

Tru64 UNIX

Changing the Cluster Name or IP Address in a TruCluster Server Version 5.0A Cluster

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This Best Practice describes how to change the cluster name (and default cluster alias) or IP address in a TruCluster™ Server Version 5.0A cluster for the Tru64™ UNIX Version 5.0A operating system.

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See the Tru64 UNIX Best Practices Web page for more information about Best Practices documentation.

Is This Best Practice Right for You?

Not all Best Practices apply to all configurations, so you must be sure that it is appropriate for your system and circumstances. To use this Best Practice, you must meet the requirements described in the following table:

Requirement	Description
Operating System	You must have an operational Version 5.0A TruCluster Server cluster.
System Configuration	Your configuration must adhere to the requirements and restrictions that are listed in Chapter 2 of the Version 5.0A TruCluster Server <i>Hardware Configuration</i> manual and be a supported configuration as described in other chapters of that manual.

Requirement	Description
Impact on Availability	<p>Changing the name or IP address of a cluster must be coordinated closely with your network administration group. If your site uses a domain name server, do not change the name or IP address until your network administration group changes the database. After the name or IP address change, client systems will not be able to access the cluster until the change has propagated to the secondary name servers.</p> <p>Changing the name of a cluster requires a shutdown and reboot of the entire cluster. Changing the IP address requires that you shut down and reboot each member individually.</p>

Before You Begin

Before you apply the Best Practice to change the cluster name or IP address in a Version 5.0A TruCluster Server cluster, you must understand some background information and perform some preliminary tasks:

- You must have received a new valid cluster name or IP address from your network administrator.

Note

Before you request a new cluster name or IP address, use the `/usr/bin/nslookup` command to verify that the new name or IP address is not already in use:

```
# /usr/bin/nslookup deli.zk3.dec.com
Server:  nserver.zk3.dec.com
Address:  16.140.140.3

*** nserver.zk3.dec.com can't find deli.zk3.dec.com:
Non-existent host/domain
```

- If you are not familiar with the `/etc/sysconfigtab` file and the format of its stanza entries, read the `sysconfigtab(4)` and `stanza(4)` reference pages.
- Before you carry out the procedures in this Best Practice, boot all cluster members into the cluster.

Applying the Best Practice

Before you change the cluster name or IP address, be sure to follow the recommendations in *Before You Begin*.

Changing the Cluster Name

To change the cluster name, follow these steps carefully. Any mistake can prevent the cluster from booting.

1. Create a file with the new `cluster_name` attribute for the `clubase` subsystem stanza entry. For example, to change the cluster name to `deli`, add the following `clubase` subsystem stanza entry:

```
clubase:  
  cluster_name=deli
```

Notes

Ensure that you include a line-feed at the end of each line in the file that you create. If you do not, when the `sysconfigtab` file is modified, you will have two attributes on the same line. This may prevent your system from booting.

If you create the file in the cluster root directory, you can use it on every system in the cluster without a need to copy the file.

2. On each cluster member, use the **`sysconfigdb -m -f file clubase`** command to merge the new `clubase` subsystem attributes from the file that you created with the `clubase` subsystem attributes in the `/etc/sysconfig` file.

For example, assume that the file `cluster-name-change` contains the information shown in the example in step 1. To use the file `cluster-name-change` to change the cluster name from `poach` to `deli`, use the following command:

```
# sysconfigdb -m -f cluster-name-change clubase  
Warning: duplicate attribute in clubase:  
was cluster_name = poach, now cluster_name = deli
```

Caution

Do not use the `sysconfigdb -u` command with a file with only one or two attributes to be changed. The `-u` flag causes the subsystem entry in the input file to replace a subsystem entry (for instance `clubase`). If you only specify the `cluster_name` attribute for the `clubase` subsystem, the new `clubase` subsystem will contain only the `cluster_name` attribute and none of the other required attributes.

3. Change the cluster name in each of the following files:

- `/etc/hosts`
- `/etc/hosts.equiv`

There is only one copy of these files in a cluster.

4. Add the new cluster name to the `/.rhosts` file (which is common to all cluster members).

Leave the current cluster name in the file. The current name is needed for the `shutdown -c` command in the next step to function.

Change any client `.rhosts` file as appropriate.

5. Shut down the entire cluster with the `shutdown -c` command and reboot each system in the cluster.
6. Remove the previous cluster name from the `/.rhosts` file.

Changing the Cluster IP Address

To change the cluster IP address, follow these steps:

1. Edit the `/etc/hosts` file, and change the IP address for the cluster.
2. One at a time (to keep quorum), shut down and reboot each cluster member system.

Verifying Success

After you apply the Best Practice for changing the cluster name or IP address in a Version 5.0A TruCluster Server cluster, you can verify whether it was successful.

