

Test Plan for XenServer Fuel Plugin Ver 1.0.0

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XenServer Fuel Plugin

XenServer Fuel Plugin will help to deploy Mirantis OpenStack using the XenServer hypervisor to host virtual machines, making all the necessary changes to the Mirantis OpenStack to use the xenapi Nova compute driver.

Developer's Specification

See developers specification in the source code repository at <https://git.openstack.org/openstack/fuel-plugin-xenserver.git> (or <https://github.com/citrix-openstack/xenserver-fuel-plugin> if the openstack repository has not yet been created)

Limitations

This version of XenServer Fuel Plugin has not been certified to work with the Ceilometer, MongoDB or Murano additional services. Neutron is not supported in this version of the plugin. Future versions of the plugin will relax these restrictions.

Test strategy

Acceptance criteria

All tests that do not depend on additional services must pass.

Test environment, infrastructure and tools

All tests need to be run under a cluster of at least 4 XenServer machines with 2 physical NICs. As HA and multihost are enabled, a topology of 3 Controller Nodes + 3 Compute Nodes + 1 Storage Node will be recommended to be created as VMs on XenServer machines. Easy setup and management of those XenServers and VM Nodes can be achieved using XenCenter and a plugin, described below, to add an internal management network to VMs.

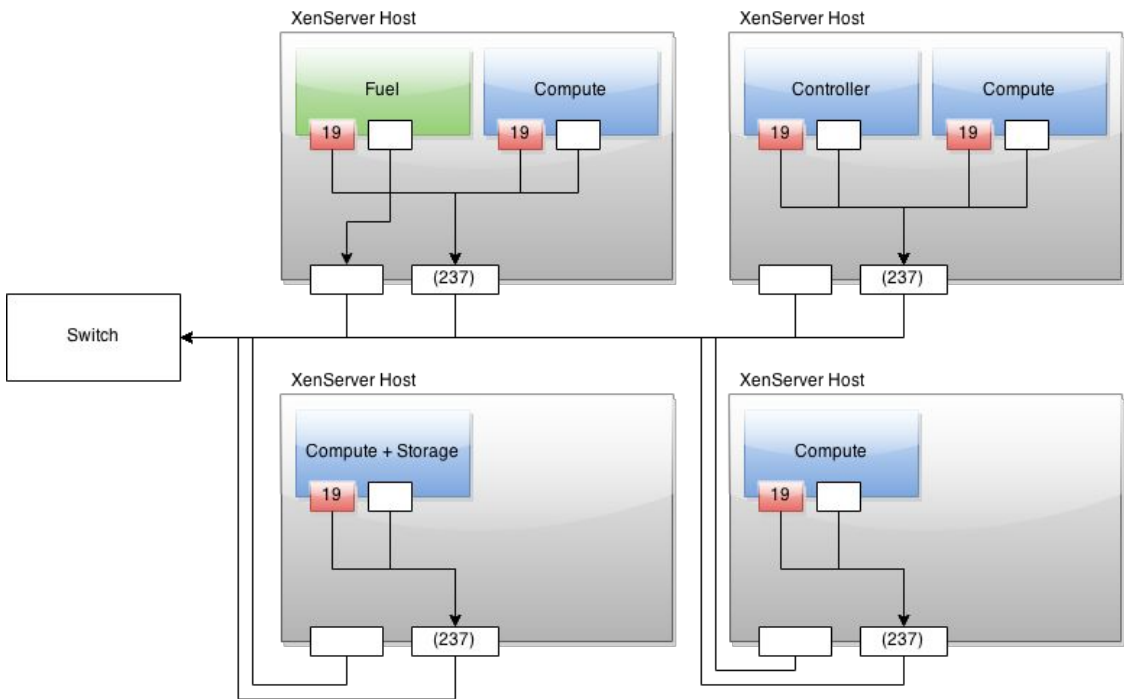
To simplify setup, the fuel master is also installed on the XenServer hosts (so XenServer hosts can fully control the network setup), but this is not required.

While many networking setups are expected to work, the following setup is used by this test plan:

eth0 / "Access network": Used to access the XenServer hosts and Fuel Master during setup

eth1 / "VLAN network": Carries all traffic during setup + use of OpenStack. Untagged packets are tagged at the switch to ensure isolation from eth0.

VLAN 19 / “PXE network”: Used for node bootstrapping.
br100: Named network to be added to VMs - VLAN on eth1.
Other networks are defined and used by the setup wizard, all as VLANs on eth1.



Product compatibility matrix

The plugin is compatible with MOS 6.1 and XenServer 6.5 SP1, with all hotfixes applied.

