



# CHAPTER 3

## ESC NCS Installer

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Complete the following prerequisites before executing the installation procedure.

### Pre-Requisites

1. Make sure that the cloud-image-utils package is installed on MAAS/bootstrap server prior to running ESC NCS Installer.

```
sudo apt-get install cloud-image-utils
```

2. Create the following networks in OpenStack.

```
os mgmt,  
vnf mgmt,  
orch mgmt,  
outside servers,  
vnf internet,  
vnf outside
```

### ESC NCS Installation

Perform the following procedure to install ESC, NCS.

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#### Step 1 VMS 2.0 package download information:

```
- Navigate to http://www.cisco.com/c/en/us/products/software/index.html  
  Click on Products -> Cloud and Systems Management -> Products and Solutions ->  
  Service Management and Orchestration -> Virtual Managed Services  
  
- Add the 3 vms packages to cart and download them to MaaS server  
  Vms-cvpn1a-2.0.k9.tar -> ESC, NCS, UBUNTU_VM, deploy-cloudvpn, automation (esc, ncs  
  installer)  
  Vms-cvpn1b-2.0.k9.tar -> VNF  
  Vms-cvpn1c-2.0.k9.tar -> Inception_VM  
  
- scp Vms-cvpn1a-2.0.k9.tar, Vms-cvpn1b-2.0.k9.tar to inception-vm (after it is  
  spawned & active) as shown below  
  
  scp -i <inception_vm_key_path> Vms-cvpn1a-2.0.k9.tar  
  ubuntu@<inception_vm_ip>:/home/ubuntu/  
  scp -i <inception_vm_key_path> Vms-cvpn1b-2.0.k9.tar  
  ubuntu@<inception_vm_ip>:/home/ubuntu/
```

```

- login to inception_vm from MaaS server

ssh -i <inception_vm_key_path> ubuntu@<inception_vm_ip>

(switch to root)
sudo su -

untar the tar files
cd /home/ubuntu/
tar -xvf Vms-cvpng1a-2.0.k9.tar
tar -xvf Vms-cvpng1b-2.0.k9.tar

cp automation /opt/cisco/vms-installer/

cp ESC      /opt/cisco/vms-installer/images/
cp NCS      /opt/cisco/vms-installer/images/
cp VNF      /opt/cisco/vms-installer/images/
cp UBUNTU_VM /opt/cisco/vms-installer/images/
cp deploy-cloudvpn /opt/cisco/vms-installer/images/

```

**Step 2 Configuration**—Update the install.ini file with test bed details as shown in the example. The install.ini file is self-explanatory.

```

cd /opt/cisco/vms-installer/automation
vi install.ini

[dc_info]

# dc_type = dt/gen
dc_type = gen

# ncs, esc instances will be named as <location>-esc, <location>-ncs
location = tb5

# cluster_type = sm/dm/none/single(for single dc clustering). NOTE: multiple dc
clustering is not supported for now!
cluster_type = single

# esc_ha = yes/no
esc_ha = yes

# for setup with only maas server, update below with maas IPs
# if running from inception vm, set below public_ip to os_mgmt_ip
bootstrap_public_ip = 172.23.169.35
bootstrap_os_mgmt_ip = 10.20.0.1

# *_zone is optional. if not specified random zone will be assigned

# jumpvm used for accessing ncs
jumpvm_zone =
jumpvm_outside_servers_ip = 11.17.0.10
jumpvm_os_mgmt_ip = 10.20.0.159

# if cluster_type = single, below data is for ncs-sm, and ncs2* is for ncs-dm
ncs_zone =
ncs_vnf_mgmt_ip = 10.18.0.13
ncs_orch_mgmt_ip = 10.19.1.13
ncs_outside_servers_ip = 11.17.0.13

# fill below info ONLY for cluster_type = single
ncs2_zone =
ncs2_vnf_mgmt_ip = 10.18.0.14
ncs2_orch_mgmt_ip = 10.19.1.14
ncs2_outside_servers_ip = 11.17.0.14

