MANAGING SERVICES WITH RED HAT CLOUDFORMS AND ANSIBLE

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AGENDA

- Why self service, challenges and solutions
- A customer perspective
- Demonstration

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WHY SELF-SERVICE?

CHALLENGES AND SOLUTIONS

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DIGITAL TRANSFORMATION DRIVING DRAMATIC CHANGES IN IT

CEO
Competitive pressure driving digital transformation

LINE OF BUSINESS
Challenged to deliver services faster, at scale, and more efficiently

DEVELOPERS
Need to develop applications faster with greater productivity

IT OPERATIONS
Must provide infrastructure agility, on-demand that scales as needed

"The business environment today is pushing companies to respond to ever increasing competition.

In order to remain competitive, they have to deliver their services faster, at greater scale, and do so efficiently in order to remain profitable.

These demands drive application developers to create new applications and deliver them faster.

This further places stress on the IT Operations team who has to provide a scalable, on-demand infrastructure that can service the Developers."

Gartner

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SELF-SERVICE SIGNIFICANTLY IMPROVES AGILITY

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Competitive pressure driving digital transformation

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"We analyzed the numbers and realized with Red Hat we saved almost 10 years of time and almost $5 million in soft savings."

Jason Cornell, Cox automotive:

Self-service benefits

- Service delivery times: weeks to minutes
- Improved compliance by using standardized offerings
- More efficient use of staff

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WARNING
CHALLENGES
AHEAD

#1 - LIFE CYCLE

TYPICAL SELF-SERVICE APPROACH

1. Deploy resources through a portal

2. There is no step 2

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ISSUES WITH “FIRE AND FORGET”

- When are the resources cleaned up? (sprawl!)
- How to manage resources after the are deployed (day-2 ops)? E.g.:
  - Restart VMs
  - Get a console
  - Snapshot a data volume
  - See resource utilization
- Who owns what?
- What resources are owned by what service?

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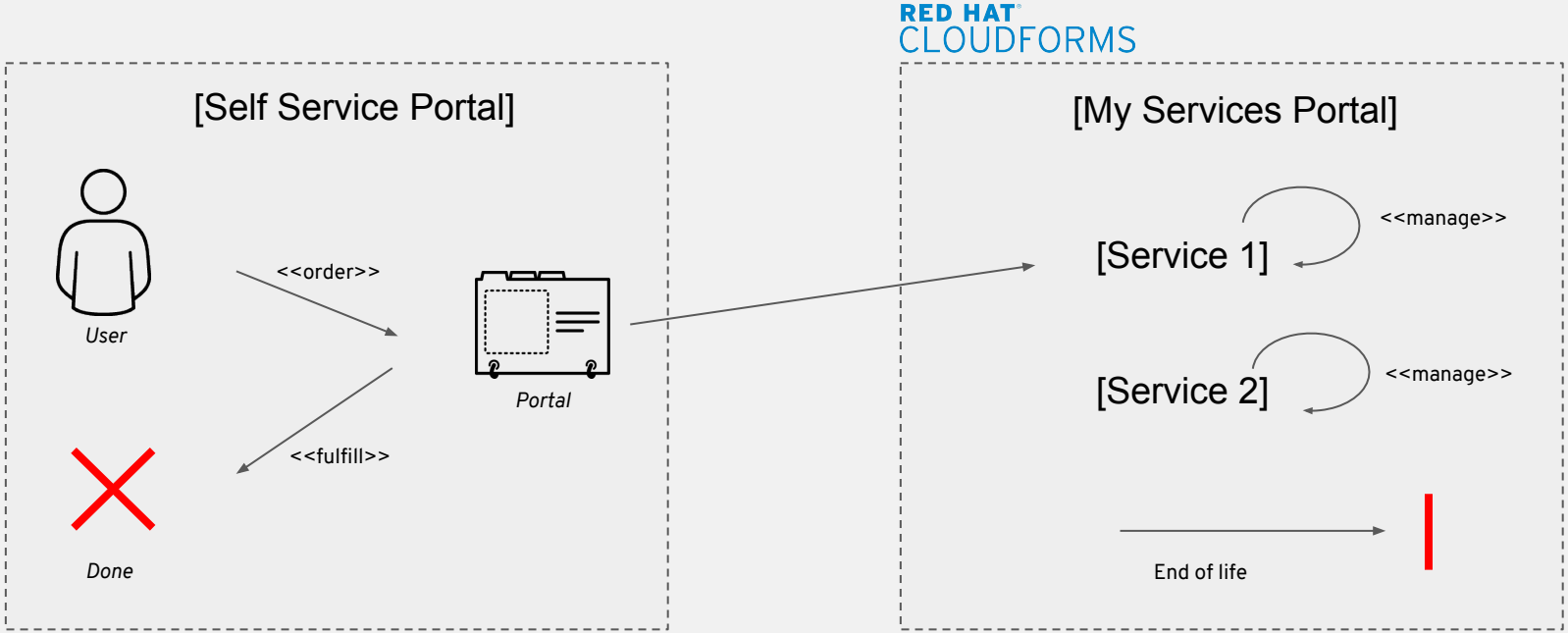
SOLUTION - FULL LIFE CYCLE MANAGEMENT



