



Foreman

Martin Souchal, 3 octobre 2017





Foreman c'est quoi ?



Installation



Initial
configuration



Updates and drift
management



Foreman c'est quoi ?



Provisioning



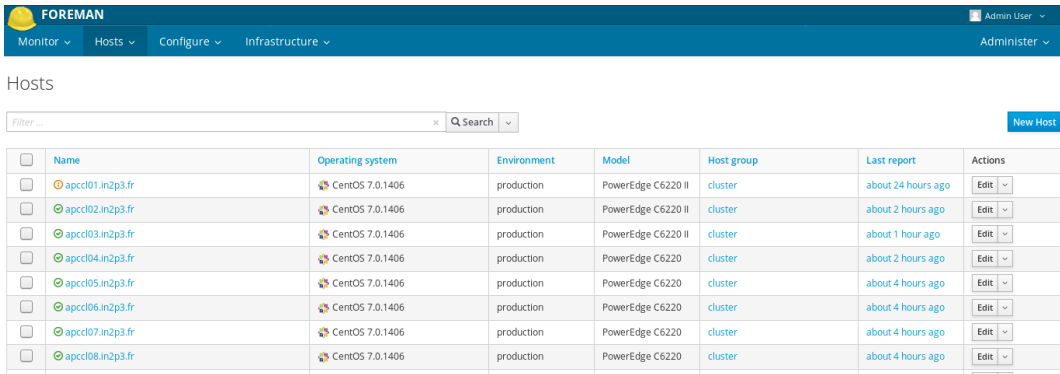
Configuration



Monitoring

Provisioning

- Provisionne des machines presque partout :
 - bare metal (kickstart)
 - cloud (openstack, AWS)
 - virtualisation (KVM, VMWare)
- Extensible avec des plugins (Docker, ...)



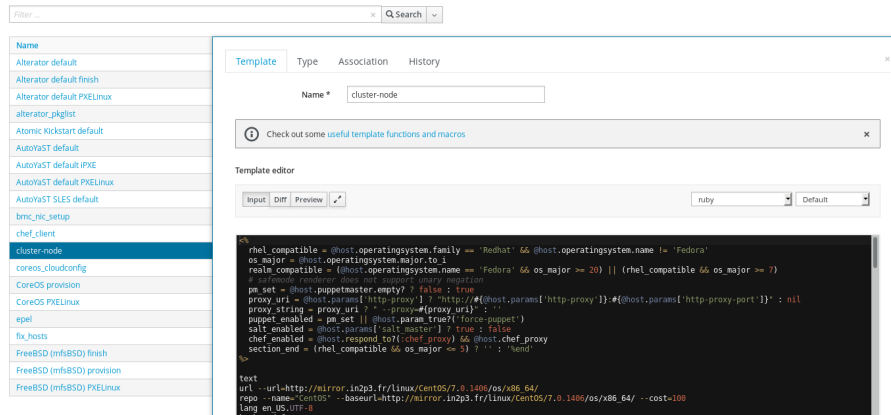
The screenshot shows the Foreman web interface. The top navigation bar includes 'Monitor', 'Hosts', 'Configure', and 'Infrastructure'. The user is logged in as 'Admin User' with an 'Administer' dropdown. Below the navigation bar, the page title is 'Hosts'. There is a search bar with a 'Search' button and a 'New Host' button. The main content is a table listing hosts with columns for Name, Operating system, Environment, Model, Host group, Last report, and Actions.

<input type="checkbox"/>	Name	Operating system	Environment	Model	Host group	Last report	Actions
<input type="checkbox"/>	apcc101.in2p3.fr	CentOS 7.0.1406	production	PowerEdge C6220 II	cluster	about 24 hours ago	Edit
<input type="checkbox"/>	apcc102.in2p3.fr	CentOS 7.0.1406	production	PowerEdge C6220 II	cluster	about 2 hours ago	Edit
<input type="checkbox"/>	apcc103.in2p3.fr	CentOS 7.0.1406	production	PowerEdge C6220 II	cluster	about 1 hour ago	Edit
<input type="checkbox"/>	apcc104.in2p3.fr	CentOS 7.0.1406	production	PowerEdge C6220	cluster	about 2 hours ago	Edit
<input type="checkbox"/>	apcc105.in2p3.fr	CentOS 7.0.1406	production	PowerEdge C6220	cluster	about 4 hours ago	Edit
<input type="checkbox"/>	apcc106.in2p3.fr	CentOS 7.0.1406	production	PowerEdge C6220	cluster	about 4 hours ago	Edit
<input type="checkbox"/>	apcc107.in2p3.fr	CentOS 7.0.1406	production	PowerEdge C6220	cluster	about 4 hours ago	Edit
<input type="checkbox"/>	apcc108.in2p3.fr	CentOS 7.0.1406	production	PowerEdge C6220	cluster	about 4 hours ago	Edit

