

Introducing GUTS & StackBuffet

OpenStack 遷移即服務與持續整合即服務之開源工具介紹

Joanna H. Huang, General Manager, Aptira
joanna@aptira.com

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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**”

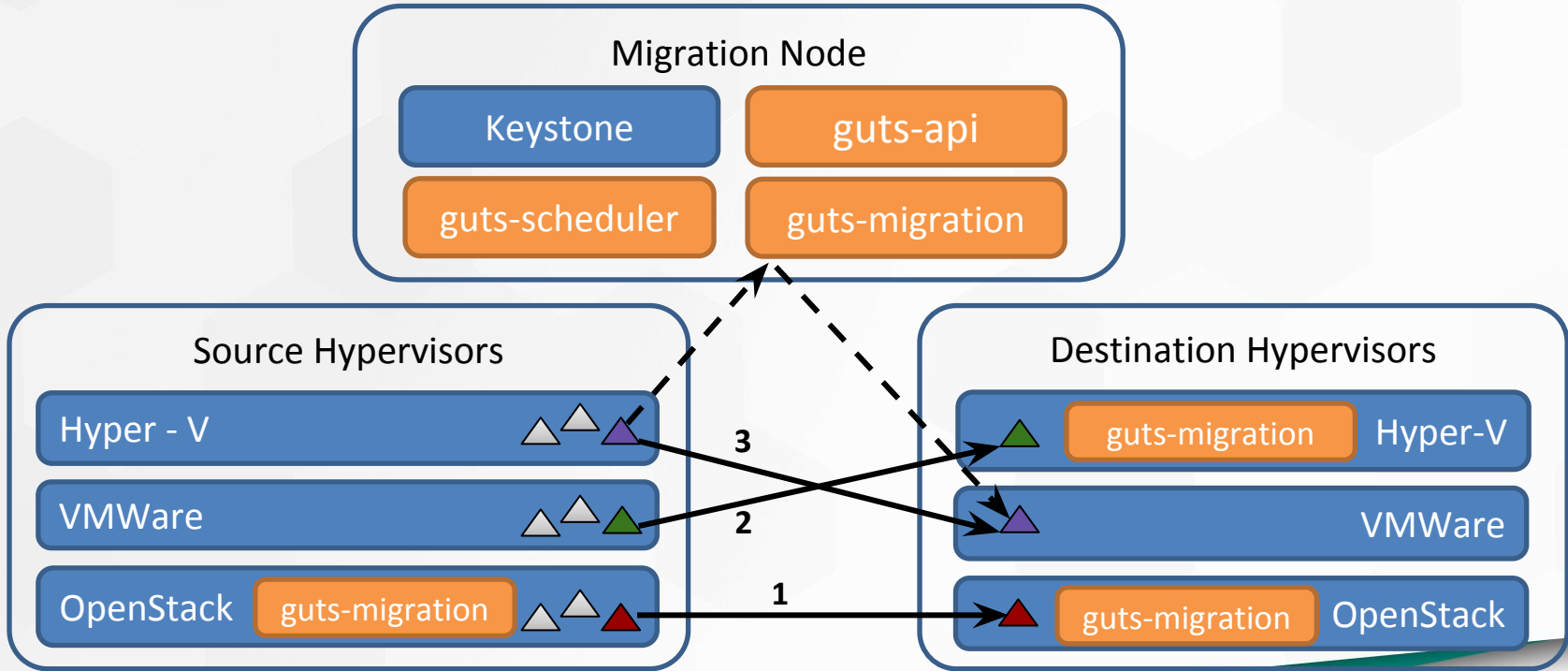
GUTS Use Cases

- 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

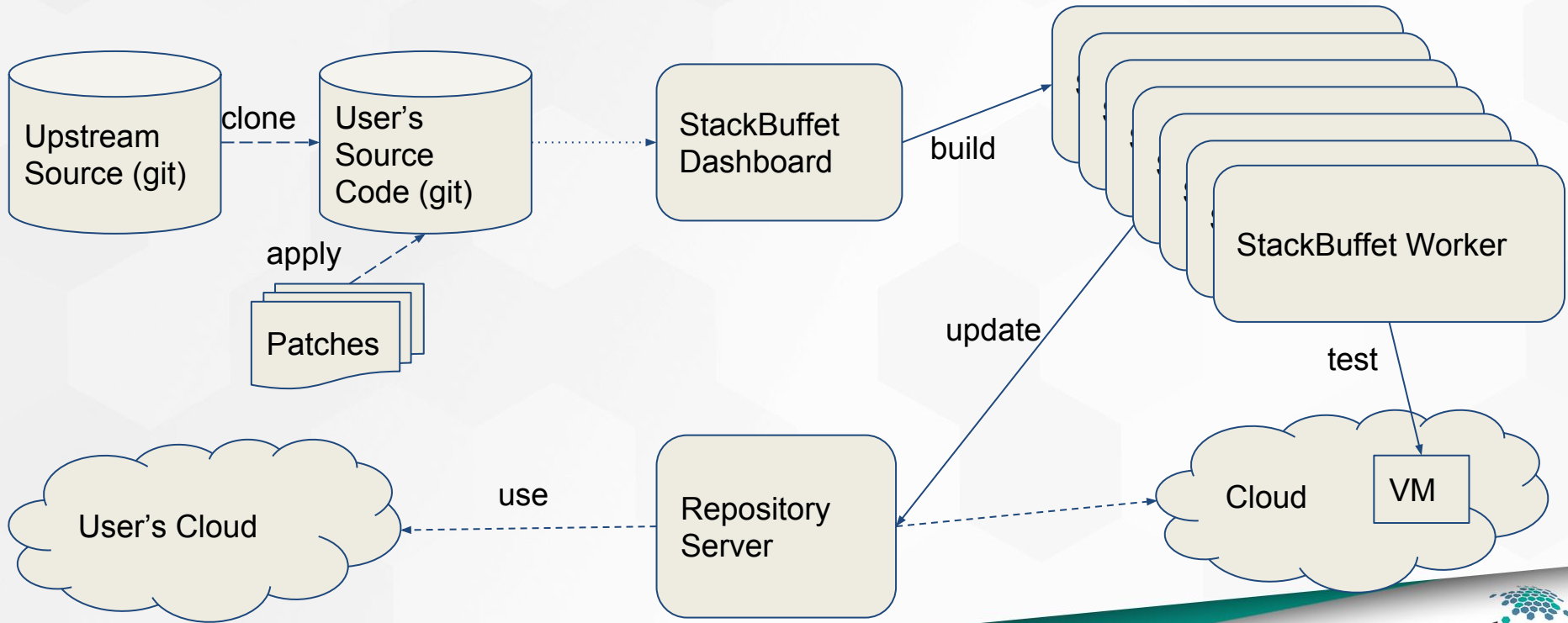
StackBuffet Overview

- 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

The screenshot shows the StackBuffet web interface. At the top, the breadcrumb is 'Repository: rpm-syslib-mitaka'. A dropdown menu is open, showing 'rpm-syslib-mitaka' and 'Add a new repository'. The 'Add a new repository' option is highlighted with a red box. A red arrow points from this option to a text instruction. In the background, a table lists repository builds with columns for Time, Duration, Result, and Action. A modal dialog titled 'Create new Repository' is open, containing the following fields:

- Repository Name: ubuntu-syslib-mitaka
- Operating System Type: Ubuntu
- Operating System Version: 14.04
- OpenStack Version: mitaka
- Profile: syslib

At the bottom of the dialog are 'Cancel' and 'Create' buttons. A green arrow points from the 'Create' button to a text instruction.

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 contains the text 'STACKBUFFET' on the left and a user profile icon labeled 'aptira' on the right. Below this, a secondary bar shows 'Repository: ubuntu-syslib-mitaka' with a dropdown arrow, highlighted by a red box. A red arrow points from the text above to this repository name. On the left side, a dark sidebar menu is visible, with the 'Jobs' option highlighted by a green box. A green arrow points from the 'Jobs' menu item to the main content area. The main content area is titled 'JOBS' and features a 'Delete jobs...' button. Below this is a table with columns: 'Delete', 'Component', 'Parameters', 'Running?', 'Start Time', 'Duration', 'Result', and 'Action'. The table is currently empty, indicating no jobs are running.