Type of testing

Prepare XenServers

Test Case ID	prepare_xs
Description	Verify that XenCenter is installed and XenServer Machines are well connected and configured
Steps	<ol style="list-style-type: none">1. Install and start XenCenter on your Windows PC2. Add new servers with a common root password in XenCenter3. Plug two physical NIC to each of all XenServer machines, make sure the cabling of all NIC 0 are attached to the 'access' network and NIC 1s are attached to the isolated, 'VLAN network'. It is recommended to rename these networks using XenCenter to

	<p>make the network topology clear.</p> <ol style="list-style-type: none"> 4. Add a new network, or rename an existing network to 'br100', using a VLAN on the 'VLAN network'. 'br100' will be added to all VMs, and traffic will normally flow through the nova-network VM. 5. Add a further network, with a different vlan tags that will be used for PXE.
Expected Result	All XenServer hosts are shown in XenCenter with network list of 'Access', 'VLAN', 'PXE' and 'br100'.

Prepare Fuel Master

Test Case ID	prepare_fm
Description	Verify that Fuel Master is well installed and connected.
Steps	<ol style="list-style-type: none"> 1. Upload Fuel ISO to a NFS/Samba server and make it accessible to your XenServer hosts. 2. Select a XenServer and click "New Storage" button, in the popup window check on CIFS/NFS ISO library and input NFS/Samba server path. 3. Create a new VM in XenCenter using the "Other Install Media" template (to ensure a HVM domain is created) with and PXE network as eth0 and 'access' network as eth1. In the Console Tab, insert Fuel ISO and install. 4. In fuel menu, enable eth1 with DHCP so the fuel master can be accessed over the 'access' network. 5. Select Fuel Master in XenCenter and switch to Console tab, login with prompted user and password 6. Visit http://ip_of_fuel_master:8000 in browser.
Expected Result	Fuel Web UI is set up and accessible.

Build XenServer Fuel Plugin

Test Case ID	build_xfp
Description	Verify that XenServer Fuel Plugin can be successfully built and output rpm installer.
Steps	<p>Follow the steps defined in the README.md of the fuel plugin. These steps are, at the time of writing, reproduced below:</p> <ol style="list-style-type: none"> 1. Install the required packages for plugin building <ol style="list-style-type: none"> a. Ubuntu: <pre>apt-get install -y createrepo rpm dpkg-dev python-pip sshpass</pre> b. CentOS:

	<pre>yum install -y createrepo rpm rpm-build dpkg-devel python-pip sshpas</pre> <p>2. Create a virtual environment to build the plugin</p> <pre>virtualenv TEST_ENV source TEST_ENV/bin/activate</pre> <p>3. Clone the Citrix fork of FPB (needed to add a post-install hook to the RPM)</p> <pre>git clone https://github.com/citrix-openstack/fuel-plugins.git pip install fuel-plugins/fuel_plugin_builder/</pre> <p>4. Clone and build the plugin</p> <pre>git clone https://github.com/citrix-openstack/xenserver-fuel-plugin.git fpb --check xenserver-fuel-plugin fpb --build xenserver-fuel-plugin</pre>
Expected Result	xenserver-fuel-plugin-1.0-1.0.0-1.noarch.rpm is generated under xenserver-fuel-plugin directory.

Install XenServer Fuel Plugin

Test Case ID	insall_xfp
Description	Verify that XenServer Fuel Plugin can be installed into Fuel Master, and the new OpenStack release is registered.
Steps	<pre>scp xenserver-fuel-plugin-1.0-1.0.0-1.noarch.rpm root@fuel-master:/tmp fuel plugins --install xenserver-fuel-plugin-1.0-1.0.0-1.noarch.rpm</pre>
Expected Result	<pre>fuel plugins id name version package_version --- ----- ----- ----- 2 xenserver-fuel-plugin 1.0.0 2.0.0 fuel rel id name state operating_system version --- ----- ----- ----- 2 Juno on Ubuntu 14.04.1 available Ubuntu 2014.2.2-6.1 9 Juno+Citrix XenServer on Ubuntu 14.04.1 available Ubuntu 2014.2.2-6.1 1 Juno on CentOS 6.5 available CentOS 2014.2.2-6.1</pre>

Prepare Nodes

Test Case ID	prepare_nodes
Description	Verify all controller/compute/storage nodes are ready for PXE install.
Steps	<ol style="list-style-type: none">1. Create 3 new VMs in XenCenter in different XenServers and name them Controller1, Controller2, Controller32. Create 3 new VMs in XenCenter in different XenServers and name them Compute1, Compute2, Compute33. Create 1 new VM in XenCenter and name it Storage14. Add 'PXE' network as eth0 and 'VLAN network' as eth 1 to each of new VMs created above.
Expected Result	All nodes are shown in XenCenter with 'PXE network' as eth0 and 'VLAN network' as eth1.

Install XenCenter HIMN plugin

Test Case ID	install_xcp
Description	Verify XenCenter HIMN plugin is installed to Windows.
Steps	<ol style="list-style-type: none">1. Download SetupHIMN from http://ca.downloads.xensource.com/OpenStack/Plugins/2. Install MSI to your XenCenter3. Restart XenCenter
Expected Result	Right click on any selected VMs, there will be a menu item "Add management network".

