

## **Fabricks Audit Automation Project**

### **Robot Framework**

Libraries Used:

### **Installations Required**

Python 3.8.2 (Latest Version):

Selenium:

Robot Framework:

Robot Framework Libraries:

Python Libraries:

Microsoft Excel:

Visual Studio Code: (Optional)

### **Flow of Execution**

Script to be run by the user:

Input File Format:

Output of the script:

Configuration File:

# Fabrics Audit Automation Project

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## Robot Framework

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Robot Framework is a generic open source automation framework for acceptance testing, acceptance test driven development (ATDD), and robotic process automation (RPA). It has easy-to-use tabular test data syntax and it utilizes the keyword-driven testing approach. Its testing capabilities can be extended by test libraries implemented either with Python or Java, and users can create new higher-level keywords from existing ones using the same syntax that is used for creating test cases.

### Libraries Used:

1. **Built-in:**

This is the default library that need not be included at the beginning of the Robot code.  
<https://robotframework.org/robotframework/latest/libraries/BuiltIn.html>

2. **Operating System:**

This library is required to access the file systems and command prompt if required.  
<https://robotframework.org/robotframework/latest/libraries/OperatingSystem.html>

3. **Collections:**

This library is required to create List and Dictionaries. It also has all the operations that has to be done on Lists and Dictionaries.  
<https://robotframework.org/robotframework/latest/libraries/Collections.html>

4. **String:**

This library includes strings and its operations. Conversions, Splitting, Reversing etc.  
<https://robotframework.org/robotframework/latest/libraries/Collections.html>

5. **Process:**

This library is used to start any windows process even the terminal. It is also used to terminate certain processes. For example in order to terminate the web browser this library is used.  
<https://robotframework.org/robotframework/latest/libraries/Process.html>

6. **Selenium2Library:**

This library is used simulate the user actions on the web browser. With the help of web driver, it controls the actions of the web-browser.  
<https://robotframework.org/Selenium2Library/Selenium2Library.html>

## Installations Required

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### Python 3.8.2 (Latest Version):

- Go to <https://www.python.org/downloads/> and download latest version of python for windows/linux.
- Go to the directory where python has been installed. Copy the path to python.exe and scripts. Add it to the system variables.
- Open command prompt and type "py" to verify the proper installation of python.

- Install PIP from any git repository.
- Note: Remove previous versions of python before the installation.

## Selenium:








- Open command prompt and type "pip install -U selenium"

```
C:\Users\ssumanth>pip install -U selenium
Collecting selenium
  Using cached selenium-3.141.0-py2.py3-none-any.whl (904 kB)
Requirement already satisfied, skipping upgrade: urllib3 in c:\users\ssumanth\appdata\local\programs\python\python38-32\lib\site-packages (from selenium) (1.25.8)
Installing collected packages: selenium
Successfully installed selenium-3.141.0
```

















- Enter into the python environment(just enter py or python) and enter "from selenium import webdriver". No error should indicate the proper installation.

```
C:\Users\ssumanth>py
Python 3.8.1 (tags/v3.8.1:1b293b6, Dec 18 2019, 22:39:24) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> from selenium import webdriver
>>>
```

- Download selenium web-driver (particular web browser has particular web-drivers). Download that version of web-driver which supports the web browser you have. (For Firefox it is geckodriver.exe) <https://github.com/mozilla/geckodriver/releases> .

 <a href="#">geckodriver-v0.26.0-linux32.tar.gz</a>	2.22 MB
 <a href="#">geckodriver-v0.26.0-linux64.tar.gz</a>	2.28 MB
 <a href="#">geckodriver-v0.26.0-macos.tar.gz</a>	1.91 MB
 <a href="#">geckodriver-v0.26.0-win32.zip</a>	1.37 MB
 <a href="#">geckodriver-v0.26.0-win64.zip</a>	1.46 MB
 <a href="#">Source code (zip)</a>	
 <a href="#">Source code (tar.gz)</a>	

- Copy the geckodriver.exe file to the python **scripts** folder.

 DLLs	1/14/2020 10:09 AM	File folder	
 Doc	1/14/2020 10:08 AM	File folder	
 ExcelRobotTest	3/17/2020 8:29 PM	File folder	
 include	1/14/2020 10:08 AM	File folder	
 Lib	1/14/2020 10:08 AM	File folder	
 libs	1/14/2020 10:08 AM	File folder	
 <b>Scripts</b>	3/17/2020 8:54 PM	File folder	
 tcl	1/14/2020 10:09 AM	File folder	
 Tools	1/14/2020 10:08 AM	File folder	
 LICENSE.txt	12/18/2019 11:26 ...	Text Document	31 KB
 NEWS.txt	12/18/2019 11:27 ...	Text Document	859 KB
 python.exe	12/18/2019 11:26 ...	Application	96 KB
 python3.dll	12/18/2019 11:26 ...	Application extens...	58 KB
 python38.dll	12/18/2019 11:26 ...	Application extens...	3,834 KB
 pythonw.exe	12/18/2019 11:26 ...	Application	94 KB
 vcruntime140.dll	12/18/2019 11:27 ...	Application extens...	85 KB

## Robot Framework:

- Open command prompt and enter "pip install robotframework"

```
C:\Users\ssumanth>pip install robotframework
Collecting robotframework
  Using cached robotframework-3.1.2-py2.py3-none-any.whl (602 kB)
Installing collected packages: robotframework
Successfully installed robotframework-3.1.2
```

