to a known state at various points in the configuration process. This prevents issues observed on some devices where the return context after an exit statement is inconsistent.

Chapter 2

Issues

This chapter provides a list of all customer issues fixed in this release.

Customer issues fixed in Service Activator 5.2.4

This section contains customer issues that are fixed in this release of Service Activator.

The following table provides the bug number and a brief description of the issue.

Bug Number	Subject
7437863	MIGRATED DEVICE MODEL IS INVALID
7434828	NO POP UP WINDOW TO WARNING WHEN A FOLDER CONTAINING CUSTOMERS IS DELETED
7348192	IPSA SYSTEM APPEARS STALLED AFTER UPGRADE FROM PATCH 5 TO 6
7345011	AUDIT FAILURE HANDLING PVC STATEMENTS
7338743	CARTRIDGE CONFIGURATION TOOL GENERATES CONFLICTING CAPABILITIES
7332119	Migration Preview Failure - Invalid Device Model Generated
7332114	TRAILING SPACE IN THE AUDIT TRAIL CAUSING SEVERE PROVISIONING PROBLEMS
7326912	DBUPGRADE SCRIPT FAILS WITHOUT ERROR LOG

Bug Number	Subject
7323376	FRAME-RELAY FRAGMENT [VALUE] END-TO-END NOT FUNCTIONING
7314112	ABLE TO UNLINK A COS OBJECT FROM THE DOMAIN AND COMMIT - CAUSES CORE
7307770	CONFIGURATION FAILED VALIDATION (AUTO-MDIX IS SUPPORTED ONLY ON ETH OR GIGABIT)
7307481	IOS PORT & VLAN - UNABLE TO SET NO SPEED NONNEGOTIATE
7265034	GSR CAPABILITIES: ADDING TRAFFIC-SHAPING TO INTERFACE
7258167	CISCO CARTRIDGE ERROR WHEN LINKING ONE INTERFACE TO TWO SITES
7256098	FAIR QUEUE FOR CISCO 12K CANNOT BE TURNED OFF USING CAPABILITIES
7255438	GSR (C12K) ATM PVC CAPABILITY DISCOVERY ISSUE
7253447	GUI SITE INTERFACE DESCRIPTION FIELD HAS RIGHT TO LEFT READING ORDER
7244486	OIM DOES NOT ALLOW YOU TO CHANGE THE NAME ATTRIBUTE FOR ROLEINTERFACE OR DEVICE
7215006	VALUE OUT OF RANGE EXCEPTION" WHILE CONFIGURING ACCESS RULE ON NP AND CDD
7208666	MULTIPLE VLANDEFINITION WITH SAME VLAN ID CANNOT BE APPLIED TO SAME DEVICE
7208581	COMMANDS ISSUED ON WRONG ORDER WHEN ADDING WRED INTO A MQCPHB
7176952	AUDIT REPORTS IN RED FOR SAA CONFIG THAT IPSA PROVISIONED CORRECTLY
7176176	SUCCESS MESSAGES TO BE UPDATED FOR ADD / MODIFY / DELETE OF VLANS
7169681	REMOVAL OF SPEED NEGOTIATE COMMAND SENDS INCORRECT COMMAND
7165120	VLANDEFINITION CONFIG POLICY LIMITS VLAN TO 100 PER POLICY
7162966	CTM TEMPLATE WITH LONG COMMANDSTRING CONTAINING QUOTES FAILS WHEN...
7158063	CISCO CARTRIDGE DOES NOT AGGREGATE GROUPS AS PER GROUP DEFINITIONS

