

So erstellen Sie ein ECS Systems zu Testzwecken

Für Testzwecke stellt Dell/EMC in der sog. *Community* eine ECS Software Version mit einer Lizenz von 1 TB zur Verfügung. Diese Software nennt sich ECS-CE (CE für *Community Edition*). Hierbei gibt es 2 Möglichkeiten:

- Sie können 'nur' die ECS Software herunterladen und sie auf einem kompatiblen Linux Server installieren.

Vorteil	Sie selbst bestimmen den ‚Installationsgrad‘ Ihres Linux Systems.
Nachteil	Die Installation wird etwas komplizierter.

- Sie können auch ein fertiges VMware OVA File herunterladen und die VM dann konfigurieren.

Vorteil	Die Installation der ECS Software sollte eigentlich einfacher sein (doch dazu später).
Nachteil	Das Linux System (Centos 7) ist nur minimal installiert. Somit stehen viele bewährte Tools/Programme standardmäßig nicht zur Verfügung.

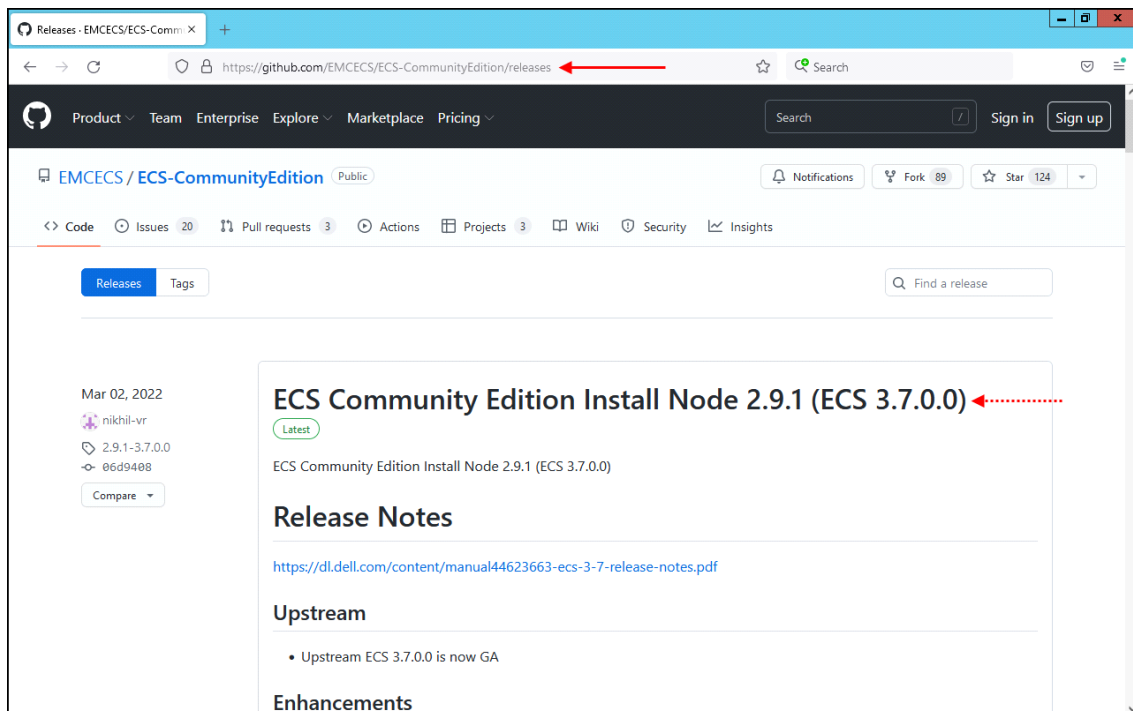
Trotz der OS-spezifischen Einschränkungen möchte ich hier die letzte Variante verwenden, denn sie führt schneller zum Ziel.

I. Der Download von Software und Dokumentation

Alle Informationen (Software & Dokumentation) befindet sich auf einem GitHub Server. Allerdings stellt Ihnen heute das Dell/EMC Websystem keinen Link dorthin mehr zur Verfügung.

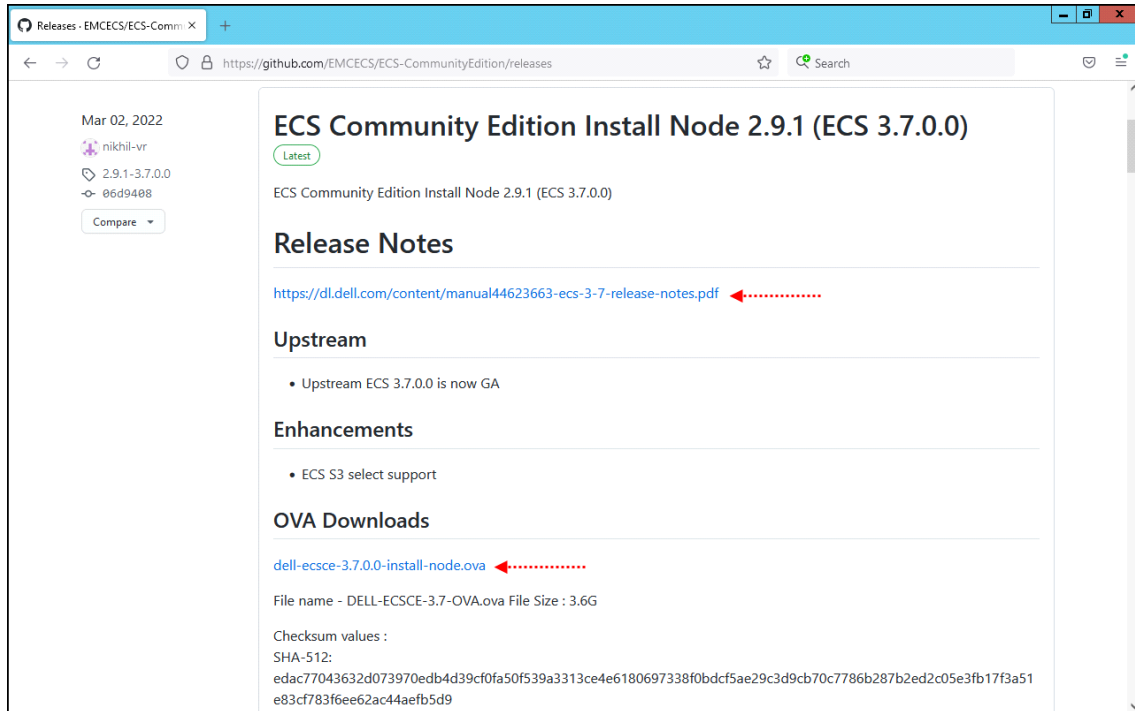
Hier die Download Adresse:

<https://github.com/EMCECS/ECS-CommunityEdition/releases>

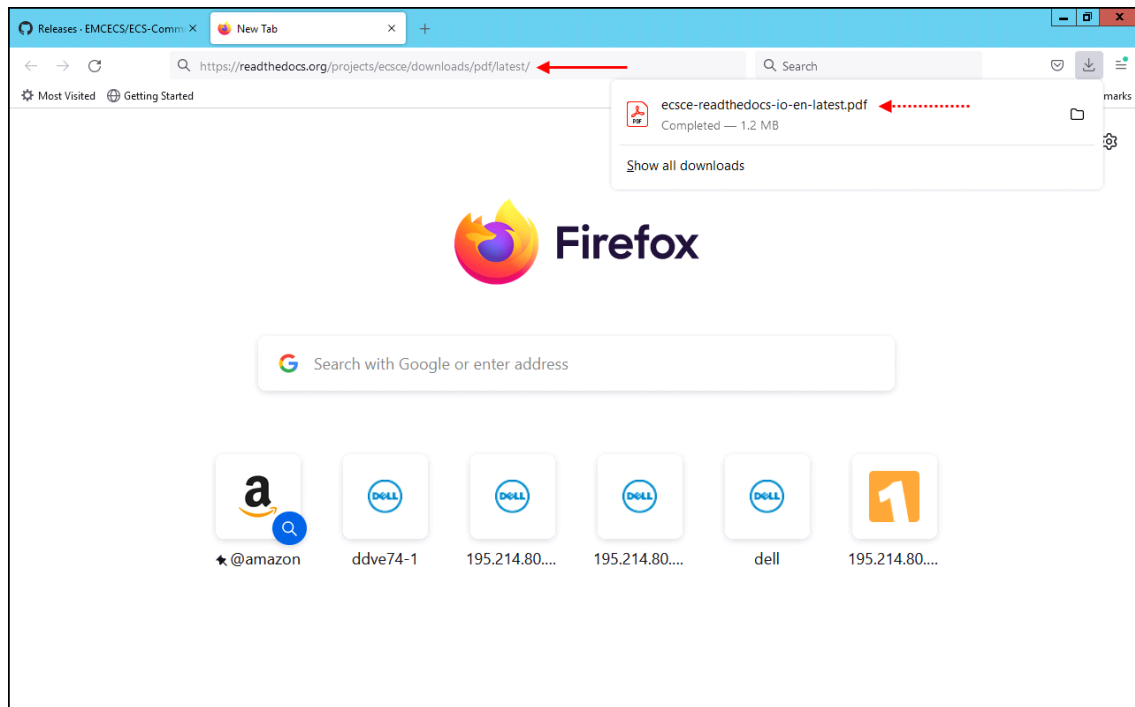


Der Vergleich mit der Dell EMC Versionsnummer zeigt, daß dies offenbar die letzte/aktuelle Version ist. Dies gilt zumindest für den 01.07.2022.

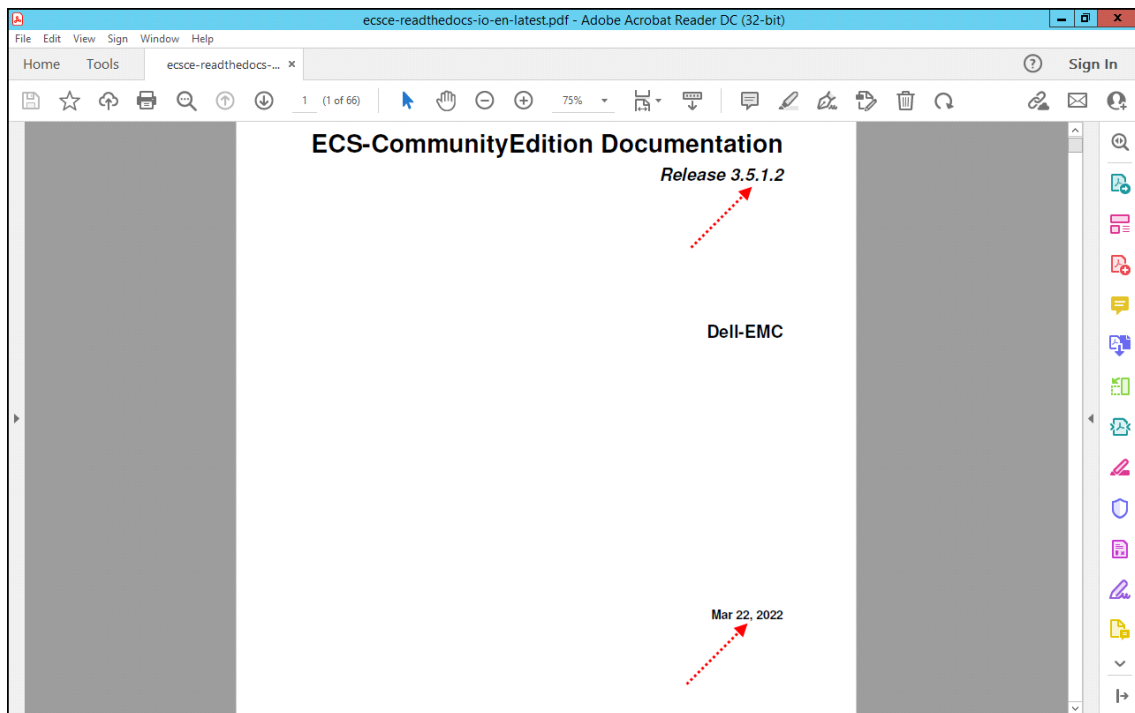
Hier erhalten Sie auch die aktuelle Dokumentation:



Nach Aussage der Web-Seite handelt es sich sogar um die für die Version 3.7.0.0. Wenn Sie allerdings das Dokument heruntergeladen haben, ...