- Next command "pip install robotframework-selenium2library"

```
C:\Users\ssumanth>pip install robotframework-selenium2library
Collecting robotframework-selenium2library
  Using cached robotframework_selenium2library-3.0.0-py2.py3-none-any.whl (6.2 kB)
Requirement already satisfied: robotframework-seleniumlibrary>=3.0.0 in c:\users\ssumanth\appdata\local\programs\python\python38-32\lib\site-packages (from robotframework-selenium2library) (4.2.0)
Requirement already satisfied: selenium>=3.141.0 in c:\users\ssumanth\appdata\local\programs\python\python38-32\lib\site-packages (from robotframework-seleniumlibrary>=3.0.0->robotframework-selenium2library) (3.141.0)
Requirement already satisfied: robotframework>=3.0.4 in c:\users\ssumanth\appdata\local\programs\python\python38-32\lib\site-packages (from robotframework-seleniumlibrary>=3.0.0->robotframework-selenium2library) (3.1.2)
Requirement already satisfied: urllib3 in c:\users\ssumanth\appdata\local\programs\python\python38-32\lib\site-packages (from selenium>=3.141.0->robotframework-seleniumlibrary>=3.0.0->robotframework-selenium2library) (1.25.8)
Installing collected packages: robotframework-selenium2library
Successfully installed robotframework-selenium2library-3.0.0
```

- verifying the installation

cmd>> pip show robotframework

cmd>> pip check

```
C:\Users\ssumanth>pip show robotframework
Name: robotframework
Version: 3.1.2
Summary: Generic automation framework for acceptance testing and robotic process automation (RPA)
Home-page: http://robotframework.org
Author: Pekka Klärck
Author-email: peke@eliga.fi
License: Apache License 2.0
Location: c:\users\ssumanth\appdata\local\programs\python\python38-32\lib\site-packages
Requires:
Required-by: robotframework-seleniumlibrary, robotframework-excellib, robotframework-excel, robotframework-datadrivers
```

- Add ".\python38-32\lib\site-packages" to the system variables. This is the folder where all the libraries of robot framework would be present.

## Robot Framework Libraries:

- pip install selenium2library

```
C:\Users\ssumanth>pip install robotframework-selenium2library
Collecting robotframework-selenium2library
  Using cached robotframework_selenium2library-3.0.0-py2.py3-none-any.whl (6.2 kB)
Requirement already satisfied: robotframework-seleniumlibrary>=3.0.0 in c:\users\ssumanth\appdata\local\programs\python\python38-32\lib\site-packages (from robotframework-selenium2library) (4.2.0)
Requirement already satisfied: robotframework>=3.0.4 in c:\users\ssumanth\appdata\local\programs\python\python38-32\lib\site-packages (from robotframework-seleniumlibrary>=3.0.0->robotframework-selenium2library) (3.1.2)
Requirement already satisfied: selenium>=3.141.0 in c:\users\ssumanth\appdata\local\programs\python\python38-32\lib\site-packages (from selenium>=3.141.0->robotframework-seleniumlibrary>=3.0.0->robotframework-selenium2library) (3.141.0)
Requirement already satisfied: urllib3 in c:\users\ssumanth\appdata\local\programs\python\python38-32\lib\site-packages (from selenium>=3.141.0->robotframework-seleniumlibrary>=3.0.0->robotframework-selenium2library) (1.25.8)
Installing collected packages: robotframework-selenium2library
Successfully installed robotframework-selenium2library-3.0.0
```

- No need to install other libraries as it will be automatically installed with robot framework.

## Python Libraries:

- pip install xlswriter

```
C:\Users\ssumanth>pip install xlswriter
Collecting xlswriter
  Using cached XlsxWriter-1.2.8-py2.py3-none-any.whl (141 kB)
Installing collected packages: xlswriter
Successfully installed xlswriter-1.2.8
```

- pip install xlrd

```
C:\Users\ssumanth>pip install xlrd
Collecting xlrd
  Using cached xlrd-1.2.0-py2.py3-none-any.whl (103 kB)
Installing collected packages: xlrd
Successfully installed xlrd-1.2.0
```

## Microsoft Excel:

Latest version of microsoft office/Excel that is compatible with the windows server version.

## Visual Studio Code: (Optional)

- Download VS code from this link and install it <https://code.visualstudio.com/download> .
- Add extension "Robot Framework Intellisense"
- Make sure that all the files that are created must be in same directory

## Flow of Execution

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### Script to be run by the user:

`<Script_folder>\Fabrics_audit_run.py` py is the file that need to run along with a parameter.

User can enter --help or -h for the format of giving paramaters.

```
py .\Audit_run.py unknown_parameter
-h, --help for help message
```

```
py .\Audit_run.py --help
-i, --input [input_file_path]
```

Valid parameter looks like this:

```
py .\Audit_run.py -i .\Audit_input.xlsx
```


## Input File Format:

- Input file would be a excel sheet placed anywhere in the system. User has to provide the path of the input file as a parameter as shown in the above pictures.
- Input excel file should consider 12 columns as shown in the same format.





