## Glossary

## Concepts

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This project adds support to Pulp for managing OSTree images.
**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:

<table>
<thead>
<tr>
<th>Permissions</th>
<th>Owner</th>
<th>Group</th>
<th>Size</th>
<th>Date</th>
<th>File Or Directory</th>
</tr>
</thead>
<tbody>
<tr>
<td>-rw-rw-r--</td>
<td>1 root</td>
<td>pulp</td>
<td>124</td>
<td>Sep 11 15:25</td>
<td>config</td>
</tr>
<tr>
<td>drwxrwxr-x</td>
<td>1 root</td>
<td>pulp</td>
<td>4096</td>
<td>Aug 27 16:02</td>
<td>objects</td>
</tr>
<tr>
<td>drwxrwxr-x</td>
<td>4 root</td>
<td>pulp</td>
<td>4096</td>
<td>Aug 27 15:55</td>
<td>refs &lt;--********** HERE</td>
</tr>
<tr>
<td>drwxrwxr-x</td>
<td>2 root</td>
<td>pulp</td>
<td>4096</td>
<td>Aug 27 15:55</td>
<td>remote-cache</td>
</tr>
<tr>
<td>drwxrwxr-x</td>
<td>2 root</td>
<td>pulp</td>
<td>4096</td>
<td>Sep 2 13:04</td>
<td>tmp</td>
</tr>
<tr>
<td>drwxrwxr-x</td>
<td>2 root</td>
<td>pulp</td>
<td>4096</td>
<td>Aug 27 15:55</td>
<td>uncompressed-objects-cache</td>
</tr>
</tbody>
</table>

**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.
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:

```bash
$ 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:

```bash
$ 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 |
| Remote Id: fe3150788b0d5f396a4834c7be7ec4f83d47fda8b3f9ff8404a789c28d4d22e7 |
| Digest: e3b0c44298fc1c149afbf4c8996fb92427ae41e4649b934ca495991b7852b855 |
| Refs: |
| Heads: |
| Id: 544673d0e138231f61748824 |
| Created: 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.
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:

  ```json
  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`.
CHAPTER 5

Indices and tables

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