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**LEARN. NETWORK.
EXPERIENCE OPEN SOURCE.**

www.theredhatsummit.com

Integrating User Community Content with Systems Management

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05.06.11

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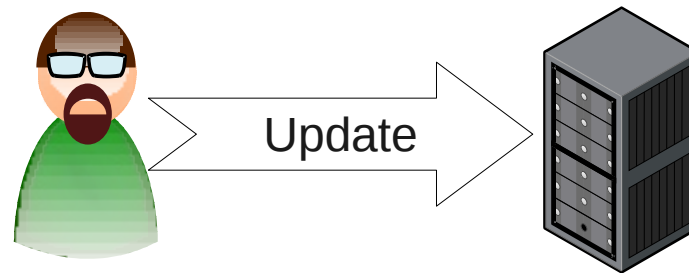


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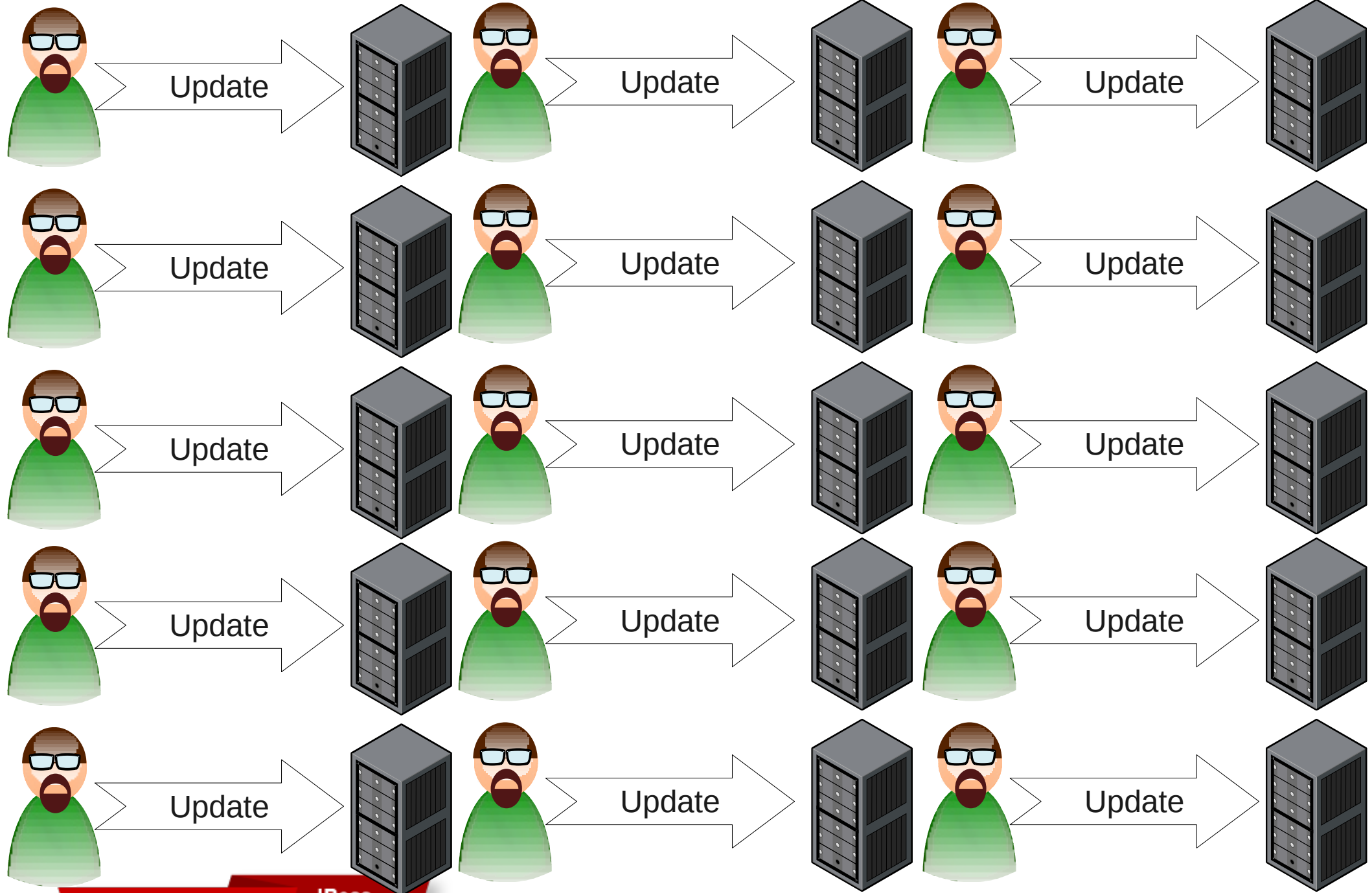


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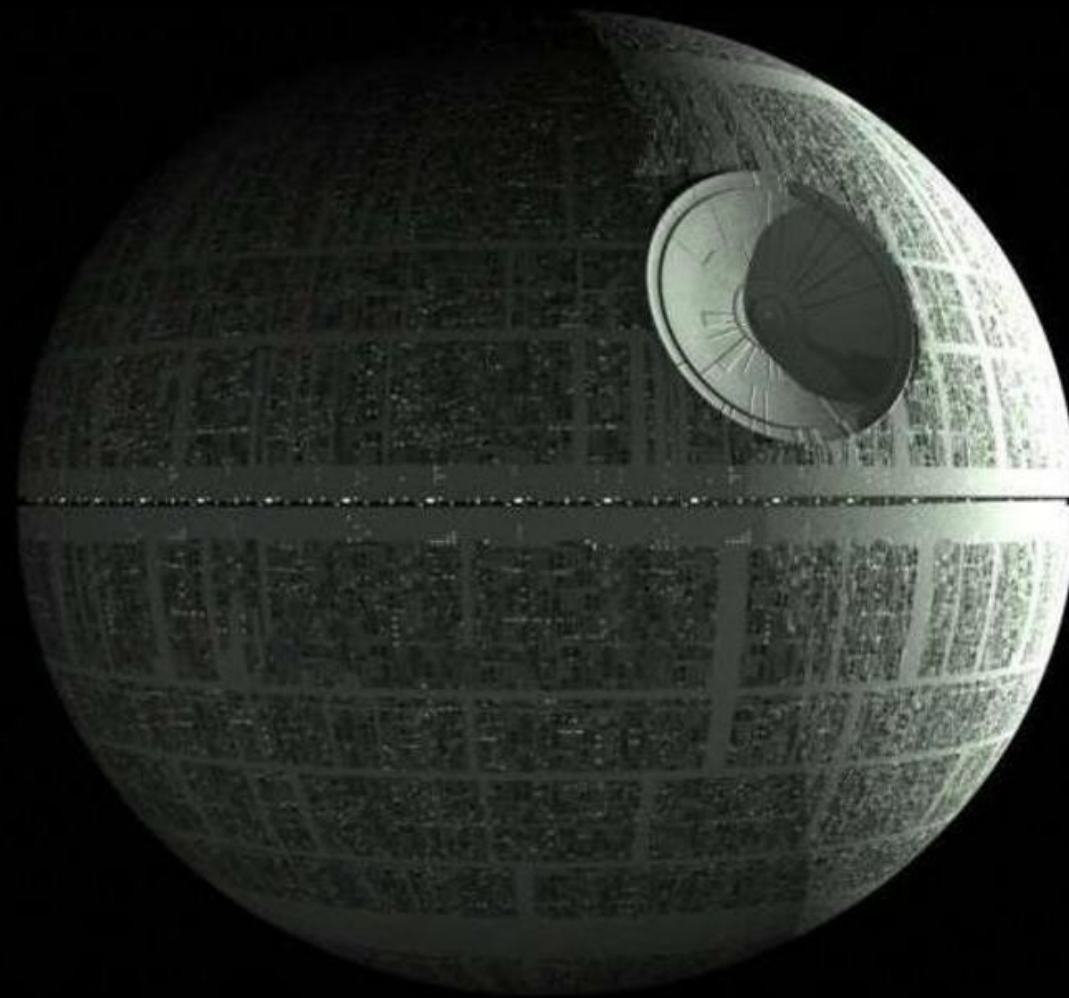
24,000 Red Hat Enterprise Linux Systems
=
\$54 Million Initial
+
\$9 Million/month Ongoing

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Problems with the Death Star

- Network links are unreliable
- Tragedy of the commons
- Moral hazard
- Not using local expertise
- No Darth Vader

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Wouldn't it be Great?

- Benefits of Centralized
 - Repeatable
 - Stable
 - Discoverable
- Benefits of Local
 - Democratize expertise
 - Work in limited connectivity
 - Work without the “mother ship”

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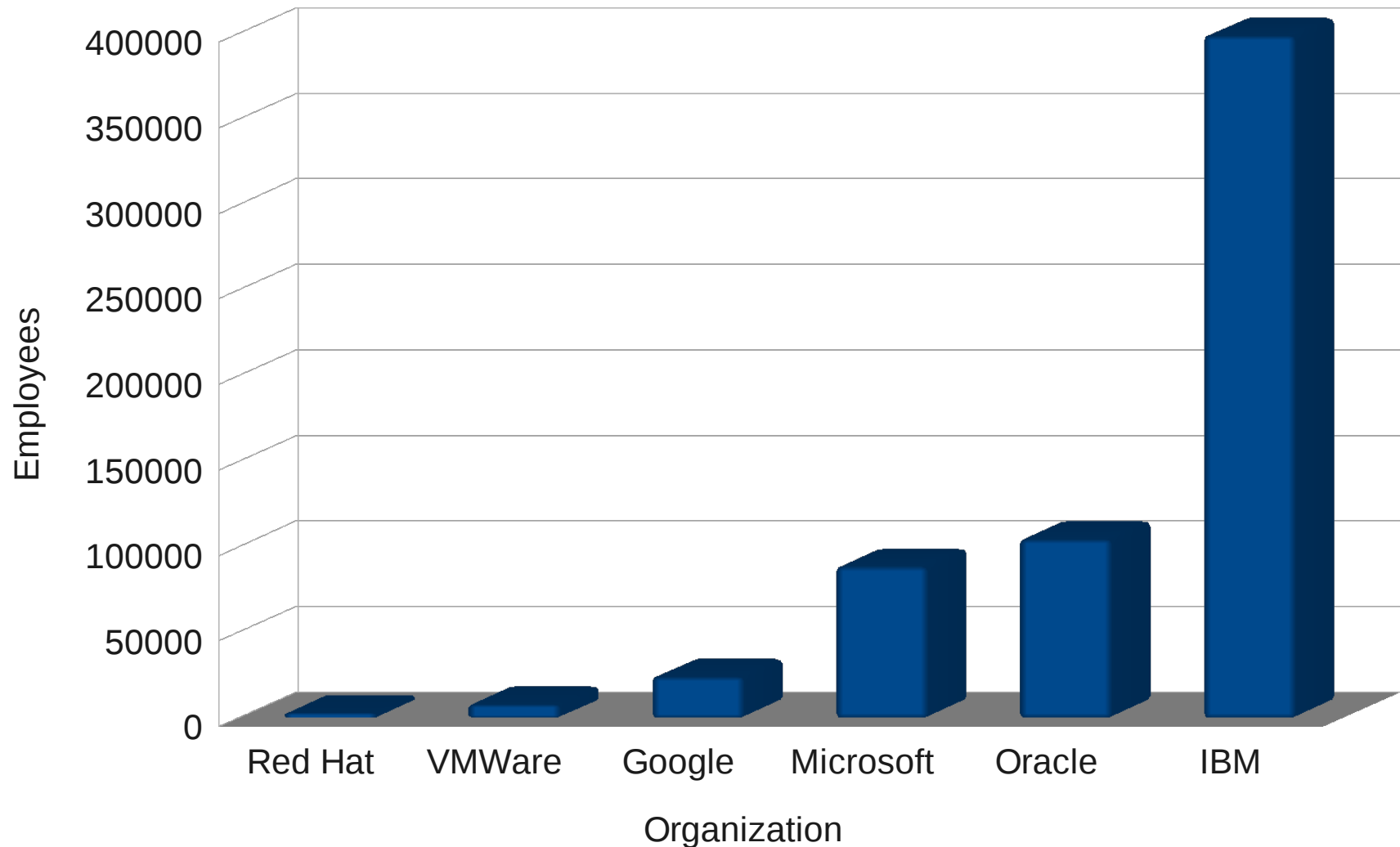


Where have we seen this before?

