LSEG Workspace | Desktop

System Test User Guide

LSEG DATA & ANALYTICS

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In this guide

A System Test is a suite of tests that verifies whether your hardware, software, and network environments are suitable to run LSEG Workspace and its associated applications.

The set of tests performed depends on when you run them; before installation, during installation, or once the product is installed.

For information about the Financial Community Network (FCN) and Delivery Direct, see the repository for the Customer Connectivity DNS Migration Guide and Finance Community Network (FCN) document:

https://myaccount.lseg.com/en/policies/private-network-overview.

Intended readership

This document is targeted at the following:

- Anyone who is considering installing Workspace can run System Test to make sure that their computer meets the necessary minimum requirements.
- Any Workspace user can run System Test at any time to verify that Workspace is running correctly.

Further information

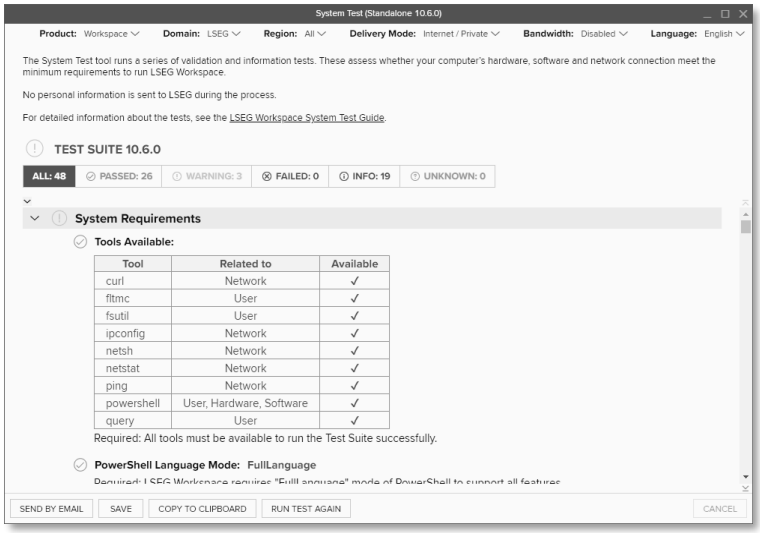
To:

- Request product assistance, contact Support.
- Access other LSEG Workspace technical content, see the Workspace technical documentation site.
- Provide feedback on Workspace technical content, contact DocFeedback@lseg.com.

Running system and network testing

To check whether your system meets the minimum requirements, run one of the following:

- Standalone System Test, illustrated opposite, or
- Embedded System Test
- Web System Test



Running the standalone System Test

The System Test (Standalone) product is updated more frequently than the embedded version. As such, it is highly recommended that you use this method to assess system compatibility, before installing Workspace for the first time.

1. Go to the Workspace download page that is accessible in your enterprise. See Download locations, below.
2. Click the **Download for Windows** button[1].
3. Open the downloaded executable to run System Test (Standalone).

Running the embedded System Test

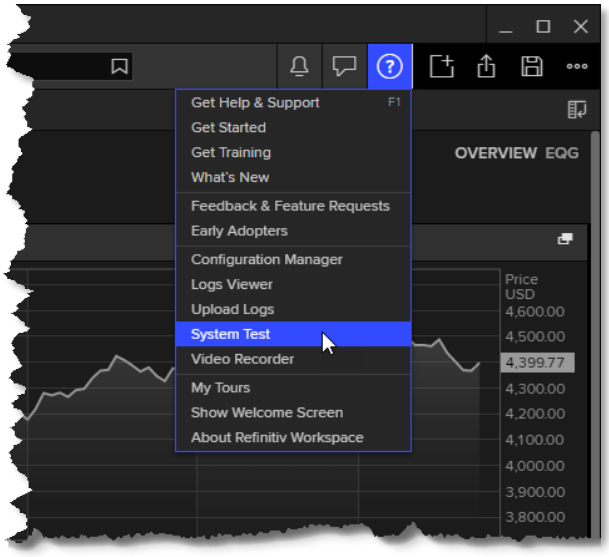
From the command line

1. Open a command prompt and navigate to the Workspace executable location.
2. Run the following command:

```
RefinitivWorkspace.exe --systemtest
```

From in-product

1. Run Workspace.
2. Select the **Help** menu > **System Test**



[1] To toggle the operating system, click the **macOS** hyperlink.

