HP Helion

Roles

- Ecosystem
- Flow of Information between Roles
- Accountability

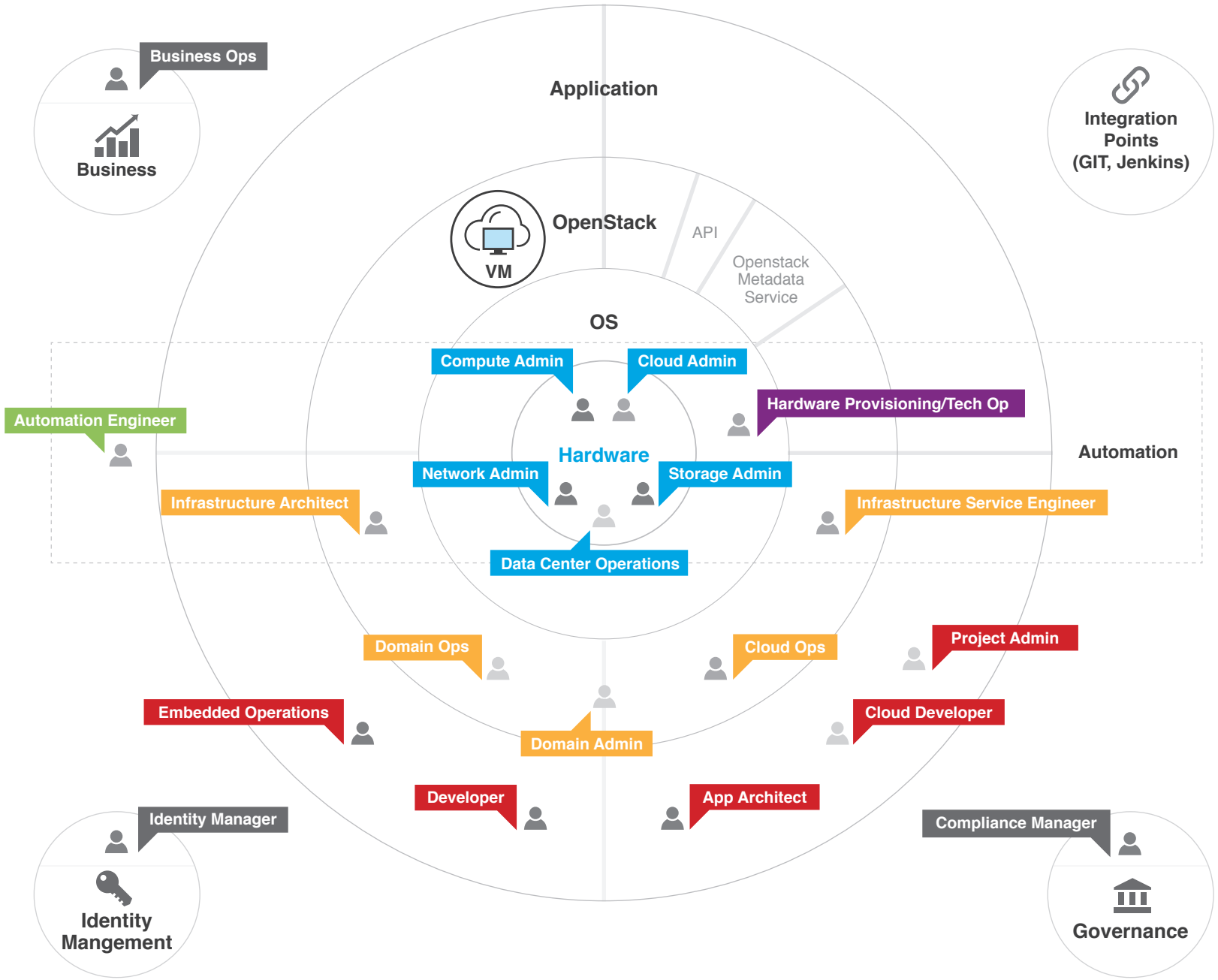
Role Definitions

Role	Silo	Job Tasks
Compute Admin	Operations	The Compute Admin is responsible for setting up and maintaining the physical and virtual infrastructure, from bare metal to cloud service. This role also manages available virtual capacity and hardware procurement. Involved in deploying the cloud.
Network Admin	Operations	The Network Admin is responsible for setting up and maintaining the physical and virtual networking infrastructure, from bare metal to cloud service. This role also manages available virtual capacity and hardware procurement.
Storage Admin	Operations	The Storage Admin is responsible for setting up and maintaining the physical and virtual storage infrastructure, from bare metal to cloud service. This role also manages available virtual capacity and hardware procurement.
Support Engineer (Level I)	Operations	The Support Engineer primarily handles customer support requests, and uses knowledge base, run-books, operational health, reporting, ticketing systems, etc. Primary responsibilities include managing SLA, service health, availability, cloud resources, quotas, RCAs, customer support, billing, etc.
Identity/Resource Manager	Governance	The Identity/Resource Manager is responsible for managing identity and privileges across all tenants (projects). Includes managing domains, resource quotas, and resource consumption. Involved in deploying the cloud.
Project Admin	Operations	The Tenant (Project) Admin is responsible for administration within a single project scope or across multiple projects. Includes managing users, roles, permissions, groups, quotas, service activations, etc.
Domain Admin	Operations	The Domain (Tenant) Admin is responsible for administration within a single domain, which can represent a single business unit, program, physical environment, or individual. Includes managing users, roles, permissions, groups, quotas, service activations, etc.
Automation Engineer	Operations	The Automation Engineer uses Heat, OOO, and Ironic to create templates. This is an emerging role, and is involved in deploying the cloud.
Cloud Developer	Application (End User)	The Cloud Developer deploys code on cloud resources, and is part of the DevOps environment.

Role Definitions

Role	Silo	Job Tasks
