Silk Performer 21.0

Release Notes

Contents

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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 websites. Micro Focus cannot be responsible for the contents of the website or for the contents of any site to which it might link. Websites by their nature can change rapidly and although we try to keep our links up-to-date, we cannot guarantee that they will always work as expected.

For information about installation, deployment, and licensing issues, refer to the *Silk Performer Installation Help* .

System Requirements

The following sections describe the system requirements for installing and running Silk Performer.

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:

Hardware Requirements

System Area	Requirement
Processor	Intel Core 2 Duo or equivalent CPU
RAM	4 GB
Hard disk space	2.5 GB for controller software installation
	1 GB 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	Network connectivity to the system under test and to all Silk Performer agent computers.

Operating System Requirements

- Both the Silk Performer controller and the Silk Performer agent can be installed on Microsoft Windows 8.1 or newer, or Microsoft Windows Server 2012 or newer.
- Installing the network emulation driver is currently not supported for Microsoft Windows 10 and Microsoft Windows Server 2016 and 2019.

Software Requirements

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

The required components vary based on installation type. For example, to run Silk Performer Java Explorer, your system must be equipped with the appropriate Java Development Kit. Download components from the respective websites.

- Internet Explorer 11, Google Chrome, Mozilla Firefox, Microsoft Edge, or Opera for browser-driven load testing.
- PDF viewer to view documentation .
- Citrix Receiver for Microsoft Windows 4.9.7 (LTSR) or later to test Citrix applications.
- Java Runtime Environment (JRE): Both 32- and 64-bit versions are required on 64-bit operating systems.
- Java Development Kit 7, 8 (32-bit) to test Java applications with Java Explorer.
- Visual Studio 2015, 2017, or 2019 for Visual Studio extension.

Working with Silk Performer on a multi-user system

Silk Performer can be installed on a machine with terminal services enabled for multi-user access. In general, it is not recommended to work in multiple sessions simultaneously. If you want to do so nevertheless, keep the following in mind:

- **Recording:** The Silk Performer Recorder uses a system-wide hooking mechanism. If one user starts the Recorder, the traffic of all other users might be recorded as well.

- **Workbench:** Multiple users can work on different projects simultaneously. Working on the same project is not recommended. The project will be opened in read-only mode for the second and all further users.
- **Executing tests:** Multiple users can execute tests simultaneously from one machine. However, multiple simultaneously running tests will influence each other as they share the same resources (CPU, memory, network bandwidth).
- **Monitoring tests:** Performance Explorer does not differentiate between test metrics of multiple running tests. Therefore, real-time values of the wrong test might be displayed.

What's New in Silk Performer 21.0

Silk Performer 21.0 introduces significant enhancements and changes.

Web on Protocol-level Enhancements

The following enhancements for web load testing on protocol-level have been implemented:

Brotli compression

Silk Performer now supports Brotli compression for protocol-level HTTP/HTML scripts. Brotli compression is an addition to other compression algorithms such as gzip.

Authentication fallback scenarios in HTTP/2

Many modern web applications use HTTP/2, however, negotiation for NTLM and Kerberos authentication is not defined for the HTTP/2 protocol. Thus, browsers are using various fallback strategies to HTTP/1.x to authenticate a user. Silk Performer 21.0 implements the fallback behavior of Google Chrome.

Browser-driven Load Testing Enhancements

The following enhancements have been implemented for browser-driven load testing:

Browser-driven script recording for Chrome, Firefox, Edge and Opera browsers

Silk Performer now lets you record browser-driven scripts using Firefox, Chrome, Edge and Opera. To do so, it uses Silk WebDriver, which originally was a pure functional testing tool to record Silk Test or Selenium scripts. For Silk Performer 21.0 and onwards, the tool allows to generate browser-driven BDL scripts.

Locator Spy for Chrome, Firefox, Edge and Opera browsers

To facilitate locator generation and modification for all supported browsers except Internet Explorer, the Locator Spy is offered in the **Tools** menu.

Enhanced Silk WebDriver update for agents

You can update Silk WebDriver on your agents through the systems settings by selecting one or more agents on the **Agent Pool** tab, right-clicking, and clicking **Update Webdriver**. Another option is to update Silk WebDriver through the **Summary** page.

`BrowserTypeKeys` with delay parameter

The BDL function `BrowserTypeKeys` now offers a delay parameter, which lets you specify the delay between the separate keystrokes.

