

Welcome to the Synergy Roundtable

created by Stephan Koch & Dirk Derichsweiler - 01/11/2018

do not hesitate to contact us: stephan.koch@hpe.com (<mailto:stephan.koch@hpe.com>) or dirk.derichsweiler@hpe.com (<mailto:dirk.derichsweiler@hpe.com>)

jupyter Notebook can be found: <https://github.com/dderichswei/synergy> (<https://github.com/dderichswei/synergy>)

requirements

- Anaconda (Python) recommended (for the Jupyter installation and pip)
- Jupyter-Powershell (<https://github.com/vors/jupyter-powershell> (<https://github.com/vors/jupyter-powershell>))

additional information

On your HPE OneView appliance, or online

<https://10.0.20.50/help/cic-rest/en/content/index.html#home.html> (<https://10.0.20.50/help/cic-rest/en/content/index.html#home.html>)

<https://10.0.20.50/api-docs/current/> (<https://10.0.20.50/api-docs/current/>)

<http://www.hpe.com/info/oneview/docs> (<http://www.hpe.com/info/oneview/docs>)

<https://developer.hpe.com/> (<https://developer.hpe.com/>)

Powershell (POSH) specific

<https://github.com/HewlettPackard/POSH-HPOneView> (<https://github.com/HewlettPackard/POSH-HPOneView>)

Installation of HP OneView Module

only required, if not installed yet.

```
In [1]: Start-Process powershell -ArgumentList "Install-Module HPOneView.410 -AllowClobber -Verb runAs"
Start-Process powershell -ArgumentList "Set-ExecutionPolicy RemoteSigned -Scope CurrentUser"
```

```
Start-Process powershell -ArgumentList "Install-Module HPOneView.410 -AllowClobber -Verb runAs"
Start-Process powershell -ArgumentList "Set-ExecutionPolicy RemoteSigned -Scope CurrentUser"
```

Login



OneView

Directory

Password

Login

This management appliance is a company owned asset and provided for the exclusive use of authorized personnel. Unauthorized use or abuse of this system may lead to corrective action including termination, civil and/or criminal penalties.



import the PowerShell module:

```
In [2]: Import-Module -name hponeview.410
```

login:

```
In [3]: Connect-HPOVMgmt -Hostname 10.0.20.50 -AuthLoginDomain local -UserName python -Password python123!
```

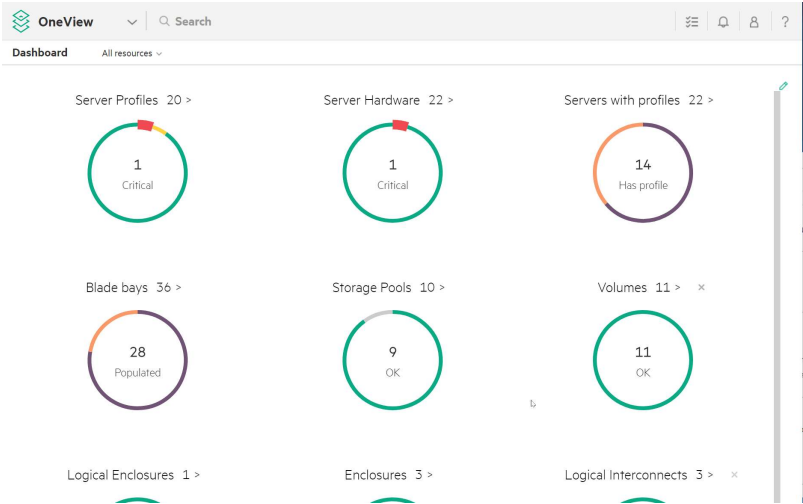
ConnectionID	Name	UserName	AuthLoginDomain	Default
1	10.0.20.50	python	local	True

ADVANCED: which functions are available?

```
In [4]: Get-Command -Module HPOneView.410
```

