

Zones (Solaris Containers)

Introduction to Zones - New Features in Solaris 10 Update 3

- Lastly we'll look at cloning a zone.
- This procedure allows a zone to be cloned on both UFS and ZFS file systems on the same machine.
- On a UFS file system, the zonepath is copied, but under ZFS a writeable snapshot (also called a clone) can be created almost instantly.
- We will look at ZFS later in the course; for now, we'll create a clone of a UFS-based zone.
- The source zone must be halted:-

```
# zoneadm -z navajo halt
```

- A zone configuration must first be created for the new zone, by specifying it from new, or by importing an existing one.
- To start from new, run *zonecfg* as follows:-

```
# zonecfg -z arapaho
```

```
zonecfg:arapaho> set zonepath=/Zones/Arapaho
```

```
etc. etc..
```

```
zonecfg:arapaho> commit
```

```
zonecfg:arapaho> exit
```

- To import an existing description, first export an existing zone description to a file:-

```
# zonecfg -z navajo export -f /var/tmp/template
```

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- Now make any changes required to the */var/tmp/template* file.
- At a minimum, you must change the *zonepath*, but probably also the IP address.
- (There might be a *create -b* at the top of the exported file, but this is ignored. when cloning.)

- Now use the file to create a new zone:-

```
# zonecfg -z arapaho -f /var/tmp/template
```

- Having created the zone configuration, the zone can be cloned:-

```
# zoneadm -z arapaho clone navajo
```

Cloning zonepath /Zones/Navajo...

- * *arapaho* is the new zone.
 - * *navajo* is the exiting zone.
 - * Takes only a minute or two.
- Now the zone can be booted and used.
 - You may wish to install a *sysidcfg* file as previously shown to pre-configure the zone prior to its first boot.

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Zones - Running previous Solaris versions

- Solaris 8 and 9 can be run in a zone, but you need to download additional software from Sun.
- You will also need a patch (127127-11), if your Solaris 10 version is Update 5 or earlier.
- See <http://www.sun.com/software/solaris/containers/> for details of what you require for any given release.
- The new zone can be assigned a shared or exclusive IP interface as previously described.
- Our practical example uses Solaris 8 and Update 4 Solaris 10.
- Firstly, if needed, install patch 127127-11 and reboot your system. (Check with *showrev -p* as it may already be installed)
- The patch and other required software is located on yamaha in */software/containers*.
- Now obtain and install the required software package from Sun - this you will find in *yamaha's /software/containers* directory as *s8containers-bundle-solaris10-sparc.tar.gz*.

```
# gunzip s8containers-bundle-solaris10-sparc.tar.gz
```

```
# tar xvf s8containers-bundle-solaris10-sparc.tar
```

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Zones - Configuring a Solaris 8 zone

```
# cd s8containers-bundle/1.0/Product
```

- Install all the packages in this directory with *pkgadd*:-

```
# pkgadd -d .
```

- 1 SUNWs8brandr Solaris 8 Containers: solaris8 brand support (Root)
(sparc) 11.10.0,REV=2007.10.08.16.51
- 2 SUNWs8brandu Solaris 8 Containers: solaris8 brand support (Usr)
(sparc) 11.10.0,REV=2007.10.08.16.51
- 3 SUNWs8p2v Solaris 8 p2v Tool
(sparc) 11.10.0,REV=2007.10.08.16.51

Select package(s) you wish to process (or 'all' to process all packages). (default: all) [?,??,q]: *all*
etc etc..

- Now the zone can be configured:-

```
# mkdir /Zones/sol8
```

```
# zonecfg -z sol8
```

```
sol8: No such zone configured
```

Use 'create' to begin configuring a new zone.

```
zonecfg:sol8> create -t SUNWsolaris8
```

```
zonecfg:sol8> set zonepath=/Zones/sol8
```

```
zonecfg:sol8> set autoboot=true
```

```
zonecfg:sol8> add net
```

```
zonecfg:sol8:net> set physical=eri0
```

```
zonecfg:sol8:net> set address=192.168.200.155
```

```
zonecfg:sol8:net> end
```

* Continued overleaf...

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Zones - Installing a Solaris 8 zone

```
zonecfg:sol8> add attr
zonecfg:sol8:attr> set name=hostid
zonecfg:sol8:attr> set type=string
zonecfg:sol8:attr> set value=83685987
zonecfg:sol8:attr> end
zonecfg:sol8> verify
zonecfg:sol8> commit
zonecfg:sol8> exit
```

#

* The above adds a hostid to the zone.

- Now use *zoneadm* to install the zone:-

```
# zoneadm -z sol8 install -u \  
-a /root/containers/solaris8-image.flar
```

* *-u* causes the Solaris 8 zone to be installed in a *sys-unconfig* state, i.e. no hostname or name services configured.

* Use *-p* instead if you want to preserve the Solaris 8 system's original ID.

* *-a /root/containers/solaris8-image.flar* specifies the location of the flash archive to use.

* The installation continues:-

Log File: /var/tmp/sol8.install.27972.log

Source: /root/containers/solaris8-image.flar

Installing: This may take several minutes...

Postprocessing: This may take several minutes...

Result: Installation completed successfully.

Log File: /Zones/sol8/root/var/log/sol8.install.27972.log

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Zones - Solaris 8 zone pre-configuration and booting

- The zone can now be booted with *zoneadm*, but you may wish to install a *sysidcfg* file into the */etc* directory of the zone before you do this; here is an example:-

```
locale=C
name_service=NONE
system_locale=C
network_interface=primary{protocol_ipv6=no hostname=sol8
netmask=255.255.255.0}
timezone=GB
terminal=xterm
timeserver=localhost
security_policy=none
root_password=pvDVrMdPyNYk2
```

- Now boot the new Solaris 8 zone:-

```
# zoneadm -z sol8 boot
# zlogin -C sol8
[Connected to zone 'sol8' console]
Configuring network interface addresses: eri0.
add default route: Not owner
starting rpc services: rpcbind done.

rebooting system due to change(s) in /etc/default/init

*          Continued overleaf...
```

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Zones - Solaris 8 zone first-time boot

Jan 9 08:54:44 rpcbind: rpcbind terminating on signal.

[NOTICE: Zone rebooting]

SunOS Release 5.8 Version Generic_Virtual 64-bit
Copyright 1983-2000 Sun Microsystems, Inc. All rights reserved

Hostname: sol8

The system is coming up. Please wait.

starting rpc services: rpcbind done.

syslog service starting.

Print services started.

Jan 9 16:55:09 sol8 sendmail[2353]: My unqualified host name (sol8) unknown; sleeping for retry

The system is ready.

sol8 console login:

- You may now wish to carry out the zone post-install configuration as described earlier.
- Normal zone operations such a cloning should work fine.
- For issues such as patching, resoure controls, etc take a look at *Solaris 8 Containers 1.0.1 Collection > System Administration Guide: Solaris 8 Containers > 7. About Zone Login and Post-Installation Configuration*