



Red Hat Cloud

Infrastructure as Code -

Mehrwerte und Potentiale für die Unternehmens IT

Red Hat Forum Germany
München, 15. Januar 2019

INFRASTRUCTURE AS CODE

DEFINITION - INFRASTRUCTURE AS CODE (IAC)



Infrastructure as code (IaC) is the process of managing and provisioning computer data centers through machine-readable definition files, rather than physical hardware configuration or interactive configuration tools. The IT infrastructure managed by this comprises both physical equipment such as bare-metal servers as well as virtual machines and associated configuration resources.



Infrastructure as Code (IAC) ist eine bestimmte IT-Infrastruktur, die Operations-Teams anstatt manueller Verfahren automatisch per Code verwalten und bereitstellen können. Infrastructure as Code wird deshalb auch als programmierbare Infrastruktur bezeichnet.

IT - FACHKRÄFTEMANGEL / WAR FOR TALENT

bitkom

Beispiel IT-Sektor: Dort waren laut Bitkom im Herbst 2017 rund 55.000 Stellen unbesetzt – acht Prozent mehr als im Vorjahr.

IT-Branche

Arbeitgeber melden Rekord beim Fachkräftemangel

Deutschen Firmen fehlen Fachleute aus technischen Berufen. Einer Studie zufolge sind es in als 300.000 - die Arbeitgeber sprechen von Rekordwerten.

14.05.2018, 14:17 Uhr

Der Fachkräftemangel im deutschen IT-Bereich ist heute doppelt so schwerwiegend wie noch vor vier Jahren. Das geht aus einer aktuellen Arbeitgeber-Studie hervor.

