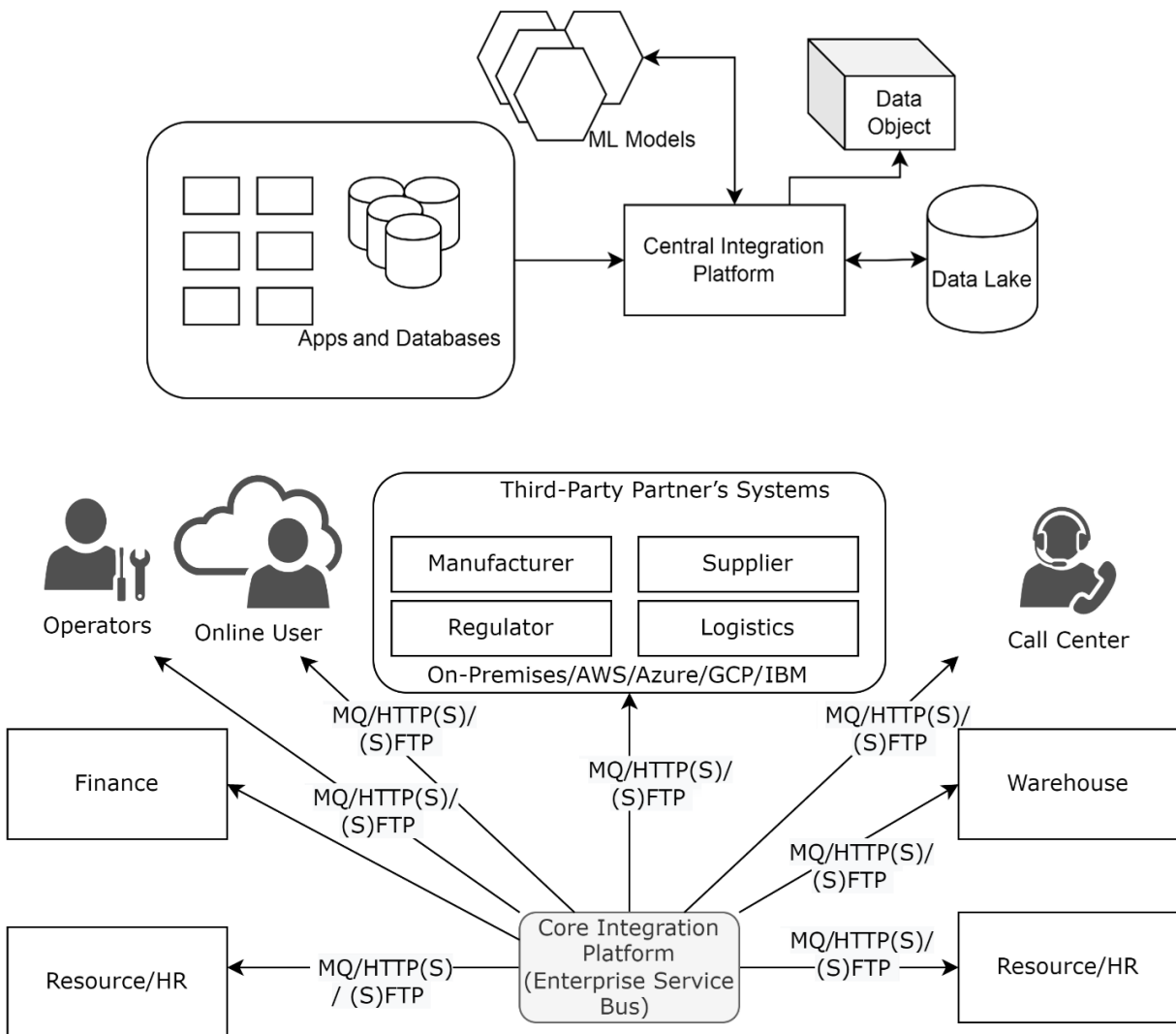
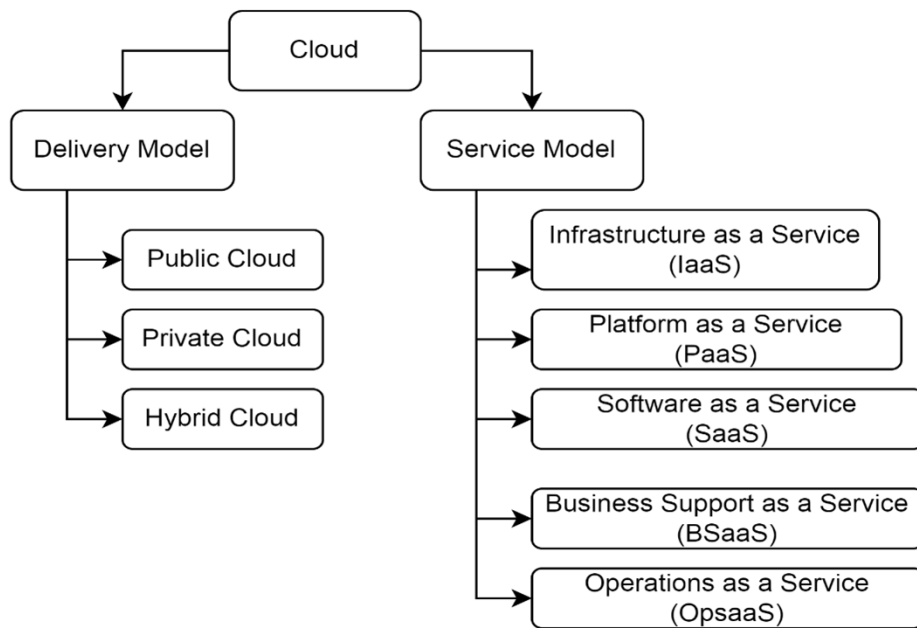
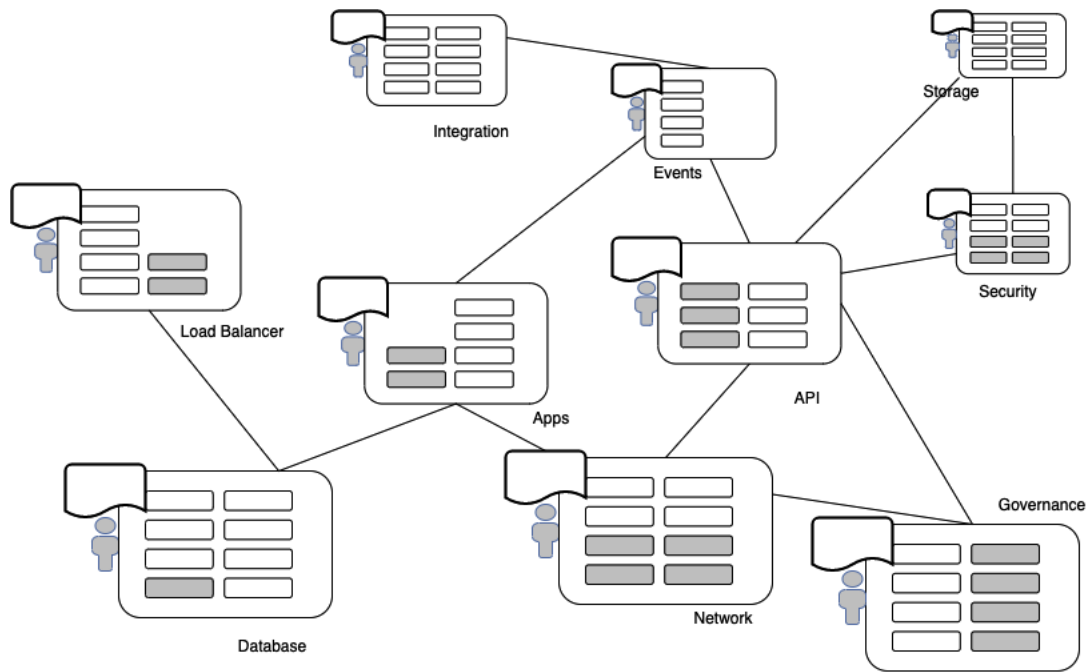
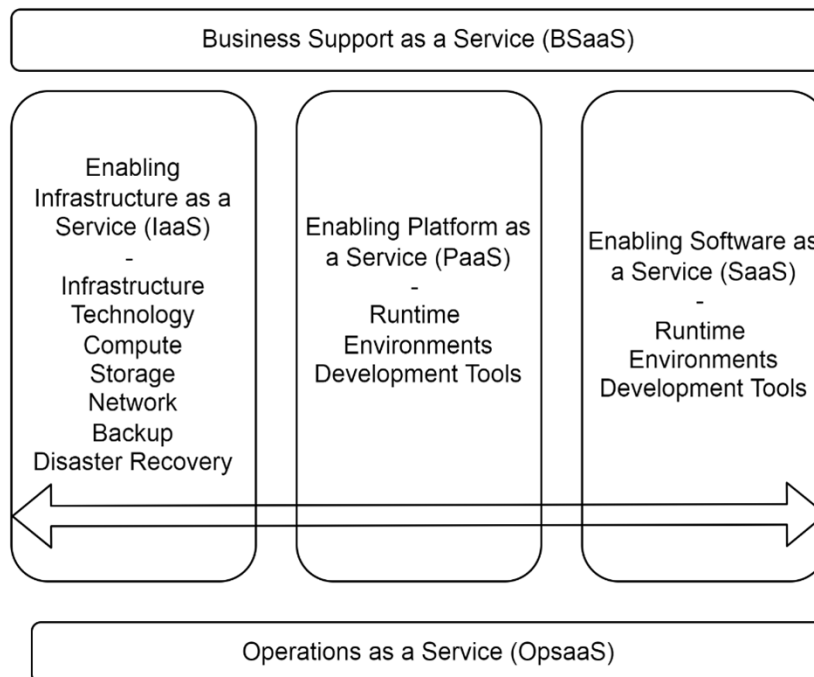
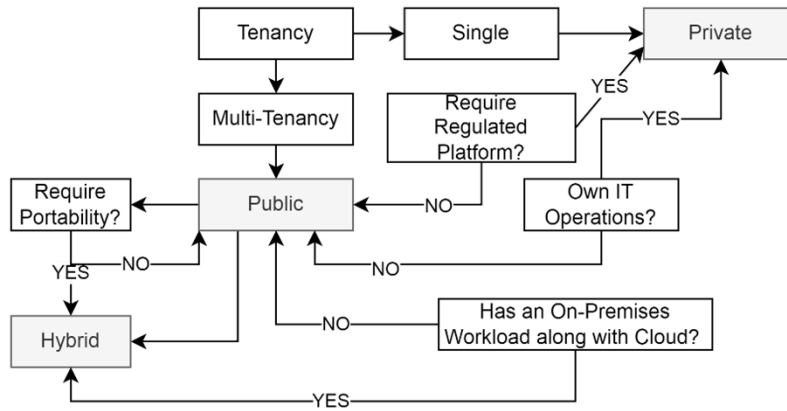
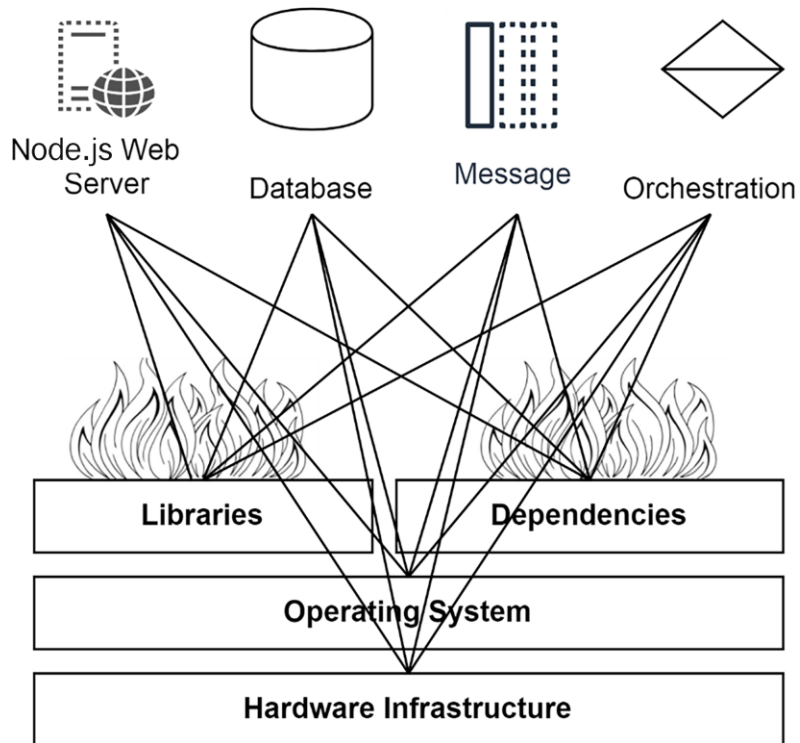
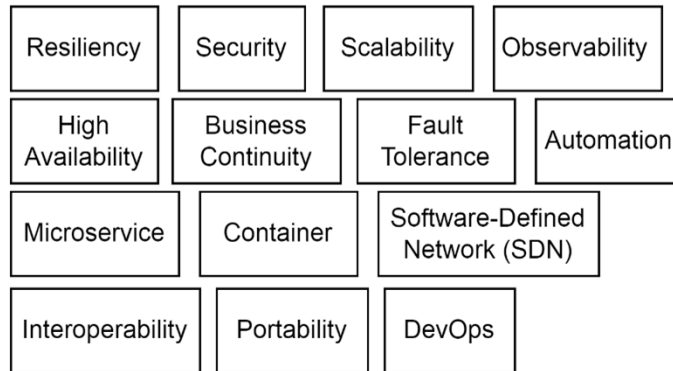


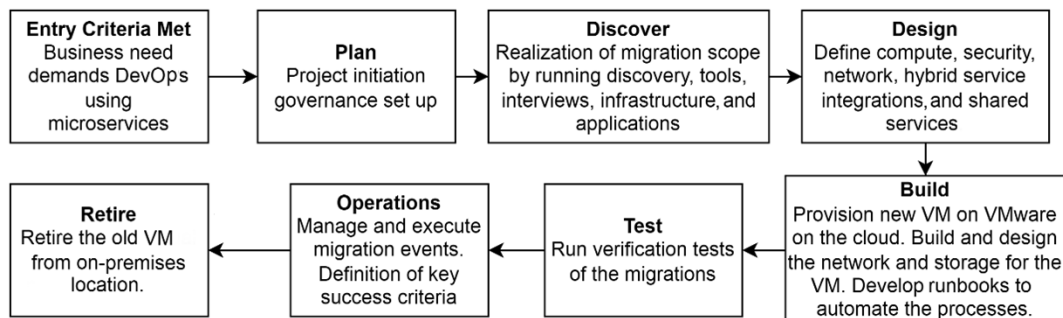
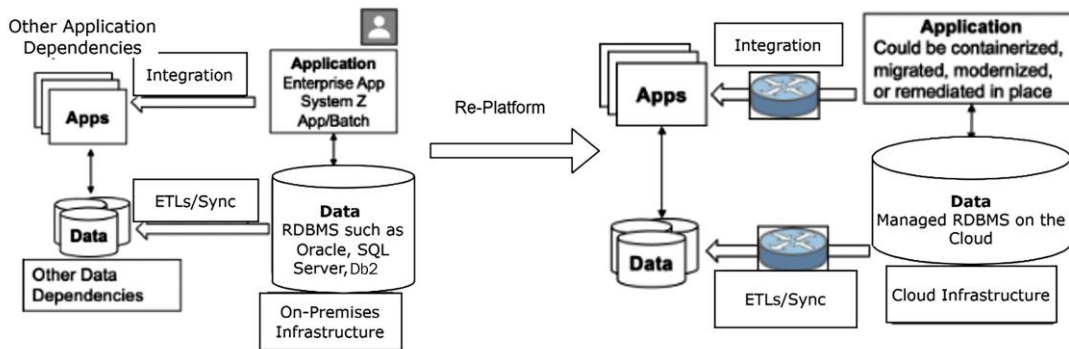
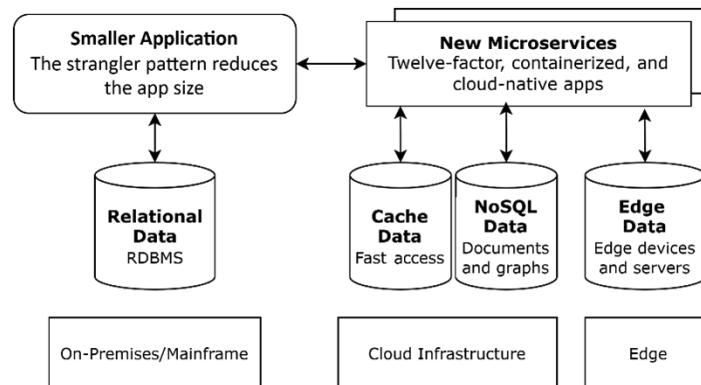
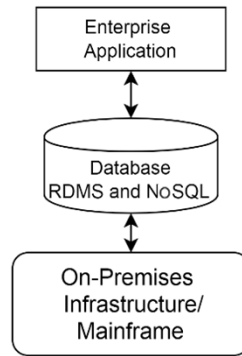
Chapter 1: An Introduction to Hybrid Cloud Modernization

