Cloud Computing Patterns

http://www.cloudcomputingpatterns.org

Cloud Runtime Environment

Load Balancer
Cloud Application

Communication
Processing
Storage
Operation Management
Message Queue
Presentation
Hosted on
Hosted on
Hosted on

Cloud Endpoints

Cloud Environments

Elastic Infrastructure (87)
Hosting of virtual servers, disk storage, and configuration of network connectivity is offered via a self-service interface over a network.

Elastic Platform (91)
Middleware that enables the execution of applications, their communication, and data storage is offered via a self-service interface over a network.

Node-based Availability (95)
A cloud provider guarantees the availability of individual nodes, such as virtual servers, middleware, or hosted application components.

Environment-based Availability (96)
A cloud provider guarantees the availability of the environment hosting individual nodes, such as virtual servers or application components.

Data Processing Offerings

Processing Capacity (180)
Processing functionality is handled by elastically-scaled components.

Batch Processing Component (185)
Requests are delayed until environmental conditions make their processing feasible.

Time-bounded Message Processor (204)
Components acknowledge message processing to ensure that messages are processed if a message is not acknowledged it is processed again.

Transaction-based Processor (205)
Components receive messages on read and data and process the obtained information under a transactional context to ensure processing.

Stateless Message Processor (206)
Components receive messages on read and data and process the obtained information under a transactional context to ensure processing.

Data Access Component (288)
Data is stored at different locations to improve response time and failure resiliency while consistency of replicas is ensured at all times.

Data Abstraction (294)
Data is altered to inherently support eventually consistent data storage through the use of abstractions and approximations.

Multi-Tier Cloud Application (294)
The messaging system ensures that each message is delivered exactly once by filtering possible message duplicates automatically.

Elasticity Manager (296)
The utilization of IT resources on which an application is hosted is used to adjust the number of required application component instances.

Elastic Load Balancer (296)
The number of synchronous accesses is used to adjust the number of required application component instances.

Cloud Integration

Restricted Data Access Component (222)
Data provided to clients from different environments is based on access restrictions.

Message Router (225)
Messages are moved automatically between different cloud providers to provide unified access to application components using messaging.

Application Component Proxy (228)
Application components are made available in an environment from which it cannot be accessed directly by deploying a proxy.

Compliant Data Replication (231)
Data is replicated among multiple environments. Data is automatically obfuscated and deleted to meet laws and security regulations.

Integration Provider (236)
Integration functionality such as messaging and shared data is hosted by a separate provider to enable integration of hosting environments.

Communication Offerings

At-least-once Delivery (244)
Messages are moved automatically between cloud environments with guaranteed delivery.

Transaction-based Delivery (246)
Messages are moved automatically between cloud environments with guaranteed delivery.

Dedicated Component (218)
A component providing critical functionality are provided exclusively to tenants while still allowing other components to be shared.

Dedicated Tenancy (219)
Clients acknowledge message receptions to ensure that messages are received properly.

Storage Offerings

Key-Value Storage (107)
Strings or structured data is stored with limited querying support but high-performance, availability, and flexibility.

Strict Consistency (123)
Data is stored at different locations to improve response time and failure resiliency while consistency of replicas is ensured at all times.

Eventual Consistency (126)
Data consistency is ensured after data is increased ensuring data consistency eventually and not at all times.

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