Running the Web System Test

To run the Web System Test:

1. Go to the Workspace download page that is accessible in your enterprise. See Download locations, below.
2. Click the **Open in Web** button.

   Web System Test opens in the same tab and runs immediately.

Download locations

For both Windows and macOS, you can download Workspace and the standalone version of System Test from the following locations:

- https://emea1-apps.platform.refinitiv.com/Apps/ProductSystemTest/
- https://workspace.extranet.refinitiv.biz/Apps/ProductSystemTest/

System Test user interface

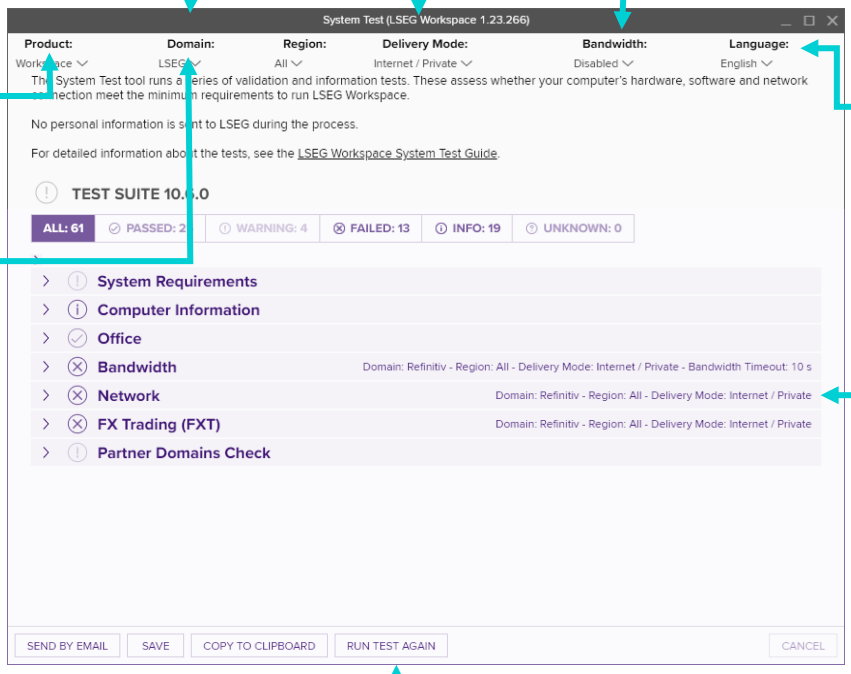
Region filters
AMERS
EMEA
APAC
All

Delivery Mode filters
Internet
Private
Internet / Private

Bandwidth Timeout
If you have a low bandwidth, a higher setting is recommended.
5 s[econds]
10 s[econds]
20 s[econds]

Product
Workspace
FXT/FXAll
All

Domain filters
Refinitiv
Thomson Reuters
All



Language
English
Simplified Chinese
Traditional Chinese
Japanese

Test sections
The sections and the tests they contain depend on the type of test that is run

Controls

Send by email creates an email in your default email app, containing the test results in plain text and attaches the results as HTML and XML files.

Save allows you to save the results to your network in HTML, XML, or text format.

Copy to clipboard copies the results in plain text format.

Run test again reruns the test, including any changes you make to filter selections.

Pre-requisites

System Test requires the following operating system tools to produce the full set of results.