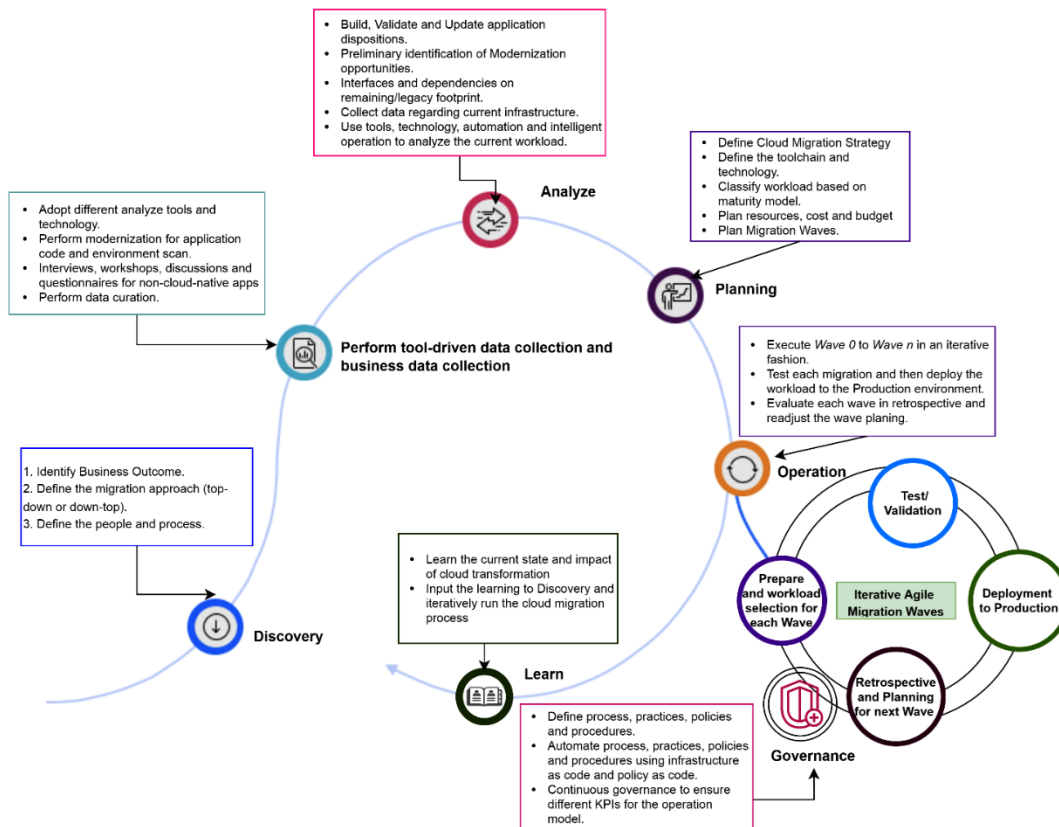
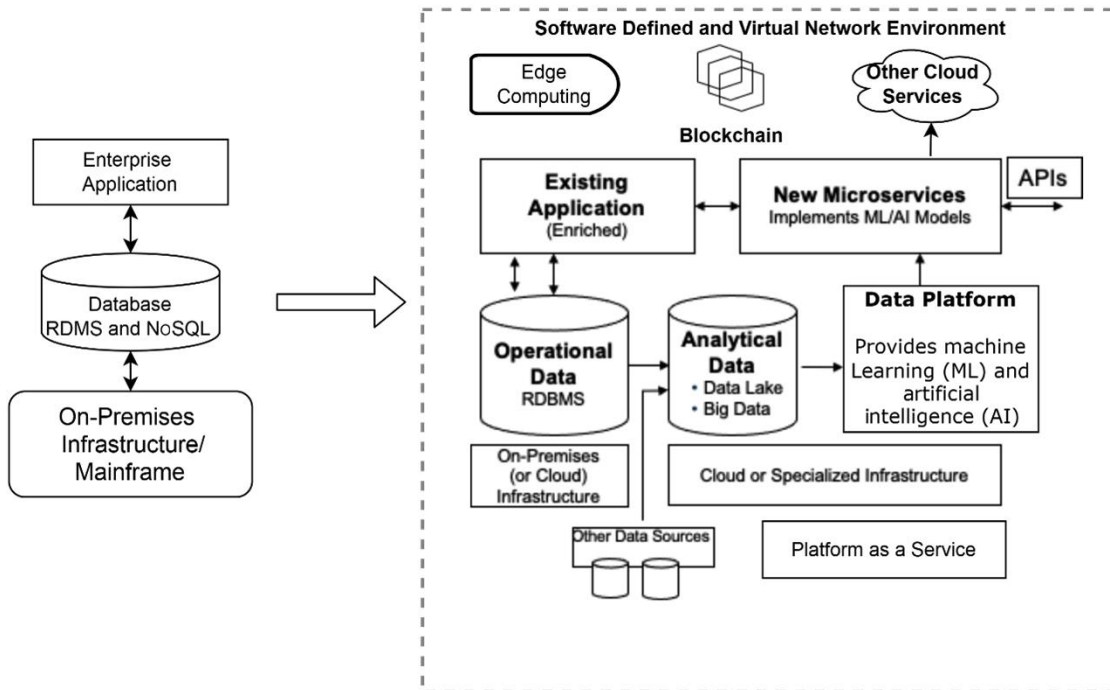




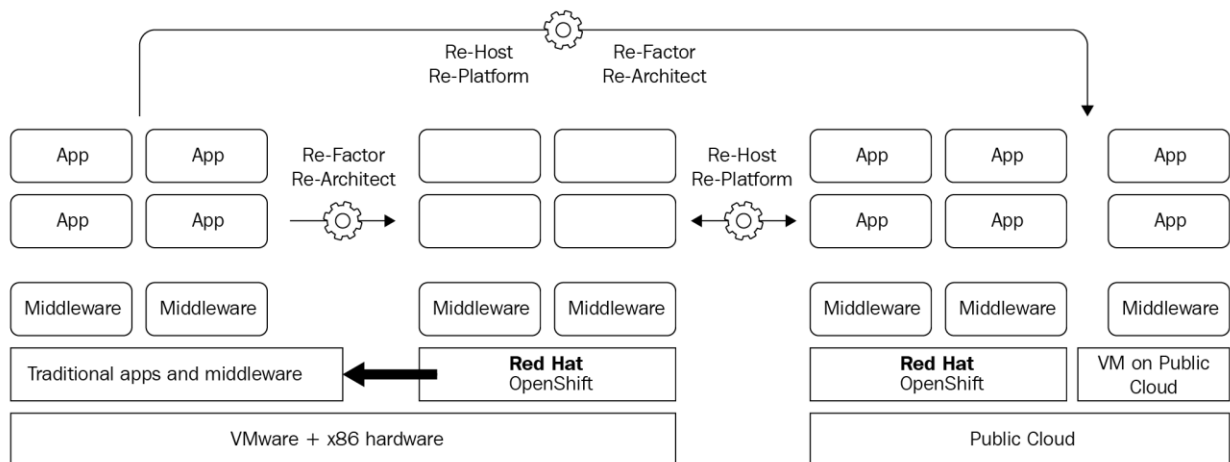
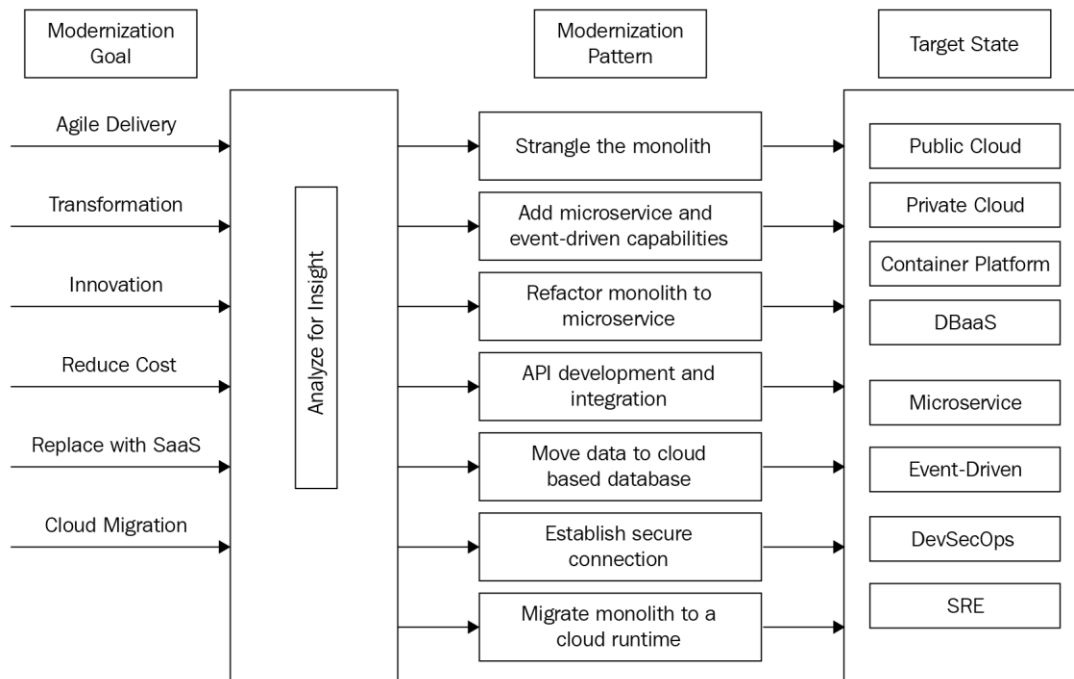


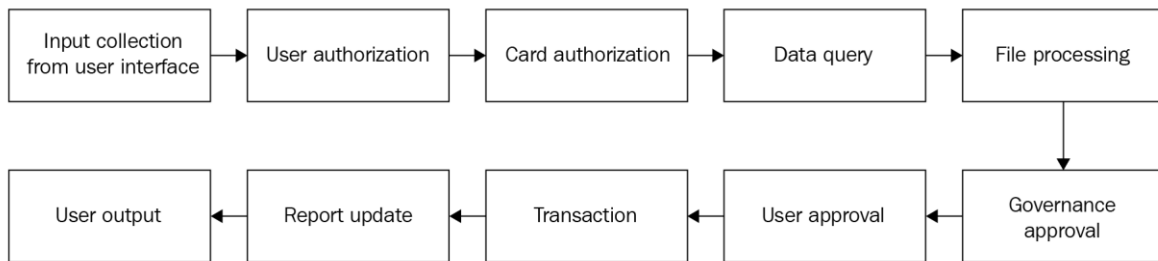
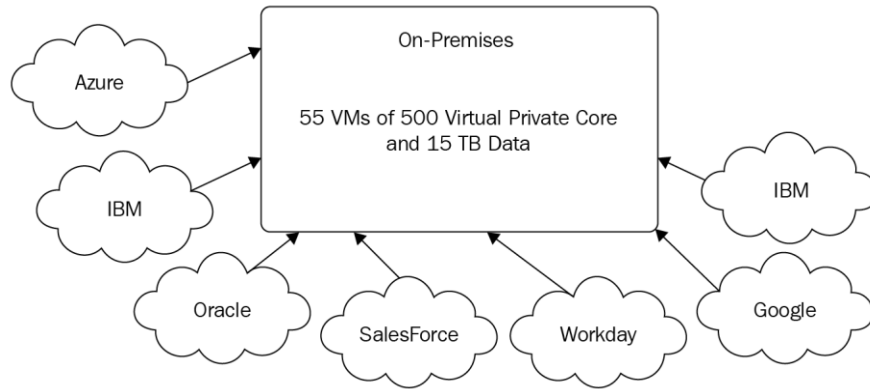




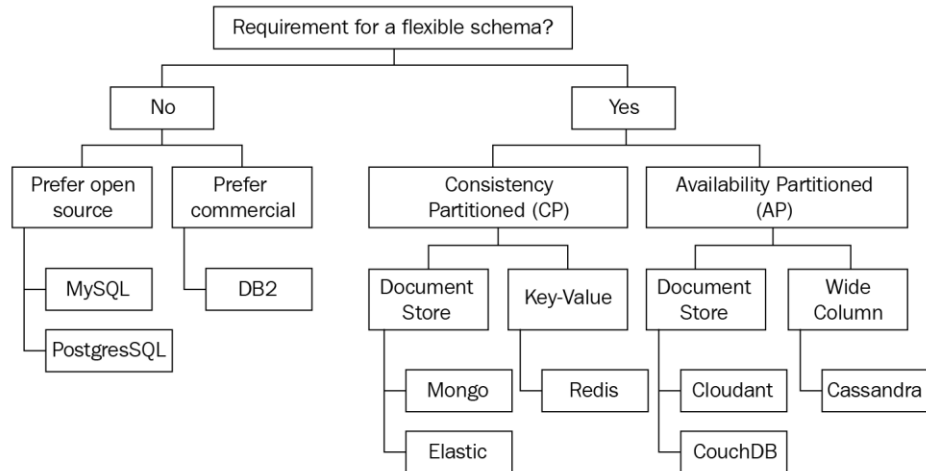
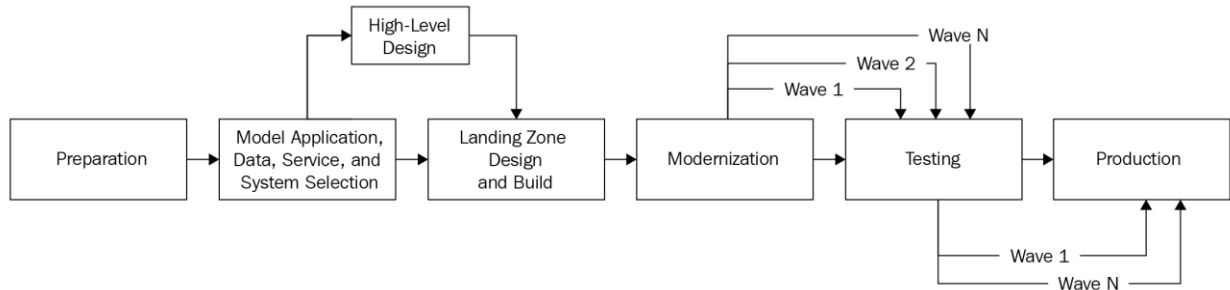


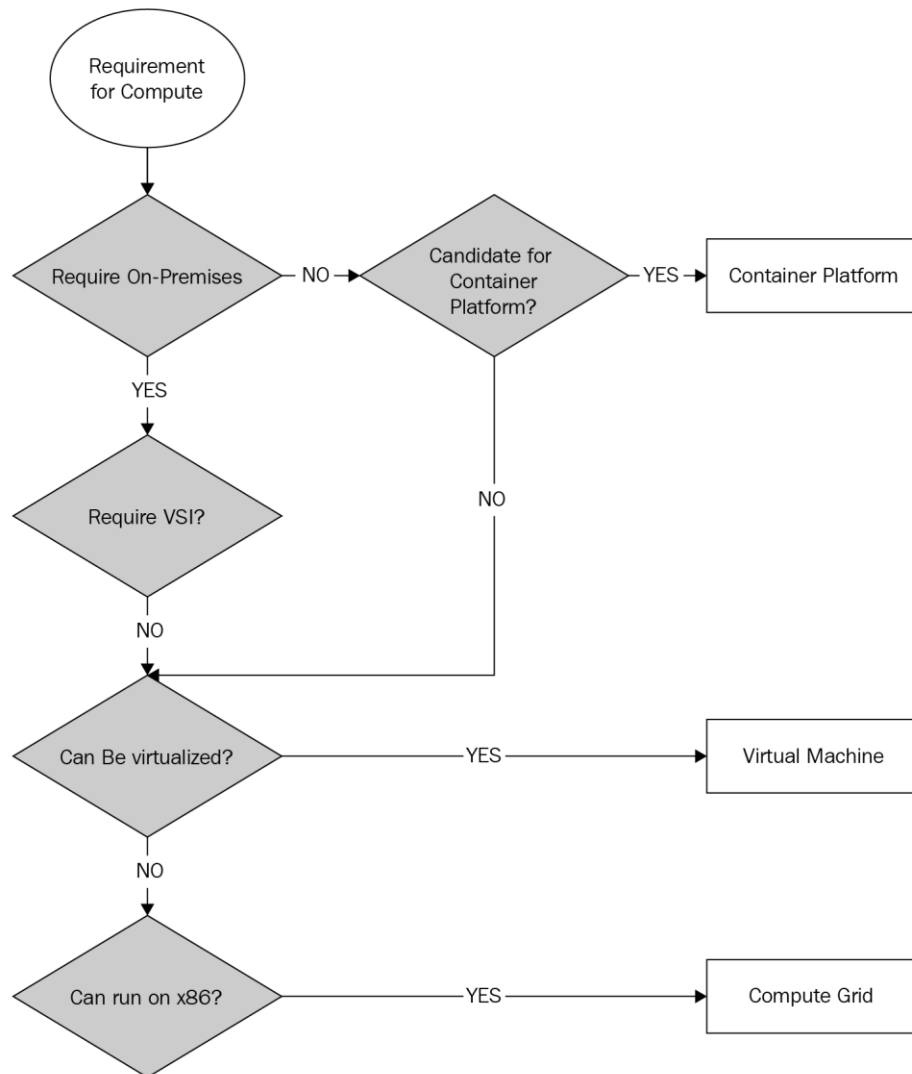
Chapter 2: Understanding Cloud Modernization and Innovation Fundamentals