"Classical" self service process

"My Services" for day-2 management

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#2 - COMPLIANCE

USERS WANT

- Newer version of the OS
- Root access
- A newer version of a library
- An older version of a library
- Both versions of a library
- Root access
- The latest version of left-pad
- Root access?
- Root access!

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CHALLENGE

How to

- Be compliant: security, regulatory, corporate, other
- Not be in the way

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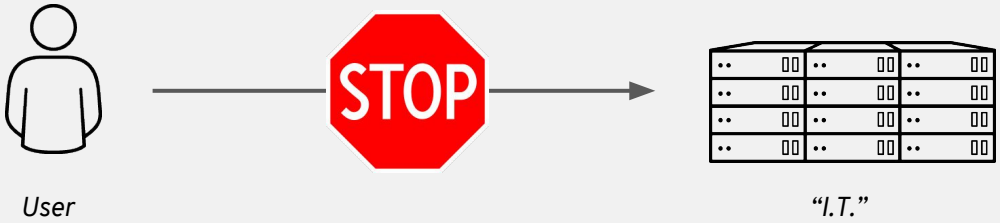
TWO WAYS TO COMPLIANCE



Option 1: change control / ITSM CM

RED HAT® CLOUDFORMS

- Continuous
- Agentless
- Cross-technology

Option 2: "trust but verify"