Quelle: <https://t3n.de/news/it-fachkraeftemangel-mint-1078563/>

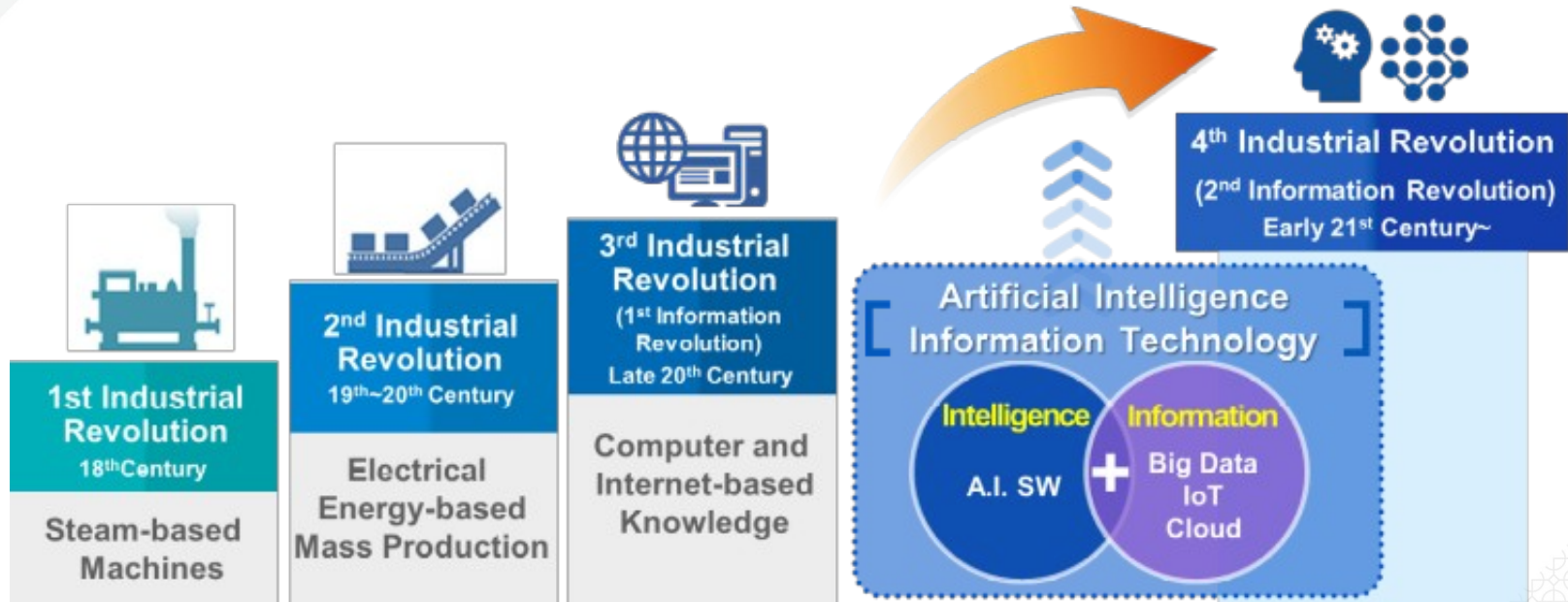
War for Talents in der IT-Branche

„Mitarbeiterakquise ist (fast) wichtiger als Kundenakquise“

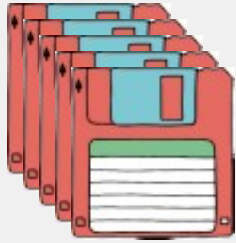
IT-Nerds: Verzweifelt gesucht!
IT-Fachkräftemangel: Einbußen in Milliardenhöhe

**Winning the battle
for technology talent**

INDUSTRIAL & DIGITAL REVOLUTION



My own digital revolution - based on installations



Floppy Disc



Compact Disc



Digital Video Disc



Cloud

34 years of my digital live time

How many time thereof have I spend with computer installation?

WHERE ARE YOU TODAY?

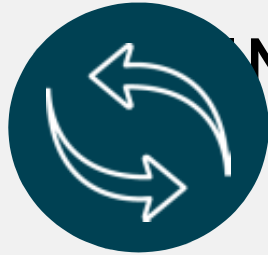
BALANCING INNOVATION & OPTIMIZATION

HOW DO YOU MODERNIZE EXISTING I.T. WHILE SHIFTING INVESTMENT TO

INNOVATION?



Optimize the IT
you have



Integrate apps, data,
& processes



Add & manage cloud
infrastructure



Build more modern
applications



**Automate &
manage IT**

AUTOMATION IS THE SWEET SPOT

86%

Automation is either critical or very important to future cloud strategy.

79%

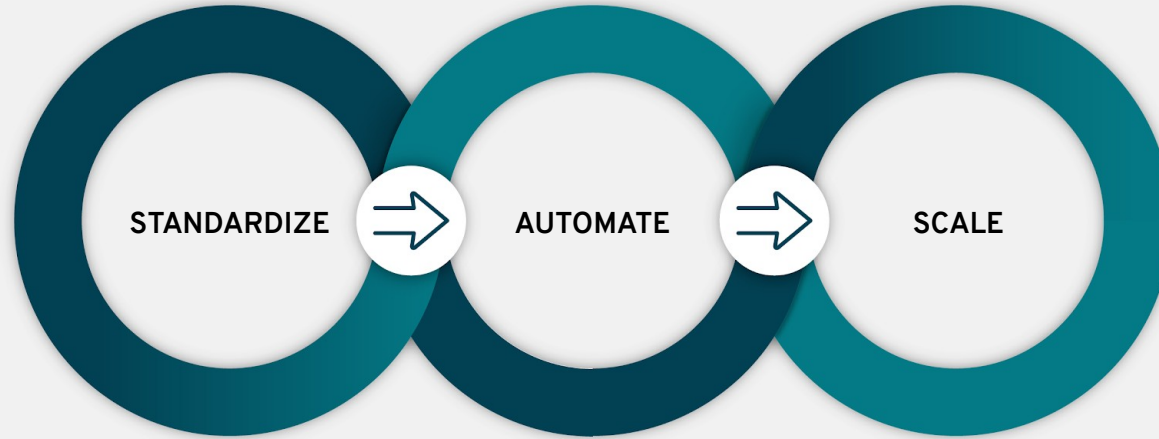
Of IT organizations will need to deploy new management and automation software between now and 2020.

WHAT APPROACHES CAN YOU TAKE?

TAKE AN INCREMENTAL APPROACH

COMMON AUTOMATION & MANAGEMENT STRATEGY FOR TRADITIONAL I.T., CLOUD, & CONTAINERS

Traditional
physical &
virtualized
datacenters



Hybrid cloud,
containers, and
continuous
integration &
delivery (CI/CD)

TAKE A COMPLETE APPROACH

AUTOMATE ACROSS I.T. & THE BUSINESS



PLATFORM

1. Define the Standard Operating Environment (SOE).
2. Implement prescriptive analytics across your infrastructure.
3. Define the security, governance, and policy to be enforced.