	A	B	C	D	E	F	G	H	I	J	K	L
1	Part Number	Card Name	Chipset	TYPE	OFED	WinOF	WinOF2	Vmware	MFT	Windows FW	Linux RoCE	FW binary
2	P23664-B21	HPE InfiniBand HDR/Ethernet 200Gb 1-port MCX653105A-HDAT QSFP56 x16 Adapter (Satima II-1P)	CX6	VPI	YES	NO	YES	NO	YES	YES	NO	YES
3	P23665-B21	HPE InfiniBand HDR100/Ethernet 100Gb 1-port MCX653105A-ECAT QSFP56 x16 Adapter (Virunga II-1P)	CX6	VPI	YES	NO	YES	NO	YES	YES	NO	YES
4	P23666-B21	HPE InfiniBand HDR100/Ethernet 100Gb 2-port MCX653105A-ECAT QSFP56 x16 Adapter (Virunga II-2P)	CX6	VPI	YES	NO	YES	NO	YES	YES	NO	YES
5	P06154-B21	HPE InfiniBand HDR/Ethernet 200Gb 1-port 940QSFP56 x16 Adapter (Satima-1P)	CX6	VPI	YES	NO	YES	NO	YES	YES	NO	YES
6	P06250-B21	HPE InfiniBand HDR100/Ethernet 100Gb 1-port 940QSFP56 x16 Adapter (Virunga-1P)	CX6	VPI	YES	NO	YES	NO	YES	YES	NO	YES
7	P06251-B21	HPE InfiniBand HDR100/Ethernet 100Gb 2-port 940QSFP56 x16 Adapter (Virunga-2P)	CX6	VPI	YES	NO	YES	NO	YES	YES	NO	YES
8	R1E59A	HPE Apollo 9000 InfiniBand HDR 940x FIO Mezzanine Adapter (Comal)	CX6	VPI	YES	NO	YES	NO	YES	NO	NO	YES
9	872726-B21	HPE InfiniBand EDR/Ethernet 100Gb 2-port 841QSFP28 Adapter (Bradford-2)	CX5	VPI	YES	NO	YES	YES	YES	YES	NO	YES
10	P02012-B21	HPE InfiniBand EDR/Ethernet 100Gb 1-port 841QCP QSFP28 Adapter (Berkshire)	CX5	VPI	YES	NO	YES	NO	YES	NO	NO	YES

## Output of the script:

- Output would be collected in the folder named **Fabrics\_Audit\_Reports**. Path to the folder should be given in the config file.
- By default the path of the output file would be `<path to script folder>\\Fabrics_Audit_Reports`
- User can give specific path to the output folder in the config file. Then the path to output file would be `<output_path>\\Fabrics_Audit_Reports\\Audit_<date_time>\\files.xlsx`

 Audit_10-07-2020_21-01-08	10/8/2020 2:58 PM	File folder
 Audit_10-07-2020_15-44-29	10/7/2020 4:26 PM	File folder
 Audit_10-07-2020_13-10-38	10/7/2020 1:16 PM	File folder
 Audit_10-07-2020_12-51-01	10/7/2020 1:08 PM	File folder

- Output folder **Fabric\_Audit\_Reports\\<date\_time>** consists of four excel sheets.

 Audit_report_consolidated_10-07-2020_2...	10/7/2020 10:46 PM	Microsoft Excel W...	79 KB
 Audit_report_summary_10-07-2020_21-0...	10/8/2020 12:32 A...	Microsoft Excel W...	125 KB
 Audit_report_summary_alterate_10-07-2...	10/8/2020 12:32 A...	Microsoft Excel W...	101 KB
 Audit_report_unique_10-07-2020_21-01-...	10/8/2020 12:31 A...	Microsoft Excel W...	51 KB

### 1. Audit\_report\_consolidated:

Contains all the products of all part number and their details in a single sheet.

1	A	B	C	D	E	F	G	H
	Part Number	Product name	Date	Version	OS	Download Page	Description	Severity
1	P23664-B21	* RECOMMENDED * Mellanox InfiniBand and Ethernet Driver (OFED) (Connect v4 and above) for SUSE Linux Enterprise Server 12 Service Pack 5	Sep 24, 2020	Driver   Network   5.1-2.3.7.1	SUSE Linux Enterprise Server 12	<a href="https://support.hpe.com/hpsc/swd/public/detail?swItemId=MTX_433068844c394fa1879b747966">https://support.hpe.com/hpsc/swd/public/detail?swItemId=MTX_433068844c394fa1879b747966</a>	VPI (Virtual Protocol Interconnect) driver for use with SUSE Linux Enterprise Server 12 Service Pack 5	Recommended
2	P23664-B21	* RECOMMENDED * Mellanox InfiniBand and Ethernet Driver (Connect-v4 and above) for Red Hat Enterprise Linux 7 Update 6	Sep 24, 2020	Driver   Network   5.1-2.3.7.1	Red Hat Enterprise Linux 7 Server	<a href="https://support.hpe.com/hpsc/swd/public/detail?swItemId=MTX_98172643858e4928a52e747888">https://support.hpe.com/hpsc/swd/public/detail?swItemId=MTX_98172643858e4928a52e747888</a>	VPI (Virtual Protocol Interconnect) driver for use with Red Hat Enterprise Linux 7 Update 6	Recommended
3	P23664-B21	* RECOMMENDED * Mellanox InfiniBand and Ethernet Driver (Connect-v4 and above) for Red Hat Enterprise Linux 7 Update 5	Sep 24, 2020	Driver   Network   5.1-2.3.7.1	Red Hat Enterprise Linux 7 Server	<a href="https://support.hpe.com/hpsc/swd/public/detail?swItemId=MTX_1ade5838f17c48a2a4720bee4c">https://support.hpe.com/hpsc/swd/public/detail?swItemId=MTX_1ade5838f17c48a2a4720bee4c</a>	VPI (Virtual Protocol Interconnect) driver for use with Red Hat Enterprise Linux 7 Update 5	Recommended
4	P23664-B21	* RECOMMENDED * Mellanox InfiniBand and Ethernet Driver (Connect-v4 and above) for Red Hat Enterprise Linux 7 Update 5	Sep 24, 2020	Driver   Network   5.1-2.3.7.1	Red Hat Enterprise Linux 8 Server	<a href="https://support.hpe.com/hpsc/swd/public/detail?swItemId=MTX_3ea253e151564a42b7b3f5e898">https://support.hpe.com/hpsc/swd/public/detail?swItemId=MTX_3ea253e151564a42b7b3f5e898</a>	VPI (Virtual Protocol Interconnect) driver for use with Red Hat Enterprise Linux 8 Update 0	Recommended
5	P23665-B21	* RECOMMENDED * Mellanox InfiniBand and Ethernet Driver (Connect-v4 and above) for Red Hat Enterprise Linux 8 Update 0	Sep 24, 2020	Driver   Network   5.1-2.3.7.1	Red Hat Enterprise Linux 8 Server	<a href="https://support.hpe.com/hpsc/swd/public/detail?swItemId=MTX_3ea253e151564a42b7b3f5e898">https://support.hpe.com/hpsc/swd/public/detail?swItemId=MTX_3ea253e151564a42b7b3f5e898</a>	VPI (Virtual Protocol Interconnect) driver for use with Red Hat Enterprise Linux 8 Update 0	Recommended
101	P23665-B21	* RECOMMENDED * Mellanox InfiniBand and Ethernet Driver (OFED) (Connect v4 and above) for SUSE Linux Enterprise Server 15 Service Pack 1	Sep 24, 2020	Driver   Network   5.1-2.3.7.1	SUSE Linux Enterprise Server 15	<a href="https://support.hpe.com/hpsc/swd/public/detail?swItemId=MTX_13086398c364828ff7a23a393">https://support.hpe.com/hpsc/swd/public/detail?swItemId=MTX_13086398c364828ff7a23a393</a>	VPI (Virtual Protocol Interconnect) driver for use with SUSE Linux Enterprise Server 15 Service Pack 1	Recommended
102	P23665-B21	* RECOMMENDED * Mellanox InfiniBand and Ethernet Driver (OFED) (Connect v4 and above) for SUSE Linux Enterprise Server 12 Service Pack 4	Sep 24, 2020	Driver   Network   5.1-2.3.7.1	SUSE Linux Enterprise Server 12	<a href="https://support.hpe.com/hpsc/swd/public/detail?swItemId=MTX_4c7f9eb3d02441468f250a348a">https://support.hpe.com/hpsc/swd/public/detail?swItemId=MTX_4c7f9eb3d02441468f250a348a</a>	VPI (Virtual Protocol Interconnect) driver for use with SUSE Linux Enterprise Server 12 Service Pack 4	Recommended
103	P23665-B21	* RECOMMENDED * Mellanox InfiniBand and Ethernet Driver (OFED) (Connect v4 and above) for SUSE Linux Enterprise Server 12 Service Pack 3	Sep 24, 2020	Driver   Network   5.1-2.3.7.1	SUSE Linux Enterprise Server 12	<a href="https://support.hpe.com/hpsc/swd/public/detail?swItemId=MTX_68c4e493ad8c9d3c3a880e4c">https://support.hpe.com/hpsc/swd/public/detail?swItemId=MTX_68c4e493ad8c9d3c3a880e4c</a>	VPI (Virtual Protocol Interconnect) driver for use with SUSE Linux Enterprise Server 12 Service Pack 3	Recommended
104								