Identifying the determining TTI element

TrueLog Explorer now displays the element that determines the time to interact (TTI) in the **Info** tab.

Maximum length of DOM attribute values

For browser-driven scripts, Silk Performer lets you configure a number of settings, like which DOM attribute names to ignore and which to prefer. You can now also set the maximum length of DOM attribute values. If the value is longer than specified, it will be cut off.

Starting browsers with command-line arguments

You can now add custom command-line arguments in the profile settings for all supported browsers (except Internet Explorer).

Convenience Functionality in BDL

Silk Performer 21.0 adds a number of convenience features through the BDL API:

`ToUnicode()` and `FromUnicode()` BDL functions

The new `ToUnicode()` BDL function lets you convert ANSI string representation into a unicode escape sequence of type `\uxxxx`. The `FromUnicode()` BDL function allows you to convert all unicode escape sequences of type `\uxxxx` from string into the corresponding characters.

`HashSHA2()` function

The new BDL function `HashSHA2()` calculates an SHA2 hash value of an input string. The required SHA2 hash length can be passed as a function argument.

`WebFtpGetFileSize()` and `WebFtpGetFileTime()` functions

`WebFtpGetFileSize()` retrieves the file size of a remote file through FTP. `WebFtpGetFileTime()` retrieves the file date and time properties of a remote file respectively.

`Print Function()` prints to the Output pane

The API function `Print Function()` prints additional information to the output that displays on the **Virtual User** tab in the **Output** pane. Additionally, the data passed to all Print* functions is now written to the log file.

Integration Enhancements

Silk Performer 21.0 provides a number of integration enhancements like new project upload wizards, new command-line tools, third-party plugin support for GUI-less environments, and more.

Project upload to LoadRunner Enterprise and LoadRunner Cloud

You can now upload your Silk Performer projects to both LoadRunner Enterprise and LoadRunner Cloud using the wizards Silk Performer provides. Once LoadRunner Enterprise and LoadRunner Cloud provide support for the integration, you will be able you define and execute your Silk Performer workloads in the respective LoadRunner environment.

New command-line tools - PerfProj and PerfExec

Silk Performer provides the two new command-line tools `PerfProj.exe` and `PerfExec.exe`, which greatly simplifies the modification and execution of your Silk Performer projects in CI environments. Among other settings you can specify the standard host, the port, agents, or result folder paths through command-line arguments. More information is available directly in the command-line through the argument `/?`.

Third-party plugin support for GUI-less environments

When running projects in GUI-less environments like Silk Central, LoadRunner Enterprise, LoadRunner Cloud, Jenkins, or the command-line, third-party plugins such as Dynatrace and InfluxDB are now available.

JUnit style result file

Silk Performer can now generate a JUnit style result file, which can be automatically interpreted in various CI tools. The result file displays any errors that might have occurred and shows warnings if performance levels were not met.

Jenkins plugin support for 64-bit Java

The Silk Performer Jenkins plugin now works with 64-bit Java installations.

Project upload to BMC Helix Monitor

Silk Performer now provides a wizard to upload projects to BMC Helix Monitor.

Other Enhancements

Silk Performer provides a number of additional new features like support for AutoPass licensing, for Java 11, and more.

AutoPass licensing

In addition to Silk Meter, Silk Performer now allows the use of Micro Focus AutoPass as a license technology for floating licenses. AutoPass provides additional functionality like user management, usage tracking, or reporting. For more information, refer to the Installation Guide.

Java 11

Silk Performer now supports Java 11 in the Java framework, Java Explorer, as well as other Java technologies.

Agent alias names

In the agent pool, Silk Performer now allows to specify an alias for Silk Performer agent machines. Aliases display in various places in the user interface.

Editor shortcuts

For the script editor of Silk Performer, additional shortcuts are now available: To toggle a comment, press **Ctrl+Shift+Q**. To duplicate a selection or line, press **Ctrl+D**. To create a new line above the current line, click **Ctrl+Enter**.

Silk Performer provides a PDF, which gives you an overview of all available shortcuts for the Workbench, the Recorder, the Browser Application, TrueLog Explorer, and more. Additionally, the PDF visualizes the features of the new script editor. To access the PDF, open the **Startpage**, click the **Get Started** tab, and click **Reference Sheet with Keyboard Shortcuts (pdf)**.