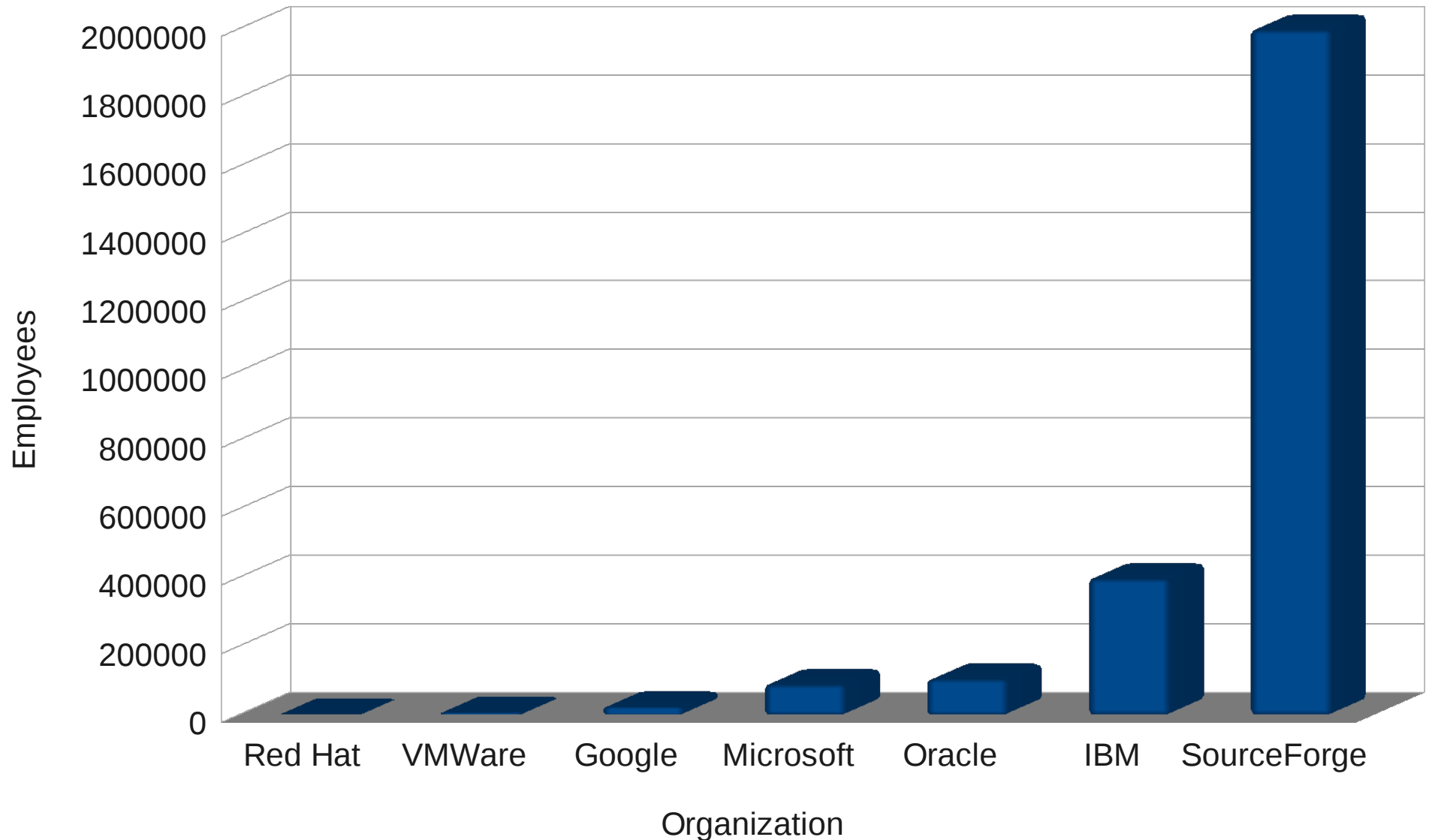
- Benefits of Centralized
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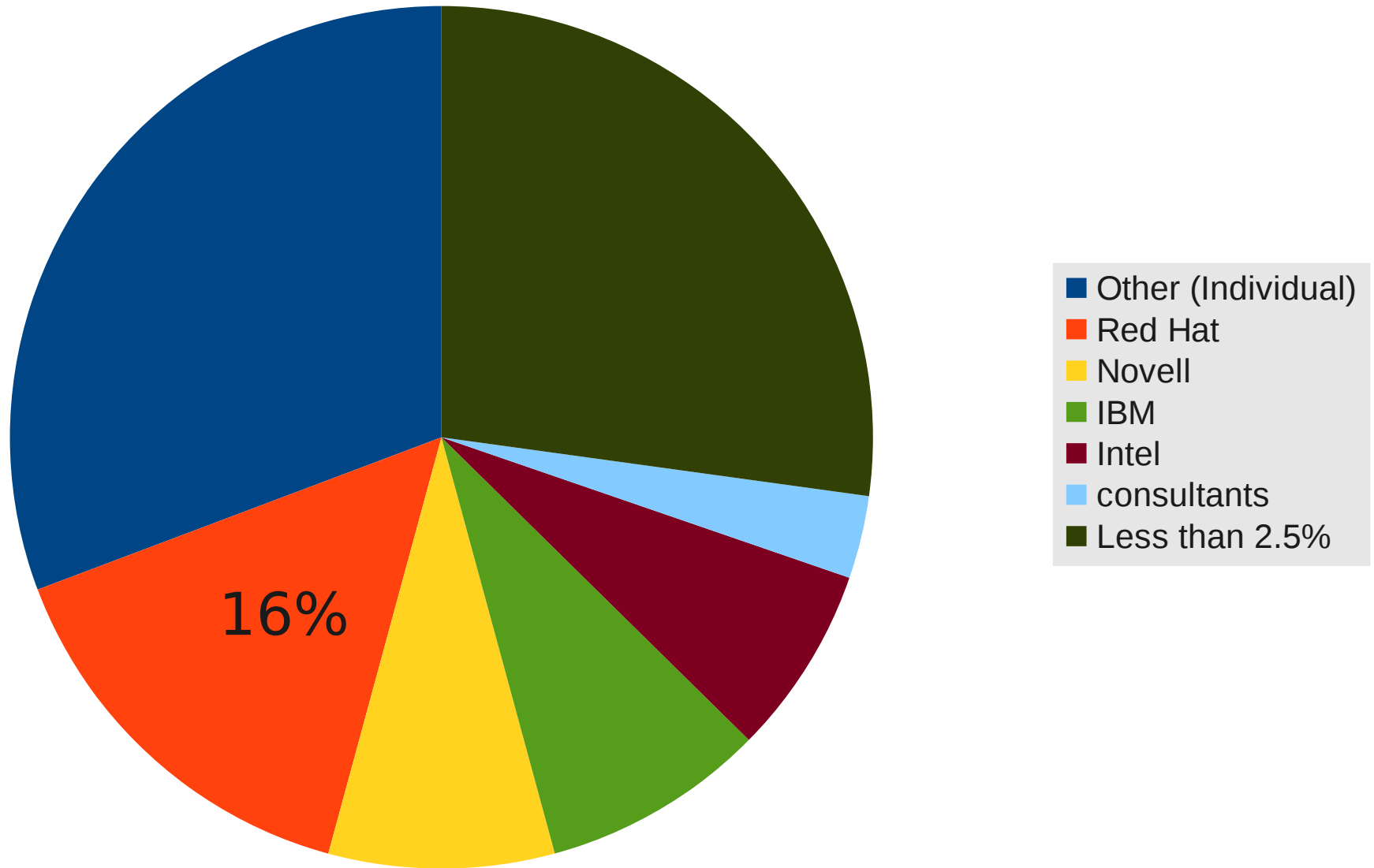
How does Red Hat compete?



The Community!



Linux Kernel Contribution



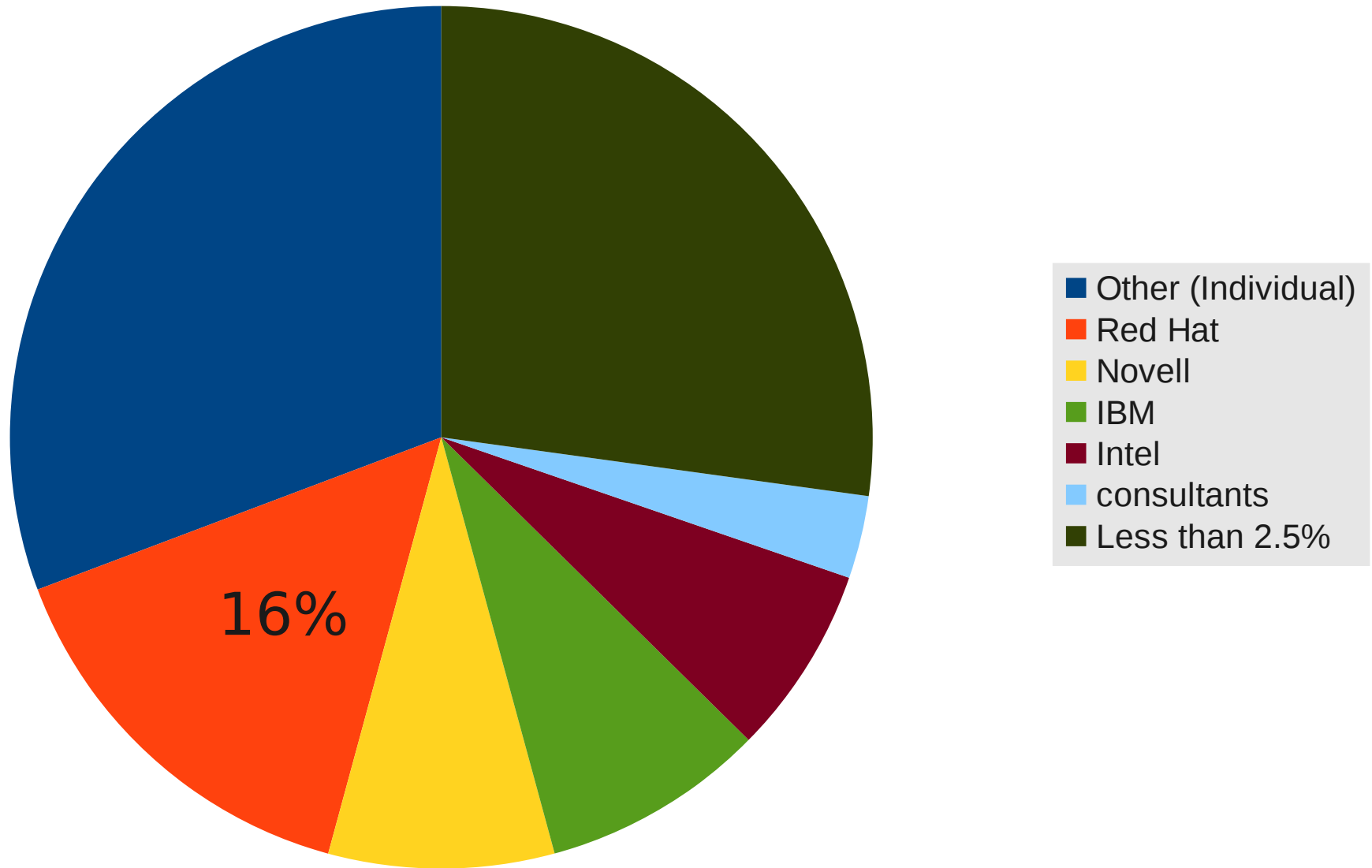
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600% More Efficiency