CommandType	Name	Version	Source
Alias	Add-HPOVSppFile	4.10.18...	hponeview.410
Alias	Copy-HPOVProfile	4.10.18...	hponeview.410
Alias	Get-HPOVProfile	4.10.18...	hponeview.410
Alias	Get-HPOVProfileAssign	4.10.18...	hponeview.410
Alias	Get-HPOVProfileConnectionList	4.10.18...	hponeview.410
Alias	Get-HPOVServerHardwareTypes	4.10.18...	hponeview.410
Alias	Get-HPOVSppFile	4.10.18...	hponeview.410
Alias	New-HPOVAddressRange	4.10.18...	hponeview.410

show existing networks



In [5]: Get-HPOVNetwork

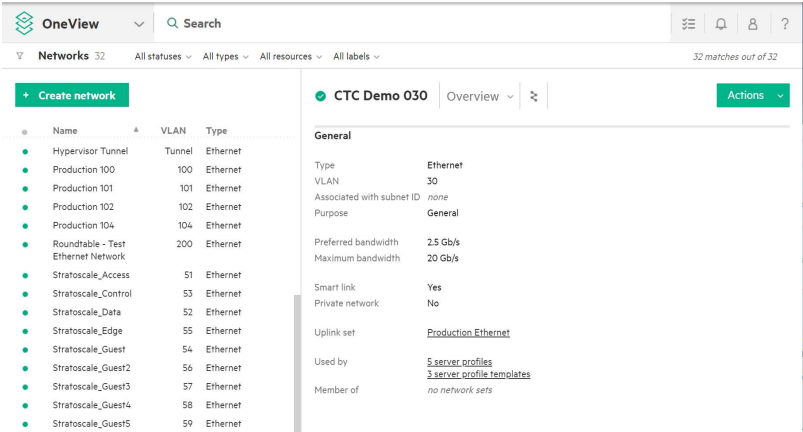
Type: Ethernet

Name rk PreferredBandwid th	Status	Purpose	Type	VlanID	IPv4Subnet	Smartlink	PrivateNetwo
-----	-----	-----	-----	-----	-----	-----	-----
CTC Demo 030 2500	OK	General	Tagged	30	None	True	False
CTC Demo 031 2500	OK	General	Tagged	31	None	True	False
CTC Demo 032 2500	OK	General	Tagged	32	None	True	False
CTC Demo 033 2500	OK	General	Tagged	33	None	True	False
CTC Demo 034 2500	OK	General	Tagged	34	None	True	False
CTC Demo 035 2500	OK	General	Tagged	35	None	True	False
CTC Demo 036 2500	OK	General	Tagged	36	None	True	False
CTC Demo 037 2500	OK	General	Tagged	37	None	True	False
CTC Demo 038 2500	OK	General	Tagged	38	None	True	False
CTC Demo 039 2500	OK	General	Tagged	39	None	True	False
CTC Image Streamer 109 2500	OK	ISCSI	Tagged	109	10.0.19.0	True	False
CTC Management 020 2500	OK	Management	Tagged	20	10.0.20.0	True	False
CTC SAP HANA 023 2500	OK	General	Tagged	23	None	True	False
DevOps_Back 2500	OK	General	Tagged	48	None	True	False
DevOps_Front 2500	OK	General	Tagged	47	None	True	False
Hypervisor Tunnel 2500	OK	General	Tunnel	0	None	True	False
Production 100 2500	OK	General	Tagged	100	None	True	False
Production 101 2500	OK	General	Tagged	101	None	True	False
Production 102 2500	OK	General	Tagged	102	None	True	False
Production 104 2500	OK	General	Tagged	104	None	True	False
Python CTC IMAGE Streamer 2500	OK	ISCSI	Tagged	109	10.0.19.0	True	False
Roundtable - Test Ethernet Network 2500	OK	General	Tagged	200	None	False	False
Stratoscale_Access 2500	OK	General	Tagged	51	None	True	False
Stratoscale_Control 2500	OK	General	Tagged	53	None	True	False
Stratoscale_Data 2500	OK	General	Tagged	52	None	True	False
Stratoscale_Edge 2500	OK	General	Tagged	55	None	True	False
Stratoscale_Guest 2500	OK	General	Tagged	54	None	True	False
Stratoscale_Guest2 2500	OK	General	Tagged	56	None	True	False
Stratoscale_Guest3 2500	OK	General	Tagged	57	None	True	False
Stratoscale_Guest4 2500	OK	General	Tagged	58	None	True	False
Stratoscale_Guest5 2500	OK	General	Tagged	59	None	True	False

