

[Mpt Drivers](#)[Jbods y discos](#)**Como Actualizar la version de ZFS pool**

```

admin@seal:~$ zpool get version oceano
NAME      PROPERTY  VALUE      SOURCE
oceano    version   22         local

admin@seal:~$ zpool upgrade -v
This system supports ZFS pool feature flags.

The following versions are supported:

VER  DESCRIPTION
---  -----
1    Initial ZFS version
2    Ditto blocks (replicated metadata)
3    Hot spares and double parity RAID-Z
4    zpool history
5    Compression using the gzip algorithm
6    bootfs pool property
7    Separate intent log devices
8    Delegated administration
9    refquota and reservation properties
10   Cache devices
11   Improved scrub performance
12   Snapshot properties
13   snapused property
14   passthrough-x aclinherit
15   user/group space accounting
16   stmf property support
17   Triple-parity RAID-Z
18   Snapshot user holds
19   Log device removal
20   Compression using zle (zero-length encoding)
21   Deduplication
22   Received properties
23   Slim ZIL
24   System attributes
25   Improved scrub stats
26   Improved snapshot deletion performance
27   Improved snapshot creation performance
28   Multiple vdev replacements

admin@seal:~$ sudo zpool upgrade oceano
Password:
This system supports ZFS pool feature flags.

Successfully upgraded 'oceano' from version 22 to version 5000

admin@seal:~$ zpool get version oceano
NAME      PROPERTY  VALUE      SOURCE
oceano    version   -          default

```

En las notas de la version encontramos una explicacion(**ZFS feature flags concept**) a que aparezca un - en la columna version:

This release includes the *async zfs destroy* feature from illumos that comes with a new zpool version. Remember upgrading a zpool is a non-reversible command and any zpools you upgrade may not be readable with previous versions of Oi, including other BEs on the same system. The ZFS feature flags concept is documented here: [?http://blog.delphix.com/csiden/files/2012/01/ZFS_Feature_Flags.pdf](http://blog.delphix.com/csiden/files/2012/01/ZFS_Feature_Flags.pdf). In this context the "zpool version" becomes a legacy concept, and the number is set to 5000 on existing pools during a "zpool upgrade" run

[?http://wiki.openindiana.org/oi/oi_151a_prestable5+Release+Notes](http://wiki.openindiana.org/oi/oi_151a_prestable5+Release+Notes)

```
admin@seal:~$ zpool get all oceano
NAME      PROPERTY          VALUE                SOURCE
oceano    size              132T                 -
oceano    capacity         92%                  -
oceano    altroot          -                    default
oceano    health           ONLINE              -
oceano    guid             13935394210464928120 default
oceano    version          -                    default
oceano    bootfs           -                    default
oceano    delegation       on                   default
oceano    autoreplace     off                  default
oceano    cachefile        -                    default
oceano    failmode        wait                 default
oceano    listsnapshots   off                  default
oceano    autoexpand      off                  default
oceano    dedupditto      0                    default
oceano    dedupratio      1.01x               -
oceano    free            9.43T               -
oceano    allocated       123T                 -
oceano    readonly        off                  -
oceano    comment         -                    default
oceano    expandsize      0                    -
oceano    freeing         0                    default
oceano    feature@async_destroy disabled             local
```

Features Flags

Es una manera de especificar el **ZFS pool on-disk format** que reemplaza a los números de versión .Se pueden encontrar en tres estados:

- Activate
- Enable
- Disable

Nuevas features

Al actualizar el sistema a [OpenIndiana](#) Development oi_151.1.6 X86, aparece una feature flag nueva **empty_bpobj**.

```
admin@seal:~$ zpool upgrade
This system supports ZFS pool feature flags.

All pools are formatted using feature flags.

Some supported features are not enabled on the following pools. Once a
feature is enabled the pool may become incompatible with software
that does not support the feature. See zpool-features(5) for details.

POOL  FEATURE
-----
oceano
      async_destroy
      empty_bpobj
```

```
rpool
  async_destroy
  empty_bpobj
```

Actualizando oceano:

```
admin@seal:~$ sudo zpool upgrade oceano
Password:
This system supports ZFS pool feature flags.

Enabled the following features on 'oceano':
  async_destroy
  empty_bpobj
```

```
admin@seal:~$ zpool get all oceano
```

NAME	PROPERTY	VALUE	SOURCE
oceano	size	132T	-
oceano	capacity	87%	-
oceano	altroot	-	default
oceano	health	ONLINE	-
oceano	guid	13935394210464928120	default
oceano	version	-	default
oceano	bootfs	-	default
oceano	delegation	on	default
oceano	autoreplace	off	default
oceano	cachefile	-	default
oceano	failmode	wait	default
oceano	listsnapshots	off	default
oceano	autoexpand	off	default
oceano	dedupditto	0	default
oceano	dedupratio	1.01x	-
oceano	free	17.2T	-
oceano	allocated	115T	-
oceano	readonly	off	-
oceano	comment	-	default
oceano	expandsize	0	-
oceano	freeing	0	default
oceano	feature@async_destroy	enabled	local
oceano	feature@empty_bpobj	enabled	local

Nuevas features con la versioin SunOS seal 5.11 oi_151a9

- lz4_compress
- multi_vdev_crash_dump