zFS utility "zfsfsutl" V1.1

In z/OS V2R1 the zFS utilities IOEAGFMT and IOEAGSLV had been rewritten in Metal C. This was true as well for the new super tool named IOEFSUTL.

- They cannot be used in UNIX via external links anymore.
- They are designed to be run as batch utilities only.
- You should use SYSPRINT as the output ddname.
- IOEFSUTL is the strategic tool and should be used.

Note: For information about release updates see at the end of this document.

The magic of utility "zfsfsutl"

Tool "zfsfsutl" allows to use IOEFSUTL from UNIX. There are just two things to remark or do.

- IOEFSUTL nicely stays in its initial ASID when working.
- IOEFSUTL needs to be set as an authorized program by adding it to "AUTHPGM NAMES" in the IKJTSOxx parmlib member for TSO.

Based on this "zfsfsutl" nicely works by doing the following:

- It uses a temporary named pipe in "/tmp" allocated with ddname SYSPRINT to be used via "Address TSO".
- A simple "cp" command is started via "spawnp" to read the data from the pipe and write it to STDOUT (/dev/fd1).
- IOEFSUTL command is addressed to TSO via the TSO "call" command: …**"call *(ioefsutl) '"** …

Using utility "zfsfsutl"

Next you can see how it works in a z/OS UNIX shell.

```
$> zfsfsutl -help
IOEZ00559I zFS IOEFSUTL: Initializing z/OS    zFS
Version 02.01.00 Service Level OA45948 - HZFS410.
Created on Fri Jan 30 15:41:22 EST 2015.
Address space asid x6C
IOEZ00760I No IOEZPRM DD specified. Parmlib search being used.
IOEZ00229I IOEFSUTL:  Commands are:
apropos         search by help text
converttov4     Convert aggregate to version 4
converttov5     Convert aggregate to version 5
format          format an aggregate
help            get help on commands
level           display service level
salvage         Salvage an aggregate
$> zfsfsutl salvage -help
IOEZ00559I zFS IOEFSUTL: Initializing z/OS    zFS
Version 02.01.00 Service Level OA45948 - HZFS410.
Created on Fri Jan 30 15:41:22 EST 2015.
Address space asid x6C
IOEZ00760I No IOEZPRM DD specified. Parmlib search being used.
Usage: IOEFSUTL salvage -aggregate <name> [-verifyonly] [-level] [-help]
$>
```

Finally an example is shown for verifying the consistency of a zFS aggregate.

```
$> zfsfsutl salvage HERING.TEST.ZFS -verifyonly
IOEZ00559I zFS IOEFSUTL: Initializing z/OS zFS
Version 02.01.00 Service Level OA45948 - HZFS410.
Created on Fri Jan 30 15:41:22 EST 2015.
Address space asid x6C
IOEZ00760I No IOEZPRM DD specified. Parmlib search being used.
IOEZ00707I Log file size 13 8K blocks, verified correct
IOEZ00729I Verification of aggregate HERING.TEST.ZFS started
IOEZ00705I Formatted v5 aggregate size 4500 8K blocks, dataset size 4500 8K blocks
IOEZ00707I Log file size 13 8K blocks, verified correct
IOEZ00709I Bitmap size 1 8K blocks, verified correct
IOEZ00782I Salvage has verified 9 of 9 pages in the anode table.
IOEZ00782I Salvage has verified 4 of 4 directories in the directory tree.
IOEZ00782I Salvage has verified 1 of 1 pages in the partially-free page list.
IOEZ00722I Primary file system size 17 8K blocks, verified correct
IOEZ00739I Salvage processed 5 directory pages, 258 anodes, 124 indirect blocks
and 9 anode table pages.
IOEZ00730I Verification of aggregate HERING.TEST.ZFS completed, no errors found.
$>
```

Updates...

- Update in V1.1: If a BPX.SUPERUSER works in superuser mode when using the utility it may happen that a work file is not removed afterwards. This has been corrected.