

An aerial view of the London skyline, featuring prominent skyscrapers like The Shard and the Gherkin. The image is overlaid with a semi-transparent blue filter. The text is positioned on the left side of the image.

Microsoft Azure Well-Architected Framework

September 2023

Cisilion Architect
Principle Architect – Cloud and Security
Cisilion

Agenda

- Why is being Well-Architected important?
- Overview: Microsoft Azure Well-Architected
- Overcoming workload quality inhibitors
- Pillar Overviews: Cost Optimization, Operational Excellence, Performance Efficiency, Security
- How to get started with the Well-Architecture Framework
- Resources

Data breaches cost you —and your customers

Customers' PII was the most frequently, and costliest compromised type of record per latest data breach study*

\$3.86M

Average total cost of a data breach

80%

Number of breaches carried out with customer PII

\$150

Customer PII average cost per record

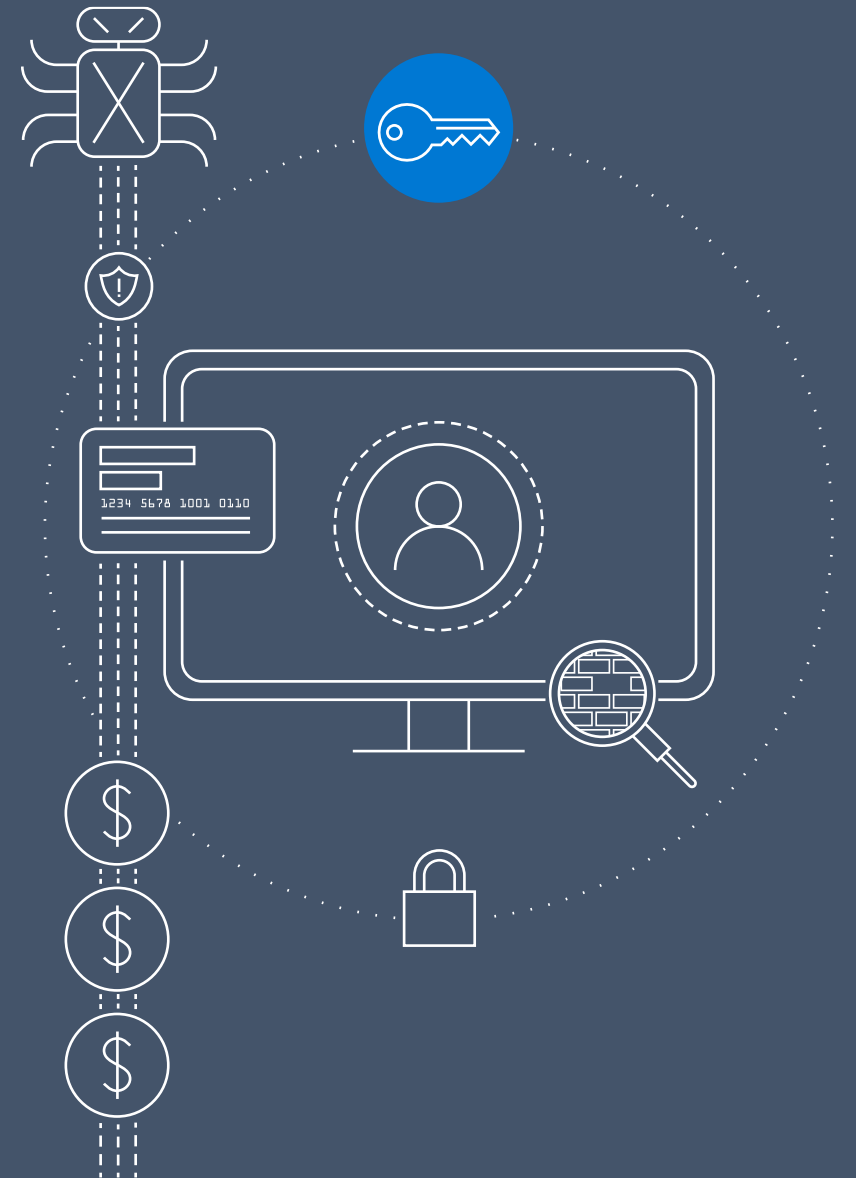
\$175

Increased cost per record of customer PII in breaches caused by a malicious attack

\$137,000+

Remote workforce impact on average total cost of data breaches

*[Cost of a Data Breach Report 2020, IBM Security, Ponemon Institute.](#)



