

How to Simplify Configuration With System Roles

... and get your lunch hour back

Terry Bowling

Technical Product Manager

Red Hat Enterprise Linux



9 TIPS & TRICKS FOR SECURING AND AUTOMATING RED HAT INFRASTRUCTURE

How to Securely Manage Your Red Hat Infrastructure

Learn how to automate repetitive tasks and easily audit and remediate systems to maintain compliance over time with Red Hat infrastructure management tooling, such as Red Hat Satellite and Ansible Tower.

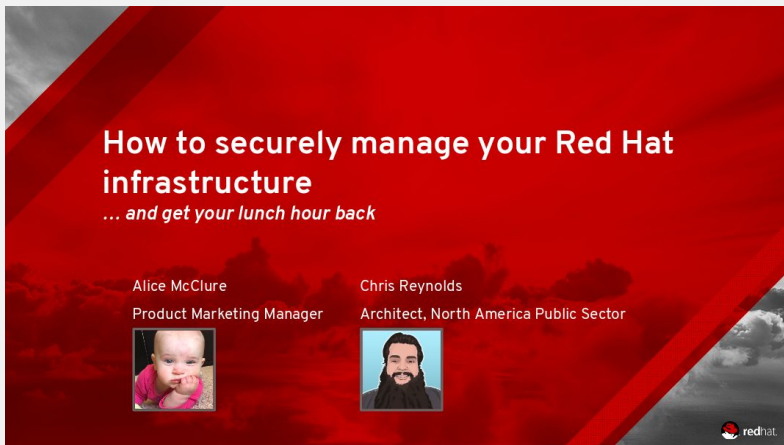
How to Automate System Remediation

Learn how to integrate predictive threat analysis with an operations--friendly workflow so you can maximize uptime and increase the security of your infrastructure with Red Hat Insights.

How to Simplify Configuration With System Roles


In addition to the management capabilities of Red Hat Satellite and automation via Ansible Tower, Red Hat Enterprise Linux 7.4 is designed to make system configuration easier through the inclusion of Red Hat Enterprise Linux System Roles.

DID YOU MISS THE LAST WEBINARS?

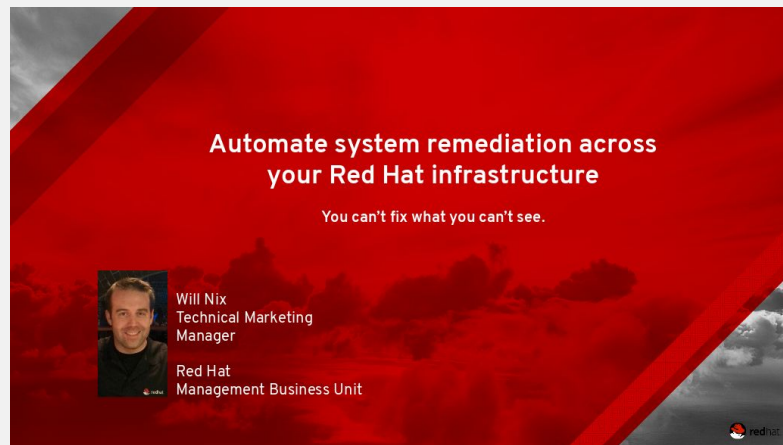




How to securely manage your Red Hat infrastructure
... and get your lunch hour back

Alice McClure
Product Marketing Manager



Chris Reynolds
Architect, North America Public Sector




Automate system remediation across your Red Hat infrastructure
You can't fix what you can't see.

Will Nix
Technical Marketing Manager



Red Hat
Management Business Unit



Select “Live & On Demand” Here: <http://bit.ly/2x4r8Tr>

RHEL Customer Requirements: 2002

“Light up my hardware and make my software run.”

Award-winning support.

Vast ecosystem.

Peerless security.

Lifecycle options.

RHEL Customer Requirements: 2017

“Light up my hardware.” → “Enable my operations.”