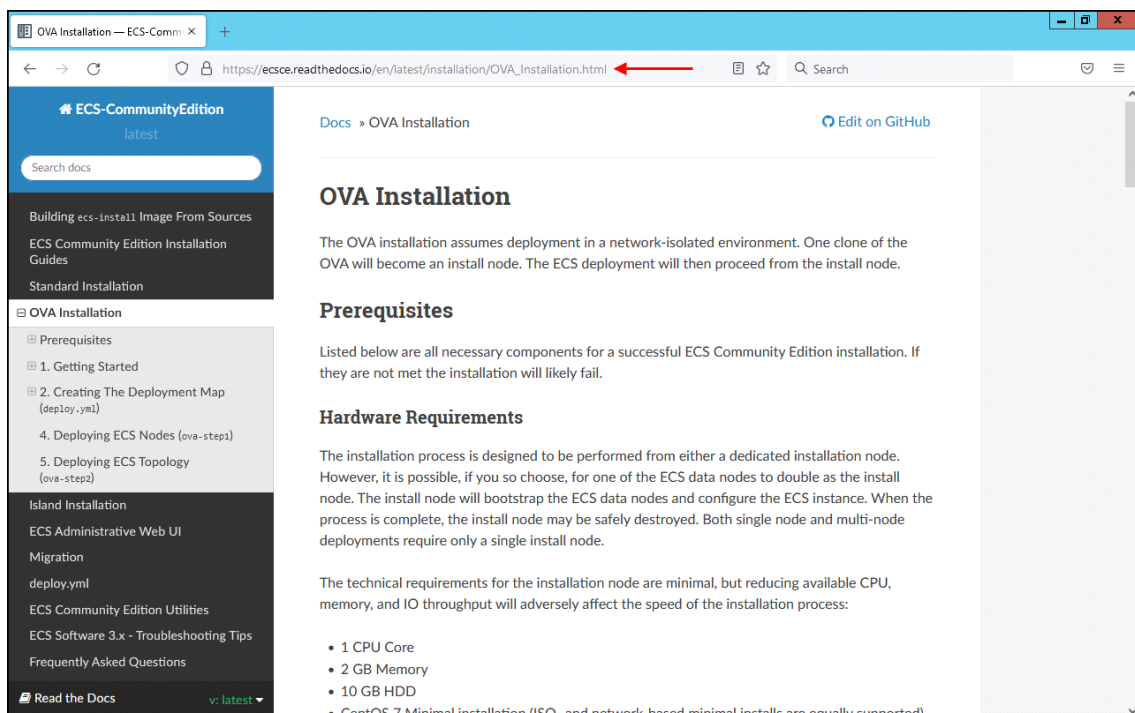


... entpuppt sich die Beschreibung für die ältere Version 3.5.1.2 - jedoch mit dem zeitlich richtigen Bezug zur Version 3.7.0.0:



Weitere, detaillierte Informationen erhalten Sie auch unter dieser URL:

https://ecsce.readthedocs.io/en/latest/installation/OVA_Installation.html



Erst am unteren Bildrand finden Sie den Copyright Hinweis - er bezieht sich auf das Jahr 2017. Sollte dies stimmen, wäre die Beschreibung mittlerweile veraltet, wenn vielleicht auch immer noch gültig.

II. Die Installation der OVA Version

Sie besteht grundsätzlich aus diesen Schritten, die Sie top-down durchführen müssen:

- Deployen des OVA Images
- Booten des Betriebssystems
- Adaptieren verschiedener Systemparameter
- Aktualisieren der Software (sog. 'Bootstrapping')
- Einrichten der ECS Software – je nach Ziel-Typ
 - Es gibt insgesamt 3 Möglichkeiten
 - 1-Node Installation mit Internet-Anschluß
 - 4-Node Installation mit Internet-Anschluß
 - 1-Node Installation ohne Internet-Anschluß (sog. *Island Installation*)

II-1. Deployen des OVA Images

Dies ist nichts Besonderes, weswegen ich auf Details an dieser Stelle verzichten möchte. Auch der erforderliche Speicherplatz hält sich mit 300 GB in Grenzen. Übrigens ist es mir gelungen, das Image problemlos unter der VMware Workstation 16 Software zu deployen.

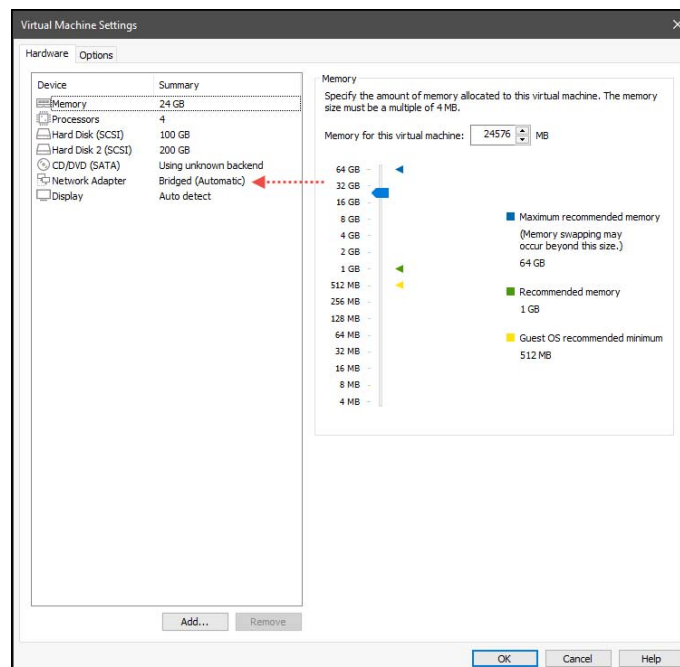


Sie sollten den Bedarf für die Anzahl der CPUs (4) und die Größe des Arbeitsspeichers (24GB) nicht verändern - die Doku verweist ausdrücklich auf die Mindest-Anforderungen!

In der ECS-CE Version 3.7.0.0 werden bereits beim Deployen bereits 2 Disks angelegt:

- die kleine (100 GB) für das Betriebssystem und die ECS Software selbst
 - die große (200 GB) für die späteren ECS Daten
- Mit der VMware Workstation Software werden sie automatisch mit *Thin Provisioning* eingerichtet.

Das sind die Einstellungen der VM nach dem Deployment:





Der Netzwerkadapter benötigt momentan noch die Verbindung zum Internet !!!
Ihn müssen Sie mit einem entsprechenden Virtuellem Netzwerk verbinden.

15.2.1 Deployments into Soft-Isolated and Air-Gapped Island Environments

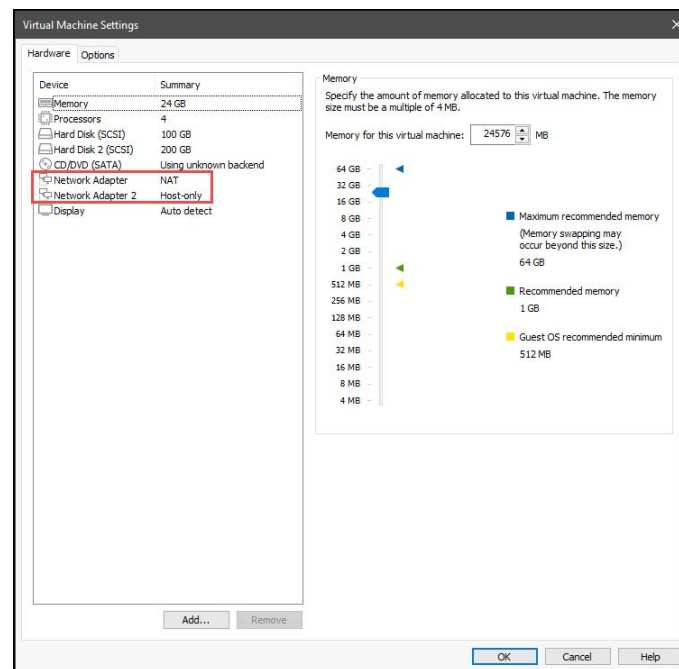
Important information regarding Island deployments

Please be aware that **install node bootstrapping requires Internet access to the hardware or virtual machine** that will become the install node, but **once this step is complete, the machine can be removed from the Internet** and migrated into the Island environment.

If you prefer to download a prefab install node as an OVF/OVA, follow one of the links below. Please note that OVAs are produced upon each release and do not necessarily have the most current software.

Please see the [release page](#) for OVA download links.

Also habe die Einstellungen der VM etwas erweitert:



II-2. Kopieren/Clonen der VM

Das ist nur notwendig, wenn Sie eine Multi-Node-Installation durchführen wollen. In meiner Testumgebung möchte ich mich jedoch auf eine Single-Node Installation (sog. *all-in-1-island-installation*) beschränken.

II-3. Booten und Vorbereiten der VM

Beim Booten werden Sie feststellen, daß ein CentOS 7.9 Linux hochgefahren wird.

Abschließend müssen Sie sich anmelden. Hierfür wurden diese beiden User Accounts angelegt:

name	admin	Standard-Passwort	ChangeMe
name	root	Standard-Passwort	ChangeMe

Mit der Version ECS-CE Version 3.7.0.0 sind folgende Optionen **nicht** mehr möglich:

- Login als User `admin`
- Wechseln des User Account zum User `root` (`su -`)



`root` Befehle lassen sich nur mit Hilfe von `sudo` ausführen!

II-3.1. Anpassen des Tastatur-Layouts

Die Aktivierung des deutschen Schemas erreichen Sie mit diesen Befehlen:

```
localectl set-keymap de    stellt die aktuelle Session um  
localectl                 speichert die aktuelle Einstellung dauerhaft
```

II-3.2. Kontrolle der OS Version

Beim Booten werden Sie feststellen, daß ein CentOS 7.9 Linux hochgefahren wird. Dies können Sie natürlich auch später noch verifizieren:

```
$ rpm -q centos-release  
centos-release-7-9.2009.1.el7.centos.x86_64
```

Die Abbildung auf der nächsten Seite zeigt die entsprechenden Beispiele.

```

[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# hostname
localhost.localdomain
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# localectl set-keymap de
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# localectl
System Locale: LANG=en_US.UTF-8
               UC Keymap: de
               X11 Layout: de
               X11 Model: pc105
               X11 Options: terminate:ctrl_alt_bksp
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# rpm -q centos-release
centos-release-7-9.2009.1.el7.centos.x86_64
[root@localhost ~]#

```

II-3.3. Generelles Abschalten der IPv6 Unterstützung

Momentan unterstützt die ECS(-CE) Software das IPv6 Protokoll noch nicht. Deshalb sollten Sie es generell ausschalten.

- Fügen Sie diese Zeilen an das Ende Ihrer Datei `/etc/sysctl.conf` hinzu:

```

net.ipv6.conf.all.disable_ipv6 = 1
net.ipv6.conf.default.disable_ipv6 = 1

