

AWS Well-Architect Summarized

The AWS Well-Architected Framework helps to understand the pros and cons of decisions we make while building systems on AWS. By using the framework we will learn architectural best practices for designing and operating reliable, secure, efficient, and cost-effective systems in the cloud.

Purpose of AWS Well Architecture:

- Make informed decisions
- Think Cloud Natively
- Understand Potential Impact

General Design Principle:

- Stop guessing needs
- Test at production scale
- Make experiments easier
- Allow for architecture to evolve
- Build data-driven architecture
- Improve through game days

AWS Well-Architect Framework is based on 6 pillars:

- Operational Excellence
- Security
- Reliability
- Performance efficiency
- Cost optimization
- Sustainability

Operational Excellence Pillar

The ability to support development and run workloads effectively, gain insight into their operations, and to continuously improve supporting processes and procedures to deliver business value.

There are four best practice areas for operational excellence in the cloud:

Organization – need to understand the organization priorities, organizational structure, and how collaboration between organizations and team works to support the common goal.

Prepare – need to prepare designs for the architecture and review the readiness of the workload and teams in order to make informed decisions about when to go live and update.

Operate – need to know how to operate the workload and understand the health of the workload. Through this operational activity one can identify the organizational and business outcomes are at risks and respond appropriately.

Evolve – need to have a process to continue improve workload and operational activities. Feedbacks and continues learning

Operational Excellency Design:

- Perform operation as a code
- Make frequent, small, reversible changes
- Refine operation procedure frequently
- Anticipate failure
- Learn from all operational failure

Security Pillar

The ability to protect information, systems & assets while delivering business values through risk assessments and mitigation.

These are best practice areas for Security in the cloud:

- IAM - Identity and Access Management for users
- Detection - Detection of possible security loop
- Infrastructure Protection - Securing entire infrastructure
- Data Protection - Protecting data in transit and at rest
- Incident Report – Reporting of incident happened.

Security Design:

- Implement strong identity foundation
- Use fine grained access controls
- Apply security at all layers
- Automate security best practices
- Prepare for security events and automations

Reliability Pillar

It is the ability of a workload to perform its intended function correctly and consistently when it is expected to. The ability to recover from failure and meet demand in the following area:

- Foundation
- Workload architecture
- Change management
- Failure management

Reliability Design:

- Automatically recover from failure
- Test recovery procedure
- Scale horizontally to increase aggregated workload availability
- Stop guessing capacity
- Manage change in automation

Performance Efficiency Pillar

The ability to use the computing resources effectively to meet the system requirements and to maintain that efficiency as demand changes and technologies have

- Right selection of resources
- Reviews
- Monitoring
- Trade offs

Performance Efficiency Design:

- Democratize advance technologies
- Go global in minutes
- Use serverless architecture
- Experiment more often
- Consider mechanical sympathy

Cost Optimization Pillar

The Cost Optimization pillar includes the ability to run systems to deliver business value at the lowest price point. These are best practice areas for Cost Optimization in the cloud:

- Practice cloud foundation management
- Expenditure and usage awareness
- Cost-effective use of resources
- Manage demand and supply resources
- Optimize overtime

Cost Optimization Design:

- Implement cloud financial management
- Adopt consumption model
- Measure overall efficiency
- Stop spending money on un different heavy lifting
- Analyze and attribute expenditure

Sustainability Pillar

The Sustainability pillar focuses on environmental impacts, especially energy consumption and efficiency, since they are important levers for architects to inform direct action to reduce resource usage.

There are six best practice areas for sustainability in the cloud:

- Region selection
- User behavior patterns
- Software and architecture patterns
- Data patterns
- Hardware patterns
- Development and deployment process

Sustainability Design:

- Understand your impact
- Establish sustainability goal
- Maximize utilization
- Anticipate and adopt new hardware and software
- Use managed service
- Reduce the downstream impact of your cloud workloads

Thank you,

Vaishal Shah