Bug Number	Subject
7155645	ACL ORDER IN CISCO DEVICE DRIVER DOES NOT MATCH LIST ORDER IN NETWORK PROCESSOR
7154145	NP THROWS JAVA EXCEPTION WHEN APPLYING POLICING RULE TO INTERFACE
7147710	POLICY-MAP NAMES WITH SPECIAL CHARS ":"
7147347	REMOVAL OF SPEED COMMAND ON ETHERNET INTERFACES PRODUCES ROLLBACK
7140060	BASE_OPTIONS REQUIRED FOR 5.2.3 PATCH 3
7136275	CTM VALIDATOR CAN'T HANDLE NESTED COMMANDS.
7134267	NO FAULT IS CREATED WHEN USING DUPLICATE VLAN IDS IN VLANINTERFACE CONFIG POLICY
7133798	SUPPORT FOR VLAN INTERFACE MISSING IN CISCO CARTRIDGE
7130369	ACL MANAGEMENT OVERWRITE CAUSE ERROR IN UI
7129911	ENABLING "MANAGEMENT RULE OVERRIDE" RULEACCESS ATTRIBUTE CREATES FAULT ON CDD
7116133	VLAN CONFIGURATION POLICY PERFORMANCE IS VERY SLOW
7113655	CLASS MAPS COULD HAVE INCORRECT REFERENCES TO THE ACLS
7113601	CISCO DEVICE DRIVER DOES NOT IGNORE IPV6 CONFIGURATIONS
7113583	JAVA.LANG ASSERTIONERROR: VALUE OF VARIABLE IS UNDEFINED (NULL) IN NP LOG
7047199	RULEACCESS PERMIT ATTRIBUTE OVERRIDES ALL CLASSIFICATION OBJECTS MATCH FLAG
7047074	IPSA REPLACES MANUAL VLAN IDS ON TRUNK INTERFACES WITH ITS OWN VLAN IDS IN CP
7046789	INA PROXY DOES NOT WORK WITH POLICY SERVICES 5.5
7044526	CAN'T APPLY SRR QUEUE BANDWIDTH ON FASTETHERNET PORT ON 3750ME
7044217	THE TEXT ENTRY FIELD FOR VLAN IDS IN THE VLAN INTERFACE IS TOO SMALL

Bug Number	Subject
7041147	PROVISIONING CERTAIN HW/SW CAUSES CLI PROBLEM WHEN REMOVING ACLS
7040609	IPSA CREATED INTERFACES DO NOT HAVE IP ADDRESS AVAILABLE UNTIL REDISCOVERY
7038773	ALTERATION TO AUDIT SYNONYMS FILES REQUIRED TO SUPPORT CISCO ACL FORMATTING
7032631	SAA DEFAULT VALUES INCORRECTLY SHOWN AS RED IN THE AUDIT REPORT
7032350	ACL-RELATED ERROR MESSAGE DOES NOT HELP RESOLVE NAMING AND DATA CONFLICT
7031818	ALLOW CREATION/ASSIGNMENT OF MULTIPLE INTERFACE VLAN POLICIES AGAINST SAME PORT
7021738	ALCATEL CARTRIDGE - ALLOW FOR MIGRATION OF ANY ?AUTO-GENERATED? NAMES OR IDS
7019773	IPSA GUI TERMINATES IF INTERFACE POLICY REGISTRATIONS ARE INCORRECTLY LINKED
7013227	TRAFFIC-TYPE DEFINITIONS CANNOT USE 'GREATER THAN' FOR PORT SELECTION ON CISCONP
6996211	ERROR MESSAGE WHEN DELETING CLASS IGNORED / CISCO NP COMMANDEXECUTOREXCEPTION
6995674	USING INVALID SYNTAX IN OIM CAUSES SYSTEM INSTABILITY
6992643	OSPF MD5 KEYS NOT DECRYPTED ON POLICY SERVER RESTART
6990055	UNABLE TO MODIFY REDISTMETRICTYPEBGP2OSPF THROUGH THE OIM
6980141	CP VLANSUBINTERFACEDATA TO SUPPORT MTU SIZE
6979317	CANNOT CONFIGURE POLICIES ON TWO DIFFERENT INTERFACES ON A ROUTER.
6976191	IPSA GENERATES AN ERROR FOR A VC_BASED_VBR-NRT CONFIGURATION POLICY
6969533	IOS - ERROR WHEN DISABLING MULTIPLE CONCRETES FOR DOT1Q PORT CONFIGURATION