PROCESS

1. Optimize operations by automating complex and manual processes.
2. Accelerate service delivery while maintaining control and visibility.
3. Transform your tools to create an end-to-end delivery chain.



PEOPLE

1. Promote cultural changes needed to implement DevOps.
2. Train operators on new tools and methods.
3. Partner with Red Hat Services to quickly build capabilities across your enterprise.

ANSIBLE

SIMPLE BUT POWERFUL

AUTOMATION FOR EVERYONE

A woman with blonde hair tied in a bun is driving a car. She is looking down at a map she is holding in her hands. The car's interior is visible, including the steering wheel, dashboard, and center console. Through the windshield, a red Volvo car with license plate KWP 031 is visible in the lane ahead. The background shows a road with greenery and a clear sky.

THE WORLD IS AUTOMATING

Those who succeed in automation will win

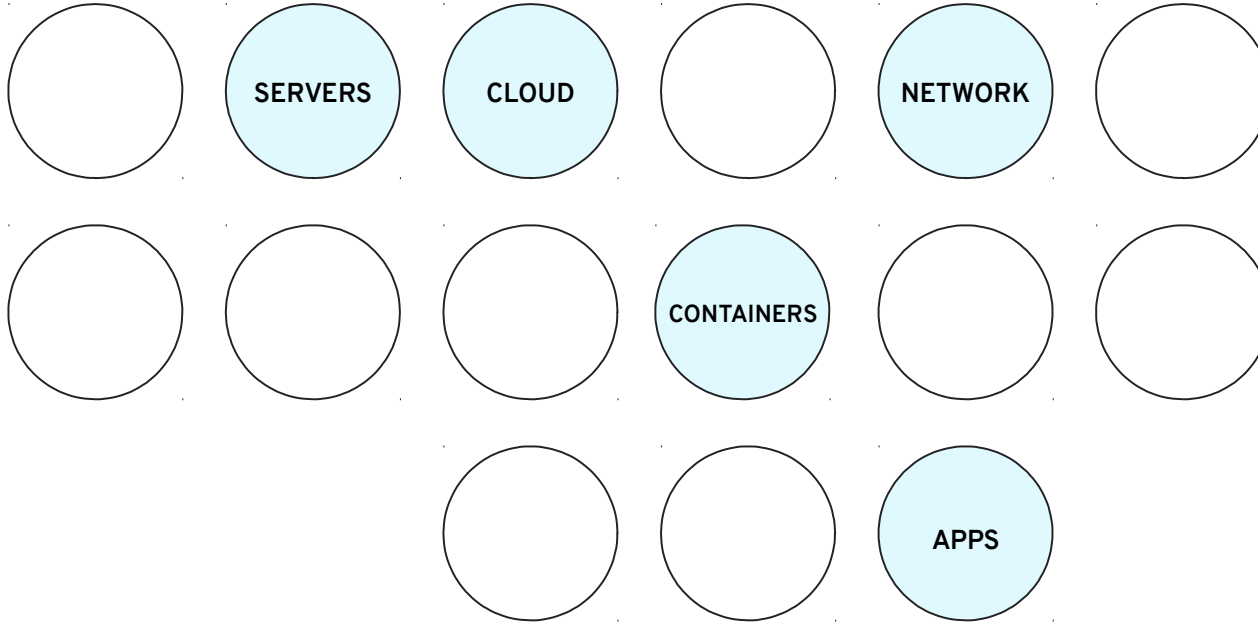
AUTOMATION IS KEY TO BUSINESS TRANSFORMATION

“Digital business gives IT infrastructure and operations leaders a mandate to implement **organization-wide automation**...