Windows tools[2]

Tool	Type	Summary	System Test use
chcp		Used to change the active console code page to UTF-8.	Changes the default console code page to UTF-8.
cmd		Used to run other commands, such as curl.	
curl	Network	Used to get or send data including files using URL syntax.	Tests IP address accessibility.
findstr		Used to search for a specific text string in files.	Retrieves a specific text string in a file.
fltmc	User	Used to load and unload mini-filter drivers, which monitor or track file system data, attach, or detach mini-filter drivers from volumes, and enumerate mini-filter drivers, instances, and volumes.	Retrieves the installed mini-filter drivers.
fsutil	User	Lists hard links for a file or creates a hard link (a directory entry for a file).	Checks admin rights.
ipconfig	Network	Determines the IP address of your computer, together with other information, such as the address of its default gateway.	
netsh	Network	Allows you to display or modify the network configuration of a computer that is currently running.	Retrieves the proxy settings.
netstat	Network	Displays incoming and outgoing TCP network connections, routing tables, and several network interface and network protocol statistics.	Retrieves the routing table.
ping	Network	Used to troubleshoot connectivity, reachability, and name resolution.	Tests IP address accessibility.
query	User	Displays information about processes, sessions, and Remote Desktop Session Host servers.	
reg	Hardware, Software	Used to perform operations on registry subkey information and values in registry entries.	Reads registry entries.
taskkill		Used to end the `RefinitivWorkspace.exe` process.	
tasklist		Often used in conjunction with taskkill, this identifies whether `RefinitivWorkspace.exe` and Microsoft Office applications are running.	
where	Software	Displays the location of files that match a search pattern.	Retrieves the location of tools files.
whoami	User	Used to display user, group, and privilege information for the user who is currently logged into the local system. If used without parameters, it displays the current domain and username.	Retrieves the security identifier of the current user.

macOS tools

Tool	Type	Summary	System Test use
cat	Software	Allows the creation of single or multiple files, view contents of files, concatenate files, and redirect output.	

[2] In currently supported versions of Workspace, the test performed prior to installation no longer checks for the presence of the PowerShell app, as the 50 most used apps do not require this application. However, if you are using more niche applications, it may be a requirement.

Tool	Type	Summary	System Test use
defaults			Used to retrieve the language settings on the machine.
df	Hardware	Displays disk usage information based on file system.	Retrieves the amount of available disk space.
diskutil	Hardware	A native Apple command-line utility used to retrieve detailed disk information, such as disk partitioning.	Retrieves disk and partitioning information.
echo	Software	Used to output the strings it is passed as arguments.	
exec()		This command can be used to run a script file on a local computer. It can also be used perform tasks in a backup or restore process.	
grep	Software	Used to search text and strings in files.	
hostname			Used to retrieve the machine ID.
ioreg	Hardware	Displays the I/O Kit registry.	
ifconfig	Hardware, Software	Used to configure network interface parameters.	Retrieves network information.
ipconfig	Software	Manages the IP configuration state.	
locale			Used to retrieve the system language.
netstat	Network	Displays incoming and outgoing TCP network connections, routing tables, and several network interface and network protocol statistics.	Retrieves the routing table.
route	Network	Used to retrieve network routing table information, such as the default gateway.	Retrieves information on the default gateway and network interfaces.
scutil	Network	Used to manage system configuration parameters: • scutil-nwi: Retrieves network information • scutil-dns: Retrieves DNS information • scutil-proxy: Retrieves system proxy settings	Retrieves network, DNS, and system proxy information.
sw_vers	Software	Displays the macOS version.	Retrieves the macOS version.
sysctl	Software	Allows kernel variables to be queried and set.	Retrieves system information.
system_profiler	Hardware, software	Used to retrieve system hardware and software configuration information.	Retrieves memory system information.
vm_stat			Used to retrieve machine virtual memory statistics.
who	User	Displays who is currently logged into a machine.	
whoami	User	Used to display user, group, and privilege information for the user who is currently logged into the local system. If used without parameters, it displays the current domain and username.	Retrieves the security identifier of the current user.

Test sections and results

Test result icons

When you run a System Test, Workspace displays the test results with relevant messages and a status. The result displays the test status as an icon.

The tables that follow summarise the meaning of the network test and system test result icons.

Network tests

For the standalone and embedded versions of System Test, checks are performed using the following command:

```
curl -v -I -L -s –connect-timeout 5 -m 5 https://login.ciam.refinitiv.biz/.well-known/openid-configuration
```

For the Web version of System Test, the browser uses the `Fetch` method to check network accessibility.

