Bynar Documentation

# Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Date | Reason for Change | Version |
| Michelle Zhong | 10/8/2019 | Outline the Document | 0.1 |
| Michelle Zhong | 10/9/2019 | Outline the Document Modules, fill in the API section | 0.2 |
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# API

## Introduction

This package uses Protobuf version 2 to create Messages that can be sent over the network. Protobuf is a fast and small protocol for serializing structs (or structured data). Serialized messages can be sent between Sockets, unpackaged, and read easily and quickly. The protobuf package automatically generates the rust code needed to create, modify, and destroy Messages as well as their attributes.

## List of Message Enums

### DiskType

The type of disk or device

#### Enum Values

|  |  |
| --- | --- |
| Name | Description |
| LOOPBACK | Special loopback device |
| LVM | Logical Volume Device |
| MDRAID | Linux software RAID |
| NVME | Non-Volatile Memory Express, a logical device interface |
| RAM | Ramdisk |
| ROTATIONAL | Regular rotational device |
| SOLID\_STATE | SSD |
| VIRTUAL | Virtual Disk |
| UNKNOWN | Unknown disk |

### ResultType

A result value

#### Enum Values

|  |  |
| --- | --- |
| Name | Description |
| OK | ok |
| ERR | There is an error |

### Op

An operation on a disk

#### Enum Values

|  |  |
| --- | --- |
| Name | Description |
| Add | Generic Add Disk command, returns an OpResult |
| AddPartition | Add a Partition Command, returns an OpResult |
| List | List the Disks, returns a list of Disks |
| Remove | Remove a Disk, returns an OpResult |
| SafeToRemove | Checks if a Disk is safe to remove, returns a bool |
| GetCreatedTickets | list created tickets, returns a list of created tickets |

### DatacenterOp

Datacenter API’s, these all require server\_id as a parameter for the operation

#### Enum Values

|  |  |
| --- | --- |
| Name | Description |
| GetDc | Get ? Returns an OpStringResult |
| GetRack | Get the rack of a server, returns an OpStringResult |
| GetRow | Get the row of a server, returns an OpStringResult |
| GetElevation | Get the elevation of a server, returns an OpStringResult |

## List of Message Structs

### Osd

A Ceph OSD object descriptor

#### Attributes

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| fsid | Option(String) | OSD File System ID, if one exists |
| id | u64 | OSD ID number |
| block\_device | String | Block Device of the OSD |
| journal | Option(String) | Name of the Journal if the OSD has one set |
| active | bool | Whether or not an OSD is active or a spare |
| used\_space | u64 | How much space in the OSD is currently used |
| total\_space | u64 | Total space in the OSD |

### Partition

A single partition descriptor

#### Attributes

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| uuid | String | The id of the partition |
| first\_lba | u64 | The first logical block address of the partition |
| last\_lba | u64 | The last logical block address of the partition |
| flags | u64 | Flags associated with the partition |
| name | String | The name of the partition |

### PartitionInfo

A list of Partitions

#### Attributes

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| partition | Vec<Partition> | List of partitions |

### Disk

A disk object descriptor

#### Attributes

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| type | DiskType | The type of disk |
| dev\_path | String | ?? Device path? |
| partitions | PartitionInfo | Disk partitions |
| serial\_number | Option<String> | Disk serial number |

### OpResult

A result of an Op message

#### Attributes

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| result | ResultType | Whether the result is ok or Error |
| error\_msg | Option<String> | Error message if there is an error |

### OpBoolResult

A boolean result of an Op message

#### Attributes

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| result | ResultType | Whether Ok or Error |
| value | Option<bool> | A value is set if OK |
| error\_msg | Option<String> | Error message is set if there is an Error |

### OpStringResult

A String result of an Op message

#### Attributes

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| result | ResultType | Whether Ok or Error |
| value | Option<String> | A value is set if OK |
| error\_msg | Option<String> | Error message is set if there is an Error |

### JiraInfo

A Jira Ticket information descriptor

#### Attributes

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| ticket\_id | String | Ticket number |
| server\_name | String | A value is set if OK |

### OpJiraTicketsResult

A Jira ticket result

#### Attributes

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| result | ResultType | Whether Ok or Error |
| value | Option<String> | A value is set if OK |
| error\_msg | Option<String> | Error message is set if there is an Error |

### DatacenterOperation

A Datacenter operation message

#### Attributes

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| Op\_type | DatacenterOp | The type of operation to be performed |
| server\_id | String | The ID of the server to be operated on |

### Operation

A service operation that can be performed

#### Attributes

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| Op\_type | Op | The operation type |
| disk | Option<String> | The disk name, used for an Add or Remove |
| simulate | Option<bool> | Whether the operation is a simulation, used for Add, Remove, and SafeToRemove |
| partition\_start | Option<u64> | Optional field for AddPartition, start of a partition |
| partition\_end | Option<u64> | Optional field for AddPartition, end of a partition |
| partition\_name | Option<String> | Optional field for AddPartition, partition name |
| osd\_id | Option<u64> | Optional Ceph related field, the id of an OSD |
| replica\_set | Vector<String> | Host:/dev/disk strings list for gluster replica sets |

# Configuration Files

## Introduction

Bynar uses a set of configuration files

## List of Config Files

### Bynar JSON

### Ceph JSON

### Disk-Manager JSON

# Backend

## Introduction

### Backend Module

### Ceph

# Database Schema

## Introduction

### Postgres

# Database Logging

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# Bynar

## Introduction

### Main Process