



Silk Performer 15.0

Release Notes

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2013-12-16

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Silk Performer 15.0 Release Notes

These release notes contain information that might not appear in the Help. Read them in their entirety before you install the product.



Note: This document contains a number of links to external web sites. Micro Focus cannot be responsible for the contents of the website or for the contents of any site to which it might link. Web sites by their nature can change very rapidly and although we try to keep our links up-to-date, we cannot guarantee that they will always work as expected.

System Requirements

The following tables identify the system requirements for installing and running Silk Performer. For details about Silk Performer performance and scalability, see the *Performance and Scalability Matrix*.

Hardware Requirements

To run the Silk Performer agent software, or both controller and agent software, and to use the full potential of Silk Performer to run large-scale load-tests, your system must meet the following minimum requirements:

Table 1: Load Testing

| System Area | Requirement |
|-----------------|---|
| Processor | Pentium IV or equivalent CPU |
| RAM | 1 GB recommended minimum |
| Virtual memory | Three times as much virtual memory as RAM |
| Hard disk space | 1 GB for controller software installation. 450 MB for agent-only installation. Depending on the size of your load tests, make sure you have enough space on your hard disk for result files. |
| Network | Windows network with TCP/IP (when using remote Silk Performer Agent computers) |
| Network adapter | 10 MBit recommended minimum fast Ethernet recommended |

Software Requirements

To install and run Silk Performer, your system requires a minimum set of software components:

The specific components that are required vary based on installation type. For example, to run Silk Performer Java Explorer, your system must be equipped with either of 32-bit Java Development Kit 1.4, 1.5, 1.6, 1.7. Download components from their respective vendors' Web sites.

- Internet Explorer 7, 8, 9, 10 for browser-driven recording
- Adobe Acrobat Reader to view documentation
- Citrix XenApp Client 11.x, 12.x or Citrix Receiver to test Citrix applications
- 32-bit Java Development Kit 1.4, 1.5, 1.6, 1.7 to test Java applications with Java Explorer

Installation

For information about installation, deployment, and licensing issues, refer to the [Silk Performer Installation Help](#).

What's New in Silk Performer 15.0

Silk Performer 15.0 introduces significant enhancements and changes.

Browser-Driven Web Load Testing Enhancements

Support for Modal And Modeless Windows

Silk Performer now supports dialog boxes with HTML content that are created by the JavaScript methods `showModalDialog` and `showModelessDialog`.

Load Testing Websites That Use Non-system Codepage Characters

Silk Performer now supports load testing of websites that use non-displayable characters. The characters are converted to hexadecimal numbers in the script and are converted back to a readable string during the replay of the script.

Use a Specific Attribute For a Locator

You can now use a specific attribute for a locator directly in the Browser Application. For example: You can specify explicitly that the attribute `textContent` is to be used to locate a link on a website.

Asynchronous Web Communication on Protocol-Level

Asynchronous Communication Pattern Detection

Silk Performer now offers a dedicated project type to facilitate protocol-level testing of web applications, which make use of asynchronous communication patterns. The new offline scripting approach allows Silk Performer to better analyze the captured traffic and automatically detect asynchronous communication patterns, such as server push, polling, or long-polling.

Asynchronous Callback Handling

During a script run, you may want the virtual user to execute a so-called BDL callback function to react to a particular event. A BDL callback function implements the logic that is required to handle the event.

By adding the attribute `ASYNC_CALLBACK_FUNCTION`, you can turn a BDL function into a callback function. Note that a callback function has one string parameter and no return value.

New Web Functions for Asynchronous Communication Channels

- `WebAsyncPreparePush`
- `WebAsyncPreparePoll`
- `WebAsyncPrepareLongPoll`
- `WebAsyncStop`
- `WebAsyncGetResponseHeaders`

New Virtual User Synchronization Functions

- `UserWaitFor`

- UserSignal

CloudBurst Enhancements

Reserve IP Addresses for Your Cloud Agents

You can now reserve IP addresses for your cloud agents. This ensures that your cloud agents keep the same IP addresses, which allows you to adapt your firewall configuration before you launch any agent instances. You can even stop and restart agents. As long as you have the IP addresses reserved, they will automatically be assigned to new agents.

Pay-as-you-go Model Available for CloudBurst Enterprise

Silk Performer CloudBurst Enterprise is now available not only as prepaid model, but also as pay-as-you-go model. If you use the pay-as-you-go model, you are charged monthly according to your Borland Credits consumption.