Type: Fibre Channel

Name	Status	Type	PreferredBandwidth	MaxBandwidth	AutoLoginRedistribution	LinkStabil
ityInterval	Managed					
SAN						
FCoE Fabric A	OK	FabricAttach	8000	20000	True	30
FCoE Fabric B	OK	FabricAttach	8000	20000	True	30

create network



```
In [ ]: New-HPOVNetwork -Name "Roundtable - Test Ethernet Network" -VlanId 200 -Type Ethernet -VLANType Tagged
```

create bulk network

How to setup multiple networks at once.

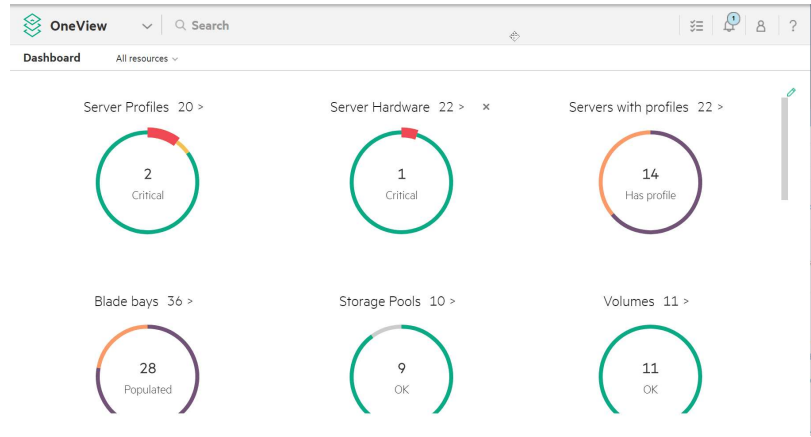
```
In [ ]: $net = @(1,2,3,4,5,7,100,101,102,103,104,105,106,107,108,109,200)
foreach ($i in $net) { New-HPOVNetwork -Name "Bulk_$i" -VlanId $i -Type Ethernet -VLANType Tagged }
```

delete bulk network

as it's not needed for the demo

```
In [ ]: Get-HPOVNetwork -name "bulk*" | Remove-HPOVNetwork -Confirm:$false
```

show configured/existing storage (systems and pools)



```
In [6]: Get-HPOVStorageSystem
```

Get-HPOVStorageSystem

Name	Family	State	Status	SerialNumber	Model	ManagedDomain	WWN
3par20k 3.3.1.410	StoreServ	Managed	OK	CZ3706DWBB	HPE_3PAR 20800	NO DOMAIN	2F:F7:00:02:AC:01:D0:B2
3PAR8200 3.3.1.460	StoreServ	Managed	OK	CZ38277F39	HPE_3PAR 8200	NO DOMAIN	2F:F7:00:02:AC:02:18:33

```
In [7]: Get-HPOVStoragePool | select Name, URI
```