Provisioning

- PXE - kickstart
- Images disques (ISO)
- Virtualisation, cloud (créer VM)
- Orchestration (DNS, DHCP, TFTP)
- On définit un ensemble de template pour un host ou un hostgroup
- On définit les paramètres réseau (MAC adresse)
- On branche et on déploie

Provisioning Templates



The screenshot shows a provisioning interface. On the left is a list of templates, and on the right is a template editor for the 'cluster-node' template.

Template List:

- alterator default
- alterator default finish
- alterator default PXELinux
- alterator_piglist
- Atomic Kickstart default
- AutoYaST default
- AutoYaST default IPXE
- AutoYaST default PXELinux
- AutoYaST SLES default
- bmc_rhc_setup
- chef_client
- cluster-node**
- coreos_cloudonfig
- CoreOS provision
- CoreOS PXELinux
- epel
- fx_hosts
- FreeBSD (mfBSD) finish
- FreeBSD (mfBSD) provision
- FreeBSD (mfBSD) PXELinux

Template Editor (cluster-node):

```
rhel_compatible = @host.operatingsystem.family == 'Redhat' && @host.operatingsystem.name != 'Fedora'
os_major = @host.operatingsystem.major.to_i
real_compatible = (@host.operatingsystem.name == 'Fedora' && os_major == 20) || (rhel_compatible && os_major == 7)
# autoinstall responder does not support proxy configuration
pn_set = @host.puppetmaster.empty? ? false : true
proxy_uri = @host.system['http-proxy'] ? 'http://#{@host.params['http-proxy']}':#{@host.params['http-proxy-part']}: nil
proxy_string = proxy_uri ? "proxy=#{proxy_uri}" : ''
puppet_enabled = pn_set || @host.param_true?('force-puppet')
salt_enabled = @host.params['salt-master'] ? true : false
chef_enabled = @host.respond_to?(:chef_proxy) && @host.chef_proxy
section_end = (rhel_compatible && os_major == 3) ? '' : 'end'
%>
```

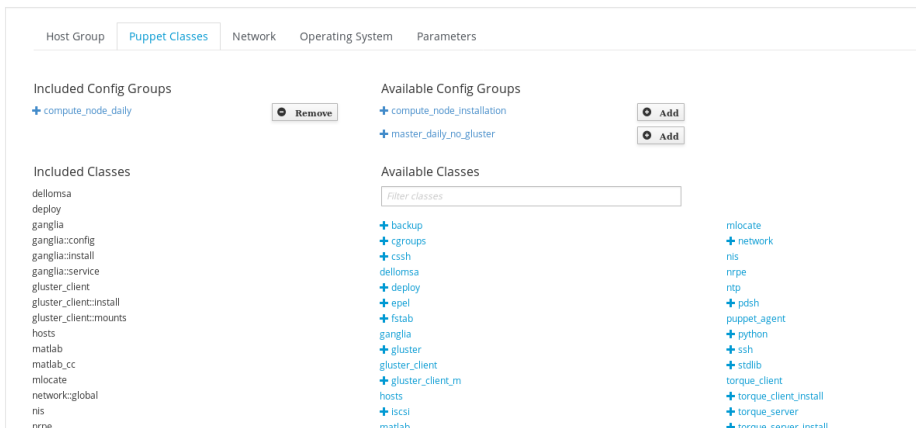
Below the code, there is a 'text' section with the following content:

```
url --url=http://mirror.ln2p3.fr/Linux/CentOS/7.0.1406/os/x86_64/
repo --name=centos --baseurl=http://mirror.ln2p3.fr/Linux/CentOS/7.0.1406/os/x86_64/ --cost=100
lang en_US.UTF-8
```

Configuration

- Historiquement Puppet
- Plugins pour Chef, Salt, Ansible
- Gestion des classes et des paramètres
- Enregistrement des hôtes automatiquement
- Gestion d'inventaire
- Remplace le site.pp

