

Ferramentas para Automação de Datacenter

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Motivação

- Agilidade
- Custos operacionais
- Padronização e conformidade contínua
- Tarefas repetitivas – exaustão e erros
- *Downtime*
- Rastreabilidade
- Escalabilidade e *Recovery*



Premissas

- Mundo “físico” e virtual
- Automação pensando na topologia
- Uso do potencial da infraestrutura
- Modular

Escopo

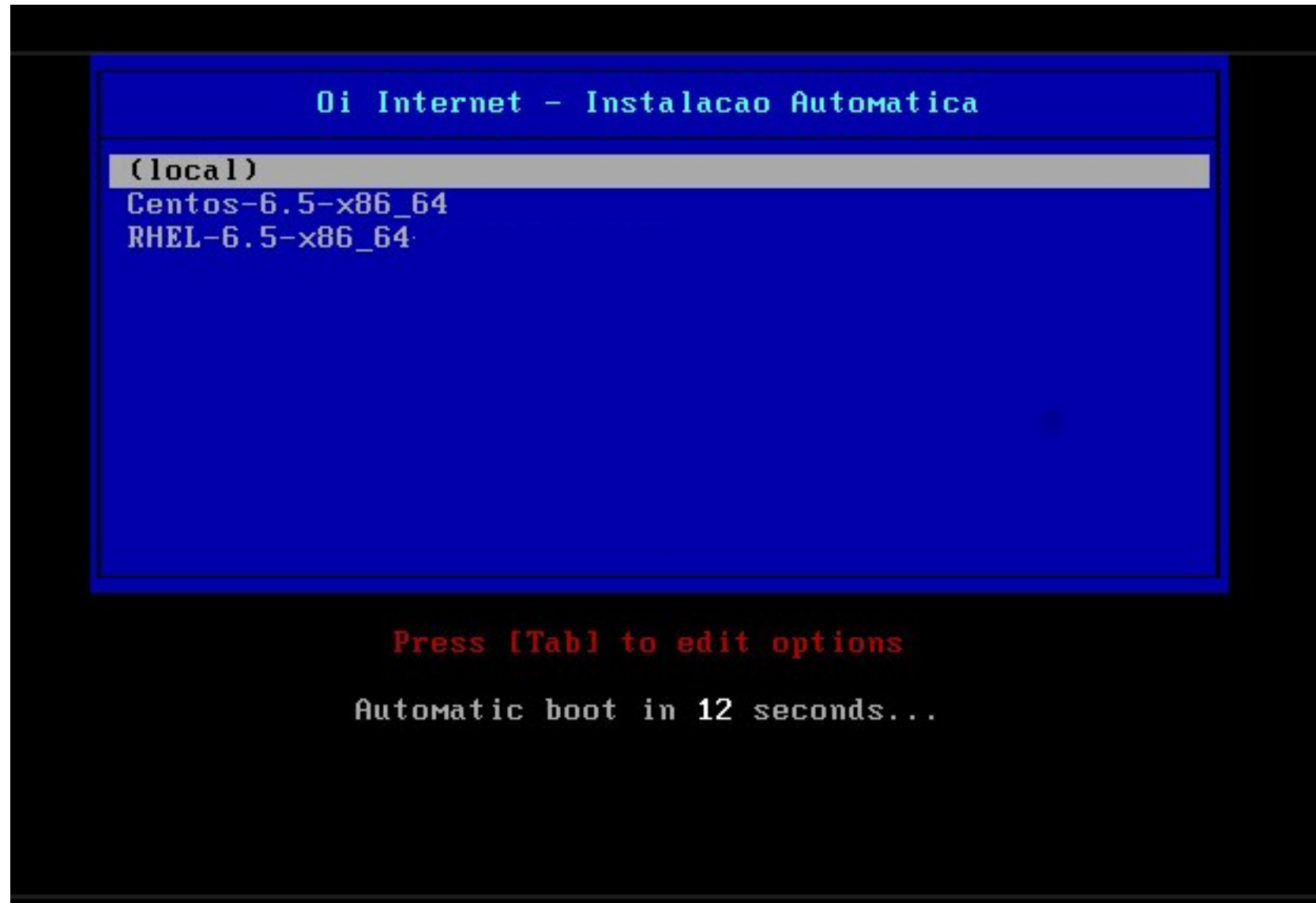
- ✓ Instalação do S.O.
- ✓ Configurações de IP e DNS
- ✓ Checklist de segurança
- ✓ *Deploy* em massa de apps e pacotes
- ✓ Manutenção e versionamento de arquivos de configuração
- ✓ Rede
- ✓ Storage
- ✓ Balanceadores de carga