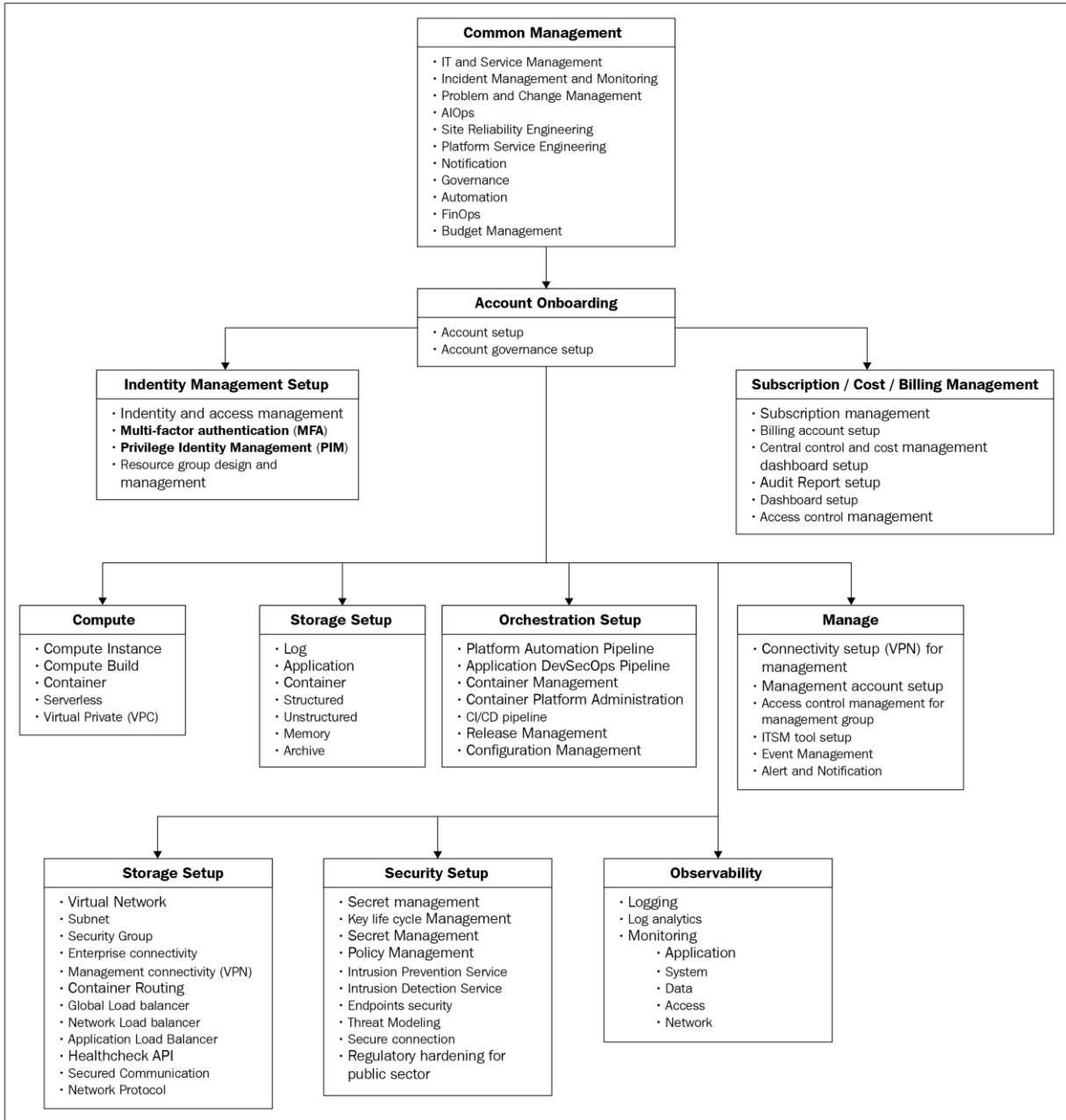


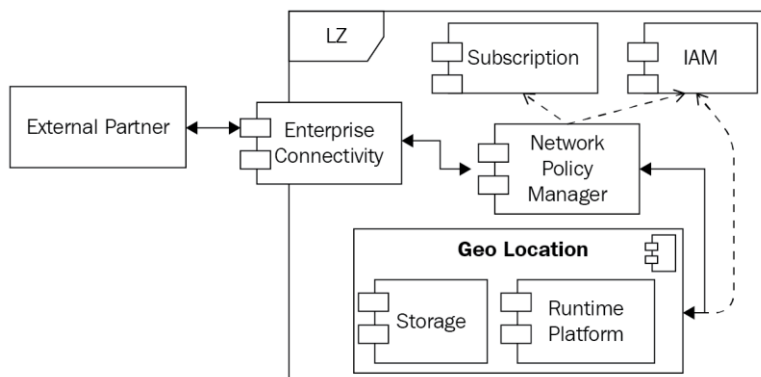
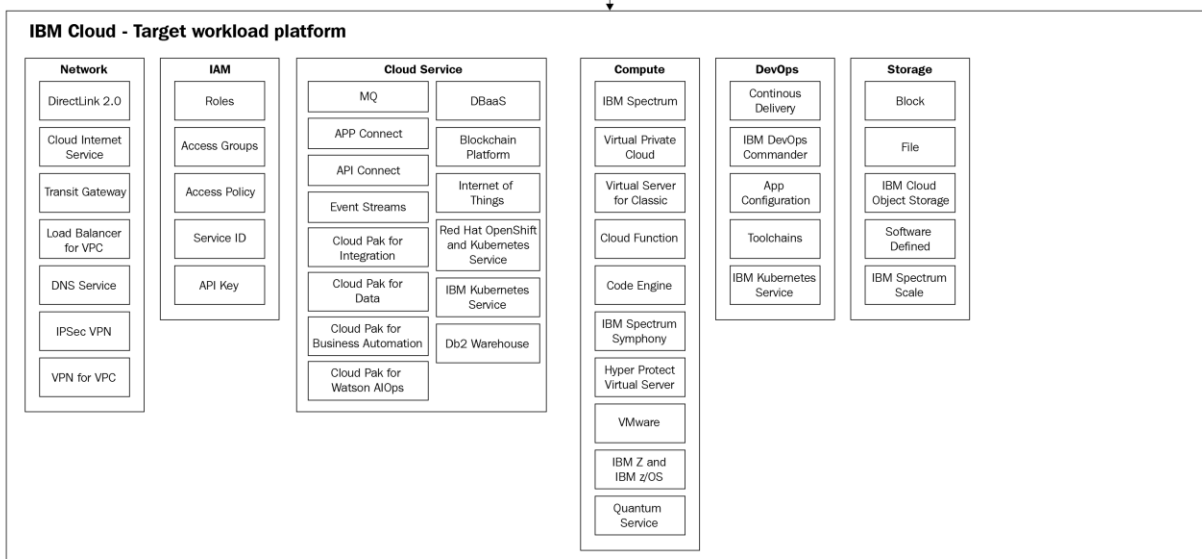
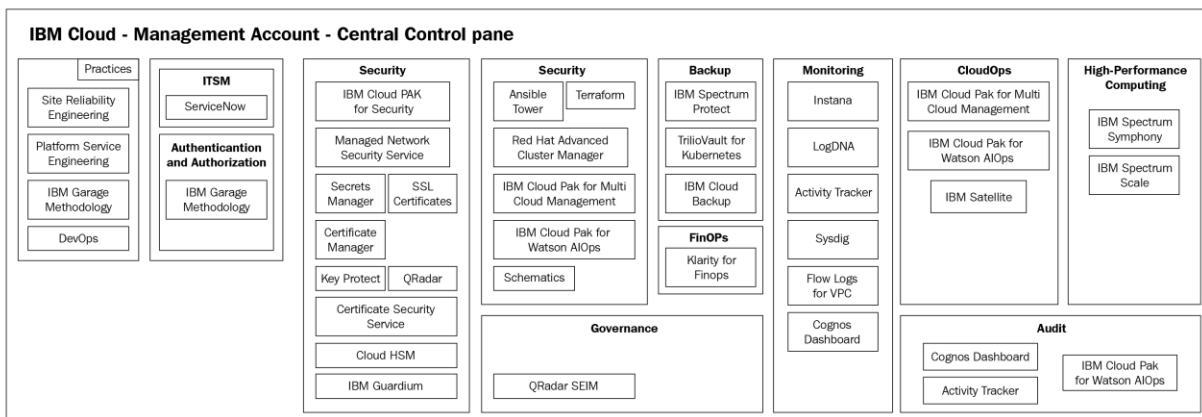


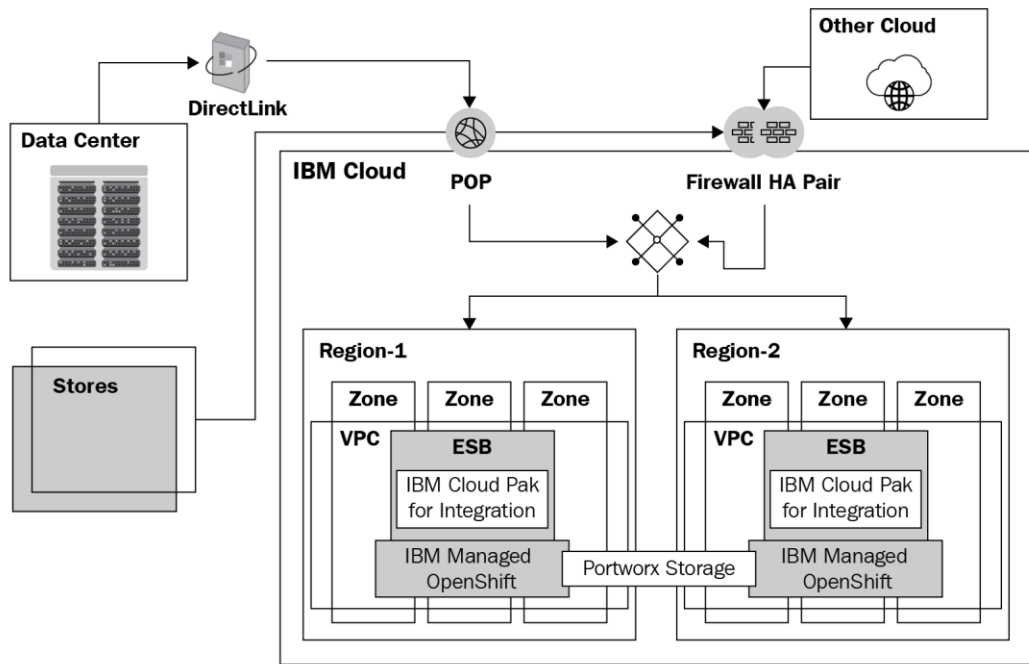
Chapter 3: Exploring Best Practices for the Cloud Journey



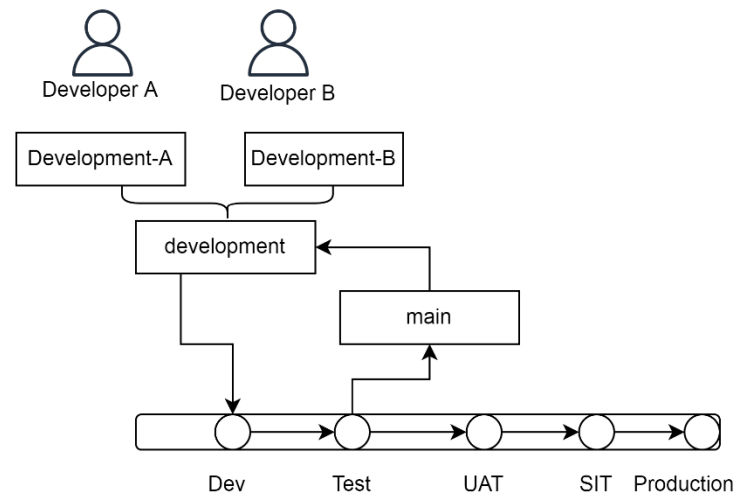


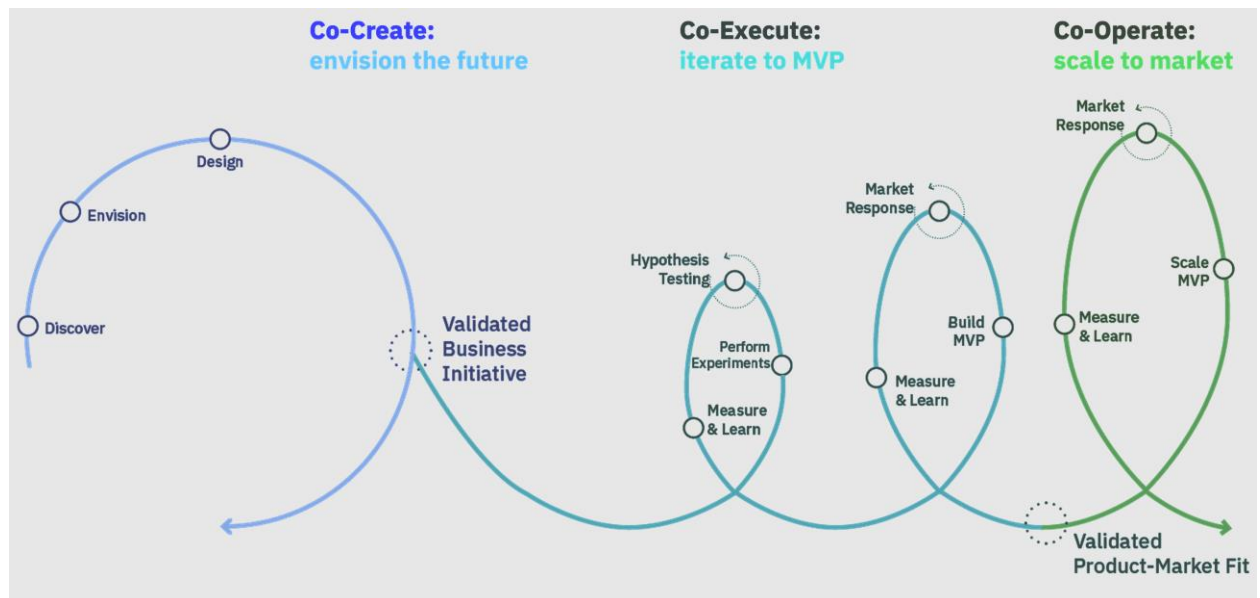
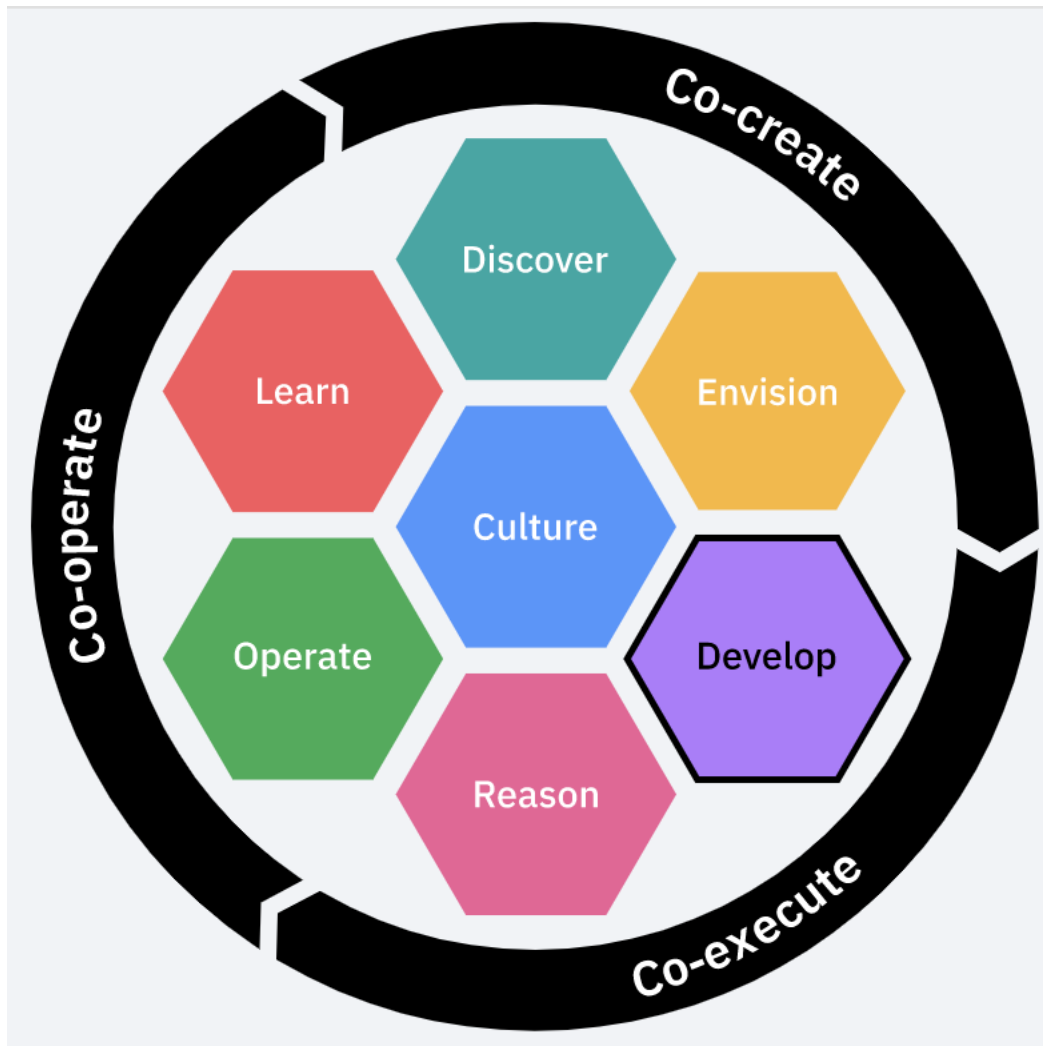




