DP-201

- 1 Azure Architecture
  - Security
    - Defense in Depth
      - Data
      - Application
      - Compute
      - Network
      - Perimeter
      - Policies
      - Physical
    - Shared Responsibility
      - IaaS - Infrastructure as a service
        - Example: VM, Container Instance
      - PaaS - Platform as a service
        - Example: Data lake, Data Warehouse, Azure SQL Server etc
      - SaaS - Software as a service
        - Example: Cosmos DB, Office 365 etc
  - Performance and Scalability
    - Scale
      - Scale Up
      - Scale Out
    - Performance
      - Storage
      - Network
  - Availability & Recoverability
    - Available: SLA/LRG/Geo-Replication
    - Recover: RPO & RTO
  - Efficiency and Operations
    - Efficiency : Cost Management
    - Operation: Automation/Monitoring Tools / CI-CD/ Less Human Intervention
- 2 Data Processing
  - Architecture - Lambda
    - Batch Processing
      - Batch Layer
        - Technologies
          - Azure DW/Synapse
          - Databricks
          - CosmosDB
        - Automate
          - Data Factory
    - Serving Layer
      - Technologies
        - Azure Analysis Service
        - Power BI
  - Speed Layer
    - Real Time Processing
      - Technologies
        - Azure Stream Analytics
          - Supported Data Sources for Ingestion
            - Event Hub / IoT Hub/ Blob Storage
        - Azure Databricks with Kafka/Flume
        - Azure Kafka/ Strom on HDInsights
      - Addition Technologies
        - Event Ingestion
          - Even Hub
          - IoT Hub
        - IoT DPS (Device Provisioning Service)
        - Azure Function
        - Azure Logic Apps
          - Business Process Integration
- Security
  - Layered Approach
    - Defense in Depth
  - Identity Management
    - Azure AD / PMI
    - SQL Server Auth.
  - Encryption
    - AES 256 bit
  - Network Security
    - Firewall Rule/Vnet/NSG
  - Application Security
- Scaling / Optimization
  - Networks
    - Azure CDN
    - Azure Traffic Manager
  - Storage
    - HDD/SSD
    - Caching
  - High Availability (HA)
    - SLA
    - AZ, AS, LRS, GRS, ZRS
    - Load Balancing
  - Disaster Recovery and Backup
    - Draw Recovery Plan
    - Testing Recovery
- Azure Storage
  - Redundancy
    - LRS
    - ZRS
    - GRS
    - RA-GRS
  - Tools
    - azcopy
    - powershell
    - SDK
  - Type
    - Blob — Any Type of Data
    - File — FileSystem/SMB
    - Queue — Pass Message
    - Table — NoSQL
    - Disk — Attached with VM
  - Access Tier
    - Hot
    - Cool
    - Archive
- Azure Data Services
  - Data Catalog
  - Data Lake
  - Data Warehouse / Synapse Analytics
  - HDInsights
  - Data Factory
  - Analysis Services
  - Azure DataBricks
  - Stream Analytics
  - Event Hub / IoT Hub
  - Azure function
- Relational DB
  - Azure SQL DB
  - Azure SQL DB Managed Instance
  - SQL Server Stretch DB — Hybrid Mode USe
  - Azure Database for MySQL
  - Azure Database for PostgreSQL
- NoSQL
  - Azure Table Storage
  - Azure Data Lake Storage
  - Azure Redis Cache
  - Cosmos DB