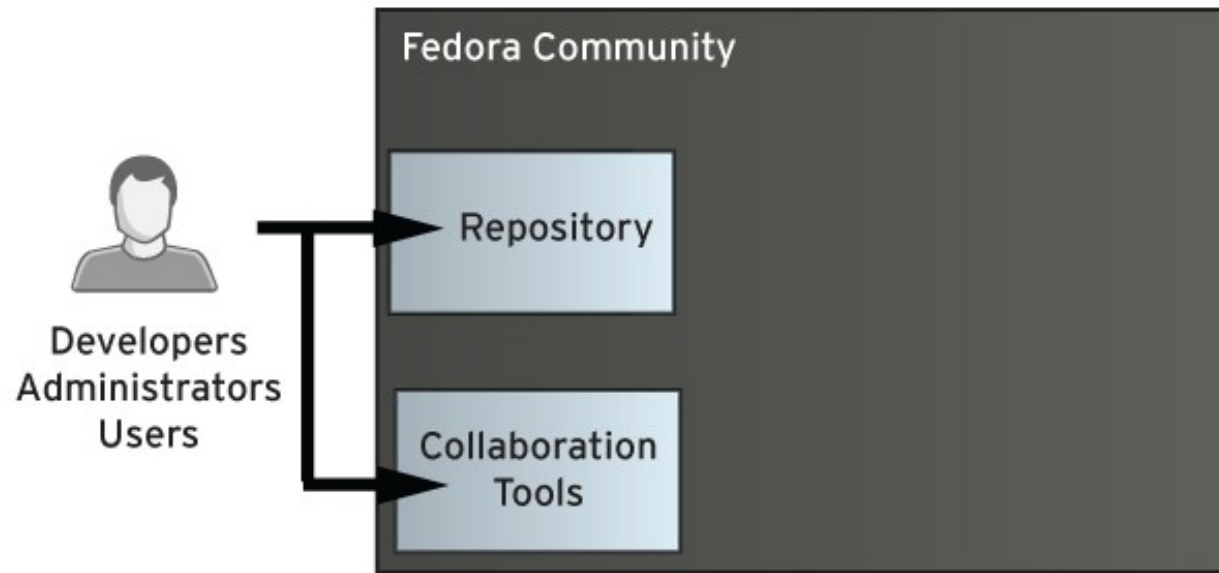


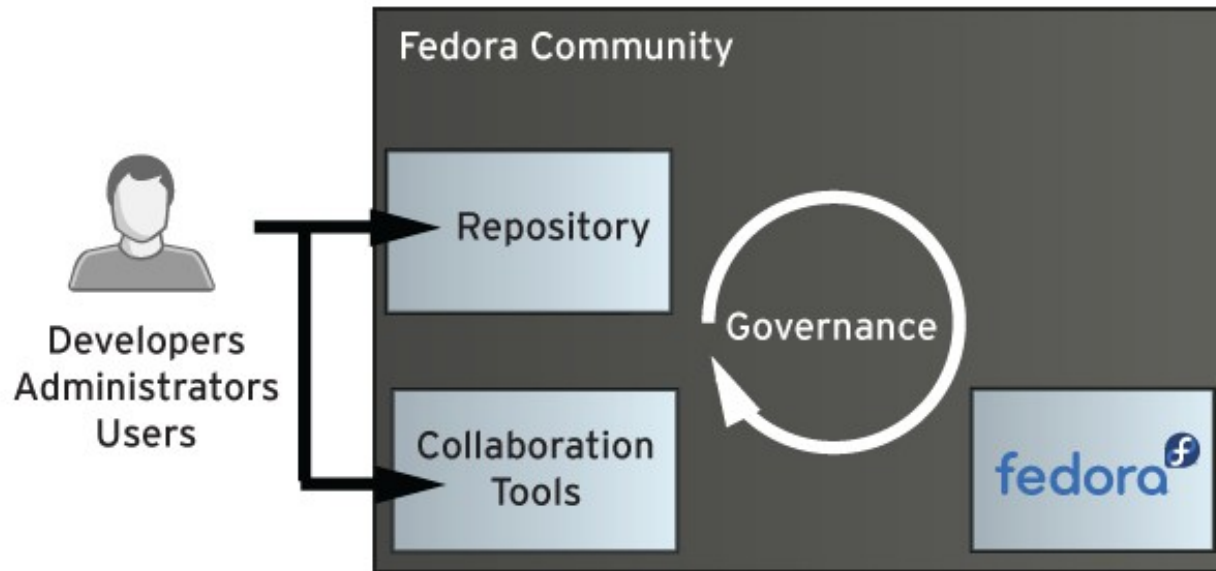
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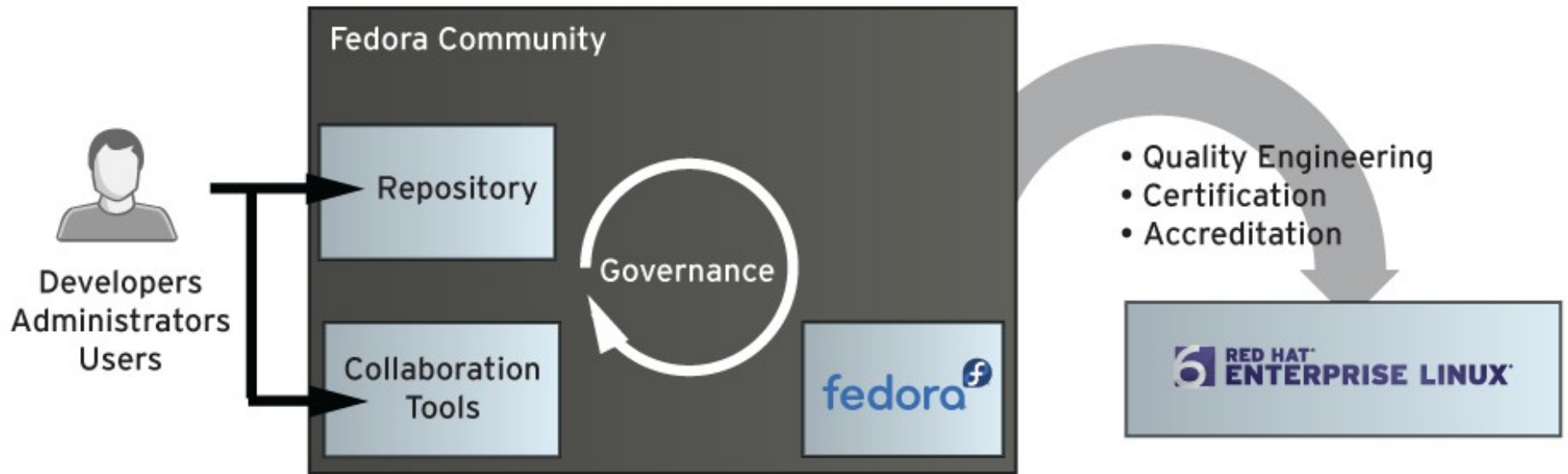
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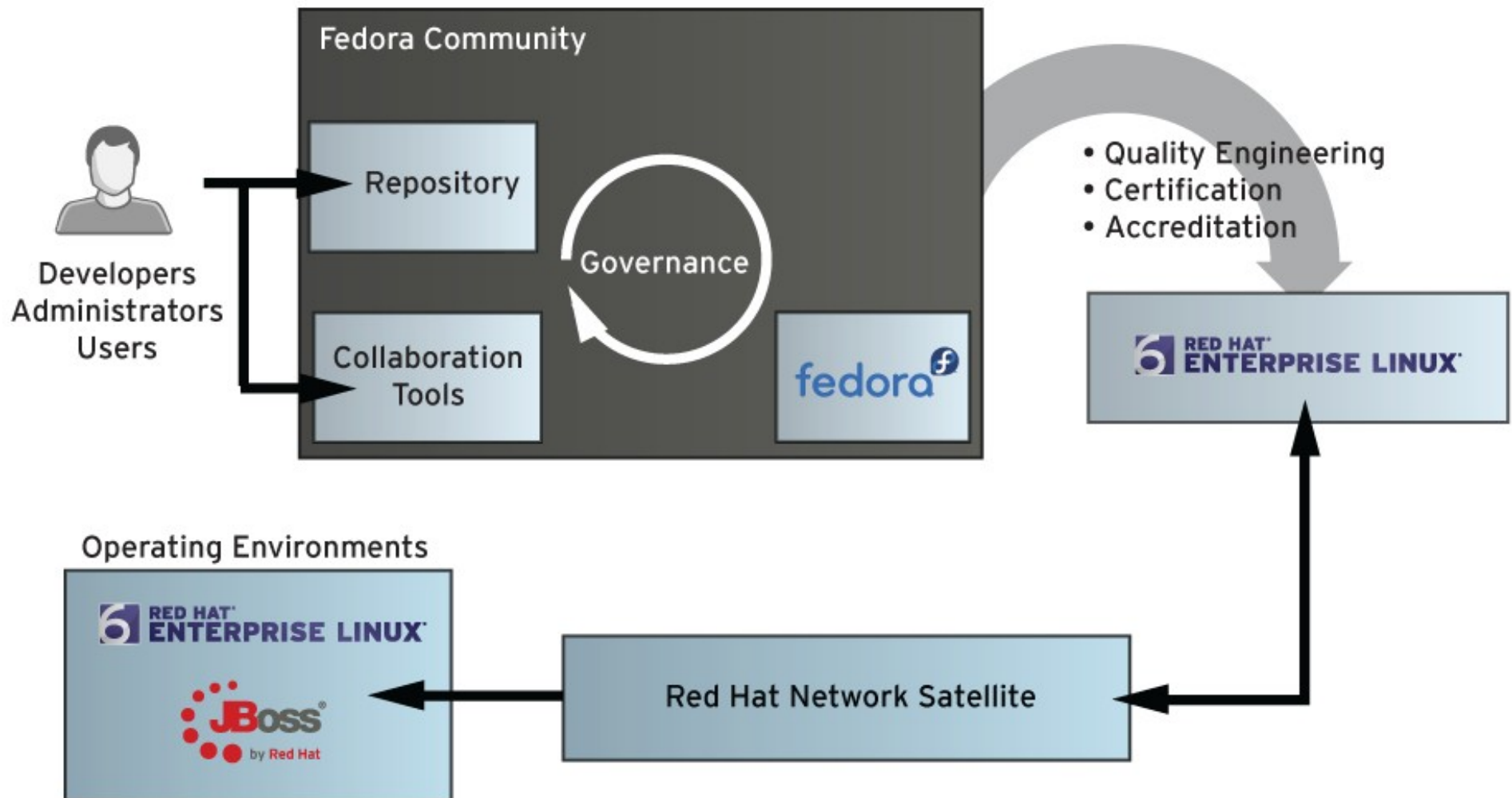
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Administrators
Users

Repository

Collaboration
Tools

Governance

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- Quality Engineering
- Certification
- Accreditation

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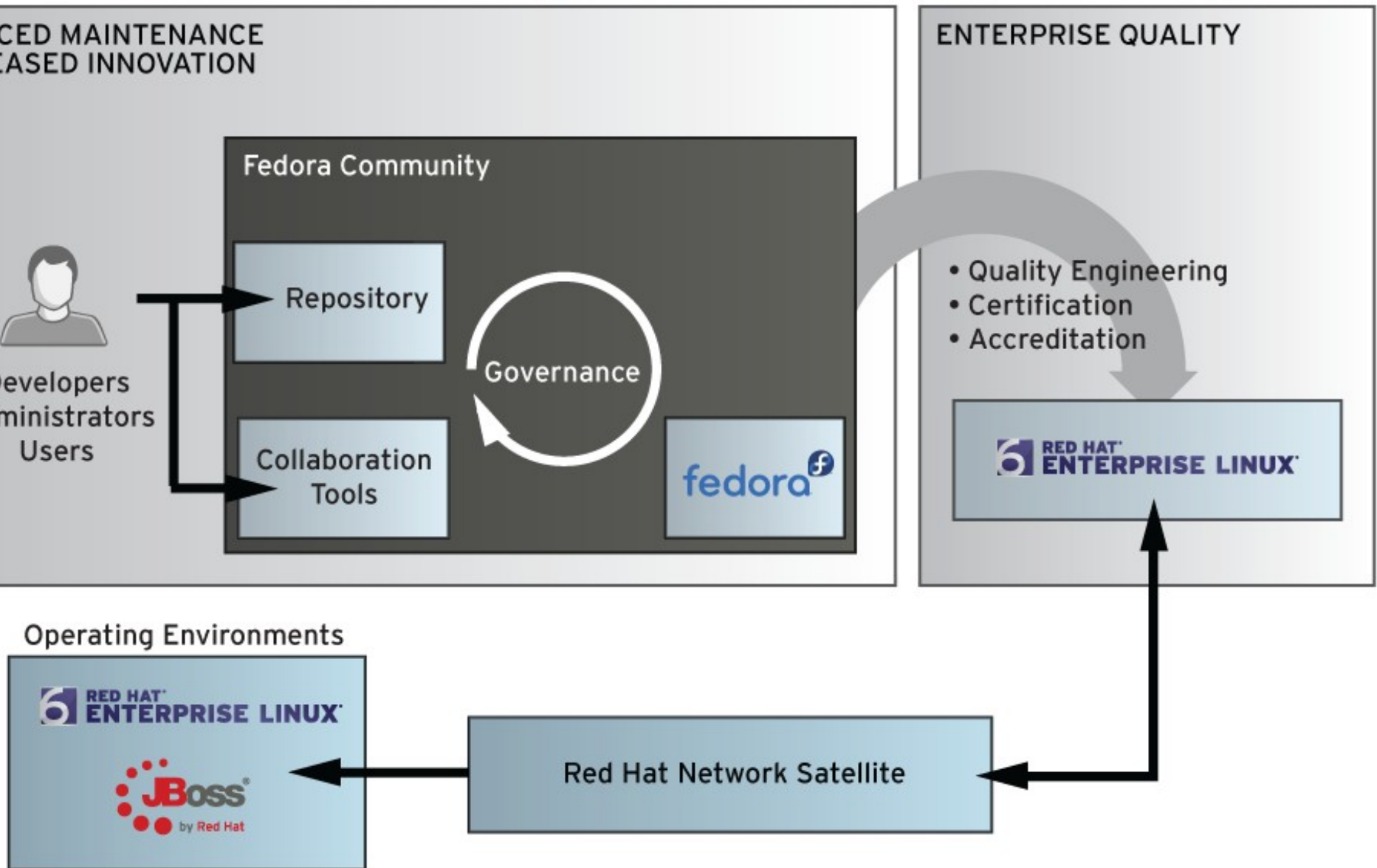
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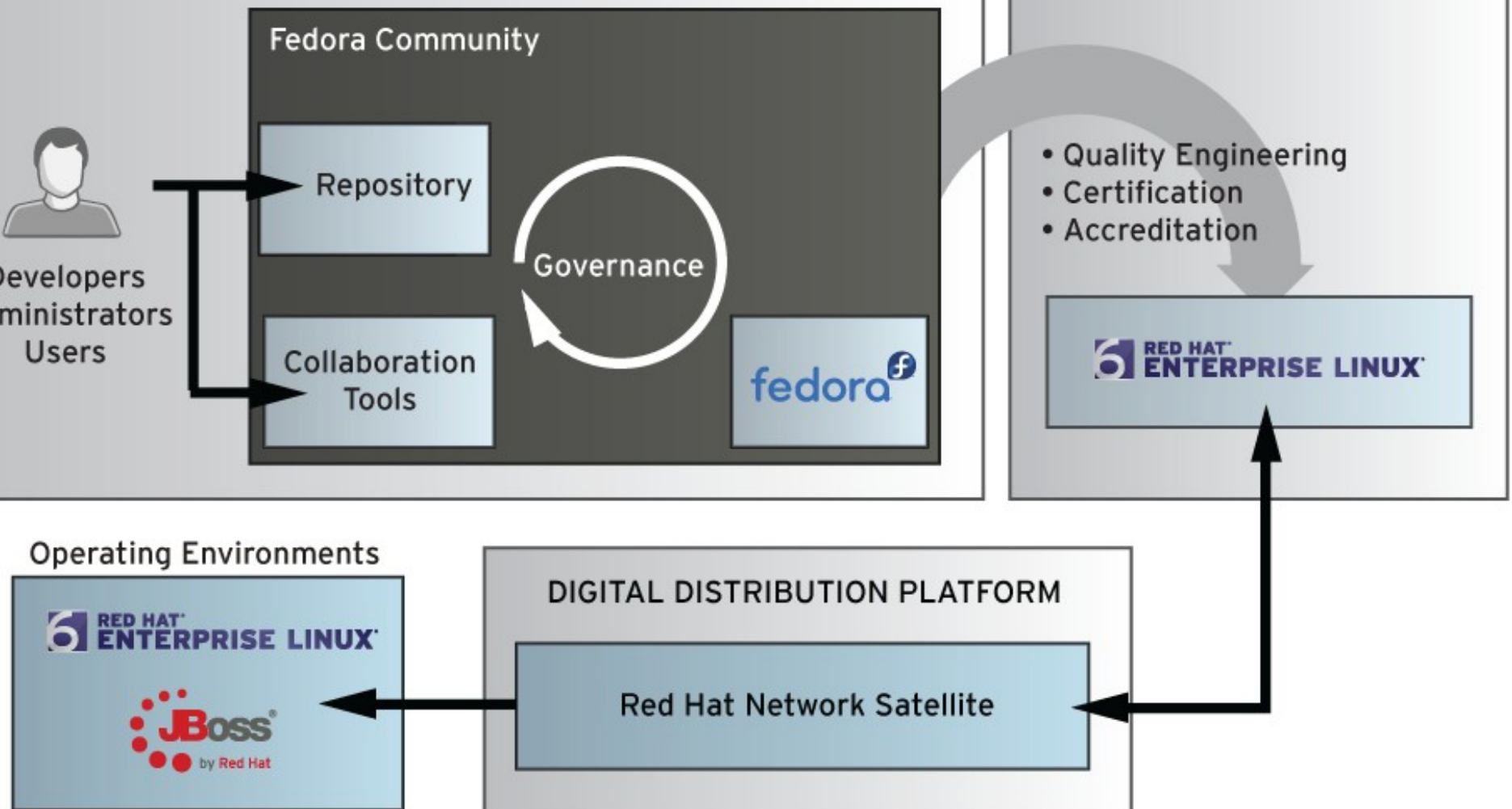
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Open Source Mitigates Risk