```

- Aktivieren Sie diese Anweisungen mit `sysctl -p` (kein Reboot erforderlich).

```

[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# more /etc/sysctl.conf
# sysctl settings are defined through files in
# /usr/lib/sysctl.d/, /run/sysctl.d/, and /etc/sysctl.d/.
#
# Vendors settings live in /usr/lib/sysctl.d/.
# To override a whole file, create a new file with the same in
# /etc/sysctl.d/ and put new settings there. To override
# only specific settings, add a file with a lexically later
# name in /etc/sysctl.d/ and put new settings there.
#
# For more information, see sysctl.conf(5) and sysctl.d(5).
#
net.ipv6.conf.all.disable_ipv6 = 1
net.ipv6.conf.default.disable_ipv6 = 1
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# sysctl -p
net.ipv6.conf.all.disable_ipv6 = 1
net.ipv6.conf.default.disable_ipv6 = 1
[root@localhost ~]#
[root@localhost ~]#

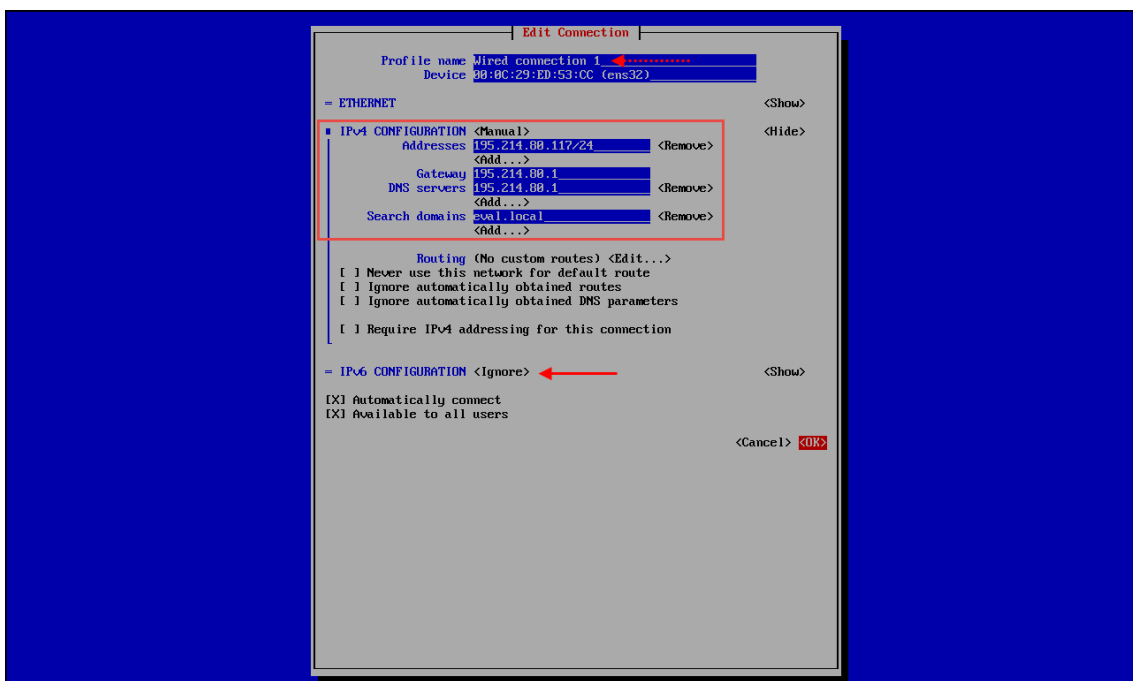
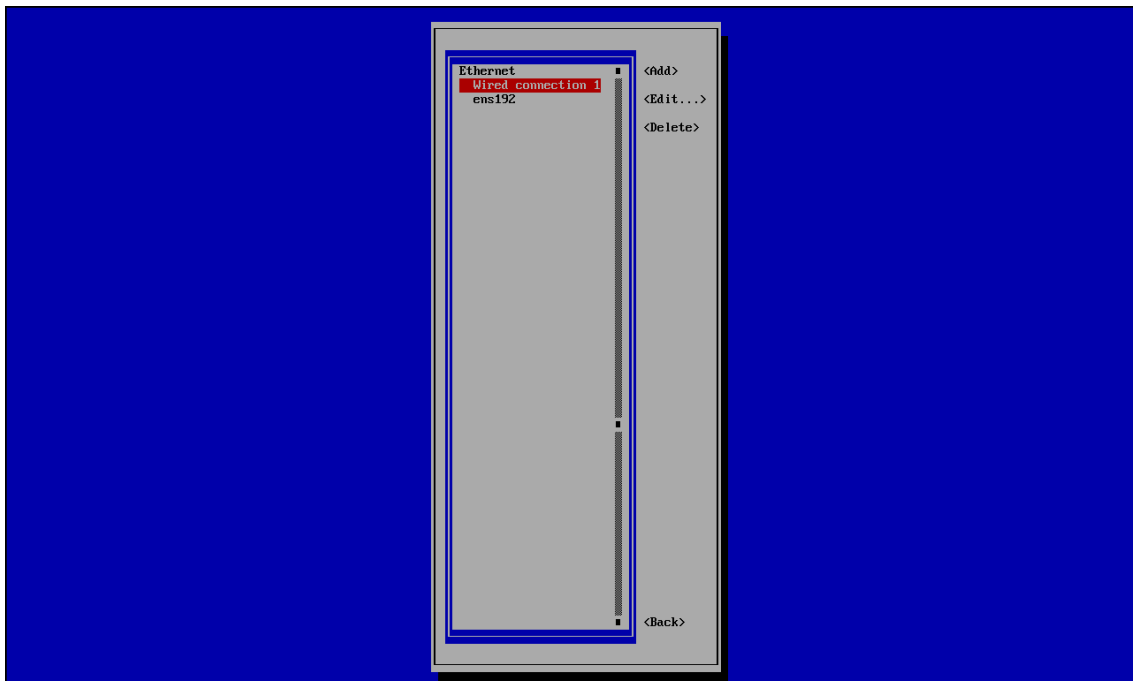
```

II-3.4. Zuweisen einer festen IP Adresse für den zweiten NIC

Über den zweiten Netzwerkadapter (den im Domain Netzwerk) soll die ECS später erreichbar sein. Es macht Sinn, ihm eine feste IP Adresse zuzuweisen. Dank der minimalen CentOS Installation steht Ihnen hierzu allerdings nur das Befehlszeilen-Tool `nmtui` (NetworkManager TUI) zur Verfügung.

Für meine Testumgebung sollten seine Daten wie folgt eingestellt werden:

IPv4 Adresse	195.214.80.117/24	(für das gesamte Subnetz)
Gateway	195.214.80.1	
DNS Server	195.214.80.1	
Search domains	eval.local	



Die Alternative, der Befehl

`ip address show`

weicht von dem `ifconfig` Ergebnis ab und irritiert nur:

```

[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# ip address show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
2: ens192: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default qlen 1000
    link/ether 00:0c:29:ed:53:c2 brd ff:ff:ff:ff:ff:ff
    inet 192.168.115.181/24 brd 192.168.115.255 scope global noprefixroute dynamic ens192
        valid_lft 4285sec preferred_lft 1785sec
3: ens32: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group default qlen 1000
    link/ether 00:0c:29:ed:53:c2 brd ff:ff:ff:ff:ff:ff
    inet 195.214.88.117/24 brd 195.214.88.255 scope global noprefixroute ens32
        valid_lft forever preferred_lft forever
    inet6 fe80::20c:29ff:feed:53cc/64 scope link
        valid_lft forever preferred_lft forever
4: docker0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc noqueue state DOWN group default
    link/ether 02:42:12:fa:7d:1b brd ff:ff:ff:ff:ff:ff
    inet 172.17.0.1/16 brd 172.17.255.255 scope global docker0
        valid_lft forever preferred_lft forever
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# ping 195.214.88.1
PING 195.214.88.1 (195.214.88.1) 56(84) bytes of data:
64 bytes from 195.214.88.1: icmp_seq=1 ttl=128 time=0.784 ms
64 bytes from 195.214.88.1: icmp_seq=2 ttl=128 time=0.676 ms
^C
--- 195.214.88.1 ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1814ms
rtt min/avg/max/mdev = 0.676/0.730/0.784/0.054 ms
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# ping www.avus-cr.de
PING www.avus-cr.de (85.13.137.165) 56(84) bytes of data:
64 bytes from dd16726.kasserver.com (85.13.137.165): icmp_seq=1 ttl=128 time=24.8 ms
64 bytes from dd16726.kasserver.com (85.13.137.165): icmp_seq=2 ttl=128 time=23.5 ms
^C
--- www.avus-cr.de ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1882ms
rtt min/avg/max/mdev = 23.517/24.163/24.889/0.646 ms
[root@localhost ~]#

```

Trotzdem ist sowohl die Verbindung zum Domain Controller als auch zum Internet erfolgreich.

II-3.5. Dauerhaftes Abschalten der Firewall Daemons

Mit Hilfe der Steuerung des Firewall Daemons habe ich sie vorsichtshalber generell abgeschaltet:

```
systemctl disable firewalld
systemctl stop firewalld
systemctl status firewalld
```

Hier die Durchführung und die Kontrolle:

```
root@localhost ~#
root@localhost ~# systemctl status firewalld
firewalld.service - firewalld - dynamic firewall daemon
Loaded: loaded (/usr/lib/systemd/system/firewalld.service; enabled; vendor preset: enabled)
Active: active (running) since Tue 2022-07-05 08:29:28 GMT; 19s ago
Docs: man:firewalld(1)
Main PID: 2153 (firewalld)
Tasks: 2
Memory: 22.0M
CGroup: /system.slice/firewalld.service
└─2153 /usr/bin/python2 -Es /usr/sbin/firewalld --nofork --nopid

Jul 05 08:29:28 localhost.localdomain systemd[1]: Starting firewalld - dynamic firewall daemon...
Jul 05 08:29:28 localhost.localdomain systemd[1]: Started firewalld - dynamic firewall daemon.
Jul 05 08:29:28 localhost.localdomain firewalld[2153]: WARNING: AllowZoneDrifting is enabled. This is considered an insecure configuration option. It... it now.
Jul 05 08:29:29 localhost.localdomain firewalld[2153]: WARNING: COMMAND_FAILED: /usr/sbin/iptables -w0 -D FORWARD -i docker0 -o docker0 -j DROP' fa...chain?}.
Jul 05 08:29:29 localhost.localdomain firewalld[2153]: WARNING: COMMAND_FAILED: /usr/sbin/iptables -w0 -D FORWARD -i docker0 -o docker0 -j DROP' fa...chain?}.
Hint: Some lines were ellipsized, use -l to show in full.
root@localhost ~#
root@localhost ~#
root@localhost ~# systemctl stop firewalld
root@localhost ~#
root@localhost ~#
root@localhost ~# systemctl status firewalld
firewalld.service - firewalld - dynamic firewall daemon
Loaded: loaded (/usr/lib/systemd/system/firewalld.service; enabled; vendor preset: enabled)
Active: inactive (dead) since Tue 2022-07-05 08:30:07 GMT; 3s ago
Docs: man:firewalld(1)
Process: 2153 ExecStart=/usr/sbin/firewalld --nofork --nopid $FIREWALLD_ARGS (code=exited, status=0/SUCCESS)
Main PID: 2153 (code=exited, status=0/SUCCESS)

Jul 05 08:29:28 localhost.localdomain systemd[1]: Starting firewalld - dynamic firewall daemon...
Jul 05 08:29:28 localhost.localdomain systemd[1]: Started firewalld - dynamic firewall daemon.
Jul 05 08:29:28 localhost.localdomain firewalld[2153]: WARNING: AllowZoneDrifting is enabled. This is considered an insecure configuration option. It... it now.
Jul 05 08:29:29 localhost.localdomain firewalld[2153]: WARNING: COMMAND_FAILED: /usr/sbin/iptables -w0 -D FORWARD -i docker0 -o docker0 -j DROP' fa...chain?}.
Jul 05 08:29:29 localhost.localdomain firewalld[2153]: WARNING: COMMAND_FAILED: /usr/sbin/iptables -w0 -D FORWARD -i docker0 -o docker0 -j DROP' fa...chain?}.
Jul 05 08:30:05 localhost.localdomain systemd[1]: Stopping firewalld - dynamic firewall daemon...
Jul 05 08:30:07 localhost.localdomain systemd[1]: Stopped firewalld - dynamic firewall daemon.
Hint: Some lines were ellipsized, use -l to show in full.
root@localhost ~#
root@localhost ~#
root@localhost ~# systemctl disable firewalld
Removed symlink /etc/systemd/system/multi-user.target.wants/firewalld.service.
Removed symlink /etc/systemd/system/dbus-org.fedoraproject.FirewallD1.service.
root@localhost ~#
root@localhost ~#
```



Vergessen Sie nicht, dem neuen ECS Server auch einen entsprechenden Eintrag am Domain Controller hinzuzufügen.

Danach sollte der Server auch von einem anderen Computer mit **ping** erreichbar sein:

```
Administrator: Command Prompt
C:\>
C:\>ping 195.214.80.117
Pinging 195.214.80.117 with 32 bytes of data:
Reply from 195.214.80.117: bytes=32 time<1ms TTL=64
Reply from 195.214.80.117: bytes=32 time<1ms TTL=64
Reply from 195.214.80.117: bytes=32 time<1ms TTL=64
Reply from 195.214.80.117: bytes=32 time<1ms TTL=64

Ping statistics for 195.214.80.117:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>^n
C:\>
```

II-3.6. Anpassen der Datei /etc/hosts

Ich habe am sie ECS-CE Server wie folgt geändert:

```
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# more /etc/hosts
127.0.0.1 localhost localhost.localdomain localhost4 localhost4.localdomain4
::1 localhost localhost.localdomain localhost6 localhost6.localdomain6
#
195.214.80.1 dcon dcon.eval.local
195.214.80.111 ddve74-1 ddve74-1.eval.local
195.214.80.222 22-nwtest 22-nwtest.eval.local

[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
```

II-3.7. Einrichten des NTP Services

Dies ist wichtig, da andernfalls die Zeiten auseinanderlaufen. Außerdem prüft ein Script später den Zugriff auf einen NTP Server. Allerdings ist diese Verbindung bei einer 'Island' Installation, also ohne Internet-Zugriff, nicht vorhanden.



Ohne Verbindung zu einem NTP Server bleibt das Script einfach 'ewig' an dieser Stelle hängen!

Aus diesem Grund habe ich mich dazu entschlossen, den Domain Controller (dcon.eval.local) auch als NTP Server für die Domäne einzurichten. Das ist wohl auch mit Windows Mitteln möglich (Details hierzu finden Sie im Internet), doch ist die ECS Software mit dieser Lösung offensichtlich nicht wirklich kompatibel.

Deshalb habe ich die Meinberg-Software heruntergeladen und installiert. Sie erhalten sie hier:

https://www.meinbergglobal.com/english/sw/ntp.htm#ntp_stable

Vorteile:

- Die Software gibt es für Windows
- Bei Windows wird der OS interne Zeitservice standardmäßig abgestellt.
- Nach einem Reboot bleibt der Service aktiv.
- Auch bei Verlust des Internet-Anschlusses am DCON steht der NTP Server im Intranet zur Verfügung.
- Die Software scheint sehr stabil zu sein.



Vergessen Sie nicht, an der ECS den `ntpd` Daemon standardmäßig zu starten, denn der Daemon übernimmt auch die Funktionalität für den NTP Client.