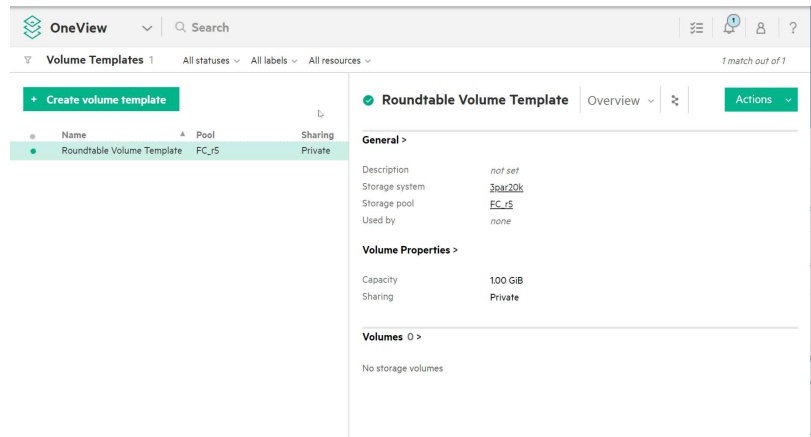
Name	Uri
FC_r1	/rest/storage-pools/9AFF5ED2-3356-4084-B75F-A92D00FCF0F8
FC_r1	/rest/storage-pools/17E1C201-A26D-4CF4-B60B-A8C800809AA0
FC_r5	/rest/storage-pools/2F6AF802-4A32-4E24-9D02-A92D00FCF0FB
FC_r5	/rest/storage-pools/D9F83211-52EE-4227-9344-A8C800809AA2
FC_r6	/rest/storage-pools/9C5E1505-E882-4359-86ED-A92D00FCF0FC
FC_r6	/rest/storage-pools/D28EC912-58F5-44FA-8E2E-A8C800809AA3
fs_cpg	/rest/storage-pools/FADAC678-EED1-49F0-8F68-A95E009A3ED7
SSD_r1	/rest/storage-pools/E43592FC-5A91-4E33-B1F9-A8C800809AA5
SSD_r5	/rest/storage-pools/9F9E08E5-AA78-4978-AA31-A8C800809AA6
SSD_r6	/rest/storage-pools/BB8951A5-233B-4E73-A0C1-A8C800809AA8

show volume templates

```
In [8]: Get-HPOVStorageVolumeTemplate
```

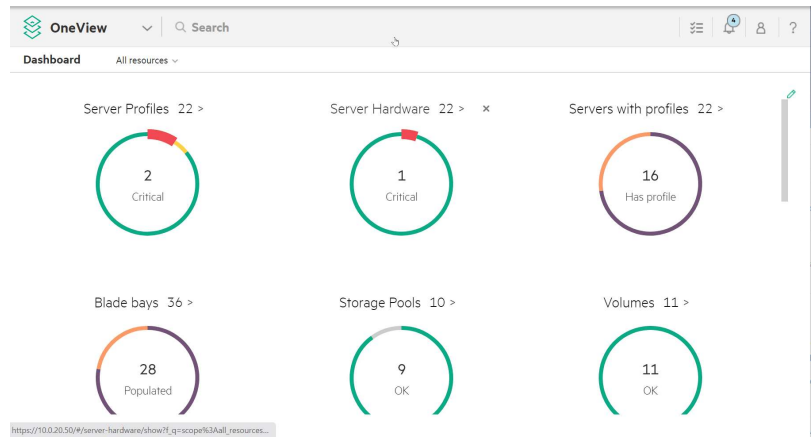
Name	Capacity	ProvisionedType	Sharing	StorageSystem	StoragePool	SnapshotPo
ol						
Roundtable Volume Template	10.240,00 GB	Thin	Private	3par20k	FC_r5	FC_r5

create volume template



```
In [ ]: $StorPool=Get-HPOVStoragePool -Name "FC_r5" -StorageSystem 3par20k
New-HPOVStorageVolumeTemplate -Name "Roundtable Volume Template" -StoragePool $StorPool -Capacity 1024
```

show Enclosure / Server Hardware / Bay



```
In [9]: Get-HPOVEnclosureGroup
```

Name	LogicalInterconnectGroup	UsedBy
----	-----	-----
SY 3 Frame SAS FC VC		
SY 1 Frame VC		
SY 3 Frame SAS VC	Virtual Connect SE 40GB F8,SAS Switch	CTC Synergy Production