App Architect	Application (End User)	The Cloud Architect is responsible for infrastructure design templates (topologies), deployment profiles, and supporting cloud service architecture.
Domain Ops	Operations	Domain Operations is a team responsible for monitoring workload health, performance, and availability. Involved in deploying cloud.
Compliance	Governance	Compliance is responsible for ensuring that all workloads running in cloud meet organizational security, patching, and compliance requirements. Typically this role touches configuration management, reporting, alerting, and automation tooling.
Business Operations	Governance	Business Ops is responsible for IT spend and budget. They view usage and financial data, typically across projects to plan budget, track spend, and reduce costs.
Infrastructure Architect	Infrastructure Engineering	The Infrastructure Architect is responsible for helping to architect solutions in companies that are looking into technologies like OpenStack.
Data Center Operations	Operations	Data Center Ops is responsible for the physical infrastructure (racking and stacking) of the data center.
Hardware Provisioning/Tech Ops	Operations	Tech Ops is responsible for installing the OS, firmware, and software on the machines in the data center, and providing an inventory of the hardware accessible to the software. HP uses Chef, Socorro, and Use.
Infrastructure Service Engineer	Infrastructure Engineering	The Infrastructure Services Engineer is responsible for services such as Nova, Horizon, Swift, and Keystone.
Embedded operations and automation	Infrastructure Engineering	Embedded Ops understands the deployment process and communicates with the Automation Engineer. This is a subrole of the cloud admin.
QA Engineer	Infrastructure Engineering	The QA Engineer is responsible for testing and validation, and communicates with the Automation Engineer when creating tools. QA interacts closely with engineering during testing and may run their own Jenkins jobs.

Role Ecosystem



Legend

- Out of scope
- New Role
- Mature Role

- Application
- OpenStack
- Automation
- Hardware

- Admin
- End User
- Operations
- Installation

Archive: Cloud Profiles

Work in Progress

What is a User Profile?

A user profile describes the characteristics of a person working in a particular job role. For example, the characteristics of a compensation specialist include job title, level of education and training, goals, key tasks, and age range.

