

Stratuslab tutorial Appliance overview

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Introduction

Definition

 A generic disk image with an <u>OS</u> and eventually some <u>packages</u>

Goal

An application stack easily deployable over a cloud

Benefits

- Propose an easy way to use cloud resources
- Standardize cloud usage

Requirements

- Disk image must be supported by targeted cloud
- Contextualization



Appliance lifecycle

Appliance lifecycle steps

- Creation
- Storage
- Transport
- Authorization



Several image formats

- RAW
- FVD
- QCow2
- VirtualBox VDI
- VMWare VMDK
- Microsoft VHD
- Ovf (standard)
- **–** ...



Requirements

- The appliance must contain contextualization tools
- Cloud infrastructure <u>may</u> propose contextualization services

Goals

- Customizing virtual machine
 - Network params
 - Ssh access
 - Start services etc.

Technics

- Cloud-init (https://help.ubuntu.com/community/CloudInit)
- Hepix (http://grid.desy.de/vm/hepix/vwg/doc/html/start/contextualisation-principles.shtml)

Appliances can be created

- From scratch
 - Hardest: should be avoid
- From a factory
 - Out of the box; one can customize provided appliance
 - → http://www.bitnami.org
- From a existing OS
 - Allow incremental generations
 - → http://manpages.ubuntu.com/manpages/lucid/en/man1/vmbuilder.1.html
 - → https://fedoraproject.org/wiki/Features/ApplianceTools
 - →https://github.com/jedi4ever/veewee



Good practices

- Remove all specificities
- stop unneeded services
- Include contextualization tools

Service/ package	Recommandations
Firewall	deactivated
SSH security	Allow electronic keys only
Boot protocol	DHCP
Contextualization	Cloud-init, Hepix
udev	rm -f /lib/udev/rules.d/*net-gen* rm -f /etc/udev/rules.d/*net.rules
selinux	deactivated
swap	Include swap disk in fstab
acpid	Needed for volume hot plug
Hostname	Clean hostname installation reference

Goals

- A public store
- An appliance sharing system
- An easy way to retrieve appliances



- Stores appliances metadata, including URI
 - → Does <u>not</u> store appliances themselves
- Publishes appliances metadata

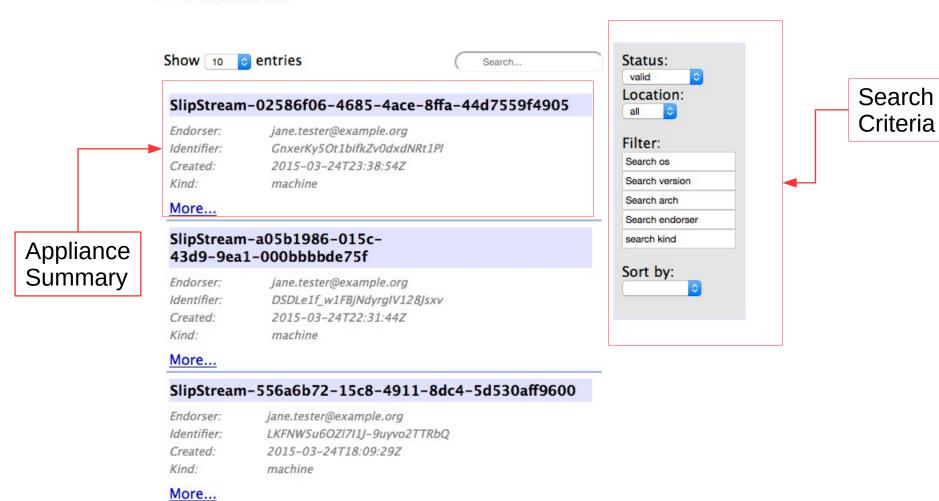
- A Web service
- A REST interface



Stratuslab marketplace (2/3)

https://marketplace.stratuslab.eu/marketplace/metadat a

MELAUALA





Stratuslab marketplace (3/3)

Appliance details

Endorsed by jane.tester@example.org at 2015-03-24T23:38:54Z

Identifier	GnxerKy5Ot1bifkZv0dxdNRt1Pl		
Type	base		
Kind	machine		
Format	raw		
OS	CentOS v6.6 x86_64		
Version	1.2.30		
Created	2015-03-24T23:38:54Z		
Valid	2015-09-22T23:38:54Z		
Hypervisor kvm			
Publisher	StratusLab		
Bytes	32212254720		
Checksum	MD5	3dee82c0eeb0167c922357fb69de9796	
	SHA-1	69f17ab2b2e4eb756e27e466fd1dc5d351b753e5	
	SHA-256	b02cf883451c54e61bc65b00241977b2dffcdafb 28bb01bafd76188ee3ca7a4b	
	SHA-512	151f8d3cb9581ae1abbdb00b71706aabd170e889 9fb177de337d22fc2aedd60a1364a7dd5b249a5b db3b85c6bfbad2e97232308c96688a4058c24dbe 66eb2572	
Location	pdisk:10.2	16.64.9:8445:19f4ea26-09b7-42e3-a7ce-b6da85365fec	
xml json			



Goal

The appliance must be transfered to the cloud infrastructure

Transparency

Stratuslab transport appliances transparently

Integrity

Appliance integrity is checked

Cache

- Transported once
- Locally stored in a persistent disk



Users

Find and use existing appliances

Creators

Publish appliances

Administrators

Verify appliances



Tutorial

http://stratuslab.readthedocs.org/en/latest/user-guide/06-storage-mgt.html