In [10]: Get-HPOVServerHardwareType

Name	Model	Form Factor	Adapters
SY 480 G10 M1:SA416 M3:3820CNA ie-m SR G10, Mezz	Synergy 480 Gen10	HalfHeight	{Mezz 1 - HPE Smart Array P416 3 - Synergy 3820C 10/20Gb CNA}
SY 480 G10 M3:3820CNA CNA	Synergy 480 Gen10	HalfHeight	Mezz 3 - Synergy 3820C 10/20Gb
SY 480 G9 M1:SA542 M3:3820CNA b CNA, Mezz 1 -	Synergy 480 Gen9	HalfHeight	{Mezz 3 - Synergy 3820C 10/20Gb Smart Array P542D Controller}
SY 480 G9 M1:SA542 M3:3820CNA1 ntroller, Mezz 3 -	Synergy 480 Gen9	HalfHeight	{Mezz 1 - Smart Array P542D Co HP Synergy 3820C 10/20Gb CNA}
SY 660 G10 M3:3820CNA CNA	Synergy 660 Gen10	FullHeight	Mezz 3 - Synergy 3820C 10/20Gb
SY 660 G9 M1:SA542 M2:3830FC M3:3820CNA 20Gb CNA, Mezz 2 -	Synergy 660 Gen9	FullHeight	{Mezz 3 - HP Synergy 3820C 10/ Synergy 3830C 16G FC HBA, Mezz 1 - Smart Array P542D Controller}

In [11]: Get-HPOVServer | select Name, URI

name	uri
CTC Synergy HE01, bay 1	/rest/server-hardware/39313738-3134-5A43-4A37-343030373531
CTC Synergy HE01, bay 2	/rest/server-hardware/39313738-3134-5A43-4A37-343030373535
CTC Synergy HE01, bay 3	/rest/server-hardware/39313738-3134-5A43-4A37-343030373536
CTC Synergy HE01, bay 7	/rest/server-hardware/39313738-3134-5A43-4A37-343030373534
CTC Synergy HE01, bay 8	/rest/server-hardware/39313738-3134-5A43-4A37-343030373532
CTC Synergy HE01, bay 9	/rest/server-hardware/39313738-3134-5A43-4A37-343030373533
CTC Synergy HE11, bay 10	/rest/server-hardware/33323337-3235-5A43-3337-303948545656
CTC Synergy HE11, bay 2	/rest/server-hardware/33323337-3235-5A43-3337-30394854524D
CTC Synergy HE11, bay 3	/rest/server-hardware/33323337-3235-5A43-3337-303948545332
CTC Synergy HE11, bay 4	/rest/server-hardware/33323337-3235-5A43-3337-303948545345
CTC Synergy HE11, bay 5	/rest/server-hardware/33323337-3235-5A43-3337-303948545438
CTC Synergy HE11, bay 6	/rest/server-hardware/33323337-3235-5A43-3337-303948545356
CTC Synergy HE11, bay 7	/rest/server-hardware/33323337-3235-5A43-3337-30394854544D
CTC Synergy HE11, bay 8	/rest/server-hardware/33323337-3235-5A43-3337-303948545632
CTC Synergy HE11, bay 9	/rest/server-hardware/33323337-3235-5A43-3337-303948545645
CTC Synergy HE21, bay 1	/rest/server-hardware/36343537-3338-4E43-3736-303230383144
CTC Synergy HE21, bay 10	/rest/server-hardware/33323337-3235-5A43-3337-303948545238
CTC Synergy HE21, bay 2	/rest/server-hardware/36343537-3338-4E43-3736-303230355931
CTC Synergy HE21, bay 3	/rest/server-hardware/39313738-3234-5A43-4A37-343030373559
CTC Synergy HE21, bay 4	/rest/server-hardware/39313738-3234-5A43-4A37-343030373558
CTC Synergy HE21, bay 5	/rest/server-hardware/39313738-3133-5A43-4A37-343030373931
CTC Synergy HE21, bay 6	/rest/server-hardware/30373737-3237-4E43-3735-353030335447