Result	Icon	Description
Success		The host IP address is discoverable and was contacted successfully.
Unable to connect		The host IP address is discoverable but is not responding or is returning an error, which is usually a security or credential issue. This can be expected occasionally, as some servers may require a login token. However, in this case, the System Test is disconnected.
Failed to resolve IP address		The host IP address is not discoverable. This may be caused by any of the following: • An authorization issue, due to a security tool blocking access. • The server, IP address, or domain is currently not accessible. • The server, IP address, or domain has been removed.

System tests

Result	Icon	Description
None / Unknown		No test status has been found.
Passed		Test matches the required conditions. No further action is required.
Failed		Test does not match the required conditions. Further action needs to be taken to address the issue.
Warning		Test results may not be critical. If Workspace displays a warning message while running the prerequisite tests, you can continue with the installation process. While running the diagnostics tests, this status may restrict some features, but will not prevent you from using the product.
Information		No validation is required for the test, and it is only for information. No further action is required.

System requirements

Web version

For the Web-based System Test, the System Requirements tests are limited to the following:

Test	Description	Type
Browser version	Displays your browser name and version. It also indicates whether you are using a supported product.	Validation

Embedded and standalone versions

For the embedded and standalone System Tests, this section checks for the pre-requisite operating system tools, described in the Pre-requisites section. It also returns the information described in the table below regarding your operating system.

These initial tests ensure that all software prerequisites[3] (such as operating system version, third-party software, and so on), and all hardware prerequisites (such as the CPU speed, RAM size, and so on), meet the minimum requirements to install Workspace:

Test	Description	Type
PowerShell Language Mode	Verifies whether the FullLanguage mode of PowerShell is available. This is the default language mode and is a requirement for Workspace to support all features.	Validation • Required: FullLanguage
Operating System	Verifies if the operating system version installed on your workstation is compatible with Workspace.	Information • Windows release number See Windows 10 in the list of Microsoft Windows versions. • Mac release number See macOS 10.13 onwards in macOS version history.
OS Architecture	Checks whether the operating system is 32- or 64-bit.	Validation • Required: 64-bit
OS Version	Checks whether the operating system version is supported.	Validation • Supported versions are specified in the Workspace System Requirements document.
OS Service Pack	If relevant, the service pack number of your operating system.	Information
Operating System Language	Displays the interface language of your system.	Information
CPU Description	Displays a description of your system.	Information
CPU Type	Provides information regarding the type of CPU you use.	Information
CPU Speed	Checks whether the minimum CPU speed (in GHz) of your computer supports Workspace.	Information
Number of CPU Cores	The CPU number of cores (= logical cores = physical cores x threads)	Validation • Required: 2 cores
Installed Memory	This test verifies if you have enough memory installed on your computer for optimal performance. Installed memory is also known as physical memory or random access memory (RAM).	Validation • Required: 8GB
Primary Screen Resolution	This test is run to verify whether the resolution on your primary screen meets the minimum requirements to support Workspace.	Validation • Required: 1280 x 1024
Color Depth [4]	Verifies if the value of the colour depth that you have on your computer supports Workspace.	Validation • Required: 24-bit
Free Disk Space	Displays the drive that has the most available free space. It provides information on whether enough free disk space is available for installation of Workspace.	Validation • Required: 1 GB
Disk Write Permissions	Verifies that you have access rights to the required folders.	Validation
Registry Access Rights	Verifies that you have access rights to the required registry.	Validation

[3] Currently, some of the values returned by System Test are not in line with the system requirements for Workspace. For further information, refer to the Workspace System Requirements document.

[4] Uses the `RstPlugPrerequisites.dll` plug-in and Win32 APIs to determine the color depth

Computer information

These tests provide information about the machine on which System Test is run. These details can help your support team identify and rectify issues.