Bug Number	Subject
6966709	"MLS QOS TRUST DSCP" TO BE INCLUDED INTO OTHER CONFIGURATION POLICIES
6966601	LINE FEEDS ARE ADDED TO XML CODE WHEN USING CTM API TO INSERT TEMPLATES
6966315	JUNIPER SERVICE DELETES STATIC ROUTE WITHOUT 'NEXT-HOP' TERM
6963273	CANNOT SPECIFY SECONDARY IP ADDRESS WITHOUT SPECIFYING PRIMARY IP ADDRESS
6956819	GENERATED CLASS MAP COMMANDS DIFFER FROM CISCO DEVICE DRIVER BEHAVIOR
6956815	DEFAULT VALUES ARE NOT PUSHED BY THE NETWORK PROCESSOR
6956805	UNABLE TO CREATE PHB OBJECT VIA OIM USING COS OBJECT CONTAINED IN A COS FOLD...
6956804	CONFIGURATION POLICY CREATION MENU LOSES CURSOR WHEN FOCUS CHANGES
6956802	GUI MENU ITEMS SHOULD BE GRAYED OUT FOR NON NETWROK PROCESSOR PROXY AGENTS
6953353	NEED THE 5.2.3 CONFIGURATION POLICY SINGLE ZIP FILE
6953136	CONFIG POLICY SETS THE NETFLOW INACTIVE TIMEOUT VALUE TO 15 WHEN LEFT BLANK/NULL
6942179	READ/WRITE USER CAN CREATE CLASSIFICATION GROUP THROUGH GUI, BUT NOT THROUGH API
6942110	BETTER CONTROL OVER CLASSIFICATION GENERATION REQUIRED
6941369	STRICT CLASSIFICATION AGREGATION - ADAPTATION TO 5.2.3
6941116	"MLS QOS TRUST DSCP" TO BE INCLUDED INTO OTHER CONFIGURATION POLICIES
6929172	MODIFYING THE POLICER NAME FIELD IN A CONFIGURATION POLICY CAUSES A FAULT

Bug Number	Subject
6919497	SUPPORT OF DEFAULT- INFORMATION ORIGINATE IN THE DEVICE RIP PORTION OF A VPN
6915122	UNABLE TO CREATE PHB OBJECT VIA OIM USING COS OBJECT CONTAINED IN A COS FOLD...
6906068	OIM CLI CREATE/MODIFY TRAFFICPORT ICMPOPTIONS=0 NOT POSSIBLE
6906067	INTERFACE RIGHT-CLICK SHOWS INVALID OPTIONS WHEN DECORATE POLICY LINKED
6906066	UNABLE CANNOT CREATE NON-MQC PHB OBJ IN OIM USING COS OBJ WITHIN A COS FOLDER
6906061	GLOBAL SEARCH IN OIM REQUIRES BETTER PERFORMANCE
6902061	STM1 CHANNALISED SERIAL INTERFACE CONFIG POLICY NOT WORKING ON 7609
6900166	UNABLE TO LINK INTERFACEPOLICYREGISTRATION OBJECTS TO INTERFACES
6899608	UNABLE TO GENERATE THE REQUIRED CLASS-MAP, ACL CONFIGURATION
6896235	GENERATED CLASS MAP COMMANDS DIFFER FROM CISCO DEVICE DRIVER BEHAVIOR
6892665	IPSA AUDIT DOES NOT PROPERLY HANDLE IOS VARIANCE IN THE MULTILINK CONFIGURATION
6892448	AUDIT FAILURE FOR NETFLOW ACTIVE TIMEOUT
6882443	IPSA DOES NOT REMOVE THE IP ADDRESS FROM THE ORCHESTREAM GROUP
6881912	IPR ENHANCEMENT - GUI ATTRIBUTE NAME CHANGE REQUIRED
6854873	CISCO ETHERNET PORT CHARACTERISTICS CP FLOWCONTROL SEND ON REJECTED 3508G-XL
6854754	CISCO ETHERNET PORT CHARACTERISTICS CP UDLD AGGRESSIVE REJECTED 3508G-XL
6854733	CISCO IOS PORT & VLAN - INCORRECT COMMAND FOR AUTO NEGOTIATION