show Serverprofile

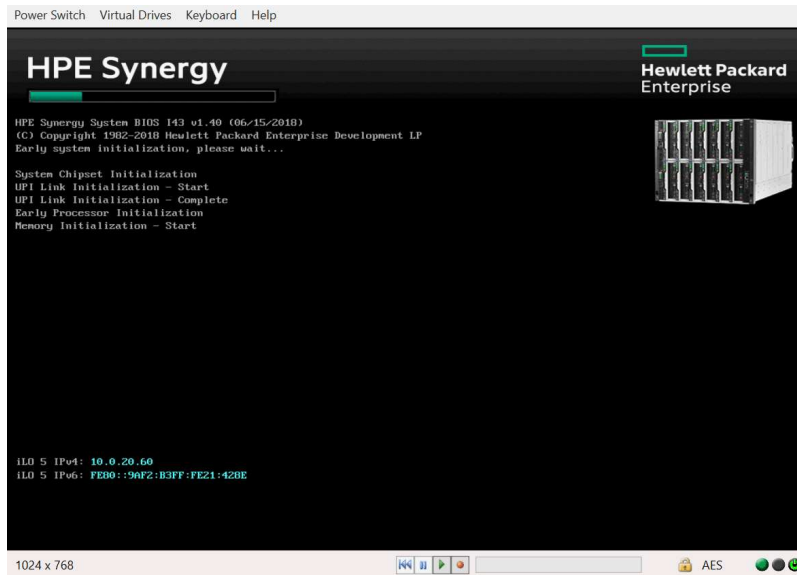
```
In [12]: Get-HPovServerProfileTemplate|select Name, URI
```

name	uri
----	---
DEMO-CTC ESXi Server Template 984b75	/rest/server-profile-templates/ac2995c1-8b21-482b-80e8-7157f1
DEMO-CTC Stratoscale Template 2de850	/rest/server-profile-templates/c8e28ad3-d764-441b-80ee-0280f7
Demo-CTC Windows2016-DC-byI3s 703b97	/rest/server-profile-templates/7a5d77bc-a372-4a44-8a52-b538ba
Demo-CTC Windows2016-DC-byI3s_Gen10 0a9381	/rest/server-profile-templates/894f818a-9604-48cb-ab9f-ea6c24
Roundtable (DirkD) e10100	/rest/server-profile-templates/cfe892e5-b775-46df-a36e-c65cf7
Roundtable - API Demo Template (DirkD) c04c1c	/rest/server-profile-templates/cb62f9a2-5da4-49cc-896c-4d16fa
Roundtable - Python (DirkD) 1d3953	/rest/server-profile-templates/1e2c29f5-e146-42d4-9f78-a057b4
SRT-LC-WIN BfS 078acd	/rest/server-profile-templates/b18b3cf9-8f47-4a6a-be35-18bba3
SRT-Storage-BfS-ESX 1b28af	/rest/server-profile-templates/823883ee-0f0e-4554-8e00-a90900
SRT-Storage-BfS-W2k16 dc7231	/rest/server-profile-templates/1df43d4a-76c3-4821-bff3-729446
SRT-StorageDemo-ESX e3fcac	/rest/server-profile-templates/534d2abd-989c-456e-a84b-8c112c