Auto-configuring Timeout Settings

When you use cloud agents for your load tests, the timeout values for connecting the controller with the cloud agents are now automatically extended. Connecting the controller with cloud agents can take a considerable amount of time, depending on the network conditions. The new auto-configuration minimizes the number of timeout errors.

Notification When CloudBurst Resources Are in Use

If you have CloudBurst resources (reserved IP addresses or started cloud agents) in use and you close Silk Performer, you receive a notification that you are charged for those running CloudBurst resources. You can open the **Cloud Agent Manager** with one click and change settings as desired.

Transaction and Session Pacing

The new pacing feature of Silk Performer allows you to reach a defined number of transactions per second. You have several configuration options to specify a so-called pacing wait time, which will be added following a transaction or a session (a set of transactions).

On the newly created dialog box **Configure Pacing**, you can determine the pacing wait time or the total time for a transaction or session, in which case the pacing wait time is included implicitly. You can define either a fixed or a random time value.

Besides configuring the pacing settings in the GUI, you can also use the newly created Pacing BDL functions to specify all settings directly in your test script.

Raw Measure Data Capturing

Silk Performer now allows you to capture the raw measure data of a load test and store it in CSV files. This is especially useful if you need result data that is even more detailed than the data from the reports in Performance Explorer or if you want to process the collected data in a spreadsheet program. Simply enable raw measure data capturing, open the generated CSV file with your favorite spreadsheet program, and generate custom tables and graphs.

Gui-Level Testing with Silk4J and Silk4NET

Silk Performer now allows you to perform GUI-level tests with Silk4J and Silk4NET test scripts. Therefore, it is now possible to use the following Silk Test clients for GUI-level testing: Silk4J, Silk4NET, and Silk Test Classic.

Usability Enhancements

Usability enhancements have been implemented throughout Silk Performer:

Merging Load Test Results

Silk Performer now offers a merge wizard, which allows you to merge the results from multiple load tests into one result folder. This is especially useful when you start a big load test from multiple controllers. Merging result data allows you to view all metrics in a single comprehensive report in Performance Explorer.

Automatically Upload Test Results to Silk Central

You can now let Silk Performer automatically upload test results to Silk Central after each test run. Once you have enabled the automatic upload, you can easily turn on and off this feature with just two clicks.

Browsers Are Opened in Incognito Mode For Recording

Internet Explorer and Google Chrome are now opened in incognito mode each time you start a recording. This way, you do not have to manually clear browser caches each time you start a recording.

Silk Performer String Converter

Silk Performer 15.0 introduces a string converter, which allows you to convert non-displayable strings into hexadecimal code and into the browser driven raw format and vice versa.

Technology Updates

Internet Explorer 11 on Protocol-Level

Silk Performer now supports Internet Explorer 11 on protocol-level.

Known Issues in Silk Performer

This list contains known issues in Silk Performer and provides work-arounds where available:

General Silk Performer Issues

Multi-byte character set support limitations

Problem:

The protocol / testing support of the Multi-Byte Character Set / UTF-8 / EUC-JP is limited to certain application types.

Resolution:

The protocol / testing support of the Multi-Byte Character Set / UTF-8 / EUC-JP is limited to the following application types:

- Web application testing, both protocol-level and browser-driven level
- SAPGUI testing
- Oracle Forms/Oracle Applications testing
- Citrix testing

Optical character recognition (OCR) does not work for multibyte characters

Problem:

Optical character recognition (OCR) does not work for multibyte characters

Resolution:

Unfortunately there is no solution to this. Silk Performer uses a third-party DLL for optical character recognition which only supports ASCII characters.

How can I get Silk Performer "What's This" contextual Help to work on Windows Vista?

Problem:

How can I get Silk Performer "What's This" contextual Help to work on Windows Vista?

Resolution:

In Silk Performer it is possible to get information about GUI functionality by right-clicking GUI controls and choosing **What's This?**. This contextual help does not work on Windows Vista. This is a known issue related to the fact that the Windows Help program `winHlp32.exe` is no longer included with Windows

Vista. To resolve this, a download for 32-bit .hlp files can be downloaded from the Microsoft Download Center. For more information, see: <http://support.microsoft.com/kb/917607>.

TrueLog Explorer Issues

On-access virus scanner software may cause TrueLog Explorer to crash

Problem:

On-access virus scanner software may cause TrueLog Explorer to crash.

Resolution:

Virus scanner software may cause a variety of problems including TrueLog Explorer crashes or performance degradation. We recommend disabling virus scanner software on the agent computers and on the controller computer for the duration of load tests.