Bug Number	Subject
6851735	CISCO CARTRIDGE ERROR WHEN DEVICE DESCRIPTION CONTAINED "EXPERIMENTAL VERSION"
6851728	DEVICE RESTARTS WHILE PARSING RUNNING CONFIGS WITH RTR XXXX SCHEDULE COMMANDS
6851557	CISCO DEVICE DRIVER DOES NOT SUPPORT CERTAIN ACL PORT CONFIGURATION KEYWORDS
6848229	INTERFACE REGISTRATION POLICY OBJECTS RESTRICTED TO A SINGLE SNMP I/F TYPE
6836974	MATCH ANY , MATCH DSCP COMMANDS NOT PROVISIONED
6836814	OIM INCORRECTLY INVALIDATES "REDISTMETRICTYPEBGP2OSPF" WHEN SET TO 1 OR 2
6826583	CISCO IOS PORT AND VLAN - SRR QUEUE BANDWIDTH PARAMETERS MISSING.
6822820	IOS L2 PORT & VLAN - MISMATCH BETWEEN DEVICE AND IPSA NOT FOUND DURING AUDIT
6822691	CISCO IOS - MQC PHB - INCORRECTLY CONFIGURED CLASS MAPS
6820340	DUPLICATE COMMAND IDS IN DEFAULT AUDIT TEMPLATE
6817943	CLASSIFICATIONGROUP AND CLASSIFICATIONOBJECTS MISSING CLASSIFICATIONORDER
6814960	NO SUPPORT FOR MDIX AUTO IN CISCOETHERNETPORTCHARACTERISTICS CONFIG POLICY
6805840	CISCO IOS L2 PORT AND VLAN - CISCO 3750-12S - MISSING COMMANDS DOT1Q PORT CONFIG
6804688	CONCRETES REMAIN WHEN DEVICE UNMANAGED IF INTERFACE IN "NOT FOUND" STATE
6802672	THE CISCO DRIVER DOES NOT PROPAGATE CERTAIN CAPS TO THE ATM AND FRAME RELAY VCS
6798289	EIGRP AND EBGP REDISTRIBUTION BY DEFAULT UPDATE IN BOTH ADDRESS FAMILIES

Bug Number	Subject
6789677	BGP MULTIPATH SUPPORT REQUIRED
6789453	AMBIGUOUS ERROR MESSAGE WHEN TRYING TO WRONGLY APPLY A CIR TO A POLICY-TO-QUEUE
6789316	ALCATEL SAM CARTRIDGE DOES NOT SUPPORT ".*" NOTATION TO REPRESENT VALUE 4095
6789297	SERVICE ID CHANGING SILENTLY ON ADDING NEW VPN SITES
6784106	NETWORK PROCESSOR NEEDS ENTRY IN NP_PROPERTY TABLE WHEN STARTING UP NEW DB
6781644	I/O EXCEPTION RAISED DURING JUNIPER ORDER CONFIGURE TRANSACTION
6774908	CISCO DIA CONFIGURE TRANSACTION TOOK TOO LONG TO COMPLETE
6767674	UNABLE TO RESTRICT INSTALLATION OF CISCO DEFAULT DRIVER (CDD) ACCESS RULES
6762896	CONFIGURATION DETAILS SUPPRESSED DURING PER SERVICE AUDIT OF JUNIPER DEVICE
6762871	INVALID TARGET DM BEING GENERATED
6750592	REDISTRIBUTE OPTIONS FOR ALL ROUTING PROTOCOLS - MORE CONTROL REQUIRED
6743446	QOS POLICY APPLIED ON CISCO 878 AND 1803 ATM PVCS CAUSES CISCO CARTRIDGE ERROR
6708471	MULTILINK INTERFACE CREATION/DECORATION POLICY MISSING CONFIGURATION COMMANDS

Known issues in Service Activator 5.2.4

This section includes internal issues found during testing of this release of Service Activator and remain unresolved at the release date.

