Well-Architected Bootcamp 2020 Taipei
Performance Efficiency Pillar

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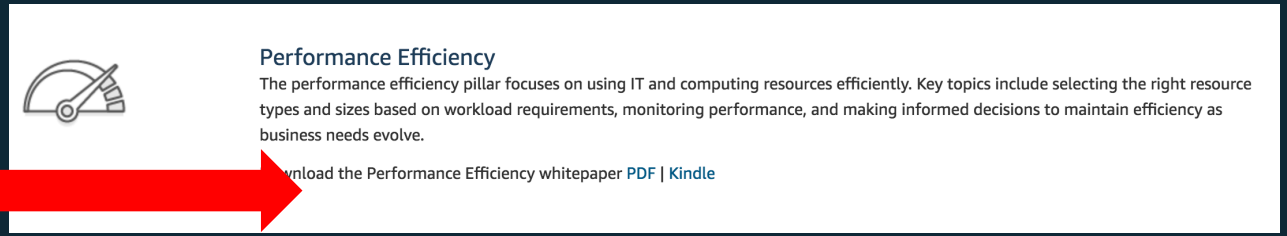
The performance efficiency pillar focuses on using IT and computing resources efficiently. Key topics include selecting the right resource types and sizes based on workload requirements, monitoring performance, and making informed decisions to maintain efficiency as business needs evolve.

Resources:

Website:

https://aws.amazon.com/architecture/well-architected/

Whitepaper



Resources:

HTML Version of Performance Pillar:

https://wa.aws.amazon.com/wat.pillar.performance.en.html

Design Principal:

- Democratize advanced technologies
- Go global in minutes
- Use server-less architectures
- Experiment more often
- Mechanical sympathy

aws

Definitions:

- Selection
- Review
- Monitoring
- Trade-offs

Selection

- Compute
    - Instances
    - Containers
    - Functions
    - Elasticity
- Storage
- Database
    - OLTP
    - NoSQL
    - OLAP
    - Data Indexing and searching
- Network

Selection

- Compute
    - EC2 → GPU? FPGA? Burstable? HPC?
    - ECS, EKS, Fargate
    - Lambda + APIGateway
- Storage
    - EBS, EFS, EC2 instance store, Glacier
- Database
    - RDS
    - DynamoDB, DAX
    - Redshift, S3, Athena
    - ES
- Network
    - Route53, VPC, CloudFront, DirectConnect

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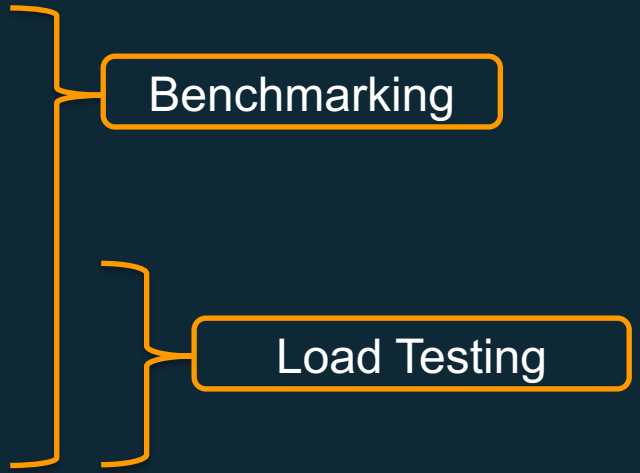
Review

- Infrastructure as code
- Deployment pipeline
- Well-defined metrics
- Performance test automatically
- Load generation
- Performance visibility
- visualization



→ CodeDeploy, CloudFormation, CloudWatch

Definitions:

- Selection
- Review
- **Monitoring**
- Trade-offs

Monitoring

- Active
    - You setup and collect in every environment
- Passive
    - Collected from outside of your system
    - Understand user experience performance
    - Geographically performance variability
    - The impact of API use
- Phases

Generation →Aggregation →Real-time processing and alarming →Storage →Analytics

→ CloudWatch, S3, EMR

Definitions:

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Trade-offs

- Caching
    - Application Level
    - Database Level
    - Geographic Level
- Partitioning or Sharding
- Compression
- Buffering

Q: How did you select your storage solution?

Considered Characteristics

Options no Explored

Considered Configuration Options

Have not Considered Configuration Options to Improve Performance

Considered Access Patterns

Have not Considered Access Patterns to Improve Performance

Q&A

Thank you!