Test	Description	Type
Computer Name	Displays the name of the computer.	Information
Computer Domain	Displays the name of the computer domain.	Information
User Account Name	Displays the username used in the current login session. You can see the login information.	Information
Admin Rights	Displays whether you have admin rights on the computer	Information
User Time Zone	Displays the time zone that is set on your system.	Information
Local Time	The Local Time test displays the local time that is set on your system.	Information
User Locale	Displays the language code from your Regional and Language Options. For example, en-US represents English (United States) or en-GB represents English (United Kingdom).	Information
Thin Client Run Mode	Verifies if the current session is running remotely or locally.	Information
Screens	This test collects information on the number of screens.	Information
Screen Details	Displays: • Model Name • Screen Resolution • Primary Screen	Information
Video Adapters	Displays the model, RAM, and manufacturer of the video adapter on your computer.	Information • Required: 128 MB

Office

Test	Description	Type
Microsoft Office	Displays the installed Microsoft Office variant	Information
Microsoft Office version	Verifies the version of Microsoft Office.	Validation • Required: Version 15 or higher
Microsoft Office language	The Microsoft Office Language test displays the language that you have set for Microsoft Office.	Information
Microsoft Office installed through Windows Store	Verifies the installation type of Microsoft Office. If the variant was installed through Microsoft Store, it is unsupported by Workspace.	Validation • Required: false
Microsoft Edge WebView2 Runtime installed	Verifies whether Microsoft Edge WebView2 Runtime is installed. This is required for certain Workspace Add-In functions[5] to be available in the ribbon.	Validation • Required: True
Don’t allow any web add-ins to start	Verifies whether Group and/or Microsoft 365 Trust Center policies are set to deny the use of Web add-ins. The **Don’t allow any web add-ins to start** checkbox must be unchecked for certain Workspace Add-In functions[5] to be available in the ribbon.	Validation • Required: False
Microsoft Office Version for Productivity Tools	Verifies the version of Microsoft Office.	Validation

[5] Items that are affected include Deals BI, Linking, Hotkeys, Traces, Auto Color, Define Palette, Comp List, Annotations, and Logos. For further information, see the Workspace Add-In Installation Guides on the Workspace documentation site.

Test	Description	Type
	This is required for certain Workspace Add-In functions[5] to be available in the ribbon.	• Required: Version 16.0.15601 or higher

Bandwidth

Test	Description	Type
Content Delivery Network (CDN)	Checks connectivity with the main and regional CDN servers	Validation • Minimum recommended download speed: 175 kbit/s
Reverse Proxy		Validation • Minimum recommended download speed: 175 kbit/s

Network

Network tests are used to test connectivity, including:

- Missing connection
- Speed of connection
- Connection to services
- Connection to real-time data
- Connection to time series data

Test	Description	Type
Certificates	Checks whether the trusted Commodo root certificate is installed.	Validation
Check for publisher's certificate revocation	Activating this setting may cause installation to fail because LSEG certificates cannot be updated on a private network without direct Internet access.	Validation • Required: false
Check for server certificate revocation	Activating this setting may cause the installation to fail because LSEG certificates cannot be updated on a private network without direct Internet access.	Validation • Required: false
Product page	Tests connectivity to the product page of Workspace.	Validation
Content Delivery Network	Tests connectivity to content delivery network.	Validation
Login – Authentication	Checks login authentication.	Validation
Login – Heartbeat	Checks login heartbeat.	Validation
Customer Identity and Access Management (CIAM)	Checks the accessibility to new authentication services.	Information
Greenfield Azure	Checks connectivity to a newer set of LSEG services hosted on Azure cloud.	Validation
Support	Checks connectivity to Support.	Validation
API/s	Checks connectivity to API/s.	Validation
Messenger	Checks connectivity to Messenger.	Validation
Advanced Dealing Fully Qualified Domain Names	Checks connectivity to a set of collaborative trading services for Workspace for FX and Dealing communities	Validation
Apps	Checks connectivity to Apps.	Validation
Views	Checks connectivity to Views.	Validation
Real-time	Checks the availability of real-time data, the type of network you are using for real-time data delivery (Private or Internet), your deployment model, and whether your IDN permissions are synchronized.	Validation
Datastream	Checks connectivity to Datastream.	Validation