Visual script modifications fail if the related transaction is in an include file

Problem:

Visual script modifications fail if the related transaction is in an include file.

Resolution:

Do not move transactions to BDH files.

Visual user data customization does not work for browser-level scripts

Problem:

Visual user data customization does not work for browser-level scripts

Resolution:

This behavior is by design, as TrueLog Explorer only considers forms submitted by `WebPageSubmit` calls (page-based browser-level API), because the HTML form names are required to match HTML and BDL forms. If you want to customize your script using TrueLog Explorer Visual User Data Customization, you need to record a page-based browser-level API script.

SAPGUI Issues

Control position information cannot be retrieved correctly from SAP

Problem:

In rare instances, control position information can not be retrieved correctly from SAP. Therefore TrueLog Explorer might not be able to display the selected control rectangle at the correct position on the screenshot.

Resolution:

Use the control tree instead of the screenshot.

Citrix Issues

Citrix scripts run into timeout when UAC is turned on

Problem:

When recording or replaying Citrix scripts, a 30 second delay causes a timeout error. This delay only occurs when UAC is turned on.

Resolution:

Turn off UAC to successfully record and replay Citrix scripts.

Connecting to existing session during Citrix recording results in unusable script

Problem:

Connecting to existing session during Citrix recording results in unusable script

Resolution:

When connecting to an existing Citrix session, the Citrix client does not recognize any windows and therefore no synchronization functions are scripted. You should always record a new session.

Oracle Forms Issues

After hooking into main Oracle Forms applet classes, JInitiator cannot load additional jar files that rely on those classes

Problem

After hooking into main Oracle Forms applet classes, JInitiator cannot load additional jar files that rely on those classes

Resolution

When recording Oracle Forms or Oracle Applications, define the following Java Runtime Options on the **JInitiator Properties** Dialog: "-noverify -mx128m" NoVerify prevents these loading issues. Additionally, the default **Virtual Memory Size** of JInitiator 1.1.7.x is between 16 and 64 MB. The option -mx128m increases the virtual memory size to 128MB. This additional memory is needed as there is some extra memory overhead caused by recording. If you run into an OutOfMemory error you can further increase this value.

Browser crashes during recording of Oracle Forms

Problem

Browser crashes during recording of Oracle Forms.

Resolution

When recording Oracle Forms 6i it is recommended that you disable Java JIT (Just-In-Time compiling) in the Java Runtime settings. This is because the JIT library of the Java Virtual Machine (symcjit.dll) may crash your browser.

Java JIT can be disabled using one of the following options:

Option 1: Define - DJAVA.COMPILER=NONE in the Java runtime settings of the Oracle **JInitiator Properties** dialog. This must be done using the JInitiator control panel, which is installed with JInitiator (available in the Windows control panel).

1. Launch the JInitiator Control Panel.
2. Add DJAVA.COMPILER=NONE to the **Java Run Time Parameters** text field.
3. Click **Apply**.

Option 2: Use the check box on the Oracle JInitiator Properties dialog to disable the Just In Time Compiler (only available since version 1.1.8.x).

1. Launch the JInitiator Control Panel.
2. Select the **Advanced** tab.
3. Uncheck the **Enable Just In Time Compiler** checkbox.
4. Click **Apply**.

Option 3: Define environment variable: JAVA_COMPILER=NONE.

1. Right-click **My Computer** and choose **Properties**.
2. Choose **Advanced**.
3. Choose **Environment Variables**.
4. Under **System Variables** click **New**.

5. For **Variable Name** enter `JAVA_COMPILER`.
6. For **Variable Value** enter `NONE`.
7. Click **OK** to exit out of dialogs.

Web Issues

Recording of browser traffic does not work when browser window is already open.

Problem

Recording of browser traffic does not work when browser window is already open.

Resolution

Close all browser windows before recording a script.