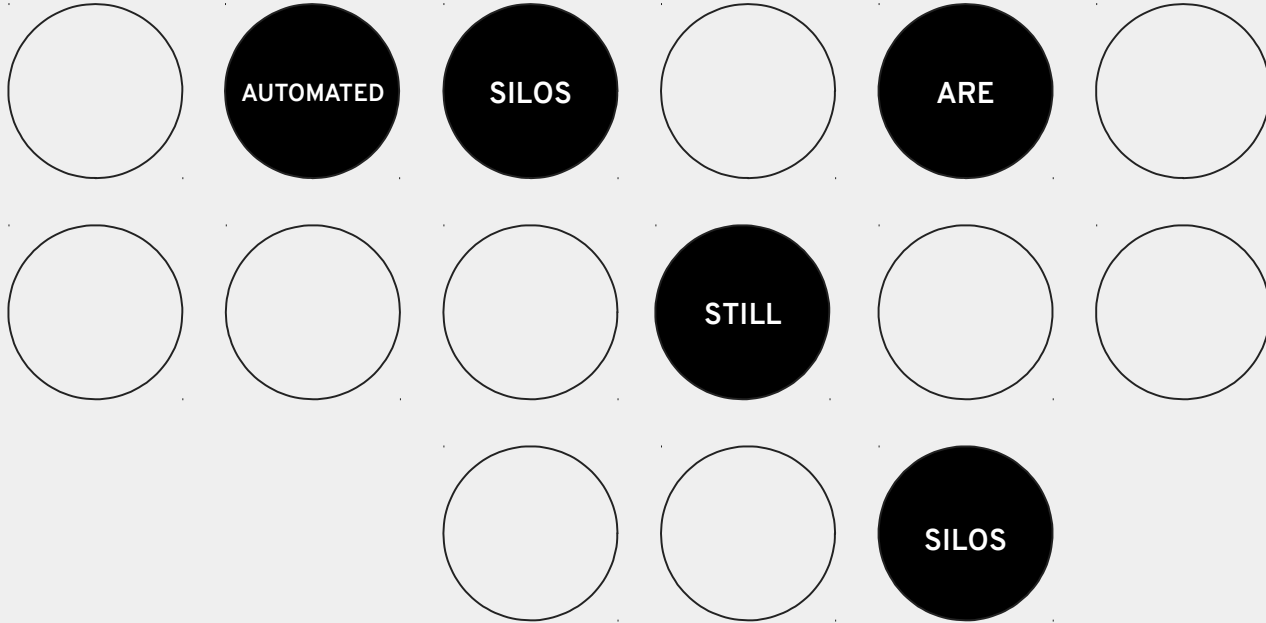
The benefits are compelling - automation improves accountability, efficiency and predictability, while **reducing cost, variability and risk...**”