### 2. Audit\_report\_unique:

Contains only the recently published version of the particular product of all part numbers in a single excel sheet.

### 3. Audit\_report\_summary:

Contains summary of the entire data collected. Each part number is given a different sheet within a single excel file. Each sheet(part number) consists of 9 columns as shown below. Top left cell (A1) has the part number and cell besides that has the corresponding card name.

	A	B	C	D	E	F	G	H	I
1	P02012-B21	HPE InfiniBand EDR Server 800Gb 1-port B410CP QSFP28 Adapter (Black/Blue)							
2	Group Name	Product Name	Date	Version	OS	File name	Download URL	Description	Search
3	Mellanox OFED	Red Hat Enterprise Linux 7 Update 6 (ARM - AARCH64)	Jun 10, 2020	Driver   Network   5.0-2.1.8.0	Red Hat Enterprise Linux 7 Server for ARM	MLNX_OFED_LINUX-5.0-2.1.8.0-arm64e-mlnx	<a href="https://support.hpe.com/hpsc/swd/public/detail?swItemId=a16696482736444602004493">https://support.hpe.com/hpsc/swd/public/detail?swItemId=a16696482736444602004493</a>	VFIO Virtual Protocol Recommended driver to use with	Recommended
4		Red Hat Enterprise Linux 8 Update 0 (ARM - AARCH64)	Jun 10, 2020	Driver   Network   5.0-1.0.0.0	Red Hat Enterprise Linux 8 Server for ARM	MLNX_OFED_LINUX-5.0-1.0.0.0-arm64e-mlnx	<a href="https://support.hpe.com/hpsc/swd/public/detail?swItemId=a16696482736444602004493">https://support.hpe.com/hpsc/swd/public/detail?swItemId=a16696482736444602004493</a>	VFIO Virtual Protocol Recommended driver to use with	Recommended
5		Red Hat Enterprise Linux 7 Update 5 (ARM - AARCH64)	Nov 05, 2019	Driver   Network   4.6-1.0.1.1(A)	Red Hat Enterprise Linux 7 Server for ARM	MLNX_OFED_LINUX-4.6-1.0.1.1(A)-arm64e-mlnx	<a href="https://support.hpe.com/hpsc/swd/public/detail?swItemId=a16696482736444602004493">https://support.hpe.com/hpsc/swd/public/detail?swItemId=a16696482736444602004493</a>	VFIO Virtual Protocol Recommended driver to use with	Recommended
6	WinOF	Not Supported							
7	WinOF2	No Products Found							
8	nmlx4_en ESXi 6.7 Driver Smart Components	Not Supported							
9	nmlx4_en ESXi 6.5 Driver Smart Components	Not Supported							
10	nmlx4_en ESXi 6.0 Driver Smart Components	Not Supported							
11	nmlx5_en ESXi 7.0 Driver Smart Components	Not Supported							
12	nmlx5_en ESXi 6.7 Driver Smart Components	Not Supported							
13	nmlx5_en ESXi 6.5 Driver Smart Components	Not Supported							
14	nmlx5_en ESXi 6.0 Driver Smart Components	Not Supported							
15	Linux RoCE driver Smart Components	Not Supported							
16	net-mst Kernel Driver ESXi6.0 Smart component	Not Supported							
17	net-mst Kernel Driver ESXi6.5 and 6.7 Smart component	Not Supported							
18	net-mst Kernel Driver ESXi7.0 Smart component	Not Supported							
19	Mellanox MFT DR_FW Tools Smart Components	No Products Found							
20	Linux firmware smart components	No Products Found							
21	Windows firmware smart components	Not Supported							
22	ESXi 6.0 firmware smart components	Not Supported							
23	ESXi 6.5 firmware smart components	Not Supported							
24	ESXi 6.7 firmware smart components	Not Supported							
25	ESXi 7.0 firmware smart components	Not Supported							
26	Firmware binary posting	* RECOMMENDED * Firmware for HPE InfiniBand EDR/Ethernet 100Gb 1-port B410CP QSFP28 Adapter: HPE part number P02012-B21	Jun 10, 2020	Firmware   Network   16.27.2008	Red Hat Enterprise Linux 7 Server for ARM	hrc-connect04-mh-ML_27_2008-P02012-B21_Arch-UEFI	<a href="https://support.hpe.com/hpsc/swd/public/detail?swItemId=a16696482736444602004493">https://support.hpe.com/hpsc/swd/public/detail?swItemId=a16696482736444602004493</a>	Firmware for use with HPE InfiniBand and EDR/Ethernet 100Gb 1-port B410CP QSFP28 Adapter.	Recommended
27		* RECOMMENDED * Firmware for HPE InfiniBand FDR/Ethernet 40/50Gb 2-port 547FLR-QSFP Adapter : HPE part number 879482-B21	Apr 13, 2020	Firmware   Network   16.27.1016-Flex-3.5.901	Red Hat Enterprise Linux 7 Server for ARM	hrc-connect04-mh-ML_27_2016-879482-B21_Arch-UEFI	<a href="https://support.hpe.com/hpsc/swd/public/detail?swItemId=a16696482736444602004493">https://support.hpe.com/hpsc/swd/public/detail?swItemId=a16696482736444602004493</a>	Firmware for use with HPE InfiniBand and EDR/Ethernet 40/50Gb 2-port 547FLR-QSFP Adapter.	Recommended
28	Mellanox MFT	No Products Found							

