

# MIGRATION FROM SCRIPTING TOOLKIT TO RESTFUL INTERFACE TOOL



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## INTRODUCTION

### What is Scripting Toolkit (STK) and its various utilities?

- Scripting Tool Kit (STK) is a set of legacy tools, which helps to automate many of the manual steps in the server configuration process.
- The Scripting Toolkit utilities control the installation process, read the source server configuration, and duplicate the configuration on a target server through a generated script file.
- Supports HPE ProLiant Gen9, Gen10, and Gen10 Plus servers.
- The Scripting Toolkit utilities include CONREP, HPDISCOVERY, IFHW, HWQUERY, SSASCRIPING, SETBOOTORDER, RBSURESET, STATEMGR, REBOOT, HPRCU, HPCONCFG.

### What is RESTful Interface Tool (HPE iLORest)?

- It is a command-line interface (CLI) tool.
- Used to view or manipulate data from the HPE iLO RESTful API and Redfish API for configuration or inventory.
- Supports HPE ProLiant Gen9, Gen10, and Gen10 Plus servers.
- Users can install the tool on their computer for remote use or can install the tool locally on a server with a Windows OS or Linux® OS.
- The RESTful Interface Tool includes many commands:
  - Global commands, BIOS commands, HPE iLO commands, HPE iLO Repository commands, HPE Smart Array commands, HPE Persistent Memory commands, Raw commands.

### Why are we moving to RESTful Interface Tool from STK?

1. One CLI to manage user's server versus multiple utilities.
2. Take advantage of HPE iLO RESTful API and Redfish API and reduce the complexity of our offering.
3. Follows known RESTful API architecture that helps accelerate the learning curve and adoption.
4. Open-source tool enabling customers to expand features to fit their needs, Extensible tool, no dependencies on firmware (FW) or schema downloads.
5. All operations are secure over HTTPS and protected by HPE iLO user account credentials.
6. All data is interchanged using JSON formatted UTF-8 data.
7. Error responses conform to a well-defined structure and refer to localizable messages.
8. It supports Windows, Linux, and Mac, whereas STK supports Windows and Linux.
9. All resources contain "Type" information for consulting with schemas and documentation.
10. STK supports only local mode, whereas RESTful Interface Tool supports both local and remote, local through HTTP over HPE iLO channel interface (CHIF) and remote via HTTPS through HPE iLO management NIC.
11. The RESTful Interface Tool does not require users to manually add new settings that come with a new BIOS version to the XML file.

## MIGRATION TO RESTFUL INTERFACE TOOL IN DETAIL

### CONREP

The Configuration Replication (CONREP) utility lets users save and load BIOS settings to the server locally under Windows and Linux operating systems. It is supported on all HPE servers.

The RESTful Interface tool utility supports reading and writing of BIOS settings on Gen9 and later servers. It is the go-forward configuration utility for BIOS and other configurations on HPE servers. The following table lists some commonly used CONREP utility commands and their equivalent RESTful Interface Tool command.



**TABLE 1.** Save/load BIOS commands—STK versus HPE iLORest

Description	STK	HPE iLORest
<b>Saving the current settings to a file</b>	conrep -s -f settings.xml	ilorest save --selector=Bios. -f settings.json <a href="https://hewlettpackard.github.io/python-redfish-utility/#save-command">hewlettpackard.github.io/python-redfish-utility/#save-command</a>
<b>Load settings from a captured file</b>	conrep -l -f settings.xml	ilorest load --selector=Bios. -f settings.json <a href="https://hewlettpackard.github.io/python-redfish-utility/#load-command">hewlettpackard.github.io/python-redfish-utility/#load-command</a>
		<b>Note:</b> RESTful Interface Tool captures all the BIOS settings to a file. It is not necessary to remove/edit any of the read-only settings from the file as they are skipped during the processing of the load command.
<b>Reading the current value of individual settings</b>	Not supported	ilorest get bootmode --selector=Bios Output: bootmode =UEFI
<b>Changing the current value of individual settings</b>	Not supported	ilorest set bootmode =UEFI --selector=Bios. --commit

## SETBOOTORDER

SETBOOTORDER enables users to set the order in which devices are booted, including CD-ROM or DVD drives, hard drives, PXE, and USB devices. This utility sets the boot order only for devices that exist for a server. The devices can be set to boot in any order.