Coverity has tracked the code quality of open source software since 2004. **Proprietary software, on average, has 20,000 to 30,000 defects per million lines of code.** This has been true since 1960.

2004 Linux has 985 defects in 5.7 MLOC, or **99.3% lower than a proprietary system.**

2005 Linux grew 4.7%, but **defect density went down 2.3%.**

2006 Funded by DHS, Coverity adds the LAMP stack and **32 OSS projects, and defect density stayed the same.**

2008 Now covers 250 projects, with 434 defects per MLOC. Worst performer has 1237 defects per MLOC.

2009 Now covers 280 projects, with **defect density down 16%.**

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Modular by Design

Small Pieces, Loosely Coupled

"a change to one element in Mozilla is likely to impact three times as many other elements as a similar change in Linux. **We conclude that the first version of Mozilla was much less modular than a comparable version of Linux.**"

MacCormack, Rusnak, and Baldwin. "Exploring the Structure of Complex Software Designs: An Empirical Study of Open Source and Proprietary Code"
<http://opensource.mit.edu/papers/maccormackrusnakbaldwin2.pdf>

"Mozilla, after its release as open source, was rapidly and successfully redesigned to become much more modular - at least as modular as Linux, in fact.... **the differences in code appear to result from differences in organization.**"

Nick Carr, http://www.roughtype.com/archives/2006/01/open_sources_du.php

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Collaborative Maintenance

Everyone Makes Less Work for Everyone

“The Linux kernel is one of the largest and most successful open source projects that has ever come about. The huge rate of change and number of individual contributors show that it has a **vibrant and active community**, constantly causing the evolution of the kernel in response to number of different environments it is used in. This **rate of change continues to increase**, as does the number of developers and companies involved in the process; thus far, the development process has proved that it is **able to scale up to higher speeds without trouble.**”

Kroah-Hartman, Corbet, McPherson. “Linux Kernel Development”

www.linuxfoundation.org/sites/main/files/publications/whowriteslinux.pdf

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What if our customers adopted this model?

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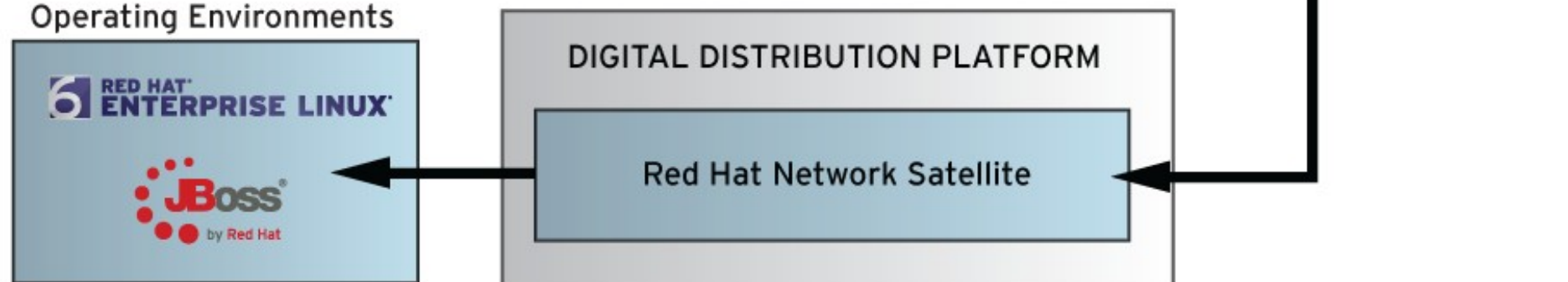
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Open Source Certification Team

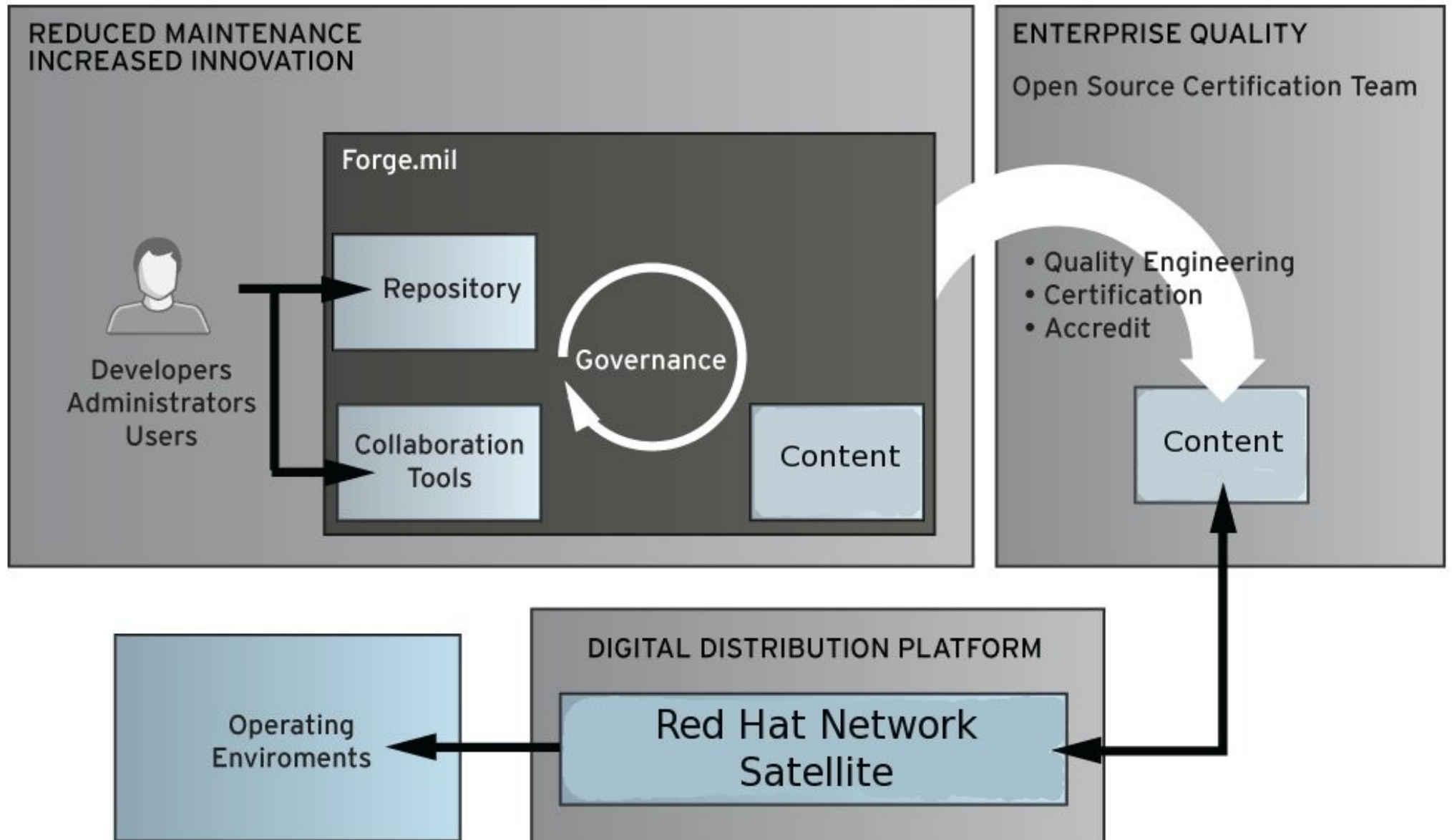
- Quality Engineering
- Certification
- Accredit