FX trading (FXT/FxAll)

Test	Description	Type
Single Sign On (SSO)	Checks connectivity to SSO servers	Validation
Dealing/Trading session	Checks connectivity to trading servers	Validation
FXall Apps (example Treasury Center)	Checks connectivity to regional servers hosting FXall apps	Validation
Aggregator access to Order Book, Pricestream, Refinitiv FX Matching		Validation
Trade blotter		Validation
Credit admin		Validation
Connectivity test		Validation
FB	Checks connectivity to the Feed Blender service.	Validation
POMS	Checks connectivity to the Portfolio Order Management System, which is an automated FX trade order management and execution system.	Validation
QT	Checks connectivity to the QuickTrade service.	Validation
TC	Checks connectivity to the Trading Code service.	Validation
Options	Checks connectivity to the Trading Code Options service.	Validation

Partner domains check

Test	Description	Type
Frequently used Partner Domains	Checks DNSs that are permitted and commonly used by Workspace customers. This includes news and search services.	Validation

Appendix A: Workspace Scripts usage

LSEG Workspace now tracks (in other words, monitors and logs) all external processes.

The purpose of tracking these processes is to determine which scripts / tools running from LSEG Workspace may require user execution rights.

To display these processes in the log, the user must grep the '[ProcessTracker]' or '[ProcessScript]' tag in the traces.

Processes

Synchronous processes

A synchronous process is a sequential execution model where tasks are performed one after another in a specific order. These processes are usually started using functions suffixed by 'Sync' such as execSync, spawnSync, and so on,., where the traces are sequential and the PID of the process is -1

```
Line 840: 2022-06-15T12:40:17.815Z|info|[ProcessTracker] [1] execSync (-1) => chcp "chcp"
Line 841: 2022-06-15T12:40:17.990Z|info|[ProcessTracker] [1] exit execSync (-1) => chcp
"chcp"
Line 842: 2022-06-15T12:40:17.990Z|info|[ProcessTracker] spawn time: 0 ms
Line 843: 2022-06-15T12:40:17.990Z|info|[ProcessTracker] exec time: 175.7001 ms
Line 844: 2022-06-15T12:40:17.990Z|info|[ProcessTracker] output: Active code page: 850\r\n
Line 845: 2022-06-15T12:40:17.991Z|info|[ProcessTracker] => code: 0 - signal: null
```