Automation: The Next Frontier for IT Gartner
May 2016

AUTOMATION IN ENTERPRISE IT TODAY



AUTOMATION IN ENTERPRISE IT TODAY



Isolated
scripts



**AUTOMATES
FUNCTIONS**

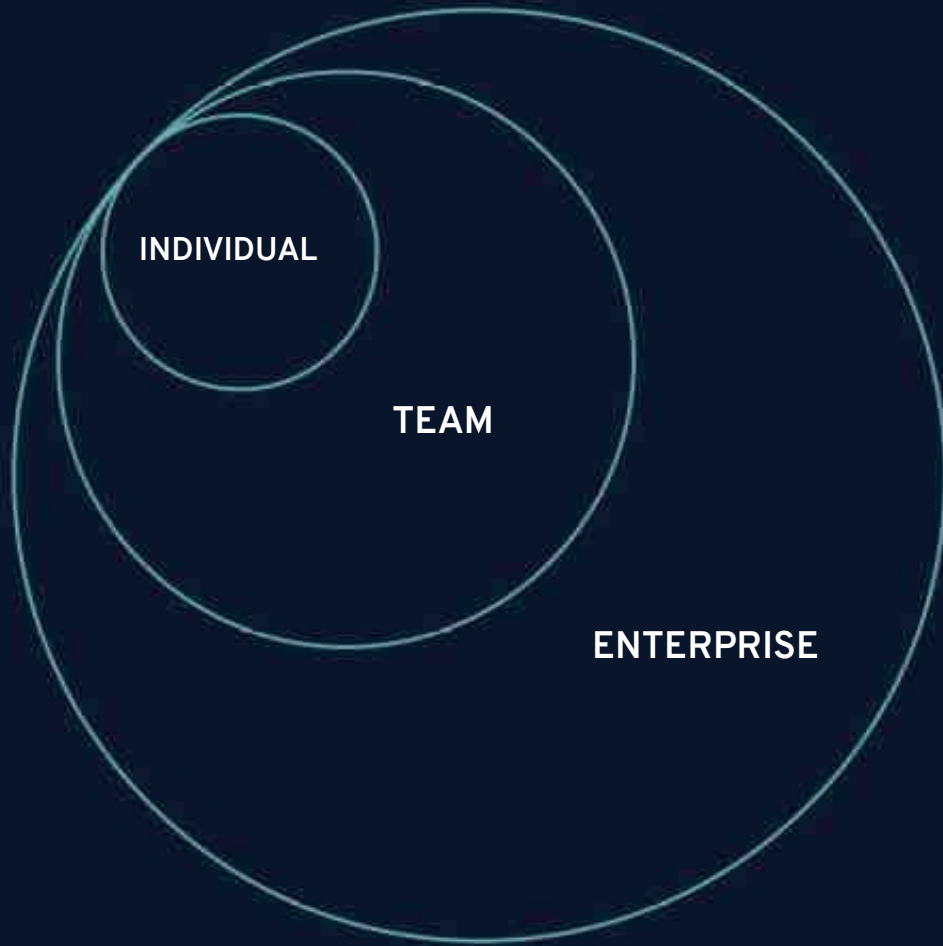
A culture of
automation



**AUTOMATES
ORGANIZATIONS**



For automation to scale,
it must be simple.



**An enterprise-wide
automation strategy
must benefit individuals first.**



AUTOMATION FOR EVERYONE

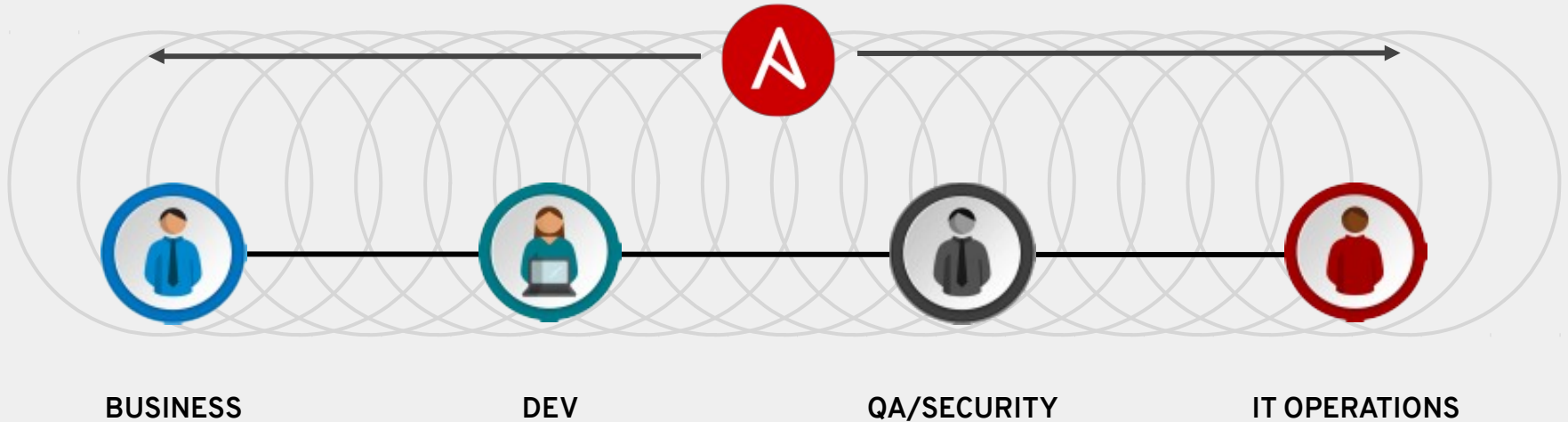
Designed around the way people work
and the way people work together.

31,000+
Stars on GitHub

1900+
Ansible modules

500,000+
Downloads a month

ANSIBLE IS THE UNIVERSAL LANGUAGE



ANSIBLE AUTOMATES TECHNOLOGIES YOU USE

Time to automate is measured in minutes

CLOUD

AWS
Azure
Digital Ocean
Google
OpenStack
Rackspace
+more

OPERATING SYSTEMS

RHEL and Linux
UNIX
Windows
+more

VIRT & CONTAINER

Docker
VMware
RHV
OpenStack
OpenShift
+more

STORAGE

NetApp
Red Hat Storage
Infinidat
+more

WINDOWS

ACLs
Files
Packages
IIS
Regedit
Shares
Services
Configs
Users
Domains
+more

NETWORK

Arista
A10
Cumulus
Bigswitch
Cisco
Cumulus
Dell
F5
Juniper
Palo Alto
OpenSwitch
+more

DEVOPS

Jira
GitHub
Vagrant
Jenkins
Bamboo
Atlassian
Subversion
Slack
Hipchat
+more

MONITORING

Dynatrace
Airbrake
BigPanda
Datadog
LogicMonitor
Nagios
New Relic
PagerDuty
Sensu
StackDriver
Zabbix
+more