Wie unten zu sehen, ist der Service zwar enabled, jedoch nicht automatisch gestartet. Die Steuerung erfolgt auch hier wieder durch die Manipulation des zuständigen Service:

```
systemctl disable | enable ntpd
systemctl start   | stop   ntpd
systemctl status  |        ntpd
```

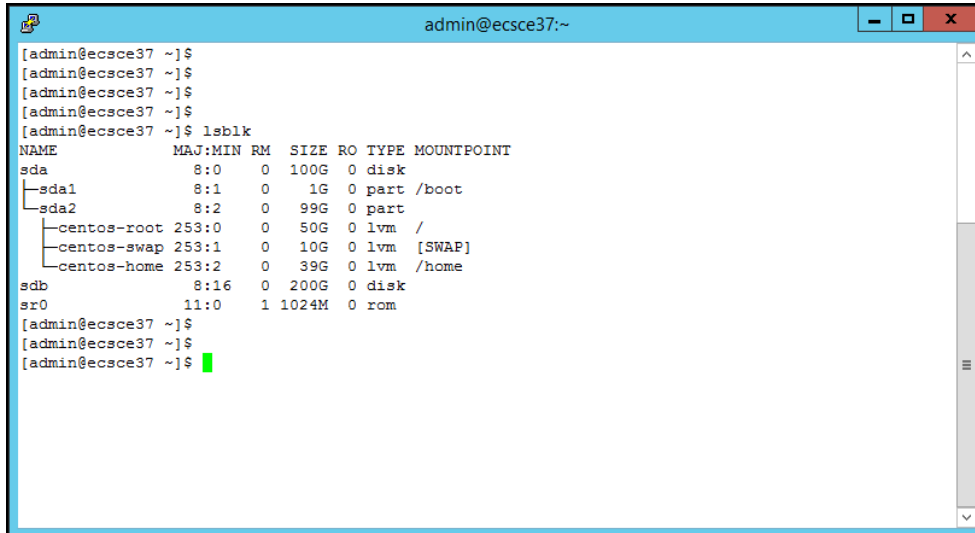
```
root@localhost ~#
root@localhost ~# systemctl status ntpd
# ntpd.service - Network Time Service
Loaded: loaded (/usr/lib/systemd/system/ntpd.service; disabled; vendor preset: disabled)
Active: inactive (dead)
Jul 01 13:48:54 ecscce37.eval.local ntpd[2128]: Listen normally on 4 docker0 172.17.0.1 UDP 123
Jul 01 13:48:54 ecscce37.eval.local ntpd[2128]: Listening on routing socket on fd #21 for interface updates
Jul 01 13:48:54 ecscce37.eval.local system[11]: Started Network Time Service.
Jul 01 13:48:55 ecscce37.eval.local ntpd[2128]: 0.0.0.0 c816 06 restart
Jul 01 13:48:55 ecscce37.eval.local ntpd[2128]: 0.0.0.0 c812 02 freq_set kernel 0.800 PPM
Jul 01 13:48:55 ecscce37.eval.local ntpd[2128]: 0.0.0.0 c811 01 freq_not_set
Jul 01 13:49:01 ecscce37.eval.local ntpd[2128]: 0.0.0.0 c614 04 freq_mode
Jul 01 13:50:19 ecscce37.eval.local system[11]: Stopping Network Time Service...
Jul 01 13:50:19 ecscce37.eval.local ntpd[2128]: ntpd exiting on signal 15
Jul 01 13:50:19 ecscce37.eval.local system[11]: Stopped Network Time Service.
root@localhost ~#
root@localhost ~# systemctl start ntpd
root@localhost ~#
root@localhost ~# systemctl status ntpd
# ntpd.service - Network Time Service
Loaded: loaded (/usr/lib/systemd/system/ntpd.service; disabled; vendor preset: disabled)
Active: active (running) since Fri 2022-07-01 13:50:47 GMT; 8s ago
Process: 2162 ExecStart=/usr/sbin/ntpd -u ntp:ntp $OPTIONS (code=exited, status=0/SUCCESS)
Main PID: 2163 (ntpd)
Tasks: 1
Memory: 612.0K
CGroup: /system.slice/ntpd.service
└─2163 /usr/sbin/ntpd -u ntp:ntp -g
Jul 01 13:50:47 ecscce37.eval.local ntpd[2163]: Listen and drop on 0 *wildcard 0.0.0.0 UDP 123
Jul 01 13:50:47 ecscce37.eval.local ntpd[2163]: Listen and drop on 1 *wildcard *: UDP 123
Jul 01 13:50:47 ecscce37.eval.local ntpd[2163]: Listen normally on 2 lo 127.0.0.1 UDP 123
Jul 01 13:50:47 ecscce37.eval.local ntpd[2163]: Listen normally on 3 ens192 195.214.88.117 UDP 123
Jul 01 13:50:47 ecscce37.eval.local ntpd[2163]: Listen normally on 4 docker0 172.17.0.1 UDP 123
Jul 01 13:50:47 ecscce37.eval.local ntpd[2163]: Listening on routing socket on fd #21 for interface updates
Jul 01 13:50:47 ecscce37.eval.local ntpd[2163]: 0.0.0.0 c816 06 restart
Jul 01 13:50:47 ecscce37.eval.local ntpd[2163]: 0.0.0.0 c812 02 freq_set kernel 0.800 PPM
Jul 01 13:50:47 ecscce37.eval.local ntpd[2163]: 0.0.0.0 c811 01 freq_not_set
Jul 01 13:50:54 ecscce37.eval.local ntpd[2163]: 0.0.0.0 c614 04 freq_mode
root@localhost ~#
```

Hier die Kontrolle:

```
root@ecscce37 ~#
root@ecscce37 ~# systemctl status ntpd
# ntpd.service - Network Time Service
Loaded: loaded (/usr/lib/systemd/system/ntpd.service; enabled; vendor preset: disabled)
Active: active (running) since Fri 2022-07-01 13:54:30 GMT; 1min 42s ago
Process: 832 ExecStart=/usr/sbin/ntpd -u ntp:ntp $OPTIONS (code=exited, status=0/SUCCESS)
Main PID: 842 (ntpd)
Tasks: 1
Memory: 2.5M
CGroup: /system.slice/ntpd.service
└─842 /usr/sbin/ntpd -u ntp:ntp -g
Jul 01 13:54:32 ecscce37.eval.local ntpd_intres[846]: DNS 0.centos.pool.ntp.org -> 109.230.227.90
Jul 01 13:54:32 ecscce37.eval.local ntpd_intres[846]: DNS 1.centos.pool.ntp.org -> 164.68.116.11
Jul 01 13:54:33 ecscce37.eval.local ntpd_intres[846]: DNS 2.centos.pool.ntp.org -> 194.158.196.171
Jul 01 13:54:33 ecscce37.eval.local ntpd_intres[846]: DNS 3.centos.pool.ntp.org -> 162.159.200.123
Jul 01 13:54:35 ecscce37.eval.local ntpd[842]: Listen normally on 3 ens192 195.214.88.117 UDP 123
Jul 01 13:54:35 ecscce37.eval.local ntpd[842]: Listen normally on 4 docker0 172.17.0.1 UDP 123
Jul 01 13:54:35 ecscce37.eval.local ntpd[842]: new interface(s) found: waking up resolver
Jul 01 13:54:42 ecscce37.eval.local ntpd[842]: 0.0.0.0 c61c 0c clock_step -0.158193 s
Jul 01 13:54:42 ecscce37.eval.local ntpd[842]: 0.0.0.0 c614 04 freq_mode
Jul 01 13:54:43 ecscce37.eval.local ntpd[842]: 0.0.0.0 c618 08 no_sys_peer
root@ecscce37 ~#
root@ecscce37 ~# ntpq -p
remote refid st t when poll reach delay offset jitter
-----
+ntp2.am-hosting 131.188.3.222 2 u 61 64 1 15.389 1.679 1.228
+node01.meteora- 131.188.3.222 2 u - 64 1 18.434 2.736 2.793
+194.158.196.171 89.189.251.24 2 u 68 64 1 44.782 0.121 1.176
+time.cloudflare 10.48.8.105 3 u 62 64 1 19.616 1.573 1.286
root@ecscce37 ~#
root@ecscce37 ~# ntpq -pn -4
remote refid st t when poll reach delay offset jitter
-----
+109.230.227.90 131.188.3.222 2 u 9 64 3 16.821 2.856 2.237
+164.68.116.11 131.188.3.222 2 u 12 64 1 18.434 2.736 2.793
+194.158.196.171 89.189.251.24 2 u 8 64 3 44.898 2.448 3.326
+162.159.200.123 10.48.8.105 3 u 74 64 1 19.616 1.573 1.286
root@ecscce37 ~#
root@ecscce37 ~#
```

II-3.8. Ermitteln des Devicenamens für den RAW Disk

Hierzu verwenden Sie den Befehl `lsblk`:



```
admin@ecsce37:~$  
[admin@ecsce37 ~]$  
[admin@ecsce37 ~]$  
[admin@ecsce37 ~]$  
[admin@ecsce37 ~]$  
[admin@ecsce37 ~]$ lsblk  
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT  
sda          8:0    0  100G  0 disk  
├─sda1       8:1    0    1G  0 part /boot  
├─sda2       8:2    0   99G  0 part  
│   └─centos-root 253:0  0    50G  0 lvm /  
│       └─centos-swap 253:1  0   10G  0 lvm [SWAP]  
│           └─centos-home 253:2  0   39G  0 lvm /home  
sdb          8:16   0  200G  0 disk  
sr0         11:0    1 1024M  0 rom
```

II-3.9. Überprüfen Sie die 'Stabilität' aller Einstellungen



Überprüfen Sie, ob alle Einstellungen/Funktionen auch nach dem Reboot der beiden Server *dcon* & *luna* sowohl mit als auch ohne Internet-Verbindung noch existieren und vor allem, ob der Zugriff auf den NTP Server (hier: *dcon*) noch möglich ist.

III. Installieren und Einrichten der ECS Software

Hier die generelle Vorgehensweise:

- In einem ersten Schritt müssen Sie das System vorbereiten (sog. *Bootstrapping*)
 - Hierfür müssen Sie die Parameter einer Konfigurationsdatei (`deploy.yml`) genau anpassen. Allein diese Datei müssen Sie ändern.
 - Dann müssen Sie das `bootstrap` Script starten, um den Vorgang selbst einzuleiten.
 - Im ersten Schritt wird die Parameterdatei kopiert.
 - Dann werden - sofern möglich - die Parameter verifiziert.
 - Anschließend wird im Hintergrund vor allem die aktuelle Software aus dem Internet geladen.
Genau hierfür ist die Verbindung zum Internet an dieser Stelle unverzichtbar!
 - Schließlich wird das System automatisch durchgestartet.
- Nicht explizit erwähnt ist, daß Sie dann die Verbindung zum Internet kappen sollten.
- Schließlich müssen Sie die sog. Install-Scripts starten.
 - Je nach Installationsmethode handelt es sich um jeweils 2-3 Scripts.
 - Für mein Ziel (*island = all-in-1-without-internet*) müssen Sie genau 3 Scripts in der richtigen Reihenfolge starten.
 - Eine weitere Anpassung der Parameterdatei ist nicht mehr nötig.