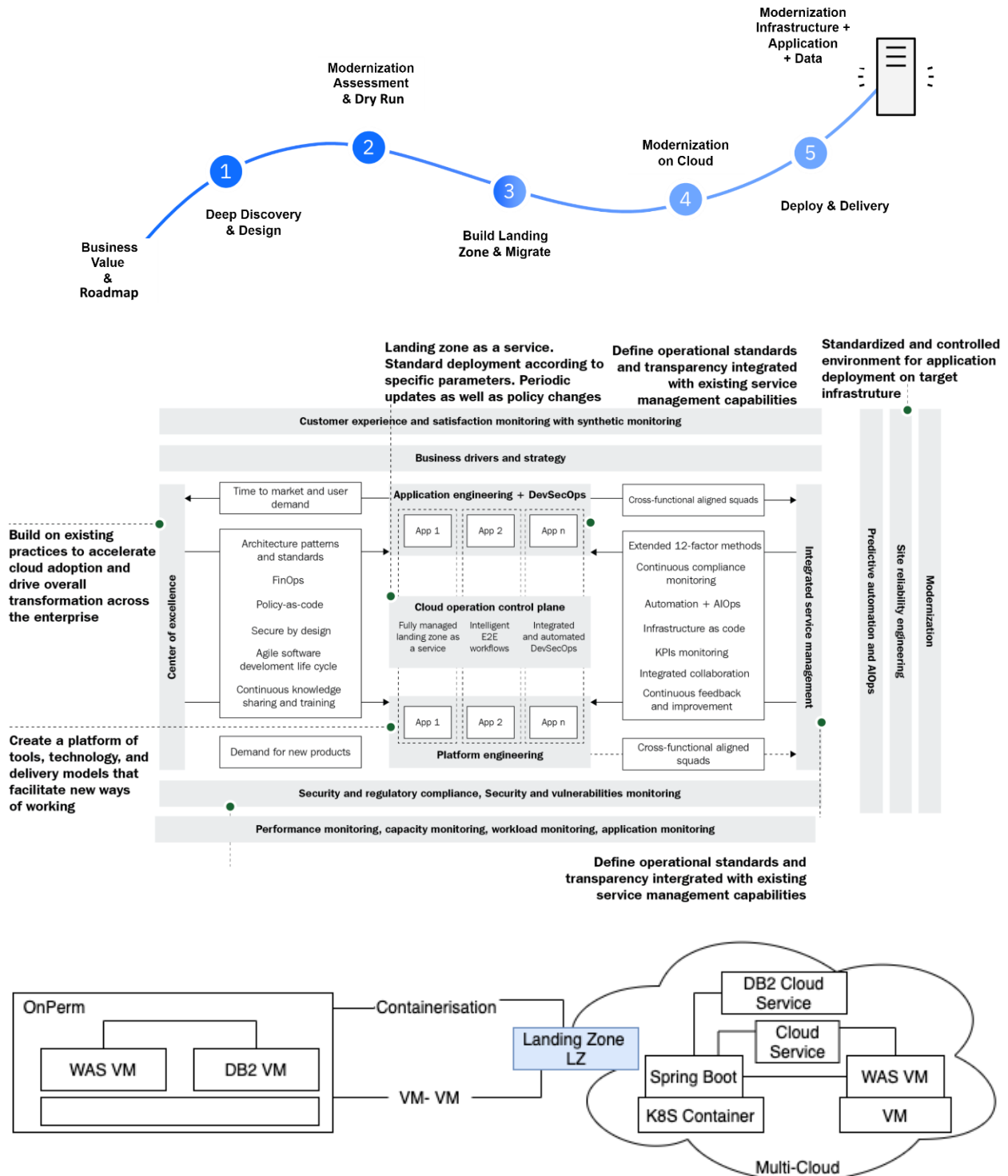


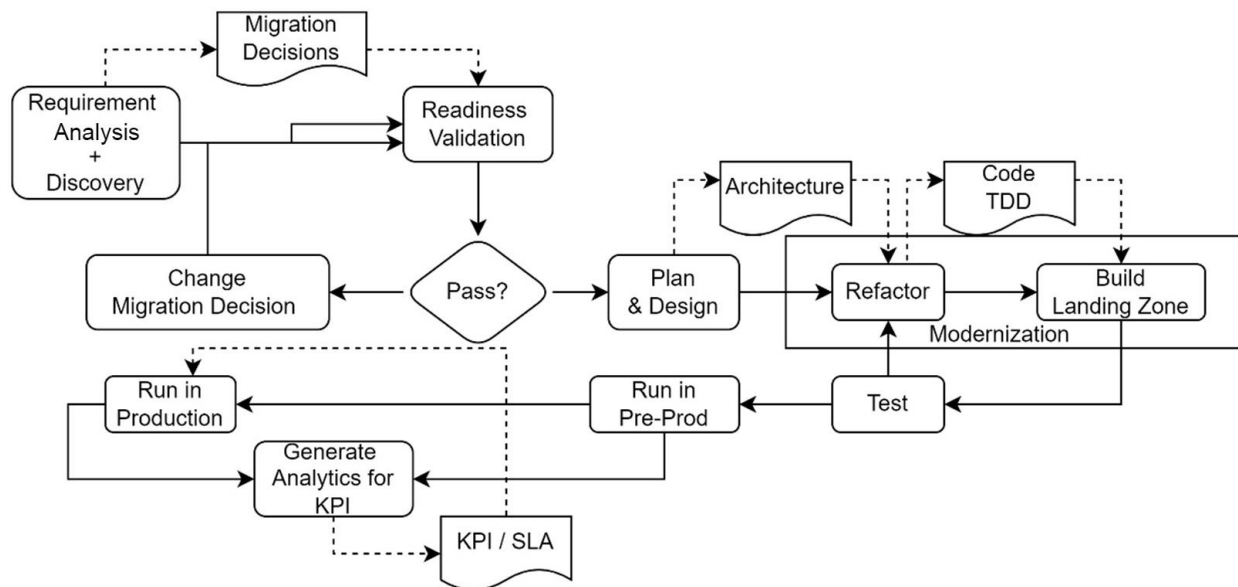
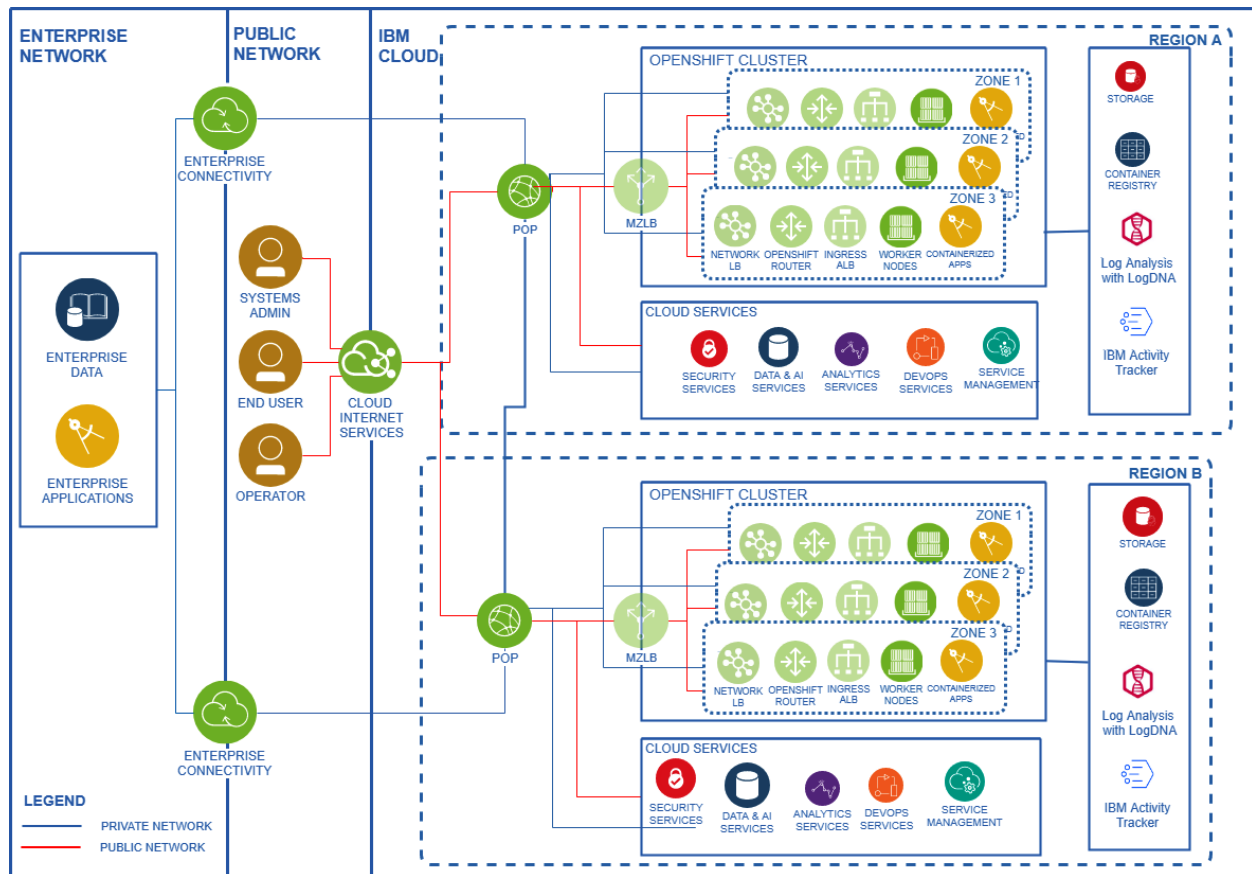
Chapter 4: Developing Applications in a Cloud Native Way

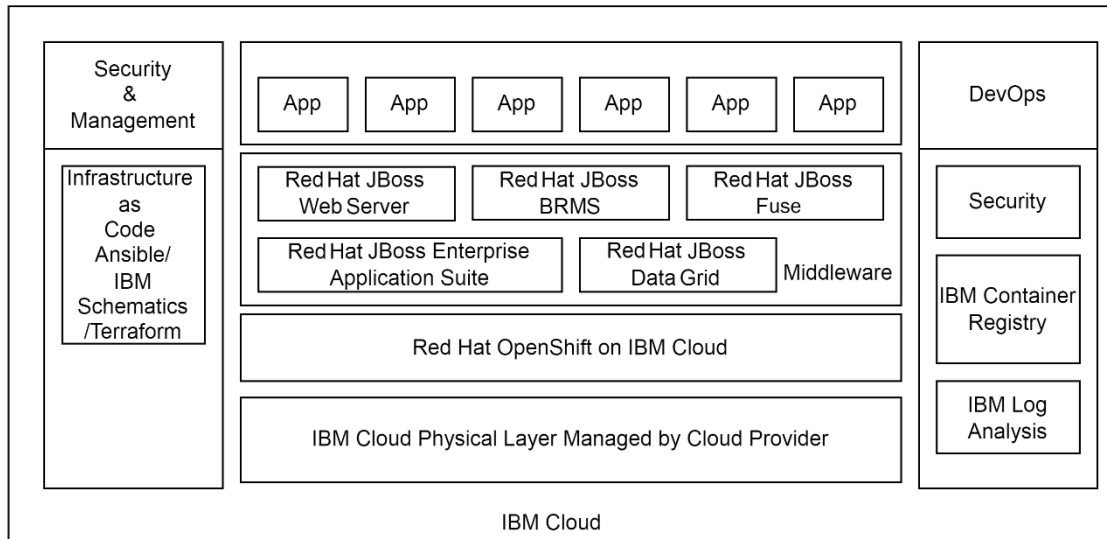




Chapter 5: Exploring Application Modernization Essentials







- [Back to Project](#)
- [Status](#)
- [Changes](#)
- [Console Output](#)
- [View Build Information](#)
- [Git Build Data](#)
- [Git Build Data](#)
- [Checkstyle Warnings](#)
- [PMD Warnings](#)
- [Test Result](#)
- [Coverage Report](#)
- [Artifactory Build Info](#)
- [Replay](#)
- [Pipeline Steps](#)
- [Previous Build](#)

Build #107 (19.9.10) (Sep 6, 2019 3:33:32 A



Build Artifacts

[clair-result](#) [19.9.10.json](#) 139 B [view](#)



Changes

1. Add kubhetel for production and Ina [\(detail\)](#)



[Push event to branch master at 3:33:27 AM on Sep 6, 2019](#)



Revision: 5098c71caf4ee45ef3e8aed6348e13fc192fd32e

- master



Revision: 505602af185061cbb19a4436049d3e8eefdc1015

- master



FindBugs: 0 warnings from one analysis.

- No warnings since build 54.
- New zero warnings highscore: no warnings for 41 days!



Checkstyle: [16 warnings](#) from one analysis.



PMD: [7 warnings](#) from one analysis.



0 vulnerabilities from one analysis.

- No warnings since build 24.
- New zero warnings highscore: no warnings for 52 days!



[Test Result](#) (no failures)



Jacoco - Overall Coverage Summary

INSTRUCTION	77%	<div></div>
BRANCH	27%	<div></div>
COMPLEXITY	69%	<div></div>
LINE	77%	<div></div>
METHOD	87%	<div></div>
CLASS	100%	<div></div>



Artifactory Build Info



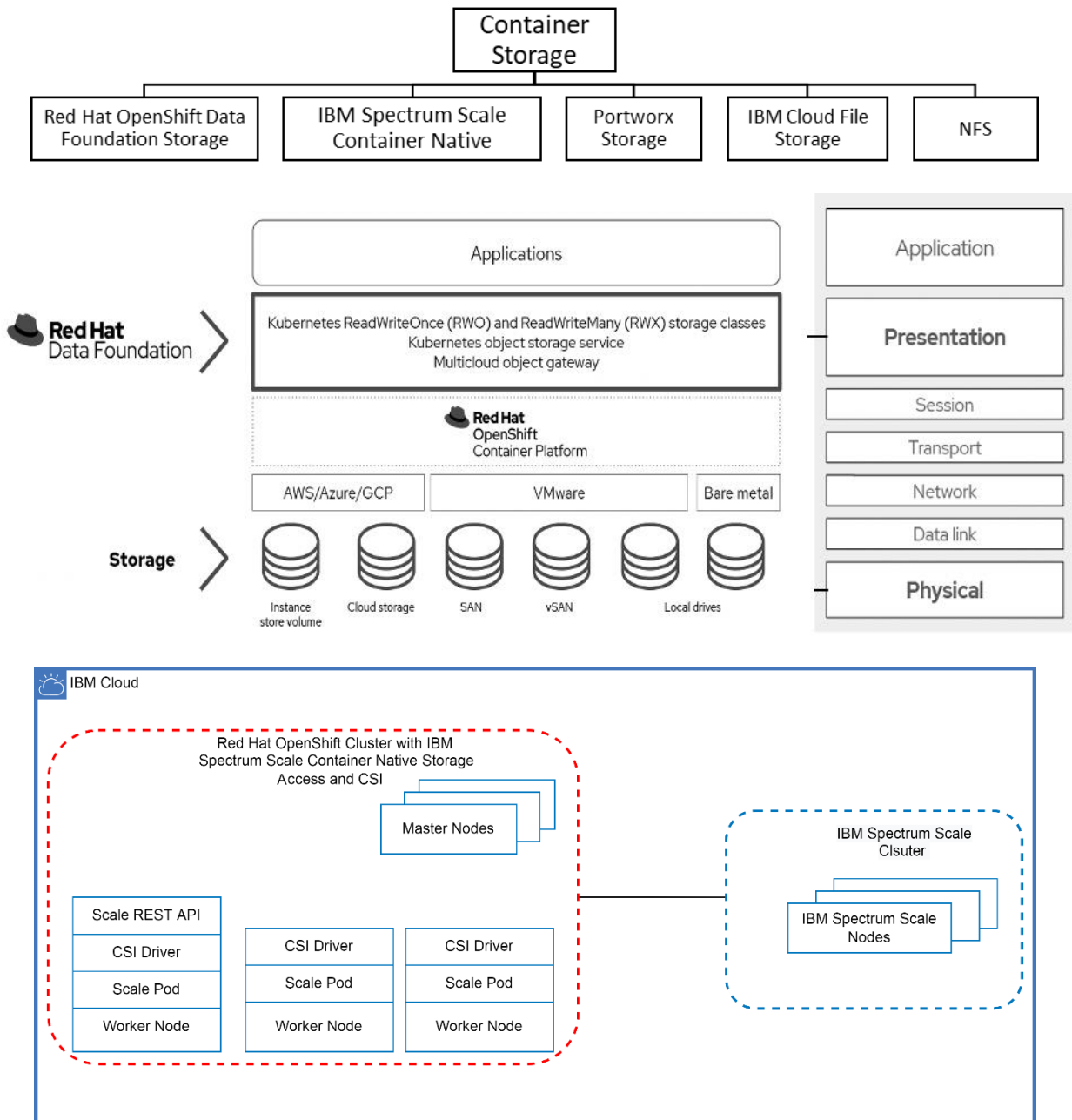
[enlarge](#)

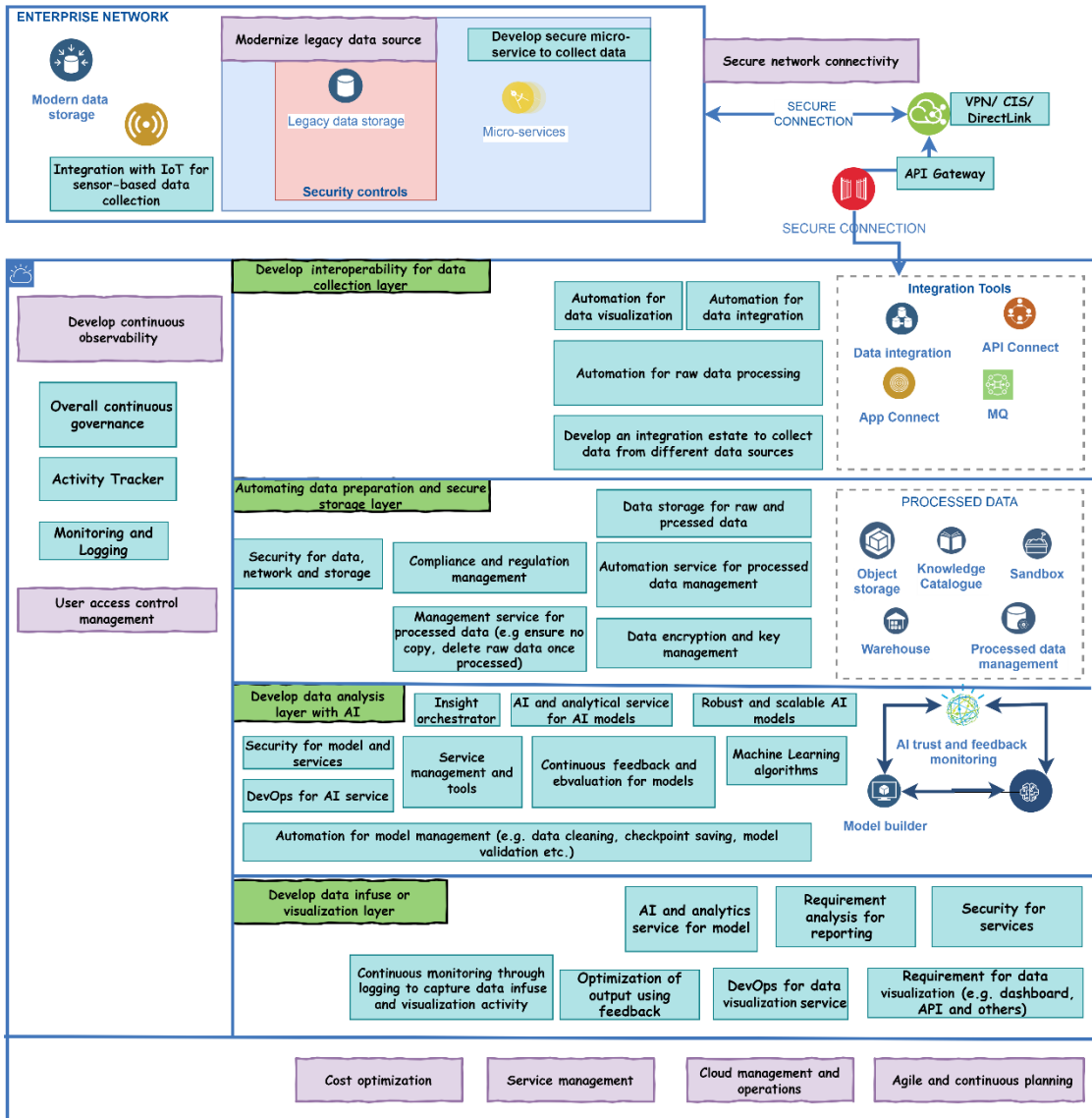
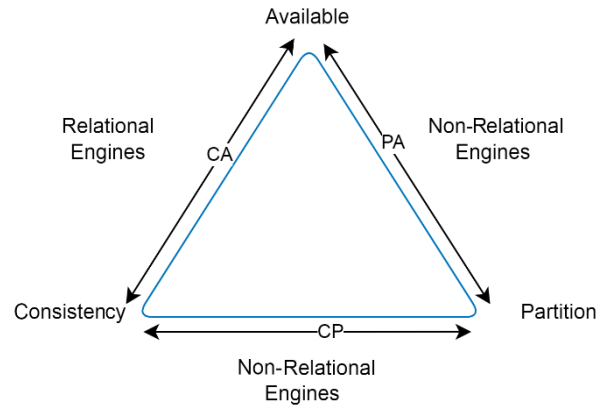
Average stage times:
(Average full run time: ~17min 49s)

