



# Non Interactive Operating System Installation

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## Non Interactive Operating System Installation

Non Interactive Server Configuration Utility (NI-SCU) helps deploy operating systems without user intervention.

To install operating systems using NI-SCU, do the following:

- Modify the `nwboot.cfg` file to include information such as the target server, the SCU ISO file location, and the log collection details.
- Modify the `niscu.cfg` configuration file to include information such as the target server, the SCU ISO file location, and the log collection details.
- See [Modifying the niscu.cfg File, on page 9](#).
- See [Modifying conf\\_file, on page 16](#).
- Prepare the answer file for kickstart installation.

For sample answer files, see the Custom OS Installation Examples chapter.

- Run the `os_install-4.2.yc.yyyymmddab.py` script to begin the installation.  
See [Running the Python Script to Start OS Deployment, on page 18](#).

# Support for Network Boot from PXE, iPXE, HTTP and HTTPS

Beginning with Release 6.3, you can perform SCU Network boot from the following network options with IPv4 and IPv6.

- PXE
- iPXE
- HTTP
- HTTPS

The above network boot options are available in addition to the existing boot medium options like CIMC vMedia.

You can perform the SCU ISO boot from the above network options using the NISCU-XML API and NISCU-Redfish interfaces on Cisco UCS M5, M6 and M7 servers.

Beginning with Release 6.3, for non interactive operating system installation using HTTP/HTTPS, PXE and iPXE, you must first configure the `nwboot.cfg` file.

## Modifying the nwboot.cfg File

Beginning with Release 6.3, for non interactive operating system installation using HTTP/HTTPS, PXE and iPXE, you must first configure the `nwboot.cfg` file.

The `nwboot.cfg` file consists of the following sections:

### Default

The Default section consists of the following parameter:

**Table 1: Parameters in the Default Section**

Parameter	Description
Update_Timeout	The time (in minutes) the python script is active after it has been started. The default value is 240 minutes. The valid range is 30 to 240 minutes.

### Example

```
[defaults]
update_timeout=240
```

### SCU Repository

The SCU Repository section consists of the following parameters:

**Table 2: Parameters in the SCU Repository Section**

Parameter	Description
BootMedium	<p>The boot medium to install SCU boot.</p> <p>The following types are supported:</p> <ul style="list-style-type: none"> <li>• vMedia</li> <li>• HTTP</li> <li>• FlexMMC</li> <li>• MicroSD</li> <li>• PXE</li> <li>• IPXE</li> </ul>



**Note** See the below sections for the details of the fields available for the respective boot medium under **SCU Repository**.

**Table 3: HTTP Boot Medium**

Parameter	Description
ImageRepository	Path where SCU ISO resides in the HTTP share
MACAddress	The MAC address assigned to the active network interface to SCU
PCIEslot	The name of the PCIe slot in which the controller is located.
PhysicalPortNumber	Physical Port Number

Parameter	Description
IPv4Address and IPv6Address	<p>IP address for IPv4 and IPv6</p> <p>These are the following parameters for IPv4:</p> <ul style="list-style-type: none"> <li>• AddressOrigin</li> <li>• Address - Host IP Address for the network interface</li> <li>• Gateway - IPv4 Gateway Address</li> <li>• Subnetmask - IPv4 Subnet Address</li> <li>• Static Name Server</li> </ul> <p>These are the following parameters for IPv6:</p> <ul style="list-style-type: none"> <li>• AddressOrigin</li> <li>• Address - Host IP Address for the network interface</li> <li>• Gateway - IPv6 Gateway Address</li> <li>• Subnetmask - IPv6 Subnet Address</li> <li>• Static Name Server</li> </ul>

Table 4: vMedia Boot Medium

Parameter	Description
ImageRepository	Path where SCU ISO resides in the HTTP share
TransferProtocol	The transfer protocol type.
Username	User credentials
Password	
MountOptions	Mounting options

Table 5: PXE Boot Medium

Parameter	Description
ImageRepository	Path where SCU ISO resides in the HTTP share
MACAddress	The MAC address assigned to the active network interface to SCU
PCIEslot	The name of the PCIe slot in which the controller is located.
PhysicalPortNumber	Physical port number

Parameter	Description
AddressOrigin	Server IP address from which IPv4 or IPv6 origins The value is DHCP.