#### Colour code explained:

- If any card is not supported for any particular group it is marked in a green bold font as "Not Supported".
- If any card is supported for the group and yet has no products discovered, then it is marked in a bold red font as "No products found".
- Under Firmware binary posting the products that are coloured in blue are the ones which has different part number in it yet get populated under the current part number search.

Mellanox OFED	Red Hat Enterprise Linux 7 Update 6 (ARM - AARCH64)	Jun 10, 2020	Driver   Network   5.0-2.1.8.0
	Red Hat Enterprise Linux 8 Update 0 (ARM - AARCH64)	Jun 10, 2020	Driver   Network   5.0-1.0.0.0
	Red Hat Enterprise Linux 7 Update 5 (ARM - AARCH64)	Nov 05, 2019	Driver   Network   4.6-1.0.1.1(A)
WinOF	Not Supported		
WinOF2	No Products Found		
nmlx4_en ESXi 6.7 Driver Smart Components	Not Supported		
nmlx4_en ESXi 6.5 Driver Smart Components	Not Supported		
nmlx4_en ESXi 6.0 Driver Smart Components	Not Supported		
nmlx5_en ESXi 7.0 Driver Smart Components	Not Supported		
nmlx5_en ESXi 6.7 Driver Smart Components	Not Supported		
nmlx5_en ESXi 6.5 Driver Smart Components	Not Supported		
nmlx5_en ESXi 6.0 Driver Smart Components	Not Supported		
Linux RoCE driver Smart Components	Not Supported		
net-mst Kernel Driver ESXi6.0 Smart component	Not Supported		
net-mst Kernel Driver ESXi6.5 and 6.7 Smart component	Not Supported		
net-mst Kernel Driver ESXi7.0 Smart component	Not Supported		
Mellanox MFT DR_FW Tools Smart Components	No Products Found		
Linux firmware smart components	No Products Found		
Windows firmware smart components	Not Supported		
ESXi 6.0 firmware smart components	Not Supported		
ESXi 6.5 firmware smart components	Not Supported		
ESXi 6.7 firmware smart components	Not Supported		
ESXi 7.0 firmware smart components	Not Supported		
Firmware binary posting	* RECOMMENDED * Firmware for HPE InfiniBand EDR/Ethernet 100Gb 1-port 8410CP QSFP28 Adapter: HPE part number P02012-B21	Jun 10, 2020	Firmware   Network   16.27.2008
	* RECOMMENDED * Firmware for HPE InfiniBand FDR/Ethernet 40/50Gb 2-port 547FLR-QSFP Adapter : HPE part number 879482-B21	Apr 13, 2020	Firmware   Network   16.27.1016-Flex-3.5.901

### 4. Audit\_report\_summary\_alterdate:

In this report each group name is considered as a single sheet and all the part numbers are listed within it. It has 10 columns. Top left cell (A1) of each sheet represents the current group name.



