



# OPERATIONS AND ATOs: AS EASY AS ORDERING PIZZA

Technology Should Be That Simple

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# MY BIOGRAPHY

- 6.5 years at Red Hat
- United States Marine Corps ('88-'08)
- Oakland Raiders Football
- My favorite food is **PIZZA!**

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**...and this talk is just before lunch is served.**





# SIX WAYS TO MAKE OPERATIONS MORE LIKE ORDERING PIZZA

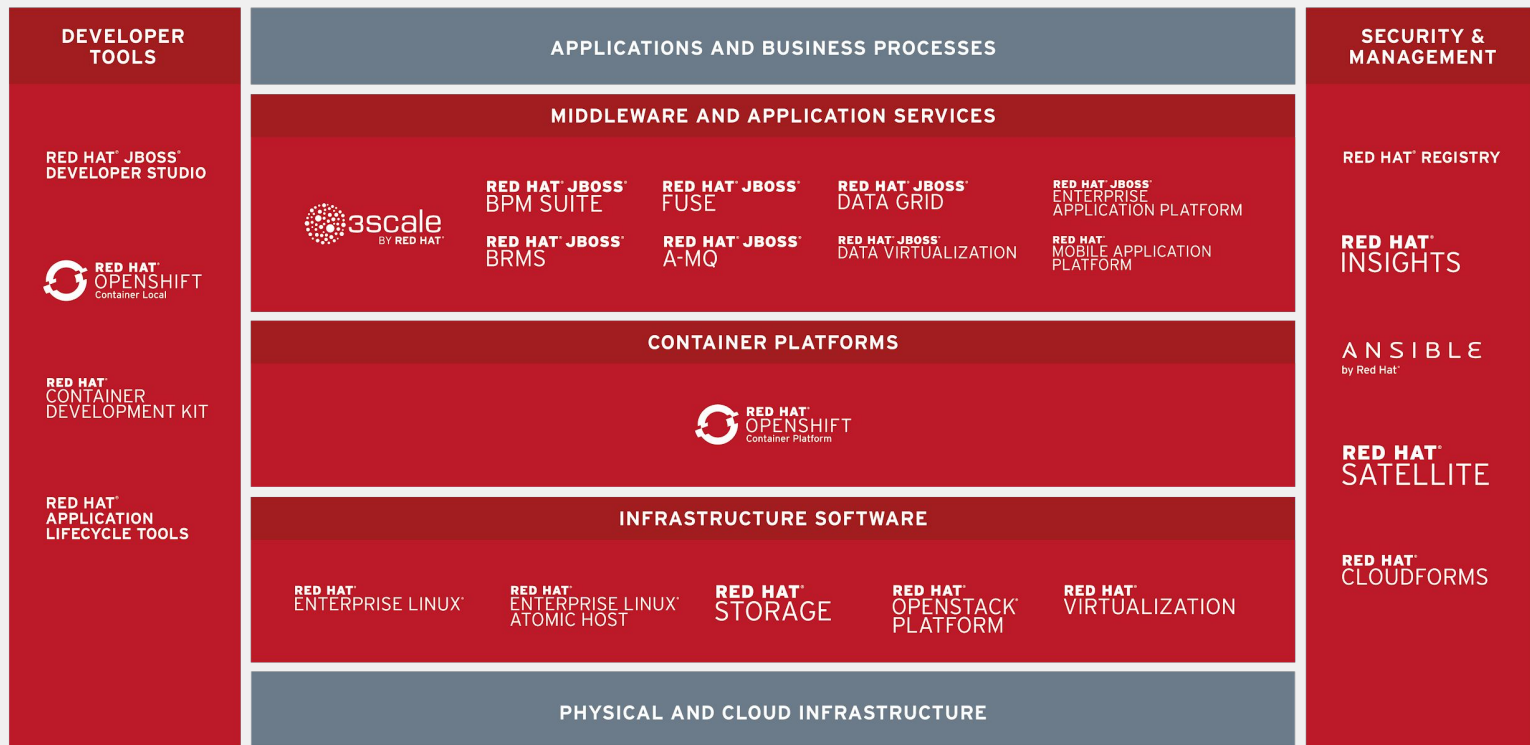
- Deploy API-driven infrastructure
- Plan for capacity utilization
- Implement a self-service portal
- Enforce policy and governance
- Speed processes with automation
- Maintain configuration accuracy



Photo by Fancycrave from Pexels



# API-DRIVEN INFRASTRUCTURE



RH007562

# PLAN FOR CAPACITY



Photo by [Evelyn](#) on [Unsplash](#)