III-1. Bootstrappen der Installation

III-1.1. Editieren der Parameterdatei 'deploy.yml'

Leider stellt die VM eine namensgleiche Datei in mehreren Verzeichnissen zur Verfügung - Sie brauchen aber nur diese Datei:

```
/home/admin/ECS-CommunityEdition/deploy.yml
```

Editieren Sie also ausschließlich die Datei `/home/admin/ECS-CommunityEdition/deploy.yml`

Hier das bereits angepaßte Ergebnis - ich habe die sehr wenig geänderten Parameter blau markiert.

```
# deploy.yml reference implementation v2.8.0

# [Optional]
# By changing the license_accepted boolean value to "true" you are
# declaring your agreement to the terms of the license agreement
# contained in the license.txt file included with this software
# distribution.
licensing:
  license_accepted: false

#autonames:
#  custom:
#    - ecs01
#    - ecs02
#    - ecs03
#    - ecs04
#    - ecs05
#    - ecs06

# [Required]
# Deployment facts reference
facts:

# [Required]
# Node IP or resolvable hostname from which installations will be launched
# The only supported configuration is to install from the same node as the
# bootstrap.sh script is run.
# NOTE: if the install node is to be migrated into an island environment,
#       the hostname or IP address listed here should be the one in the
#       island environment.
install_node: 195.214.80.117

# [Required]
# IPs of machines that will be whitelisted in the firewall and allowed
# to access management ports of all nodes. If this is set to the
# wildcard (0.0.0.0/0) then anyone can access management ports.
management_clients:
  - 0.0.0.0/0

# [Required]
# These credentials must be the same across all nodes. Ansible uses these credentials to
# gain initial access to each node in the deployment and set up ssh public key authentication.
# If these are not correct, the deployment will fail.
ssh_defaults:
# [Required]
# Username to use when logging in to nodes
ssh_username: admin
# [Required]
# Password to use with SSH login
# *** Set to same value as ssh_username to enable SSH public key authentication ***
ssh_password: ChangeMe
# [Required when enabling SSH public key authentication]
# Password to give to sudo when gaining root access.
ansible_become_pass: ChangeMe
# [Required]
# Select the type of crypto to use when dealing with ssh public key
# authentication. Valid values here are:
# - "rsa" (Default)
# - "ed25519"
ssh_crypto: rsa

# [Required]
# Environment configuration for this deployment.
node_defaults:
  dns_domain: eval.local
  dns_servers:
    - 195.214.80.1
  ntp_servers:
    - 195.214.80.1

.....
```


.....

```
#
# [Optional]
# VFS path to source of randomness
# Defaults to /dev/urandom for speed considerations.  If you prefer /dev/random, put that here.
# If you have a /dev/srandom implementation or special entropy hardware, you may use that too
# so long as it implements a /dev/random type device.
entropy_source: /dev/urandom
#
# [Optional]
# Picklist for node names.
# Available options:
# - "moons" (ECS CE default)
# - "cities" (ECS SKU-flavored)
# - "custom" (uncomment and use the top-level autonames block to define these)
# autonaming: custom
#
# [Optional]
# If your ECS comes with differing default credentials, you can specify those here
# ecs_root_user: root
# ecs_root_pass: ChangeMe

# [Optional]
# Storage pool defaults. Configure to your liking.
# All block devices that will be consumed by ECS on ALL nodes must be listed under the
# ecs_block_devices option. This can be overridden by the storage pool configuration.
# At least ONE (1) block device is REQUIRED for a successful install. More is better.
storage_pool_defaults:
  is_cold_storage_enabled: false
  is_protected: false
  description: Default storage pool description
  ecs_block_devices:
    - /dev/sdb

# [Required]
# Storage pool layout. You MUST have at least ONE (1) storage pool for a successful install.
storage_pools:
  - name: sp1
    members:
      - 195.214.80.117
    options:
      is_protected: false
      is_cold_storage_enabled: false
      description: My First SP
      ecs_block_devices:
        - /dev/sdb

# [Optional]
# VDC defaults. Configure to your liking.
virtual_data_center_defaults:
  description: Default virtual data center description

# [Required]
# Virtual data center layout. You MUST have at least ONE (1) VDC for a successful install.
# Multi-VDC deployments are not yet implemented
virtual_data_centers:
  - name: vdc1
    members:
      - sp1
    options:
      description: My First VDC

# [Optional]
# Replication group defaults. Configure to your liking.
replication_group_defaults:
  description: Default replication group description
  enable_rebalancing: true
  allow_all_namespaces: true
  is_full_rep: false
```

.....

```
.....

# [Optional, required for namespaces]
# Replication group layout. You MUST have at least ONE (1) RG to provision namespaces.
replication_groups:
  - name: rg1
    members:
      - vdc1
    options:
      description: My First RG
      enable_rebalancing: true
      allow_all_namespaces: true
      is_full_rep: false

# [Optional]
# Management User defaults
management_user_defaults:
  is_system_admin: false
  is_system_monitor: false

# [Optional]
# Management Users
management_users:
  - username: admin1
    password: ChangeMe
    options:
      is_system_admin: true
  - username: monitor1
    password: ChangeMe
    options:
      is_system_monitor: true

# [Optional]
# Namespace defaults
namespace_defaults:
  is_stale_allowed: false
  is_compliance_enabled: false

# [Optional]
# Namespace layout
namespaces:
  - name: ns1
    replication_group: rg1
    administrators:
      - root
    options:
      is_stale_allowed: false
      is_compliance_enabled: false

# [Optional]
# Object User defaults
object_user_defaults:
  # Comma-separated list of Swift authorization groups
  swift_groups_list:
    - users
  # Lifetime of S3 secret key in minutes
  s3_expiry_time: 2592000

.....
```

.....

```
# [Optional]
# Object Users
object_users:
- username: object_admin1
  namespace: ns1
  options:
    swift_password: ChangeMe
    swift_groups_list:
      - admin
      - users
    s3_secret_key: ChangeMeChangeMeChangeMeChangeMeChangeMe
    s3_expiry_time: 2592000
- username: object_user1
  namespace: ns1
  options:
    swift_password: ChangeMe
    s3_secret_key: ChangeMeChangeMeChangeMeChangeMeChangeMe

# [Optional]
# Bucket defaults
bucket_defaults:
  namespace: ns1
  replication_group: rg1
  head_type: s3
  filesystem_enabled: False
  stale_allowed: False
  encryption_enabled: False
  owner: object_admin1

# [Optional]
# Bucket layout (optional)
buckets:
- name: bucket1
  options:
    namespace: ns1
    replication_group: rg1
    owner: object_admin1
    head_type: s3
    filesystem_enabled: False
    stale_allowed: False
    encryption_enabled: False
```



Zur Vorsicht sollten Sie jetzt einen Snapshot bzw. ein Backup Ihrer VM erstellen!

III-1.2. Aktualisieren der Dateien mit 'update_deploy'

Leider stellt die VM eine namensgleiche Datei in mehreren Verzeichnissen zur Verfügung:

```
[admin@localhost bin]$
[admin@localhost bin]$
[admin@localhost bin]$ pwd
/home/admin/bin
[admin@localhost bin]$
[admin@localhost bin]$
[admin@localhost bin]$
[admin@localhost bin]$ update_deploy
> Updating /opt/emc/ecs-install/deploy.yml from deploy.yml
31c31
<   install_node: 195.214.80.117
---
>   install_node: 192.168.2.200
65c65
<     dns_domain: eval.local
---
>     dns_domain: local
67c67
<       - 195.214.80.1
---
>       - 192.168.2.2
69c69
<         - 195.214.80.1
---
>         - 192.168.2.2
102c102
<           - /dev/sdb
---
>           - /dev/vda
109c109
<             - 195.214.80.117
---
>             - 192.168.2.200
115c115
<               - /dev/sdb
---
>               - /dev/vda
> Recreating ecs-install data container
ecs-install> Initializing data container, one moment ..DEPRECATION: Python 2.7 will reach
the end of its life on January 1st, 2020. Please upgrade your Python as Python 2.7 won't
be maintained after that date. A future version of pip will drop support for Python 2.7.
You are using pip version 19.0.3, however version 20.3.4 is available.
You should consider upgrading via the 'pip install --upgrade pip' command.
. OK
ecs-install> Applying and validating deploy.yml...

PLAY [Installer | Setup access between ecs-install and install node]
*****

TASK [Gathering Facts]
*****
ok: [195.214.80.117]

TASK [group_by]
*****
ok: [195.214.80.117]

PLAY [Installer | Create SSH keys]
*****

TASK [Gathering Facts]
*****
ok: [localhost]

.....
```

```
.....

TASK [installer_generate_ssh_keys : Installer | Check RSA Keypair]
*****
ok: [localhost]

TASK [installer_generate_ssh_keys : Installer | Generate RSA Keypair]
*****
changed: [localhost]

TASK [installer_generate_ssh_keys : Installer | Check ed25519 Keypair]
*****

TASK [installer_generate_ssh_keys : Installer | Generate ed25519 Keypair]
*****

TASK [installer_generate_ssh_keys : Installer | Fail when no crypto selected]
*****

TASK [installer_generate_ssh_keys : Installer | Ensure directory permissions on ssh
keystore] *****
ok: [localhost] => (item=/opt/ssh/id_rsa)
ok: [localhost] => (item=/opt/ssh/id_rsa)

PLAY [CentOS 7 | Setup SSH on install node]
*****

TASK [CentOS_7_configure_ssh : CentOS 7 | Distribute ed25519 ssh key]
*****

TASK [CentOS_7_configure_ssh : CentOS 7 | Distribute rsa ssh key]
*****
changed: [195.214.80.117]

TASK [CentOS_7_configure_ssh : CentOS 7 | Disable SSH UseDNS]
*****
changed: [195.214.80.117]

TASK [CentOS_7_configure_ssh : CentOS 7 | Disable requiretty]
*****
ok: [195.214.80.117]

TASK [CentOS_7_configure_ssh : CentOS 7 | Disable sudo password reverification for admin
group] *****
changed: [195.214.80.117]

TASK [CentOS_7_configure_ssh : CentOS 7 | Disable sudo password reverification for wheel
group] *****
changed: [195.214.80.117]

RUNNING HANDLER [CentOS_7_configure_ssh : CentOS 7 | Restart sshd]
*****
changed: [195.214.80.117]

PLAY RECAP
*****
195.214.80.117      : ok=8      changed=5      unreachable=0    failed=0
localhost         : ok=4      changed=1      unreachable=0    failed=0

Playbook run took 0 days, 0 hours, 0 minutes, 28 seconds

[admin@localhost bin]$
```

III-1.3. Starten des 'Bootstrap' Scripts

Dies erreichen Sie einfach mit dem Start des entsprechenden Scripts. Mit allen Downloads, die hier im Resultat nicht mehr zu sehen sind, dauert der Vorgang ca. 10-15 min.

```
[admin@luna ECS-CommunityEdition]$
[admin@luna ECS-CommunityEdition]$ pwd
/home/admin/ECS-CommunityEdition
[admin@luna ECS-CommunityEdition]$
[admin@luna ECS-CommunityEdition]$ ./bootstrap.sh -y -g -c deploy.yml
>
> ECS Community Edition Install Node Bootstrap 2.9.1r
> ECS Software Image emccorp/ecs-software-3.7.0:3.7.0.0
> ~~~~~
>
> Escalating privileges
> You may be presented with the system sudo banner and asked
> for your password depending on the Linux flavor and default
> sudo configuration for your system.
>
>
> Environment is centos linux release 7.9.2009 (core)
> [supported: true]
>
> We collect some hardware and OS info into a log file on the
> install node in case something fails and you want help trouble-
> shooting. HOWEVER, absolutely nothing is transmitted over the
> Internet or shared with EMC, GitHub, or anyone else unless or
> until you decide to attach the log file or copy & paste its
> content into a help request on GitHub (or where ever).
>
> If you are curious to see what's collected, the log is here:
> /home/admin/ECS-CommunityEdition/install.log
>
> It is perfectly fine to remove this log file at any time.
>
> Onward to bootstrapping. This can take anywhere between five
> minutes to a few hours depending on many factors, the most
> important being the speed of your Internet connection.
> The ECS software docker image is around 1.5GiB.
> Bootstrapping requires about 10 minutes under KVM on a
> Xeon E5 with a 250Mbps Internet connection.
>
> This script installs all packages that are both required for
> the deployment and that we think will be helpful to you when
> managing and operating your environment.
>
> We're going to start working with Docker now. If you elected
> to build your own ecs-install image rather than pull one from
> the EMC Dockerhub repo, it will add some time to your initial
> bootstrap.
>
> We are now pulling the emccorp/ecs-software-3.7.0 image.
> This can take quite a long time over a slow Internet link or
> if the backing block storage system is slower than usual.
>
> All done bootstrapping your install node.
.....
```

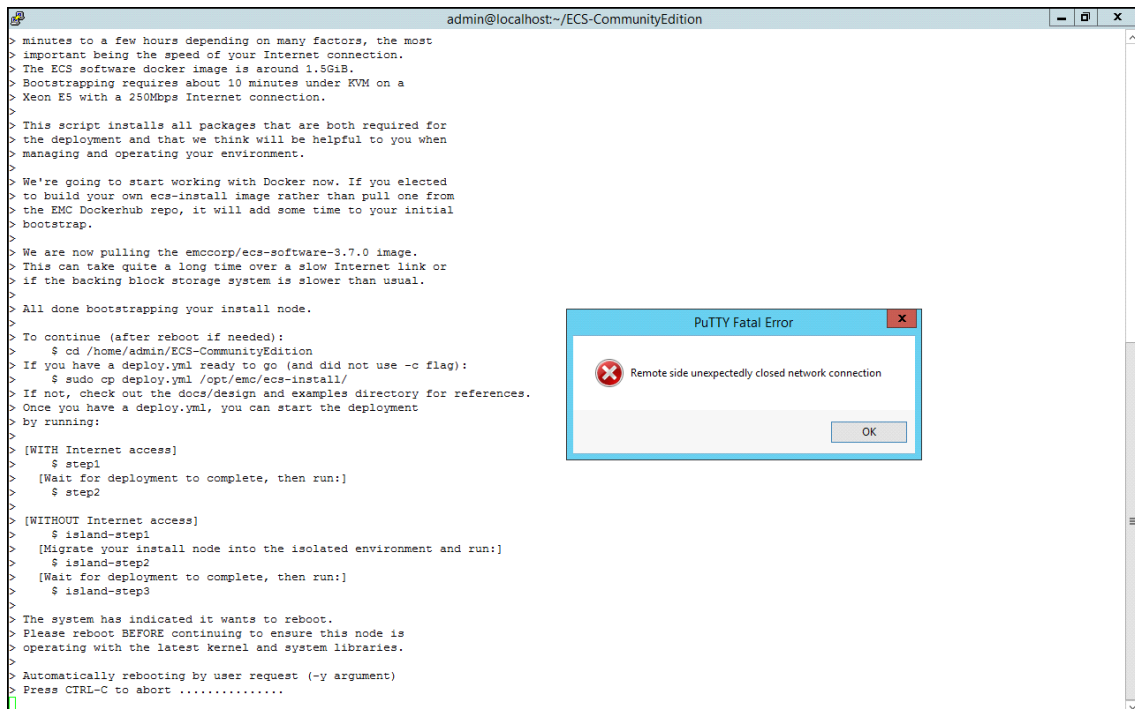
Damit ist der eigentliche Vorgang beendet. Allerdings sagt Ihnen das Programm gleich noch, was Sie noch weiterhin tun müssen (siehe nächste Seite).