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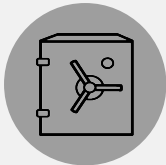
More software available.

Less software installed.

Non-disruptive updates.

More automation.

Red Hat Enterprise Linux 7.4



Defend against the latest **security** threats via:

- Improvements to encryption and auditing
- New features to prevent data leakage



Improve **performance** across all roles via:

- Advanced disk connectivity
- Enhancements to public cloud instances



Streamline **systems management** via:

- Red Hat Enterprise Linux System Roles
- An interactive, browser-based admin interface



Conception	Access to, curation, and image creation of content	Image Builder, Satellite
Birth	Deployments and instantiation	Anaconda+Kickstart, Satellite, CloudForms, OSP, OCP
A Life Well Lived	Ongoing maintenance updates, configuration revisions, new apps & services	Satellite, Insights, Ansible, Cockpit
Retirement	OS upgrades, Migrations, Server retirements	Upgrades & Migrations

Cockpit Admin Console

- Browser-based Linux management console
- Easy to setup
 - No config or infrastructure required
 - Zero footprint
- Discoverable and intuitive
- Remotable and firewall friendly
- Domain + SSO
- Multi-Server

Cockpit [documentation](#)

Community [presentation](#)

tbowling.local... ▾

Dashboard

Cluster

System

Logs

Storage

Networking

Containers

Virtual Machines

Accounts

Services

Diagnostic Reports

Kernel Dump

SELinux

Software Updates

Subscriptions

Terminal

Hardware **LENOVO 20ARS0LE00**

Asset Tag **PF030444**

Machine ID **20032bf749d24b9986f6aa...**

Operating System **Fedora 26 (Twenty Six)**

Secure Shell Keys [Show fingerprints](#)

Host Name **tbowling.localdomain**

Domain [Join Domain](#)

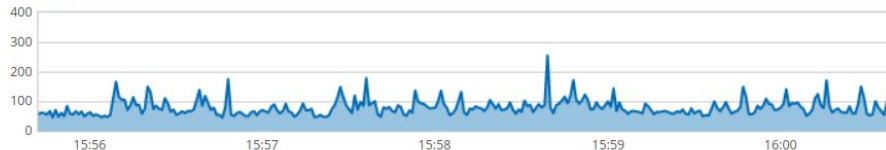
System Time **2017-11-01 16:00** ⓘ

Power Options **Restart** ▾

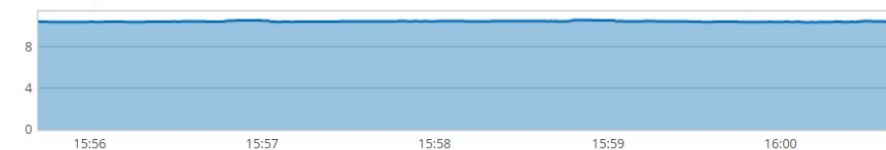
Performance Profile **desktop** ⓘ

Store Performance Data **ON**

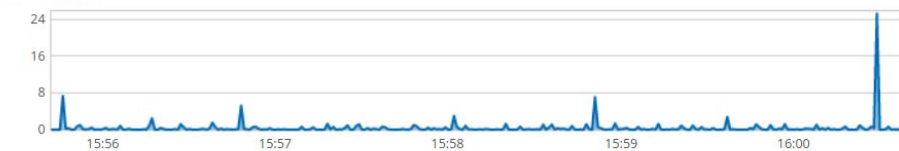
% CPU



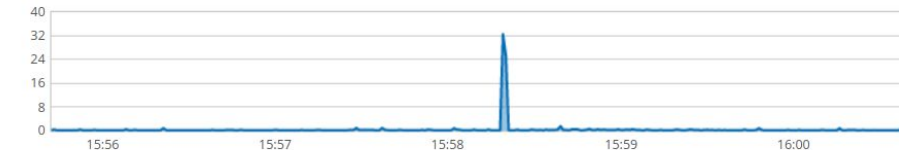
GiB Memory



MiB/s Disk I/O



Mbps Network Traffic



tbowling.local...