S.O. - Instalação

- Cobbler – <http://www.cobblerd.org>
- Instalação de distros Linux via PXE / Kickstart
- Gerência de tftp e dhcp
- *Profiles* – Distro + Kickstart
- Tarefas *post-install*

```
$ cobbler system add --name=server1 --mac=00:11:22:AA:BB:CC --profile=Centos-6.5 x86_64
```

S.O. - Instalação



IP e DNS

- OpenNetAdmin - <http://opennetadmin.com/>
 - *IPv6 Ready*
 - Vlans, subnets, ips, dns direto e reverso
 - Interface web ajax
 - CLI – scripting, interação remota

```
$ dcm.pl -r host_add host=server ip=X.X.X.X notes=http://x.x.x.x
```


IP e DNS

Menu Quick Search... |

ONA

Newer Version Available ▾






Record Counts ▲


Where to begin ▲



Subnets	14
Hhosts	129
Interfaces	371
DNS Records	499
DNS Domains	8
DHCP Pools	0
Blocks	0
VLAN Campuses	1
Config Archives	0

If you are wondering where to start, try one of these tasks:

-  [Add a DNS domain](#)
-  [Add a new subnet](#)
-  [Add a new host](#)
-  [Perform a search](#)
-  [List Hosts](#)

- If you need further assistance, look for the  icon in the title bar of windows.
- You can also try the main help index located [here](#)

IP e DNS

Menu Quick Search...

Trace:

Work Space: display_host: mysql-db-1

mysql-db-1.dev.infra

Device Type VMware, vm - Centos (server)
Notes <https://puppetmaster/hosts/mysql-db-1.dev.infra>

Host Actions

- Splunk
- Cacti Graph
- Wiki Page

//

Associated DNS records (2)

Name	Time to Live	Type	Data
mysql-db-1.dev.infra.	86400 seconds	A	
.10.in-addr.arpa.	86400 seconds	PTR	mysql-db-1.dev.infra.

Add DNS record

Associated interfaces (1)