## Provider "RHEV-M" Utilization Trend Summary

Summary **Details** Report

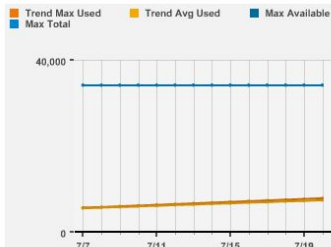
### Options

Trends for past 2 Weeks

Classification <None>

Time Profile UTC

### Trend of CPU Used (Mhz)



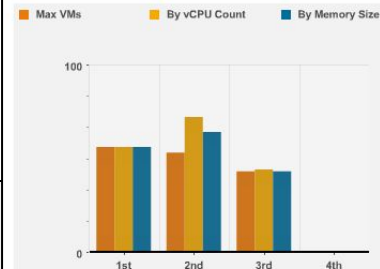
## Planning Summary

Summary **Report**

### Display Options

Limit Chart to 100 VMs

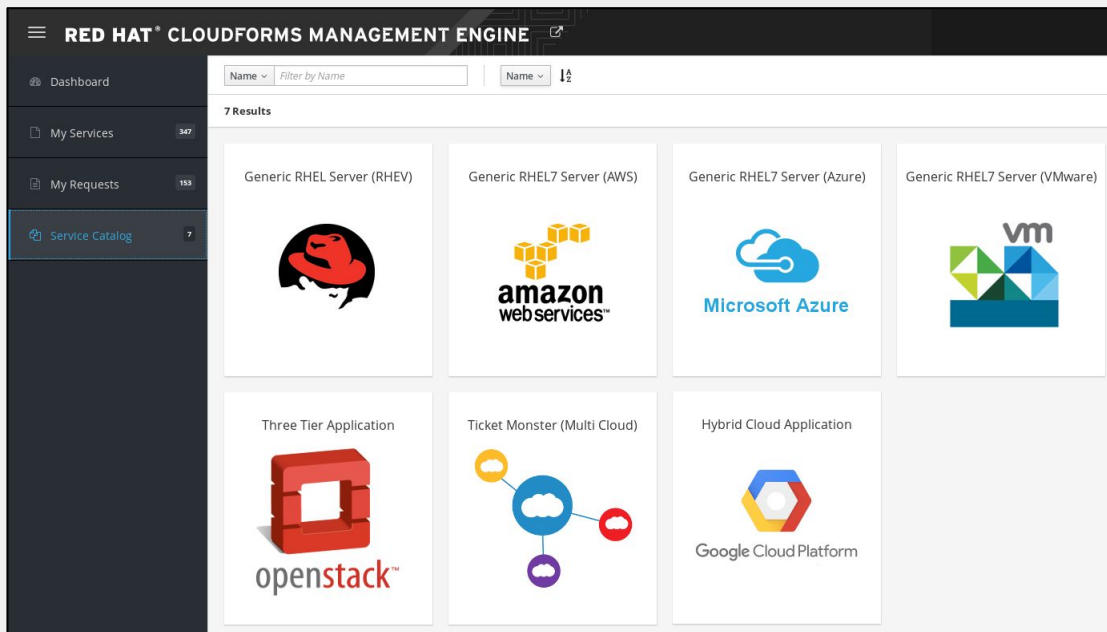
### VM Planning





# SELF-SERVICE PORTAL

- Order and deploy workloads
- Include governance
- Maintain control
- Convenient for operations and the user



# POLICY AND GOVERNANCE



Photo by [Vita Marija Murenaite](#) on [Unsplash](#)

## Scope

**No Policy scope defined, the scope of this policy includes all elements.**

## Conditions

	Description	Scopes / Expressions
◆	Permit Root Login Disabled	ExpressionFIND VM and Instance.Files : Contents Available = "true" CHECK ALL Contents INCLUDES "PermitRootLogin no"

## Events

	Description	Actions
📁	VM Compliance Check	<ul style="list-style-type: none"><li>✗ Mark as Non-Compliant</li><li>✗ Generate log message</li><li>✗ Generate Audit Event</li><li>✗ Send Email to Security Team</li></ul>

## All Policy Profiles

🛡️	Analysis: Exclude Specially Tagged VMs
🛡️	Analysis: On VM Reconfiguration
🛡️	Compliance Hosts: November 2012
🛡️	Compliance: DISA STIG
🛡️	Compliance: DMZ Configuration
🛡️	Compliance: Hosts
🛡️	Compliance: RHEL Host (KVM)