Bug Number	Subject
7602337	SERVICE ACTIVATOR GUI HELP PAGE IS MISSING FOR ALL POLICY TYPES
7602332	IPSA GUI INTERFACE CONFIGURATION POLICY CAN NOT BE DELETED IN OFFLINE MODE
7602321	ASAP IPSA CARTRIDGE: ASDL PARAMETER TYPES SHOULD BE CONSISTENT WITH OIM OBJECTS
7298901	[CONCURRENCY] CONCRETE ACTIVATION STATUS SET TO FAILED

Appendix A

Third-Party Websites, Content, Products and Services Disclaimer

The Programs may provide links to Web sites and access to content, products, and services from third parties. Oracle is not responsible for the availability of, or any content provided on, third-party Web sites. You bear all risks associated with the use of such content. If you choose to purchase any products or services from a third party, the relationship is directly between you and the third party. Oracle is not responsible for: (a) the quality of third-party products or services; or (b) fulfilling any of the terms of the agreement with the third party, including delivery of products or services and warranty obligations related to purchased products or services. Oracle is not responsible for any loss or damage of any sort that you may incur from dealing with any third party.

Oracle, JD Edwards, PeopleSoft and Siebel are registered trademarks of Oracle Corporation and/or its affiliates. Other names must be trademarks of their respective owners.

Adobe, Adobe Reader, Acrobat, Adobe Acrobat, Adobe FrameMaker and Macromedia RoboHelp are trademarks of Adobe Systems, Incorporated. This product includes software developed by the Apache Software Foundation (<http://www.apache.org/>).

BEA, BEA WebLogic Server, BEA WebLogic Workshop and BEA WebLogic Platform are registered trademarks of BEA Systems, Inc. All rights reserved.

BeanShell is licensed under the Sun Public License (<http://www.opensource.org/licenses/sunpublic.php>); the Source Code version of BeanShell is available under the terms of this license.

Business Objects and Crystal Reports are trademarks or registered trademarks of Business Objects SA or its affiliated companies in the United States and other countries.

Cisco, Catalyst and Cisco IOS are registered trademarks of Cisco Systems, Inc.

Clarify, the Clarify logo, ClearHelpdesk, ClearLogistics, ClearQuality, ClearSales, ClearSupport, and e.link are trademarks of Clarify Inc.

Cluster Server, File System, and Volume Manager are trademarks of Veritas Software, Inc.

COMMON LANGUAGE is a registered trademark, and Telcordia, CLCI, CLEI, CLFI, and CLLI are trademarks of Telcordia Technologies, Inc. (formerly Bellcore).

Crystal Reports is a registered trademark of Seagate Technology, Inc.

CorelDraw is a trademark or registered trademark of Corel Corporation and/or its subsidiaries.

Cygent is a trademark of Cygent, Inc.

Environmental Systems Research Institute, Inc., All Rights Reserved.

Ethernet is a trademark of Xerox Corporation.

Ericsson is the trademark or registered trademark of Telefonaktiebolaget LM Ericsson.

Exolab, Castor and Intalio are trademarks of Intalio Inc. Copyright 2000-2002 (C) Intalio Inc. All Rights Reserved.

Extreme Networks, BlackDiamond, and Summit are registered trademarks of Extreme Networks, Inc, Santa Clara, California in the United States and may be registered in other countries. Alpine is a trademark of Extreme Networks, Inc, Santa Clara, California in the United States and other countries.

Foundry Networks and the "Iron" family of marks are trademarks or registered trademarks of Foundry Networks, Inc. in the United States and other countries.

Fulcrum is a trademark of Fulcrum Technologies Inc.

HipLink is a trademark of Cross Communications, Inc.

HP and Hewlett-Packard are a registered trademark of Hewlett-Packard Development Company, L.P.

HUAWEI and Quidway are registered trademarks of Huawei Technologies Co., Ltd. VRP is a trademark of Huawei Technologies Co., Ltd.

InfoMaker, PowerBuilder, and Open Client are registered trademarks of Sybase, Inc.

IBM and AIX are trademarks of IBM Corporation in the United States and/or other countries.

Informix is a registered trademark of Informix Software, Inc.

InfoVista is a trademark of InfoVista S.A.

InstallAnywhere and InstallShield is a registered trademark or trademark Macrovision Corporation in the United States of America and/or other countries.

Juniper Networks is a registered trademark of Juniper Networks, Inc. in the United States and other countries. JUnit, JUNOS and JUNOSe are trademarks of Juniper Networks, Inc.