These characteristics represent a range of values, for example, an age range between 25 and 40.

Is a user profile the same as a persona?

No, although they are often confused. A user profile describes the range of characteristics for a user role; a persona describes the specific characteristics of a single fictional user based on a user profile. A persona describes the fictional user's personal and job goals, skills, expectations, key tasks, and relationships with other workers. There can be more than one persona for each user profile.

Oracle User Experience Direct (2012). FAQ: How to build User Profiles

Current Profiles:

- Cloud Developer
- Cloud Operations
- Automation Engineer
- Infrastructure Architect
- Embedded DevOps
- Domain Admin

Cloud Developer

Roles:
Developer

Organization Type:
Engineering

Team:
Developer
AppArchitect
Automation Engineer

Silo:

- Operations
- ✓ Applications
- Governance

Roles

Cloud Developer

Legend

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Cloud Operations

The Cloud Operations Engineer works in the Engineering Operations group and has work assignments related to the management, automation, and expansion of the cloud. In addition, the Cloud Operations Engineer assists with planning, developing, and implementing a virtualized private cloud, and is responsible for excellent level 3 customer service, application configuration, patching, and security in an enterprise production environment.

Roles:
Level II support
Cloud Operations
Compute Admin
Storage Admin

Organization Type:
Operations

Team:
Developer
AppArchitect
Automation Engineer

Silo:

- [x] Operations
- Applications
- Governance

Cloud Operations

Silo:
Operations

What are their key deliverables?

The Cloud Operations Engineer is responsible for deploying and managing SaaS applications running on Public and Private Cloud environments.

What software/hardware tools do they use?

The Cloud Operations Engineer is responsible for deploying and managing SaaS applications on public and private clouds.

- Icinga (open source NSCA web UI)
- Hammer - in–house tool
- Scrubber - in–house tool
- Active Directory (Microsoft) [LDAP / SSO]
- Blacksmith - in–house tool (working to open source)
- PagerDuty (External / Commercial)

