

Introducing GUTS & StackBuffet

OpenStack 遷移即服務與持續整合即服務之開源工具介紹

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GUTS

OpenStack Migration Service

GUTS Overview

“GUTS: Workload Migration Engine designed to **automatically** move existing workloads and virtual machines from various previous generation **virtualisation platforms** on to **OpenStack**”

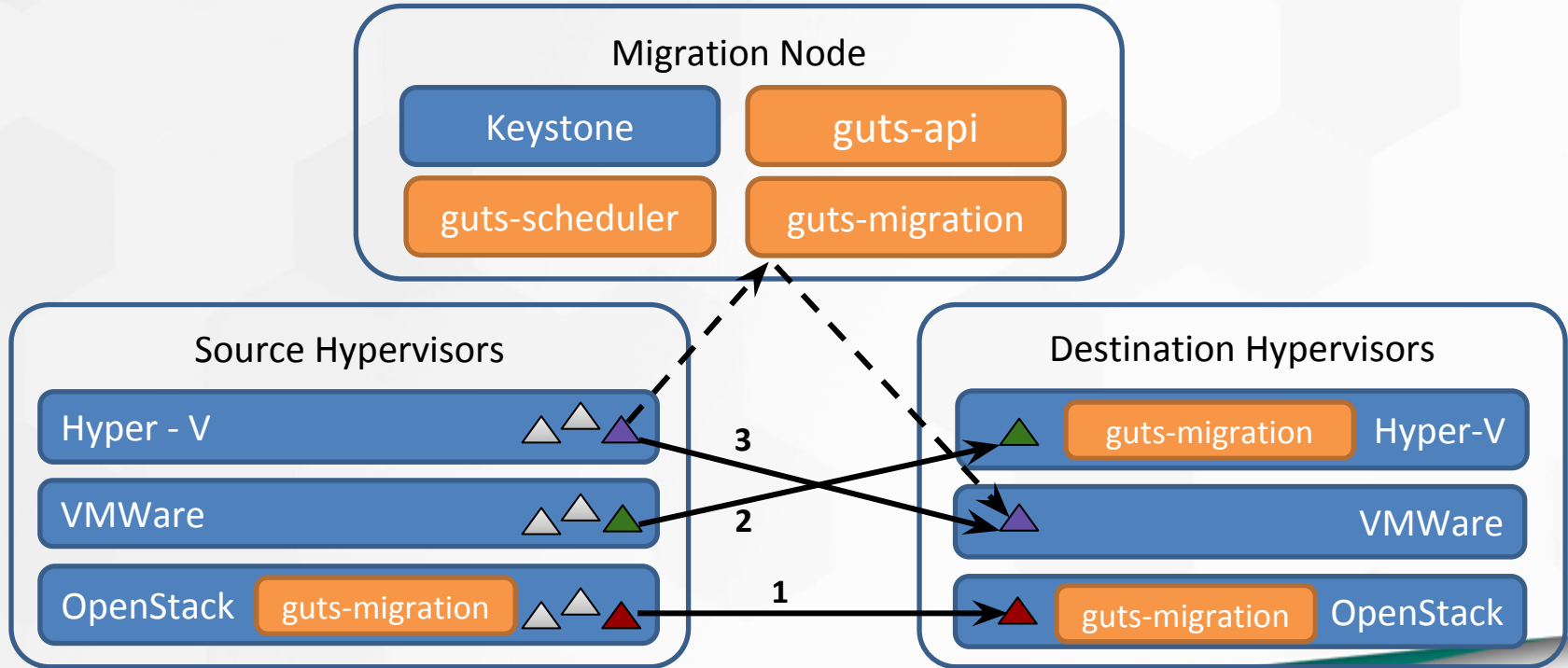
GUTS Use Cases

- Traditional Virtualization Platforms → OpenStack migrations
- Public cloud → Private cloud
- OpenStack → OpenStack migrations
- Complete environment migration between OpenStack → OpenStack
- Upgrade / maintenance of clouds
- Various resource migrations: VMs, volumes, networks, configuration, etc...
- Migration of user applications