Gemäß meiner Installationsvariante sind jetzt noch diese Schritte durchzuführen:

```

>>>>>
>
> To continue (after reboot if needed):
>   $ cd /home/admin/ECS-CommunityEdition
> If you have a deploy.yml ready to go (and did not use -c flag):
>   $ sudo cp deploy.yml /opt/emc/ecs-install/
> If not, check out the docs/design and examples directory for references.
> Once you have a deploy.yml, you can start the deployment
> by running:
>
> [WITH Internet access]
>   $ step1
>   [Wait for deployment to complete, then run:]
>   $ step2
>
> [WITHOUT Internet access]
>   $ island-step1
>   [Migrate your install node into the isolated environment and run:]
>   $ island-step2
>   [Wait for deployment to complete, then run:]
>   $ island-step3
>
> The system has indicated it wants to reboot.
> Please reboot BEFORE continuing to ensure this node is
> operating with the latest kernel and system libraries.
>
> Automatically rebooting by user request (-y argument)
> Press CTRL-C to abort .....

```



Durch den Vorgang wird der Rechner in **luna** umbenannt.

Deshalb sollten Sie unbedingt wieder einen Snapshot bzw. ein Backup erstellen!

Außerdem sollten Sie den **ntpd** Service re-enablen, re-starten & prüfen.

```
[admin@luna ~]$
[admin@luna ~]$ systemctl status ntpd
? ntpd.service - Network Time Service
   Loaded: loaded (/usr/lib/systemd/system/ntpd.service; disabled; vendor preset:
disabled)
   Active: inactive (dead)
[admin@luna ~]$
[admin@luna ~]$
[admin@luna ~]$
[admin@luna ~]$ systemctl start ntpd
==== AUTHENTICATING FOR org.freedesktop.systemd1.manage-units ====
Authentication is required to manage system services or units.
Authenticating as: admin
Password: <password>
==== AUTHENTICATION COMPLETE ====
[admin@luna ~]$
[admin@luna ~]$
[admin@luna ~]$
[admin@luna ~]$ systemctl enable ntpd
==== AUTHENTICATING FOR org.freedesktop.systemd1.manage-unit-files ====
Authentication is required to manage system service or unit files.
Authenticating as: admin
Password: <password>
==== AUTHENTICATION COMPLETE ====
Created symlink from /etc/systemd/system/multi-user.target.wants/ntpd.service to /usr/lib/
systemd/system/ntpd.service.
==== AUTHENTICATING FOR org.freedesktop.systemd1.reload-daemon ====
Authentication is required to reload the systemd state.
Authenticating as: admin
Password: <password>
==== AUTHENTICATION COMPLETE ====
[admin@luna ~]$
[admin@luna ~]$
[admin@luna ~]$
[admin@luna ~]$ systemctl status ntpd
? ntpd.service - Network Time Service
   Loaded: loaded (/usr/lib/systemd/system/ntpd.service; enabled; vendor preset: disabled)
   Active: active (running) since Sun 2022-07-03 21:49:49 GMT; 47s ago
     Main PID: 8508 (ntpd)
    CGroup: /system.slice/ntpd.service
            +-8508 /usr/sbin/ntpd -u ntp:ntp -g

Jul 03 21:49:49 luna ntpd[8508]: Listen normally on 4 ens34 195.214.80.117 UDP 123
Jul 03 21:49:49 luna systemd[1]: Started Network Time Service.
Jul 03 21:49:49 luna ntpd[8508]: Listen normally on 5 docker0 172.17.0.1 UDP 123
Jul 03 21:49:49 luna ntpd[8508]: Listening on routing socket on fd #22 for interface
updates
Jul 03 21:49:49 luna ntpd[8508]: 0.0.0.0 c016 06 restart
Jul 03 21:49:49 luna ntpd[8508]: 0.0.0.0 c012 02 freq_set kernel 0.000 PPM
Jul 03 21:49:49 luna ntpd[8508]: 0.0.0.0 c011 01 freq_not_set
Jul 03 21:49:56 luna ntpd[8508]: 0.0.0.0 c61c 0c clock_step -0.289962 s
Jul 03 21:49:55 luna ntpd[8508]: 0.0.0.0 c614 04 freq_mode
Jul 03 21:49:56 luna ntpd[8508]: 0.0.0.0 c618 08 no_sys_peer
[admin@luna ~]$
[admin@luna ~]$
[admin@luna ~]$
[admin@luna ~]$
[admin@luna ~]$ ntpq -p
      remote           refid      st t when poll reach  delay  offset  jitter
=====
176.9.102.215    .XFAC.        16 u  35m   64    0   0.000    0.000  0.000
 5.161.44.72     .XFAC.        16 u   685   64    0   0.000    0.000  0.000
37.120.164.45   .XFAC.        16 u 1037   64    0   0.000    0.000  0.000
176.9.166.35    .XFAC.        16 u 1117   64    0   0.000    0.000  0.000
[admin@luna ~]
[admin@luna ~]
```


IV. Installieren einer Single-Node 'All-in-1' ECS ohne Internet-Anschluß (sog. 'Island Installation')

Sind alle Vorbedingungen erfüllt, können Sie gleich loslegen.

IV-1. Unterbrechen Sie die Internet-Verbindung an der ECS



Bevor Sie die Install-Scripts starten, müssen Sie unbedingt die Internet-Verbindung für den ersten NIC unterbrechen!

Und so verifizieren Sie die Situation. Bedenken Sie, daß die Resultate für den Befehl `ntpq -p` jetzt etwas länger benötigen:

```

admin@luna:~$
admin@luna:~$
admin@luna:~$ ifconfig
docker0: flags=4099<UP,BROADCAST,MULTICAST> mtu 1500
    inet 172.17.0.1 netmask 255.255.0.0 broadcast 172.17.255.255
    ether 02:42:a6:6b:69:85 txqueuelen 0 (Ethernet)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

ens32: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 195.214.80.117 netmask 255.255.255.0 broadcast 195.214.80.255
    ether 00:0c:29:ed:53:c2 txqueuelen 1000 (Ethernet)
    RX packets 638 bytes 53922 (52.6 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 308 bytes 41247 (40.2 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

ens192: flags=4099<UP,BROADCAST,MULTICAST> mtu 1500
    ether 00:0c:29:ed:53:c2 txqueuelen 1000 (Ethernet)
    RX packets 458 bytes 33073 (32.2 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 83 bytes 7848 (7.6 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    loop txqueuelen 1000 (Local Loopback)
    RX packets 28 bytes 5708 (5.5 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 28 bytes 5708 (5.5 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

admin@luna:~$
admin@luna:~$
admin@luna:~$
admin@luna:~$ ntpq -p
=====
      remote           refid      st t when poll reach  delay  offset jitter
=====
157.90.3.240       .XFAC.      16 u 35m  64   0   0.000   0.000   0.000
85.214.71.38       .XFAC.      16 u 382  64   0   0.000   0.000   0.000
185.21.101.59      .XFAC.      16 u 715  64   0   0.000   0.000   0.000
176.9.166.35       .XFAC.      16 u 631  64   0   0.000   0.000   0.000
admin@luna:~$
    
```

IV-2. Ausführen des Scripts 'island-step1'

Die Ausführung dauert weniger als 1 Minute!

```
admin@luna ECS-CommunityEdition]$ pwd
/home/admin/ECS-CommunityEdition
[admin@luna ECS-CommunityEdition]$
[admin@luna ECS-CommunityEdition]$ island-step1
ecs-install> Initializing data container, one moment ..DEPRECATION: Python 2.7 will reach
the end of its life on January 1st, 2020. Please upgrade your Python as Python 2.7 won't
be maintained after that date. A future version of pip will drop support for Python 2.7.
. OK
ecs-install> Applying and validating deploy.yml...

PLAY [Installer | Setup access between ecs-install and install node]
*****

TASK [group_by]
*****
ok: [195.214.80.117]

PLAY [Installer | Create SSH keys]
*****

TASK [installer_generate_ssh_keys : Installer | Check RSA Keypair]
*****
ok: [localhost]

TASK [installer_generate_ssh_keys : Installer | Generate RSA Keypair]
*****

TASK [installer_generate_ssh_keys : Installer | Check ed25519 Keypair]
*****

TASK [installer_generate_ssh_keys : Installer | Generate ed25519 Keypair]
*****

TASK [installer_generate_ssh_keys : Installer | Fail when no crypto selected]
*****

TASK [installer_generate_ssh_keys : Installer | Ensure directory permissions on ssh
keystore] *****
ok: [localhost] => (item=/opt/ssh/id_rsa)
ok: [localhost] => (item=/opt/ssh/id_rsa)
PLAY [CentOS 7 | Setup SSH on install node]
*****

TASK [CentOS_7_configure_ssh : CentOS 7 | Distribute ed25519 ssh key]
*****

TASK [CentOS_7_configure_ssh : CentOS 7 | Distribute rsa ssh key]
*****
ok: [195.214.80.117]

TASK [CentOS_7_configure_ssh : CentOS 7 | Disable SSH UseDNS]
*****
ok: [195.214.80.117]
```

.....

.....

```
TASK [CentOS_7_configure_ssh : CentOS 7 | Disable requiretty]
*****
ok: [195.214.80.117]
```

```
TASK [CentOS_7_configure_ssh : CentOS 7 | Disable sudo password reverification for admin
group] *****
ok: [195.214.80.117]
```

```
TASK [CentOS_7_configure_ssh : CentOS 7 | Disable sudo password reverification for wheel
group] *****
ok: [195.214.80.117]
```

```
PLAY RECAP
*****
195.214.80.117 : ok=6    changed=0    unreachable=0    failed=0
localhost      : ok=2    changed=0    unreachable=0    failed=0
```

Playbook run took 0 days, 0 hours, 0 minutes, 3 seconds

```
PLAY [Installer | Build the package cache]
*****
```

```
TASK [installer_build_cache : include_vars]
*****
ok: [localhost]
```

```
TASK [installer_build_cache : Installer | Create cache directories]
*****
```

```
TASK [installer_build_cache : Installer | Create compressed cache files]
*****
```

```
TASK [installer_build_cache : Installer | Create cache distribution torrent file]
*****
```

```
PLAY [Installer | Enable torrent ffx]
*****
```

```
TASK [file]
*****
```

```
PLAY RECAP
*****
localhost      : ok=1    changed=0    unreachable=0    failed=0
```

Playbook run took 0 days, 0 hours, 0 minutes, 0 seconds

```
[admin@luna ECS-CommunityEdition]$
```

IV-3. 'ntpd' Service nochmals prüfen

Am Ende sollte die Verbindung zum lokalen Zeitserver (hier DCON stehen).

So sollte es aussehen:

```
[admin@luna ECS-CommunityEdition]$ systemctl status ntpd
? ntpd.service - Network Time Service
   Loaded: loaded (/usr/lib/systemd/system/ntpd.service; enabled; vendor preset: disabled)
   Active: active (running) since Sun 2022-07-03 22:05:46 GMT; 3s ago
     Process: 11479 ExecStart=/usr/sbin/ntpd -u ntp:ntp $OPTIONS (code=exited, status=0/SUCCESS)
    Main PID: 11480 (ntpd)
       Tasks: 1
      Memory: 580.0K
      CGroup: /system.slice/ntpd.service
              +-11480 /usr/sbin/ntpd -u ntp:ntp -g

Jul 03 22:05:46 luna.eval.local ntpd[11480]: ntp_io: estimated max descriptors: 1024, initial
socket boundary: 16
Jul 03 22:05:46 luna.eval.local ntpd[11480]: Listen and drop on 0 v4wildcard 0.0.0.0 UDP 123
Jul 03 22:05:46 luna.eval.local ntpd[11480]: Listen and drop on 1 v6wildcard :: UDP 123
Jul 03 22:05:46 luna.eval.local ntpd[11480]: Listen normally on 2 lo 127.0.0.1 UDP 123
Jul 03 22:05:46 luna.eval.local ntpd[11480]: Listen normally on 3 ens34 195.214.80.117 UDP 123
Jul 03 22:05:46 luna.eval.local ntpd[11480]: Listen normally on 4 docker0 172.17.0.1 UDP 123
Jul 03 22:05:46 luna.eval.local ntpd[11480]: Listening on routing socket on fd #21 for interface
updates
Jul 03 22:05:46 luna.eval.local ntpd[11480]: 0.0.0.0 c016 06 restart
Jul 03 22:05:46 luna.eval.local ntpd[11480]: 0.0.0.0 c012 02 freq_set kernel 0.000 PPM
Jul 03 22:05:46 luna.eval.local ntpd[11480]: 0.0.0.0 c011 01 freq_not_set
[admin@luna ECS-CommunityEdition]$
[admin@luna ECS-CommunityEdition]$
[admin@luna ECS-CommunityEdition]$
[admin@luna ECS-CommunityEdition]$ ntpq -p
      remote          refid          st t when poll reach  delay  offset  jitter
=====
dcon          .INIT.          16 u    2   64    0   0.000   0.000   0.000
[admin@luna ECS-CommunityEdition]$
[admin@luna ECS-CommunityEdition]$
[admin@luna ECS-CommunityEdition]$
```



Ist das nicht der Fall, dann ...