Table 6: iPXE Boot Medium

Parameter	Description
ImageRepository	Server IP address from which IPv4 or IPv6 origins The value is DHCP.
MACAddress	The MAC address assigned to the active network interface to SCU
PCIEslot	The name of the PCIe slot in which the controller is located.
PhysicalPortNumber	Physical port number

### Example

```
"BootMedium": {
  "VMEDIA": {
    "ImageRepository": "10.10.10.1/home/nfsshare/iso/scu.iso",
    "TransferProtocol": "nfs",
    "Username": "root",
    "Password": "password",
    "MountOptions": ""
  },
  "HTTP": {
    "ImageRepository": "http://10.10.10.1:80/iso/scu.iso",
    "MACAddress": "70:df:2f:86:af:02",
    "PCIEslot": "L",
    "PhysicalPortNumber": 1,
    "IPv4Address": {
      "AddressOrigin": "Static",
      "Address": "10.104.255.179",
      "Gateway": "10.104.255.129",
      "SubnetMask": "255.255.255.128",
      "StaticNameServer": "64.104.76.247"
    },
    "IPv6Address": {
      "AddressOrigin": "DHCPv6",
      "Address": "fc00:1234::a:b:c:d",
      "PrefixLength": 64,
      "Gateway": "fe80::fe15:b4ff:fe97:90cd",
      "StaticNameServer": "fe80::fe15:b4ff:fe97:90cd"
    }
  },
  "FLEXMMC": {
    "ImageRepository": "scu.iso"
  },
  "MICROSD": {},
  "PXE": {
    "ImageRepository": "ftp://10.104.255.224/pub/scu",
    "MACAddress": "70:df:2f:86:af:02",
    "PCIEslot": "L",
    "PhysicalPortNumber": 1,
  }
}
```

```

        "IPv4Address": {
            "AddressOrigin": "DHCP"
        }
    },
    "IPXE": {
        "ImageRepository": "http://10.10.10.1/iso/scu.iso",
        "MACAddress": "70:df:2f:86:af:02",
        "PCIEslot": "L",
        "PhysicalPortNumber": 1
    }
}

```

## OS Details

In the OS Details section, provide the OS Repository and Target OS details of the share where the SCU ISO image is located.

The OS Details section consists of the following parameters for OS Repository, vMedia boot medium and Target OS:

**Table 7: OS Repository**

Parameter	Description
MediaType	Type of media.
BootMedium	The boot medium to install SCU boot. The following types are supported: <ul style="list-style-type: none"> <li>• vMedia</li> <li>• HTTP</li> <li>• FlexMMC</li> <li>• MicroSD</li> <li>• PXE</li> <li>• IPXE</li> </ul>

**Table 8: vMedia Boot Medium**

Parameter	Description
ImageRepository	SCU ISO boot image repository location
Transfer Protocol	The transfer protocol type.
Username	User credentials
Password	
Mount Options	Mounting options

## Example

```

"OSDetails": {
  "OSRepository": {
    "MediaType": "Local",
    "BootMedium": {
      "VMEDIA": {
        "ImageRepository":
"10.10.10.1/home/nfsshare/iso/rhel/RHEL-8.5.0-20211013.2-x86_64-dvd1.iso",
        "TransferProtocol": "nfs",
        "Username": "root",
        "Password": "password",
        "MountOptions": ""
      }
    }
  },
  "TargetOS": {
    "OSName": "rhel8u5x64",
    "OSEdition": "None"
  }
}

```

### Target Disk

In the Target Disk section, provide the type of disk details.

The Target Disk section consists of the following parameters:

**Table 9: Target Disk**

Parameter	Description
PHYSICALDISK	Enter the Drive Serial Number.
VIRTUALDISK	Enter the following details: <ul style="list-style-type: none"> <li>• Storage Controller Slot ID</li> <li>• Virtual Drive Number</li> </ul>
DISKNAME	Enter the OS Drive details.
VIRTUALDRIVENAME	Enter the virtual drive name.
ONBOARDSATAM2SSD	Enter the slot details for SATAM2SSD.
M2SWVDNAME	Enter the details for M2 SW RAID Name.
FC	Enter the following details: <ul style="list-style-type: none"> <li>• HostWWPN</li> <li>• TargetWWPN</li> <li>• LUN</li> </ul>
iSCSI	Enter the following details: <ul style="list-style-type: none"> <li>• MACAddress</li> <li>• Primary Target Name</li> <li>• Primary LUN</li> </ul>

**Example**

```

"TargetDisk": {
  "PHYSICALDISK": {
    "DriveSerialNumber": "06VSGVVB"
  },
  "VIRTUALDISK": {
    "StorageControllerSlotID": "MRAID",
    "VirtualDriveNumber": 0
  },
  "DISKNAME": {
    "OSDrive": "/dev/sdk"
  },
  "VIRTUALDRIVENAME": {
    "VirtualDriveName": "Hypervisor"
  },
  "ONBOARDSATAM2SSD": {
    "SATAM2SSD": "slot1"
  },
  "M2SWVDNAME": {
    "M2SWRAIDName": "RAID0"
  },
  "FC": {
    "HostWWPN": "10:00:54:88:DE:A7:32:6F",
    "TargetWWPN": "50:06:01:68:3E:A0:62:22",
    "Lun": 200
  },
  "ISCSI": {
    "MACAddress": "70:DF:2F:86:AE:FD",
    "PrimaryTargetName":
    "iqn.2001-05.com.equallogic:0-af1ff6-082b3ebe6-cf2005780845d665-iqn.siva-25.com",
    "PrimaryLUN": 1
  }
}

```

**Remote Log**

In the Remote Log section, provide the IP address and access details of the share where the installation logs will be saved.