GUTS System Components

- **guts-api service**
 - Accepts and responds to end user migration API calls
 - Enforces some policies and initiates orchestration activities
- **guts-scheduler service**
 - Selects the migration nodes for migration operations
 - Selects a migration node based on conversion space available on migration nodes
- **guts-migration service**
 - A workers daemon that creates and manages migration processes of resources

GUTS Workflows



GUTS Features

- Currently we support only OpenStack as Destination Hypervisor
- Features
 - OpenStack→OpenStack: migration of computing instances, volumes, networks, users, tenants, quota, security groups, keypairs, heat stacks, etc. resources
 - VMWare(VSphere)→OpenStack: migration computing instances
 - Converts disk formats from VMDK to Qcow2, if required
 - Manages hypervisor specific tools like virtio-tools, vmware-tools etc.
 - GUTS DevStack plugin
 - GUTS Horizon plugin
 - GUTS CLI tool

GUTS Future Work

- More Hypervisors
 - AWS (development completed and under testing)
 - Hyper-V, etc... (under development and nearly done)
- More resource types
 - Templates
 - Networks
 - Subnets

GUTS Links

- GUTS documentation (user guide and installation guide)
 - <http://guts.readthedocs.io/en/latest/index.html>
- Source code repositories
 - GUTS: <https://github.com/aptira/guts>
 - GUTS Client: <https://github.com/aptira/python-gutsclient>
 - GUTS Dashboard: <https://github.com/aptira/guts-dashboard>
- GUTS demo (download it for better video resolution)
 - <http://pan.baidu.com/s/1qYiqVoC>