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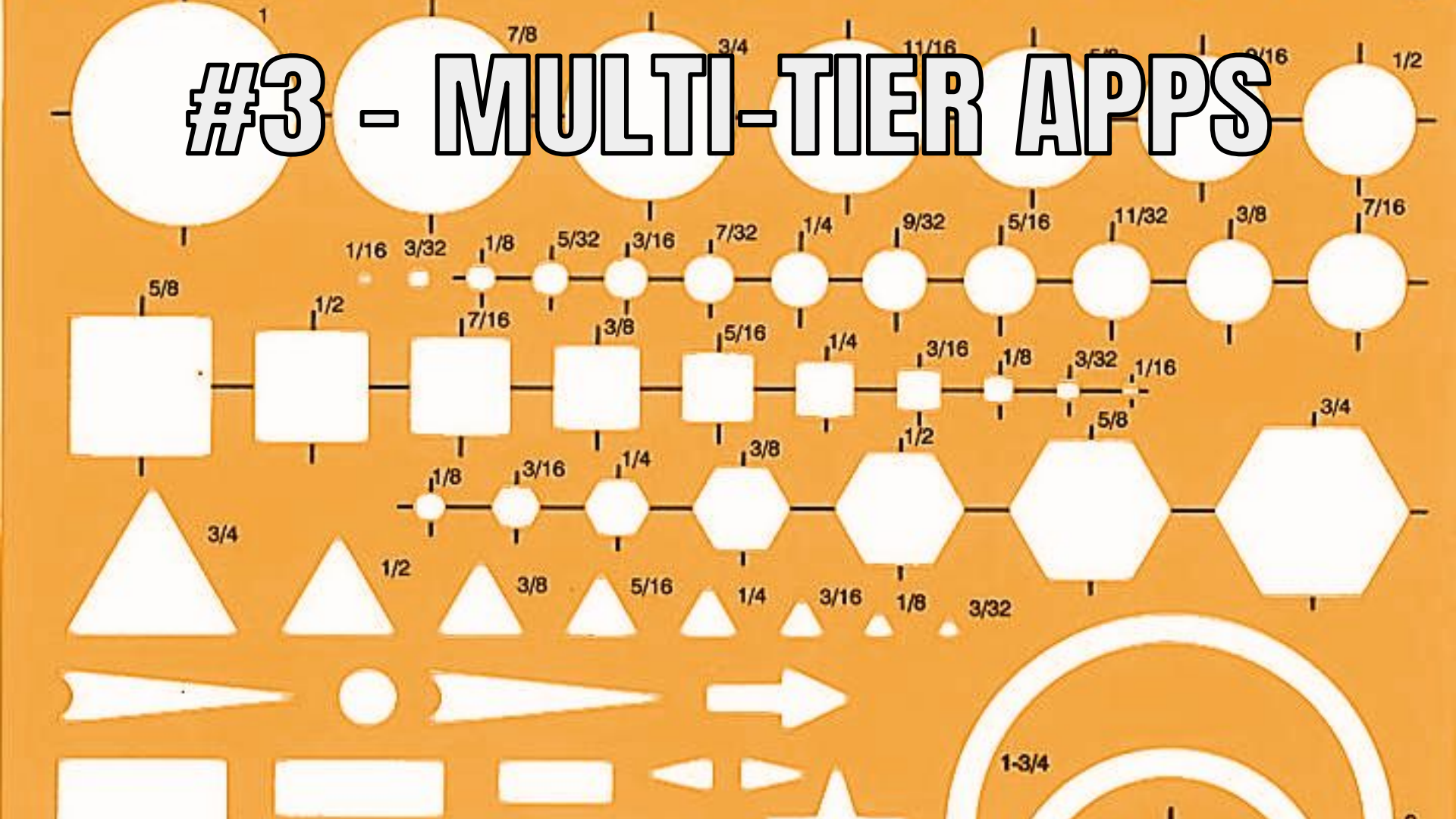
#3 - MULTI-TIER APPS

SINGLE-VM VS. MULTI-TIER SELF SERVICE

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MULTI-TIER APPS: CHALLENGES

- Multiple types of resources to create: VMs, load balancers, subnets.
- Resources need to be created in certain order.
- Application software need to be installed.
- Application software needs to be configured for its role in the stack.
- Application software needs to be configured for its relationship with other resources.

Common solution: “Template”

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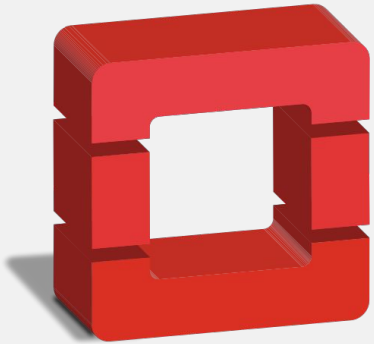
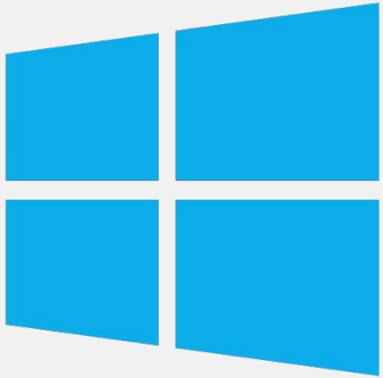
TEMPLATE TYPE: CLOUD NATIVE