Run *Well-Architected* cloud workloads— to create business value

✓ Invest in **these actions:**  To avoid **these consequences:**

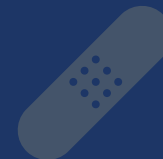
- Manage budget
- Improve workloads security
- Increase incident response
- Streamline internal processes
- Find costly mistakes
- Enhance workload performance



Expenses, losses



Broken Trust



Damages

Microsoft Azure Well-Architected Framework

Architecture guidance and best practices, created for architects, developers and solution owners, to improve the quality of their workloads, based on 5 aligned and connected pillars

**Cost
Optimization**



**Operational
Excellence**



**Performance
Efficiency**



Reliability



Security



<https://aka.ms/wellarchitected/framework>

Overcoming workload quality inhibitors

Cost Optimization



- No cost and usage monitoring
- Unclear on underused or orphaned resources
- Lack of structure billing management
- Budget reductions due to lack of support for cloud adoption by LT/board

Operational Excellence



- Lack of rapid issue identification
- No deployment automation
- Absence of communication mechanisms and dashboards
- Unclear expectations and business outcomes
- No visibility on root cause for events

Performance Efficiency



- No monitoring new services
- No monitoring current workloads health
- No design for scaling
- Lack of rigor and guidance for technology and architecture selection

Reliability



- Unclear on resiliency features/capabilities for better architecture design
- Lack of data back up practices
- No monitoring current workloads health
- No resiliency testing
- No support for disaster recovery

Security



- No access control mechanism (authentication)
- No security threat detection mechanism
- Lack of security threat response plan
- No encryption process

Best practices to drive workload quality

Cost Optimization



- Azure Hybrid Benefit
- Reserve Instances
- Shutdown
- Resize
- Move to PAAS

Operational Excellence



- DevOps
- Deployment
- Monitor
- Processes and cadence

Performance Efficiency



- Design for scaling
- Monitor performance

Reliability



- Define requirements
- Test with simulations and forced failovers
- Deploy consistently
- Monitor health
- Respond to failure and disaster

Security



- Identity and access management
- Infra protection
- App security
- Data encryption and sovereignty
- Security operations

Well-Architected Reliability Assessment

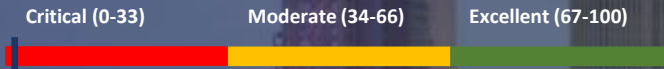
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EXAMPLE-Executive Summary

Areas of focus to raise your Review Score

Number of recommendations per focus area:



Capability Score

23

Reliability ensures your application can meet the commitments you make to your customers. Architecting resiliency into your application framework ensures your workloads are available and can recover from failures at any scale.

	2	Health Modeling & Monitoring
	2	Application Platform Availability
	17	Application Design
	3	Data Platform Availability
	3	Deployment & Testing
	5	Networking & Connectivity
	2	Application Performance Management
	5	Operational Procedures

EXAMPLE-Application Design

Top 5 out of 17 recommendations:

Identify distinct workloads

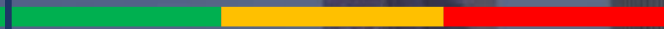
Have clearly defined availability targets

Decouple the lifecycle of the application from its dependencies

Perform a failure mode analysis

Monitor long-running workflows for failures

Excellent (0-33) Moderate (34-66) Critical (67-100)



Focus Area relative weight

Relative weight indicates the average importance of recommendations in this section

70

Building a reliable application in the cloud is different from traditional application development. Instead of trying to prevent failures altogether, the goal is to minimize the effects of a single failing component.

Well-Architected Security Assessment

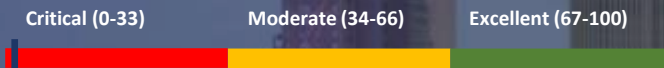
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EXAMPLE-Executive Summary

Areas of focus to raise your Review Score

Number of recommendations per focus area:



Capability Score

35

Assuring confidentiality, availability, and integrity of your Azure workload involves investing in security throughout the entire lifecycle of an application, from design and implementation to deployment and operations. A Well-Architected security maturity program will enable you to begin optimizing the security of your workload and enhance your confidentiality, availability, and integrity assurances.