A	B	C	D	E	F	G	H	I	J
1	Fireware binary posting								
2	<b>Card Name</b>	<b>Part Number</b>	<b>Product Name</b>	<b>Date</b>	<b>Version</b>	<b>OS</b>	<b>File name</b>	<b>Download URL</b>	<b>Description</b>
3	HPE InfiniBand HDR/Ethernet 200Gb 1-port MCX65105A-HDAT QSFP56 x16 Adapter (Satima II-1P)	P23664-B21	* RECOMMENDED * Firmware for HPE InfiniBand HDR/Ethernet 200Gb 1-port MCX65105A-HDAT QSFP56 x16 Adapter : HPE part number P23664-B21	Aug 26, 2020	Firmware   Network   20.28.1002	Red Hat Enterprise Linux 8 Server, Red Hat Enterprise Linux 7 Server, SUSE Linux Enterprise Server 15, SUSE Linux Enterprise Server 12	fw-ConnectX6-rel-20_28_1002-MCX65105A-HDAT_HPE_Au-EP7-X-21-16-FlashBoot-3.6.101.tar.gz (2.8 MB)	https://support.hpe.com/hpsc/swd/public/detail/?swd_id=MTX_025490447&swd_id=MTX_025490447	Firmware for use with HPE InfiniBand HDR/Ethernet 200Gb 1-port MCX65105A-HDAT QSFP56 x16 Adapter
4			Firmware for HPE InfiniBand HDR/Ethernet 100Gb 2-port MCX65106A-ECAT QSFP56 x16 Adapter : HPE part number P23666-B21	Jul 02, 2020	Firmware   Network   20.27.6202	SUSE Linux Enterprise Server 12, SUSE Linux Enterprise Server 15, Red Hat Enterprise Linux 7 Server, Red Hat Enterprise Linux 8 Server	fw-ConnectX6-rel-20_27_6202-MCX65106A-ECAT_HPE_Au-EP7-X-21-25-FlashBoot-3.5.903.tar.gz (2.8 MB)	https://support.hpe.com/hpsc/swd/public/detail/?swd_id=MTX_025490447&swd_id=MTX_025490447	Firmware for use with HPE InfiniBand HDR/Ethernet 100Gb 2-port MCX65106A-ECAT QSFP56 x16 Adapter
5			* RECOMMENDED * **OBSOLETE** Firmware for HPE InfiniBand HDR/Ethernet 100Gb 2-port MCX65105A-HDAT QSFP56 x16 Adapter : HPE part number P23664-B21	Apr 21, 2020	Firmware   Network   20.27.2008	Microsoft Windows Server 2019, Microsoft Windows Server 2016, Microsoft Windows Server 2012 R2, Microsoft Windows Server 2012	fw-ConnectX6-rel-20_27_2008-MCX65105A-HDAT_HPE_Au-EP7-X-21-25-FlashBoot-3.5.903.tar.gz (2.8 MB)	https://support.hpe.com/hpsc/swd/public/detail/?swd_id=MTX_025490447&swd_id=MTX_025490447	Firmware for use with HPE InfiniBand HDR/Ethernet 100Gb 2-port MCX65105A-HDAT QSFP56 x16 Adapter
6	HPE InfiniBand HDR100/Ethernet 100Gb 1-port MCX65105A-ECAT QSFP56 x16 Adapter (Virunga II-1P)	P23665-B21	* RECOMMENDED * Firmware for HPE InfiniBand HDR100/Ethernet 100Gb 1-port MCX65105A-ECAT QSFP56 x16 Adapter : HPE part number P23665-B21	Aug 26, 2020	Firmware   Network   20.28.1002	Microsoft Windows Server 2019, Microsoft Windows Server 2016, Microsoft Windows Server 2012 R2, Microsoft Windows Server 2012	fw-ConnectX6-rel-20_28_1002-MCX65105A-ECAT_HPE_Au-EP7-X-21-16-FlashBoot-3.6.101_windows.exe (2.8 MB)	https://support.hpe.com/hpsc/swd/public/detail/?swd_id=MTX_025490447&swd_id=MTX_025490447	Firmware for use with HPE InfiniBand HDR100/Ethernet 100Gb 1-port MCX65105A-ECAT QSFP56 x16 Adapter
7			Firmware for HPE InfiniBand HDR100/Ethernet 100Gb 2-port MCX65106A-ECAT QSFP56 x16 Adapter : HPE part number P23666-B21	Jul 02, 2020	Firmware   Network   20.27.6202	Microsoft Windows Server 2019, Microsoft Windows Server 2016, Microsoft Windows Server 2012 R2, Microsoft Windows Server 2012	fw-ConnectX6-rel-20_27_6202-MCX65106A-ECAT_HPE_Au-EP7-X-21-25-FlashBoot-3.5.903.tar.gz (2.8 MB)	https://support.hpe.com/hpsc/swd/public/detail/?swd_id=MTX_025490447&swd_id=MTX_025490447	Firmware for use with HPE InfiniBand HDR100/Ethernet 100Gb 2-port MCX65106A-ECAT QSFP56 x16 Adapter
8			* RECOMMENDED * **OBSOLETE** Firmware for HPE InfiniBand HDR100/Ethernet 100Gb 2-port MCX65105A-ECAT QSFP56 x16 Adapter : HPE part number P23664-B21	Apr 21, 2020	Firmware   Network   20.27.2008	Microsoft Windows Server 2019, Microsoft Windows Server 2016, Microsoft Windows Server 2012 R2, Microsoft Windows Server 2012	fw-ConnectX6-rel-20_27_2008-MCX65105A-ECAT_HPE_Au-EP7-X-21-25-FlashBoot-3.5.903.tar.gz (2.8 MB)	https://support.hpe.com/hpsc/swd/public/detail/?swd_id=MTX_025490447&swd_id=MTX_025490447	Firmware for use with HPE InfiniBand HDR100/Ethernet 100Gb 2-port MCX65105A-ECAT QSFP56 x16 Adapter