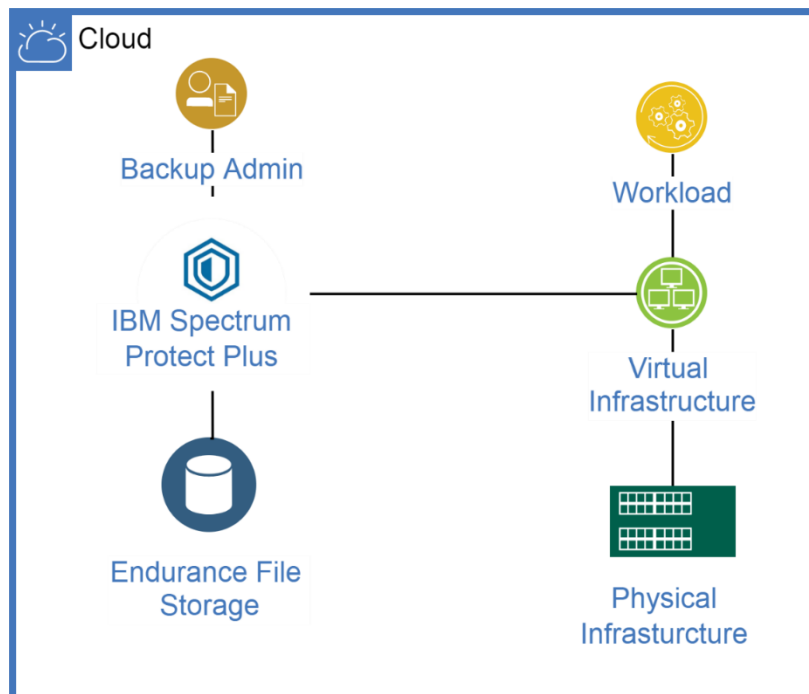
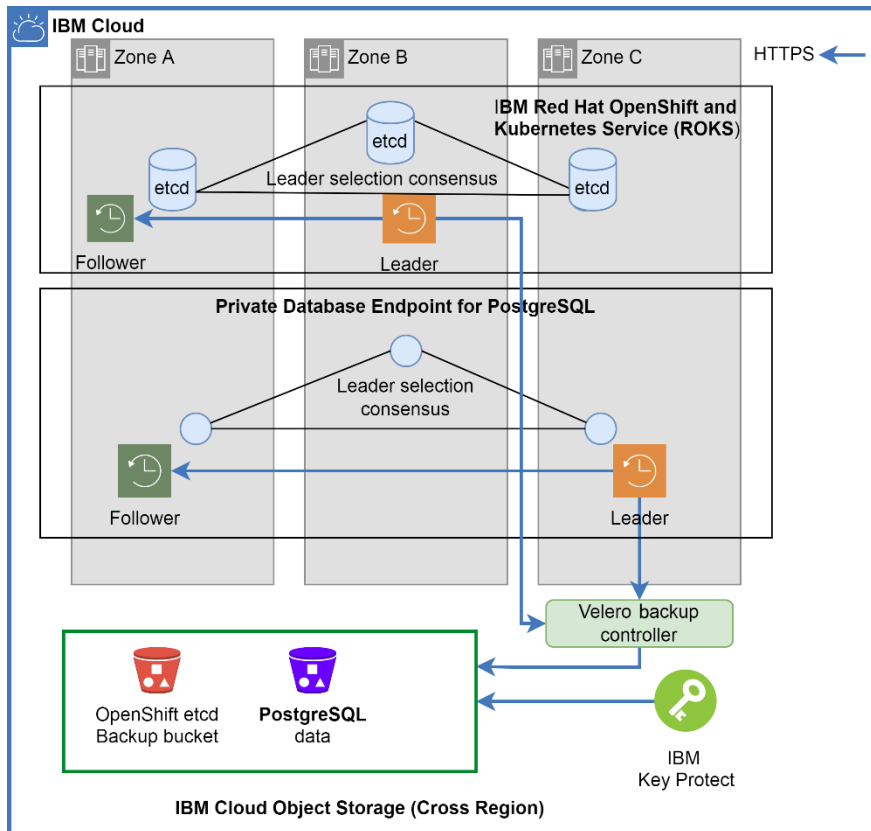
#539 (19.9.15)	4	commits
Sep 18	11:52	
#538 (19.9.14)	1	commit
Sep 18	11:22	

Fetch sources	Build	Check	Dependency Check	Test	Artifactory Publish	Vulnerability Check	Quality Gate	Create Version	create release notes	Push	Promote to smoke-mz	Deploy to smoke-mz
3s	6min 2s	1min 50s	37s	2min 25s	2min 39s	57s	30s	22s	2s	21s	46s	28s
3s	6min 0s	1min 59s	38s	2min 26s	2min 19s	26s	30s	19s	2s	15s	34s	26s
3s	6min 11s	1min 42s	37s	2min 23s	2min 58s	1min 27s	30s	25s	2s	27s	59s	30s

Chapter 6: Designing and Implementing Cloud Storage Services



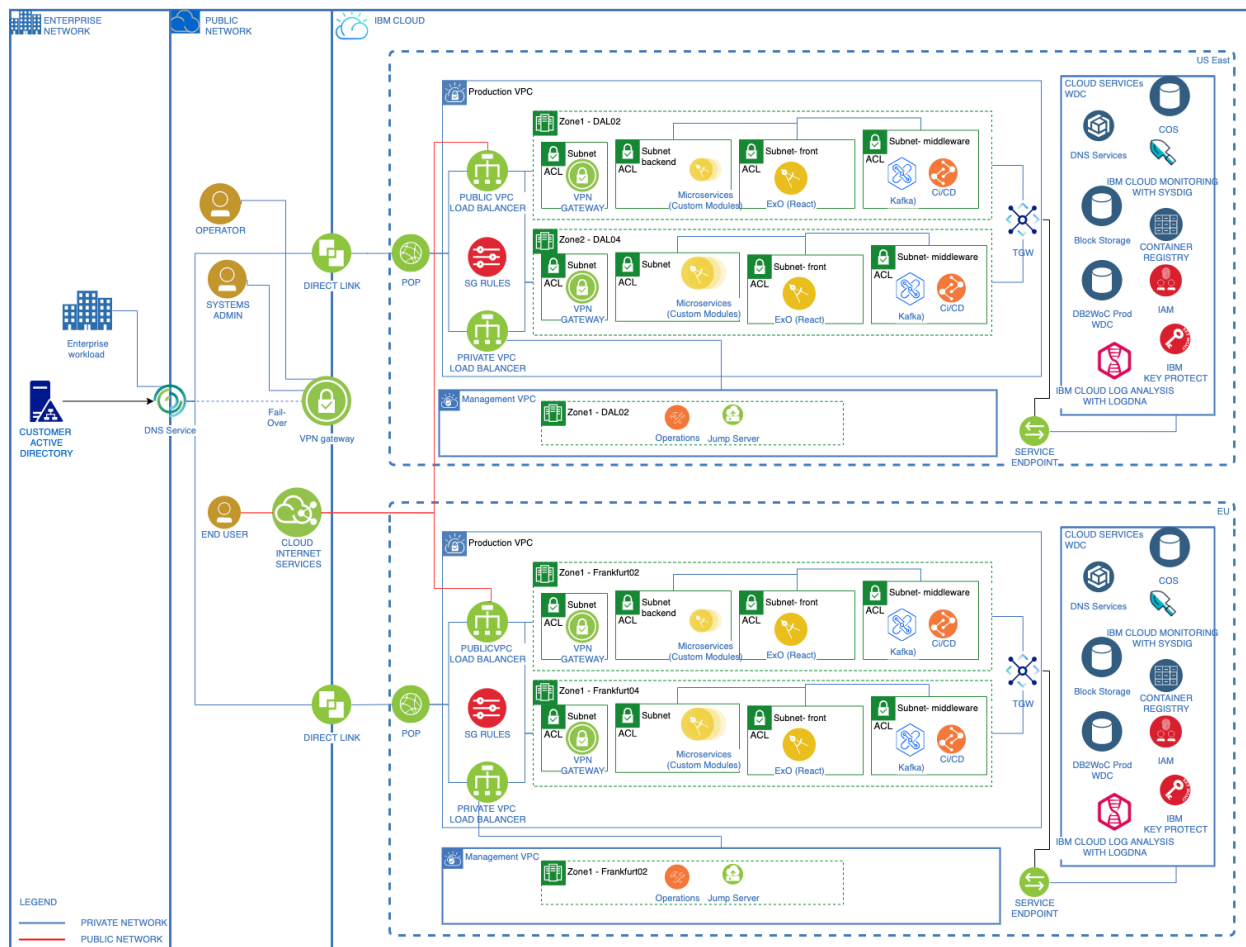


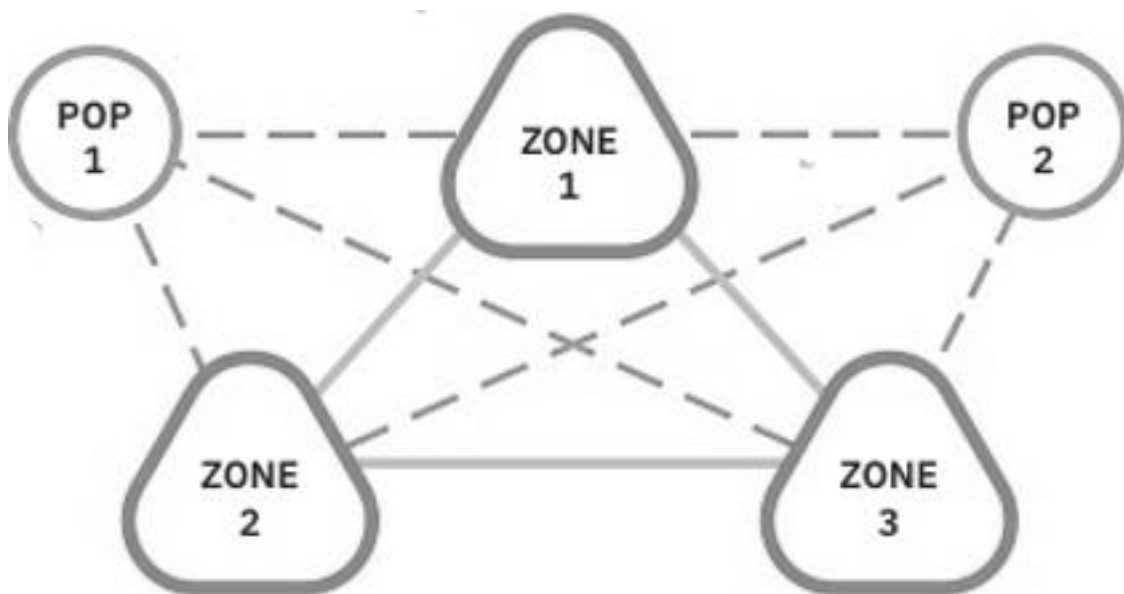
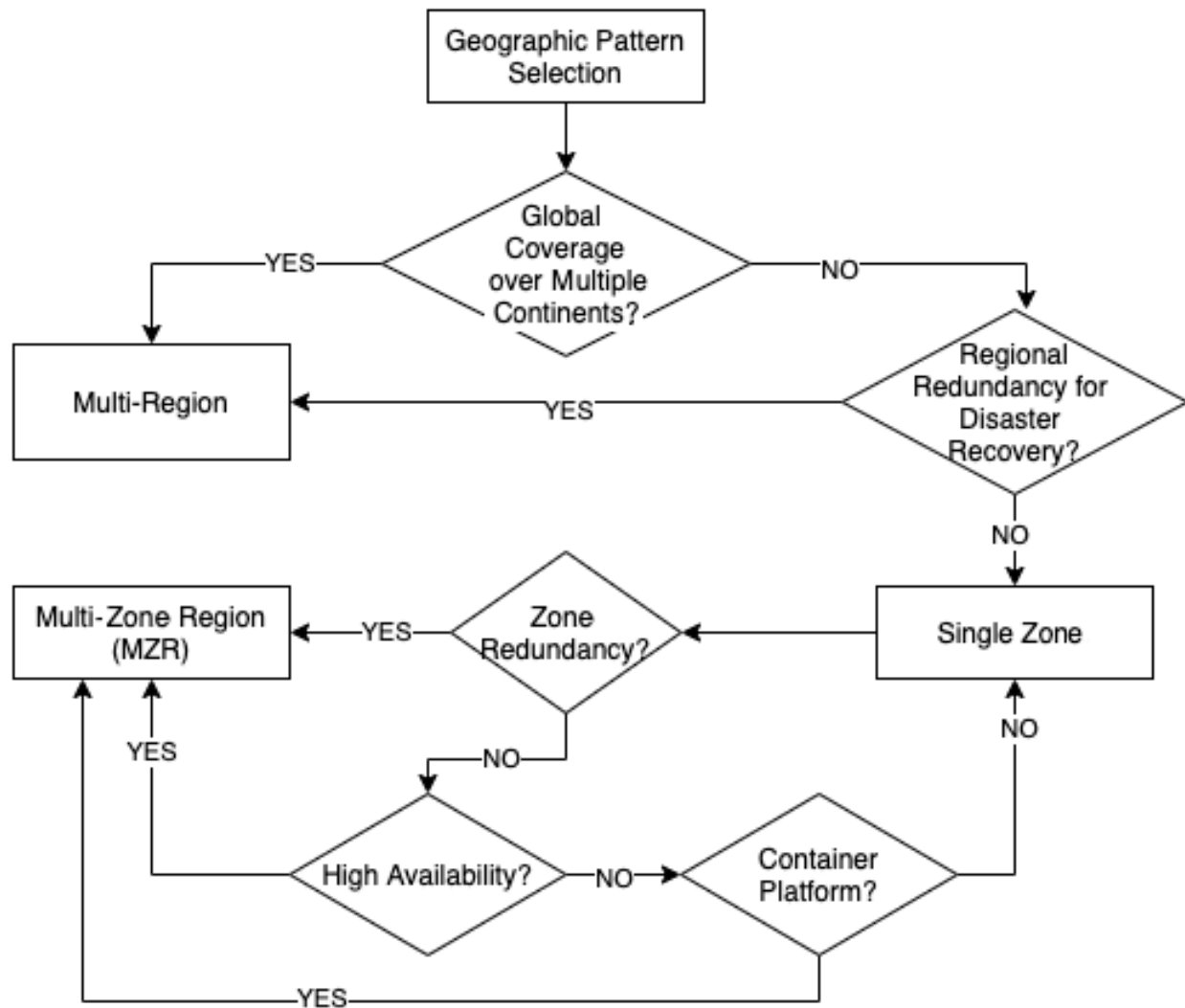


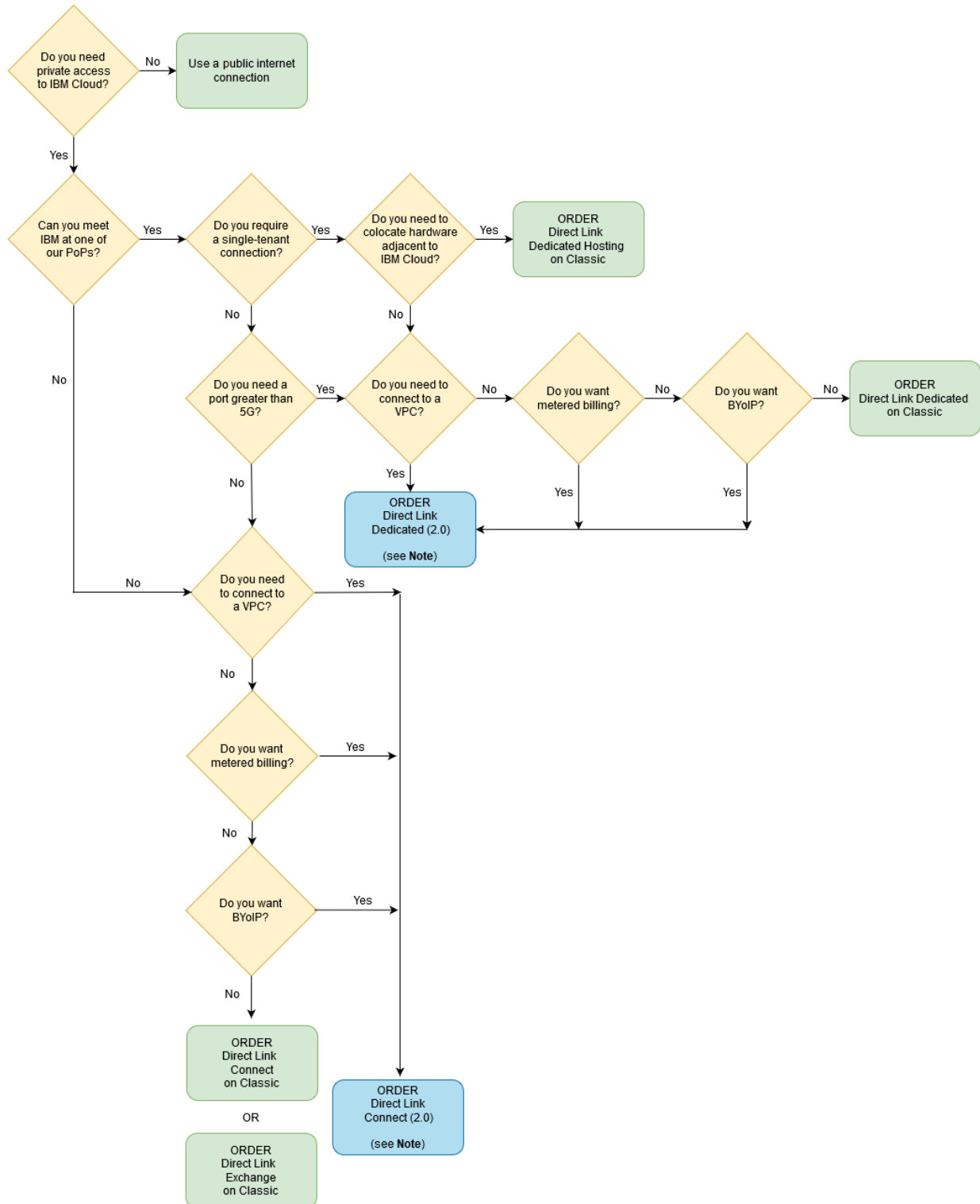
Chapter 7: Designing and Implementing Networking in Hybrid Cloud Infrastructure

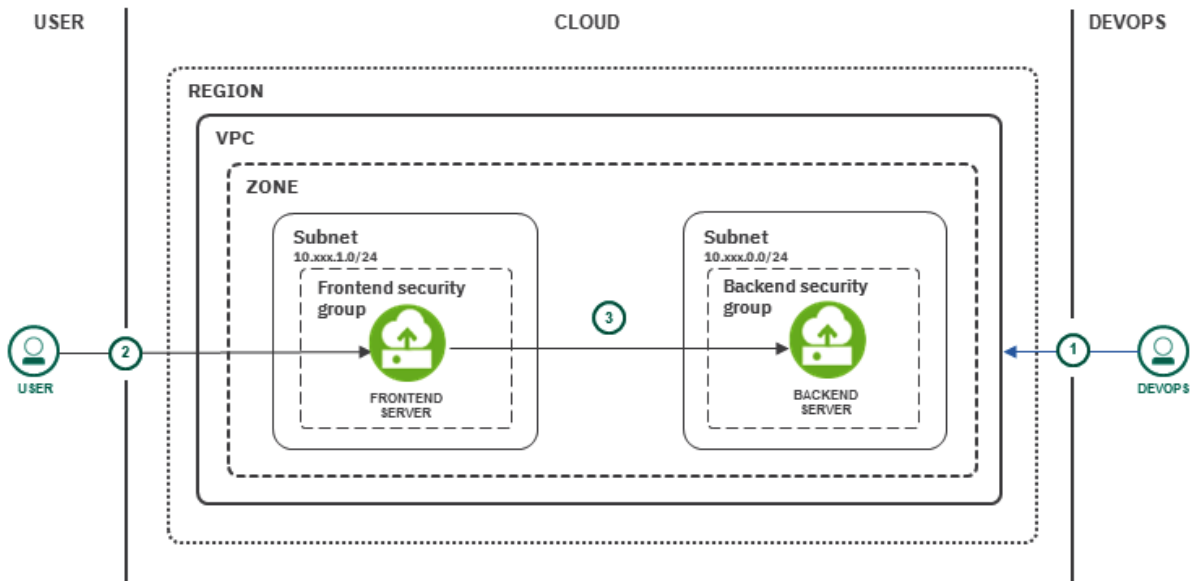
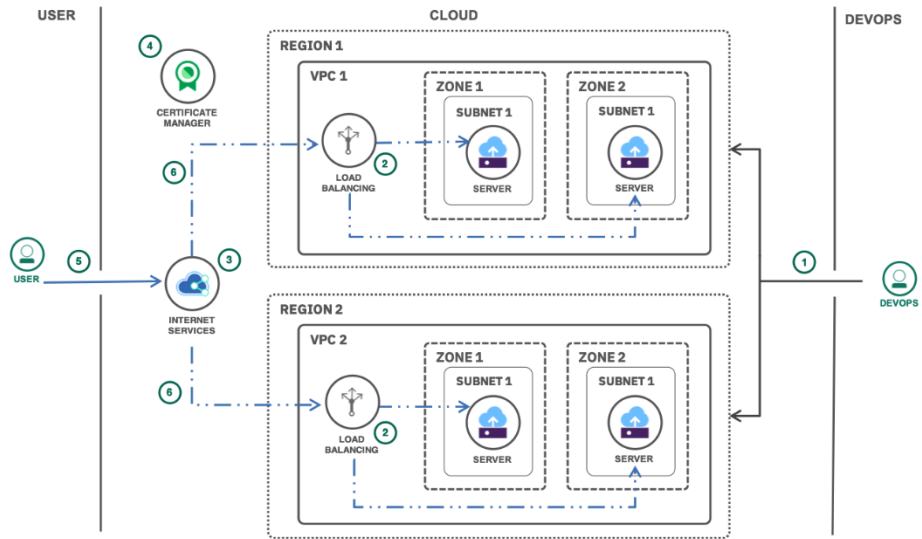
7	Application Layer	Human-computer interaction layer, where applications can access the network services
6	Presentation Layer	Ensures that data is in a usable format and is where data encryption occurs
5	Session Layer	Maintains connections and is responsible for controlling ports and sessions
4	Transport Layer	Transmits data using transmission protocols including TCP and UDP
3	Network Layer	Decides which physical path the data will take
2	Data Link Layer	Defines the format of data on the network
1	Physical Layer	Transmits raw bit stream over the physical medium