Interface	Subnet	MAC	Name
10.	OIINTERNET_DEV_3857	00:50:56:86:2A:C0	eth0

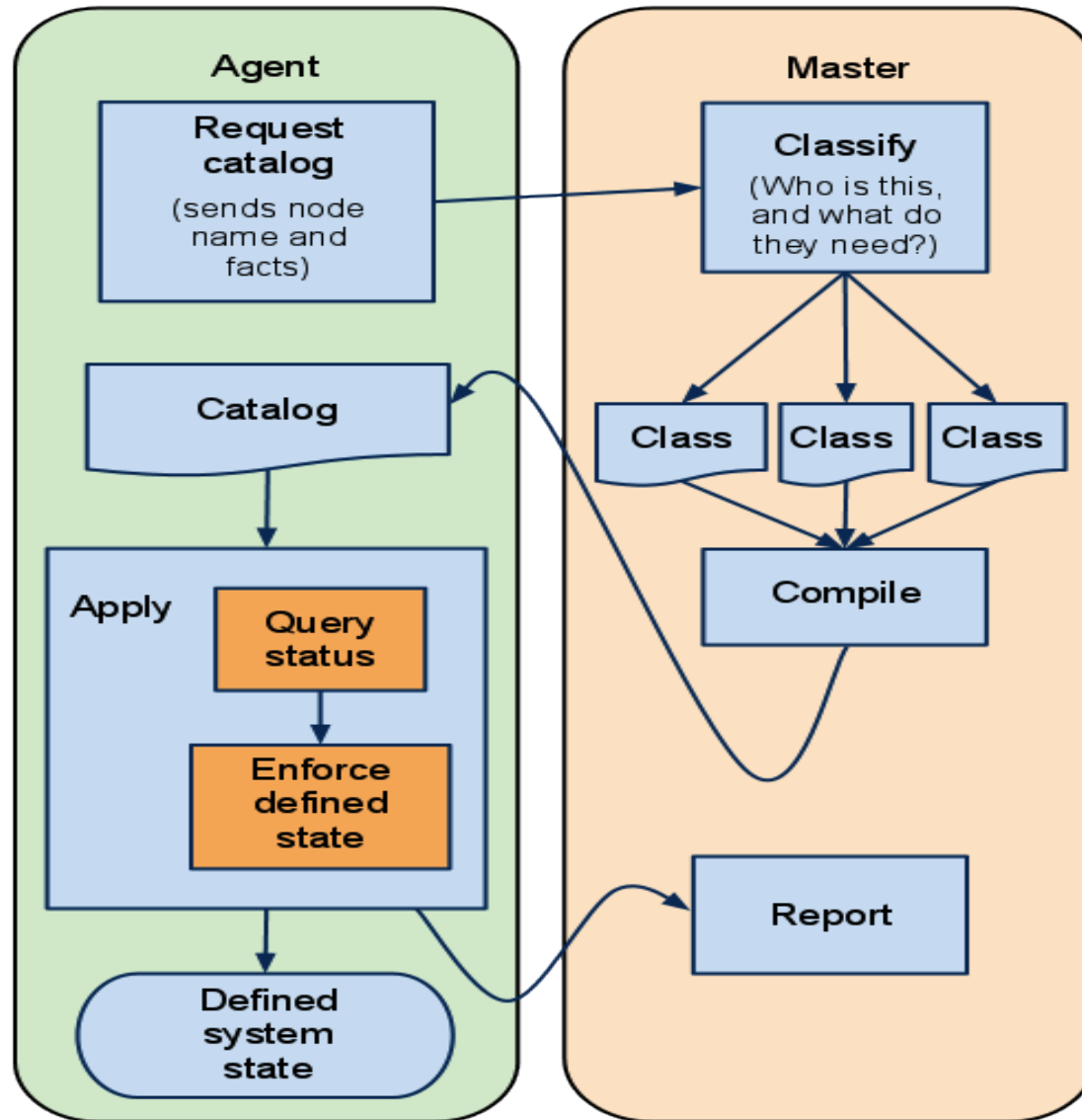
Add interface

Pacotes e Configurações

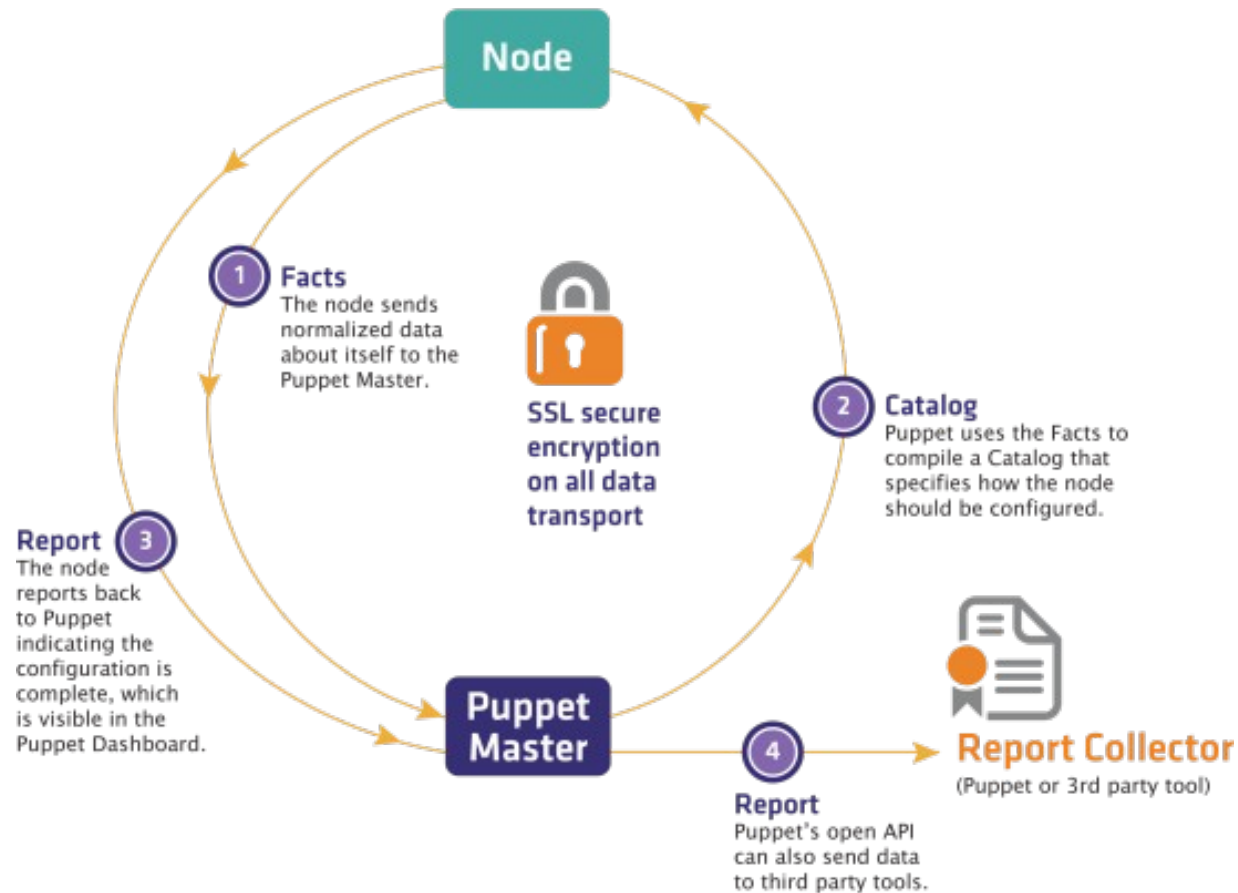
Puppet - <http://puppetlabs.com/>

- Puppet master – *modules, classes, nodes, catalogs* (SVN)
- Puppet agent – requisita o seu *catalog* periodicamente
- Linguagem declarativa – *define, enforce, report*
- *Deploy* em massa de apps, pacotes, arquivos (e mais..)
- Configurações aplicadas para 1-N hosts agrupados
- *Facts* – variáveis baseadas no host
- Conformidade contínua

Pacotes e Configurações



Pacotes e Configurações



Pacotes e Configurações

- Puppet Master

site.pp

```
node 'web-1.example.com' {  
  include default  
  include httpd  
}  
  
node /^web-*/ {  
  include default  
  include httpd  
}
```

Pacotes e Configurações

modules/default/manifests/init.pp

```
class iptables {  
    package { 'iptables':  
        ensure => installed,  
    }  
  
    service { 'iptables':  
        name     => iptables,  
        ensure   => running,  
        enable   => true,  
        subscribe => File['/etc/sysconfig/iptables'],  
    }  
  
    file { '/etc/sysconfig/iptables':  
        owner => "root",  
        group => "root",  
        source => "puppet:///modules/default/files/iptables"  
    }  
  
class tcpwrappers {  
    file { '/etc/hosts.allow':  
        owner => "root",  
        group => "root",  
        mode  => 0644,  
        source => "puppet:///modules/default/files/hosts.allow"  
    }  
}
```