- stellen Sie sicher, daß die Datei `/etc/ntp.conf` den richtigen Eintrag für NTP Server aufweist (siehe nächste Seite)
- re-starten Sie den Dienst `ntpd`
- wiederholen Sie die Abfrage `ntpq -p`
`dcon` muß auftauchen!

```
[root@luna ~]#
[root@luna ~]#
[root@luna ~]# more /etc/ntp.conf
# Ansible managed: /usr/local/src/ui/ansible/roles/CentOS_7_baseline_install/templates/
ntp.conf.j2 by 1000 on luna.eval.local
# permit the source to query or modify the service on this system.
restrict default nomodify notrap nopeer noquery

# Permit all access over the loopback interface. This could
# be tightened as well, but to do so would effect some of
# the administrative functions.
restrict 127.0.0.1
restrict ::1

# Hosts on local network are less restricted.
#restrict 192.168.2.0 mask 255.255.255.0 nomodify notrap

# Use NTP servers configured via ECS installer
server 195.214.80.1 iburst

#broadcast 192.168.2.255 autokey # broadcast server
#broadcastclient # broadcast client
#broadcast 224.0.1.1 autokey # multicast server
#multicastclient 224.0.1.1 # multicast client
#manycastserver 239.255.254.254 # manycast server
#manycastclient 239.255.254.254 autokey # manycast client

# Enable public key cryptography.
#crypto

includefile /etc/ntp/crypto/pw

# Key file containing the keys and key identifiers used when operating
# with symmetric key cryptography.
keys /etc/ntp/keys

# Specify the key identifiers which are trusted.
#trustedkey 4 8 42

# Specify the key identifier to use with the ntpdc utility.
#requestkey 8

# Specify the key identifier to use with the ntpq utility.
#controlkey 8

# Enable writing of statistics records.
#statistics clockstats cryptostats loopstats peerstats

# Disable the monitoring facility to prevent amplification attacks using ntpdc
# monlist command when default restrict does not include the noquery flag. See
# CVE-2013-5211 for more details.
# Note: Monitoring will not be disabled with the limited restriction flag.
disable monitor
[root@luna ~]#
[root@luna ~]#
[root@luna ~]#
[root@luna ~]# systemctl stop ntpd
[root@luna ~]#
[root@luna ~]#
[root@luna ~]#
[root@luna ~]# systemctl start ntpd
[root@luna ~]#
[root@luna ~]#
[root@luna ~]#
[root@luna ~]# ntpq -p
      remote          refid          st t when poll reach  delay  offset  jitter
=====
dcon          .INIT.          16 u   52   64    0   0.000   0.000   0.000
[root@luna ~]#
[root@luna ~]#
```

IV-4. Ausführen des Scripts 'island-step2'

Bedingung

- Internet-Anbindung kappen. Nur so benutzt der Node den Server dcon als NTP Server!
- Der NTP Server (dcon) ist erreichbar
- dcon muß eine aktive Internet-Verbindung haben



Prüfen Sie zuerst noch einmal die Verbindung zum NTP Server!
Siehe letzte Seite.

Der Vorgang dauert ca. 20 - 30 min.

```
[admin@luna ECS-CommunityEdition]$
[admin@luna ECS-CommunityEdition]$
[admin@luna ECS-CommunityEdition]$ pwd
/home/admin/ECS-CommunityEdition
[admin@luna ECS-CommunityEdition]$
[admin@luna ECS-CommunityEdition]$
[admin@luna ECS-CommunityEdition]$ island-step2

PLAY [Common | Ping data nodes before doing anything else]
*****

TASK [ping]
*****
ok: [195.214.80.117]

PLAY [Installer | Gather facts and slice into OS groups]
*****

TASK [group_by]
*****
ok: [195.214.80.117]

PLAY [CentOS 7 | Configure access]
*****

TASK [CentOS_7_configure_ssh : CentOS 7 | Distribute ed25519 ssh key]
*****

TASK [CentOS_7_configure_ssh : CentOS 7 | Distribute rsa ssh key]
*****
ok: [195.214.80.117]

TASK [CentOS_7_configure_ssh : CentOS 7 | Disable SSH UseDNS]
*****
ok: [195.214.80.117]

TASK [CentOS_7_configure_ssh : CentOS 7 | Disable requiretty]
*****
ok: [195.214.80.117]

TASK [CentOS_7_configure_ssh : CentOS 7 | Disable sudo password reverification for admin group]
*****
ok: [195.214.80.117]

TASK [CentOS_7_configure_ssh : CentOS 7 | Disable sudo password reverification for wheel group]
*****
ok: [195.214.80.117]

TASK [firewalld_configure_access : Firewalld | Ensure service is started]
*****
ok: [195.214.80.117]
```

.....

```
.....

TASK [firewalld_configure_access : Firewallld | Add install node to firewalld trusted zone]
*****
ok: [195.214.80.117]

TASK [firewalld_configure_access : Firewallld | Add all data nodes to firewalld trusted zone]
*****
ok: [195.214.80.117] => (item=195.214.80.117)
ok: [195.214.80.117] => (item=172.17.0.1)

TASK [firewalld_configure_access : Firewallld | Whitelist management prefixes]
*****
ok: [195.214.80.117] => (item=0.0.0.0/0)

TASK [firewalld_configure_access : Firewallld | Add all public service ports to firewalld
public zone] *****
ok: [195.214.80.117] => (item=3218/tcp)
ok: [195.214.80.117] => (item=9020-9025/tcp)
ok: [195.214.80.117] => (item=9040/tcp)

TASK [firewalld_configure_access : Firewallld | Ensure service is started]
*****
changed: [195.214.80.117]

PLAY [Common | Configure hostnames]
*****

TASK [common_set_hostname : include_vars]
*****
ok: [195.214.80.117]

TASK [common_set_hostname : Common | Find node hostname]
*****
ok: [195.214.80.117] => (item=(0, u'195.214.80.117'))

TASK [common_set_hostname : Common | Set node hostname]
*****
ok: [195.214.80.117]

PLAY [Common | Configure /etc/hosts]
*****

TASK [common_etc_hosts : Common | Add install node to /etc/hosts]
*****
changed: [195.214.80.117] => (item=195.214.80.117)

TASK [common_etc_hosts : Common | Add data nodes to /etc/hosts]
*****
ok: [195.214.80.117] => (item=195.214.80.117)

PLAY [Common | Test inter-node access]
*****

TASK [common_access_test : Common | Check node connectivity by IP]
*****
ok: [195.214.80.117] => (item=195.214.80.117)
ok: [195.214.80.117] => (item=172.17.0.1)

TASK [common_access_test : Common | Check node connectivity by short name]
*****
ok: [195.214.80.117] => (item=luna)

TASK [common_access_test : Common | Check node connectivity by fqdn]
*****
ok: [195.214.80.117] => (item=luna)

PLAY RECAP
*****
195.214.80.117 : ok=21 changed=2 unreachable=0 failed=0

Playbook run took 0 days, 0 hours, 0 minutes, 12 seconds

.....
```

```
.....

PLAY [Common | Ping data nodes before doing anything else]
*****

TASK [ping]
*****
ok: [195.214.80.117]

PLAY [Installer | Slice nodes into OS groups]
*****

TASK [group_by]
*****
ok: [195.214.80.117]

PLAY [Installer | Perform preflight check]
*****

TASK [common_collect_facts : Common | Create custom facts directory]
*****
ok: [195.214.80.117]

TASK [common_collect_facts : Common | Insert data_node.fact file]
*****
ok: [195.214.80.117]

TASK [common_collect_facts : Common | Reload facts to pick up new items]
*****
ok: [195.214.80.117]

TASK [common_baseline_check : include_vars]
*****
ok: [195.214.80.117]

TASK [common_baseline_check : Common | Check RAM size]
*****

TASK [common_baseline_check : Common | Check CPU architecture]
*****

TASK [common_baseline_check : Common | Validate OS distribution]
*****

TASK [common_baseline_check : Common | (Optional) Check UTC Timezone]
*****
ok: [195.214.80.117] => {
  "msg": "Timezone is not set to UTC - It is recommended to use the UTC timezone"
}

TASK [common_baseline_check : Common | Make sure /data directory does not exist]
*****
ok: [195.214.80.117]

TASK [common_baseline_check : fail]
*****

TASK [common_baseline_check : Common | Make sure /host directory does not exist]
*****
ok: [195.214.80.117]

TASK [common_baseline_check : fail]
*****

TASK [common_baseline_check : Common | Make sure block device(s) exist on node]
*****
ok: [195.214.80.117] => (item=/dev/sdb)

TASK [common_baseline_check : fail]
*****

TASK [common_baseline_check : Common | Make sure block device(s) are at least 100GB]
*****

.....
```



```
.....

TASK [common_baseline_check : Common | Make sure block device(s) are unpartitioned]
*****
ok: [195.214.80.117] => (item=/dev/sdb)

TASK [common_baseline_check : fail]
*****

TASK [common_baseline_check : Common | Check for listening layer 4 ports]
*****
changed: [195.214.80.117]

TASK [common_baseline_check : Common | Report any conflicts with published ECS ports]
*****

TASK [common_baseline_check : Common | Report any conflicts with internal ECS ports]
*****

PLAY RECAP
*****
195.214.80.117 : ok=12 changed=1 unreachable=0 failed=0

Playbook run took 0 days, 0 hours, 0 minutes, 7 seconds

PLAY [Common | Ping data nodes before doing anything else]
*****

TASK [ping]
*****
ok: [195.214.80.117]

PLAY [Installer | Slice nodes into OS groups for package install]
*****

TASK [group_by]
*****
ok: [195.214.80.117]

PLAY [CentOS 7 | Synchronize cache]
*****

TASK [CentOS_7_sync_caches_prep : CentOS 7 | Fetch torrent package names]
*****

TASK [CentOS_7_sync_caches_prep : CentOS 7 | Make yum cache paths for torrent packages]
*****

TASK [CentOS_7_sync_caches_prep : CentOS 7 | Copy torrent packages to nodes]
*****

TASK [CentOS_7_sync_caches_prep : CentOS 7 | Install torrent packages on nodes]
*****

TASK [common_sync_caches_by_torrent : include_vars]
*****
ok: [195.214.80.117]

TASK [common_sync_caches_by_torrent : Selinux | Set selinux permissive]
*****
ok: [195.214.80.117]

TASK [common_sync_caches_by_torrent : Common | Create ecs-install host directory on nodes]
*****

TASK [common_sync_caches_by_torrent : Common | Create ecs-install cache directory on nodes]
*****

TASK [common_sync_caches_by_torrent : Common | Copy cache torrent digest to nodes]
*****

TASK [common_sync_caches_by_torrent : Common | Torrent sync caches with nodes]
*****
.....
```

```
.....

PLAY [CentOS 7 | Install cached packages]
*****

TASK [CentOS_7_baseline_install : include_vars]
*****
ok: [195.214.80.117]

TASK [CentOS_7_baseline_install : CentOS 7 | Set selinux permissive]
*****
ok: [195.214.80.117]

TASK [CentOS_7_baseline_install : CentOS 7 | Add SSL proxy cert]
*****

TASK [CentOS_7_baseline_install : CentOS 7 | Stop and disable unused services]
*****
ok: [195.214.80.117] => (item=mta)

TASK [CentOS_7_baseline_install : CentOS 7 | Configure DNS]
*****
ok: [195.214.80.117]

TASK [CentOS_7_baseline_install : CentOS 7 | Unpack package_cache.tgz]
*****

TASK [CentOS_7_baseline_install : CentOS 7 | Install all packages in the cache]
*****

TASK [CentOS_7_baseline_install : CentOS 7 | Configure ntp]
*****
ok: [195.214.80.117]

TASK [CentOS_7_baseline_install : CentOS 7 | Start and enable services]
*****
ok: [195.214.80.117] => (item=docker)
ok: [195.214.80.117] => (item=ntp)
ok: [195.214.80.117] => (item=firewall)

PLAY [Installer | Disable torrent ffx]
*****

TASK [file]
*****

PLAY RECAP
*****
195.214.80.117      : ok=10   changed=0    unreachable=0    failed=0
localhost          : ok=0    changed=0    unreachable=0    failed=0

Playbook run took 0 days, 0 hours, 0 minutes, 5 seconds

PLAY [Common | Ping data nodes before doing anything else]
*****

TASK [ping]
*****
ok: [195.214.80.117]

PLAY [Installer | Slice nodes into OS groups]
*****

TASK [group_by]
*****
ok: [195.214.80.117]

.....
```

```
.....

PLAY [CentOS 7 | Conditionally reboot nodes]
*****

TASK [CentOS_7_reboot : CentOS 7 | Check needs-restarting]
*****

TASK [CentOS_7_reboot : CentOS 7 | Set reboot action on nodes that need restarting]
*****

TASK [CentOS_7_reboot : CentOS 7 | Check if install node also needs restarting]
*****

TASK [CentOS_7_reboot : CentOS 7 | Reboot node(s)]
*****

TASK [CentOS_7_reboot : CentOS 7 | Wait for node(s) to reboot]
*****

PLAY RECAP
*****
195.214.80.117          : ok=2    changed=0    unreachable=0    failed=0

Playbook run took 0 days, 0 hours, 0 minutes, 1 seconds

Waiting for nodes to become reachable... (CTRL-C to break)
195.214.80.117 | SUCCESS => {"changed": false, "failed": false, "ping": "pong"}

PLAY [Common | Ping data nodes before doing anything else]
*****

TASK [ping]
*****
ok: [195.214.80.117]

PLAY [Common | Install ECS]
*****

TASK [common_baseline_install : include_vars]
*****
ok: [195.214.80.117]

TASK [common_baseline_install : include_vars]
*****
ok: [195.214.80.117]

TASK [common_baseline_install : Common | Create and modify paths and semaphores for docker
containers] *****
changed: [195.214.80.117] => (item=/ecs)
changed: [195.214.80.117] => (item=/ecs)
changed: [195.214.80.117] => (item=/ecs)
changed: [195.214.80.117] => (item=/ecs)
changed: [195.214.80.117] => (item=/ecs)
changed: [195.214.80.117] => (item=/ecs)
changed: [195.214.80.117] => (item=/ecs)

TASK [common_baseline_install : Common | Generate network.json]
*****
changed: [195.214.80.117]

TASK [common_baseline_install : Common | Generate object-main_network.json]
*****
changed: [195.214.80.117]

TASK [common_baseline_install : Common | Generate id.json]
*****
changed: [195.214.80.117]

TASK [common_baseline_install : Common | Generate agent.json]
*****
changed: [195.214.80.117]

.....
```