Add Host Internal Management Network to Compute Nodes

Test Case ID	add_himn
Description	Verify (or add) Host Internal Management Network is added to all Compute Nodes.
Steps	<ol style="list-style-type: none">1. Select Compute1, Compute2, Compute3 in XenCenter2. Right click on above nodes and select "Add management network" menu.3. In the popup window, after status detection, make sure all selected Compute nodes are checked on. Click on "Add management network" button.4. After processing, the status column should be shown as

	management network is added with new generated MAC address 5. Close the management network window
Expected Result	The wizard will report success, however the networks may not be visible in XenCenter.

Create an OpenStack environment with XenServer Fuel Plugin

Test Case ID	create_env
Description	Verify that an OpenStack environment created with XenServer Fuel Plugin can have XenServer options and options of hypervisor/network/storage/additional services are disabled.
Steps	<ol style="list-style-type: none"> 1. Create new OpenStack environment Fuel Web UI and select "Juno on Ubuntu 14.04.1 (2014.2.2-6.1)" in the OpenStack release dropdown list 2. Hypervisor is default to QEMU, Network is default to Nova Network and Storage is default to Cinder. Other options are disabled. 3. In Nodes Tab, add all 3 Controller Nodes, 3 Compute Nodes and 1 Storage Node. 4. Select all Compute Nodes and click "Configure Interfaces", drag Storage/Management/VM(fixed) network from default eth0 to eth1. Leave PXE on eth0. No networks should be assigned to the final interface. 5. Select all Controller and Storage Nodes and click "Configure Interfaces", drag Storage/Management/VM(fixed) network from default eth0 to eth1. Leave PXE on eth0. 6. Choose FlatDHCP Manager in Networks Tab, set the vlan tags according to your network interfaces previous set and make sure network range will not be conflicting with other systems in the same lab. Then click "Verify Networks" button. 7. In the Settings Tab, scroll down to the bottom and input the credential applied to all your XenServer hosts. 8. Click "Deploy Changes" button
Expected Result	Deploy of nodes all succeed

Verify hypervisor type

Test Case ID	verify_hypervisor
Description	Verify that all hypervisors are identified by OpenStack as 'xen'.
Steps	<ol style="list-style-type: none"> 1. Login to Horizon with admin user when OpenStack deployment is

	finished. 2. Enter into Admin->Hypervisors
Expected Result	The Type column should show xen for all hypervisors.

Create guest instances

Test Case ID	create_instances
Description	Verify that new environment can create guest instances.
Steps	<ol style="list-style-type: none"> 1. Create an instance with image of TestVM and flavor of m1.tiny in either of Horizon or Controller Node. 2. Find the instance in XenCenter and switch to Console Tab. 3. Login with the username and password that prompted in the terminal screen. 4. Ping out to 8.8.8.8
Expected Result	Guest instances can ping out.

Verify Fuel Health Checks

Test Case ID	verify_health_checks
Description	Ensure that all applicable health checks pass
Steps	<ol style="list-style-type: none"> 1. Within the Fuel Master, select the appropriate environment 2. Run all health checks and wait for completion
Expected Result	All health checks, except those requiring additional services (e.g. Ceilometer) and those where the configuration has not been changed from the defaults, pass

Mandatory Tests

Install plugin and deploy environment

Covered above.

Modifying env with enabled plugin (removing/adding controller nodes)

Covered above.

Modifying env with enabled plugin (removing/adding compute nodes)

Covered above.

Uninstall of plugin with deployed environment

Test Case ID	uninstall_plugin_with_deployed_env
Description	Verify XenServer Fuel Plugin cannot be uninstalled before all dependant environments are removed.
Steps	<code>fuel plugins --remove xenserver-fuel-plugin==1.0.0</code>
Expected Result	400 Client Error: Bad Request (Can't delete plugin which is enabled for some environment.)

Uninstall of plugin

Test Case ID	uninstall_plugin
Description	Verify XenServer Fuel Plugin can be uninstalled as well as XenServer OpenStack release.
Steps	<pre>fuel plugins --remove xenserver-fuel-plugin==1.0.0 fuel plugins id name version package_version --- ----- ----- ----- fuel rel id name state operating_system version --- ----- ----- ----- ----- ----- 2 Juno on Ubuntu 14.04.1 available Ubuntu 2014.2.2-6.1 1 Juno on CentOS 6.5 available CentOS 2014.2.2-6.1</pre>
Expected Result	Both of plugin and release are removed.

Appendix

XenServer Fuel Plugin GitHub: <https://github.com/citrix-openstack/xenserver-fuel-plugin> or <https://git.openstack.org/openstack/fuel-plugin-xenserver.git>

XenCenter HIMN Plugin GitHub: <https://github.com/citrix-openstack/xencenter-himn-plugin>
Plugin download server: <http://ca.downloads.xensource.com/OpenStack/Plugins/>

Revision history

Version	Revision Date	Editor	Comment
0.1	18.09.2015	John Hua(john.hua@citrix.com)	First draft