Content

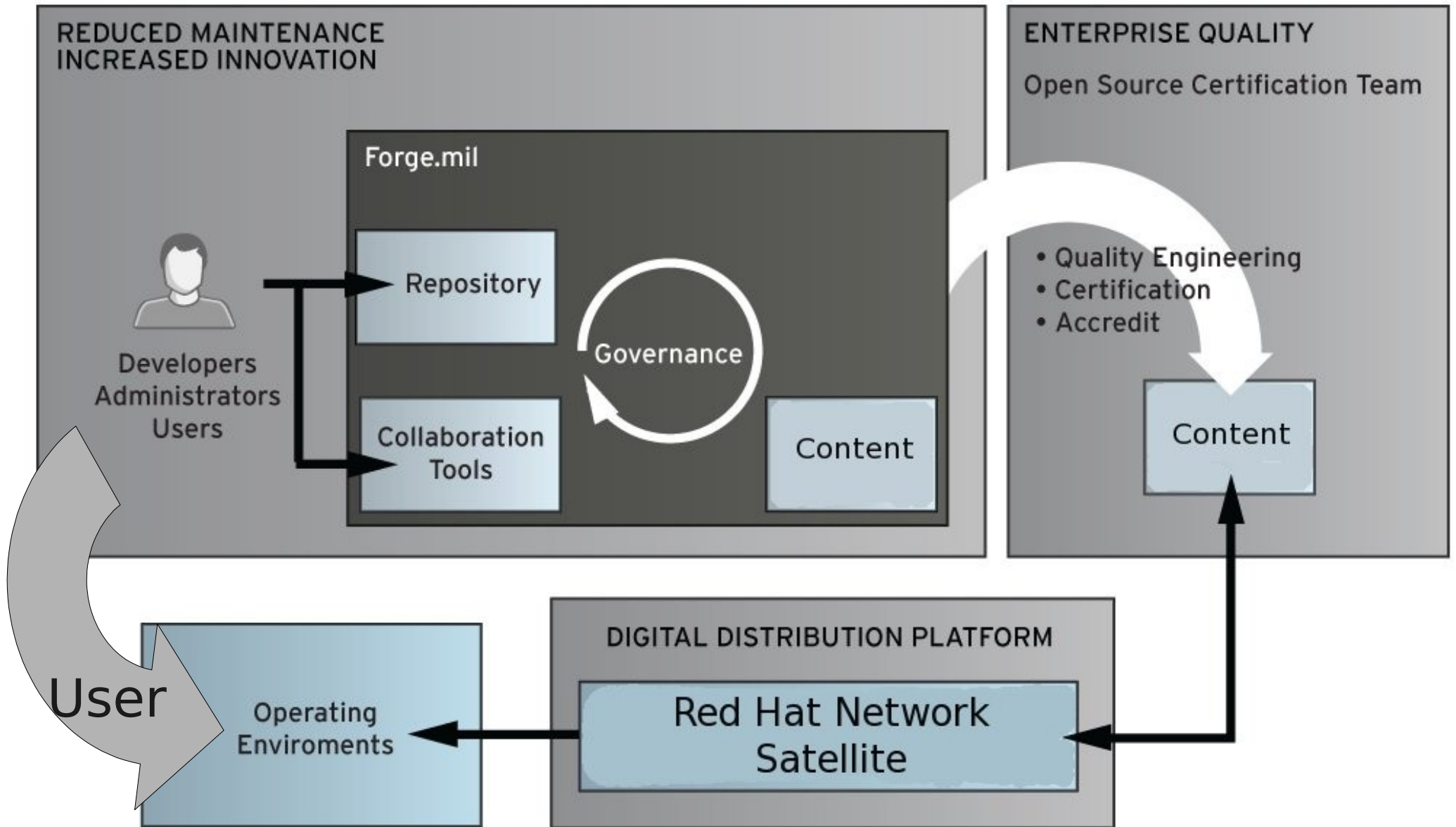
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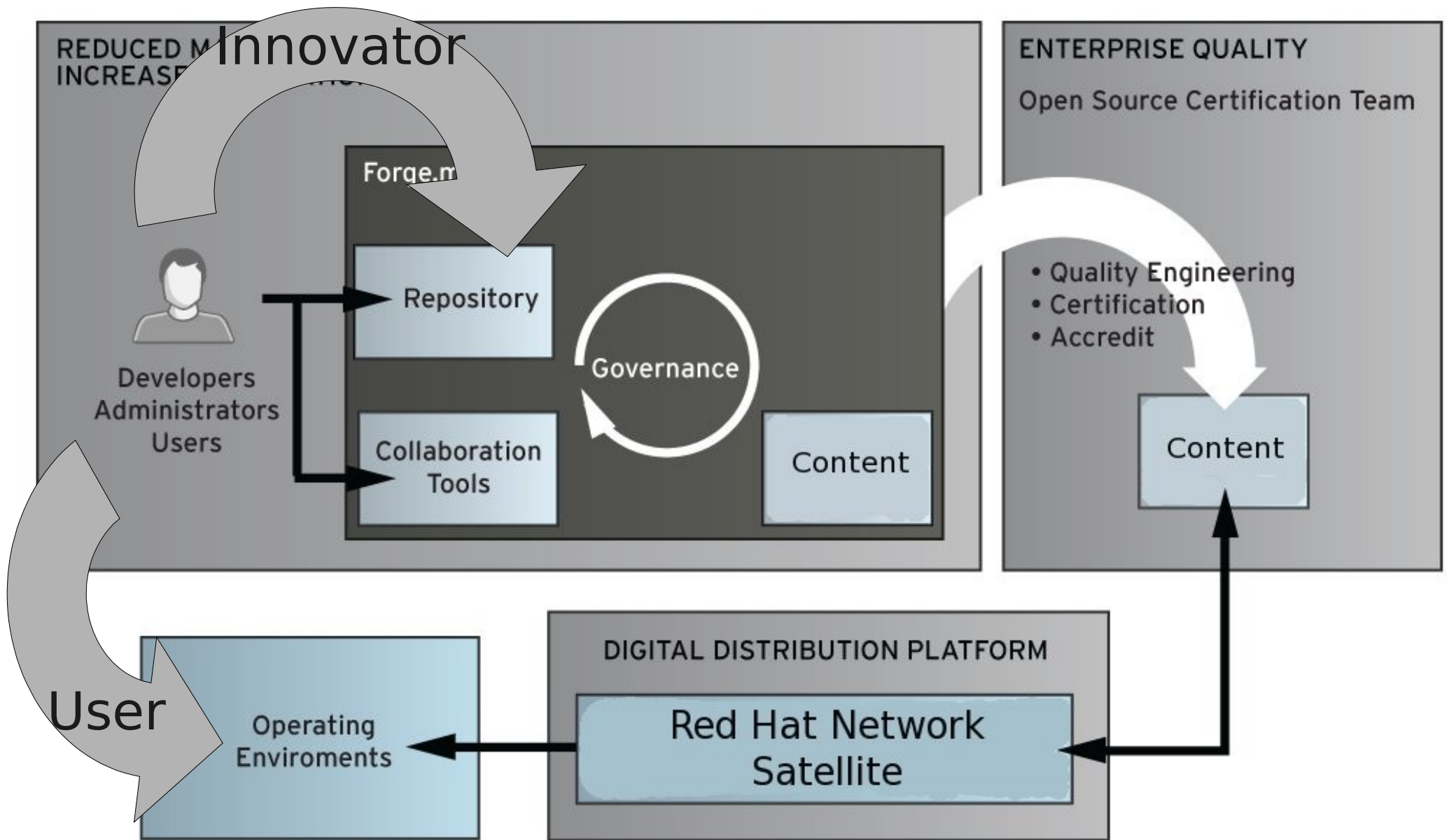
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Users empowered to Innovate



Users empowered to Innovate



Real Results

- System deployment
 - Before: 3 administrators, 3 days
 - After: 1 administrator, 15 minutes
- System reporting
 - Before: Cumbersome manual task
 - After: Custom reports to validate
- Collaboration
 - Before: Disparate mailing lists, emailing scripts and kickstart files
 - After: Easy to retrieve latest files and see discussions, contribute changes

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The Common Vulnerabilities and Exposures or CVE system provides a reference-method for publicly-known information-security vulnerabilities and exposures. MITRE Corporation maintains the system, with funding from the National Cyber Security Division of the United States Department of Homeland Security.

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Information Assurance Vulnerability Alert

An announcement of a computer application software or operating system vulnerability notification in the form of alerts, bulletins, and technical advisories identified by DoD-CERT, a division of the United States Cyber Command.

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Open Vulnerability Assessment Language

OVAL is the common language for security experts to discuss and agree upon technical details about how to check for the presence of vulnerabilities on computer systems

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Security Readiness Review Scripts target conditions that undermine the integrity of security, contribute to inefficient security operations and administration, or may lead to interruption of production operations

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The Retina Vulnerability Scanner is used to measure compliance with Department of Defense (DoD) Computer Emergency Response Team (CERT) Information Assurance Vulnerability Management Notices.

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Kickstart - Automated unattended installation of Red Hat Enterprise Linux

Cobbler – Rapid network installation environment (PXE/Profiles/DHCP/DNS)

YUM repository/channels – Repository of packages and organization



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Open Source Configuration Management

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Security Content **Automation** Protocol

- Common Vulnerabilities and Exposures
- Common Configuration Enumeration
- Common Platform Enumeration
- Common Vulnerability Scoring System
- Extensible Configuration Checklist Description Format
- Open Vulnerability and Assessment Language

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User tools for SCAP

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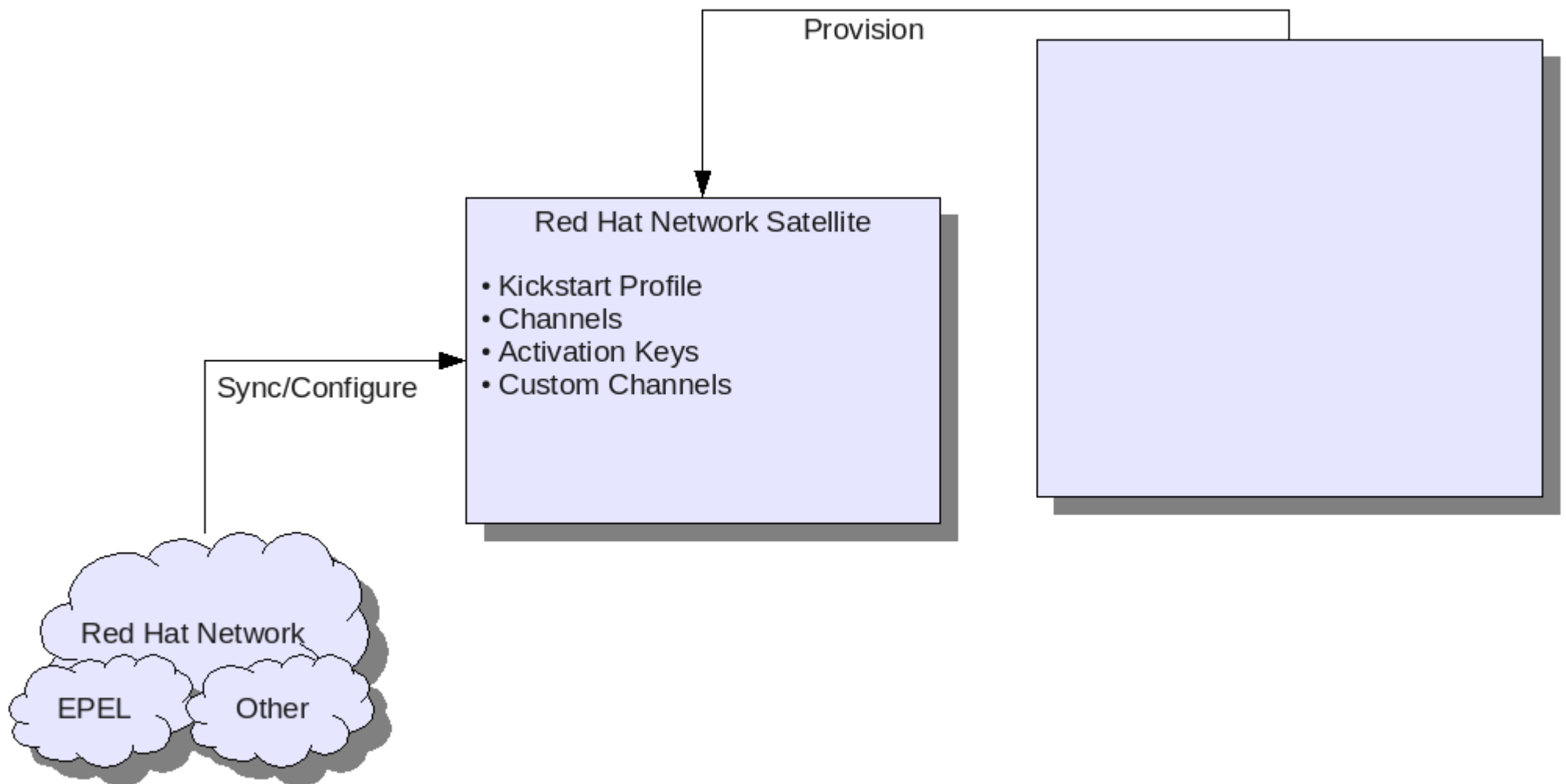
We focused here

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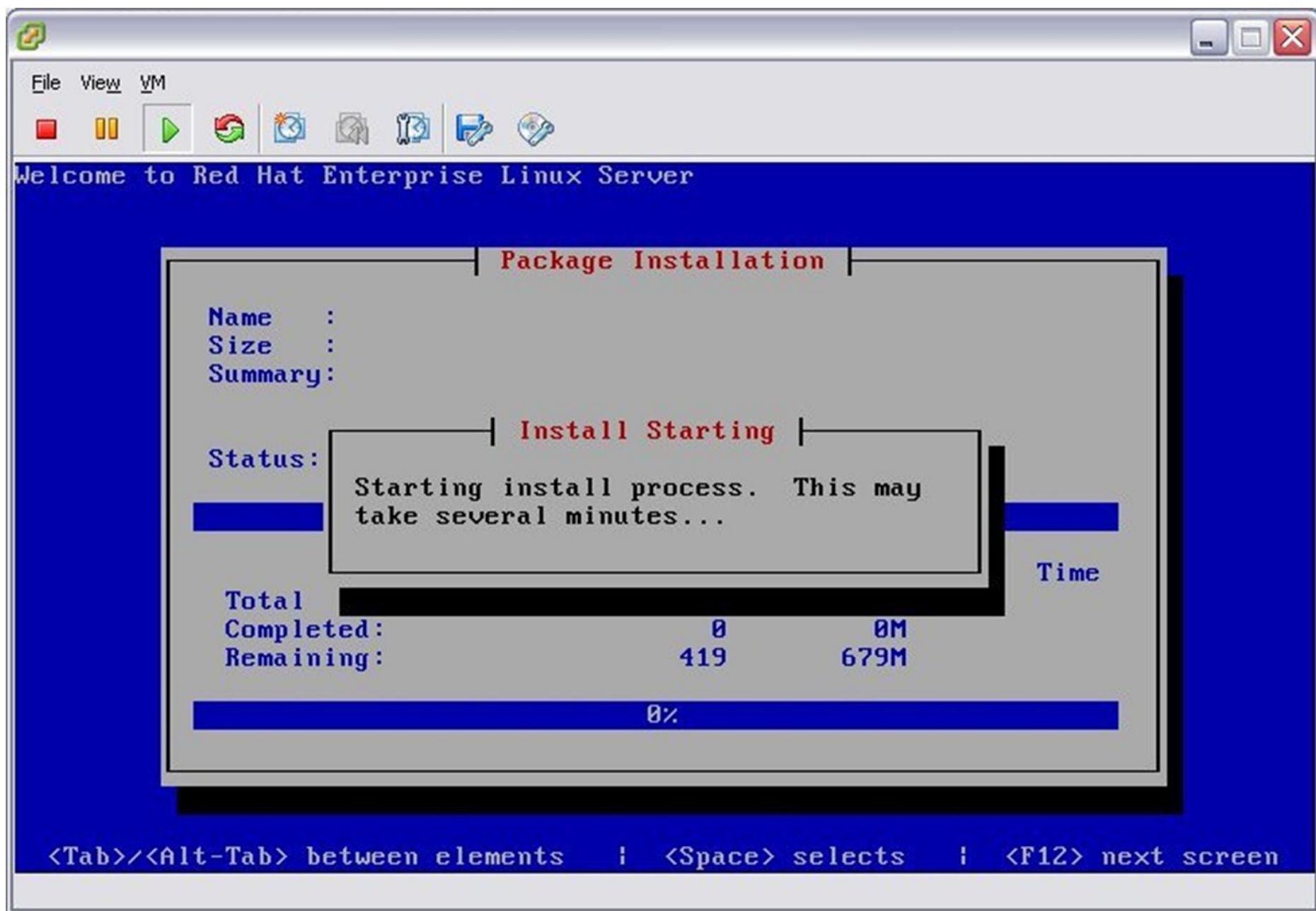