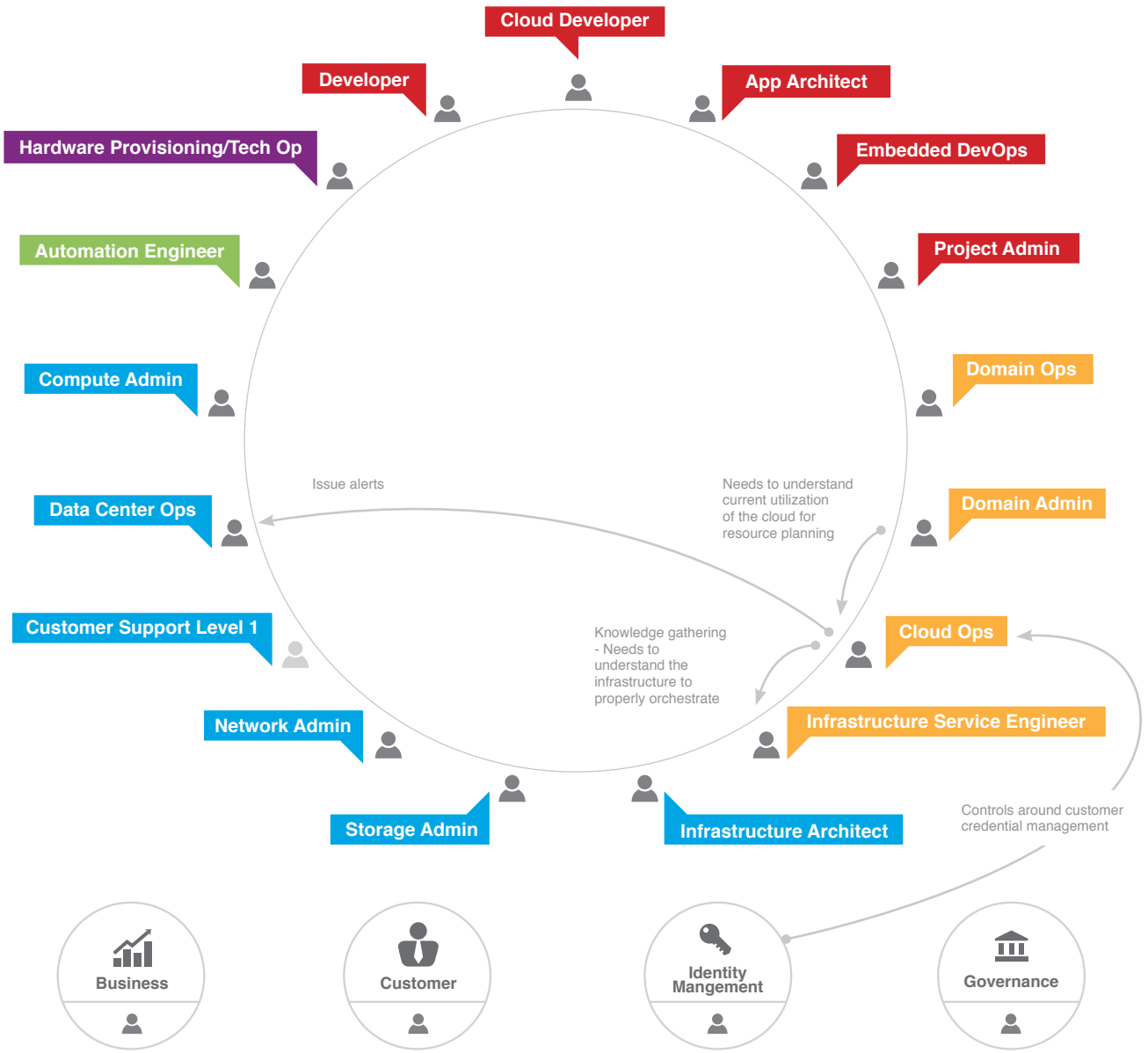
Responsibilites

- Deploy multiple cloud applications via automation & orchestration platforms
- Troubleshoot production events/issues, including cloud infrastructure and application components
- Work closely and collaboratively with Software Development and DevOps teams to maintain test / staging / production environments to meet uptime, performance, cost and security goals
- Build and maintain enterprise monitoring platforms including basic infrastructure checks

Skills

- Bachelor's degree (BA/BS) in Business, Computer Science, Information Systems
- 5+ years of experience, with at least 2+ years of experience working on a 24x7 cloud production operations team
- Experience in deploying applications within a production cloud environment (AWS or similar)
- Understanding of network configuration (DNS, VPN, IP Proxy)
- Expertise with Linux systems administration (CentOS, RHEL or similar)
- Experience in scripting languages (Ruby, Bash, Python or similar)
- Experience with Cloud Infrastructure & Application monitoring tools
- Experience with orchestration/provisioning solutions (Chef or similar)

Roles
Cloud Ops



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Automation Engineer

Automation is the connective tissue that makes many collaborative or Agile practices work. Automation can be responsible for testing, version control, and delivery, as well as an array of lower level functions. Automated tasks allow developers and those using their solutions to contribute to the whole without duplication of efforts while still benefitting from the work that others are doing around them.