FORRESTER®

The Total Economic Impact Of Red Hat Ansible Tower – Webinar for Spark

Sam Conway, TEI Consultant

September 12, 2018



The objective of the TEI framework is to identify all of the factors that affect an investment decision



Source: The Total Economic Impact Of Red Hat Ansible Tower, July 2018

FINANCIAL SUMMARY

146

%

ROI ON ANSIBLE TOWER

< 3 MONTHS

PAYBACK ON ANSIBLE TOWER

ANSIBLE TOWER BY THE NUMBERS

94%

Reduction in recovery
time following a
security incident

84%

Savings by deploying
workloads to generic
systems appliances
using Ansible Tower

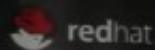
67%

Reduction in man
hours required for
customer deliveries

RED HAT CLOUD SOLUTION

Software defined infrastructure

Neulich im Büro



WOULD
YOU DRIVE
WITHOUT
TRAINING?

► redhat.com/training



```
TASK [layer2_ipa_certificate : create host in IPA DB] *****
skipping: [rhosp-director] => (item={'_ansible_parsed': True, 'stderr_lines': [], 'u'cmd': 'u'echo "Open_Source" | kinit admin 1>/dev/null && LANG=C ipa host-find openstack.rh-sddc.test-bosch.com | awk \'match($0,/Host ?name:\\s+/) {print substr($0, RSTART + RLENGTH)}\'', 'u'end': 'u'2017-12-04 23:23:27.815465', '_ansible_no_log': False, '_ansible_delegated_vars': {'_ansible_delegated_host': 'u'ipa', '_ansible_host': 'u'10.116.127.153'}, '_ansible_item_result': True, 'u'changed': False, 'u'stdout': 'u'openstack.rh-sddc.test-bosch.com', 'item': 'u'openstack.rh-sddc.test-bosch.com', 'u'delta': 'u'0:00:00.637106', 'u'stderr': 'u'', 'u'rc': 0, 'u'invocation': {'u'module_args': {'u'creates': None, 'u'executable': None, 'u'_uses_shell': True, 'u'_raw_params': 'u'echo "Open_Source" | kinit admin 1>/dev/null && LANG=C ipa host-find openstack.rh-sddc.test-bosch.com | awk \'match($0,/Host ?name:\\s+/) {print substr($0, RSTART + RLENGTH)}\'', 'u'removes': None, 'u'warn': True, 'u'chdir': None}}, 'stdout_lines': ['u'openstack.rh-sddc.test-bosch.com'], 'failed_when_result': False, 'u'start': 'u'2017-12-04 23:23:27.178359', 'failed': False})
```

```
TASK [layer2_ipa_certificate : get principal for host] *****
ok: [rhosp-director -> 10.116.127.153] => (item={'_ansible_parsed': True, 'stderr_lines': [], 'u'cmd': 'u'echo "Open_Source" | kinit admin 1>/dev/null && LANG=C ipa host-find openstack.rh-sddc.test-bosch.com | awk \'match($0,/Host ?name:\\s+/) {print substr($0, RSTART + RLENGTH)}\'', 'u'end': 'u'2017-12-04 23:23:27.815465', '_ansible_no_log': False, '_ansible_delegated_vars': {'_ansible_delegated_host': 'u'ipa', '_ansible_host': 'u'10.116.127.153'}, '_ansible_item_result': True, 'u'changed': False, 'u'stdout': 'u'openstack.rh-sddc.test-bosch.com', 'item': 'u'openstack.rh-sddc.test-bosch.com', 'u'delta': 'u'0:00:00.637106', 'u'stderr': 'u'', 'u'rc': 0, 'u'invocation': {'u'module_args': {'u'creates': None, 'u'executable': None, 'u'_uses_shell': True, 'u'_raw_params': 'u'echo "Open_Source" | kinit admin 1>/dev/null && LANG=C ipa host-find openstack.rh-sddc.test-bosch.com | awk \'match($0,/Host ?name:\\s+/) {print substr($0, RSTART + RLENGTH)}\'', 'u'removes': None, 'u'warn': True, 'u'chdir': None}}, 'stdout_lines': ['u'openstack.rh-sddc.test-bosch.com'], 'failed_when_result': False, 'u'start': 'u'2017-12-04 23:23:27.178359', 'failed': False})
```

```
TASK [layer2_ipa_certificate : create principal for host] *****