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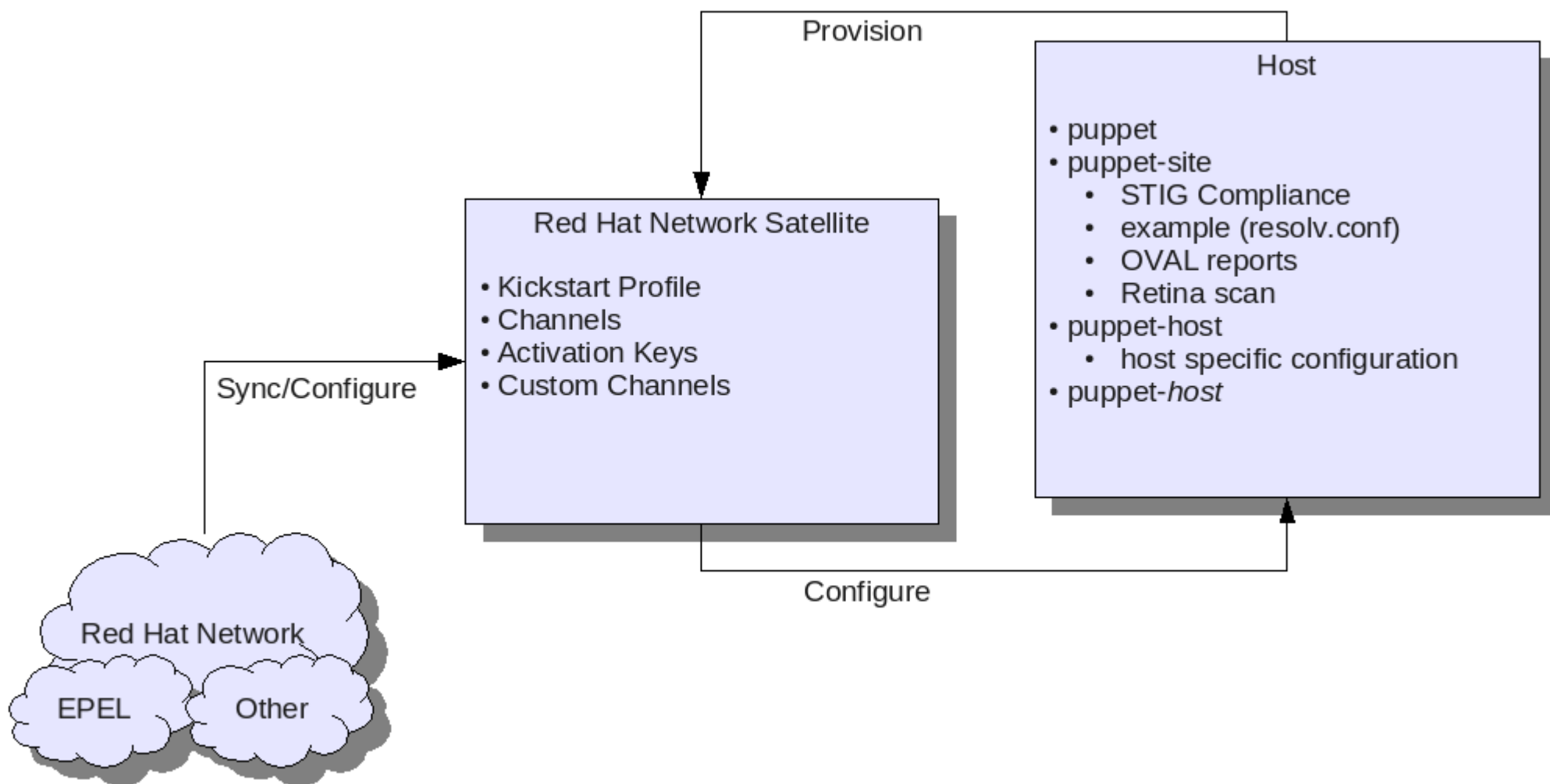


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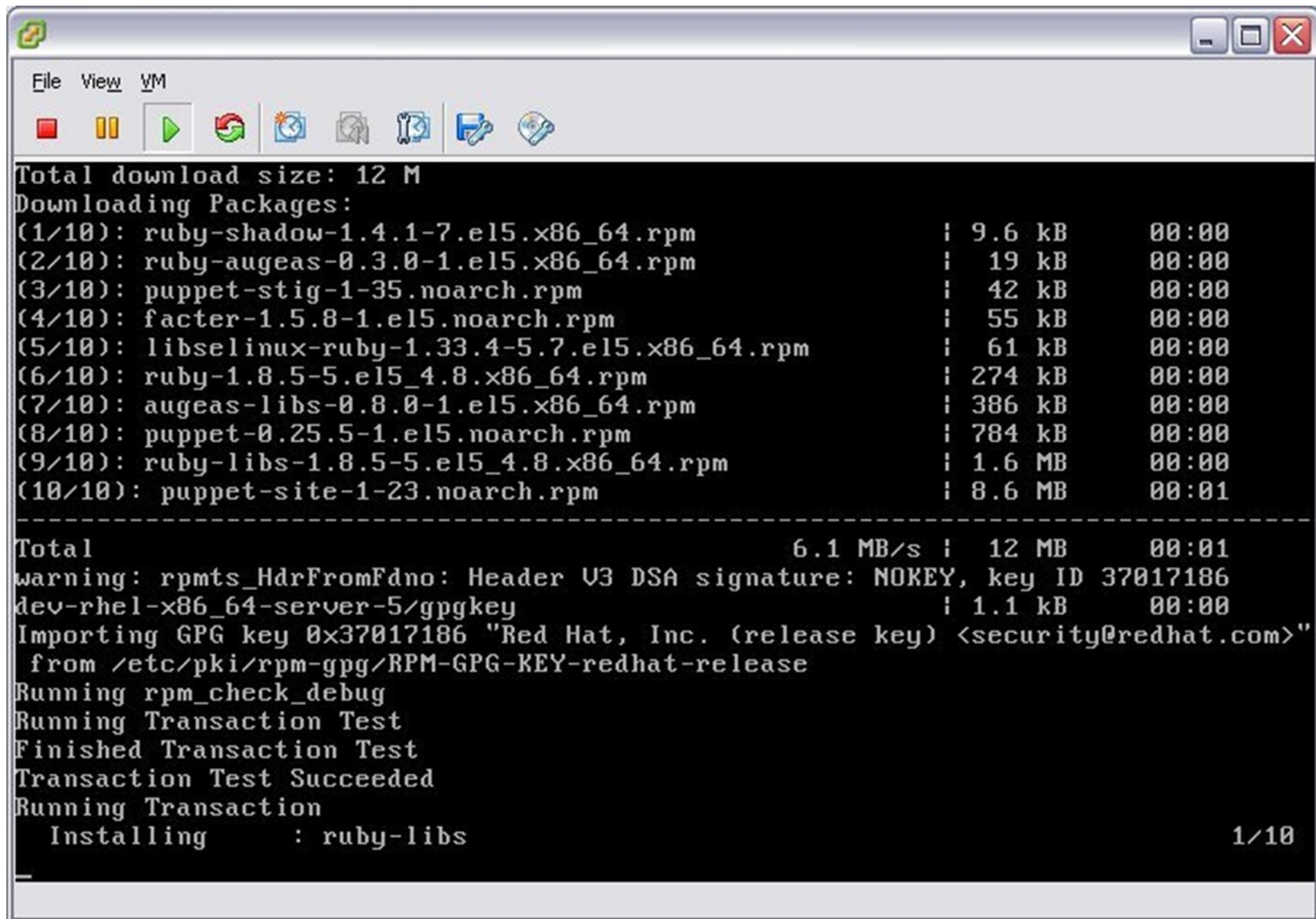


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The screenshot shows a Virtual Machine window with a menu bar (File, View, VM) and a toolbar with icons for running, pausing, and other VM controls. The terminal window displays the following output:

```
Total download size: 12 M
Downloading Packages:
(1/10): ruby-shadow-1.4.1-7.el5.x86_64.rpm           | 9.6 kB      00:00
(2/10): ruby-augeas-0.3.0-1.el5.x86_64.rpm          | 19 kB       00:00
(3/10): puppet-stig-1-35.noarch.rpm                 | 42 kB       00:00
(4/10): facter-1.5.8-1.el5.noarch.rpm                | 55 kB       00:00
(5/10): libselinux-ruby-1.33.4-5.7.el5.x86_64.rpm    | 61 kB       00:00
(6/10): ruby-1.8.5-5.el5_4.8.x86_64.rpm             | 274 kB      00:00
(7/10): augeas-libs-0.8.0-1.el5.x86_64.rpm          | 386 kB      00:00
(8/10): puppet-0.25.5-1.el5.noarch.rpm              | 784 kB      00:00
(9/10): ruby-libs-1.8.5-5.el5_4.8.x86_64.rpm        | 1.6 MB      00:00
(10/10): puppet-site-1-23.noarch.rpm                | 8.6 MB      00:01
-----
Total                                                6.1 MB/s | 12 MB      00:01
warning: rpmts_HdrFromFdno: Header U3 DSA signature: NOKEY, key ID 37017186
dev-rhel-x86_64-server-5/gpgkey                      | 1.1 kB      00:00
Importing GPG key 0x37017186 "Red Hat, Inc. (release key) <security@redhat.com>"
from /etc/pki/rpm-gpg/RPM-GPG-KEY-redhat-release
Running rpm_check_debug
Running Transaction Test
Finished Transaction Test
Transaction Test Succeeded
Running Transaction
  Installing      : ruby-libs                                1/10
```

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OVAL Results - Mozilla Firefox

File Edit View History Bookmarks Tools Help

file:///tmp/results9.html

Google

OVAL Results

OVAL Results Generator Information					OVAL Definition Generator Information				
Schema Version	Product Name	Product Version	Date	Time	Schema Version	Product Name	Product Version	Date	Time
5.5	OVAL Definition Interpreter	5.5 Build: 25	2011-05-05	04:57:10	5.3	Red Hat OVAL Patch Definition Merger	2	2011-05-04	17:37:02

System Information

Host Name			
Operating System	Linux		
Operating System Version	#1 SMP Fri Mar 18 12:42:39 EDT 2011		
Architecture	x86_64		
Interfaces	Interface Name	eth0	
	IP Address		
	MAC Address		

OVAL System Characteristics Generator Information

Schema Version	Product Name	Product Version	Date	Time
5.5	OVAL Definition Interpreter	5.5 Build: 25	2011-05-05	04:29:36

OVAL Definition Results

☐ True
 ☐ False
 ☐ Error
 ☐ Unknown
 ☐ Not Applicable
 ☐ Not Evaluated

ID	Result	Class	Reference ID	Title
oval:com.redhat.rhsa:def:20110163	false	patch	RHSA-2011:0163-01CVE-2010-4526	RHSA-2011:0163: kernel security and bug fix update (Important)
oval:com.redhat.rhsa:def:20110303	false	patch	RHSA-2011:0303-01CVE-2010-4249CVE-2010-4251CVE-2010-4655	RHSA-2011:0303: kernel security and bug fix update (Moderate)
oval:com.redhat.rhsa:def:20110429	false	patch	RHSA-2011:0429-01CVE-2010-4346CVE-2011-0521CVE-2011-0710CVE-2011-1010CVE-2011-1090CVE-2011-1478	RHSA-2011:0429: kernel security and bug fix update (Important)
oval:com.redhat.rhsa:def:20030315	false	patch	RHSA-2003:315-01CVE-2003-0858	RHSA-2003:315: quagga security update (Low)
oval:com.redhat.rhsa:def:20030317	false	patch	RHSA-2003:317-01CVE-2003-0856	RHSA-2003:317: iproute security update (Low)
				RHSA-2003:324: ethernet security