Resolved Issues

The following issues have been resolved in Silk Performer 15.0:

| Issue # | Description | Notes |
|-------------|---|-------|
| RPI 1084215 | In Performance Explorer, SSH counter names cannot be changed. | |
| RPI 1084944 | Silk Performer 9.0 Java Over HTTP runs out of memory while transforming response | |
| RPI 1085093 | Unexpected behavior of GlobalWaitFor function. | |
| RPI 1085996 | Transformation of AMF3 data into XML is included in response times. | |
| RPI 1086756 | TrueLog Explorer removes escape characters from script. | |
| RPI 1087040 | .NET Explorer project exported to Silk Performer results in following error upon TryScript run: RT: 9 - The name of the measure point is too long. | |
| RPI 1088215 | TrueLog Explorer not rendering CSS for TrueLogs when running Internet Explorer 9. | |
| RPI 1089010 | | |
| RPI 1088473 | BDL call times out due to crash of the SAPGUI replay process. | |
| RPI 1089152 | BrowserWaitForProperty timeout not working as expected. | |
| RPI 1089379 | Requested exceptions to having simulated browsers connect through a proxy server are ignored. Simulated browsers continue to pass through proxy server. | |
| RPI 1089578 | GetDataFilePath returns incorrect path. | |
| RPI 1089652 | On the Workload configuration dialog box, the diagram that displays users, transactions, and simulation takes its focus from the bottom user type in the list. | |
| RPI 1089910 | Exported .NET Explorer Web projects fail upon replay in Try Script runs. | |
| RPI 1089962 | It is not possible to validate an enum data type in .NET Explorer based on individual returned values. It is only possible to verify a range of values. | |

| Issue # | Description | Notes |
|-------------|---|-------|
| RPI 1089964 | WebPageUrl(HTTP: 1015 - The authentication method requested is not supported. | |
| RPI 1089922 | Silk Performer 10.0 summary pages displaying incorrect messages. | |
| RPI 1090006 | Silk Performer 9.5 agent binary data logging issue. Log shows server responses flowing out of sequence. | |
| RPI 1090361 | Running tests with controller and agent machines in different time zones produces inconsistent results. | |
| RPI 1090412 | Microsoft unit test error DotNet 25: not a valid Unit test test method | |
| RPI 1090520 | TrueLog generates incorrect WebVerifyData for Japanese literals. | |
| RPI 1090523 | After a browser crash the BrowserStart function at the beginning of the transaction does not work and the following messages displays: BrowserEngine: 65 - Communication to Browser engine failed | |
| RPI 1090661 | Virtual user container error RUNERR: 3 - RUN invalid data address message appears when running script with a Japanese name. | |
| RPI 1090808 | When loading a WSDL file, .NET Explorer reports: Binding 'System.ServiceModel.NetTcpBinding' is not supported and will be ignored | |
| RPI 1090923 | Unable to create Java VM message appears, Performance Explorer (CvmLoader) crashes when invalid Java home specified. | |
| RPI 1091321 | In Silk Performer 9.5 and earlier, it was possible to execute a 'quick run' with a specified number of users. In Silk Performer 10.0, you can execute a 'quick run' with only one user. | |
| RPI 1091427 | After exporting and reimporting a project, the dialog box Calculate Virtual Users does not display the baseline, which had already been accepted beforehand. | |
| RPI 1091473 | When starting a Citrix load test, Silk Performer reports: CitrixEngine: 43 | |

| Issue # | Description | Notes |
|-------------|---|-------|
| | <p>- Startup failed, Citrix process 'wfcrun32.exe' is already running under a different user account</p> | |
| RPI 1091591 | <p>When creating a custom table in a Performance Explorer overview report, the following message displays: TSD file contains non matching keys!</p> | |
| RPI 1091668 | <p>BDLT scripts recorded with Silk Performer 9.5 and earlier can contain locators, which are not valid in Silk Performer 10.0.</p> | |
| RPI 1091756 | <p>Opening a 4 MB .csv file within Silk Performer causes the following message: Out of memory</p> | |

Updates and SupportLine

Our Web site gives up-to-date details of contact numbers and addresses.

Contacting Micro Focus

Micro Focus is committed to providing world-class technical support and consulting services. Micro Focus provides worldwide support, delivering timely, reliable service to ensure every customer's business success.

All customers who are under a maintenance and support contract, as well as prospective customers who are evaluating products, are eligible for customer support. Our highly trained staff respond to your requests as quickly and professionally as possible.

Visit <http://supportline.microfocus.com/assistedservices.asp> to communicate directly with Micro Focus SupportLine to resolve your issues, or email supportline@microfocus.com.

Visit Micro Focus SupportLine at <http://supportline.microfocus.com> for up-to-date support news and access to other support information. First time users may be required to register to the site.

Information Needed by Micro Focus SupportLine

When contacting Micro Focus SupportLine, please include the following information if possible. The more information you can give, the better Micro Focus SupportLine can help you.

- The name and version number of all products that you think might be causing an issue.
- Your computer make and model.
- System information such as operating system name and version, processors, and memory details.
- Any detailed description of the issue, including steps to reproduce the issue.
- Exact wording of any error messages involved.
- Your serial number.