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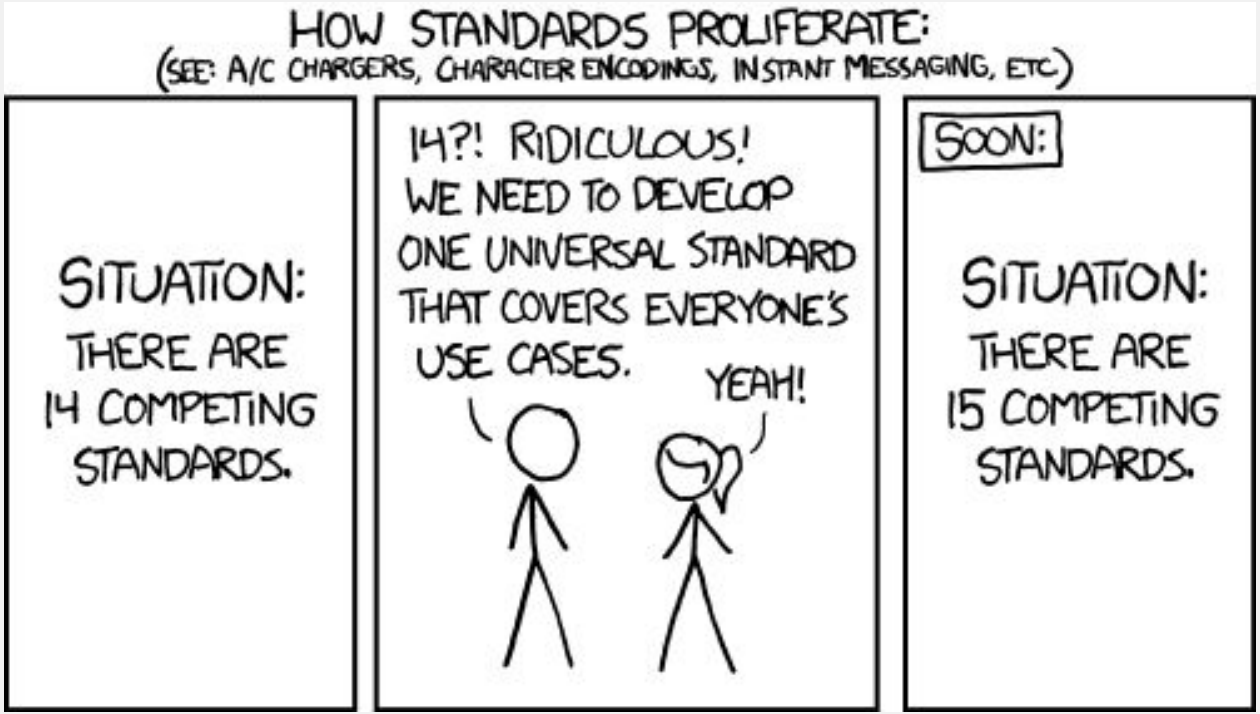
TEMPLATE TYPE: CLOUD ABSTRACTION