JViews is a trademark of ILog, Inc.

Kenan and Arbor are registered trademarks of Kenan Systems Corporation in the United States and other countries.

Local Exchange Routing Guide (LERG) and COMMON LANGUAGE Location Identifier (CLLI) are registered trademarks of Telcordia Technologies.

Lucent Technologies and the Lucent Technologies logo are trademarks or service marks of Lucent Technologies Inc.

MapObjects is a trademark of Environmental Systems Research Institute, Inc. Copyright © 1998.

Netscape Navigator is a trademark of Netscape Communications Corporation.

Microsoft Windows, Windows 95, Windows 98, Windows ME, Windows NT, Windows 2000, Windows 2000 Professional, Windows XP Professional, JScript, and Internet Explorer are registered trademarks of Microsoft Corporation.

This product includes NeatSeeker software developed by Sami Lempinen (lempinen@iki.fi).

Netcool is a registered trademark of Micromuse Inc.

Nortel, the Nortel logo and the Globemark are trademarks of Nortel Networks.

OpenLDAP is a registered trademark of the OpenLDAP Foundation.

Orbix is a trademark of IONA Technologies, Inc.

PageMaster/ex is a trademark of Omnitrend Software, Inc.

Riverstone Networks is a registered trademark of Riverstone Networks, Inc.

SalesBasic is a trademark of Newtonian Software, Inc.

Saville CBP is a registered trademark of Saville Systems.

Saxon is a trademark of Saxonica.

SilverStream, SilverJServer, SilverJRunner, JRunner, JBroker, SilverMonitor, and SilverJunction are trademarks of SilverStream Software, Inc.

Sun, Sun Microsystems, Sun Fire, the Sun logo, Solaris, Ultra, Java, J2SDK, JRE, the Jini logo, all Java-based marks, and iPlanet are trademarks or registered trademarks of Sun Microsystems, Inc. in the United States and other countries.

Sybase and SQL Server are trademarks of Sybase, Inc.

Tan Data is a trademark of TanData Corporation.

TaxWare is a trademark of TaxWare International, Inc.

Unicode is a trademark of Unicode, Inc., and may be registered in some jurisdictions.

UNIX is a registered trademark of The Open Group.

All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. in the United States and other countries. Products bearing SPARC trademarks are based upon an architecture developed by Sun Microsystems, Inc.

This product contains copyright material licensed from AdventNet, Inc. (<http://www.adventnet.com>). All rights to such copyright material rest with AdventNet.

WebAuthorize is a trademark of Tellan Software, Inc.

WebLogic Platform, Jolt, and Tuxedo are trademarks of BEA Systems, Inc.

APACHE SOFTWARE FOUNDATION

The Apache Software License, Version 1.1

Copyright (c) 2000 The Apache Software Foundation. All rights reserved.

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 THE APACHE SOFTWARE FOUNDATION 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 software consists of voluntary contributions made by many individuals on behalf of the Apache Software Foundation. For more information on the Apache Software Foundation, please see (<http://www.apache.org/>).

Apache License, Version 2.0, January 2004

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

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

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.

CMU/UCD

----- 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.

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.

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.

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.

Sun, Sun Microsystems, the Sun logo and Solaris are trademarks or registered trademarks of Sun Microsystems, Inc. in the U.S. and other countries.

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.

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.

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

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.

COMPUTRONIX, INC.

Copyright © 2001-2003, Computronix (Canada) Ltd., Edmonton, Alberta, Canada. All rights reserved.

License for cx_Oracle

THIS SOFTWARE IS PROVIDED BY COMPUTRONIX 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 COMPUTRONIX 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.

Computronix® is a registered trademark of Computronix (Canada) Ltd.

INTALIO, INC.

Copyright 2000-2002 (C) Intalio Inc. All Rights Reserved.

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

JAXEN

\$Id: LICENSE,v 1.3 2002/04/22 11:38:45 jstrachan Exp \$

Copyright (C) 2000-2002 bob mcwhirter & James Strachan. All rights reserved.

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 THE Jaxen AUTHORS OR THE PROJECT 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.