The Remote Log section consists of the following parameters:

**Table 10: Parameters in the Remote Log Section**

Parameter	Description
ImageRepository	The IP address of the share where the log file is generated during the installation.
TransferProtocol	The protocol type used to access the share. The following protocols are supported: <ul style="list-style-type: none"> <li>• SCP</li> <li>• SFTP</li> </ul>
Username Password	The user credentials to access the share.

**Example**



```
"RemoteLog": {
  "ImageRepository": "10.10.10.10/home/nfstest/scu.log",
  "TransferProtocol": "scp",
  "Username": "root",
  "Password": "John123"
```

### Answer File

In the Answer File section, provide access details of the share where the answer file is located. The answer file contains details about OS deployment.

### Example

```
"AnswerFile": {
  "ImageRepository": "10.10.10.10/home/nfstest/answerfile",
  "TransferProtocol": "scp",
  "Username": "root",
  "Password": "John123"
```

## Modifying the niscu.cfg File

Beginning with Release 6.3, for non interactive operating system installation using HTTP/HTTPS, PXE and IPXE, you must first configure the `nwboot.cfg` file.

For non interactive operating system installation using vMedia, you must first configure the `niscu.cfg` file.



**Note** You do not have to configure `nwboot.cfg` file while installing non interactive operating system using vMedia.

The `niscu.cfg` file consists of the following sections:

- [Default, on page 9](#)
- [SCU, on page 10](#)
- [NIOS Install, on page 11](#)
- [Log Collection, on page 12](#)
- [OS, on page 13](#)
- [Answer File, on page 14](#)
- [Target System, on page 15](#)

Each section must have an unique name. The section name is provided by the user.

### Default

The Default section consists of the following parameters:

**Table 11: Parameters in the Default Section**

Parameter	Description
[section_name]	Enter a name for the section.

Parameter	Description
use_http_secure=	The HTTP type. The default value is 'Yes'. Type 'No' if the connection is insecure.
update_timeout=	The time (in minutes) the python script is active after it has been started. The default value is 120 minutes. The valid range is 30 to 240 minutes.

### Example

```
[defaults]
use_http_secure=yes
update_timeout=120
```

### SCU

In the SCU section, provide the IP address and access details of the share where the SCU ISO image is located.

The SCU section consists of the following parameters:

**Table 12: Parameters in the SCU Section**

Parameter	Description
[section_name]	Enter a name for the section.
isoshareip=	The IP address of the SCU ISO share.
isosharepath=	The location of the ISO image in the share.
imagefile=	The name of the SCU ISO image.
isosharetype=	The share type. The following share types are supported: <ul style="list-style-type: none"> <li>• NFS</li> <li>• CIFS</li> <li>• WWW (HTTP or HTTPS)</li> </ul>
isoshareuser=	The user credentials to access the share.
isosharepassword=	
bootmedium=	The medium to be used to boot from. The following types are supported: <ul style="list-style-type: none"> <li>• vmedia - To boot from vmedia</li> <li>• flexmmc- To boot from eMMC</li> <li>• microsd - To boot from microsd</li> </ul>

Parameter	Description
nios_section=	The nios_install section containing the OS installation process.

### Example

```
[scu_iso]
isoshareip=192.0.2.10
isosharepath=/cifsshare
imagefile=ucs-cxxx-scu-5.0.0.39.iso
isosharetype=cifs
isoshareuser=Administrator
isosharepassword=John123
bootmedium=vmedia
```

### NIOS Install

The NIOS Install section initiates the OS installation process and consists of the following parameters.

**Table 13: Parameters in the NIOS Install Section**

Parameter	Description
remoteShareIp=	IP Address of the scuConfigFile remote share
remoteSharePath=	scuConfigFile remote share path.
remoteShareFile=	scuConfigFile in the remote share
remoteShareType=	Remote share protocol. The following are supported: <ul style="list-style-type: none"> <li>• SCP</li> <li>• SFTP</li> <li>• TFTP</li> <li>• WWW (HTTP or HTTPS)</li> </ul>
username=	The user credentials to access the remote share.
password=	
scubootmedium=	The medium to be used to SCU boot from. The following types are supported: <ul style="list-style-type: none"> <li>• HTTP - To boot from HTTP or HTTPS</li> <li>• PXE - To boot from PXE</li> <li>• IPXE - To boot from IPXE</li> <li>• vmedia - To boot from vmedia</li> <li>• flexmmc- To boot from eMMC</li> <li>• microsd - To boot from microsd</li> </ul>

Parameter	Description
osBootMedium=	The medium to be used to boot SCU ISO from. vmedia is the supported medium.
targetDiskType=	The type of target disk. The following types are supported: <ul style="list-style-type: none"> <li>• physicaldisk</li> <li>• virtualdisk</li> <li>• microsd</li> </ul>

### Example

```
[nios_install]
niosremoteshareip=10.10.10.10
niosremotesharepath=/home/nfstest/xyz/config/
niosremotesharefile=scuConfigFile_VMEDIA_VMEDIA_RHEL8_4
niosremotesharetype=scp
niosusername=root
niospassword=Jack123
niosscubootmedium=vmedia
niososbootmedium=vmedia
niostargetdisktype=physicaldisk
```

### Log Collection

In the Log Collection section, provide the IP address and access details of the share where the installation logs will be saved.