Asynchronous processes

Asynchronous processing is a non-blocking method where tasks are initiated and run independently in the background, allowing the main system to continue executing other operations without waiting for a reply. The results may arrive later in the trace, depending on how long they take. To locate these results, you can use the prefix number or the PID number.

```
Line 1033: 2022-06-15T12:40:24.844Z|info|[ProcessTracker] [3] spawn (33272) => powershell.exe
["-NoLogo","-InputFormat","Text","-NoExit","-ExecutionPolicy","Unrestricted","-Command","-"]
Line 1035: 2022-06-15T12:40:24.917Z|info|[ProcessTracker] [4] spawn (10032) => powershell.exe
["-NoLogo","-InputFormat","Text","-NoExit","-ExecutionPolicy","Unrestricted","-Command","-"]
Line 1037: 2022-06-15T12:40:24.956Z|info|[ProcessTracker] [5] spawn (26296) => powershell.exe
["-NoLogo","-InputFormat","Text","-NoExit","-ExecutionPolicy","Unrestricted","-Command","-"]
Line 1039: 2022-06-15T12:40:24.990Z|info|[ProcessTracker] [6] spawn (12884) => powershell.exe
["-NoLogo","-InputFormat","Text","-NoExit","-ExecutionPolicy","Unrestricted","-Command","-"]
Line 1040: 2022-06-15T12:40:28.611Z|info|[ProcessTracker] [6] exit spawn (12884) =>
powershell.exe ["-NoLogo","-InputFormat","Text","-NoExit","-
ExecutionPolicy","Unrestricted","-
Command","-"]
Line 1041: 2022-06-15T12:40:28.611Z|info|[ProcessTracker] spawn time: 32.9761 ms
Line 1042: 2022-06-15T12:40:28.611Z|info|[ProcessTracker] exec time: 3619.2913 ms
Line 1043: 2022-06-15T12:40:28.611Z|info|[ProcessTracker] input: $OutputEncoding =
[System.Console]::OutputEncoding = [System.Console]::InputEncoding =
[System.Text.Encoding]::UTF8 ; Add-Type -AssemblyName System.Windows.Forms;
[System.Windows.Forms.SystemInformation]::TerminalServerSession\r\nexit\r\n
Line 1044: 2022-06-15T12:40:28.611Z|info|[ProcessTracker] output: False\r\n
Line 1045: 2022-06-15T12:40:28.611Z|info|[ProcessTracker] => code: 0 - signal: null
Line 1046: 2022-06-15T12:40:28.908Z|info|[ProcessTracker] [3] exit spawn (33272) =>
powershell.exe ["-NoLogo","-InputFormat","Text","-NoExit","-
ExecutionPolicy","Unrestricted","-
Command","-"]
Line 1047: 2022-06-15T12:40:28.909Z|info|[ProcessTracker] spawn time: 245.1499 ms
Line 1048: 2022-06-15T12:40:28.909Z|info|[ProcessTracker] exec time: 3916.7045 ms
Line 1049: 2022-06-15T12:40:28.909Z|info|[ProcessTracker] input: $OutputEncoding =
[System.Console]::OutputEncoding = [System.Console]::InputEncoding =
[System.Text.Encoding]::UTF8 ; Get-WmiObject Win32_ComputerSystemProduct | select
Name,Vendor,Version,IdentifyingNumber,UUID | fl\r\nexit\r\n
Line 1050: 2022-06-15T12:40:28.909Z|info|[ProcessTracker] output: \r\n\r\nName :
Latitude 5591\r\nVendor : Dell Inc.\r\nVersion : \r\nIdentifyingNumber : GT28JR2\r\nUUID
: 4C4C4544-0054-3210-8038-C7C04F4A5232\r\n\r\n\r\n\r\n
Line 1051: 2022-06-15T12:40:28.909Z|info|[ProcessTracker] => code: 0 - signal: null
```

Windows

Workspace	tool	arg	result	purpose
startup	chcp		get Shell code page	internal [sync] x 2
startup	echo	%COMPUTERNAME%. %USERDNSDOMAIN%		get Machine Id[6]
startup	powersh ell.exe	[System.Windows.Forms.SystemI nformation]::TerminalServerSessi on	runs in remote session ?	get Machine Id
startup	powersh ell.exe	Get-WmiObject Win32_ComputerSystemProduct | select Name,Vendor,Version,Identifying Number,UUID	Get machine details	get Machine Id
startup	powersh ell.exe	(Get-CimInstance Win32_ComputerSystem).Hypervi sorPresent	hyper-v enabled ?	get Machine Id
startup	powersh ell.exe	Get-WmiObject Win32_OperatingSystem | select Caption,SerialNumber,BuildNumb er,ServicePackMajorVersion,Servi cePackMinorVersion	Get Operating system details	get Machine Id
startup	powersh ell.exe	Get-WmiObject MS_Systeminformation -Namespace "root/wmi" | select systemsku | fl	SKU number	get Machine Id
startup	findstr	/C:"Detected boot environment" "%windir%\Panther\setupact.log"	is UEFI boot	get Machine Id
startup	powersh ell.exe	Get-WmiObject Win32_bios | select Version, SerialNumber, SMBIOSBIOSVersion	virtual host (if virtual) ?	get Machine Id
startup	echo	%firmware_type%	is UEFI boot	get Machine Id
general	netsh	/?		test if tool is available
deployment	netsh	winhttp show proxy	get proxy	
deployment	netsh	lan show profiles	get network wired info	
general	powersh ell	/?		test if tool is available
deployment (For DDP)	powersh ell	Get-WmiObject Win32_NetworkAdapterConfigura tion | fl DNS*	get DNS details	
deployment	netstat	-r	get Default network interface	[sync] x2
general	ipconfig	/?		test if tool is available
deployment	ipconfig	/all	get DNS Suffixes	[sync]
deployment (For DDP)	powersh ell	Get-WmiObject Win32_NetworkAdapter | fl *; echo '#-#-#-#';Get-WmiObject Win32_NetworkAdapterConfigura tion | fl DHCPEnabled	get network details	
deployment	TASKLIS T	/FI "ImageName eq RW-Launcher.exe" /FI "UserName eq		check if REAL process is running