The RESTful Interface Tool utility prints a list of entries when no arguments are provided. Run this command with arguments to change the bootorder and set continuous and one-time boot settings.

**TABLE 2.** Boot order command—STK versus HPE iLORest

Description	STK	HPE iLORest
<b>Set the order in which devices are booted</b>	setbootorder cdrom hd pxe usb setbootorder default	ilorest bootorder [2,4,6] --commit <a href="https://hewlettpackard.github.io/python-redfish-utility/#bootorder-command">hewlettpackard.github.io/python-redfish-utility/#bootorder-command</a>

## HPDISCOVERY

HPDISCOVERY provides an inventory of the server being configured and must run on each deployed server. It is run by the server configuration script and captures the following information: system ID, ROM information, processor information, NIC information, PCI devices present in the system, HPE Smart Array controller information.

The RESTful Interface Tool utility is used for viewing server information such as firmware, software, and other useful info.

We can get information related to firmware, software, proxy, thermal, fans, memory, processors, and power by passing these as a parameter to serverinfo.

**TABLE 3.** Server inventory command—STK versus HPE iLORest

Description	STK	HPE iLORest
<b>Generates the file hpdiscovery.xml</b>	hpdiscovery -f /toolkit/hpdiscovery.xml	ilorest serverinfo -f file_name <a href="https://hewlettpackard.github.io/python-redfish-utility/#serverinfo-command">hewlettpackard.github.io/python-redfish-utility/#serverinfo-command</a>



## IFHW, HWQUERY

IFHW and HWQUERY are used from a script file, in conjunction with other utilities, to control the deployment. These utilities enable users to make intelligent queries against the hardware discovery file.

The RESTful Interface Tool utility is used for viewing server information such as firmware, software, and other useful info. We can get information related to firmware, software, proxy, thermal, fans, memory, processors, and power by passing these as a parameter to serverinfo.

**TABLE 4.** IFHW, HWQUERY versus serverinfo

Description	STK	HPE iLORest
<b>This will check if the HPE Smart Array 5i is present or not.</b>	ifhw hpdiscovary.xml allboards.xml "PCI:Smart Array 5i"	ilorest serverinfo -f file_name <a href="https://hewlettpackard.github.io/python-redfish-utility/#serverinfo-command">hewlettpackard.github.io/python-redfish-utility/#serverinfo-command</a>
<b>This will give total RAM Information.</b>	hwquery hpdiscovary.xml allboards.xml MY_SYS_RAM=TotalRAM	

## RBSURESET

RBSURESET resets the BIOS settings for a server by reapplying the default factory setting at the next reboot. It does not erase array configurations or logical storage volumes.

The RESTful Interface Tool utility sets the currently logged-in server to the default BIOS settings. Along with that, we can set user defaults and manufacture defaults instead of factory defaults.

**TABLE 5.** Resetting the BIOS settings—STK versus HPE iLORest

Description	STK	HPE iLORest
<b>Resets to default factory BIOS settings</b>	Rbsureset	ilorest biosdefaults <a href="https://hewlettpackard.github.io/python-redfish-utility/#biosdefaults-command">hewlettpackard.github.io/python-redfish-utility/#biosdefaults-command</a>
<b>Sets BIOS to user defaults instead of factory defaults</b>	Not supported	ilorest biosdefaults --userdefaults <a href="https://hewlettpackard.github.io/python-redfish-utility/#biosdefaults-command">hewlettpackard.github.io/python-redfish-utility/#biosdefaults-command</a>
<b>Sets BIOS to manufacture defaults instead of factory defaults</b>	Not supported	ilorest biosdefaults --manufacturingdefaults <a href="https://hewlettpackard.github.io/python-redfish-utility/#biosdefaults-command">hewlettpackard.github.io/python-redfish-utility/#biosdefaults-command</a>

## SSASCRIPING

HPE SSA inspects the configuration of all internal and external array controllers connected to the server and then writes a script file describing this configuration. HPE SSA reads the array configuration described in a specified script file.