The Log Collection section consists of the following parameters:

**Table 14: Parameters in the Log Collection Section**

Parameter	Description
[section_name]	Enter a name for the section.
remshareip=	The IP address of the share where the log file is generated during the installation.
remsharepath=	The location of the log file in the share. The log data generated during the installation is saved in this file. Enter the absolute path of the share.
remsharefile=	The file name to store SCU NI-OSI logs on the remote server. The default value is share_file.
remsharetype=	The protocol type used to access the share. The following protocols are supported: <ul style="list-style-type: none"> <li>• SCP</li> <li>• SFTP</li> </ul>

Parameter	Description
remshareuser= remsharepassword=	The user credentials to access the share.

### Example

```
[log_info]
remshareip=192.0.2.100
remsharepath=PATH
remsharefile=share_file
remsharetype=scp
remshareuser=user
remsharepassword=xxxx
```

### OS

In the OS section, provide access details of the share where the config file is located. The config file contains the operating system details that are used in niscu.cfg. The OS section is for a single operating system only. If you want to install a different OS, repeat this section with the corresponding config file. See [Modifying conf\\_file, on page 16](#) for information about config\_file.

The OS section consists of the following parameters:

**Table 15: Parameters in the OS Section**

Parameter	Description
[section_name]	Enter a name for the section. The name provided here should be used as the value for the config_section parameter in the Target Server section.
ip=	The IP address of the share where the config file is located.
path=	The location of the config file in the share.
file=	The config file that contains the operating system details.
username=	The user credentials to access the share.
password=	
protocol=	The protocol used to access the share. The following protocols are supported: <ul style="list-style-type: none"> <li>• SCP</li> <li>• SFTP</li> <li>• HTTP</li> <li>• TFTP</li> </ul>

**Example**

```
[OS_iso]
ip=192.0.2.200
path=/var/www/html/huu
file=conf_file
username=root
password=Huudefault369
protocol=scp
```

**Answer File**

In the Answer File section, provide access details of the share where the answer file is located. The answer file contains details about custom OS deployment. This section is optional if you want to install an operating system with default settings (Quick installation).

**Table 16: Parameters in the Answer File Section**

Parameter	Description
[section_name]	Enter a name for the section.  The name defined here should be used as the value in the "answerfile_section" parameter in the target server section.
ip=	The IP address of the share that contains the answer file.
path=	The location of the answer file in the share.
file=	The kickstart file. For custom installation, the kickstart file contains the required installation details.
username=	The user credentials to access the share.
password=	
protocol=	The protocol type used to mount the share.  The following protocols are supported: <ul style="list-style-type: none"> <li>• SCP</li> <li>• SFTP</li> <li>• HTTP</li> <li>• TFTP</li> </ul>

**Example**

```
[OS_answerfile]
ip=192.0.2.254
path=/home/SCU/NI_SCU/Files/
file=esxi_ks.cfg
username=root
password=root@123
protocol=scp
```

## Target System

In this section, provide details about the target server where the operating system is being installed. This section also contains details about the config file and answer file that are passed to the niscu.cfg file. For deploying operating systems in multiple servers, repeat this section with the details of target server, config file, and answer file.

**Table 17: Parameters in the Target System Section**

Parameter	Description
[section_name]	When naming this section, use this format: cimc, followed by an underscore (_), and a number. The number defines the target server instance.
address=	The IP address of the target server where the OS is being installed.
user=	The user credentials to access the target server.
password=	
imagefile=	The SCU image file name.
config_section=	The name given for the OS section should be provided here. For example, if the OS section name is "rhel_iso", then provide that name here.
servernode=	Select the node where you want to install the OS. This option is applicable for only C3260 and S3260 M4 servers.  Enter 1 to select node 1. Enter 2 to select node 2. Enter 'all' to select both the nodes.
[answerfile]	The name given for the Answer File section should be provided here. For example, if the Answer File section is "OS_answerfile", then provide that name here.  This is an optional parameter. The Answer file section is required only for custom installation.