	1	Governance
	7	Operational Procedures
	5	Deployment & Testing
	6	Operational Model & DevOps
	13	Application Design
	5	Networking & Connectivity
	20	Security & Compliance
	2	Health Modeling & Monitoring

EXAMPLE-Deployment & Testing

Top 5 out of 5 recommendations:

Scan container workloads for vulnerabilities

Apply security controls to self-hosted build agents in the same manner as with other Azure IaaS VMs

Integrate code scanning tools within CI/CD pipeline

Implement automated deployment process with rollback/roll-forward capabilities

Restrict application infrastructure access to CI/CD only

Excellent (0-33) Moderate (34-66) Critical (67-100)



Focus Area relative weight

Relative weight indicates the average importance of recommendations in this section

68

Deployment & Testing for Azure workloads allows to quickly provision dev/test and pre-production environments to deliver secure products, applications, and services. This model defines a set of practices that combine software development and IT operations, to shorten the development cycle and provide continuous delivery with high quality and strong security controls.

Well-Architected Cost optimization Assessment

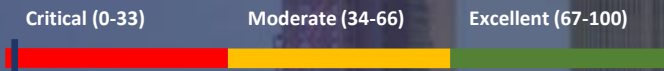
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EXAMPLE-Executive Summary

Areas of focus to raise your Review Score

Number of recommendations per focus area:



Capability Score

36

A cost-effective workload is driven by business goals and the return on investment (ROI) while staying within a given budget. The principles of cost optimization are a series of important considerations that can help achieve both business objectives and cost justification. A capability program will enable you to begin optimizing the core components needed to manage your cloud environment.

	5	Health Modeling & Monitoring
	11	Capacity & Service Availability Planning
	11	Governance
	16	Application Design
	2	Operational Procedures
	3	Deployment & Testing
	3	Networking & Connectivity

EXAMPLE-Capacity & Service Availability Planning

Top 5 out of 11 recommendations:

Consider reserved capacity for Storage

Consider utilizing disk bursting

Define and monitor targets for scale operations

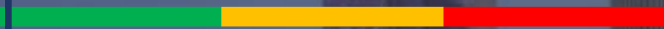
Define performance requirements

Design the workload to scale independently

Excellent (0-33)

Moderate (34-66)

Critical (67-100)



Focus Area relative weight

Relative weight indicates the average importance of recommendations in this section

65



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Well-Architected Operational excellence Assessment

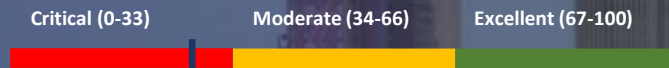
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EXAMPLE-Executive Summary

Areas of focus to raise your Review Score

Number of recommendations per focus area:



Capability Score

27

The operational excellence pillar covers the operations processes that keep an application running in production. Deployments must be reliable and predictable. Automated deployments reduce the chance of human error. Fast and routine deployment processes won't slow down the release of new features or bug fixes.



2

Operational Model & DevOps



9

Operational Procedures



2

Governance



3

Capacity & Service Availability Planning



16

Deployment & Testing



14

Health Modeling & Monitoring



4

Application Design

EXAMPLE-Governance

Top 2 out of 2 recommendations:

Use tools to govern services and configurations

Define standards, policies and best practices as code

Excellent (0-33) Moderate (34-66) Critical (67-100)



Focus Area relative weight

Relative weight indicates the average importance of recommendations in this section

50



CISILION

Well-Architected Performance efficiency Assessment

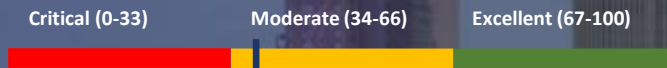
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EXAMPLE-Executive Summary

Areas of focus to raise your Review Score

Number of recommendations per focus area:



Capability Score

37

Performance efficiency is the ability of your workload to scale to meet the demands placed on it by users in an efficient manner. Just as you needed to anticipate increases in load in on-premises environments, you need to anticipate increases in cloud environments to meet business requirements.

-  5 Health Modeling & Monitoring
-  6 Application Performance Management
-  1 Capacity & Service Availability Planning
-  1 Data Platform Availability
-  4 Application Design
-  1 Deployment & Testing
-  7 Performance Testing
-  1 Networking & Connectivity

EXAMPLE-Health Modeling & Monitoring

Top 5 out of 5 recommendations:

The health model can determine if a fault is transient

Track how your resources scale

Use critical system flows in the health model

Have an overall monitoring strategy for scalability

Analyze long-term trends to predict performance issues

Excellent (0-33) Moderate (34-66) Critical (67-100)



Focus Area relative weight

Relative weight indicates the average importance of recommendations in this section

52