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OVAL Results Generator Information					OVAL Definition Generator Information				
Schema Version	Product Name	Product Version	Date	Time	Schema Version	Product Name	Product Version	Date	Time
5.5	OVAL Definition Interpreter	5.5 Build: 25	2011-05-04	04:56:27	5.3	Red Hat OVAL Patch Definition Merger	2	2011-05-02	14:35:01

System Information	
Host Name	
Operating System	Linux
Operating System Version	#1 SMP Mon Feb 21 05:52:39 EST 2011
Architecture	x86_64
Interfaces	Interface Name
	eth0
	IP Address
MAC Address	

OVAL System Characteristics Generator Information				
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5.5	OVAL Definition Interpreter	5.5 Build: 25	2011-05-04	04:28:48

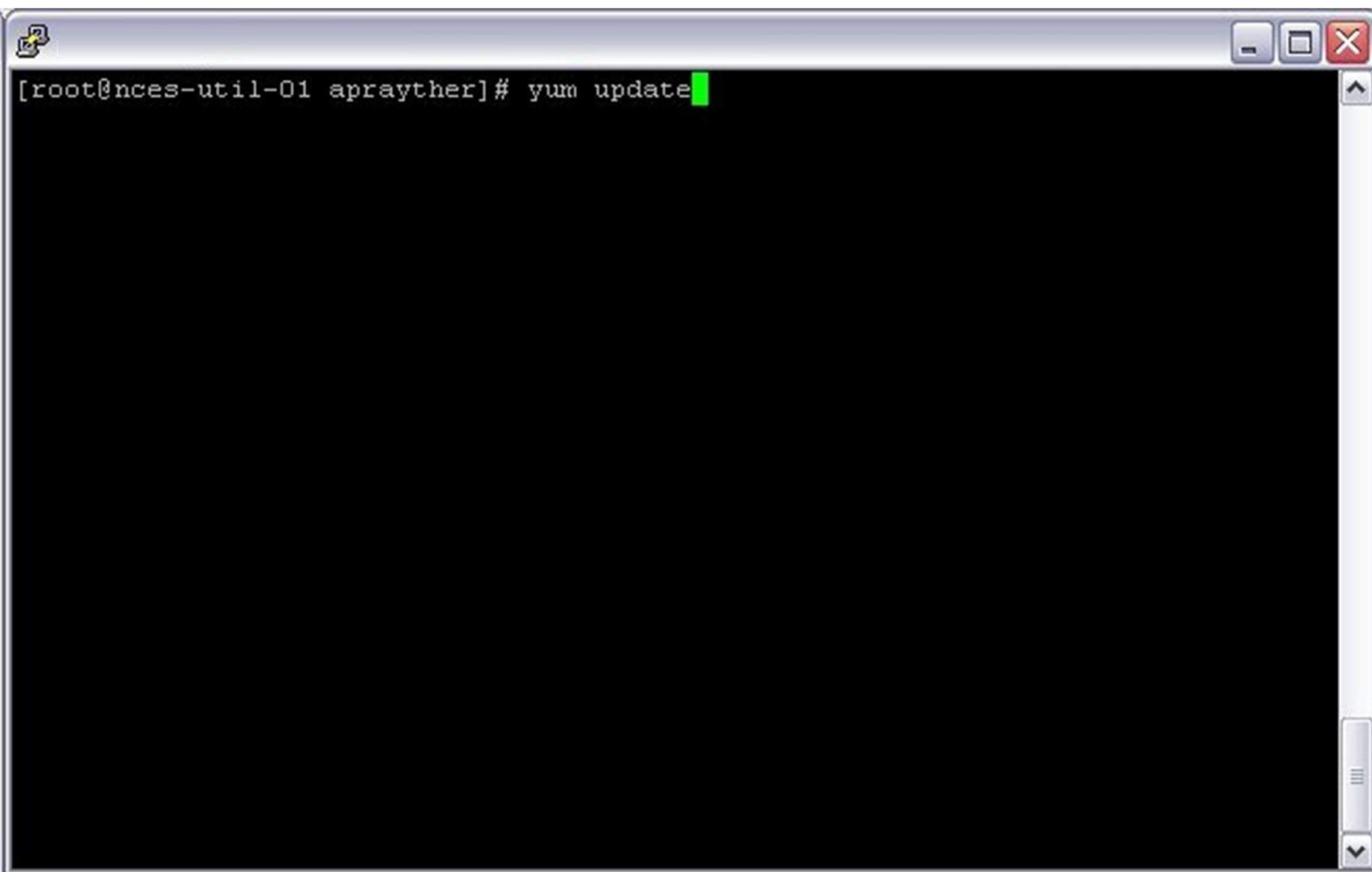
OVAL Definition Results				
<input type="checkbox"/> True	<input type="checkbox"/> False	<input type="checkbox"/> Error	<input type="checkbox"/> Unknown	<input type="checkbox"/> Not Applicable
<input type="checkbox"/> Not Evaluated				
ID	Result	Class	Reference ID	Title
oval:com.redhat.rhsa:def:20110004	true	patch	RHSA-2011:0004-01 CVE-2010-3432 CVE-2010-3442 CVE-2010-3699 CVE-2010-3858 CVE-2010-3859 CVE-2010-3865 CVE-2010-3876 CVE-2010-3880 CVE-2010-4083 CVE-2010-4157 CVE-2010-4161 CVE-2010-4242 CVE-2010-4247 CVE-2010-4248	RHSA-2011:0004: kernel security, bug fix, and enhancement update (Important)
oval:com.redhat.rhsa:def:20110017	true	patch	RHSA-2011:0017-01 CVE-2010-3296 CVE-2010-3877 CVE-2010-4072 CVE-2010-4073 CVE-2010-4075 CVE-2010-4080 CVE-2010-4081 CVE-2010-4158 CVE-2010-4238 CVE-2010-4243 CVE-2010-4255 CVE-2010-4263 CVE-2010-4343	RHSA-2011:0017: Red Hat Enterprise Linux 5.6 kernel security and bug fix update (Important)
oval:com.redhat.rhsa:def:20110163	true	patch	RHSA-2011:0163-01 CVE-2010-4526	RHSA-2011:0163: kernel security and bug fix update (Important)
oval:com.redhat.rhsa:def:20110303	true	patch	RHSA-2011:0303-01 CVE-2010-4249 CVE-2010-4251 CVE-2010-4655	RHSA-2011:0303: kernel security and bug fix update (Moderate)
oval:com.redhat.rhsa:def:20110373	true	patch	RHSA-2011:0373-01	RHSA-2011:0373: firefox security update (Important)
oval:com.redhat.rhsa:def:20110376	true	patch	RHSA-2011:0376-01 CVE-2010-4352	RHSA-2011:0376: dbus

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```
xorg-x11-font-utils  x86_64 1:7.1-3          dev-rhel-x86_64-server-5  79 k
xorg-x11-server-Xnest
                        x86_64 1.1.1-48.76.el5_6.4 dev-rhel-x86_64-server-5 1.4 M
xorg-x11-server-Xorg  x86_64 1.1.1-48.76.el5_6.4 dev-rhel-x86_64-server-5 3.4 M
xorg-x11-server-Xvfb  x86_64 1.1.1-48.76.el5_6.4 dev-rhel-x86_64-server-5 1.6 M
xorg-x11-server-utils
                        x86_64 7.1-5.el5_6.2      dev-rhel-x86_64-server-5 172 k
xorg-x11-xfs          x86_64 1:1.0.2-5.el5_6.1    dev-rhel-x86_64-server-5  73 k
xulrunner             i386   1.9.2.15-2.el5_6      dev-rhel-x86_64-server-5 12 M
xulrunner             x86_64 1.9.2.15-2.el5_6      dev-rhel-x86_64-server-5 11 M
Removing:
kernel                x86_64 2.6.18-238.el5        installed                93 M
kernel-devel          x86_64 2.6.18-194.26.1.el5  installed                16 M

Transaction Summary
=====
Install      2 Package(s)
Upgrade     46 Package(s)
Remove       2 Package(s)
Reinstall    0 Package(s)
Downgrade    0 Package(s)

Total download size: 133 M
Is this ok [y/N]: 
```

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```
[root@r ~]# ovaldi -a /usr/share/ovaldi -m -o com.redhat.rhsa-all.xml
1

-----
OVAL Definition Interpreter
Version: 5.5 Build: 25
Build date: Aug 31 2009 10:07:30
Copyright (c) 2002-2009 - The MITRE Corporation
-----

Start Time: Wed May  4 13:12:58 2011

** parsing com.redhat.rhsa-all.xml file.
   - validating xml schema.
```

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OVAL Definition Results

<div><div></div>True</div>	<div><div></div>False</div>	<div><div></div>Error</div>	<div><div></div>Unknown</div>	<div><div></div>Not Applicable</div>	<div><div></div>Not Evaluated</div>
ID	Result	Class	Reference ID	Title	
oval:com.redhat.rhsa:def:20110163	false	patch	RHSA-2011:0163-01CVE-2010-4526	RHSA-2011:0163: kernel security and bug fix update (Important)	
oval:com.redhat.rhsa:def:20110303	false	patch	RHSA-2011:0303-01CVE-2010-4249CVE-2010-4251CVE-2010-4655	RHSA-2011:0303: kernel security and bug fix update (Moderate)	
oval:com.redhat.rhsa:def:20110429	false	patch	RHSA-2011:0429-01CVE-2010-4346CVE-2011-0521CVE-2011-0710CVE-2011-1010CVE-2011-1090CVE-2011-1478	RHSA-2011:0429: kernel security and bug fix update (Important)	
oval:com.redhat.rhsa:def:20030315	false	patch	RHSA-2003:315-01CVE-2003-0858	RHSA-2003:315: quagga security update (Low)	
oval:com.redhat.rhsa:def:20030317	false	patch	RHSA-2003:317-01CVE-2003-0856	RHSA-2003:317: iproute security update (Low)	
				RHSA-2003:324: ethernet security	

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Report Tasks

- Generate Report
- Save Report
- Print Report
- View in Microsoft Word
- View in Web Browser

Other Places

- Discover
- Audit
- Remediate
- Options

Help and Support

- Help Topics
- eEye Website
- Technical Support
- About Retina

Discover Audit Remediate Report

Configuration

Type

Options

Include

- ☐ Page breaks
- ☐ Confidentiality page
- ☐ Job Metrics

Creation Details

- ☐ Include creation details page

Report created by:

Report created for:

Generate

Scan Jobs

Active

Completed

Scheduled

Rescan

Delete

Refresh

Job Name	Status	Start Time	End Time	Data Source	Scan Engine
odin-jm-20110401	Completed	4/1/2011 11:02:15 AM	4/1/201...	C:\Program Files (x86)\eEye Digital ...	Retina
tyr_FSD_scan	Completed	4/4/2011 2:10:46 PM	4/4/201...	C:\Program Files (x86)\eEye Digital ...	Retina
loki_FSD_scan	Completed	4/4/2011 2:10:07 PM	4/4/201...	C:\Program Files (x86)\eEye Digital ...	Retina
tyr_FSD_scan	Completed	4/4/2011 2:11:58 PM	4/4/201...	C:\Program Files (x86)\eEye Digital ...	Retina
nices-sb-vm-05	Completed	4/11/2011 9:01:08 AM	4/11/20...	C:\Program Files (x86)\eEye Digital ...	Retina

Results

4/11/2011 - Report created by version 5.11.16.2345

TOP 20 VULNERABILITIES

The following is an overview of the top 20 vulnerabilities on your network.