.....

```
TASK [common_deploy : Common | Configure SSM Object properties: FBL-Highwater]
*****
changed: [195.214.80.117]

TASK [common_deploy : Common | Configure SSM Object properties: FBL-Lowwater]
*****
changed: [195.214.80.117]

TASK [common_deploy : Common | Configure Common Object properties:
allowAllocationOnIgnoredPartitions] *****
changed: [195.214.80.117]

TASK [common_deploy : Common | Configure Common Object properties: System NumDtPerCos]
*****
changed: [195.214.80.117]

TASK [common_deploy : Common | Configure Common Object properties: User NumDtPerCos]
*****
changed: [195.214.80.117]

TASK [common_deploy : Common | Configure CM Object properties: Disable Minimum Node Count]
*****
changed: [195.214.80.117]

TASK [common_deploy : Common | Configure CM Read Page Cache: Max]
*****
changed: [195.214.80.117]

TASK [common_deploy : Common | Configure CM Read Page Cache: Core]
*****
changed: [195.214.80.117]

TASK [common_deploy : Common | Configure CM DT Write IO: OnHeap Buffers]
*****
changed: [195.214.80.117]

TASK [common_deploy : Common | Configure CM Geo Shipping IO: OnHeap Buffers]
*****
ok: [195.214.80.117]

TASK [common_deploy : Common | Configure georeceiver initialBufferNumOnHeap (1/2)]
*****
changed: [195.214.80.117]

TASK [common_deploy : Common | Configure georeceiver initialBufferNumOnHeap (2/2)]
*****
ok: [195.214.80.117]

TASK [common_deploy : Common | Increase memory for dtquery]
*****
ok: [195.214.80.117]

TASK [common_deploy : Common | Increase memory for transformsvc]
*****
ok: [195.214.80.117]

TASK [common_deploy : Common | Increase memory for objcontrolsvc]
*****
ok: [195.214.80.117]

TASK [common_deploy : Common | vnest enable UseSeparateThreadPools]
*****
changed: [195.214.80.117]

TASK [common_deploy : Common | Increase memory for sr]
*****
ok: [195.214.80.117]
```

.....

```
.....

TASK [common_deploy : Common | Merge configurations into configuration data container]
*****
changed: [195.214.80.117] => (item=/opt/storageos/conf/ssm.object.properties)
changed: [195.214.80.117] => (item=/opt/storageos/conf/ssm.object.properties)
changed: [195.214.80.117] => (item=/opt/storageos/conf/ssm.object.properties)
changed: [195.214.80.117] => (item=/opt/storageos/conf/ssm.object.properties)
changed: [195.214.80.117] => (item=/opt/storageos/conf/ssm.object.properties)
changed: [195.214.80.117] => (item=/opt/storageos/conf/ssm.object.properties)
changed: [195.214.80.117] => (item=/opt/storageos/conf/ssm.object.properties)
changed: [195.214.80.117] => (item=/opt/storageos/conf/ssm.object.properties)
changed: [195.214.80.117] => (item=/opt/storageos/conf/ssm.object.properties)

TASK [common_deploy : Common | Create the ECS StorageOS container]
*****
changed: [195.214.80.117]

PLAY [Installer | Slice nodes into OS groups for init scripts]
*****

TASK [group_by]
*****
ok: [195.214.80.117]

PLAY [CentOS 7 | Install init scripts]
*****

TASK [CentOS_7_service_policies : CentOS 7 | Insert ecs.service into systemd]
*****
changed: [195.214.80.117]

PLAY RECAP
*****
195.214.80.117 : ok=42 changed=31 unreachable=0 failed=0

Playbook run took 0 days, 0 hours, 0 minutes, 33 seconds

PLAY [Common | Ping data nodes before doing anything else]
*****

TASK [ping]
*****
ok: [195.214.80.117]

PLAY [Common | Start and enable ECS services]
*****

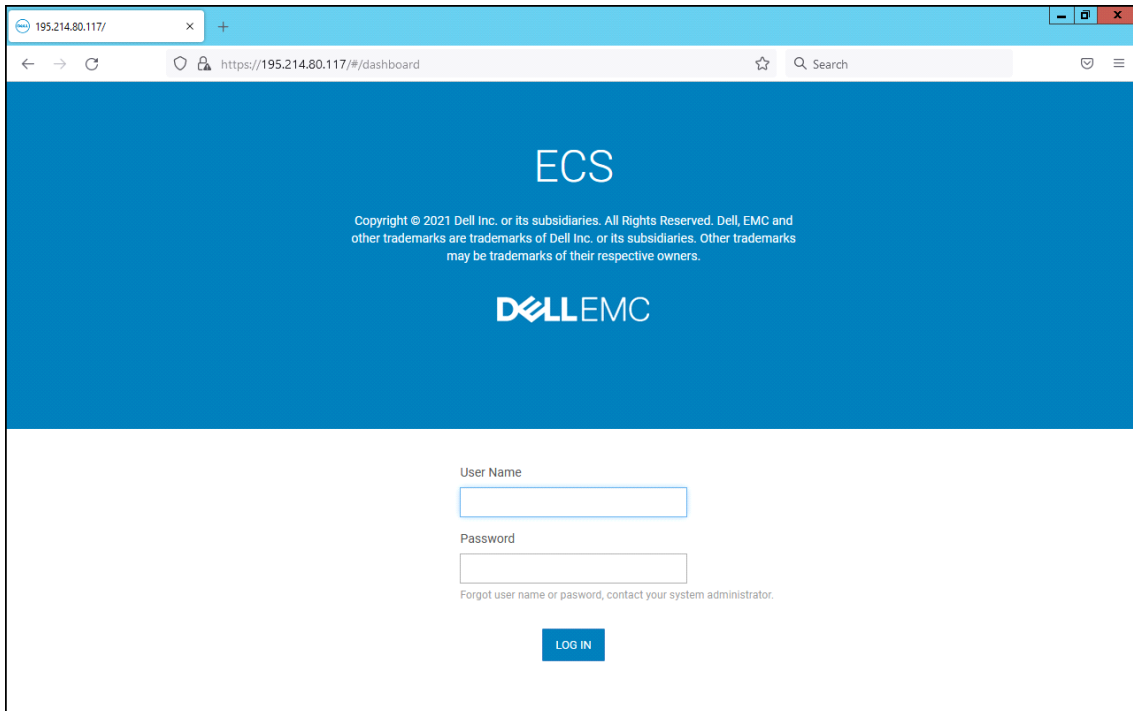
TASK [common_start_enable_service : Common | Enable ECS service and start ECS]
*****
changed: [195.214.80.117]

PLAY RECAP
*****
195.214.80.117 : ok=2 changed=1 unreachable=0 failed=0

Playbook run took 0 days, 0 hours, 0 minutes, 1 seconds

> Please wait for 30 minutes before running next step for services to bootstrap
[admin@luna ECS-CommunityEdition]$
```

Nach der Wartezeit sollten Sie prüfen, ob der Server bereit ist.
Das ist dann der Fall, wenn Sie auf die Admin GUI zugreifen können:



Melden Sie sich noch nicht an und ändern Sie das Passwort noch nicht - andernfalls fällt das nächste Script auf die Nase!

IV-5. Ausführen des Scripts 'island-step3'

```

[admin@luna ECS-CommunityEdition]$
[admin@luna ECS-CommunityEdition]$
[admin@luna ECS-CommunityEdition]$ pwd
/home/admin/ECS-CommunityEdition
[admin@luna ECS-CommunityEdition]$
[admin@luna ECS-CommunityEdition]$
[admin@luna ECS-CommunityEdition]$ island-step3
> Pinging Management API Endpoint until ready
> Pinging endpoint 195.214.80.117... (CTRL-C to break)
> PONG: api_endpoint=195.214.80.117 username=root diag_endpoint=195.214.80.117 dt_total=0
dt_unready=0 dt_unknown=0

> Installing licensing in ECS VDC(s)
> Using default license
> Adding licensing to VDC: vdc1
> OK
> Added default license to ECS

> Pinging Management API Endpoint until ready
> Pinging endpoint 195.214.80.117... (CTRL-C to break)
> PONG: api_endpoint=195.214.80.117 username=root diag_endpoint=195.214.80.117 dt_total=0
dt_unready=0 dt_unknown=0

> Creating Storage Pool: vdc1/sp1
> OK
> Adding Data Stores to Storage Pool:
> vdc1/sp1/195.214.80.117

> Waiting for Storagepool to get ready , takes 15 minutes
> Pinging endpoint 195.214.80.117... (CTRL-C to break)
> PONG: api_endpoint=195.214.80.117 username=root diag_endpoint=195.214.80.117 dt_total=128
dt_unready=0 dt_unknown=0

> Waiting for Storagepool to get ready , takes 15 minutes
> Pinging endpoint 195.214.80.117... (CTRL-C to break)
> PONG: api_endpoint=195.214.80.117 username=root diag_endpoint=195.214.80.117 dt_total=384
dt_unready=0 dt_unknown=0

> Waiting for Storagepool to get ready , takes 15 minutes
> Pinging endpoint 195.214.80.117... (CTRL-C to break)
> PONG: api_endpoint=195.214.80.117 username=root diag_endpoint=195.214.80.117 dt_total=384
dt_unready=0 dt_unknown=0

> Creating all VDCs...
> vdc1
> Created all VDCs

> Waiting for all VDCs to online and become active...
> Checking vdc1:
> OK: VDC online

> Pinging Management API Endpoint until ready
> Pinging endpoint 195.214.80.117... (CTRL-C to break)
> PONG: api_endpoint=195.214.80.117 username=root diag_endpoint=195.214.80.117 dt_total=384
dt_unready=0 dt_unknown=0

> Creating replication group rg1
> Generating zone mappings for rg1/vdc1
> sp1
> Applying mappings
> OK
> Created all Replication Groups

> Pinging Management API Endpoint until ready
> Pinging endpoint 195.214.80.117... (CTRL-C to break)
> PONG: api_endpoint=195.214.80.117 username=root diag_endpoint=195.214.80.117 dt_total=416
dt_unready=0 dt_unknown=0

.....

```