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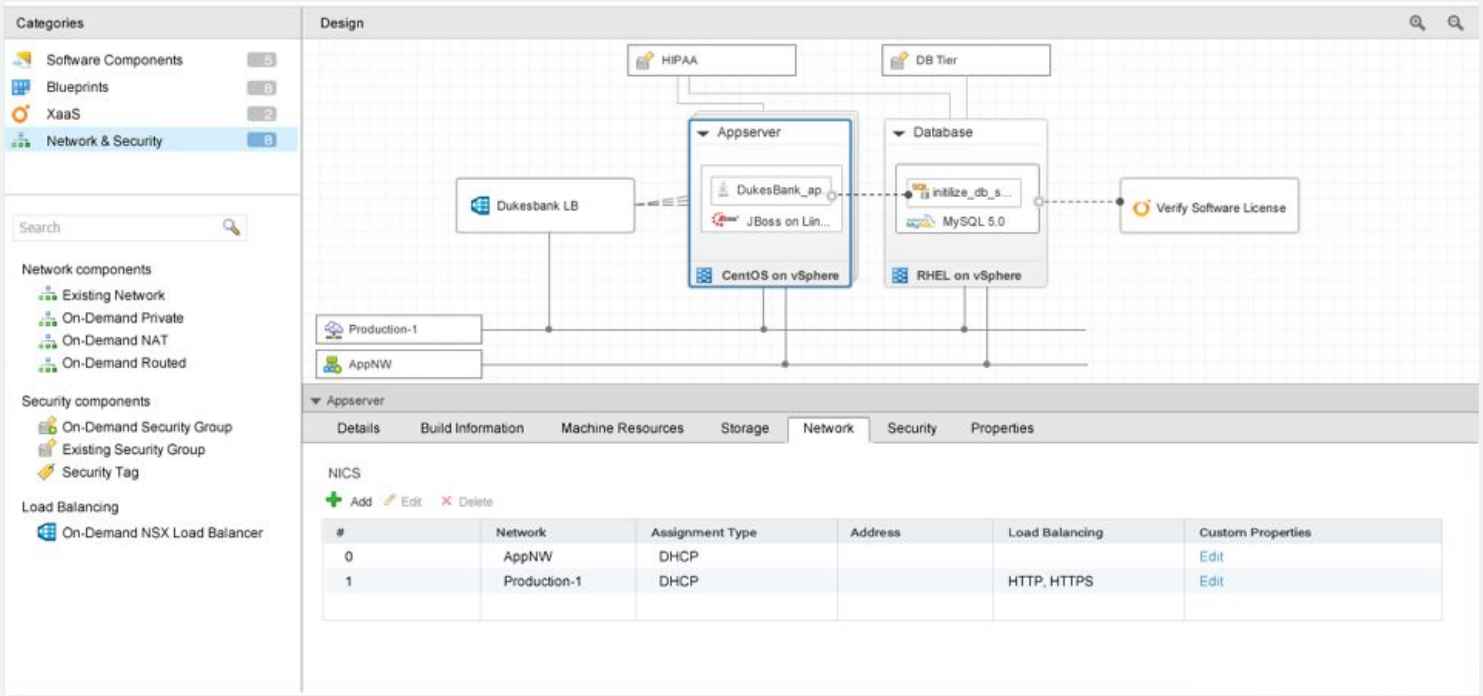
TEMPLATE TYPE: DESIGNER



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ISSUES WITH TEMPLATES

- Lowest common denominator
  - OR Cloud specific

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AUTOMATION VS TEMPLATES

- What if we had a Simple, Powerful, Agentless orchestration language?
  - That is understood and loved by the ops teams.
  - With large number of integrations and big community
  - Where it's very easy to define the creation process of a multi-tier app
- Then, Automation could be the Template

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AUTOMATION AS THE TEMPLATE

- All of the following using the same template
  - Creation of resources
  - On-system configuration
  - Life-cycle actions
- 900+ available modules
- Individual orchestration steps can be declarative
- Included in CloudForms 4.5

SUMMARY

- Self-service can significantly improve agility
- Challenges with classical self-service
  - Life cycle management
  - How to enforce compliance?
  - How to define multi-tier apps?
- CloudForms 4.5 has
  - Full life-cycle management
  - Powerful, agent-less policy engine for enforcing compliance
  - Ansible “Automation is the Template” based service definition

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A CUSTOMER PERSPECTIVE

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What is ING and who am I

- Global financial institution with a strong European base
- Offering retail and commercial banking services in over 40 countries

- Lead Dev Engineer
- Dutch Infra department

Going through change

- Organisational
- VM deployment
- Why Cloudforms
- Component-api based

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Self-service with custom portal