Technology Updates

OpenSSL

OpenSSL has been upgraded to version 1.1.1g.

Other components

Several third-party components have been upgraded to their latest versions to remediate all known vulnerabilities and other defects.

Resolved Issues and Customer-Driven Enhancements

The following table lists issues that have been resolved in Silk Performer 21.0 as well as enhancements that have been implemented in this version:

SI #	RPI #	Description
3171678	1115470	The Silk Performer Workbench crashes when attempting to compile a script that has been edited.
3188519	1116746	The Eclipse plugin does not work in 64-bit versions of Eclipse.
3192490	1117036	If `Allow_older_version` is set to `true`, available licenses do not display in Silk Performer.
3198193	1117555	If the name of a performance level contains a full stop, the performance level does not display.
3199328	1117696	`SapGuiSetFileName()` is being scripted in the wrong place.
3201213	1119155	The latest Oracle Forms versions are not supported.
3214343	1118970	Although the system setting **Report messages of severity** is set to **error**, warnings and info messages are also still displayed.
3214758	1119046	The workbench crashes when the new editor is being used.
3215353	1119291	The message `IIOP message misses magic characters 'GIOP'` displays in a log file.
3219887	1119470	When attempting to generate a script in Silk Performer 20.5, the generation process hangs at 50 percent.
3220953	1119618	After resampling a load test, the histograms in the report are incorrect.
3221475	1119812	The Silk Performer Recorder crashes while recording a Java application.
3221526	1119924	When replaying a browser-driven script, a page fails to load and frames are opened as tabs.
3222243	1119687	The **Script Errors** tab of the new script editor incorrectly displays a script error.
3223656	1119833	When attempting to install the Visual Studio Extension, a certificate error occurs.
3224420	1119952	Perfrun.exe occasionally crashes when executing HTTP/2 tests.
3225361	1120133	When executing a load test through Jenkins, the `LoadTestReport.xml` file is not generated.
3226135	1120143	When generating a Java over HTTP script, an out-of-memory error occurs.
3226617	1120206	Setting the master value on the dialog **Initialize Workload Settings** does not work as expected.
3227053	1120188	When copying a workload or creating a new workload, the existing baseline is not copied to the new workload.
3227285	1120225	The string converter tool crashes when opening a text file that contains a big amount of characters.
3228888	1120424	When recovering and merging missing results, no Overview Report is being generated.

SI #	RPI #	Description
3229472	1120457	Trying to load WSDL or .jar files in Java Explorer causes errors.
	1120476	
3233268	1120886	When a script calls various domains and the identifier of one domain is a substring of the identifier of another domain, Silk Performer adds its cookies to the calls for the second domain.
3233715	1120873	If a web application allows both `Negotiate` and `NTLM` methods for authentication and one method fails, the other method is not used as a fallback.
3234010	1120934	When merging and then resampling result files, the generated results do not contain percentile data.

Known Issues

You can find a list of known issues including resolutions in the Online Help: *Known Issues*

Updates and SupportLine

Our Web site provides up-to-date information 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

The Silk Performer licensing model is based on virtual users (VUsers).

Starting and using the Silk Performer Workbench does not require a license. You can model and customize scripts as well as adjust many other load test settings without a license. Also, executions that are performed with only one virtual user (like try script or baseline executions) do not require a license.

Starting a load test run requires licenses for the virtual users employed in the execution.

Silk Performer offers two licensing models:

- on-premise licensing
- online licensing

When you upgrade from an older Silk Performer version, new licenses are required for executing load tests with the new version. During the upgrade process, you can keep the old licenses for a period of 90 days.

Silk Performer works with three types of VUsers. Each type allows to simulate different application types:

- Web
- Standard
- Premium

VUser Type	Application Type
Web	Web Browser-Driven
	GUI-level testing in single session mode with selected web browsers
	HTTP(S) (Web browser low level)
	HTTP(S)/HTML (Web browser high level)
	HTTP(S)/XML (Web services, SOAP)
	HTTP Live Streaming (HLS)
	Silverlight
	Mobile
	SAP NetWeaver
	WebDAV (MS Outlook Web Access)
	Email (SMTP/POP)
	FTP
	TCP/IP
	UDP
	AMF0/AMF3/FLEX
	Java over HTTP
	DLL Interface
Standard	All of *Web*, plus:
	Visual Studio Extension
	Java Add-On
	DB2-CLI Add-On

VUser Type	Application Type
Premium	OCI Add-On
	ODBC Add-On
	Visual Basic Add-On (Framework)
	Directory server (LDAP)
	CORBA Add-On
	All of *Standard*, plus:
	GUI Level Testing (UFT Developer (Silk4J), UFT Developer (Silk4NET), Silk Test Classic)
	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

Silk Performer SOA Edition Licensing

What is the Silk Performer SOA edition?