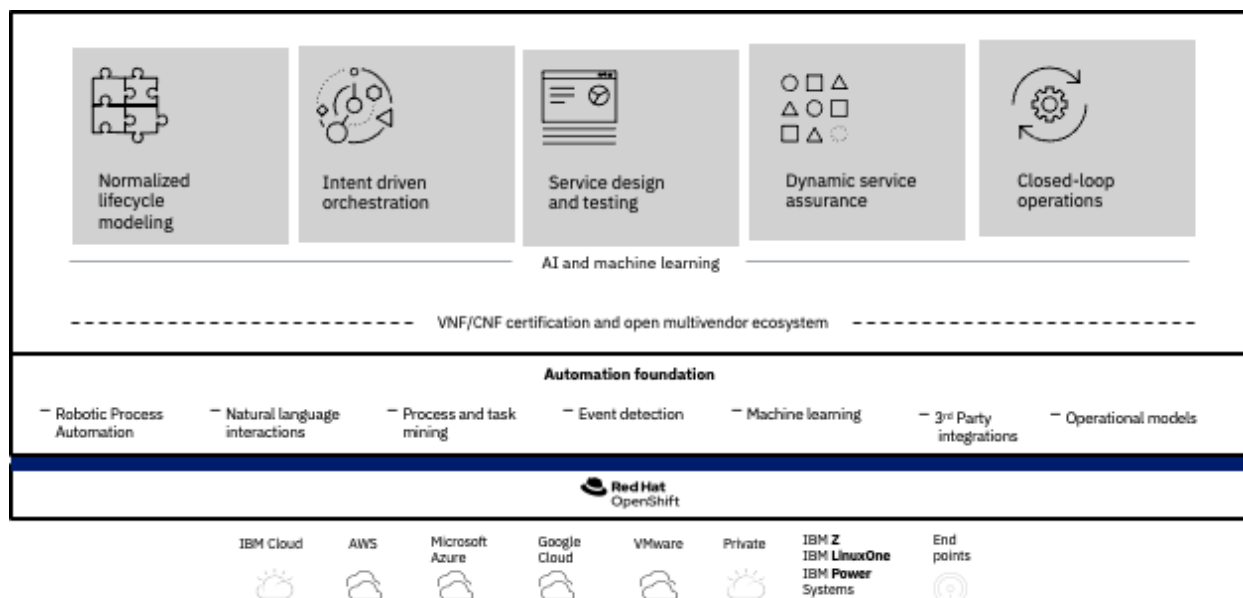
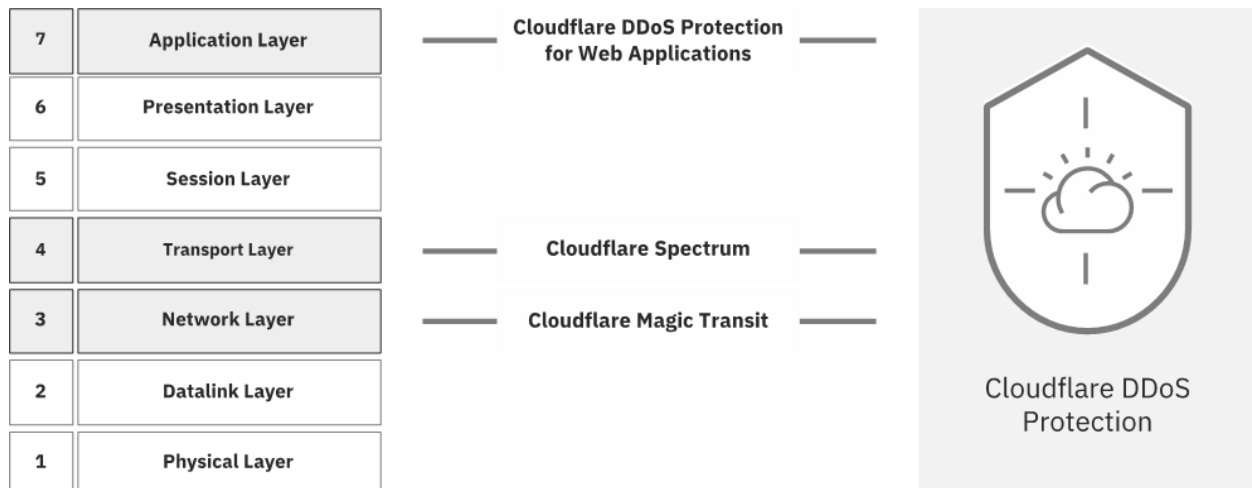
Networking	Enterprise Connectivity		Private Network (Direct Link)	Public Network (VPN)	Interconnect	HCX Add-on	Secure Gateway	GNPP	Cloud Connect
	BYOIP/Edge Gateways		Fortigate Security Appliance	Virtual Router Appliance (Vyatta)	Juniper vSRX	VMware NSX	VPC*		
	Load Balancing	Network (NLB)	IBM Cloud Load Balancer	VMware NSX	F5	IKS-NLB			
		Application (ALB)	IBM Cloud Load Balancer	Citrix Netscaler VPX Appliance	F5	IKS-NLB			
		Global (GLB)	Cloud Internet Services (CIS)	Citrix Netscaler VPX Appliance	F5				
	Cloud-Native Connectivity		VPN Tunnels	Service Endpoints					
	Network Segmentation		VMware NSX	VLANs	Security Groups				










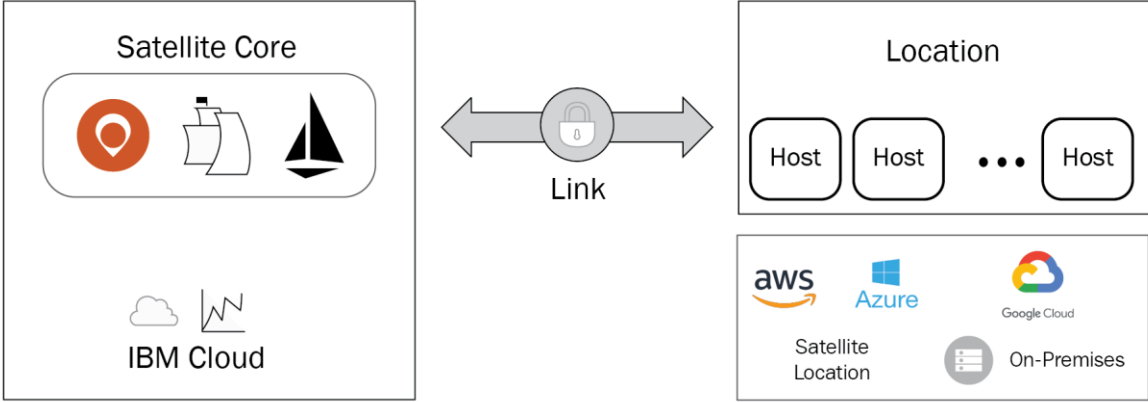




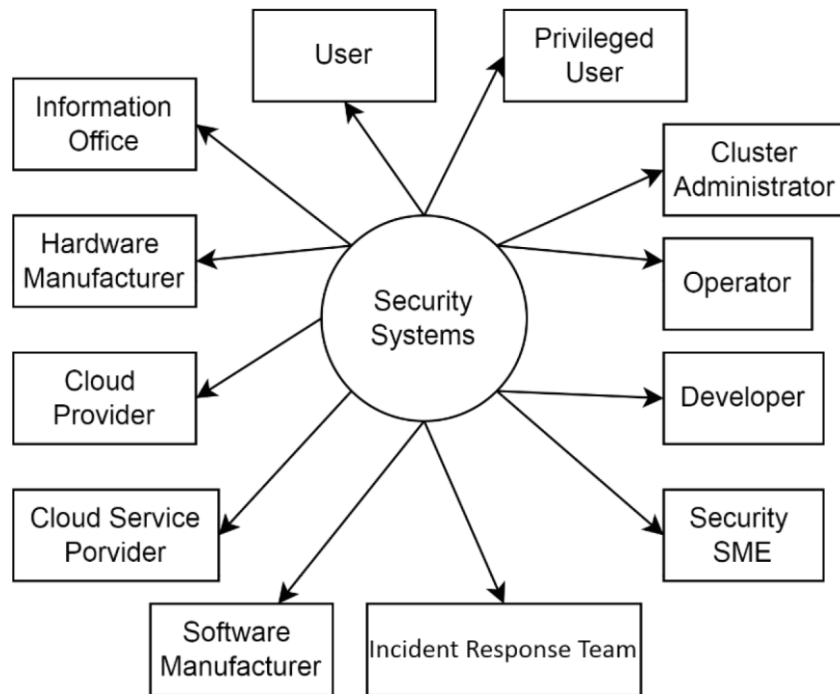


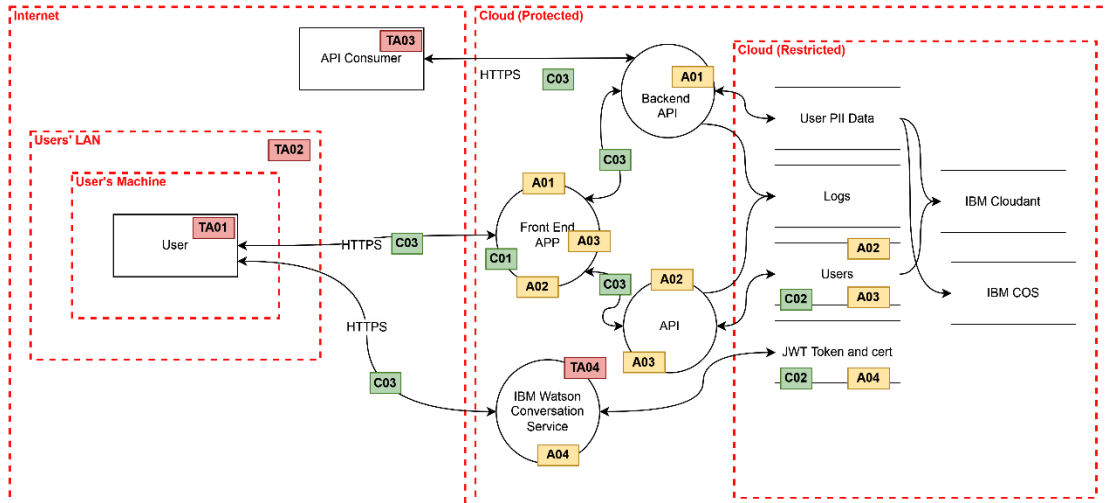
Enabled Services

Red Hat OpenShift on IBM Cloud (ROKS), IBM Cloud Databases, DevOps, and More



Chapter 8: Understanding Security in Action

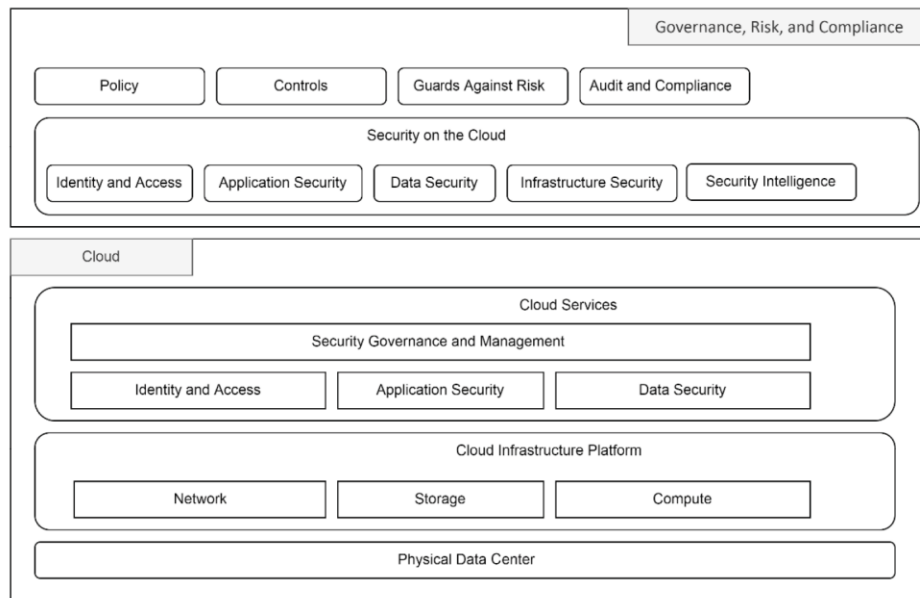




Assets	
ID	Description
A01	Application secrets
A02	User PII Data
A03	Application user credentials
A04	Application administrator credentials

Security Controls	
ID	Description
C01	Authentication
C02	Password hashing
C03	TLS

Threat Actors	
ID	Description
TA01	Malicious user
TA02	LAN Man in the middle
TA03	Malicious/compromised API consumer
TA04	Compromised talent suit user credential

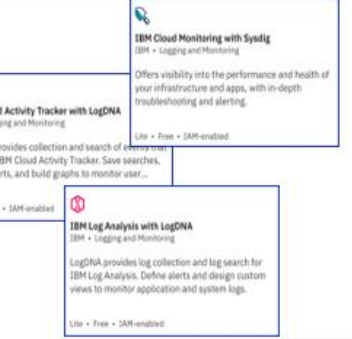


Network intrusion prevention, secure network, Malware protection, DDoS, security group, access control, gateway



Logging and activity monitoring

Continuous monitoring and logging of data flow and transactions is essential for security. Network activity also monitored continuously for future threat prediction



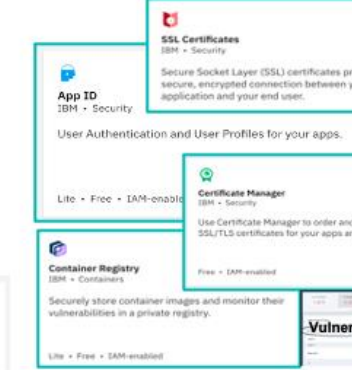
Access starts with the user

Assign access to IAM, classic infrastructure, and Cloud Foundry resources all from one place.



Data security is fundamental for any solution. Some important ADP for Data Management are Data encryption at rest and in transit; Key life cycle management; secure DBaaS; secure key generation;

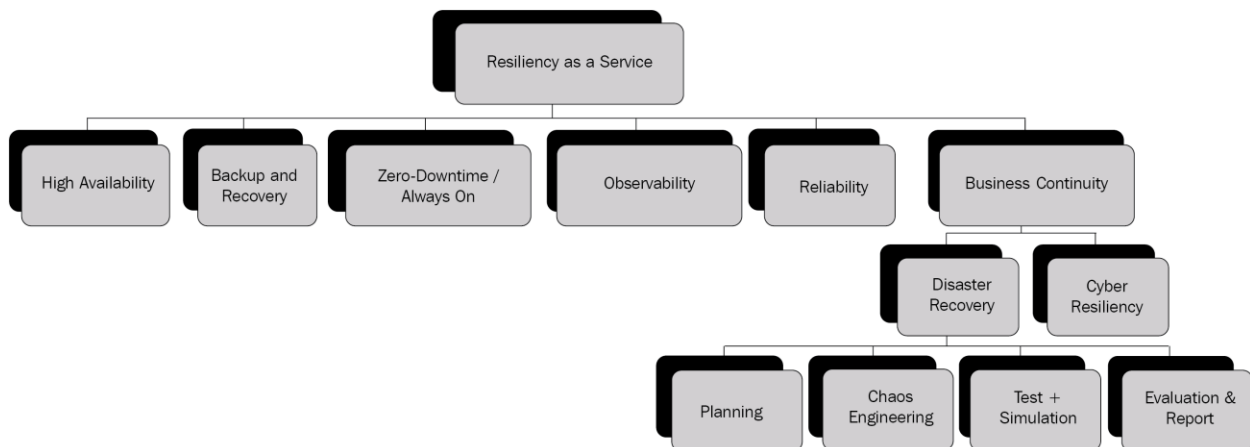
Applications need proper SSL certificates, Authorization ID, secure container images, secure code repository, automated deployment without human intervention



Security Adviser
IBM • Security
A unified security dashboard and console to enable centralized management for the security team.
Lite • Free • IAM-enabled

IT GRC automation is necessary to effectively manage risk. IBM offers automated IT risk management security services to provide the guidance and support to select, integrate and automate programs with a single IT GRC platform.