- Single entry point
- The use of Cloudforms
- Dynamic dialogs


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{
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    "description": "Development, Test, Acceptance or Production",
    "data_type": "string",
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    "required_method_options": {},
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        [ "Acceptance", "Acceptance" ],
        [ "Production", "Production" ]
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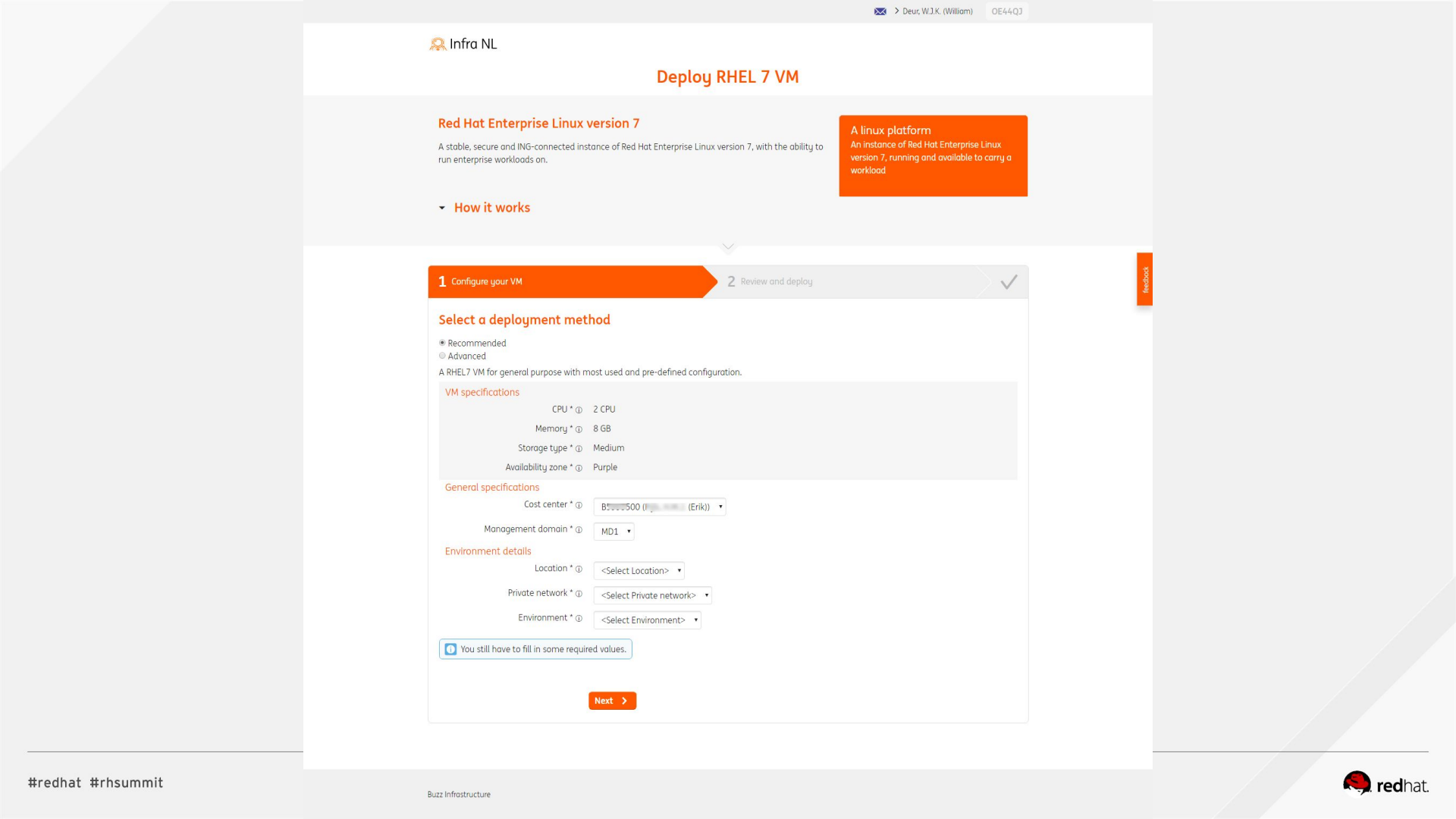
Deur, W.J.K. (William)
OE44QJ
Infra NL
Deploy RHEL 7 VM
Red Hat Enterprise Linux version 7
A stable, secure and ING-connected instance of Red Hat Enterprise Linux version 7, with the ability to run enterprise workloads on.
A linux platform
An instance of Red Hat Enterprise Linux version 7, running and available to carry a workload
How it works
1 Configure your VM
2 Review and deploy
feedback
Select a deployment method
Recommended
Advanced
A RHEL7 VM for general purpose with most used and pre-defined configuration.
VM specifications
CPU * 2 CPU
Memory * 8 GB
Storage type * Medium
Availability zone * Purple
General specifications
Cost center * B[redacted]500 ([redacted] (Erik))
Management domain * MD1
Environment details
Location * <Select Location>
Private network * <Select Private network>
Environment * <Select Environment>
You still have to fill in some required values.
Next