The RESTful Interface Tool utility smartarray discovers all storage controllers installed in the server and managed by the HPE Smart Storage Administrator and lists all available HPE Smart Array controllers.

**TABLE 6.** Storage controller discovery—STK versus HPE iLORest

Description	STK	HPE iLORest
<b>Capture the configuration of an array controller</b>	sssacripping -c FILENAME [-internal   -external] -e FILENAME	i ilorest smartarray i ilorest smartarray --logicaldrivers i ilorest smartarray --physicaldrivers <a href="https://hewlettpackard.github.io/python-redfish-utility/#smartarray-command">hewlettpackard.github.io/python-redfish-utility/#smartarray-command</a>



## HPONCFG

HPONCFG is an online configuration tool used to set up and reconfigure HPE iLO without requiring a reboot of the server operating system. HPONCFG enables users to initially configure features exposed through the RBSU or HPE iLO.

Note: HPONCFG continue to be available as part of iLO Solution at [support.hpe.com/connect/s/software/details?language=en\\_US&softwareId=MTX\\_640d4499d8c64ee79f546d439f](https://support.hpe.com/connect/s/software/details?language=en_US&softwareId=MTX_640d4499d8c64ee79f546d439f)

The RESTful Interface Tool utility rawget performs an HTTP RESTful GET command. Run to retrieve data from the passed-in path. rawpatch/rawpost performs an HTTP RESTful PATCH command. Run to send a patch from the data in the input file.

**TABLE 7.** HPE iLO configuration—STK versus HPE iLORest

Description	STK	HPE iLORest
<b>Writes the HPE iLO configuration obtained from the device to the XML</b>	<code>hponcfg -w config.xml</code>	<code>ilorest rawget /redfish/v1/systems/1/</code> <code>ilorest rawget "path" -f filename.json</code> <a href="https://hewlettpackard.github.io/python-redfish-utility/#rawget-command">hewlettpackard.github.io/python-redfish-utility/#rawget-command</a>
<b>Sets the HPE iLO configuration based on the information in the XML input file</b>	<code>hponcfg -f add_user.xml -l log.txt</code>	<code>ilorest rawpatch rawpatch.json</code> <code>ilorest rawpost rawpatch.json</code> <a href="https://hewlettpackard.github.io/python-redfish-utility/#rawpatch-command">hewlettpackard.github.io/python-redfish-utility/#rawpatch-command</a>
<b>Content of rawpatch.json</b>		<b>Ex:</b> <b>rawpatch.json</b> <pre>{   "/redfish/v1/systems/1":   {     "AssetTag": "NewAssetTag"   } }</pre>

## HPRCU

HPRCU is an RBSU configuration utility similar to CONREP. This utility does not use a definition XML file like the CONREP utility, but directly reads the same table that RBSU uses for feature names and settings.

The RESTful Interface Tool utility supports reading and writing of BIOS settings on Gen9 and later servers. It is the go-forward configuration utility for BIOS and other configurations on HPE servers. The following table lists some commonly used HPRCU utility commands, and their equivalent RESTful Interface Tool command.

**TABLE 8.** Loading system config. and writing it to a server—STK versus HPE iLORest

Description	STK	HPE iLORest
<b>Loads the system configuration from a file and writes it to the target server</b>	<code>hprcu -l -f hprcu.xml</code>	<code>ilorest load --selector=Bios. -f settings.json</code> <a href="https://hewlettpackard.github.io/python-redfish-utility/#load-command">hewlettpackard.github.io/python-redfish-utility/#load-command</a>

## STATEMGR

The STATEMGR utility enables the user to keep track of the implementation state during system reboots. This utility saves persistent state information across reboots of the system.

In RESTful Interface Tool environment, variables are stored in the form of Redfish attributes; we can use the get and set command to read and write to those attributes.