skipping: [rhosp-director] => (item={'_ansible_parsed': True, 'stderr_lines': [], 'u'cmd': 'u'echo "Open_Source" | kinit admin 1>/dev/null && ipa service-find HTTP/openstack.rh-sddc.test-bosch.com | grep openstack.rh-sddc.test-bosch.com', 'u'end': 'u'2017-12-04 23:23:28.826330', '_ansible_no_log': False, '_ansible_delegated_vars': {'_ansible_delegated_host': 'u'ipa', '_ansible_host': 'u'10.116.127.153'}, '_ansible_item_result': True, 'u'changed': False, 'u'stdout': 'u' Principal name: HTTP/openstack.rh-sddc.test-bosch.com@RH-SDDC.TEST-BOSCH.COM\n Principal alias: HTTP/openstack.rh-sddc.test-bosch.com@RH-SDDC.TEST-BOSCH.COM\n Subject: CN=openstack.rh-sddc.test-bosch.com,O=RH-SDDC.TEST-BOSCH.COM', 'item': {'_ansible_parsed': True, 'stderr_lines': [], '_ansible_item_result': True, 'u'end': 'u'2017-12-04 23:23:27.815465', '_ansible_no_log': False, '_ansible_delegated_vars': {'_ansible_delegated_host': 'u'ipa', '_ansible_host': 'u'10.116.127.153'}, 'u'cmd': 'u'echo "Open_Source" | kinit admin 1>/dev/null && LANG=C ipa host-find openstack.rh-sddc.test-bosch.com | awk \'match($0,/Host ?name:\\s+/) {print substr($0, RSTART + RLENGTH)}\'', 'u'rc': 0, 'u'stdout': 'u'openstack.rh-sddc.test-bosch.com', 'item': 'u'openstack.rh-sddc.test-bosch.com', 'u'delta': 'u'0:00:00.637106', 'u'stderr': 'u'', 'u'changed': False, 'u'invocation': {'u'module_args': {'u'warn': True, 'u'executable': None, 'u'_uses_shell': True, 'u'_raw_params': 'u'echo "Open_Source" | kinit admin 1>/dev/null && LANG=C ipa host-find openstack.rh-sddc.test-bosch.com | awk \'match($0,/Host ?name:\\s+/) {print substr($0, RSTART + RLENGTH)}\'', 'u'removes': None, 'u'creates': None, 'u'chdir': None}}, 'stdout_lines': ['u'openstack.rh-sddc.test-bosch.com'], 'failed_when_result': False, 'u'start': 'u'2017-12-04 23:23:27.178359', 'failed': False}, 'u'delta': 'u'0:00:00.621562', 'u'stderr': 'u'', 'u'rc': 0, 'u'invocation': {'u'module_args': {'u'creates': None, 'u'executable': None, 'u'_uses_shell': True, 'u'_raw_params': 'u'echo "Open_Source" | kinit admin 1>/dev/null && ipa service-find HTTP/openstack.rh-sddc.test-bosch.com | grep openstack.rh-sddc.test-bosch.com', 'u'removes': None, 'u'warn': True, 'u'chdir': None}}, 'stdout_lines': ['u' Principal name: HTTP/openstack.rh-sddc.test-bosch.com@RH-SDDC.TEST-BOSCH.COM', 'u' Principal alias: HTTP/openstack.rh-sddc.test-bosch.com@RH-SDDC.TEST-BOSCH.COM', 'u' Subject: CN=openstack.rh-sddc.test-bosch.com,O=RH-SDDC.TEST-BOSCH.COM'], 'failed_when_result': False, 'u'start': 'u'2017-12-04 23:23:28.204768', 'failed': False})
```

```
TASK [layer2_ipa_certificate : create certificate directory] *****
ok: [rhosp-director -> 10.116.127.153]
```

```
TASK [layer2_ipa_certificate : create openssl config file] *****
```




OPEN INNOVATION LABS

OPEN SOURCING OUR DNA TO ACCELERATE APPLICATION DEVELOPMENT

MISSION

To **accelerate the delivery** of our customer's innovative ideas, and **create infectious enthusiasm** for building applications **the Red Hat Way**, by leveraging community-powered innovation to **deliver an outstanding labs experience**.

VISION

To empower our customers to **deliver the most innovative software success stories of the 21st century**.





THANK YOU



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red.ht/red-hat-shares