
Pulp OSTree Documentation

Release 1.0.0

Pulp Team

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This project adds support to Pulp for managing OSTree images.

Glossary

local A local ostree repository is stored in Pulp's content storage location.

remote A remote repository is external to Pulp and is identified by its URL.

remote_id Uniquely identifies an external ostree repository. It is the *digest* of its URL.

digest A SHA256 HEX digest of an object.

refs The *references* section of an ostree repository defines branches and commit (hash) that defines the branch head:

```
-rw-rw-r-- 1 root pulp 124 Sep 11 15:25 config
drwxrwxr-x 1 root pulp 4096 Aug 27 16:02 objects
drwxrwxr-x 4 root pulp 4096 Aug 27 15:55 refs <----- HERE
drwxrwxr-x 2 root pulp 4096 Aug 27 15:55 remote-cache
drwxrwxr-x 2 root pulp 4096 Sep  2 13:04 tmp
drwxrwxr-x 2 root pulp 4096 Aug 27 15:55 uncompressed-objects-cache
```

tree An named ostree branch

branch A specific version of a filesystem tree.

snapshot After all branches have been pulled during repository synchronization with a remote, a unit is created containing the *refs*.

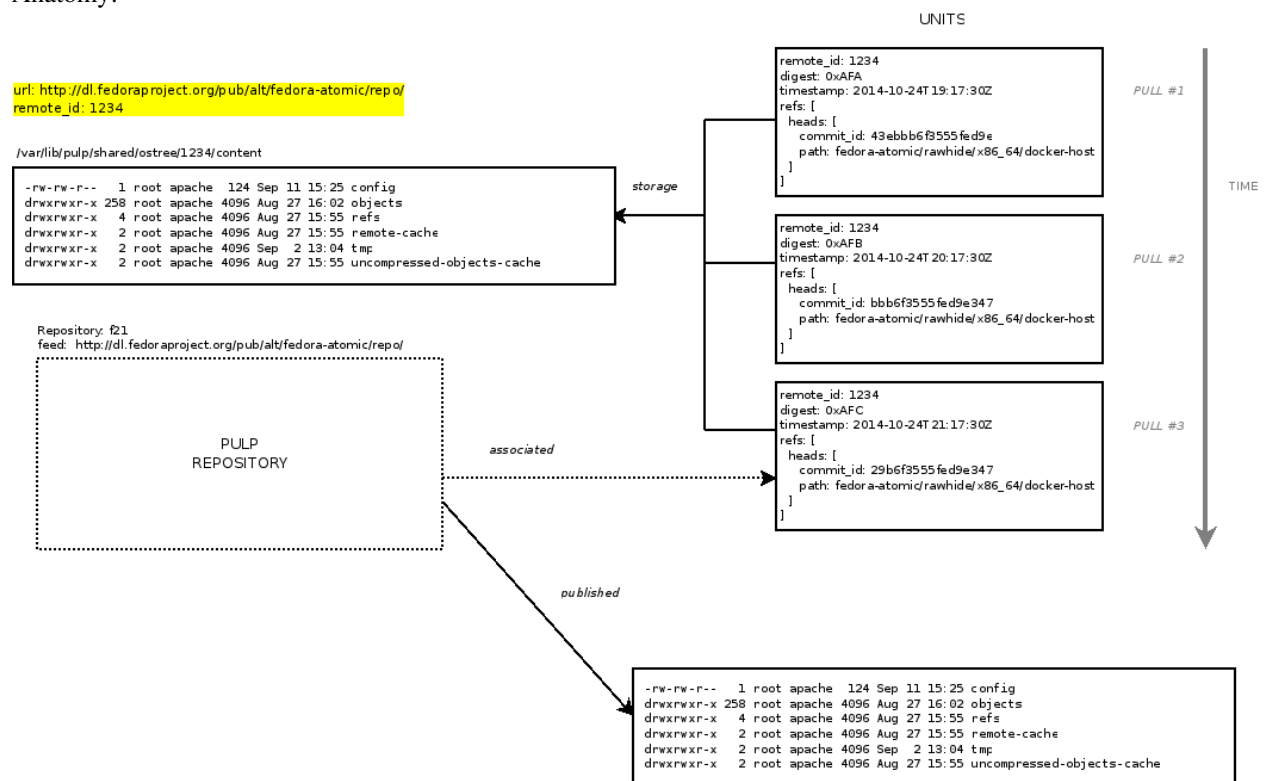
Concepts

An ostree content unit represents a snapshot of an **OSTree** repository. A Pulp ostree repository may be synchronized with a *remote* ostree repository. Each content unit created during synchronization with (the same) *remote* shares filesystem storage. Content units contain a snapshot of the repository's *refs* and are uniquely identified by the *remote_id* and the *digest* of the unit's metadata.

A Pulp ostree repository is configured with a list of branch names (or trees) which determines which branches are pulled during synchronization with its remote. The list of branches may be modified after the repository has been created.

Repository *refs* can be added, updated and deleted. But, content objects stored in *local* repositories are immutable and cannot be deleted. An orphaned local repository is removed during orphan removal.

Anatomy:



3.1 Installation

3.1.1 Prerequisites

The only requirement is to meet the prerequisites of the Pulp Platform. Please see the [Pulp User Guide](#) for prerequisites including repository setup.