## Example

```
[cimc_1]
address=192.0.2.10
user=admin
password=Cisucs891
imagefile=ucs-cxxx-scu-5.0.0.39.iso
config_section=OS_iso
servernode=1
answerfile_section=OS_answerfile
```

```
[cimc_2]
address=192.0.2.20
user=admin
```

```
password=Ciscoucs345
imagefile=ucs-cxxx-scu-5.0.0.39.iso
config_section=OS_iso
servernode=2
answerfile_section=OS_answerfile
```

## Modifying conf\_file

The `conf_file` contains details about the operating system being deployed on the target server. The `conf_file` includes the following parameters:

**Table 18: Parameters in conf\_file**

Parameter	Description
shareMapType:	The share type. The following share types are supported: <ul style="list-style-type: none"> <li>• NFS</li> <li>• CIFS</li> <li>• WWW (HTTP and HTTPS)</li> </ul>
shareIP:	The IP address of the share where the OS ISO file is saved.
sharePath:	The location of the OS ISO file.
sharefile:	The name of the OS ISO file.
username:	The user credentials to access the share.
password:	Enter the user name and password.
osName:	The operating system format. See <a href="#">Modifying conf_file</a> for the operating system formats.



Parameter	Description
osDrive:	<p>The drive where the operating system is installed.</p> <p>For example, <code>sdd</code> and <code>sde</code> might represent the first and second VDs.</p> <p>However, the enumeration of disks depends on the number of JBODs and VDs configured. Suppose a single JBOD has been configured. Then the JBOD is enumerated first and <code>sde</code> and <code>sdf</code> represent the first and second VDs.</p> <ul style="list-style-type: none"> <li>• DriveSerialNumber: Z1W4PB48000R610JQWP #Serial Number of the drive connected to LSI/Noe-Valley RAID controller or NVMe disk, on which OS has to be installed.</li> <li>• StorageControllerSlotID: MRAID #Controller Slot ID. This will be ignored, if DriveSerialNumber is present.</li> </ul> <p>VirtualDriveNumber: 0 #VD Number of the drive on which OS has to be installed.</p> <p>For LSI/Noe-Valley RAID controllers, VirtualDriveNumber should be specified along with StorageControllerSlotID.</p> <ul style="list-style-type: none"> <li>• VirtualDriveName: Hypervisor #VD Name on which OS has to be installed. Applicable only for SD Card Drives.</li> </ul> <p><b>Note</b> The above options are exclusive. You can provide any one of the above.</p>
Edition:	<p>Windows parameter only. This parameter is applicable for both custom and quick installation of Windows.</p> <p>The following editions are supported:</p> <ul style="list-style-type: none"> <li>• STANDARD</li> <li>• DATACENTER</li> <li>• STANDARDCORE</li> <li>• DATACENTERCORE</li> </ul>

### Example

```
shareMapType:www
shareIp:192.0.2.100
sharePath:/hhu
shareFile:VMware-VMvisor-Installer-5-5-0_update03-3116895_x86_64.iso
userName:root
password:HuuWelcome123
```

```

osName:esxi5u5x64
osDrive:/dev/sde
Edition:STANDARD
MediaType:Local
Interface:eth0
BootProto:static
IP:192.0.2.254
Subnet:255.255.255.0
Gateway:192.0.2.100
DNS:192.0.2.100

```

The following table lists a few examples of operating system formats.

**Table 19: Operating System Formats**

Operating System	Version	Format
Rocky Linux	Rocky Linux 8 Update 6	rocky8u6x64
	Rocky Linux 8 Update 7	rocky8u7x64
	Rocky Linux 9 Update 1	rocky9u1x64
Oracle Linux	Oracle Linux 7 Update 9	oracle7u9x64
	Oracle Linux 8 Update 6	oracle8u6x64
	Oracle Linux 9	oracle9u0x64
RHEL	RHEL 8.0	rhel8u64
	RHEL 8.4	rhel8u4x64
SLES	SLES 15 SP3	sles15sp3x64
	SLES 15.0	sles15x64
Ubuntu	Ubuntu 20.4.2	ubuntu20042x64
Esxi	Esxi 7.0U3	esxi7u03x64
	Esxi 6.7.3	esxi6u73x64
Windows	Windows Server 2019 and 2022	w2k19x64
		w2k22x64

## Running the Python Script to Start OS Deployment

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	Install the following components on the Linux client system from where you want to run the Python script:	<ul style="list-style-type: none"> <li>• Python 2.7.x for 4.1.1 and below</li> <li>• Python 3.x for 4.2.1 and above</li> <li>• Open SSL Version 1.0.1e-fips or later</li> </ul>

	Command or Action	Purpose
Step 2	On the Linux client system, run the following command:	<p><b>python os_install-4.2.yc.yyyymmddab.py -c niscu.cfg</b></p> <p>Here, <code>os_install-4.2.yc.yyyymmddab.py</code> is the Python script, and <code>niscu.cfg</code> is the configuration file that contains information about the SCU ISO image and the OS details.</p> <p>When the Python script is executed, the target server boots to the SCU ISO. After SCU boots, it mounts the OS ISO image that is mapped in the configuration file. SCU then installs the operating system on the target server.</p>

## Installing Operating Systems Using Commands

Use the following options to install an operating system on a single server:

**Table 20: Options to Install OS on a Single Server**

Option	Description
<code>-a a.b.c.d, --address=a.b.c.d</code>	The IP address of the target server.
<code>-u USERNAME, --user=USERNAME</code>	The admin user credentials to access the target server.
<code>-p PASSWORD, --password=PASSWORD</code>	
<code>-m scu.iso, --imagefile=scu.iso</code>	The name of the SCU ISO file.
<code>-i a.b.c.d, --isoshareip=a.b.c.d</code>	The IP address of the remote share where the SCU ISO image is located.
<code>-d /data/image, --isosharepath=/data/image</code>	The location of the ISO file in the share.
<code>-t cifs/nfs/www, --isosharetype=cifs/nfs/www</code>	<p>The type of remote share.</p> <p>The following share types are supported:</p> <ul style="list-style-type: none"> <li>• CIFS</li> <li>• NFS</li> <li>• WWW (HTTP or HTTPS)</li> </ul>
<code>-r ISOSHAREUSER, --isoshareuser=ISOSHAREUSER</code>	The admin user credentials to access the share where the SCU ISO image is located.
<code>-w ISOSHAREPASSWORD, --isosharepassword=ISOSHAREPASSWORD</code>	

Option	Description
-o BOOTMEDIUM, --bootMedium=BOOTMEDIUM	The boot medium used to update. The following share types are supported: <ul style="list-style-type: none"> <li>• vmedia</li> <li>• microsd</li> <li>• flexmmc</li> </ul>
-q TIMEOUT, --timeout=TIMEOUT	NISCU OS Installation timeout
-M ISOMOUNTOPTION, --isomountoption=ISOMOUNTOPTION	Use mount option in case of CIFS share to specify the security option.
-I a.b.c.d, --remshareip=a.b.c.d	The IP address of the remote share where the snapshot results will be saved.
-D /data/image, --remsharepath=/data/image	The directory to store snapshot results in the share.
-F REMOTESHAREFILE, --remoteShareFile=REMOTESHAREFILE	The name of the share file.
-T scp/sftp, --remsharetype=scp/sftp	The type of share. The following protocols are supported: <ul style="list-style-type: none"> <li>• SCP</li> <li>• SFTP</li> </ul>
-U REMSHAREUSER, --remshareuser=REMSHAREUSER	The user credentials to access the share to save snapshot results.
-W REMSHAREPASSWORD, --remsharepassword=REMSHAREPASSWORD	
-x CONFIGSHAREIP, --configShareIp=CONFIGSHAREIP	The IP address of the remote share where the config file is located.
-y CONFIGSHAREPATH, --configSharePath=CONFIGSHAREPATH	The path to the location of the config file in the share.
-z CONFIGSHAREFILE, --configShareFile=CONFIGSHAREFILE	The name of the config file.
-j CONFIGSHARETYPE, --configShareType=CONFIGSHARETYPE	The type of share.
-b CONFIGSHAREUSERNAME, --configShareUsername=CONFIGSHAREUSERNAME	The user credentials to access the share where the config file is located.
-e CONFIGSHAREPASSWORD, --configSharePassword=CONFIGSHAREPASSWORD	

Option	Description
-X ANSWERFILESHAREIP, --answerFileShareIp=ANSWERFILESHAREIP	The IP address of the share where the answer file is located.
-Y ANSWERFILESHAREPATH, --answerFileSharePath=ANSWERFILESHAREPATH	The path to the location of the answer file in the share.
-Z ANSWERFILESHAREFILE, --answerFileShareFile=ANSWERFILESHAREFILE	The name of the answer file.
-J ANSWERFILESHARETYPE, --answerFileShareType=ANSWERFILESHARETYPE	The type of share.
-B ANSWERFILEUSERNAME, --answerFileUsername=ANSWERFILEUSERNAME	The user credentials to access the share where the answer file is located.
-E ANSWERFILEPASSWORD, --answerFilePassword=ANSWERFILEPASSWORD	
-N SERVERNODE, --serverNode=SERVERNODE	Select the node where you want to install the OS. This options is applicable for only C3260 and S3260 M4 servers.  Type 1 to select node 1. Type 2 to select node 2. Type ALL to select both the nodes.
-f LOGFILE, --logrecordfile=LOGFILE	The name of the log file that contains the log data.