[6] The machine Id is comprised of the machine uuid and the platform. Note that it is more efficient to request only the properties with PowerShell.

Workspace	tool	arg	result	purpose
		%username%" /nh /FO CSV		
product insight	powersh ell	Get-WmiObject Win32_OperatingSystem | fl locale, OSLanguage	get locale	get platform[7]
About	reg	query "HKEY_LOCAL_MACHINE\ \HARDWARE\\DESCRIPTION\ \System\\CentralProcessor\\0" /v FeatureSet	get CPU flags	display CPU info
About	powersh ell	Get-WmiObject Win32_PhysicalMemory | select DataWidth,TotalWidth,Capacity,BankLabel,MemoryType,SMBIOSMemoryType,ConfiguredClockSpeed, FormFactor,Manufacturer,PartNumber,SerialNumber,ConfiguredVoltage,MinVoltage,MaxVoltage | fl	get RAM details	display RAM available
About	powersh ell	Get-CimInstance Win32_PageFileUsage | Select AllocatedBaseSize, CurrentUsage	get RAM details	display RAM free
About	powersh ell	Get-WmiObject Win32_processor | select Name, Revision, L2CacheSize, L3CacheSize, Manufacturer, MaxClockSpeed, Description, UpgradeMethod, Caption, NumberOfLogicalProcessors, NumberOfCores | fl	get processor details	display processor
About	powersh ell	Get-WmiObject Win32_CacheMemory | select CacheType,InstalledSize,Level | fl	get memory details	
About	powersh ell	(Get-CimInstance Win32_ComputerSystem).HypervisorPresent	get memory details	

Mac

The following table outlines the various system tools required by Workspace to gather information about its environment.

Workspace	tool	arg	result	purpose
startup	ioreg	-c IOPlatformExpertDevice -d 2		get Machine Id
startup	hostname	-f		get Machine Id [sync]
startup	sw_vers; sysctl	kern.ostype kern.osrelease kern.osrevision kern.uuid		get Machine Id
startup	echo	$LANG		get Machine Id [sync]
	sw_vers		Get Operating system details	
	defaults	"help"		

[7] You can use the same method as for MachineId to get the platform.

Workspace	tool	arg	result	purpose
	locale		get locale	
	sysctl			
general	ioreg	-h		
	scutil	--nwi	get network details	
	defaults	["read","-globalDomain","AppleLocale"]		
	locale	-a		
	sysctl	machdep.cpu.features		
	vm_stat		Mach Virtual Memory Statistics	
general	system_ profiler	-h		
	sysctl	machdep.cpu hw.cpufrequency_max hw.cpufrequency_min hw.packages hw.physicalcpu_max hw.ncpu hw.tbfrequency hw.cpufamily hw.cpusubfamily		
	sysctl	hw.l1icachesize hw.l1dcachesize hw.l2cachesize hw.l3cachesize		
	sysctl	-n vm.pagesize		
	vm_stat	2>/dev/null | grep "Pages active"		
	system_ profiler	SPMemoryDataType		
	sysctl	-n vm.swapusage 2>/dev/null		
	scutil	--proxy | grep "ProxyAutoConfigURLString"		
	scutil	--dns cat /etc/resolve.conf		
	ifconfig			
	ipconfig			
	route	-n get default 2>/dev/null | grep interface: | awk '{print $2}'		[sync]
	/sbin/ ifconfig	-v		[sync]
	ipconfig	getpacket "lo0" 2>/dev/null | grep lease_time;		[sync] x 10

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