Roles:
Automation Engineer

Organization Type:
Engineering

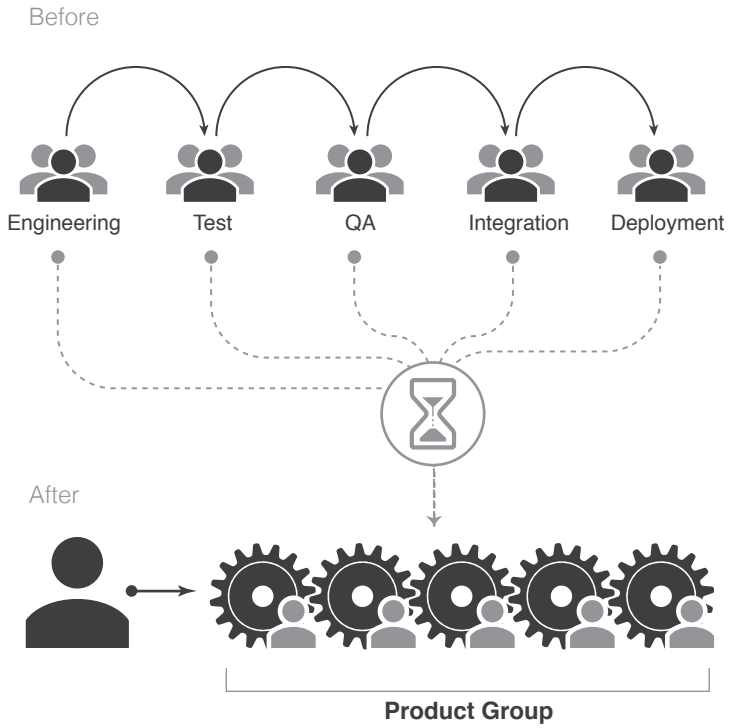
Silo:

- [x] Operations
- [ ] Applications
- [ ] Governance

Automation Engineer

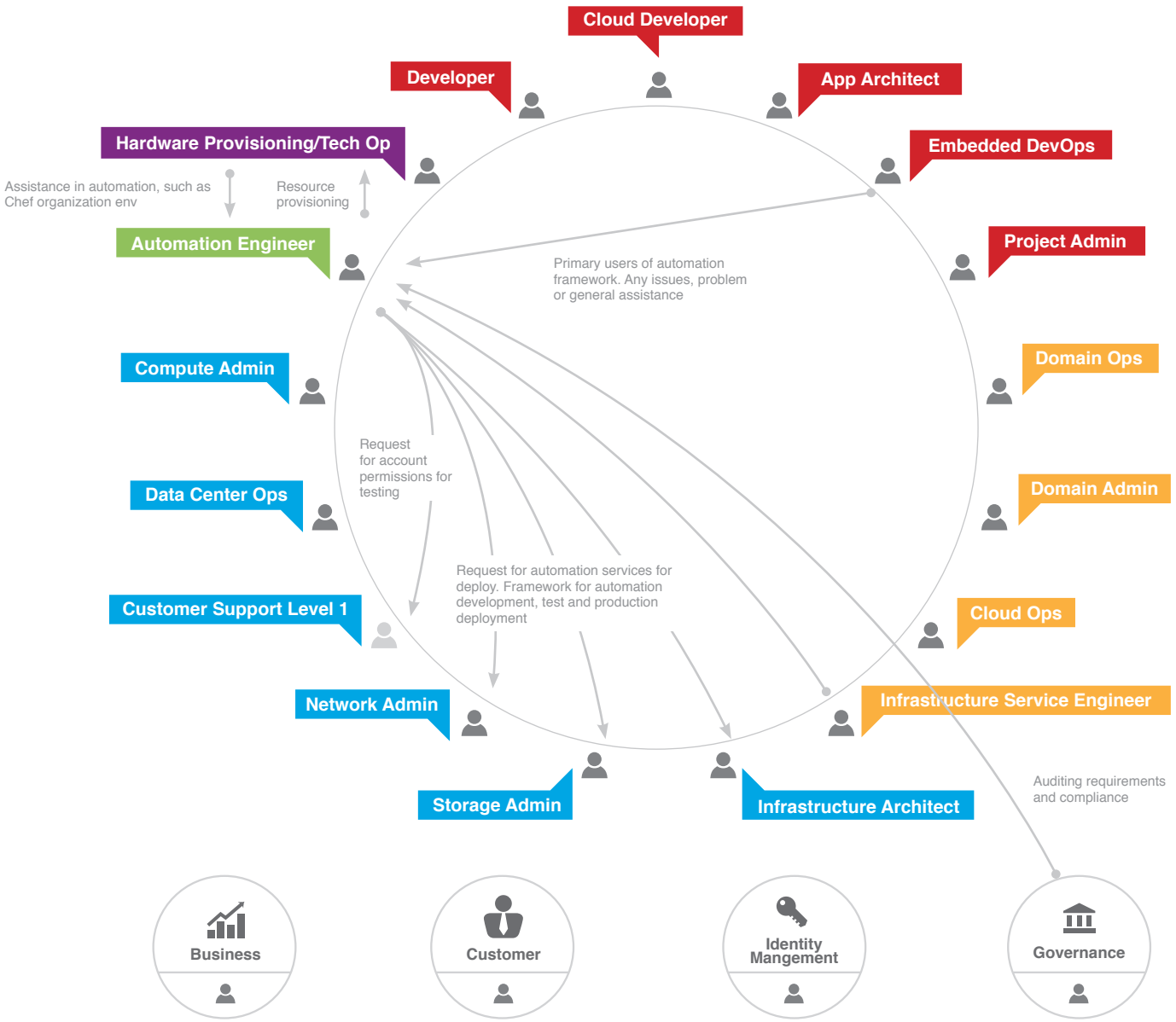
Silo:
Operations

Automation Tools



Roles

Automation Engineer



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Infrastructure Architect

The Infrastructure Architect works on the Infrastructure Design team in the Operations organization. The Senior Infrastructure Architect develops the high-level design plan for the overall IT infrastructure architecture that impacts the entire organization. The Senior Infrastructure Architect also gains organizational alignment for all high-level infrastructure plans related to but not limited to Servers, Virtualization, and Storage, and initiates and participates in projects to evaluate technologies and methods for implementing these plans.

Roles:
Infrastructure Architect

Organization Type:
Architect

Team:
Developer
AppArchitect
Automation Engineer

Silo:

- [x] Operations
- [ ] Applications
- [ ] Governance

Roles

Infrastructure Architect

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Embedded DevOps

The traditional model is that you take your software to the wall that separates development and operations, and throw it over and forget about it. Not at Amazon. You build it, you run it. This brings developers into contact with the day-to-day operation of their software. It also brings them into day-to-day contact with the customer.

Werner Vogels, Amazon CTO

Roles:
Automation Engineer

Organization Type:
Engineering

Silo:

- Operations
- ✓ Applications
- Governance

Embedded DevOps

Silo:
Applications

Responsibilities

- Build Automation Tools to Provision Environments and Applications in support of Development, Test and Staging Environment.
- Build tools to automate production deployments
- Recommend Monitoring and Alerting for the Site Operations team

Skills

- 5+ years working as a Linux Systems Administration
- Strong experience with AWS EC2, VPC, ELB, including tuning and operational issues
- Strong experience with databases, including tuning and operational issues
- Experience with monitoring tools (Nagios, Kibana, Splunk, Cloud Watch, and New Relic)
- Experience with CI Tools (Circle CI, Jenkins)
- Experience with Provisioning Automation (Chef, Puppet, Docker, Cloud Formation, etc.)
- BS or greater in Computer Science, Electrical Engineering or related work is a definite plus

DevOps Teams

We were surprised that 16 percent of our survey respondents (1,485 people) were part of a DevOps department, because named DevOps departments have only come into existence in the past five years. Of these respondents, 55 percent identified as DevOps engineers or systems engineers.

Incidence of DevOps & System Engineers by Department

	IT Operations Department	Development or Engineering Department
DevOps Engineer	129 / 4.6%	144 / 5.4%
Systes Engineer	503 / 17.8%	240 / 9.0%

We wanted to see whether there are significant differences between people who work in named DevOps departments and those who don't. Although the two groups are quite similar in many respects, we found a few interesting differences. For example, the majority of respondents in DevOps departments work in companies with 20 to 499 employees. Respondents who work in DevOps departments were more likely to work in the entertainment, technology and web software industries than respondents who worked in other departments. They are also slightly more prevalent in California and Texas than in the rest of the United States, although we found no difference in distribution across global regions.