9	HPE InfiniBand HDR100/Ethernet 100Gb 2-port MCX65106A-ECAT QSFP56 x16 Adapter (Virunga II-2P)	P23666-B21	* RECOMMENDED * Firmware for HPE InfiniBand HDR100/Ethernet 100Gb 2-port MCX65106A-ECAT QSFP56 x16 Adapter : HPE part number P23666-B21	Aug 26, 2020	Firmware   Network   20.28.1002	Microsoft Windows Server 2019, Microsoft Windows Server 2016, Microsoft Windows Server 2012 R2, Microsoft Windows Server 2012	fw-ConnectX6-rel-20_28_1002-MCX65106A-ECAT_HPE_Au-EP7-X-21-25-FlashBoot-3.6.101_windows.exe (2.8 MB)	https://support.hpe.com/hpsc/swd/public/detail/?swd_id=MTX_025490447&swd_id=MTX_025490447	Firmware for use with HPE InfiniBand HDR100/Ethernet 100Gb 2-port MCX65106A-ECAT QSFP56 x16 Adapter
10			Firmware for HPE InfiniBand HDR100/Ethernet 100Gb 1-port MCX65105A-ECAT QSFP56 x16 Adapter : HPE part number P23664-B21	Aug 26, 2020	Firmware   Network   20.28.1002	Red Hat Enterprise Linux 7 Server, SUSE Linux Enterprise Server 15, SUSE Linux Enterprise Server 12, Red Hat Enterprise Linux 8 Server, Red Hat Enterprise Linux 7 Server	fw-ConnectX6-rel-20_28_1002-MCX65105A-ECAT_HPE_Au-EP7-X-21-16-FlashBoot-3.6.101.tar.gz (2.8 MB)	https://support.hpe.com/hpsc/swd/public/detail/?swd_id=MTX_025490447&swd_id=MTX_025490447	Firmware for use with HPE InfiniBand HDR100/Ethernet 100Gb 1-port MCX65105A-ECAT QSFP56 x16 Adapter
11			Firmware for HPE InfiniBand HDR100/Ethernet 100Gb 2-port MCX65106A-ECAT QSFP56 x16 Adapter : HPE part number P23666-B21	Jul 02, 2020	Firmware   Network   20.27.6202	SUSE Linux Enterprise Server 12, SUSE Linux Enterprise Server 15, Red Hat Enterprise Linux 7 Server, Red Hat Enterprise Linux 8 Server	fw-ConnectX6-rel-20_27_6202-MCX65106A-ECAT_HPE_Au-EP7-X-21-25-FlashBoot-3.5.903.tar.gz (2.8 MB)	https://support.hpe.com/hpsc/swd/public/detail/?swd_id=MTX_025490447&swd_id=MTX_025490447	Firmware for use with HPE InfiniBand HDR100/Ethernet 100Gb 2-port MCX65106A-ECAT QSFP56 x16 Adapter
12			* RECOMMENDED * **OBSOLETE** Firmware for HPE InfiniBand HDR100/Ethernet 100Gb 2-port MCX65105A-ECAT QSFP56 x16 Adapter : HPE part number P23664-B21	Apr 21, 2020	Firmware   Network   20.27.2008	Microsoft Windows Server 2019, Microsoft Windows Server 2016, Microsoft Windows Server 2012 R2, Microsoft Windows Server 2012	fw-ConnectX6-rel-20_27_2008-MCX65105A-ECAT_HPE_Au-EP7-X-21-25-FlashBoot-3.5.903.tar.gz (2.8 MB)	https://support.hpe.com/hpsc/swd/public/detail/?swd_id=MTX_025490447&swd_id=MTX_025490447	Firmware for use with HPE InfiniBand HDR100/Ethernet 100Gb 2-port MCX65105A-ECAT QSFP56 x16 Adapter
13			Firmware for HPE InfiniBand HDR100/Ethernet 100Gb 1-port MCX65105A-ECAT QSFP56 x16 Adapter : HPE part number P23664-B21	Aug 26, 2020	Firmware   Network   20.28.1002	Microsoft Windows Server 2019, Microsoft Windows Server 2016, Microsoft Windows Server 2012 R2, Microsoft Windows Server 2012	fw-ConnectX6-rel-20_28_1002-MCX65105A-ECAT_HPE_Au-EP7-X-21-16-FlashBoot-3.6.101_windows.exe (2.8 MB)	https://support.hpe.com/hpsc/swd/public/detail/?swd_id=MTX_025490447&swd_id=MTX_025490447	Firmware for use with HPE InfiniBand HDR100/Ethernet 100Gb 1-port MCX65105A-ECAT QSFP56 x16 Adapter
14			Firmware for HPE InfiniBand HDR100/Ethernet 100Gb 2-port MCX65106A-ECAT QSFP56 x16 Adapter : HPE part number P23666-B21	Jul 02, 2020	Firmware   Network   20.27.6202	SUSE Linux Enterprise Server 12, SUSE Linux Enterprise Server 15, Red Hat Enterprise Linux 7 Server, Red Hat Enterprise Linux 8 Server	fw-ConnectX6-rel-20_27_6202-MCX65106A-ECAT_HPE_Au-EP7-X-21-25-FlashBoot-3.5.903.tar.gz (2.8 MB)	https://support.hpe.com/hpsc/swd/public/detail/?swd_id=MTX_025490447&swd_id=MTX_025490447	Firmware for use with HPE InfiniBand HDR100/Ethernet 100Gb 2-port MCX65106A-ECAT QSFP56 x16 Adapter
15			* RECOMMENDED * **OBSOLETE** Firmware for HPE InfiniBand HDR100/Ethernet 100Gb 2-port MCX65105A-ECAT QSFP56 x16 Adapter : HPE part number P23664-B21	Apr 21, 2020	Firmware   Network   20.27.2008	Microsoft Windows Server 2019, Microsoft Windows Server 2016, Microsoft Windows Server 2012 R2, Microsoft Windows Server 2012	fw-ConnectX6-rel-20_27_2008-MCX65105A-ECAT_HPE_Au-EP7-X-21-25-FlashBoot-3.5.903.tar.gz (2.8 MB)	https://support.hpe.com/hpsc/swd/public/detail/?swd_id=MTX_025490447&swd_id=MTX_025490447	Firmware for use with HPE InfiniBand HDR100/Ethernet 100Gb 2-port MCX65105A-ECAT QSFP56 x16 Adapter