Table 21: CLI Options for NIOS\_Install Section

Option	Description
-A NIOSREMOTESHAREIP, --niosremoteshareip=NIOSREMOTESHAREIP	IP address of remote share for non-interactive OS install
-G NIOSREMOTESHAREPATH, --niosremotesharepath=NIOSREMOTESHAREPATH	Path in remote share for non-interactive OS install
-H NIOSREMOTESHAREFILE, --niosremotesharefile=NIOSREMOTESHAREFILE	Filename in remote share for non-interactive OS install
-K NIOSREMOTESHARETYPE, --niosremotesharetype=NIOSREMOTESHARETYPE	Remote share type for non-interactive OS install
-L NIOSUSERNAME, --niosusername=NIOSUSERNAME	Username of the Cisco IMC admin user
-O NIOSPASSWORD, --niospassword=NIOSPASSWORD	Password of the Cisco IMC admin user
-P NIOSSCUBOOTMEDIUM, --niosscubootmedium=NIOSSCUBOOTMEDIUM	Boot medium for non-interactive OS install
-Q NIOSOSBOOTMEDIUM, --niososbootmedium=NIOSOSBOOTMEDIUM	OS medium for non-interactive OS install

Option	Description
-R NIOSTARGETDISKTYPE, --niostargetdisktype=NIOSTARGETDISKTYPE	Target Disk type for non-interactive OS install

### Example

#### Example 1: Options for Quick Installation

In this example, the command options help in quick installation of Windows on 198.51.100.10. The SCU ISO image is located in 198.51.100.100. The conf\_file is placed in 198.51.100.100. The OS installation log files are saved in 198.51.100.254. The NI-SCU script log files are saved in the same client system where the script is executed.

```
python3 os_install.py -a 198.51.100.10 -u user1 -p passwd
-m ucs-cxxx-scu-6.2.xx.iso -o vmedia -i 198.51.100.100
-d /utils_share/scu/kb -t nfs -r user2 -w passwd1 -I 198.51.100.100
-D /niscu/new_TH2U
-F niscu_cli_remsharefile1 -T scp -U user3 -W passwd2 -x 198.51.100.254
-y /niscu/new_TH2U
-z conf_file -j sftp -b abcd -e passwd -f log_latest
```

#### Example 2: Options for Custom Installation

In this example, the command options help in custom installation of Windows on 198.51.100.10. The SCU ISO image is located in 198.51.100.100. The conf\_file is placed in 198.51.100.100. The answer file required for custom installation is located in 198.51.100.110, and is named win\_answer\_file. The OS Installation log files are saved in 198.51.100.254. The NI-SCU script log files are saved in the same client system where the script is executed.

```
python3 os_install.py -a 198.51.100.10 -u user1 -p passwd
-m ucs-cxxx-scu-6.2.xx.iso -o vmedia -i 198.51.100.100
-d /utils_share/scu/kb -t nfs -r user2 -w passwd1 -q 120 -I 198.51.100.100
-D /niscu/new_TH2U
-F niscu_cli_remsharefile1 -T scp -U user3 -W passwd2 -x 198.51.100.254
-y /niscu/new_TH2U
-z conf_file -j sftp -b abcd -e passwd -X 198.51.100.254
-Y /niscu/answer_files
-Z rhel.cfg -J sftp -B user4 -E passwd-f log_latest
```

## Sample nwboot.cfg file

### Sample nwboot.cfg file

```
{
  "Update_Timeout": 240,
  "SCURepository": {
    "BootMedium": {
      "VMEDIA": {
        "ImageRepository": "10.10.10.1/home/nfsshare/iso/scu.iso",
        "TransferProtocol": "nfs",
        "Username": "root",
        "Password": "password",
        "MountOptions": ""
      },
      "HTTP": {
```

```

    "ImageRepository": "http://10.10.10.1:80/iso/scu.iso",
    "MACAddress": "70:df:2f:86:af:02",
    "PCIEslot": "L",
    "PhysicalPortNumber": 1,
    "IPv4Address": {
        "AddressOrigin": "Static",
        "Address": "10.104.255.179",
        "Gateway": "10.104.255.129",
        "SubnetMask": "255.255.255.128",
        "StaticNameServer": "64.104.76.247"
    },
    "IPv6Address": {
        "AddressOrigin": "DHCPv6",
        "Address": "fc00:1234::a:b:c:d",
        "PrefixLength": 64,
        "Gateway": "fe80::fe15:b4ff:fe97:90cd",
        "StaticNameServer": "fe80::fe15:b4ff:fe97:90cd"
    }
},
"FLEXMMC": {
    "ImageRepository": "scu.iso"
},
"MICROSD": {},
"PXE": {
    "ImageRepository": "ftp://10.104.255.224/pub/scu",
    "MACAddress": "70:df:2f:86:af:02",
    "PCIEslot": "L",
    "PhysicalPortNumber": 1,
    "IPv4Address": {
        "AddressOrigin": "DHCP"
    }
},
"IPXE": {
    "ImageRepository": "http://10.10.10.1/iso/scu.iso",
    "MACAddress": "70:df:2f:86:af:02",
    "PCIEslot": "L",
    "PhysicalPortNumber": 1
}
},
"OSDetails": {
    "OSRepository": {
        "MediaType": "Local",
        "BootMedium": {
            "VMEDIA": {
                "ImageRepository":
"10.10.10.1/home/nfsshare/iso/rhel/RHEL-8.5.0-20211013.2-x86_64-dvd1.iso",
                "TransferProtocol": "nfs",
                "Username": "root",
                "Password": "password",
                "MountOptions": ""
            }
        }
    }
},
"TargetOS": {
    "OSName": "rhel8u5x64",
    "OSEdition": "None"
}
},
"TargetDisk": {
    "PHYSICALDISK": {
        "DriveSerialNumber": "06VSGVVB"
    }
},