StackBuffer OpenStack CI-as-a-Service

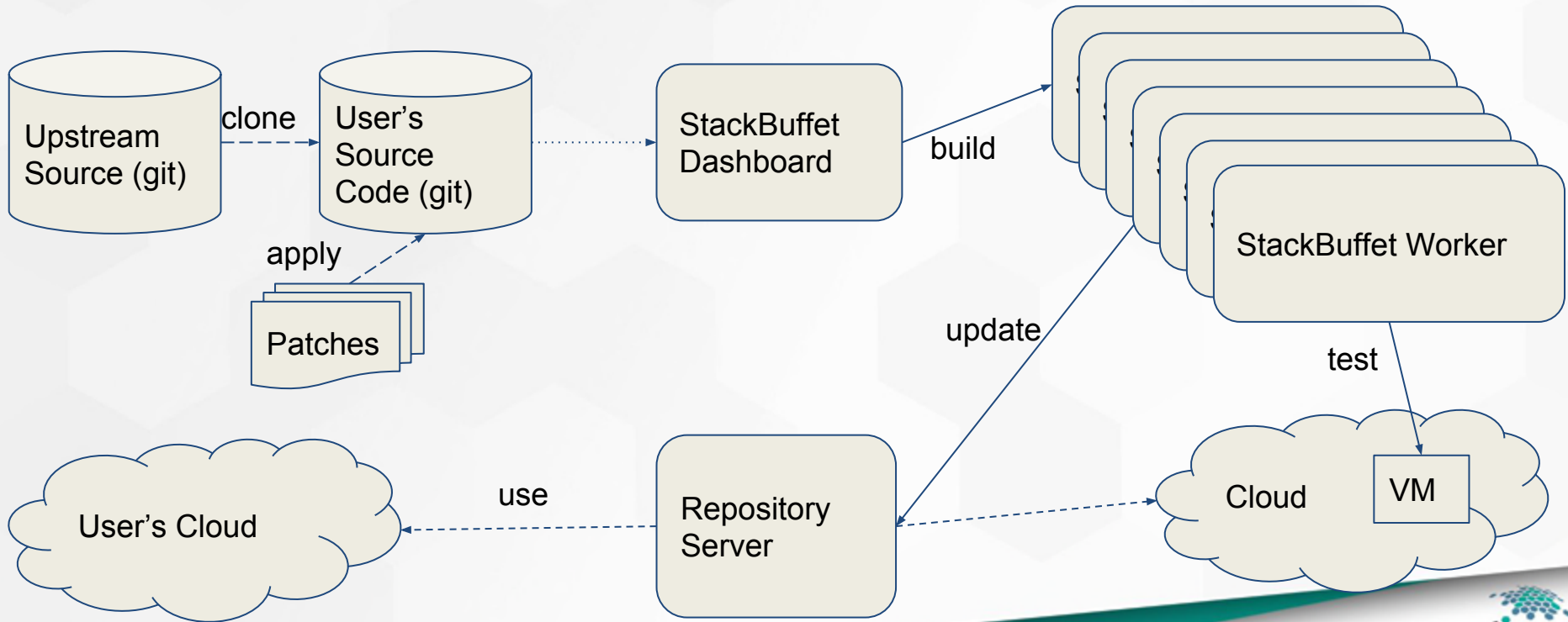
StackBuffet Overview

- OpenStack operators are reporting dissatisfaction with both vendor distros and rolling their own packages in private clouds
- **StackBuffet** is an **OpenStack CI-as-a-Service** which provides the positive aspect of both options and removes the negatives
 - Distros are rigid
 - Local patches management
 - Local CI systems are expensive/hard

StackBuffet Features

- Easily build RPM/DEB packages from your source code
- Use the package directly from StackBuffet repository (YUM or APT)
- Test packages
- Multi-OS support (CentOS and Ubuntu)
- OpenStack releases: Liberty, Mitaka
- Profiles
 - Virtualenv
 - system lib (/usr/lib)
 - docker image (future)

StackBuffer Workflow



StackBuffet - Build your packages

- Source code
 - Git URL
 - Gitref (tag, branch, commit ID)
- GPG sign
- Release number
 - enable/disable auto-increase
- Build log and history builds
 - Quota applied
 - Default 20 history builds

StackBuffet - Test your packages

- Automatic test
 - Launch a VM
 - Install OpenStack using your packages
 - Rally Certification Test (Integration tests)
 - Rally verify (Tempest functional tests)
 - Unit test (against one project)
- Reporting and troubleshooting
 - Install log and test report available on StackBuffet

StackBuffet - Use your packages

- Built-in Repository (APT, YUM)
 - http://<your_username>.stackbuffet.com/<your_repo_name>
 - E.g. <http://aptira.stackbuffet.com/ubuntu-syslib-mitaka/>
- Delete packages
- Help messages
 - How to configure this repository

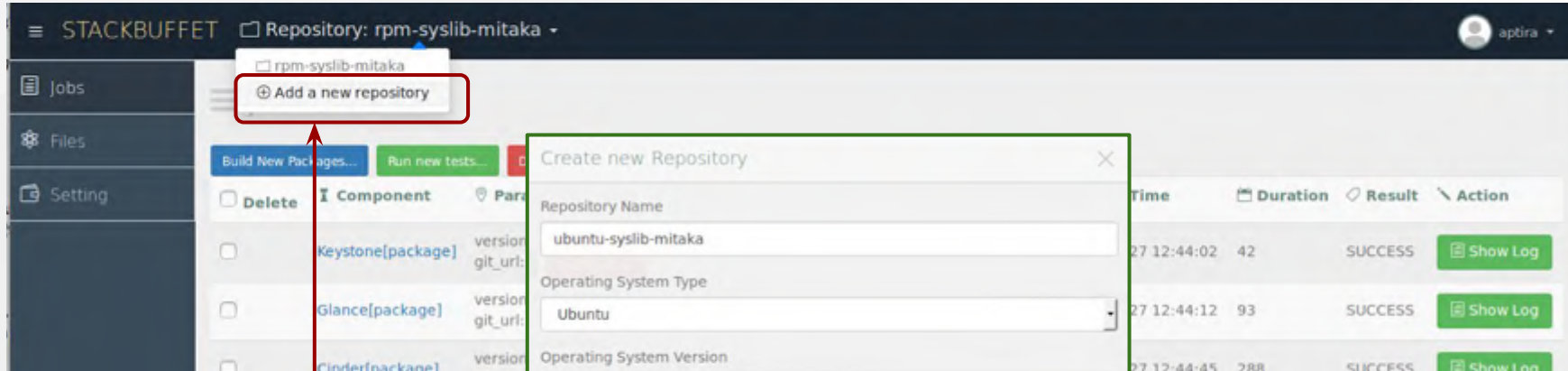
StackBuffet System Settings

- Create/delete repository
 - Quota, default 1 repository
- Your subscription
 - Start date
 - End date
- Contact Info