What we have build

- Single-VM provisioning workflow providing RHEL 7
- IPAM
- IaaS API for placement
- Pre-register vm for backup and UAM
- HierAPI
- Ansible
- Monitoring / CMDB
- …

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Future

- Second day operations
- Multi-VM
- ...

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DEMONSTRATIONS

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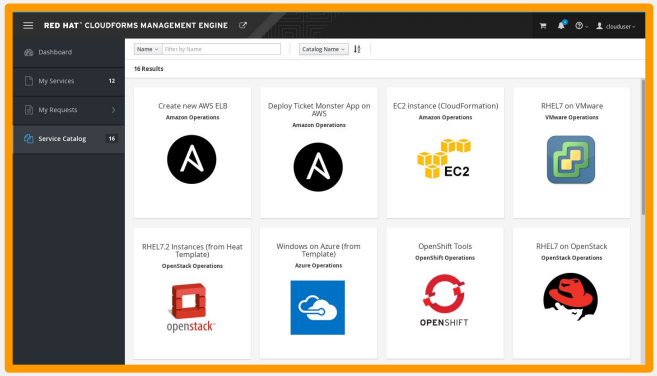
CLOUDFORMS SELF-SERVICE PORTAL



FULL VISIBILITY

DAY 2 OPERATIONS

SECURITY GOVERNANCE

RESOURCE CONSUMPTION

SIMPLE SERVICE PROVISIONING

TEMPLATE SERVICE PROVISIONING

AUTOMATION PROVISIONING

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ANSIBLE SERVICES in CLOUDFORMS 4.5

RED HAT®
CLOUDFORMS

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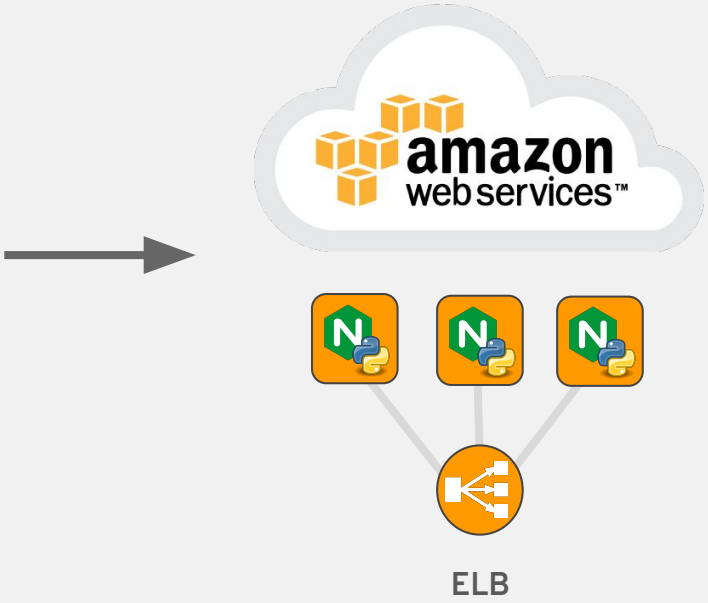
Deploy new Instances
Deploy NGINX & web application
Register instances with ELB



FULL VISIBILITY

DAY 2 OPERATIONS

SECURITY GOVERNANCE

RESOURCE CONSUMPTION

WRAP-UP & Q&A

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REFERENCES

- Download Red Hat CloudForms
  https://access.redhat.com/products/red-hat-cloudforms

- Red Hat CloudForms Blog
  http://cloudformsblog.redhat.com/

- Red Hat CloudForms YouTube channel
  https://www.youtube.com/user/cloudformsnow

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