## colour code explained:

- If any part number does not have any product under the group mentioned it is metioned as "Not found" in bold red font.
- If ant part numner does not support the current group it is mentioned as "Not supported" in bold green font.
- If any product does not belong to its corresponding part number then it is highlighted in blue colour.

A		C		D		E		F		G	
1	Fireware binary posting										
2	Card Name	Part Number	Product Name	Date	Version		OS		File name		
3	HPE InfiniBand HDR/Ethernet 200Gb 1-port MCX65105A-HDAT QSFP56 x16 Adapter (Satima II-1P)	P23664-B21	* RECOMMENDED * Firmware for HPE InfiniBand HDR/Ethernet 200Gb 1-port MCX65105A-HDAT QSFP56 x16 Adapter : HPE part number P23664-B21	Aug 26, 2020	Firmware   Network   20.28.1002		Red Hat Enterprise Linux 8 Server, Red Hat Enterprise Linux 7 Server, SUSE Linux Enterprise Server 15, SUSE Linux Enterprise Server 12, SUSE Linux Enterprise Server 15, Red Hat Enterprise Linux 8 Server, Red Hat Enterprise Linux 7 Server		fw-ConnectX6-rel-20_28_1002-MCX65105A-HDAT_HPE_Au-EP7-X-21-16-FlashBoot-3.6.101.tar.gz (2.8 MB)		
4			Firmware for HPE InfiniBand HDR/Ethernet 200Gb 1-port MCX65105A-HDAT QSFP56 x16 Adapter : HPE part number P23664-B21	Jul 02, 2020	Firmware   Network   20.27.6202		SUSE Linux Enterprise Server 12, SUSE Linux Enterprise Server 15, Red Hat Enterprise Linux 8 Server, Red Hat Enterprise Linux 7 Server		fw-ConnectX6-rel-20_27_6202-MCX65105A-HDAT_HPE_Au-EP7-X-21-25-FlashBoot-3.5.903.tar.gz (2.8 MB)		
5			* RECOMMENDED * **OBSOLETE** Firmware for HPE InfiniBand HDR/Ethernet 100Gb 1-port MCX65105A-HDAT QSFP56 x16 Adapter : HPE part number P23664-B21	Apr 21, 2020	Firmware   Network   20.27.2008		SUSE Linux Enterprise Server 12, SUSE Linux Enterprise Server 15, Red Hat Enterprise Linux 7 Server, Red Hat Enterprise Linux 8 Server		Not Found		
6	HPE InfiniBand HDR100/Ethernet 100Gb 1-port MCX65105A-ECAT QSFP56 x16 Adapter (Virunga II-1P)	P23665-B21	* RECOMMENDED * Firmware for HPE InfiniBand HDR100/Ethernet 100Gb 1-port MCX65105A-ECAT QSFP56 x16 Adapter : HPE part number P23665-B21	Aug 26, 2020	Firmware   Network   20.28.1002		Microsoft Windows Server 2019, Microsoft Windows Server 2016, Microsoft Windows Server 2012 R2, Microsoft Windows Server 2012		fw-ConnectX6-rel-20_28_1002-MCX65105A-ECAT_HPE_Au-EP7-X-21-16-FlashBoot-3.6.101_windows.exe (2.8 MB)		
7			Firmware for HPE InfiniBand HDR100/Ethernet 100Gb 2-port MCX65106A-ECAT QSFP56 x16 Adapter : HPE part number P23666-B21	Jul 02, 2020	Firmware   Network   20.27.6202		Microsoft Windows Server 2019, Microsoft Windows Server 2016, Microsoft Windows Server 2012 R2, Microsoft Windows Server 2012		fw-ConnectX6-rel-20_27_6202-MCX65106A-ECAT_HPE_Au-EP7-X-21-25-FlashBoot-3.5.903_windows.exe (2.8 MB)		
8			Firmware for HPE InfiniBand HDR100/Ethernet 100Gb 2-port MCX65106A-ECAT QSFP56 x16 Adapter : HPE part number P23666-B21	Jul 02, 2020	Firmware   Network   20.27.6202		SUSE Linux Enterprise Server 15, Red Hat Enterprise Linux 8 Server, Red Hat Enterprise Linux 7 Server, SUSE Linux Enterprise Server 12		fw-ConnectX6-rel-20_27_6202-MCX65106A-ECAT_HPE_Au-EP7-X-21-25-FlashBoot-3.5.903.tar.gz (2.8 MB)		
9			* RECOMMENDED * **OBSOLETE** Firmware for HPE InfiniBand HDR100/Ethernet 100Gb 1-port MCX65105A-ECAT QSFP56 x16 Adapter : HPE part number P23665-B21	Apr 21, 2020	Firmware   Network   20.27.2008		Microsoft Windows Server 2019, Microsoft Windows Server 2016, Microsoft Windows Server 2012, Microsoft Windows Server 2012 R2		Not Found		
53	HPE SGI Dual Plane CX5 InfiniBand EDR 2-port HCA Mezzanine Card (Nashoba)	Q7G90A	No firmware posting for Q7G90A found								
54	HPE Ethernet 200Gb 1-Port QSFP56 MCX623105A-VDAT Adapter (Magma)	P10180-B21	Not Supported								
54	HPE Ethernet 100Gb 2-Port QSFP56 MCX623436A-CDAT Adapter (Model)	P25965-B21	Not Supported								

## Configuration File:

- Location: <Script folder>\\config.txt
- Consists following:
  - Output path: Directory where the user wants to store the output obtained.