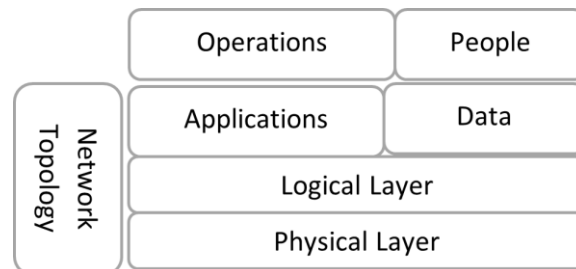
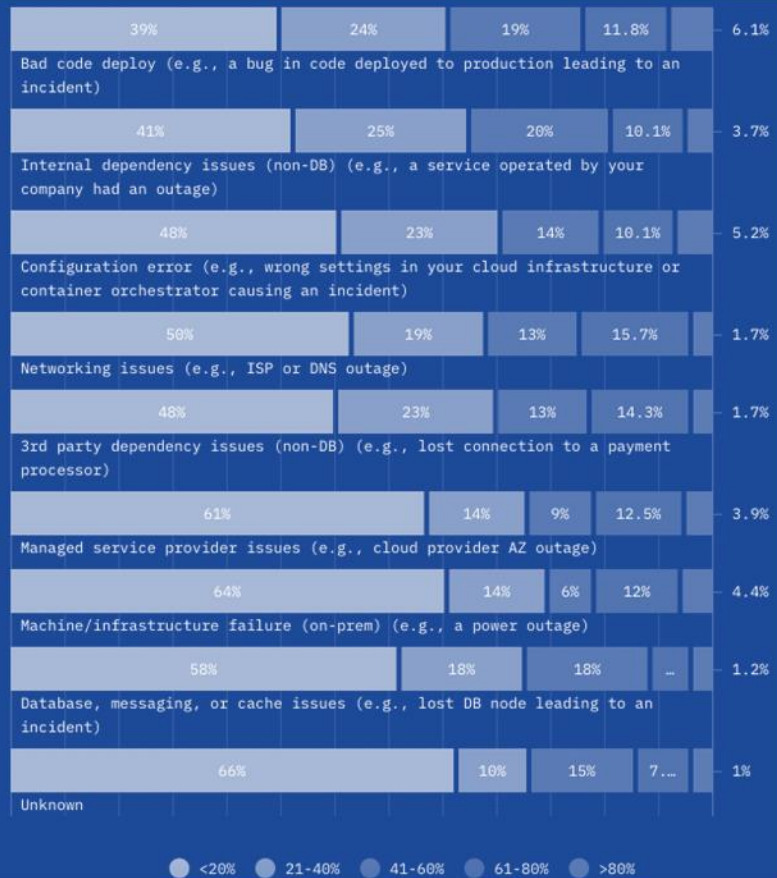
Chapter 9: Designing a Resilient Platform for Cloud Migration

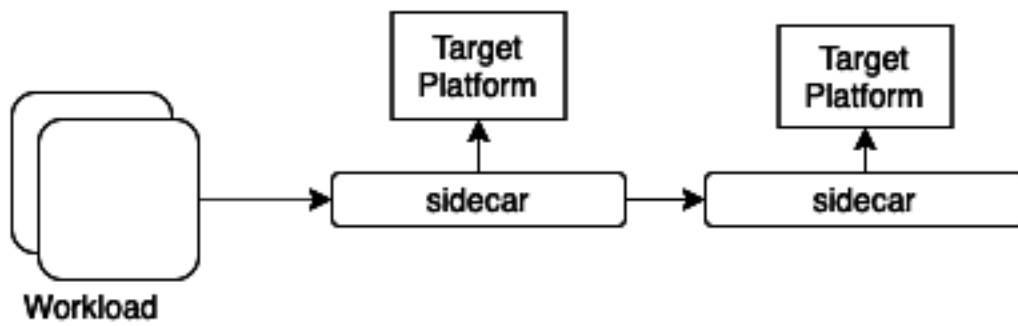
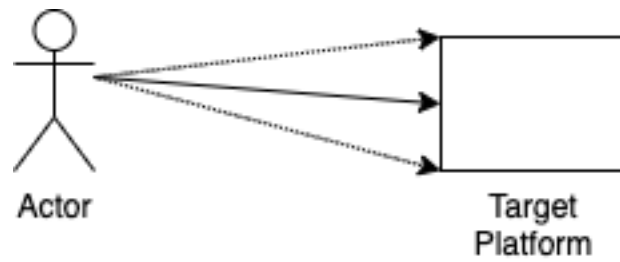
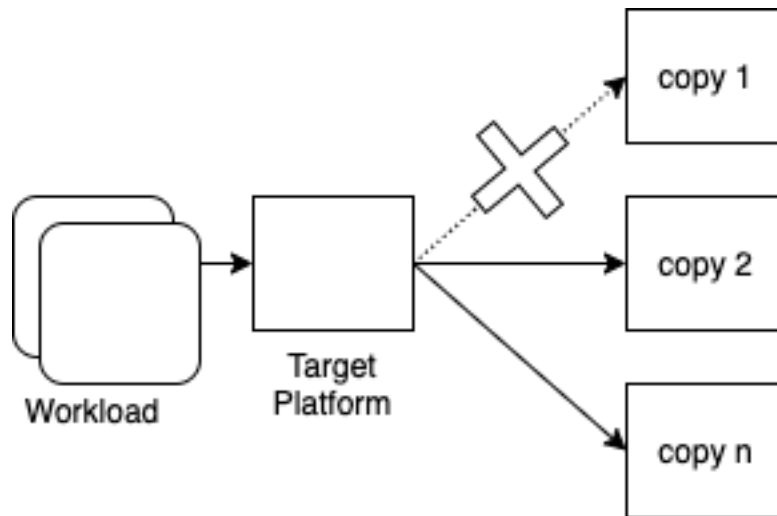


What Issues Most Negatively Impact Reliability & Cause Downtime for Server hardware, Server OS platforms in 2020? (Select all that apply)



What percent of your incidents (SEV0&1) have been caused by:





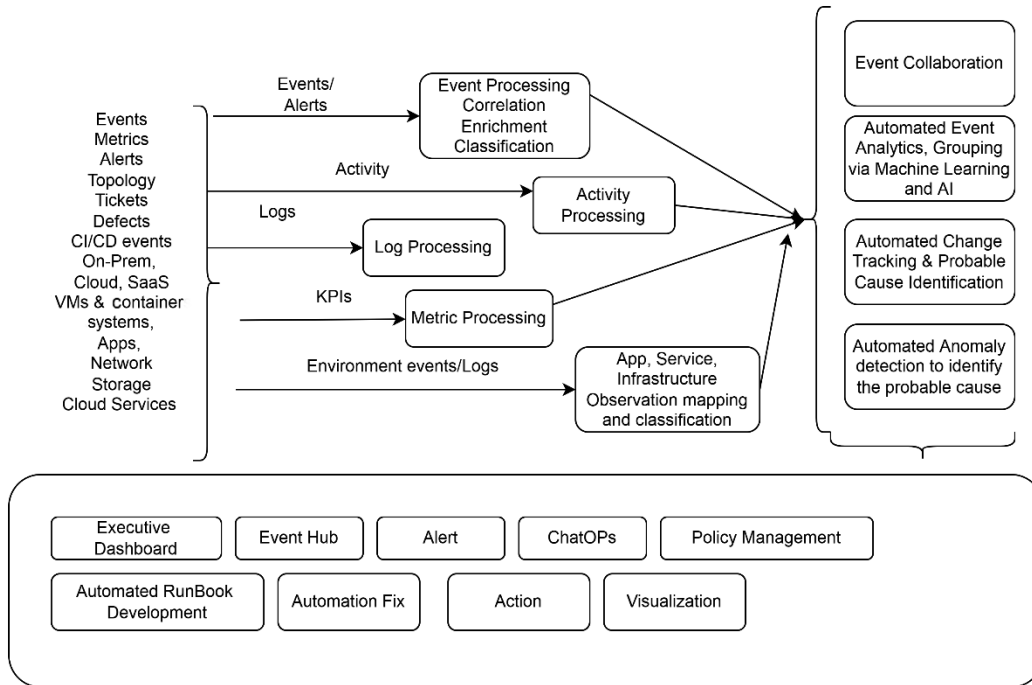
Heatmap for Dashboard– AI & Analytics Every where

Domains Taxonomy from Dashboard Framework

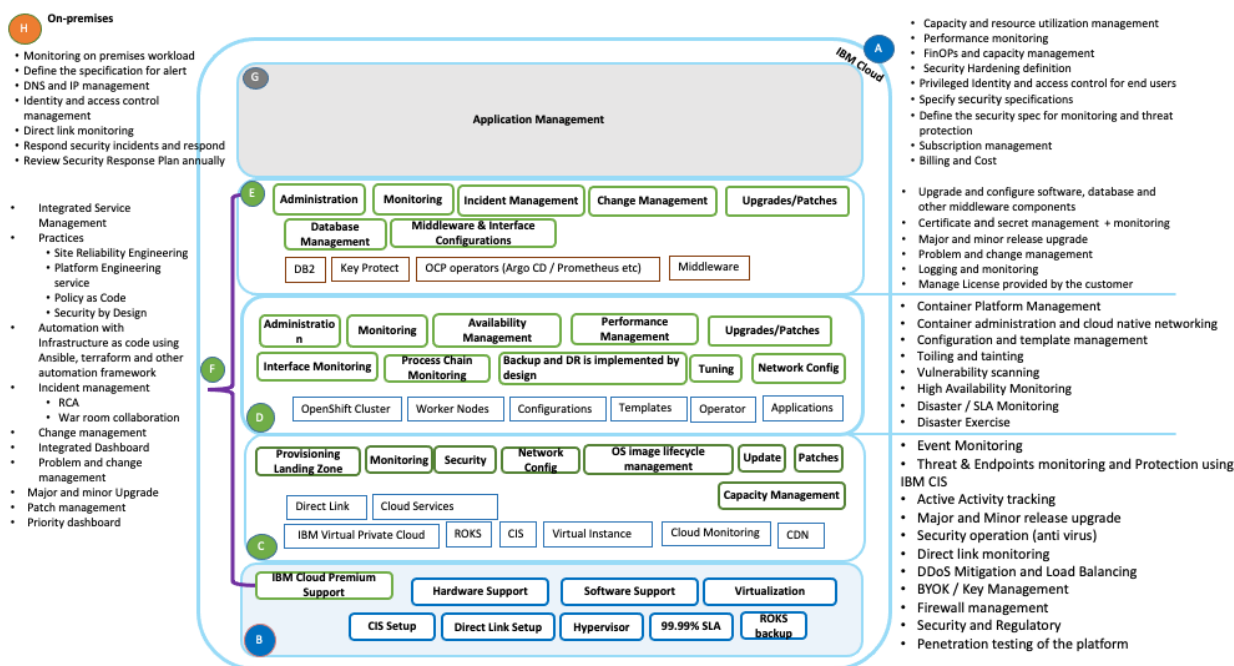
Domains considered in solution to address customer requirements

Aspects	Domains							
Planning	Self-Service	Terraform workflow	Security	Automation	Notice Board	Service Catalogue		
Platform	Compute Health	Storage Health	Network Health	Container Platform Health	Performance	Multi Cluster Management	Multi Tenant Management	Geo Location
SRE	SLOs and SLIs	error budgets	4 Golden Signal (e.g., Latency)	Anti-fragility				
Finance	Expense by Instance (compute, network, storage)	Expense by application / multiple tenants and other Categorical Expense	Expense by operations and other Categorical Expense	Budget Analysis	Proactive Recommendation	FinOps Frequency	Affected resources/ asset	Expense Correlation
Compliance	Compliance Health	Activity related to Resolution	Task/ Risk Board	UI based Report				
Regulation	Regulation Health	Activity related to Resolution	Task/ Risk Board	UI based Report				
Policy	Policy Health	Activity related to Resolution	Task/ Risk Board	UI based Report				
Application	Application Performance	Transaction	Distributed Tracing					
Inventory	Self Service	Asset Health	Assets Inventory Multi Tenancy					
AI Insight	Predictive Monitoring	Proactive Alert	Consumption trend analysis & prediction					
Operation	Frequency of run	Affected resources/ asset						
User	Activity	Audit	Report	Digital Behavior (Click + AI based)				
Security	Health	SecOps frequency	SecOps affection on asset/ resources	Violation	Report publication			
Cloud	Multi Cloud	Edge Computing						

Chapter 10: Managing Operations in Hybrid Cloud Infrastructure



Resource	Incident and Operations Management	Change Management	Identity and Access Management	Security and Regulation Compliance	Disaster Recovery
Data	Customer	Customer	Customer	Customer	Customer
Application	Customer	Customer	Customer	Customer	Customer
Operating system	Customer	Customer	Customer	Customer	Customer
Virtual and bare metal servers	Shared	Shared	Shared	Shared	Shared
Virtual storage	Shared	Shared	Shared	Shared	Shared
Virtual network	Shared	Shared	Shared	Shared	Shared
Hypervisor	IBM	IBM	IBM	IBM	IBM
Physical servers and memory	IBM	IBM	Shared	Shared	IBM
Physical storage	IBM	IBM	IBM	IBM	IBM
Physical network and devices	IBM	IBM	IBM	IBM	IBM
Facilities and data centers	IBM	IBM	IBM	IBM	IBM

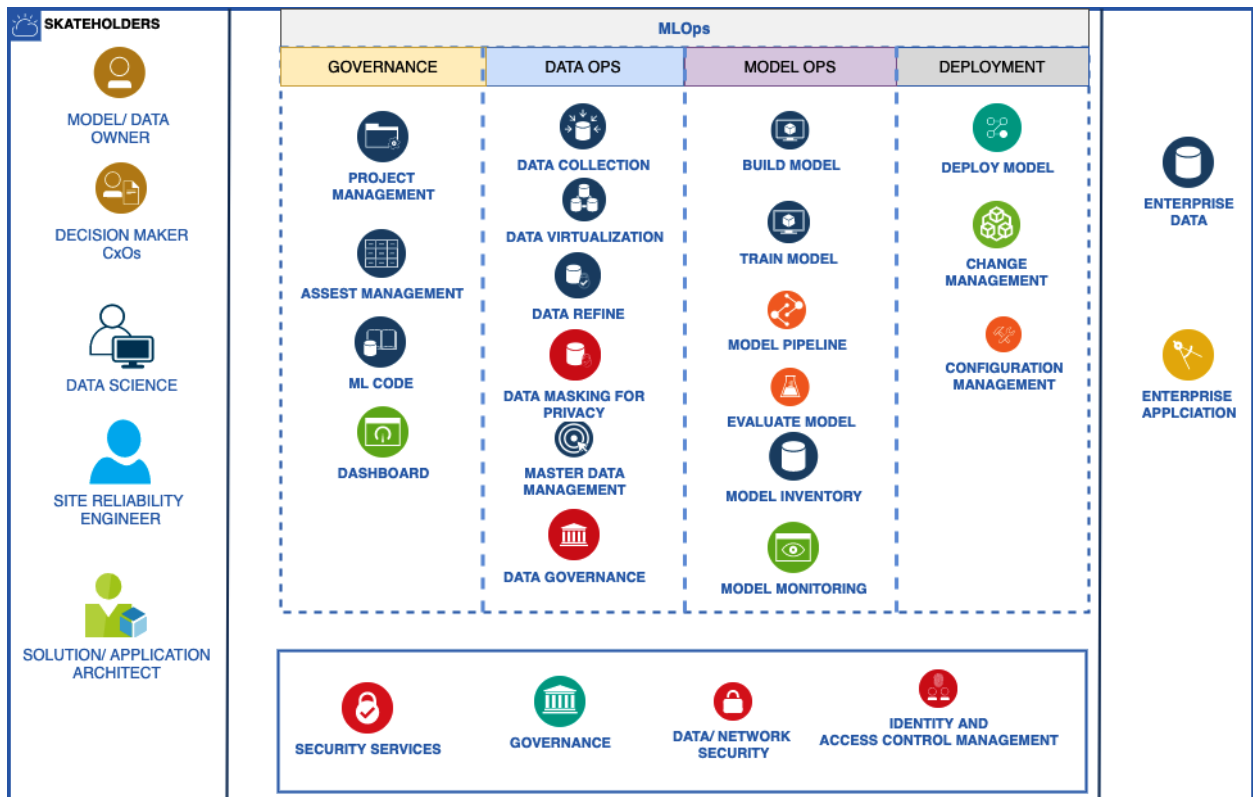
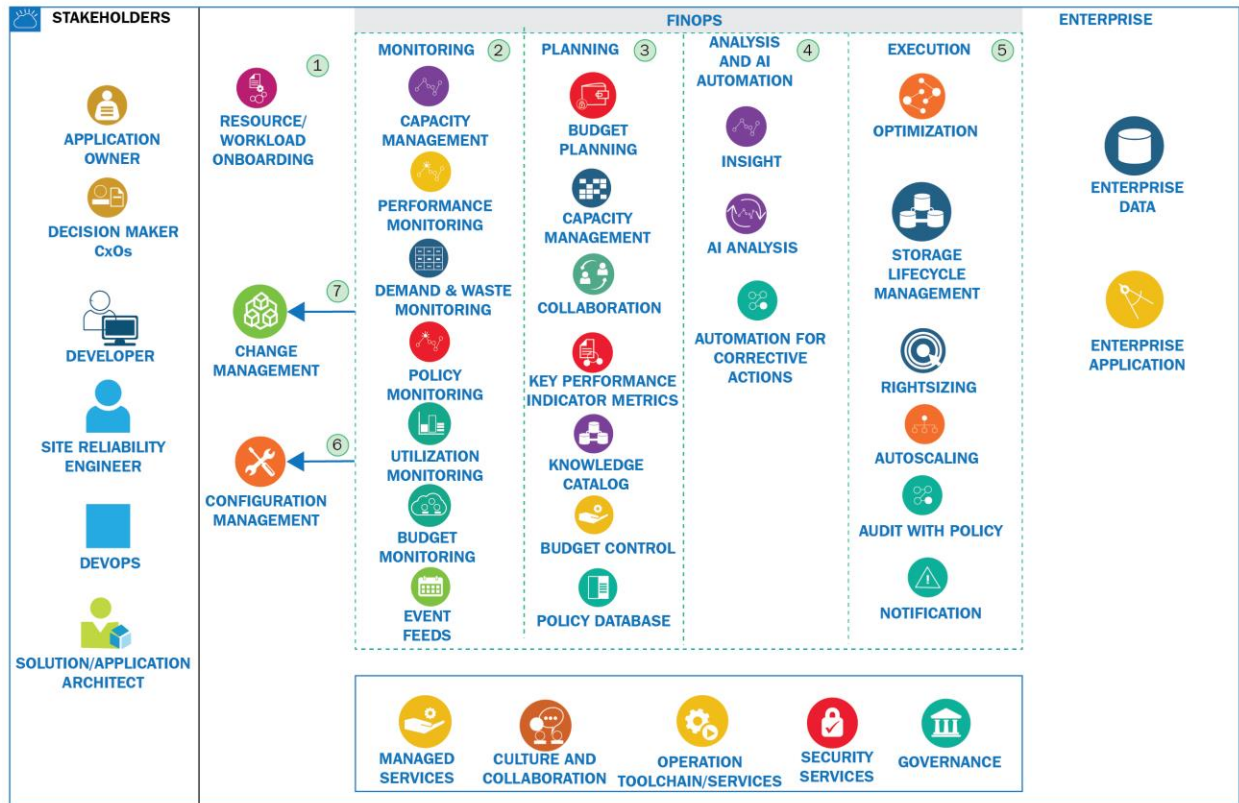


Software Development DevOps and Cloud 2021 Graph

<http://infoq.link/devops-trends-2021>

InfoQ





IBM Cloud Pak for Data | All | Search in your workspaces | Buy | MH

Projects / tme-data-fabric-adrc | Launch IDE

Overview **Assets** Jobs Manage

Find assets | Add asset | New asset +

11 assets

All assets

Asset types

- Data access (1)
 - Connection 1
- Data (6)
 - Data asset 6
- Flows (1)
 - Data Refinery flow 1
- Visualizations (1)
 - Dashboard 1
- Experiments (1)
 - AutoAI experiment 1
- Source Code (1)
 - Notebook 1

Data access

Name	Last modified
db2-anomaly-data Connection	5 months ago MANSURA HABIBA (You)

Items per page: 20 | 1–1 of 1 items | 1 of 1 pages

IBM Cloud Pak for Data | All | Search in your workspaces | Buy | MH

Projects / tme-data-fabric / Refine data

Search operations

CLEANSE

- Convert column type
- Convert column value to missing
- Extract date or time value
- Filter
- Remove columns
- Remove duplicates
- Remove empty rows
- Replace missing values
- Replace substring
- Substitute
- Text

COMPUTE

- Calculate
- Math

ORGANIZE

Cancel | Apply

Data

Use a code template to add a step

Replace missing values

Change column selection

Selected columns: c("Name", "Artist Type", "Category", "Description", "Tags", "Class Location", "Stevens", "Extra-Home ID", "File Name")

Replace the missing values in the column with the value from a specified column in the same row or with a value.