Rank	Vulnerability Name	Count
1.	ICMP Protocol Unreachable Not Supported	1
2.	ICMP Timestamp Request	1
3.	Cyrus SASL Library Base64 Encoder Buffer Overflow	1
4.	GNU C Library fnmatch Stack Corruption	1
5.	Bzip2 BZ_decompress Integer Overflow Vulnerability	1
6.	Bzip2 Decompression Denial of Service (20081207)	1
7.	Libxml2 Multiple Vulnerabilities (20080810)	1
8.	Linux Kernel Libertas WLAN Denial of Service	1
9.	OpenSSH X11 Port Forwarding Session Hijack Vulnerability	1
10.	Virtual Environment Detected	1
11.	HTTP 1.0 Protocol Detected	1
12.	OpenSSL Record of Death Vulnerability - Libraries	1

Top 20 Vulnerabilities

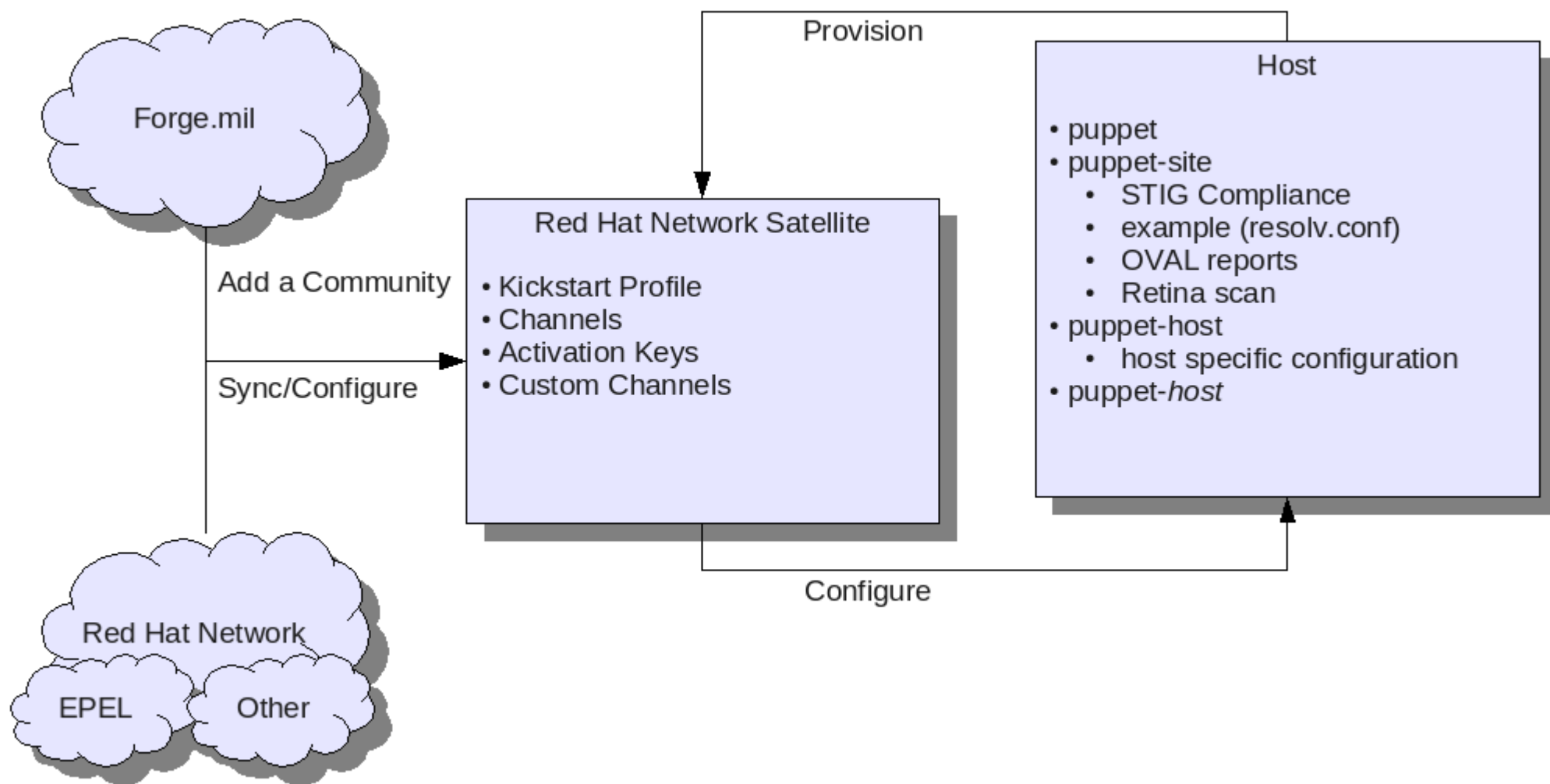
Scan complete

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Example Configuration

USER=`whoami`

BASEDIR="svn.forge.mil/slim/base"

HOMEDIR="/home/\$USER/\$BASEDIR"

TRUNKCHANNELS="rpm/trunk/channels"

RPMSOURCE="rpm/src"

TRUNKKICKSTART="kickstart/trunk"

SATSERVER="hostname.domainname.com"

SVNSERVER="<https://svn.forge.mil/svn/repos/slim/slim/base>"

RELEASEPHASE="dev test prod"

OPERATINGSYSTEM="rhel5 rhel6"

ARCHITECTURE="x86_64 i386"

SOFTWARECHANNELS="nagios puppet oval vm-tools"

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Building a Profile

```
for rel in ${RELEASEPHASE};do
  for os in ${OPERATINGSYSTEM};do
    for arch in ${ARCHITECTURE};do
      for kickstart in `ls $HOMEDIR/${rel}/${os}/${STRUNKKICKSTART}/${arch}`;do
        if [ -d $HOMEDIR/${rel}/${os}/${STRUNKKICKSTART}/${arch}/ ];then
          KICKSTARTNAME="${rel}-${os}-${arch}-${kickstart}"
          # This is setting up the expansion of a variable in the source config.cfg file
          # above. ${!KEY} below.
          KEY="KEY_${rel}${arch}${os}"
          if [[ `ls $HOMEDIR/${rel}/${os}/${STRUNKKICKSTART}/${arch}/${kickstart}` != "" ]];then
            spacecmd -y --username="$SATUSER" --password="$SATPASSWORD" --
            kickstart_delete "$KICKSTARTNAME"
            spacecmd --username="$SATUSER" --password="$SATPASSWORD" --
            kickstart_import -n "$KICKSTARTNAME" \
            -f "$HOMEDIR/${rel}/${os}/${STRUNKKICKSTART}/${arch}/${kickstart}" -d ks-rhel-
            $arch-server-5 -p 'Password' -v 'none' || error_exit "Line $LINENO: Could not
            create Kickstart \ ${rel}-${arch}-${STRUNKKICKSTART}"
            spacecmd --username="$SATUSER" --password="$SATPASSWORD" --
            kickstart_addactivationkeys \ "$KICKSTARTNAME" "${!KEY}"
          fi;
        fi;
      done; done; done; done
```

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spacecmd

Without

```
#!/usr/bin/python
```

```
import xmlrpclib
SATELLITE_URL = "http://satellite.example.com/rpc/api"
SATELLITE_LOGIN = "username"
SATELLITE_PASSWORD = "password"
client = xmlrpclib.Server(SATELLITE_URL,
verbose=0)
key = client.auth.login(SATELLITE_LOGIN,
SATELLITE_PASSWORD)
list = client.user.list_users(key)
for user in list:
    print user.get('login')
client.auth.logout(key)
```

With

```
[user@satellite ~]# spacecmd -u
username -p password user_list
```

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RHN Satellite - Channels - ...

← → ↺ ⏏

https://nces-sat-01/rhn/software/channels/All.do

Ab ☆ TAG M ?

OverviewSystemsErrataChannelsConfigurationScheduleUsersAdminHelp

4 SYSTEMS SELECTEDMANAGECLEAR

Software Channels

All Channels

Red Hat Channels

Popular Channels


My Channels

Shared Channels

Retired Channels

Package Search

Manage Software Channels

 Full Software Channel List ?

All ChannelsRed Hat ChannelsPopular ChannelsMy ChannelsShared ChannelsRetired Channels

The software channels listed below are **all of the channels** that your organization has access to.

Filter by Channel Name:

Show All Child Channels | Hide All Child Channels

Channel Name	Provider	Packages	Systems
<input checked="" type="checkbox"/> dev-rhel-i386-server-5	SPAWAR Systems Center Atlantic (NCES)	8452	0
<input checked="" type="checkbox"/> dev-rhel-i386-server-6	SPAWAR Systems Center Atlantic (NCES)	2980	0
<input checked="" type="checkbox"/> dev-rhel-x86_64-server-5	SPAWAR Systems Center Atlantic (NCES)	11218	22
<input checked="" type="checkbox"/> dev-rhel-x86_64-server-6	SPAWAR Systems Center Atlantic (NCES)	3846	0
<input type="checkbox"/> prod-rhel-i386-server-5	SPAWAR Systems Center Atlantic (NCES)	2125	0
<input type="checkbox"/> prod-rhel-i386-server-6	SPAWAR Systems Center Atlantic (NCES)	2646	0
<input type="checkbox"/> prod-rhel-x86_64-server-5	SPAWAR Systems Center Atlantic (NCES)	2820	0
<input type="checkbox"/> prod-rhel-x86_64-server-6	SPAWAR Systems Center Atlantic (NCES)	3391	0
<input checked="" type="checkbox"/> Red Hat Enterprise Linux (v. 5 for 32-bit x86)	Red Hat, Inc.	8582	0
<input checked="" type="checkbox"/> Red Hat Enterprise Linux (v. 5 for 64-bit x86_64)	Red Hat, Inc.	11254	0
<input checked="" type="checkbox"/> Red Hat Enterprise Linux Server (v. 6 for 32-bit x86)	Red Hat, Inc.	3081	0
<input checked="" type="checkbox"/> Red Hat Enterprise Linux Server (v. 6 for 64-bit x86_64)	Red Hat, Inc.	3984	0
<input checked="" type="checkbox"/> tst-rhel-i386-server-5	SPAWAR Systems Center Atlantic (NCES)	8452	0
<input checked="" type="checkbox"/> tst-rhel-i386-server-6	SPAWAR Systems Center Atlantic (NCES)	2980	0
<input checked="" type="checkbox"/> tst-rhel-x86_64-server-5	SPAWAR Systems Center Atlantic (NCES)	11082	0
<input checked="" type="checkbox"/> tst-rhel-x86_64-server-6	SPAWAR Systems Center Atlantic (NCES)	3846	0

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System							
		Updates	Errata	Packages	Configs	Base Channel	Entitlement
<input type="checkbox"/>	alba.chs.spawar.navy.mil		0	1	0	dev-rhel-x86_64-server-5	Management, Provisioning
<input type="checkbox"/>	alec.chs.spawar.navy.mil		0	1	0	dev-rhel-x86_64-server-5	Management, Provisioning
<input type="checkbox"/>	ally.chs.spawar.navy.mil		0	1	0	dev-rhel-x86_64-server-5	Management, Provisioning
<input type="checkbox"/>	alma.chs.spawar.navy.mil		0	1	0	dev-rhel-x86_64-server-5	Management, Provisioning
<input type="checkbox"/>	bags.chs.spawar.navy.mil		0	0	0	dev-rhel-x86_64-server-5	Management, Provisioning
<input type="checkbox"/>	bait.chs.spawar.navy.mil		0	1	0	dev-rhel-x86_64-server-5	Management, Provisioning
<input type="checkbox"/>	bake.chs.spawar.navy.mil		0	0	0	dev-rhel-x86_64-server-5	Management, Provisioning
<input type="checkbox"/>	bang.chs.spawar.navy.mil		0	0	0	prod-rhel-x86_64-server-5	Management, Provisioning
<input type="checkbox"/>	chop.chs.spawar.navy.mil		0	0	0	prod-rhel-x86_64-server-5	Management, Provisioning
<input type="checkbox"/>	coal.chs.spawar.navy.mil		0	0	0	prod-rhel-x86_64-server-5	Management, Provisioning
<input type="checkbox"/>	coco.chs.spawar.navy.mil		0	0	0	prod-rhel-x86_64-server-5	Management, Provisioning
<input type="checkbox"/>	coin.chs.spawar.navy.mil		0	0	0	prod-rhel-x86_64-server-5	Management, Provisioning
<input type="checkbox"/>	cold.chs.spawar.navy.mil		0	0	0	prod-rhel-x86_64-server-5	Management, Provisioning
<input type="checkbox"/>	cops.chs.spawar.navy.mil		0	0	0	prod-rhel-x86_64-server-5	Management, Provisioning
<input checked="" type="checkbox"/>	dash.chs.spawar.navy.mil		0	0	0	tst-rhel-x86_64-server-5	Management, Provisioning
<input checked="" type="checkbox"/>	dash.chs.spawar.navy.mil		0	0	0	tst-rhel-x86_64-server-5	Management, Provisioning
<input checked="" type="checkbox"/>	maya.chs.spawar.navy.mil		0	0	0	tst-rhel-x86_64-server-5	Management, Provisioning
<input checked="" type="checkbox"/>	maze.chs.spawar.navy.mil		0	0	0	tst-rhel-x86_64-server-5	Management, Provisioning
<input checked="" type="checkbox"/>	meat.chs.spawar.navy.mil		0	0	0	tst-rhel-x86_64-server-5	Management, Provisioning
<input checked="" type="checkbox"/>	milk.chs.spawar.navy.mil		0	0	0	tst-rhel-x86_64-server-5	Management, Provisioning
<input checked="" type="checkbox"/>	nces-sb-vm-09.chs.spawar.navy.mil		0	0	0	tst-rhel-x86_64-server-5	Management, Provisioning



Before we close ... questions?

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How do I do this?

- Pragmatic Approach
 - Find a real problem
 - Find people who care
 - Give them work
- Keep in Mind
 - Communities of Interest
 - Governance Body



Seek Professional Help



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Thank You

- <http://people.redhat.com/jlabocki/summit/2011/slides.pdf>
- <https://software.forge.mil>
- <http://docs.redhat.com/docs/>
 - Red Hat Network Satellite Installation Guide
 - Red Hat Network Satellite API Guide
- <https://fedorahosted.org/spacewalk/wiki/spacecmd>
- Other Interesting Areas
 - <https://github.com/matahari/matahari/wiki>
 - <https://fedorahosted.org/secstate/>
 - <http://www.open-scap.org/>

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