Edit cluster



The screenshot displays the 'Edit cluster' interface with the 'Puppet Classes' tab selected. The interface is organized into several sections:

- Host Group:** Puppet Classes (selected), Network, Operating System, Parameters.
- Included Config Groups:** A list containing 'compute_node_daily' with a '+ Remove' button.
- Available Config Groups:** A list containing 'compute_node_installation' and 'master_daily_no_gluster', each with an '+ Add' button.
- Included Classes:** A list of classes including dellomsa, deploy, ganglia, ganglia::config, ganglia::install, ganglia::service, gluster_client, gluster_client::install, gluster_client::mounts, hosts, matlab, matlab_cc, mlocate, network::global, nis, and nrsn.
- Available Classes:** A search bar labeled 'Filter classes' and a list of classes including backup, cgroups, csh, dellomsa, deploy, epel, fstab, ganglia, gluster, gluster_client, gluster_client_m, hosts, lscsi, matlab, mlocate, network, nis, nrpe, ntp, pdsh, puppet_agent, python, ssh, stdlib, torque_client, torque_client_install, torque_server, and torque_server_install.

Monitoring

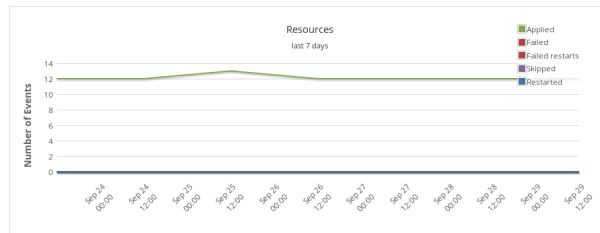
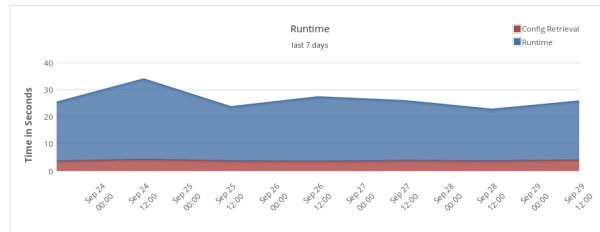
- Gestion des alertes
- Gestion des logs
- Graphiques
- Statistiques

apccd01.in2p3.fr

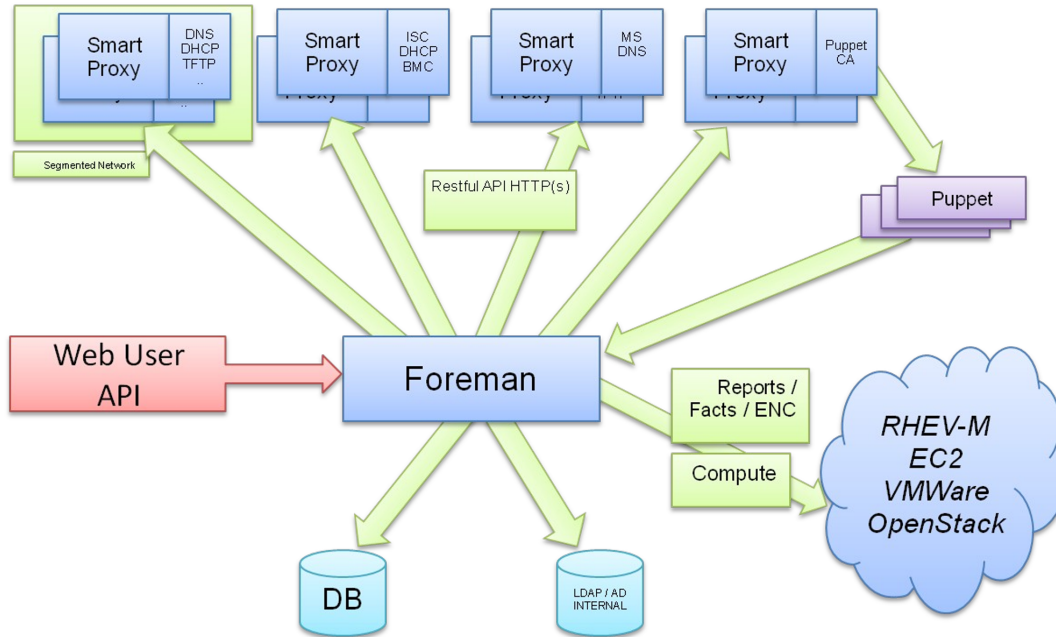
Found 7 reports from the last 7 days

Details				
Audits	Facts	Reports	YAML	
Properties		Metrics	Templates	NiCs
Properties				
Status	OK			
Build	Installed			
Configuration	Active			
Domain	in2p3.fr			
IP Address	134.158.186.127			
MAC Address	e0:db:55:fc:1c:2e			
Puppet Environment	production			
Host Architecture	x86_64			
Operating System	CentOS 7.0.1406			
PXE Loader	PXELinux BIOS			
Host group	cluster			
Owner	Admin User			