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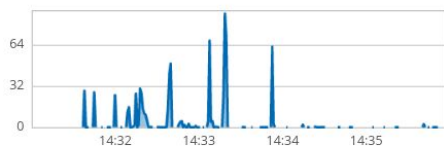
SELinux

Software Updates

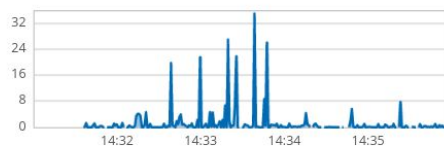
Subscriptions

Terminal

MIB/s Reading



MIB/s Writing



Filesystems

Name	Mount Point	Size
/dev/sda1	/boot	179.5 / 975.9 MIB
/dev/fedora_tbowling/root	/	19.2 / 29.4 GIB
	/var/lib/docker/containers	
	/var/lib/docker/devicemapper	
/dev/fedora_tbowling/home	/home	111.3 / 127.8 GIB

Storage Logs

October 27, 2017

16:07 g_object_notify: object class 'UDisksLinuxBlockObject' h... udisksd

16:07 g_object_notify: object class 'UDisksLinuxBlockObject' h... udisksd 7 ▶16:07 g_object_notify: object class 'UDisksLinuxLogicalVolume0... udisksd 2 ▶RAID Devices +

No storage set up as RAID

Volume Groups +

- fedora_tbowling
- 254.0 GIB

iSCSI Targets +

No iSCSI targets set up

Drives

- LITEONIT LCS-256M6S (SD0E97902L1TF)
- 238.5 GIB Solid-State Disk
- R: 0 B/s W: 0 B/s

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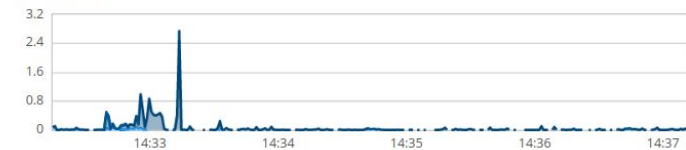
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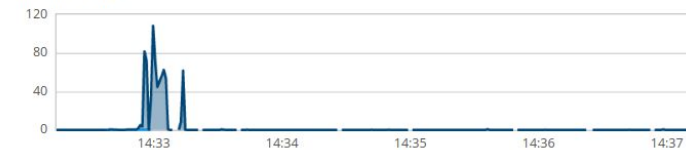
Subscriptions

Terminal

Mbps Sending



Mbps Receiving



Interfaces

Add Bond

Add Team

Add Bridge

Add VLAN

Name	IP Address	Sending	Receiving
docker0	172.17.0.1/16	0 bps	0 bps
enp0s25		Not available	
tun0	10.10.122.166/21	0 bps	0 bps
virbr0	192.168.122.1/24	0 bps	0 bps
virbr75	192.168.75.1/24	0 bps	0 bps
wlp3s0	192.168.1.92/24	3.9 Kbps	4.2 Kbps

Unmanaged Interfaces

Name	IP Address	Sending	Receiving
vethc409981			
virbr0-nic			
virbr75-nic			

Networking Logs

Upgrades & Migrations

In-Place Upgrades

same filesystem

- pre-upgrade-assistant
- rhel-upgrade-tool

Migrations

- Pre-upgrade-assistant
- *RHEL 5 to 7

Conversions

- convert2rhel
- *CentOS to RHEL
- *Oracle Linux to RHEL

** Requires consulting engaging for scoping and support*

Image Building for any deployment type

With lorax and livemedia-creator

Inputs / Sources

- RHSM / CDN
- Satellite
- DVD ISO
- Local or custom repo

Output Artifacts

- DVD ISO image
 - *customized and with updated errata*
- Disk or filesystem image
- VM image
 - *qcow, vmdk, vmhd, similar*
- Cloud ready image
 - *AWS, Azure, GCE*
- RPM-OSTREE
 - *custom Atomic Host*

Simplify Configuration with System Roles

- Overview of Red Hat Enterprise Linux Systems Roles
- How to use it and demo time
- Providing feedback and feature requests

Red Hat Enterprise Linux System Roles

How can we make Red Hat Enterprise Linux *itself* easier to manage by other managements systems?