3.1.2 Development

The only way to install ostree support currently is to setup a development environment. Installation through RPMs will come at a later time.

```
git clone https://github.com/pulp/pulp_ostree.git
cd pulp_ostree
sudo ./manage_setup_pys.sh develop
sudo ./pulp-dev.py -I
sudo -u apache pulp-manage-db
```

Then restart each pulp component, as documented in the [Pulp User Guide](#).

3.2 Configuration

3.2.1 Importer Configuration

The OSTree importer is configured by editing `/etc/pulp/server/plugins.conf.d/ostree_importer.json`. This file must be valid [JSON](#).

The importer supports the settings documented in Pulp's [importer config docs](#) with the addition of a the following OSTree specific properties:

- `branches` - A list of branch names to be pulled during repository synchronization. Only those branches listed will be pulled.
- `gpg_keys` - An (optional) list of GPG keys used to validate signed commits.

3.3 Release Notes

Contents:

3.3.1 Pulp OSTree 1.0 Release Notes

Pulp OSTree 1.0.0

New Features

The Pulp team is pleased to release version 1.0.0 of the OSTree plugins for Pulp. These plugins provide support for OSTree repositories. Once the repository has been created and configured with a feed, branches can be pulled from a remote OSTree repository. Each pulled branch HEAD is stored as a content unit and associated with the repository. The actual trees are stored in a native OSTree repository. Content units can be copied between repositories. Publishing creates a new OSTree repository that is populated using OSTree *local-pull* of those commits specified by content units. The published repository contains *refs* for each branch and a summary file is generated.

API Changes

- Added `ostree_web_importer` importer.
- Added `ostree_web_distributor` distributor.

Bugs Fixed

You can see the [list of bugs fixed](#).

3.4 Recipes

3.4.1 Create A Repository

A repository may be created using `pulp-admin`:

```
$ pulp-admin ostree repo create --repo-id=f21 \  
  --feed=http://dl.fedoraproject.org/pub/alt/fedora-atomic/repo/ \  
  -b fedora-atomic/rawhide/x86_64/server/docker-host \  
  -b fedora-atomic/rawhide/x86_64/docker-host
```

3.4.2 Update Branches

A repository may be updated to add/remove branches. Each update replaces the list of branches:

```
$ pulp-admin ostree repo update --repo-id=f21 -b fedora-atomic/rawhide/x86_64/docker-host
```

3.4.3 Synchronize Repository

A repository may be synchronized with its remote:

```
$ pulp-admin ostree repo sync run --repo-id=f21
```

3.4.4 List Content

The content contained within a repository may be listed:

```
$ pulp-admin ostree repo search --repo-id=f21
+-----+
|                                     |
|                               Content Units                               |
|-----+-----+
|
| Id:          54465eafe138231f61748822
| Created:     2014-10-21T13:25:03Z
| Updated:     2014-10-21T13:25:03Z
| Timestamp:   2014-10-21T13:25:03Z
| Remote Id:   fe3150788b0d5f396a4834c7be7ec4f83d47fda8b3f9ff8404a789c28d4d22e7
| Digest:      e3b0c44298fc1c149afb4c8996fb92427ae41e4649b934ca495991b7852b855
| Refs:
|   Heads:
|
| Id:          544673d0e138231f61748824
| Created:     2014-10-21T14:55:12Z
| Updated:     2014-10-21T14:55:12Z
| Timestamp:   2014-10-21T14:55:12Z
| Remote Id:   fe3150788b0d5f396a4834c7be7ec4f83d47fda8b3f9ff8404a789c28d4d22e7
| Digest:      7f2343063a9daa18b062507980da0b3718a28bf3b31d1286e8ef8655821f42f7
| Refs:
|   Heads:
|     Commit Id: 005d4caafc862853b920b9a0ab2f5af2b197cc13024a49a6add85bae4a8a40ee
|     Path:      fedora-atomic/rawhide/x86_64/docker-host
```

Fields:

- Id** The unit identifier.
- Created** Indicates when the unit was first associated to the repository.
- Updated** Indicates when the unit associated was last updated.
- Timestamp** Indicates when the ostree repository *snapshot* was taken.
- Remote Id** Indicates which *remote* this unit is a snapshot of.
- Digest** The *digest* of the *refs* metadata.
- Refs** The unit's *refs* metadata.

Technical Reference

4.1 Type

The programmatic identifier for this type is `ostree`.

4.1.1 Unit Key

Each unit represents a *snapshot* of an ostree repository. The key identifies each snapshot uniquely using a combination of the remote's URL and the digest of the *refs* contained with the unit itself.

remote_id The *digest* of the URL to a remote ostree repository.

digest The *digest* of the ostree *refs* information.

4.1.2 Metadata

timestamp The UTC timestamp of when the unit was created.

refs The *refs* information:

```
refs: {
  heads [
    {path: <path>, commit_id: <commit>},
    {path: <path>, commit_id: <commit>}
  ]
}
```

4.2 Importer Configuration

4.2.1 Web Importer

TYPE ID: `ostree_web_importer`

Properties

feed The URL for the upstream ostree repository to sync.

branches A list of branches from the upstream repo that should be pulled during a sync.

4.3 Distributor Configuration

4.3.1 Web Distributor

Type ID: `ostree_web_distributor`

The global configuration file for the `ostree_web_distributor` plugin can be found in `/etc/pulp/server/plugin.conf.d/ostree_distributor.json`.

All values from the global configuration can be overridden on the local config.

Properties

auto_publish Whether or not this distributor should automatically be published when the importer completes. The default value is `True`.

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