Pacotes e Configurações

modules/httpd/manifests/init.pp

```
class httpd {  
    class httpd {  
        package { 'httpd':  
            ensure => installed,  
        }  
  
        file { '/etc/httpd/conf.d':  
            owner => "root",  
            group => "root",  
            recurse => true,  
            purge => true,  
            mode => 0644,  
            source => [ "puppet:///modules//etc/httpd/conf.d",  
        ]  
    }  
  
    service { 'httpd':  
        name => 'httpd',  
        ensure => running,  
        enable => true,  
        require => Package["httpd"],  
    }  
}
```


Pacotes e Configurações

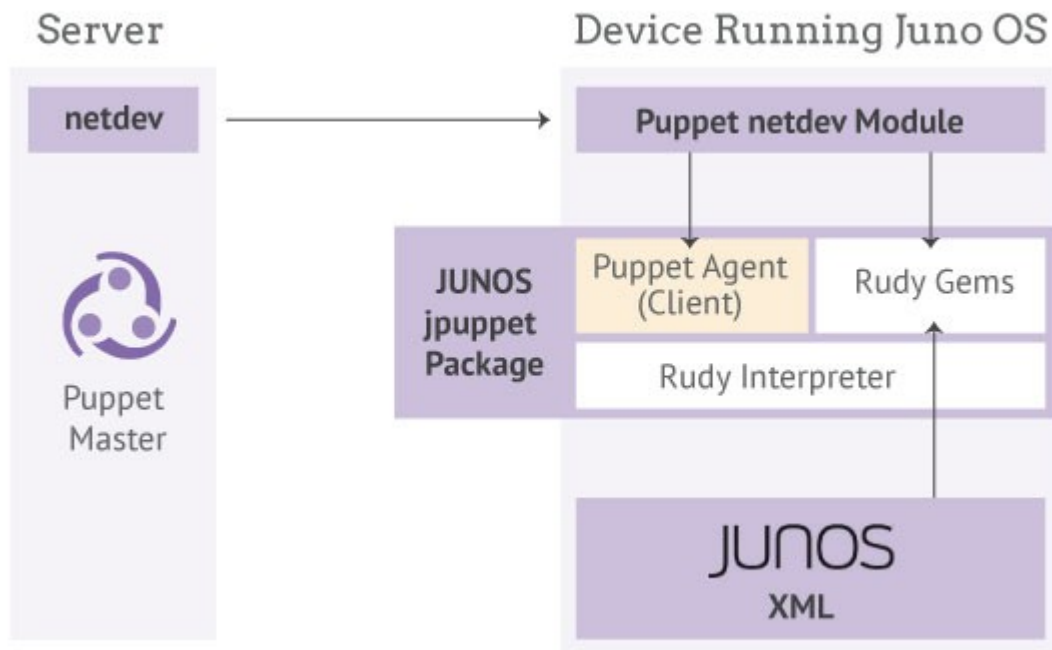
```
class nc {  
  package { 'nc':  
    ensure => 'purged'  
  }  
}
```

```
class openssl_update {  
  package { 'openssl':  
    ensure => '1.0.1e-16.el6_5.7',  
  }  
}
```

Rede

- 06/03/2014 - 1.0 of Puppet for Junos OS
- Puppet *agent* nativo instalado como pacote Junos
jpuppet.xx.tgz
- Módulo netdev, desenvolvido pela Juniper, instalado no master
- Cria vlans, configura interfaces L2 e LAGs

