Introduction to Cloud Computing

Defining cloud computing

- Components of a computing cloud
- Differentiating types of clouds: public, private, hybrid

Delivering services from the cloud

- Categorizing service types
- Comparing vendor cloud products: Amazon, Google, Microsoft and others

Adopting the Cloud

Key drivers of cloud computing solutions

- Instantaneous provisioning of computing resources
- Tapping into an infinite storage capacity
- Cost-effective pay-as-you-use billing models

Evaluating barriers to cloud computing

- Handling sensitive data
- Aspects of cloud security
- Assessing governance solutions

Exploiting Software as a Service (SaaS)

Characterizing SaaS

- Streamlining administration with centralized installation
- Optimizing cost and performance with scale on demand

Comparing service scenarios

- Improving collaboration with business productivity tools
- Simplifying business process creation by integrating existing components

Inspecting SaaS technologies

- Deploying web applications
- Implementing web services: SOAP, REST

- Choosing a development platform

Delivering Platform as a Service (PaaS)

Exploring the technical foundation for PaaS

- Specifying the components of PaaS
- Analyzing vendor PaaS provisions
- Selecting an appropriate implementation

Building services with solution stacks

- Evaluating the architecture of vendor-specific platforms
- Becoming familiar with service platform tools

Managing cloud storage

- Controlling unstructured data in the cloud
- Deploying relational databases in the cloud
- Improving data availability

Employing support services

- Testing in the cloud
- Monitoring cloud-based services
- Analyzing portability across platforms

Deploying Infrastructure as a Service (IaaS)

Enabling technologies

- Scalable server clusters
- Achieving transparency with platform virtualization
- Elastic storage devices

Accessing IaaS

- Provisioning servers on demand
- Handling dynamic and static IP addresses
- Tools and support for management and monitoring

Building a Business Case

Calculating the financial implications

- Comparing in-house facilities to the cloud
- Estimating economic factors downstream

Preserving business continuity

- Selecting appropriate service-level agreements
- Safeguarding access to assets in the cloud
- Security, availability and disaster recovery strategies

Migrating to the Cloud

Technical considerations

- Rearchitecting applications for the cloud
- Integrating the cloud with existing applications
- Avoiding vendor lock-in
- Planning the migration and selecting a vendor

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