JERASURE ERASURE CODE PLUGIN

The *jerasure* plugin is the most generic and flexible plugin, it is also the default for Ceph erasure coded pools.

The *jerasure* plugin encapsulates the Jerasure library. It is recommended to read the *jerasure* documentation to get a better understanding of the parameters.

CREATE A JERASURE PROFILE

To create a new *jerasure* erasure code profile:

```
ceph osd erasure-code-profile set {name} \
     plugin=jerasure \
     k={data-chunks} \
     m={coding-chunks} \
     technique={reed_sol_van|reed_sol_r6_op|cauchy_orig|cauchy_good|liberation|blaum_roth|lib
     [crush-root={root}] \
     [crush-failure-domain={bucket-type}] \
     [crush-device-class={device-class}] \
     [directory={directory}] \
     [--force]
```

Where:

`k={data chunks}`

Description: Each object is split in **data-chunks** parts, each stored on a different OSD.
Type: Integer
Required: Yes.
Example: 4

`m={coding-chunks}`

Description: Compute **coding chunks** for each object and store them on different OSDs. The number of coding chunks is also the number of OSDs that can be down without losing data.
Type: Integer
Required: Yes.
Example: 2

`technique={reed_sol_van|reed_sol_r6_op|cauchy_orig|cauchy_good|liberation|blaum_roth|liber8tion}`

Description: The more flexible technique is *reed_sol_van* : it is enough to set *k* and *m*. The *cauchy_good* technique can be faster but you need to chose the *packetsize* carefully. All of *reed_sol_r6_op*, *liberation*, *blaum_roth*, *liber8tion* are *RAID6* equivalents in the sense that they can only be configured with *m=2*.
Type: String
Required: No.
Default: reed_sol_van

`packetsize={bytes}`

Description: The encoding will be done on packets of *bytes* size at a time. Chosing the right packet size is difficult. The *jerasure* documentation contains extensive information on this topic.
Type: Integer
Required: No.
Default: 2048

`crush-root={root}`

Description: The name of the crush bucket used for the first step of the CRUSH rule. For intance **step take default**.
Type: String
Required: No.
Default: default

`crush-failure-domain={bucket-type}`

Description: Ensure that no two chunks are in a bucket with the same failure domain. For instance, if the failure domain is **host** no two chunks will be stored on the same host. It is used to create a CRUSH rule step such as **step chooseleaf host**.
Type: String
Required: No.
Default: host

`crush-device-class={device-class}`

Description: Restrict placement to devices of a specific class (e.g., `ssd` or `hdd`), using the crush device class names in the CRUSH map.
Type: String
Required: No.
Default: `directory={directory}`
Description: Set the **directory** name from which the erasure code plugin is loaded.
Type: String
Required: No.
Default: /usr/lib/ceph/erasure-code

`--force`

Description: Override an existing profile by the same name.
Type: String
Required: No.