**TABLE 9.** Keeping track of implementation state—STK versus HPE iLORest

Description	STK	HPE iLORest
<b>Reads value from EVNAME</b>	<code>statemgr [-R] [EVNAME]</code>	<code>ilorest get AdminName</code> <a href="https://hewlettpackard.github.io/python-redfish-utility/#get-command">hewlettpackard.github.io/python-redfish-utility/#get-command</a>
<b>Writes the state value to the EVNAME</b>	<code>statemgr [-W] [EVNAME] [VALUE]</code>	<code>ilorest set AdminName=Test</code> <a href="https://hewlettpackard.github.io/python-redfish-utility/#set-command">hewlettpackard.github.io/python-redfish-utility/#set-command</a>



## REBOOT

This utility enables the user to reboot the server with control over which device is the boot device. If no boot drive argument is passed on to REBOOT, the utility reboots the server using the drive specified as the default drive.

In the RESTful Interface Tool utility, there is no direct reboot to the drive. So, we need to set bootorder and then reboot, which will boot into a specified drive as shown in the following.

**TABLE 10.** Rebooting system to PXE—STK versus HPE iLORest

Description	STK	HPE iLORest
Reboots the system to the PXE drive	reboot pxe	ilorest bootorder [9] --commit ilorest reboot <a href="https://hewlettpackard.github.io/python-redfish-utility/#bootorder-command">hewlettpackard.github.io/python-redfish-utility/#bootorder-command</a>

## HARDWARE/OS SUPPORT

### RESTful Interface Tool

#### Hardware

- HPE ProLiant Gen9, Gen10, and Gen10 Plus servers

#### Operating systems

- Linux 64-bit—Red Hat® 7.x, 8.x, SLES 12, SLES 15, Debian
  - RPM package available for installation
  - Debian package available for installation
- Windows x64—Windows 2012 R2, Windows Server 2016, Windows Server 2019, Windows Server 2022
  - MSI package available for installation
- Mac OS 10.x and greater versions

### STK

#### Hardware

- HPE ProLiant Gen9, Gen10, and Gen10 Plus server

#### Operating systems

- Linux 64-bit—Red Hat 7.x, SLES 12, Debian
  - RPM package available for installation
  - Debian package available for installation
- Windows x64—Windows 2012 R2, Windows Server 2016, Windows Server 2019

## LINKS AND REFERENCES

- User guide for RESTful Interface Tool  
[hewlettpackard.github.io/python-redfish-utility/](https://hewlettpackard.github.io/python-redfish-utility/)
- Installing the RESTful Interface Tool  
[hewlettpackard.github.io/python-redfish-utility/#installing-the-RESTful-interface-tool](https://hewlettpackard.github.io/python-redfish-utility/#installing-the-RESTful-interface-tool)
- Starting the RESTful Interface Tool  
[hewlettpackard.github.io/python-redfish-utility/#starting-the-RESTful-interface-tool](https://hewlettpackard.github.io/python-redfish-utility/#starting-the-RESTful-interface-tool)
- Using the RESTful Interface Tool  
[hewlettpackard.github.io/python-redfish-utility/#using-the-RESTful-interface-tool](https://hewlettpackard.github.io/python-redfish-utility/#using-the-RESTful-interface-tool)



## DOCUMENTATION RESOURCES

- HPE iLO RESTful APIs  
[hewlettpackard.github.io/ilo-rest-api-docs/ilo5/](https://hewlettpackard.github.io/ilo-rest-api-docs/ilo5/)
- RESTful Interface Tool open source  
[github.com/HewlettPackard/python-redfish-utility](https://github.com/HewlettPackard/python-redfish-utility)
- RESTful Interface Tool documentation  
[hewlettpackard.github.io/python-redfish-utility/](https://hewlettpackard.github.io/python-redfish-utility/)

## WEBSITES

### General websites

- Hewlett Packard Enterprise Information Library  
[hpe.com/info/EIL](https://hpe.com/info/EIL)
- Single Point of Connectivity Knowledge (SPOCK) Storage compatibility matrix  
[hpe.com/storage/spock](https://hpe.com/storage/spock)

## SUPPORT AND OTHER RESOURCES

### Accessing HPE support

- For live assistance, go to the Contact HPE worldwide website  
[hpe.com/info/assistance](https://hpe.com/info/assistance)
- To access documentation and support services, go to the HPE Support Center website  
[hpe.com/support/hpesc](https://hpe.com/support/hpesc)

### Information to collect

- Technical support registration number (if applicable)
- Product name, model or version, and serial number
- Operating system name and version
- Firmware version
- Error messages
- Product-specific reports and logs
- Add-on products or components
- Third-party products or components

### Accessing updates

Some software products provide a mechanism for accessing software updates through the product interface. Review product documentation to identify the recommended software update method.