To find out these numbers, look in the subject line and body of your Electronic Product Delivery Notice email that you received from Micro Focus.

Silk Performer Licensing

This section describes how to obtain a license policy for Silk Performer and how to install Silk Meter. You must have administrator privileges to install Silk Meter.



Note: Silk Performer requires Silk Meter version 2008 or later as well as a Silk Performer license policy.

Install Silk Meter once per license server. If you have multiple license servers, you need multiple license policy files, each one tied to a particular license server. A single Silk Meter license server can administer license policies for multiple products.

If you have received a Silk Performer license policy, install the license policy on your license server. If you have not received a license policy, generate a license policy.

Licensing Information

Silk Performer 15.0 needs a new 15.0 license. If you want to run a previous version of Silk Performer during the upgrade process to version 15.0, you may keep your old licenses for a period of 90 days.

Silk Performer's licensing model is based on Virtual User Types (VUser Types). The available VUser Types *Web*, *Standard*, and *Premium* include the following Silk Performer application types:

| VUser Type | Application Type |
|---------------------------------|---------------------------------------|
| Web | Web Browser-Driven |
| | HTTP(S) (Web browser low level) |
| | HTTP(S)/HTML (Web browser high level) |
| | HTTP(S)/XML (Web services, SOAP) |
| | Silverlight |
| | Mobile |
| | SAP NetWeaver |
| | WebDAV (MS Outlook Web Access) |
| | Email (SMTP/POP) |
| | FTP |
| | TCP/IP |
| | UDP |
| | AMF0/AMF3/FLEX |
| | DLL Interface |
| | Standard |
| .Net Add-On | |
| Java Add-On | |
| DB2-CLI Add-On | |
| OCI Add-On | |
| ODBC Add-On | |
| Visual Basic Add-On (Framework) | |


| VUser Type | Application Type |
|------------|---|
| Premium | Directory server (LDAP) CORBA Add-On All of <i>Standard</i> , plus: GUI Level Testing (Silk Test 4Test Scripts) Remedy Web ARS SAPGUI Add-On for Silk Performer Oracle Applications/Forms Add-On PeopleSoft Add-On Siebel Add-On Citrix Add-On Terminal Emulation (Green-Screen) Add-On Tuxedo/ATMI Add-On |

Tested Software

This section lists the software with which Silk Performer has been tested.

| System Area | Tested With |
|----------------------------|---|
| Operating systems | <ul style="list-style-type: none"> • Microsoft Windows XP 32bit with Service Pack 3 • Microsoft Windows Server 2003 32bit with Service Pack 2 • Microsoft Windows Server 2003 64bit with Service Pack 2 • Microsoft Windows Server 2003 R2 32bit with Service Pack 2 • Microsoft Windows Server 2003 R2 64bit with Service Pack 2 • Microsoft Windows Vista 32bit • Microsoft Windows Vista 64bit • Microsoft Windows Server 2008 32bit • Microsoft Windows Server 2008 64bit • Microsoft Windows Server 2008 R2 • Microsoft Windows 7 32bit • Microsoft Windows 7 64bit • Microsoft Windows 8 32bit • Microsoft Windows 8 64bit • Microsoft Windows 8.1 32bit • Microsoft Windows 8.1 64bit • Microsoft Windows Server 2012 • Microsoft Windows Server 2012 R2 |
| Web browsers | <p>For protocol-based load testing:</p> <ul style="list-style-type: none"> • Internet Explorer 6*, 7, 8, 9, 10, 11 (*is not supported on Microsoft Windows XP) • Mozilla Firefox • Google Chrome • Apple Safari <p>For browser-driven load testing:</p> <ul style="list-style-type: none"> • Internet Explorer 7, 8, 9, 10 |
| Terminal emulation support | <ul style="list-style-type: none"> • AttachMate Extra 8 • AttachMateWRQ 13.0 • Distinct IntelliTerm 8.1 • Ericom Powerterm Pro v8.8.1 • HummingBird_Exceed 11.0 (hooking via socks proxy) • JProtector 4.5.2.0 • MochaSoft 5.3 (hooking via socks proxy) • NetTerm 5.1.1 • Nexus Terminal 5.3 • PassportPC2Host 3 • Quick3270 3.73 • Rumba 7.4 • Rumba 8 • Rumba 9 |