StackBuffet Other information

- Hosted service
 - Beta users are welcome
 - <https://www.stackbuffet.com/>
- User guide
 - <https://www.stackbuffet.com/userguide/>
- Public APT/YUM repository
 - Latest versions from upstream
 - Liberty and Mitaka
 - RPM and DEB
 - <https://www.stackbuffet.com/pubrepo/>

StackBuffet - Create New Repository



Click **Add a new repository** option to create new repository

Input the repository settings then click on **Create** button

StackBuffet - Create New Repository

New repository **ubuntu-syslib-mitaka** is created

The screenshot displays the StackBuffet web interface. At the top, a dark navigation bar shows the 'STACKBUFFET' logo and a dropdown menu for the repository 'Repository: ubuntu-syslib-mitaka'. A red box highlights this dropdown. On the left, a sidebar menu contains 'Jobs', 'Files', and 'Setting', with 'Jobs' highlighted by a green box. The main area is titled 'JOBS' and features a 'Delete jobs...' button. Below this is a table with the following columns: Delete, Component, Parameters, Running?, Start Time, Duration, Result, and Action. The table is currently empty.

Navigate to **Jobs** view, there is no job running

StackBuffet - Configure Repository

Navigate to **Setting** view to configure your repository

The screenshot shows the StackBuffet web interface for a repository named 'ubuntu-syslib-mitaka'. The left sidebar has a 'Setting' menu item highlighted with a green box. The main content area is titled 'REPOSITORY' and contains two sections: 'BASIC INFO' and 'JOB SETTING'. The 'BASIC INFO' section shows 'Operating System: Ubuntu 14.04', 'OpenStack Version: mitaka', and 'Profile: syslib', with a red 'DELETE REPOSITORY' button below. The 'JOB SETTING' section has two rows. The first row is for 'Keystone', with a red box around the 'Keystone' label and an 'Enabled?' checkbox. The second row is for 'Glance', with a red box around the 'Glance' label and an 'Enabled?' checkbox. To the right of these are input fields for 'git_url', 'version', and 'release_number'. A blue box highlights the 'git_url', 'version', and 'release_number' fields for both Keystone and Glance. A red arrow points from the text below to the 'Keystone' checkbox, and a blue arrow points from the text below to the 'git_url' field for Glance.

Project	git_url	version	release_number
Keystone	https://git.openstack.org/openstack/keystone	9.0.2	1
Glance	https://git.openstack.org/openstack/glance	12.0.0	

Select OpenStack projects if you would like StackBuffet to create packages for them

StackBuffet automatically fill up the information for you but you can manually change it if you need to

StackBuffet - Configure Repository

STACKBUFFET Repository: ubuntu-syslib-mitaka

Jobs

Files

Setting

Horizon Enabled?

git_url: https://git.openstack.org/openstack/horizon

version: 9.0.1

release_number: 1

Swift Enabled?

git_url: https://git.openstack.org/openstack/swift

version: 2.7.0

release_number: 1

Release Number Auto Increase?