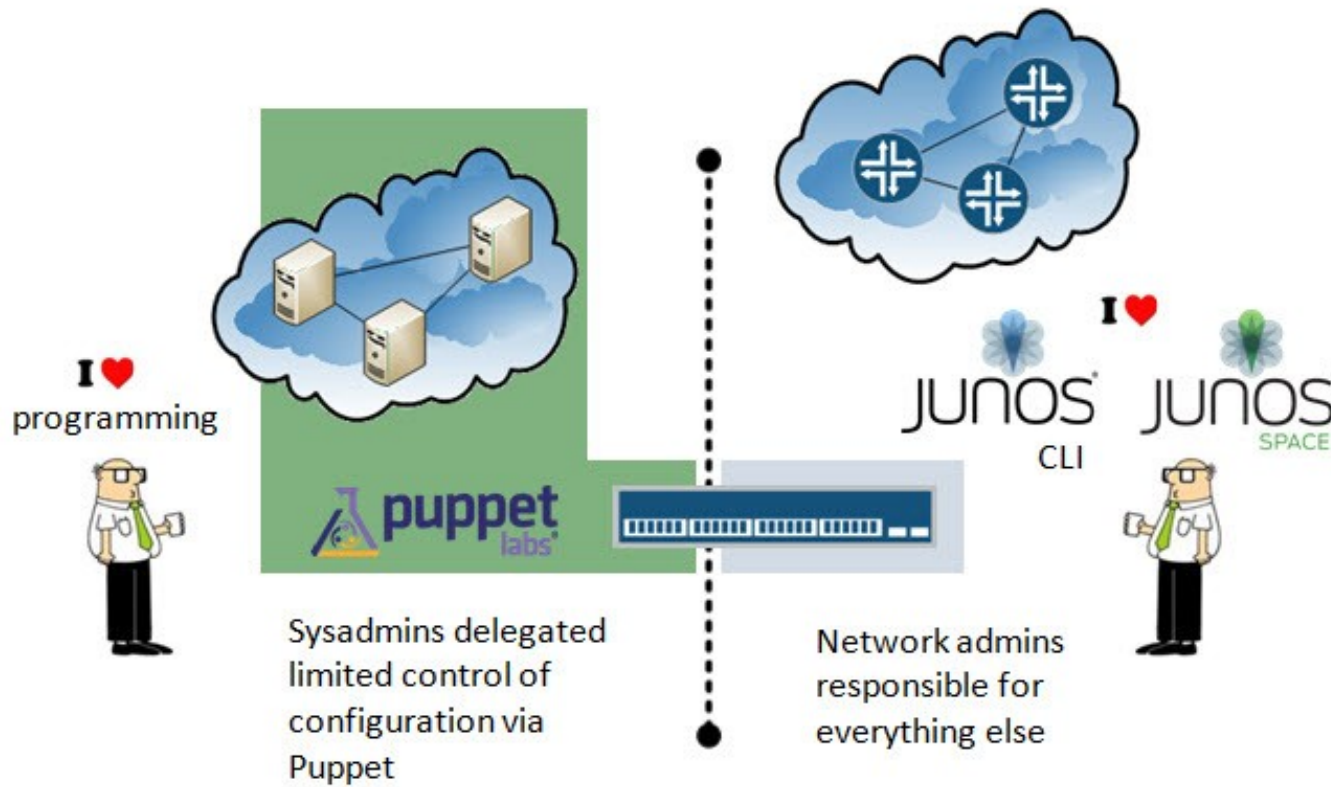
Rede



Rede

```
node "sw01.dc" {  
  netdev_device { $hostname: }  
  
  netdev_vlan { "Green":  
    vlan_id => 101,  
  }  
  
  netdev_l2_interface { "ge-0/0/0":  
    untagged_vlan => Green,  
  }  
}
```

Rede



Storage e Balanceadores

- Storage
 - . Netapp – fatmcgav-netapp
 - . Cria, modifica e delete exports NFS
- Balanceador de carga
 - . F5 BIGIP – puppetlabs-f5
 - . Cria, modifica e deleta virtual servers, pools, monitors, e mais...

Referências

<http://puppetlabs.com/>

http://www.juniper.net/techpubs/en_US/release-independent/junos-puppet/information-products/pathway-pages/index.html

<http://www.cisco.com/c/en/us/solutions/collateral/data-center-virtualization/unified-fabric/solution-brief-c22-730039.html>

<http://puppetlabs.com/presentations/managing-cisco-devices-using-puppet>