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

StackBuffet - Configure Repository

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

StackBuffet interface showing repository configuration for 'ubuntu-syslib-mitaka'. The 'Setting' view is selected in the sidebar. The configuration includes basic info (Operating System: Ubuntu 14.04, OpenStack Version: mitaka, Profile: syslib) and job settings for Keystone and Glance. The 'Keystone' section is highlighted with a red box, and the 'Glance' section is highlighted with a blue box. The 'Keystone' section shows 'Enabled?' with a checked checkbox. The 'Glance' section shows 'Enabled?' with a checked checkbox. The 'Keystone' section also shows a 'DELETE REPOSITORY' button. The 'JOB SETTING' section includes input fields for 'git_url', 'version', and 'release_number' for both Keystone and 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

The screenshot shows the StackBuffet web interface. On the left, a sidebar contains navigation options: Jobs, Files, and Setting. The 'Jobs' option is highlighted with a green box. In the main area, the 'JOBS' view is active, showing a 'Build New Packages...' button highlighted with a red box. A red arrow points from this button to the 'Build new packages' dialog box on the right. The dialog box contains a table of project details with checkboxes for each project.

Project	git_url	version	release_number						
<input checked="" type="checkbox"/> Keystone	https://git.openstack.org/openstack/keystone	9.0.2	1						
<input checked="" type="checkbox"/> Glance	https://git.openstack.org/openstack/glance	12.0.0	1						
<input checked="" type="checkbox"/> Cinder	https://git.openstack.org/openstack/cinder	8.0.0	1						
<input checked="" type="checkbox"/> Neutron	https://git.openstack.org/openstack/neutron	https://git.openstack.org/openstack/neutron-lbaas	https://git.openstack.org/openstack/neutron-fwaas	https://git.openstack.org/openstack/neutron-vpnaas	8.1.2	8.1.2	8.1.2	8.1.2	1
<input checked="" type="checkbox"/> Nova	https://git.openstack.org/openstack/nova	13.0.0	1						
<input checked="" type="checkbox"/> Horizon	https://git.openstack.org/openstack/horizon	9.0.1	1						
<input checked="" type="checkbox"/> Swift	https://git.openstack.org/openstack/swift	2.7.0	1						

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

STACBUFFET Repository: ubuntu-syslib-mitaka aptira

Jobs

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

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

<u>Name</u>	<u>Last modified</u>	<u>Size</u>	<u>Description</u>
 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

The screenshot shows the StackBuffet web interface. At the top, there is a navigation bar with 'STACKBUFFET' and 'Repository: ubuntu-syslib-mitaka'. A sidebar on the left contains 'Jobs', 'Files', and 'Setting'. The main area is titled 'JOBS' and contains three buttons: 'Build New Packages...', 'Run new tests...' (highlighted with a red box), and 'Delete jobs...'. Below these buttons is a table with columns: 'Component', 'Parameters', 'Running?', 'Start Time', 'Duration', 'Result', and 'Action'. A row is visible for 'Keystone[package]' with version '9.0.2' and git_url 'https://git.openstack.org/openstack/keystone'. The 'Running?' column shows 'True' and 'Start Time' is '2016-07-09 21:27:25'. An arrow points from the 'Jobs' sidebar item to the 'Run new tests...' button.

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

The dialog box titled 'Run new tests' is shown. It has a close button (X) in the top right. On the left, there are two radio buttons: 'Unit Test' (unchecked) and 'Rally' (checked). To the right of the 'Rally' radio button is a dropdown menu. The dropdown menu is open, showing three options: 'keystone', 'Rally Certification Test' (highlighted in orange), and 'Rally Verify'. At the bottom right of the dialog, there are 'Close' and 'Run!' buttons. An arrow points from the text 'Select new test to run with your packages then click Run button' to the 'Rally Certification Test' option in the dropdown menu.

Thank you!

Q&A

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