NEATSEEKER

Id: LICENSE v 1.1.1.1 2000/09/23 08:22:23 ssl Exp \$

The NeatSeeker Framework License, Version 1.0

Based on the Apache Software License

Copyright (c) 1999 Sami Lempinen (lempinen@iki.fi). All rights reserved.

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 SAMI LEMPINEN OR NEATSEEKER 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 software developed by the Apache Software Foundation (<http://www.apache.org/>) .

WERKIN COMPANY

\$Id: LICENSE.txt,v 1.1 2001/12/12 19:33:28 werken Exp \$

Copyright 2001 (C) The Werken Company. All Rights Reserved.

THIS SOFTWARE IS PROVIDED BY THE WERKEN COMPANY AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE WERKEN COMPANY 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.

REGENTS OF THE UNIVERSITY OF CALIFORNIA

Portions of the code in this software product may be Copyright © 1988 by the Regents of the University of California. All rights reserved.

SUCH PORTIONS OF THE SOFTWARE ARE PROVIDED "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

OBF MATERIALS NOTICES

Copyright?@ 2003 by the Alliance for Telecommunications Industry Solutions, Inc. All rights reserved.

The Access Service Ordering Guidelines, Version 27, dated March 2003, is copyrighted, printed and distributed, by the Alliance for Telecommunications Industry Solutions (ATIS) on behalf of the ATIS-sponsored Ordering and Billing Forum (OBF).

WEBFX

Copyright 2005 © WebFX. All Rights Reserved.

Copyright © 1999 by Jef Poskanzer <jef@acme.com>.

All rights reserved.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR 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 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.

SUN MICROSYSTEMS, INC.

Copyright© 1995-2006 Sun Microsystems, Inc. All Rights Reserved.

This software is provided "AS IS," without a warranty of any kind. ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE HEREBY EXCLUDED. SUN MICROSYSTEMS, INC. ("SUN") AND ITS LICENSORS SHALL NOT BE LIABLE FOR ANY DAMAGES SUFFERED BY LICENSEE AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THIS SOFTWARE OR ITS DERIVATIVES. IN NO EVENT WILL SUN OR ITS LICENSORS BE LIABLE FOR ANY LOST REVENUE, PROFIT OR DATA, OR FOR DIRECT, INDIRECT, SPECIAL, CONSEQUENTIAL, INCIDENTAL OR PUNITIVE DAMAGES, HOWEVER CAUSED AND REGARDLESS OF THE THEORY OF LIABILITY, ARISING OUT OF THE USE OF OR

INABILITY TO USE THIS SOFTWARE, EVEN IF SUN HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Copyright (C) 1996-2002 Internet Software Consortium.

\$Id: COPYRIGHT,v 1.6.2.2 2002/02/12 06:05:48 marka Exp \$

Portions Copyright (C) 1996-2001 Nominum, Inc.

Indy and Indy SSL BSD License.

Portions of this software are Copyright (c) 1993 - 2003, Chad Z. Hower (Kudzu) and the Indy Pit Crew - <http://www.IndyProject.org/>

THIS SOFTWARE IS PROVIDED BY Chad Z. Hower (Kudzu) and the Indy Pit Crew "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.

xdom Copyright (c) 1999 by Dieter Köhler

THE PACKAGE 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 PACKAGE OR THE USE OR OTHER DEALINGS IN THE PACKAGE.

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (<http://www.openssl.org/>).

Copyright (c) 1998-2006 The OpenSSL Project. All rights reserved.

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 SSL.

The SSL documentation included with this distribution is covered by the same copyright terms except that the holder is 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 curl license

Copyright (c) 1996 - 2006, Daniel Stenberg, <daniel@haxx.se>.

All rights reserved.

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.

Janino - An embedded Java[TM] compiler

Copyright (c) 2006, Arno Unkrig

All rights reserved.

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.

XStream - Copyright (c) 2003-2006, Joe Walnes

All rights reserved.

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.

DOM4J

THIS SOFTWARE IS PROVIDED BY METASTUFF, LTD. AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF

MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL METASTUFF, LTD. 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.