```

```
# esc info
esc_zone =
esc_os_mgmt_ip = 10.20.0.161
esc_vnf_mgmt_ip = 10.18.0.11
esc_orch_mgmt_ip = 10.19.1.11
esc_bgp_remote_ip = 10.19.1.2

# esc ha info
escha_zone =
escha_os_mgmt_ip = 10.20.0.162
escha_vnf_mgmt_ip = 10.18.0.12
escha_orch_mgmt_ip = 10.19.1.12
escha_bgp_remote_ip = 10.19.1.2
; for podgen, 'escha_bgp_remote_ip' and 'esc_bgp_remote_ip' would be same

kad_vip = 10.20.0.160
bgp_anycast_ip = 10.19.120.1/32
bgp_remote_as = 1000
bgp_local_as = 65170

; bgp_local_ip - is set to esc's orch_mgmt_ip
; bgp_local_router_id - is set to bgp_local_ip

# all the networks specified below should be pre-created in openstack

[os_mgmt_network]
name = net_osmgmt
subnet = 10.20.0.0/24
gateway = 10.20.0.1

[vnf_mgmt_network]
name = vnf-mgmt
subnet = 10.18.0.0/20
gateway = 10.18.0.1

[orch_mgmt_network]
name = orch-mgmt
subnet = 10.19.1.0/24
gateway = 10.19.1.1

[outside_servers_network]
name = orch-internet
subnet = 11.17.0.0/24
gateway = 11.17.0.1

[vnf_internet_network]
name = vnf-internet
subnet = 11.102.16.0/20
gateway = 11.102.16.1

[vnf_outside_network]
name = vnf-outside
subnet = 11.17.16.0/20
gateway = 11.17.16.1

[other]
pnp_mgmt_start_ip = 10.60.0.1
proxy = 10.19.2.21-8080
dns_server_ip = 10.19.2.22
dns_domain = cloudvpn.com
```

```

ntp_server = 10.19.2.22
rsyslog_server = 10.19.2.23

[resource_pool_subnets]
# format eg: 1.2.3.4/16
cpe_mgmt = 10.254.0.0/16
bogus_br_inside = 6.0.0.0/8
cpe_lan_pool = 192.168.0.0/16
loopback_cpe_csr = 10.122.0.0/16
csr_to_csr = 10.123.0.0/16
br_inside = 10.21.0.0/16

[user_pwd]
# format: userid(mandatory), pwd
bootstrap = localadmin, cisco123
esc = esc, esc123
ncs = ncs, ncs123
ncsadmin = admin, admin
dns = localadmin, cisco123
pnp = admin

[key_based_auth]
# format: userid, keypath (both mandatory)

# location of inception_key on the maas server
inception = ubuntu, /home/localadmin/inceptionqcow/myownkey

[auth_group_creds]
# format: user(mandatory), pwd(mandatory), secondary_pwd(optional)
default = admin, cisco123, cisco123
asa = admin, cisco123, cisco123
csr = admin, cisco123, cisco123
wsa = admin, lvsErT6QekFohZc2FZ!
ipsmgr = admin, cisco123
ipssns = admin, cisco123
esc = admin, admin
ncscluster = admin, admin
dnsupdater = localadmin, cisco123

[openstack]
auth_url = http://10.20.0.152:5000/v2.0
region = RegionOne
tenant = admin
user = admin
password = openstack

[openstack_quotas]
instances = 1000
cores = 2000
ram = 512000
file_content_bytes = 65535
port = 5000
network = 1000
subnet = 1000
volumes = 100

[pnp_interfaces]
# format: cpe_type, wan, lan (all mandatory)
# eg. C19[0-9][0-9], GigabitEthernet0/0, GigabitEthernet0/1
cpe_type_1 = C19[0-9][0-9], GigabitEthernet0/0, GigabitEthernet0/1
cpe_type_2 = C29[0-9][0-9], GigabitEthernet0/0, GigabitEthernet0/1
cpe_type_3 = C39[0-9][0-9], GigabitEthernet0/0, GigabitEthernet0/1
cpe_type_4 = C881, FastEthernet4, FastEthernet0

```

```
cpe_type_5 = C892, GigabitEthernet8, GigabitEthernet0
```

**Step 3 Execution—Run Installer.**

Installer would be triggered from `/opt/cisco/vms-installer/scripts/install-setup.sh`

The following info is added to `install-setup.sh`

```
*****  
cd /opt/cisco/vms-installer/automation  
python install.py -bp /opt/cisco/vms-installer/images/ -g  
/opt/cisco/vms-installer/automation/config/common/globals.cli
```



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**Note** Globals file to be created as per wiki:  
<http://csmtg-wiki.cisco.com/confluence/display/ORNG/vMS+Global+Properties#vMSGlobalProperties-GlobalPropertiesforvMS2.0>

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Copy the globals file to `/opt/cisco/vms-installer/automation/config/common/globals.cli`.

```
*****
```

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