Accelerating DevOps with Red Hat Ansible and HPE OneView

May 2018
Presenters

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Agenda

– DevOps and physical infrastructure – Bringing together two worlds
– Automating physical infrastructure with Red Hat Ansible and HPE OneView
– Building a full OpenShift solution using Red Hat Ansible and HPE OneView
– Getting started
Bringing together two worlds
What if your physical infrastructure could

Eliminate admin silos
Reduce manual tasks and inconsistent results
Be as agile as your developers

Manage and organize of all your resources
Use fluid resource pools of compute, storage, and fabric
Connect seamlessly with broad and open ecosystem
Composable Infrastructure for DevOps
Bringing the programmability of the cloud to on-premises infrastructure

Cloud Provider
All apps
1 infrastructure

Composable Infrastructure
All apps
1 infrastructure

Public cloud
Single API & UI

On-premises infrastructure
Single API & UI

Software-Defined Intelligence
Unified API

Fluid Resource Pools

Hewlett Packard Enterprise
redhat
Server profile templates
Physical infrastructure configurations defined in code

- Firmware baseline
- BIOS settings
- Local RAID settings
- Boot order
- Network configuration
- Shared storage configuration

- Can bring individual profile into compliance with template from HP OneView GUI
- Can script changes to multiple systems using REST API, PowerShell or Python
- Note: some configuration changes may require server restart
Manage Physical Servers like Virtual Machines
Accelerate Time-to-Service using HPE Synergy with Image Streamer

Virtual Machine Operation
- Create VM template with OS
- Deploy template to VM
- Update VM template
- Hibernate VM template
- Move VM template
- Delete VM template

Physical Server Equivalent
- Create logical server profile with OS
- Deploy server profile from template on compute
- Update server profile
- Unassign server profile
- Move server profile
- Delete server profile

Server profiles manage stateless compute modules like VMs
Traditional infrastructure automation can’t meet DevOps requirements
Automating physical infrastructure is complex and time consuming

Different tools and APIs for every task

1 Based on data from a large retail customer using 3rd party servers who asked HPE to create equivalent configuration management scripts for HPE ProLiant servers.
Accelerate your business with a developer-friendly infrastructure
Deliver infrastructure and apps faster and smarter

Unified API

```bash
ansible-playbook -i hosts realcoolsynergyplaybook.yml
```
Automating physical infrastructure with Red Hat Ansible and HPE OneView
Provision bare metal infrastructure with Ansible and HPE OneView
Automate provisioning with Ansible playbooks and the Unified API

– Accelerate time-to-value
  Automatically provision entire stack from bare metal through application in minutes

– Increase reliability
  Maintain infrastructure compliance with automated rolling upgrades

– Deliver deployment flexibility
  Provision and update bare metal with one line of code – in the same way as virtual and cloud resources
Live demonstration
Building a full OpenShift solution using Red Hat Ansible automation and HPE OneView
Red Hat OpenShift on HPE Synergy
Provides containers on bare metal

Fully automate the deployment of complex systems, from bare metal to software installation

Significantly reduce overall deployment time
– Use golden images and plan scripts instead of manual processes or Kickstart files.
– Clone a volume in less than three minutes.

Speed configuration time
– Configure and deploy the networking, storage, and OS for 13 nodes in only 40 minutes.
– Use automation to complete initial solution deployment in less than two hours, compared to several days required by a services organization.

Enhance accuracy
– Use built-in best practices to reduce the chances of operator- or installer-introduced errors.

Respond to change
– Benefit from fast, easy, accurate, one-click solution deployment using Red Hat Ansible Tower and HPE Synergy composability.
– Seamlessly scale the solution to allow for deployment of additional services as needed.
Automating the deployment of Red Hat OpenShift Container Platform on HPE Synergy Composable Infrastructure

Red Hat Ansible Tower
Workflow runs playbooks to deploy OpenShift on Synergy using Ansible Modules for HPE OneView

HPE OneView
Server profile template identifies the networks, storage, and deployment plan
Sets personalization parameters
Provisions physical infrastructure

HPE Synergy Image Streamer
Creates RHEL 7.4 bootable OS
Personalizes OS and prepares for OpenShift per deployment plan

HPE Synergy Compute and Storage
Computes node boots directly into a customized running OS ready for OpenShift deployment

Configure container-native storage

Ansible playbooks
Deploy Red Hat OpenShift Masters and workers.
Configure Container-native storage using Red Hat Gluster storage

Initiates OS deployment plan

Initiates workflow

System configuration settings

OS Image to Deploy

Deploys Storage Volumes

Configures boot image

Deploy OpenShift
Demonstration
Getting started
## Red Hat OpenShift on HPE Synergy Reference Architecture

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HPE OneView on HPE DEV
hpe.com/developers/oneview

– SDK’s and language bindings
– Open source integrations
– Code samples
– Reference architectures and technical white papers
– Developer blogs and news
Composable infrastructure: Your infrastructure as code, backed by the industry’s broadest partner ecosystem

Powered by HPE OneView

Developer toolkits

www.hpe.com/info/composableprogram
Composable Infrastructure ecosystem
Resources for decision makers and developers

hpe.com/info/composableprogram

30+ HPE OneView integrations & tools
hpe.com/developers/oneview

SDKs and language bindings
Thank you

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