## All Alerts

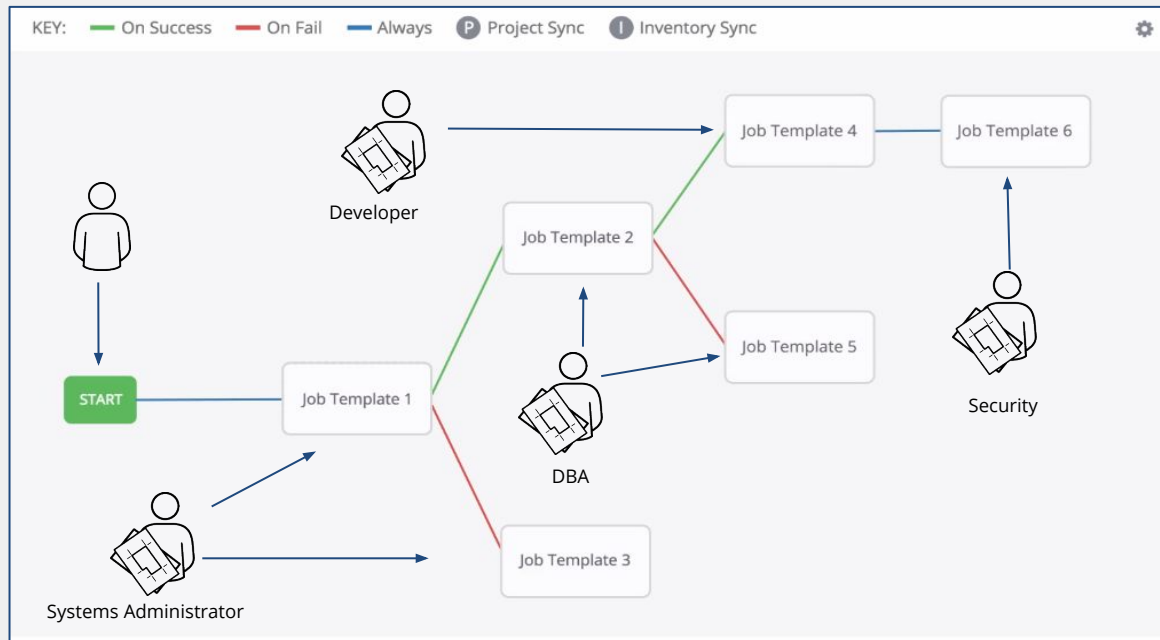
	Description
⚠️	Cluster DRS not enabled
⚠️	Cluster HA not enabled
⚠️	CPU Ready > 4000 ms for more than 10 min
⚠️	Datacenter VMs > 10
⚠️	Host Datastore < 5% of Free Space

## All Actions

	Description
👤	Alert - CPU Reservation > 500Mhz
👤	Cancel vCenter Task
👤	Check Host or VM Compliance
👤	Collect Running Processes on VM Guest OS
👤	Connect All CD-ROM Drives for Virtual Machine

# SPEED UP PROCESSES WITH AUTOMATION

- Reduce human errors
- Ensures quality through standardization
- Smooth = Faster production
- Increases delivery speed
- Flexibility to work with multiple systems



# MAINTAIN CONFIGURATION ACCURACY



**RED HAT SATELLITE**

Red Hat, Inc. | Monitor | Content | Containers | Hosts | Configure | Infrastructure | Red Hat Access

### Compliance Reports

Filter ... | Search

Host	Date	Passed	Failed	Other	
virt-who.deployment6.lan	20 days ago	34	33	1	View Report
virt-who.deployment6.lan	20 days ago	34	33	1	View Report
virt-who.deployment6.lan	20 days ago	34	33	1	View Report
virt-who.deployment6.lan	20 days ago	34	33	1	View Report
virt-who.deployment6.lan	20 days ago	34	33	1	View Report
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virt-who.deployment6.lan	20 days ago	34	33	1	View Report
virt-who.deployment6.lan	20 days ago	34	33	1	View Report

Displaying all 9 entries

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### Account and Access Control (16x fail)

- Protect Accounts by Restricting Password-Based Login (3x fail)
  - Restrict Root Logins
- Verify Proper Storage and Existence of Password Hashes (1x fail)
  - Prevent Log In to Accounts With Empty Password: high, fail
  - Verify All Account Password Hashes are Shadowed: medium, pass
- Set Password Expiration Parameters (2x fail)
  - Set Password Minimum Length in login.defs: medium, fail
  - Set Password Minimum Age: medium, fail
  - Set Password Warning Age: low, pass
- Protect Accounts by Configuring PAM (10x fail)
- Set Password Quality Requirements (5x fail)
  - Set Password Quality Requirements, if using pam\_pwquality (5x fail)
    - Set Password Retry Prompts Permitted Per-Session: low, pass
    - Set Password Strength Minimum Digit Characters: low, fail
    - Set Password Strength Minimum Uniqueness Characters: low, fail





# SECURITY AND CONTINUOUS COMPLIANCE

Simple ideas to keep in mind.

- Compliance is not optional
- Actively monitor security controls to ensure effectiveness
- Compliance methods should be repeatable and non-specialized
- Implement a cost-effective and flexible solution





# CONFIGURATION DRIFT

Avoid “create your own” configurations

- Occurs when configuration accuracy is lost
- Has the potential to create or expose vulnerabilities
- Establish a baseline and test against it
- Results in loss of:
  - Customer trust
  - Revenue
  - Positive public image



# CONTINUOUS COMPLIANCE

The key to gaining and maintaining an ATO

- Configuration Management systems
- Automation capabilities
- Security Content Automation Protocol (SCAP)
- Lifecycle and Patch Management



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RED HAT  
**SUMMIT**

# THANK YOU



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