To verify that the cluster name has changed, run the `/usr/sbin/clu_get_info` command:

```
# /usr/sbin/clu_get_info
Cluster information for cluster deli
:
```

To verify that the cluster IP address has changed, run the `/sbin/ping` command from a system that is not in the cluster to ensure that the cluster provides the echo response when you use the cluster address:

```
# /sbin/ping -c 3 16.160.160.160
PING 16.160.160.160 (16.160.160.160): 56 data bytes
64 bytes from 16.160.160.160: icmp_seq=0 ttl=64 time=26 ms
64 bytes from 16.160.160.160: icmp_seq=1 ttl=64 time=0 ms
64 bytes from 16.160.160.160: icmp_seq=2 ttl=64 time=0 ms

----16.160.160.160 PING Statistics----
3 packets transmitted, 3 packets received, 0% packet loss
round-trip (ms)  min/avg/max = 0/9/26 ms
```

If the Best Practice was not successful, see *Troubleshooting* for information about identifying and solving problems.

Troubleshooting

If you determine that the Best Practice was not successful, as described in *Verifying Success*, use the following table to identify and solve problems:

Problem	Possible Solutions
The cluster name did not change	See <i>Troubleshooting a Lack of Cluster Name Change</i>
The cluster IP address did not change	See <i>Troubleshooting a Lack of IP Address Change</i>
One or more cluster member systems do not boot	See <i>Troubleshooting a Failure to Boot After Changing Cluster Name</i>

Troubleshooting a Lack of Cluster Name Change

If the cluster name has not changed, follow these steps:

1. Use the `/sbin/sysconfig` command on each cluster member system to verify whether the `clubase` subsystem `cluster_name` attribute contains the correct cluster name:

```
# /sbin/sysconfig -q clubase
```

```
clubase:
name = Cluster base component
cluster_version = TruCluster Server V5.0A (Rev. 354); 08/11/00 16:33

cluster_name = poach
:
```

2. If the `/etc/sysconfigtab` file clubase stanza entry indicates that the cluster name is correct for every cluster member system, shut down the entire cluster with the `shutdown -c` command and reboot the cluster.

If the cluster name is not correct for one or more cluster member systems, repeat the steps in *Changing the Cluster Name* for those cluster member systems.

Troubleshooting a Lack of IP Address Change

If the IP address has not changed, repeat the procedure in *Changing the Cluster IP Address*.

Troubleshooting a Failure to Boot After Changing Cluster Name

If you have followed the procedure to change the name of an operational cluster, and one or more systems does not boot after the name change, you may have generated an error in the `sysconfigtab` file of one or more members.

If none of the systems boot the cluster software, use the following procedure to correct the `sysconfigtab` files:

1. Boot the Tru64 UNIX disk on the first cluster member system (do not boot the cluster kernel).
2. Mount the root disk of the member system that you booted:

```
# mount root1_domain#root /mnt
```

3. Edit the `/mnt/etc/sysconfigtab` file and correct the clubase entries.

The most probable problem is the lack of a line-feed between the `cluster_name` and `cluster_expected_votes` attributes, as follows:

```
clubase:
cluster_name=gallo cluster_expected_votes=3
```

4. Shut down the system.
5. Boot the first member's cluster disk.

Note

If quorum is set in a way that prevents forming a single member cluster, boot the system interactively and adjust node votes as described in Section 4.10.2 of the Version 5.0A TruCluster Server *Cluster Administration* manual.

6. Mount the root domain of any other cluster member system that will not boot:

```
# mount root2_domain#root /mnt
```

7. Repeat step 3 to correct the `sysconfigtab` file for the other member systems, then boot the cluster member.
8. If you modified quorum votes to allow booting a single member cluster, ensure that you reset quorum votes with the `clu_quorum` command. See Chapter 4 of the Version 5.0A TruCluster Server *Cluster Administration* manual and the `clu_quorum(8)` reference page for more information.

If one of the systems boots the cluster software, use the following procedure to correct the `sysconfigtab` files:

1. If you have not already done so, boot the cluster member that will boot to form a one-member cluster.

Note

If quorum is set in a way that prevents forming a single member cluster, boot the system interactively and adjust node votes as described in Section 4.10.2 of the Version 5.0A TruCluster Server *Cluster Administration* manual.

2. Mount the root domain of a cluster member system that does not boot. For example, if member 2 will not boot:

```
# mount root2_domain#root /mnt
```

3. Edit the `/mnt/etc/sysconfigtab` file and correct the `clubase` entries.

The most probable problem is the lack of a line-feed between the `cluster_name` and `cluster_expected_votes` attributes, as follows:

```
clubase:  
cluster_name=gallo cluster_expected_votes=3
```

4. Unmount the boot partition.
5. Boot the cluster member disk.
6. Repeat steps 2, 3, and 4 to correct the `sysconfigtab` file for the other member systems, then boot the cluster member.
7. If you modified quorum votes to allow booting a single member cluster, ensure that you reset quorum votes with the `clu_quorum` command. See Chapter 4 of the Version 5.0A TruCluster Server *Cluster Administration* manual and the `clu_quorum(8)` reference page for more information.

Comments and Questions

We value your comments and questions on the information in this document. Please mail your comments to us at this address:

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