Edit Clone Build Run puppet Delete



Architecture





Historique

- Logiciel libre & gratuit
- Démarré en 2009
- 213 contributeurs, soutenu par Red Hat
- Utilisé au CERN, chez Red Hat, Mozilla, etc...

Technologie

- Ruby on rails
- Concu pour OS UNIX
- Dépots pour RHEL/Debian
- foreman-install



Définition et classification du parc

- Profil de machine via hostgroups
- Application d'un profil à un hostgroupe
- Profil constitué de templates de déploiement, et de classes de configuration
- Utilisation de variables commune pour une machine (puppet factor)
- Gestion des paramètres par machine (IP, hostname, etc...)
- Audit et gestion de comptes

Paramètres des classes Puppet

Classe Puppet	Nom	Valeur	Omit
apache	default_vhost	<input type="checkbox"/> false	<input checked="" type="checkbox"/>
	listen_port	<input type="checkbox"/> 443	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
ntp	servers	<input type="checkbox"/> ["134.158.243.70"]	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
sonarqube	context_path	<input type="checkbox"/> /sonar	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
	version	<input type="checkbox"/> 5.6.7	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
ssl_certs	cert	<input type="checkbox"/> /etc/pki/ssl/certs/ssl/sslserver.crt	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
	cert_request	<input type="checkbox"/> /etc/pki/ssl/certs/ssl/sslserver.csr	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
	key	<input type="checkbox"/> /etc/pki/ssl/certs/ssl/sslserver.key	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
	multiple_names	<input type="checkbox"/> ["apceuidccapp.in2p3.fr", "ccodeen10.in2p3.fr"]	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
	self_signed	<input type="checkbox"/> true	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>



Edit apcc101.in2p3.fr

Unmanage host

Host	Puppet Classes	Interfaces	Operating System	Parameters	Additional Information																																												
		<table border="1"><thead><tr><th>Identifier</th><th>Type</th><th>MAC address</th><th>IPv4 address</th><th>IPv6 address</th><th>FQDN</th><th>Actions</th></tr></thead><tbody><tr><td> bond0</td><td>Bond virtual</td><td>a0:36:9f:36:23:78</td><td>192.168.0.124</td><td>fe80::a236:9fff:fe36:2378</td><td></td><td>Edit Delete</td></tr><tr><td> em1</td><td>Interface physical</td><td>e0:db:55:fc:1c:2e</td><td>134.158.186.127</td><td>fe80::a2db:55ff:fefc:1c2e</td><td>apcc101.in2p3.fr</td><td>Edit Delete</td></tr><tr><td> em2</td><td>Interface physical</td><td>e0:db:55:fc:1c:2f</td><td></td><td></td><td></td><td>Edit Delete</td></tr><tr><td> plp1</td><td>Interface physical</td><td>a0:36:9f:36:23:78</td><td></td><td></td><td></td><td>Edit Delete</td></tr><tr><td> plp2</td><td>Interface physical</td><td>a0:36:9f:36:23:7a</td><td></td><td></td><td></td><td>Edit Delete</td></tr></tbody></table>	Identifier	Type	MAC address	IPv4 address	IPv6 address	FQDN	Actions	bond0	Bond virtual	a0:36:9f:36:23:78	192.168.0.124	fe80::a236:9fff:fe36:2378		Edit Delete	em1	Interface physical	e0:db:55:fc:1c:2e	134.158.186.127	fe80::a2db:55ff:fefc:1c2e	apcc101.in2p3.fr	Edit Delete	em2	Interface physical	e0:db:55:fc:1c:2f				Edit Delete	plp1	Interface physical	a0:36:9f:36:23:78				Edit Delete	plp2	Interface physical	a0:36:9f:36:23:7a				Edit Delete					
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plp2	Interface physical	a0:36:9f:36:23:7a				Edit Delete																																											
		+ Add interface																																															

Questions