Specify value or a column

☒ Value ☐ Column

☐ Create new column for results

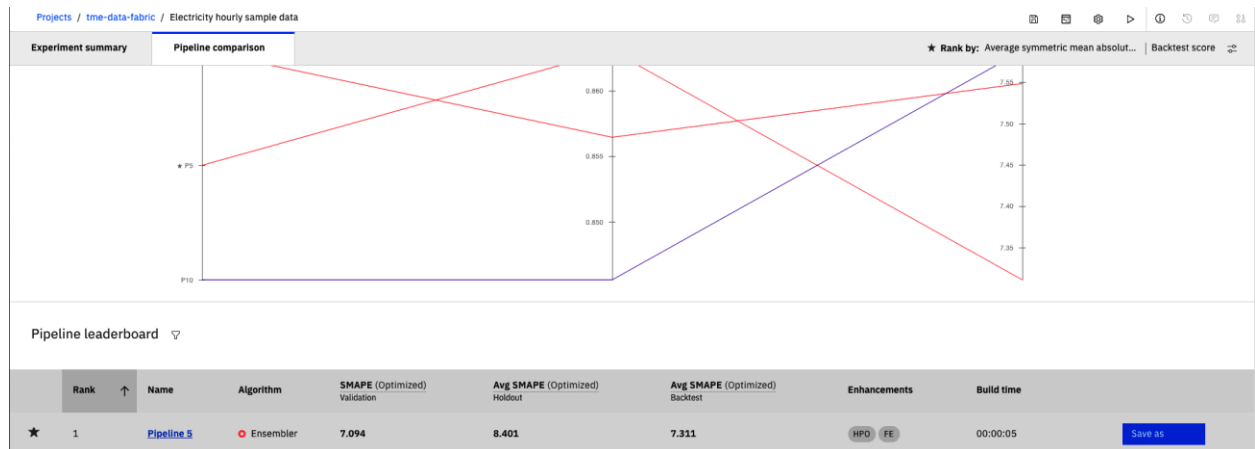
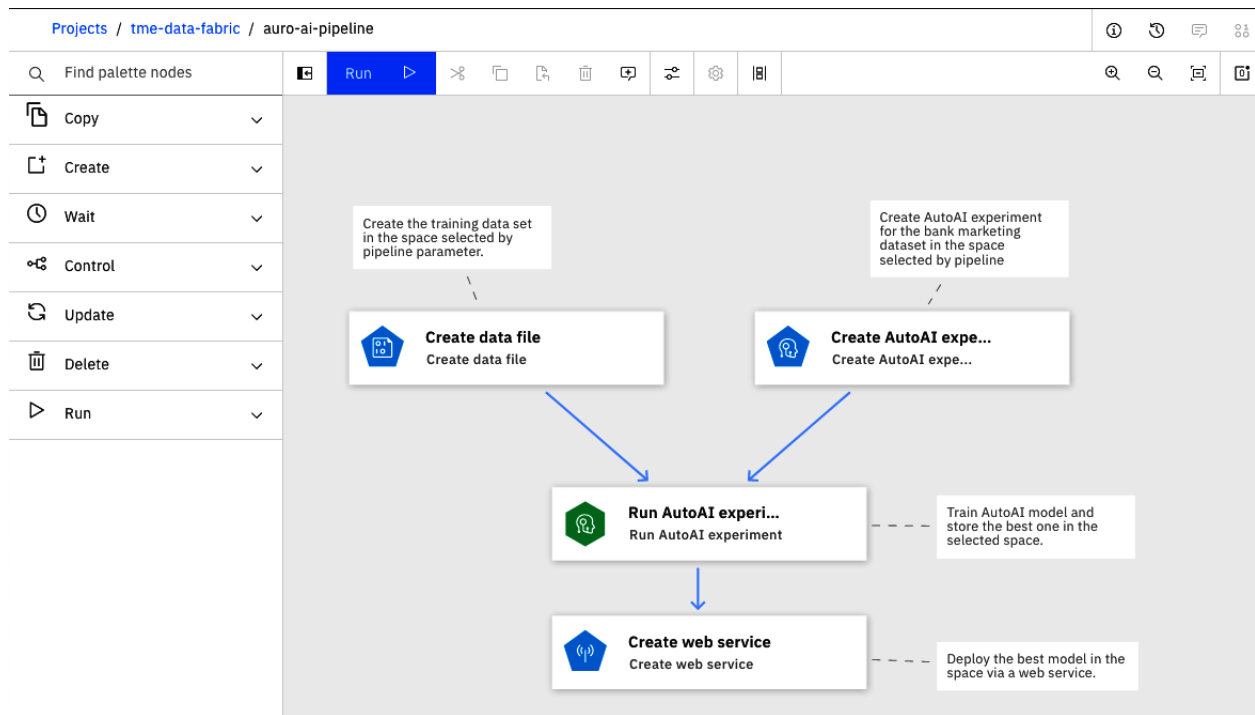
Data

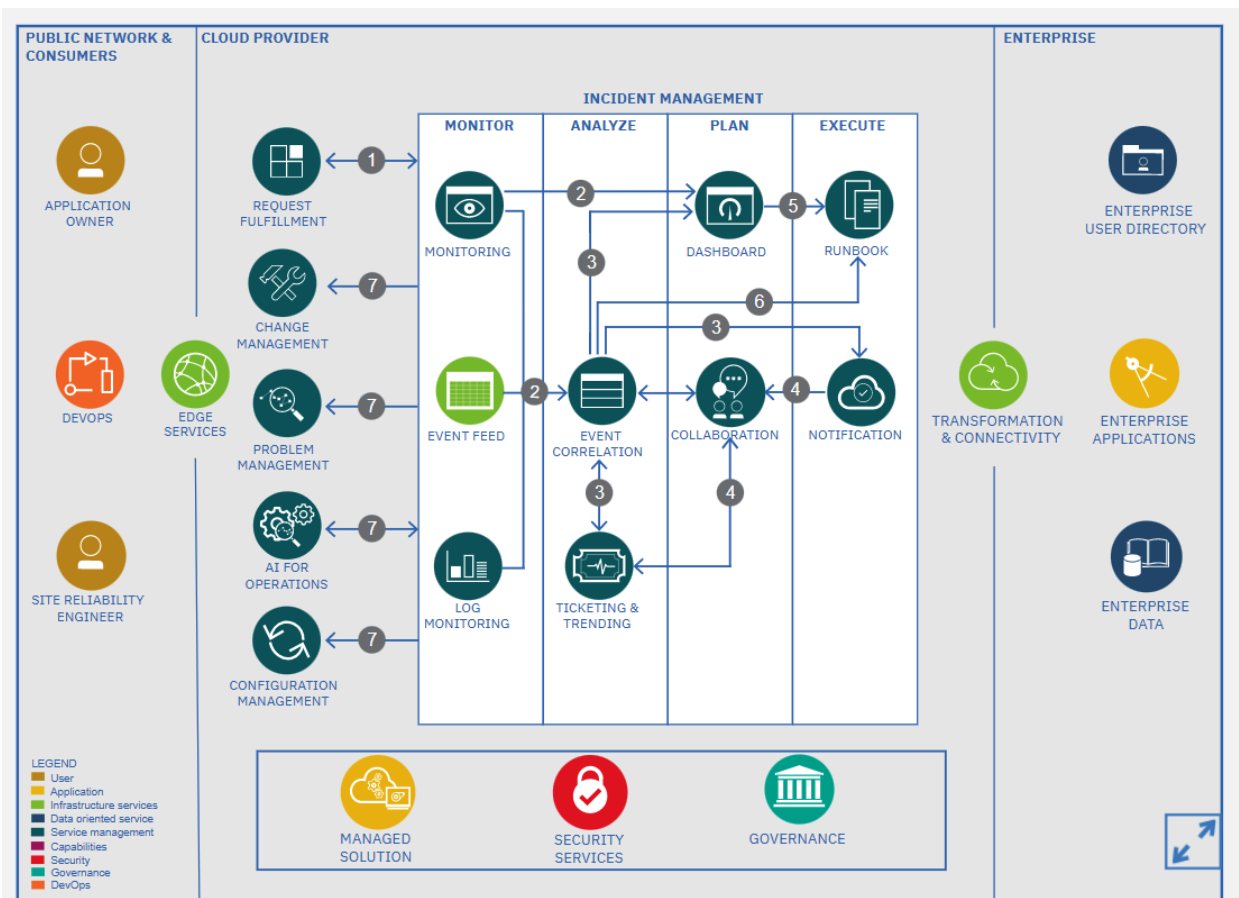
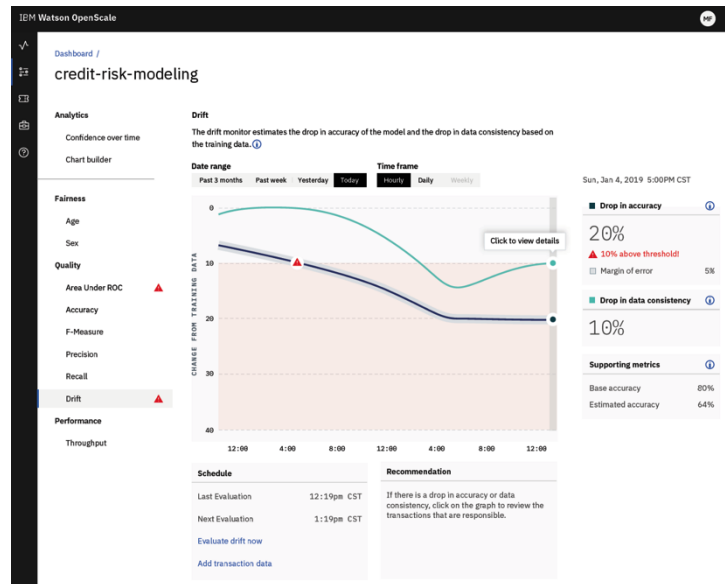
Profile	Visualizations
c("Name", "...	
String	
Data Source	
glossary_term	
TME Network Categ...	
Data Source Identifi...	
TME	
TME Network	
1000331008	
Data Origin	
TME_Metrics	
SITE_NAME	
glossary_term	
TME Network Categ...	
Location of the reso...	
TME	
TME Network	
Location, Host	

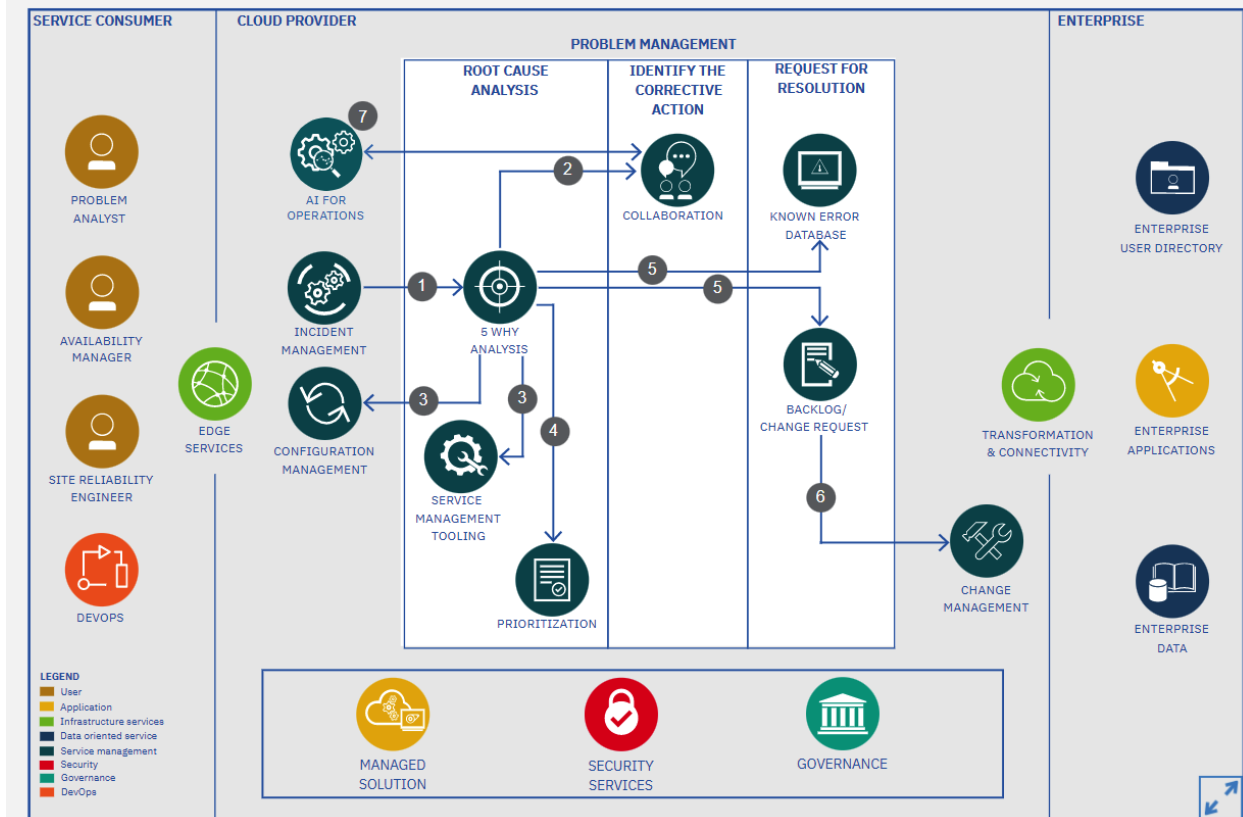
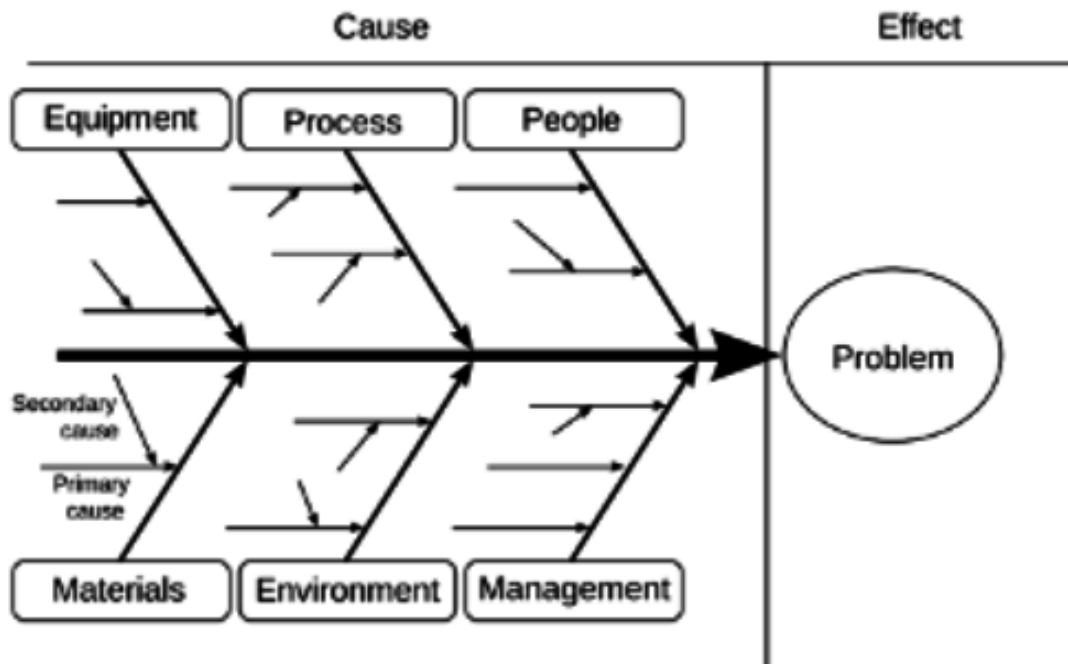
SOURCE FILE: tme

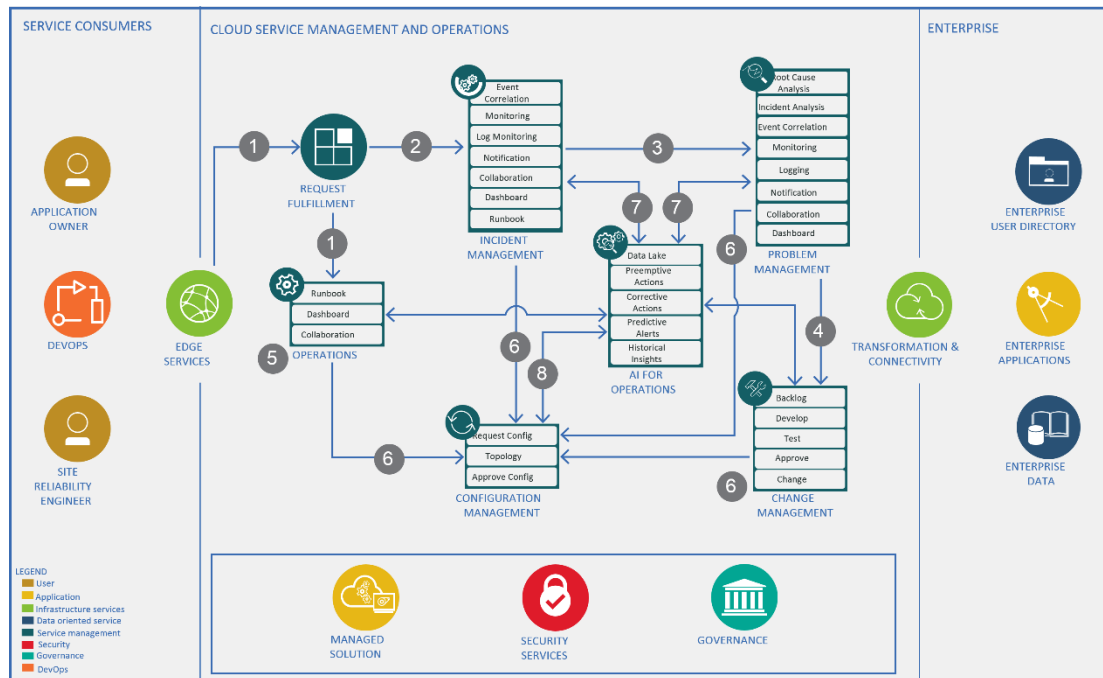
Cancel | Apply

SOURCE FILE: tme-network-business-glossary-category.csv | FULL DATA SET: 576 rows









Appendix A – Application Modernization and Migration Checklist