How can we ease the friction to adopt new major releases?

Red Hat Enterprise Linux System Roles

A collection of Roles and Modules for Ansible

Conceptually a “System API” to Linux *subsystems*

Abstract the *configuration* from the *implementation*

Focusing on compatibility with RHEL 6.9+

Useable within Ansible Tower

Based on the upstream Linux System Roles project

Red Hat Enterprise Linux System Roles

Available in the Red Hat Enterprise Linux 7.4 Extras channel as
Technology Preview

- rhel-system-roles-0.2-2.el7.noarch
- ansible-2.3.1.0-3.el7.noarch

Red Hat Customer Portal documentation:

<https://access.redhat.com/articles/3050101>

System Roles

Initial subsystems

- kdump
- network
- postfix
- selinux
- timesync

Future targeted subsystems

- Subscriptions Manager
- Tuned (perf & power tuning)
- Firewall
- SAP HANA & Applications
- Storage
- NFS
- Kerberos & LDAP Authentication
- Bootloader
- more...

Example: network

```
---  
- hosts: rhel74-test  
  vars:  
    network_provider: [nm or initscripts ]  
    network_connections:  
  
      - name: WebBond  
        type: bond  
        autoconnect: yes  
        ip:  
          dhcp4: yes  
          auto6: no
```

Not required as it will determine the provider on its own,
but you *could* manually specify the provider if desired.

... continued

```
- name: WebBond-linkA  
  type: ethernet  
  interface_name: eth1  
  #mac: "52:54:00:ae:83:49"  
  master: WebBond  
  slave_type: bond  
  
- name: WebBond-linkB  
  type: ethernet  
  interface_name: eth2  
  #mac: "52:54:00:95:c2:a2"  
  master: WebBond  
  slave_type: bond
```

roles:

```
- role: rhel-system-roles.network
```

Example: kdump

- hosts: rhel74-test

vars:

core_collector: "makedumpfile -l --message-level 2 -d 31"

path: /var/mytest/crash

system_action: reboot # reboot | halt | poweroff | shell

roles:

- role: rhel-system-roles.kdump

Example: timesync

```
---
- hosts: rhel74-test
  vars:
    ntp_implementation: ntp # or chrony
    ntp_servers:
      - hostname: 0.rhel.pool.ntp.org
        iburst: true
      - hostname: foo.example.org
        pool: true
        minpoll: 6
        maxpoll: 10
        iburst: no
      - hostname: bar.example.org
        pool: false
        minpoll: 4
        maxpoll: 6
        iburst: true
```

```
ptp_domains:
  - interfaces: [ eth0 ]

roles:
  - role: rhel-system-roles.timesync
```

IT'S DEMO TIME!

Documentation & References

Red Hat Customer Portal Documentation:

<https://access.redhat.com/articles/3050101>

Upstream Resources:

Landing page and overview -

<https://linux-system-roles.github.io/>

Link to Galaxy page -

<https://galaxy.ansible.com/linux-system-roles/>

Link github project -

<https://github.com/linux-system-roles>

Providing Feedback & Requests

Tell us...

- What new features or capabilities you need.
- What is needed.
- What needs to be fixed.

Methods...

- Our [Survey](#).
- Open a Support case via the Red Hat [Customer Portal](#).
- Open an issue at the upstream [linux-system-roles](#) project on github.
- Pull requests welcome!



QUESTIONS?