```

```

    "VIRTUALDISK": {
        "StorageControllerSlotID": "MRAID",
        "VirtualDriveNumber": 0
    },
    "DISKNAME": {
        "OSDrive": "/dev/sdk"
    },
    "VIRTUALDRIVENAME": {
        "VirtualDriveName": "Hypervisor"
    },
    "ONBOARDSATAM2SSD": {
        "SATAM2SSD": "slot1"
    },
    "M2SWVDNAME": {
        "M2SWRAIDName": "RAID0"
    },
    "FC": {
        "HostWWPN": "10:00:54:88:DE:A7:32:6F",
        "TargetWWPN": "50:06:01:68:3E:A0:62:22",
        "Lun": 200
    },
    "ISCSI": {
        "MACAddress": "70:DF:2F:86:AE:FD",
        "PrimaryTargetName":
"iqn.2001-05.com.equallogic:0-af1ff6-082b3ebe6-cf2005780845d665-iqn.siva-25.com",
        "PrimaryLUN": 1
    }
},
"RemoteLog": {
    "ImageRepository": "10.10.10.10/home/nfstest/scu.log",
    "TransferProtocol": "scp",
    "Username": "root",
    "Password": "john123"
},
"AnswerFile": {
    "ImageRepository": "10.10.10.10/home/nfstest/answerfile",
    "TransferProtocol": "scp",
    "Username": "root",
    "Password": "john123"
}
}

```

## Sample conf\_file and niscu.cfg files

### Sample conf file

```

shareMapType:www
shareIp:10.10.10.10
sharePath:/path/to/iso
shareFile:rhel66.iso
userName:www
password:www
osName:rhel6u6x64
osDrive:/dev/sdk

DriveSerialNumber:Z1W4AC480000Z610ABCD

StorageControllerSlotID:MRAID

VirtualDriveNumber:0

```



```
VirtualDriveName:Hypervisor
SATAM2SSD:slot1
M2SWRAIDName:RAID00
Edition:STANDARD
```

### Sample niscu.cfg file

```
#
# This file is just a template file and suggest user not to use this file directly without
# deleting comments and other info
#
# User has to create their own config file instead of using this.
#
#
[defaults]
use_http_secure=yes
update_timeout=120

[scu_iso]
isoshareip=10.10.10.10
isosharepath=/path/to/file
imagefile=ucs-cxx-scu.iso
isosharetype=www
isoshareuser=root
isosharepassword=password
mountoption=noauto # Multiple mount options shall be passed as a comma separated list.
Example - nolock,rw
bootmedium=vmedia # Value shall be vmedia - to boot from vmedia or flexmmc- to boot
from eMMC or microsd - to boot from microsd

##### Section to store SCU NI-OSI logs on Remote Server #####

[output_location]
remshareip=10.10.10.10
remsharepath=/path/to/file
remsharefile=share_file
remsharetype=scp/sftp
remshareuser=root
remsharepassword=password

#####Section for one server starts here#####

[rhel_iso]
ip=10.10.10.10
path=/path/to/conf_file
file=conf_file
username=root
password=password
protocol=scp # supports scp, sftp, tftp and www

[rhel_answerfile]
ip=10.10.10.10
path=/path/to/answer_file
file=rhel66_custom.ks#Keep this field blank for quick install else give name of kickstart
file to perform Custom install for RHEL,CENT, SLES, Ubuntu
username=root
password=password
protocol=scp # supports scp, sftp, tftp and www

##### Section for Network Boot Support starts here #####
[nios_install]
niosremoteshareip=10.10.10.10
niosremotesharepath=/home/nfstest/config #config templete file path for scu boot from network
location
```

```

niosremotesharefile=nwboot.cfg #config template file for scu boot from network location
niosremotesharetype=scp
niosusername=root
niospassword=Ucstack4All
niosscubootmedium=pxe #type of the boot pxe/http/ipxe
niososbootmedium=vmedia #currently only vmedia is supported
niostargetdisktype=physicaldisk #target disk details

[cimc_1]
address=10.10.10.10
user=admin
password=password
imagefile=ucs-cxx-scu.iso
config_section=rhel_iso
answerfile_section=rhel_answerfile #Mandatory for Custom Install for RHEL,CENT, SLES and
Ubuntu. Remove this line, to perform Quick install.
nios_section=nios_install #nios_install section, if this section is present then it takes
the priority over scu_iso section.
servernode=1/2/all # For Colusa2 .

#servernode option to be passed only in case of colusa2 For other server dont specify this
option
#####Section for one server ends here#####
#####
##### To trigger os installation for multiple servers simply repeate above section with
details for other server
##### and OS, also define separate conf_file for other server
#####

```