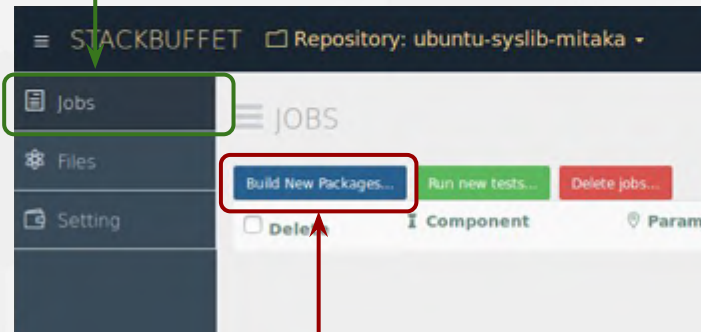
GPG Key Enable GPG Signature? GPG Private Key:

Click on **Save** button if you finish the repository configuration

You can also sign packages with your GPG keys

StackBuffet - Build Packages

Navigate to **Jobs** view



Click on Build New Packages button to build packages

Select the project you would like StackBuffet to build packages for you. Then click on **Build** button



StackBuffet - Build Packages

Navigate to **Jobs** view

The screenshot shows the StackBuffet interface with the 'Jobs' view selected. The table lists several build jobs for different OpenStack components. The 'Keystone[package]' job is highlighted with a red box, indicating it is currently running. The 'Show Log' button for this job is also highlighted with a blue box.

<input type="checkbox"/>	Delete	Component	Parameters	Running?	Start Time	Duration	Result	Action
<input type="checkbox"/>		Keystone[package]	version: 9.0.2 git_url: https://git.openstack.org/openstack/keystone	True	2016-07-09 21:27:25	0	None	Show Log
<input type="checkbox"/>		Glance[package]		Queued	None	0	None	Show Log
<input type="checkbox"/>		Cinder[package]		Pending	None	0	None	Show Log
<input type="checkbox"/>		Neutron[package]		Pending	None	0	None	Show Log
<input type="checkbox"/>		Nova[package]		Pending	None	0	None	Show Log
<input type="checkbox"/>		Horizon[package]		Pending	None	0	None	Show Log
<input type="checkbox"/>		Swift[package]		Pending	None	0	None	Show Log














You can check the package building log or stop the build job

Workers start picking up build jobs to run

StackBuffet - Use Packages

Place your own repository URL <http://aptira.stackbuffet.com/ubuntu-syslib-mitaka/> into browser

Index of /ubuntu-syslib-mitaka

Name	Last modified	Size	Description
 Parent Directory		-	
 cinder-api_8.0.0-1st.>	2016-07-08 14:46	4.2K	
 cinder-backup_8.0.0->	2016-07-08 14:46	4.2K	
 cinder-common_8.0.0->	2016-07-08 14:46	4.7K	
 cinder-scheduler_8.0.>	2016-07-08 14:46	4.2K	
 cinder-volume_8.0.0->	2016-07-08 14:46	6.9K	
 dists/	2016-07-08 14:43	-	
 glance-api_12.0.0-1s.>	2016-07-08 14:45	45K	
 glance-common_12.0.0->	2016-07-08 14:45	4.5K	
 glance-glare_12.0.0->	2016-07-08 14:45	15K	
 glance-registry_12.0.>	2016-07-08 14:45	17K	
 keystone_9.0.2-1stac.>	2016-07-08 14:43	27K	
 neutron-bgp-dragent.>	2016-07-08 14:47	6.4K	
 neutron-common_8.1.2.>	2016-07-08 14:47	22K	
 neutron-dhcp-agent_8.>	2016-07-08 14:47	8.2K	
 neutron-l3-agent_8.1.>	2016-07-08 14:47	4.4K	

You can browse the packages in the repository or download them directly

StackBuffet - Test Packages

Navigate to **Jobs** view

STACKBUFFET Repository: ubuntu-syslib-mitaka

Jobs Files Setting

Build New Packages... Run new tests... Delete jobs...

Component	Parameters	Running?	Start Time	Duration	Result	Action
Keystone[package]	version: 9.0.2 git_url: https://git.openstack.org/openstack/keystone	True	2016-07-09 21:27:25	0	None	Show Log

Click on **Run new tests** to choose what test to run

Select new test to run with your packages then click **Run** button

Run new tests

Unit Test keystone

Rally Rally Certification Test

Rally Certification Test

Rally Verify

Close Run!

Thank you!

Q&A

More questions? Please contact us on <https://aptira.com/contact/>