The Silk Performer SOA edition (Service Oriented Architecture) is specifically targeted at testing remote services and APIs, such as web services or remote Java and .NET components.

How does the SOA edition licensing work?

The SOA edition is a complete Silk Performer installation that is restricted by a SOA edition license. This license enables you to

• execute load tests with up to 5 virtual users
• perform .NET or Java testing
• perform basic web and XML testing

What can be tested with the SOA Edition?

To be able to test remote components, you need to create test clients first. Silk Performer offers the following approaches to create test clients:

• visual creation using Java Explorer (requires no programming)
• visual creation using .NET Explorer (requires no programming)
• recording an existing test client
• importing JUnit tests
• importing NUnit tests
• importing Java classes
• importing .NET classes

Tested Software

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

The listed software is complete in terms of supported technologies, but not in terms of supported versions and products.

System Area	Tested With
Operating systems	• Microsoft Windows Server 2012 • Microsoft Windows Server 2012 R2 • Microsoft Windows Server 2016 • Microsoft Windows Server 2019 • Microsoft Windows 8.1 32/64bit • Microsoft Windows 10 32/64bit
Web browsers	For protocol-based load testing: • Internet Explorer • Mozilla Firefox • Google Chrome • Apple Safari • Opera For browser-driven load testing: • Internet Explorer 11 • Google Chrome • Mozilla Firefox • Microsoft Edge (Chromium-based) • Opera For GUI-level testing in single-session mode: • Google Chrome • Mozilla Firefox • Microsoft Edge (Chromium-based) • Opera For GUI-level testing in multi-session mode: • Internet Explorer • Microsoft Edge (legacy) • mobile browsers
Terminal emulation products	• 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

System Area	Tested With
	• Nexus Terminal 5.3 • PassportPC2Host 3 • Quick3270 3.73 • Rumba 9 • SDI TN3270 Plus v2.4 • SecureCRT 1.0 • TeraTermPro 2.3 • TN5250_sourceforge 0.17.3 • TNBridge
ERP/CRM solutions	**SAPGUI Clients:** • SAPGUI client 750 PL 11, 760 PL 6 **Siebel Systems:** • 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 **Remedy Web ARS:** Remedy Web ARS 9.0, 9.1, 9.1 SP2, SP3, and SP4 **Oracle Forms:** • Oracle Forms 6i, 9i, 10g, 11g, 12c • Oracle EBS 11i, 12.x • Oracle Fusion 10g, 11g, 12c
Citrix clients	• Citrix XenApp Client 12.x • Citrix Web Interface 5.4x • Citrix StoreFront / Netscaler Gateway • Citrix Receiver for Microsoft Windows 4.9.7 (LTSR) • Citrix Workspace-App 1907
WebService frameworks	• Axis 1.x • Axis2 1.7.9 • GlassFish Metro 1.5 • Apache CXF 3.3.4
Database products	• Microsoft SQL Server 2019 • Oracle Database 10g Release 2 • Oracle Database 11g Release 2 • Oracle Database 12c
Corba products	• Oracle WebLogic Enterprise • Micro Focus VisiBroker • Micro Focus Orbix • IBM WebSphere

System Area	Tested With
Tuxedo	• Oracle TUXEDO Server 6.3, 6.4, 7.0, 7.1, 8.0, 9.0 • Oracle WebLogic Enterprise 4.2
Jolt	Oracle Jolt 1.1 (including Oracle TUXEDO Server 6.4), 1.2
Java support	• Java Development Kit 7, 8 • IBM Java Development Kit • Eclipse
.Net-based technologies	• Microsoft .NET Framework 2.0, 3.0, 3.5, 4.0, 4.5, 4.6, 4.7 • Microsoft Visual Studio 2013, 2015, 2017 • WCF Web Services
Rich Internet applications (Web 2.0)	• 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	• 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*.
Proxy servers for firewall tunneling	• WinGate • Squid • Dante • Microsoft ISA Server