Copyright 2001-2005 (C) MetaStuff, Ltd. All Rights Reserved.

XPP3

This product may include software developed by the Indiana University Extreme! Lab (<http://www.extreme.indiana.edu/>) Indiana University Extreme! Lab Software License

Version 1.1.1

Copyright (c) 2002 Extreme! Lab, Indiana University. All rights reserved.

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 THE AUTHORS, COPYRIGHT HOLDERS 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.

Colt License Agreement

Copyright (c) 1999 CERN - European Organization for Nuclear Research.

CERN makes no representations about the suitability of this software for any purpose. It is provided "as is" without expressed or implied warranty.

THE JUNG LICENSE

Copyright (c) 2003-2004, Regents of the University of California and the JUNG Project

All rights reserved.

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.

Jregex License

Copyright (c) 2001, Sergey A. Samokhodkin

All rights reserved.

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.

Python License

Copyright 1991-1995 by Stichting Mathematisch Centrum, Amsterdam, The Netherlands.

All Rights Reserved

STICHTING MATHEMATISCH CENTRUM AND CNRI DISCLAIM ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS,

IN NO EVENT SHALL STICHTING MATHEMATISCH CENTRUM OR CNRI 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.

STLPort License Agreement

Copyright 1999, 2000 Boris Fomitchev

This material is provided "as is", with absolutely no warranty expressed or implied. Any use is at your own risk.

Permission to use or copy this software for any purpose is hereby granted without fee, provided the above notices are retained on all copies. Permission to modify the code and to distribute modified code is granted, provided the above notices are retained, and a notice that the code was modified is included with the above copyright notice.

Copyright 1994 Hewlett-Packard Company

Copyright 1996,97 Silicon Graphics Computer Systems, Inc.

Copyright 1997 Moscow Center for SPARC Technology.

OpenSSL License (<http://www.openbsd.org/cgi-bin/cvsweb/src/usr.bin/ssh/LICENCE?rev=HEAD>)

This file is part of the OpenSSH software.

The licenses which components of this software fall under are as follows. First, we will summarize and say that all components are under a BSD license, or a license more free than that.

OpenSSH contains no GPL code.

1) Copyright (c) 1995 Tatu Ylonen <ylo@cs.hut.fi>, Espoo, Finland. All rights reserved

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.

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 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.

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 license 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

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.

The OpenLDAP Public License

Version 2.8, 17 August 2003

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.

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.

BEA Public License Version 2.1

THE SOFTWARE IS PROVIDED ON AN "AS IS" BASIS, WITHOUT WARRANTIES OR REPRESENTATIONS OF ANY KIND, EITHER EXPRESS OR IMPLIED INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OF TITLE, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Unicode License

The product(s) contain software made publicly available by Unicode, Inc.

COPYRIGHT AND PERMISSION NOTICE

Copyright © 1991-2006 Unicode, Inc. All rights reserved. Distributed under the Terms of Use <http://www.unicode.org/copyright.html>.

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS

ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Sun BSD License

Copyright 2002-2006 Sun Microsystems, Inc. All Rights Reserved.

This software is provided "AS IS," without a warranty of any kind. ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY,

FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE HEREBY EXCLUDED. SUN AND ITS LICENSORS SHALL NOT BE LIABLE FOR ANY DAMAGES OR LIABILITIES SUFFERED BY LICENSEE AS A RESULT OF OR RELATING TO USE, MODIFICATION OR DISTRIBUTION OF THIS SOFTWARE OR ITS DERIVATIVES. IN NO EVENT WILL SUN OR ITS LICENSORS BE LIABLE FOR ANY LOST REVENUE, PROFIT OR DATA, OR FOR DIRECT, INDIRECT, SPECIAL, CONSEQUENTIAL, INCIDENTAL OR PUNITIVE DAMAGES, HOWEVER CAUSED AND REGARDLESS OF THE THEORY OF LIABILITY, ARISING OUT OF THE USE OF OR INABILITY TO USE THIS SOFTWARE, EVEN IF SUN HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

ANTLR 3 License

[The BSD License]

Copyright (c) 2003-2006, Terence Parr

All rights reserved.

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.