| System Area | Tested With |
|----------------------|--|
| ERP/CRM support | <ul style="list-style-type: none"> • SDI TN3270 Plus v2.4 • SecureCRT 1.0 • TeraTermPro 2.3 • TN5250_sourceforge 0.17.3 • TNBridge <p>SAPGUI Clients:</p> <ul style="list-style-type: none"> • SAPGUI client 720 • SAPGUI client 730 <p>PeopleSoft Systems: PeopleSoft 8.0, 8.3, 8.4, 8.8, 9.0</p> <p>Siebel Systems:</p> <ul style="list-style-type: none"> • Siebel 6.3 using MS SQL Server • Siebel 6.3 using IBM DB2 • Siebel 6.3 using Oracle • Siebel 7 • Siebel 8.0, 8.1 <p>Clarify Systems: Clarify eFrontOffice 8, 10</p> <p>Remedy Web ARS: Remedy Web ARS 7.5, 7.6, 7.6.04, 8.0, 8.1</p> |
| Citrix support | <p>Citrix Clients:</p> <ul style="list-style-type: none"> • Citrix XenApp Client 11.x, 12.x • Citrix Web Interface 5.1, 5.2, 5.3 • Citrix Receiver <p>Citrix Servers:</p> <ul style="list-style-type: none"> • Citrix XenApp 6.5 <p>Operating Systems:</p> <ul style="list-style-type: none"> • Microsoft Windows XP • Microsoft Windows Server 2003 • Microsoft Windows Server 2008 • Microsoft Windows 7 with UAC turned off • Microsoft Windows Server 2008 R2 with UAC turned off |
| Oracle Forms support | <ul style="list-style-type: none"> • Oracle Forms 6i, 9i, 10g, 11g • Oracle Applications 11i, 12i |
| SOAP support | <ul style="list-style-type: none"> • Microsoft SOAP Toolkit 2.0 Service Pack 2 (SP2), Internet Information Server 5 • Apache-SOAP Version 2.1, TOMCAT Version 3.1 |
| Web Service Support | <ul style="list-style-type: none"> • Axis 1.x |

| System Area | Tested With |
|---|--|
| Database support | <ul style="list-style-type: none"> • Axis2 1.4, 1.5 • GlassFish Metro 1.5 • IBM Universal Database Systems 5.2, 6.1, 7.1 • Microsoft SQL Server 2005, 2008, 2008 R2, 2012 • Oracle Database 10g Release 2 • Oracle Database 11g Release 2 • Sybase SQL Anywhere Network Server 5.5.04 |
| Corba support | <ul style="list-style-type: none"> • Oracle WebLogic Enterprise 5.0.1, 6.0, 6.1 • Micro Focus VisiBroker • Micro Focus Orbix • IBM WebSphere |
| TUXEDO support | <ul style="list-style-type: none"> • Oracle TUXEDO Server 6.3, 6.4, 7.0, 7.1, 8.0, 9.0 • Oracle WebLogic Enterprise 4.2 |
| Jolt support | Oracle Jolt 1.1 (including Oracle TUXEDO Server 6.4), 1.2 |
| Java support | <ul style="list-style-type: none"> • Java Development Kit 1.4, 1.5, 1.6, 1.7 • IBM Java Development Kit • Eclipse 3.6, 3.7, 3.8, 4.2, 4.3 |
| .NET support | <ul style="list-style-type: none"> • Microsoft .NET Framework 2.0, 3.0, 3.5, 4.0, 4.5 • Microsoft Visual Studio 2010 and 2012 • WCF Web Services |
| Rich Internet applications (Web 2.0) | <ul style="list-style-type: none"> • Microsoft Silverlight 4, 5 • Apache Flex 2, 3, 4 • GraniteDS 2.3.2 • BlazeDS 3.2.0 • Google Web Toolkit • ExtJS • Eclipse RAP • script.aculo.us |
| SNMP support | <ul style="list-style-type: none"> • SNMPv2-MIB • RFC1213-MIB • RDBMS-MIB • ORADB-MIB • httpServer-MIB • ftpServer-MIB • SUN-MIB • BEA-WEBLOGIC-MIB • APPSRV_MIB (NetDynamics) • SQUID-MIB |
| |  Note: To find RFCs and vendor MIBs on the Web, visit The Internet Engineering Task Force . |

| System Area | Tested With |
|--------------------------------------|--|
| Proxy servers for firewall tunneling | <ul style="list-style-type: none"><li data-bbox="511 220 649 252">• WinGate<li data-bbox="511 262 617 294">• Squid<li data-bbox="511 304 617 336">• Dante<li data-bbox="511 346 771 378">• Microsoft ISA Server |