

FedCloud client: the powerful client for EGI Federated Cloud

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Introduction

fedcloudclient is a simple but powerful client tool for working with OpenStack sites in EGI Cloud infrastructure:

- Simple: setup in one minute, no privileges required, intuitive syntax
- Powerful: can work with all sites, all VOs, customisable, extensible, advanced options
- Federated: considers EGI Cloud infrastructure as a whole, sites and VOs are just parameters of the client

Easy to use

- Can you imagine that executing an OpenStack command on EGI Cloud federation is easier than on local site?

- With native OpenStack command:

```
$ openstack image list --os-auth-url https://cloud.ui.savba.sk:5000/v3/  
--os-auth-type v3oidcaccess token --os-identity-provider egi.eu  
--os-project-id 51f736d36ce34b9ebdf196cfcabd24ee --os-protocol openid  
--os-access-token $OS_ACCESS_TOKEN
```

- With FedCloud client

```
$ fedcloud openstack image list --site IISAS-FedCloud --vo eosc-synergy.eu  
--oidc-access-token $OS_ACCESS_TOKEN
```

- The fedcloud command is natural and intuitive: listing images on site [IISAS-FedCloud](#) in VO [eosc-synergy.eu](#) using access token, that is all

Federation-wide

- Moving from a site to another site by changing single parameter

```
$ fedcloud openstack image list --site IISAS-FedCloud --vo eoscsynergy.eu
```

```
$ fedcloud openstack image list --site IFCA-LCG2 --vo eoscsynergy.eu
```

- Global operations on all sites with `--site ALL_SITES` parameters

```
$ fedcloud openstack server list --site ALL_SITES --vo eoscsynergy.eu
```

- Global operations are performed in parallel for quick responses

Rich functionalities

- `fedcloud.openstack` module: native support for all OpenStack commands, simple execution

But still much more:

- `fedcloud.checkin`: manipulating with access token, listing VO memberships
- `fedcloud.endpoint`: listing services in GOCDB
- `fedcloud.site`: managing site configurations
- `fedcloud.select`: searching/selecting images, flavors and networks
- `fedcloud.secret`: managing secrets in Secret management service
- `fedcloud.ec3`: supporting EC3

Designed for automation

- Simple commands with clear inputs/outputs like shells
- Setting environment variables for other tools
- JSON output formats for machine processing: e.g. via [jq](#)

```
$ fedcloud openstack flavor list --site IISAS-FedCloud --vo eoscsynergy.eu --json-output | \
jq -r '[][].Result[] | select(.VCPUs == 2) | .Name'
```

The first command generates list of flavors, and the second command selects only flavors with 2 VCPUs, and print their names

- Calling fedcloud functions directly from Python codes

Easy install and customizable

- Simple install:

```
$ pip3 install -U fedcloudclient
```

- Working out of the box without additional configuration
- Integration with oidc-agent for automatic refreshing of access tokens
- Integration with bash shell completion
- All default parameters can be set in configuration files and environment variables
 - In 2.0-alpha

Rich documentations

- Main documentation: <https://fedcloudclient.fedcloud.eu/>
 - Quick start, installation guides, use guides, FAQ, cheat sheets, ...
- Tutorial on [Google drive](#)
- Demonstration video on [Youtube](#)

Open, active developments

- Open source, codes are available in [GitHub](#)
- 7 contributors, 452 commits, 30 releases
- More than 20 new features are planned
- Version 2.0 expected in the next year
- Contributions are welcomed

Summary

fedcloudclient is a simple but powerful client tool and library for working with OpenStack sites in EGI Cloud infrastructure.

- For beginners: simple setup, simple usage, intuitive syntax
- For advanced users, site admins: many customizations and powerful commands
- For VO managers: all-sites operations
- For developers: library for developing other tools/services in EGI Federated Cloud

Thank you for your attention

Questions: tdviet@gmail.com