Puppet Labs (2014). State of DevOps Report

Embedded DevOps

Silo:
Applications

Puppet Labs 2014 State of DevOps Report

More than 9,200 people from 110 countries responded to Puppet Lab's December 2013 survey, making this the largest DevOps survey to date.

Size of IT infrastructure by # of servers	
< 100	28.3%
100-499	23%
500-1,999	16.9%
2,000-4,999	8.4%
5,000 - 9,999	4.9%
10,000 >	8.5%
I don't know	8%
NA	2%

Company size by # of employees	
1 - 4	5.8%
5 - 9	3.6%
10 -19	5.8%
20 - 99	17.1%
100 - 499	21.8%
500 - 999	26.8%
10,000 +	15.8%
I Don't Know	2.1%
NA	1.3%

Industry	
Technology	22.7%
Web Software	10.9%
Education	7.5%
Finance/Banking	7.4%
ENTMT/Media	6.8%
Consulting	5.9%
Telecom	5.7%
Government	4.5%
Retail	3.7%
Healthcare	3.0%
All Others	21.9%

How Puppet Labs Measured IT Performance

"Coming up with a quantitative definition of IT performance wasn't easy. After all, how do you measure concepts that can't be measured directly, such as happiness or job satisfaction? In statistics, you do this with what's known as a latent construct.

To get a highly reliable and valid latent construct for IT performance, we started with a set of related independent variables: deployment frequency, lead time for changes, mean time to recover and change fail rate.

After a lot of refining and statistical testing, we found that change fail rate was not significantly correlated with the other variables leading us to our current definition of IT performance:

- deployment frequency,

- lead time for changes and

- mean time to recover."

Top Practices Correlated with Deployment Frequency

Continuous delivery
Continuous delivery ensures that your software is always in a releasable state, turning deployment into a non-event that can be performed on demand.

Use of version control for all production artifacts
When it's easy to recreate environments for testing and troubleshooting, throughput goes up.

Top Practices Correlated with Lead Time for Changes

Use of version control for all production artifacts
The ability to get changes into production repeatedly in a reliable, low risk way depends on the comprehensive use of version control.

Automated testing
With a reliable and comprehensive set of automated tests, you can quickly gain condence that your code is releasable without lengthy integration and manual regression testing cycles.

Top Practices Correlated with Mean Time to Recover (MTTR)

Use of version control for all production artifacts
When an error is identied in production, you can quickly either redeploy the last good state or x the problem and roll forward, reducing the time to recover.

Monitoring system and application health
Logging and monitoring systems make it easy to detect failures and identify the events that contributed to them. Proactive monitoring of system health based on threshold and rate-of-change warnings enables us to preemptively detect and mitigate problems.

Puppet Labs (2014). State of DevOps Report

Domain Admin

A domain defines administrative boundaries for the management of Identity entities. A domain may represent an individual, company, or operator-owned space. It is used for exposing administrative activities directly to the system users.

A domain is a collection of tenants, users, and roles. Users may be given a domain's administrator role. A domain administrator may create tenants, users, and groups within a domain and assign roles to users and groups.

Roles:
Level II support
Cloud Operations
Compute Admin
Storage Admin

Organization Type:
Operations

Team:
Developer
AppArchitect
Automation Engineer

Silo:

- ✔ Operations
- Applications
- Governance

Domain Admin

Silo:
Operations

Domain

This is the highest level. The creator of an account can be referred to as the Domain Administrator. This is a collection of Projects, Users, Groups, and Roles.

Project

This is a collection of services such as the Compute or Object Storage services. We talk more about how Projects work in the Managing Account Projects article.

Groups

This is a collection of roles that users can be members of. This makes administration of your user accounts much easier if you have a group of roles that are a common to a set of users. By default each account has a Domain Admin group and a Users group.

Users

This is the specific account for a person added to a Domain. It can be attached to one or more Projects or Groups and a variety of Roles.

Roles

Domain Admin

Legend

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