In [13]: `Get-HPOVServerProfile|select Name, URI`

name	uri
----	---
Andreas -41e687b3c33a	/rest/server-profiles/0f9519ba-aba9-44f5-a644
Ansible-Roundtable (DirkD) -6e0900bbdbc3	/rest/server-profiles/d1fc8f6f-c027-4302-a185
CTC ESXi Reference Server GoldenImage -efb2b1d82fcb	/rest/server-profiles/63f59e45-3e32-4672-a53a
CTC Windows2016 Reference Server GoldenImage f█r Gen10 -b7b1a6077348	/rest/server-profiles/752d0df6-87d9-4e86-ac39
CTC Windows2016 Reference Server GoldenImage f█r Gen9 -4428fe081a49	/rest/server-profiles/cc924d3-f521-4f9f-a092
DEM04CTCL0 CTC SAP HANA Demo -f905f45d1a57	/rest/server-profiles/5b989e3c-c286-4b42-a9d5
DEM05CTCCON01 -63281890457d	/rest/server-profiles/18469d4b-6bfe-43ab-9ac0
DEMO Windwos 005 -4ba8f6831b44	/rest/server-profiles/00065c78-def5-465f-9e4b
DEMO-CTC ESX SU004CTCD001 -fcbd97daabd6	/rest/server-profiles/62ae196c-da60-4cf7-9684
Roundtable - API Demo Server (DirkD) -8f388df3647f	/rest/server-profiles/428f0df8-779a-424e-ae47
SRT-LC-Win02 -bbe2c6637566	/rest/server-profiles/1179f382-b35b-4640-8691
SRT-SmartCache-Demo -919166ff15c2	/rest/server-profiles/385f7874-906e-4cef-888c
SRT-SU004SY2101 -3a10976fb09e	/rest/server-profiles/e1389199-fe13-4964-86cf
SRT-SU004SY2102 -9849c888ee3c	/rest/server-profiles/47a7de84-20f7-488d-9d4f
SRT-SU004SY2110 -b6117d811554	/rest/server-profiles/8ecbfb17-941a-4e36-9a2a
SU004CTCSTRA1 -7c2bafa7ead9	/rest/server-profiles/77e7e7e3-02b2-450a-8732
SU004CTCSTRA2 -d91dae61ce93	/rest/server-profiles/d5a216e6-9abb-482f-aea0
SU004CTCSTRA3 -c746fb8e2c6f	/rest/server-profiles/a76acf2a-6963-4915-a1ec
SU004CTCSTRA4 -36fb70b046c8	/rest/server-profiles/bf27aeb7-5786-4be5-a43a
SU004CTCSTRA5 -d9a2162ceda6	/rest/server-profiles/b17cde23-f9a1-495a-8f52
SU004CTCSTRA6 -56cd2450f8cb	/rest/server-profiles/fdff8b29-f823-43ef-be43

create server profile (takes 2-3 minutes)



```
In [14]: ### Get the first available server based on the template configuration
###$Server = Get-HPOVServer -InputObject $ServerProfileTemplate -NoProfile | Select -First 1

$Server=Get-HPOVServer -Name "CTC Synergy HE01, bay 8"

#Power off Server if on
Stop-HPOVServer -Server $Server -Force -Confirm:$false | Wait-HPOVTaskComplete

$Template=Get-HPOVServerProfileTemplate -Name "Roundtable - Python (DirkD)"
$OSDeploymentPlanName="RHEL 7.3 - customizable"

# Get the OS Deployment Plan
$OSDeploymentPlan = Get-HPOVOSDeploymentPlan -Name $OSDeploymentPlanName -ErrorAction Stop

# Get the associated deployment plan attributes
##$OSDeploymentAttributes = Get-HPOVOSDeploymentPlanAttribute -InputObject $OSDeploymentPlan -ErrorAct
$OSDeploymentAttributes = Get-HPOVOSDeploymentPlanAttribute -InputObject $Template

($OSDeploymentAttributes | Where-Object name -eq "NewUser").value = "dirk"
($OSDeploymentAttributes | Where-Object name -eq "NewUserPassword").value = "HalloRoundTable!"

# Set root password, in clear text here, as OneView does not support secure string data types
#($OSDeploymentAttributes | Where-Object name -eq "NewRootPassword").value = [Runtime.InteropServices.
($OSDeploymentAttributes | Where-Object name -eq "NewRootPassword").value = "Passw0rd"

# Set Hostname
#($OSDeploymentAttributes | Where-Object name -eq "Hostname").value = $ServerProfileName
($OSDeploymentAttributes | Where-Object name -eq "Hostname").value = "anyhostname"

$params = @{
    AssignmentType      = "Server";
    Description          = "HPE Synergy 480 Server ";
    Name                = "Roundtable - API Demo Server (DirkD)2";
    Server              = $Server;
    ServerProfileTemplate = $Template;
    OSDeploymentAttributes = $OSDeploymentAttributes;
    OSDeploymentPlan     = $OSDeploymentPlan
}

New-HPOVServerProfile @params | Wait-HPOVTaskComplete

#Power on Server
Start-HPOVServer -Server $Server -Confirm:$false

### Get the first available server based on the template configuration
###$Server = Get-HPOVServer -InputObject $ServerProfileTemplate -NoProfile | Select -First 1

$Server=Get-HPOVServer -Name "CTC Synergy HE01, bay 8"
```

In []:

7