- To download product updates:  
HPE Support Center  
[hpe.com/support/hpesc](https://hpe.com/support/hpesc)
- Hewlett Packard Enterprise Support Center: Software downloads  
[hpe.com/support/downloads](https://hpe.com/support/downloads)
- My HPE Software Center  
[hpe.com/software/hpesoftwarecenter](https://hpe.com/software/hpesoftwarecenter)
- To subscribe to eNewsletters and alerts  
[hpe.com/support/e-updates](https://hpe.com/support/e-updates)





- To view and update user entitlements and to link their contracts and warranties with their profile, they can go to the HPE Support Center More Information on Access to HPE Support Materials page [hpe.com/support/AccessToSupportMaterials](https://hpe.com/support/AccessToSupportMaterials)

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**IMPORTANT**

Access to some updates might require product entitlement when accessed through the HPE Support Center. Users must have an HPE Passport setup with relevant entitlements.

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**Remote support**

Remote support is available with supported devices as part of warranty or contractual support agreement. It provides intelligent event diagnosis and automatic, secure submission of hardware event notifications to HPE, which will initiate a fast and accurate resolution based on the product's service level. HPE strongly recommends that users register their device for remote support.

If the product includes additional remote support details, use search to locate that information.

**Remote support and HPE Proactive Care information**

- HPE Get Connected  
[hpe.com/services/getconnected](https://hpe.com/services/getconnected)
- HPE Pointnext Tech Care  
[hpe.com/services/proactivecare](https://hpe.com/services/proactivecare)
- HPE Pointnext Complete Care  
[hpe.com/services/datacentercare](https://hpe.com/services/datacentercare)

**HPE Proactive Care customer information**

- HPE Proactive Care Central  
[hpe.com/services/proactivecarecentral](https://hpe.com/services/proactivecarecentral)
- HPE Proactive Care service activation  
[hpe.com/services/proactivecarecentralgetstarted](https://hpe.com/services/proactivecarecentralgetstarted)

**Warranty information**

To view the warranty information for the product, see the following links:

- HPE ProLiant and IA-32 servers and options  
[hpe.com/support/ProLiantServers-Warranties](https://hpe.com/support/ProLiantServers-Warranties)
- HPE Cloudline and Enterprise servers  
[hpe.com/support/EnterpriseServers-Warranties](https://hpe.com/support/EnterpriseServers-Warranties)
- HPE storage products  
[hpe.com/support/Storage-Warranties](https://hpe.com/support/Storage-Warranties)
- HPE networking products  
[hpe.com/support/Networking-Warranties](https://hpe.com/support/Networking-Warranties)

**Regulatory information**

To view the regulatory information for the product, view the Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products, available at the HPE Support Center: [hpe.com/support/Safety-Compliance-EnterpriseProducts](https://hpe.com/support/Safety-Compliance-EnterpriseProducts).



## Reference guide

### Additional regulatory information

- HPE is committed to providing our customers with information about the chemical substances in our products as needed to comply with legal requirements such as Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH) (Regulation EC No 1907/2006 of the European Parliament and the Council). A chemical information report for this product can be found at: [hpe.com/info/reach](https://hpe.com/info/reach)
- For HPE product environmental and safety information and compliance data, including Restriction of Hazardous Substances Directive (RoHS) and REACH, see: [hpe.com/info/ecodata](https://hpe.com/info/ecodata)
- For HPE environmental information, including company programs, product recycling, and energy efficiency, see: [hpe.com/info/environment](https://hpe.com/info/environment)

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HPE is committed to providing documentation that meets the users' needs. To help us improve the documentation, please follow HPE Support Center Portal document feedback process. This function will automatically capture the essential information. They can find this feedback function at the bottom of any document on the portal.

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## LEARN MORE AT

[hpe.com/us/en/servers/restful-api.html](https://hpe.com/us/en/servers/restful-api.html)

Make the right purchase decision.  
Contact our presales specialists.



**Chat now (sales)**



**Call now**



**Get updates**

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