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Welcome All

CLOUD COMPUTING

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PUBLIC CLOUDS

(Introduction, Features, Specifications, Advantages, Examples, Limitations, etc.)

APPLICATION DEPLOYMENT IN CLOUD

What Is a ‘Cloud-Based Application’?

- Cloud-based applications, also known as **Cloud apps.**

- In theory, a Cloud app is one that uses **Cloud-based services.**

- Whether an app is mobile or web, they probably use some sort of Cloud service.

- Increased dependence on the Cloud’s processing power is the result of companies **building innovative and creative solutions** to all sorts of problems that use technology to do things that were previously impossible.

- The ability to process large amounts of data (Big Data) through third party owned IT infrastructure, companies can perform massive calculations and deliver top services.

- In particular, Cloud services have opened up the possibility for many **web-based Cloud applications,** also known as **web apps.**

- A web app is one where most of the computation occurs in the Cloud, not on the device itself, and usually built with the use of Cloud application development services.

- A new form of web app, known as a **Progressive Web App (PWA),** is also seeing an increase in popularity.

Progressive Web App (PWA) :

Progressive Web Apps are web applications that have been designed so they are capable, reliable, and installable. These three pillars transform them into an experience that feels like a platform-specific application.

Benefits of a Cloud App

❖Cloud application development offers various benefits for businesses. Some of the benefits are:

✓ **Improved app performance :** as more computations are performed on the server side of an app, users will experience a faster and more reliable service.

✓ **Increased uptime :** thanks to the reliability of Cloud services, a Cloud-based application will remain up easier than through your own IT infrastructure.

✓ **Scalability :** businesses can hire on-demand the processing power they need, being this very convenient for moments of high computer processing demand.

Cont'd…..

✓ **Update software easily:** through Cloud technologies, it is possible to update an app easily through a massive deployment.

✓ **Security:** Cloud services help reduce the risk of physical IT infrastructure failure.

Cloud Application Example

- Many of the apps we use on a day-to-day basis use the Cloud in one way or another.

- Cloud application development has resulted in amazing tools and services like:
  - **Miro** : a virtual board where you can work with other users in a number of fun and creative ways.
  - **Figma** : a powerful Cloud-based design app that is gaining many fans thanks to its collaborative nature.
  - **Dropbox** **or** **Google Drive** : easily store your files on the Cloud and make them available for others, wherever they are.

ANEKA

- Not familiar like Google Cloud, AWS, Salesforce, Microsoft Azure
- Product by Manjrasoft Pty Ltd – Rajkumar Buyya
- Cloud Application Development Platform (CAP)
- Implementation of PaaS
- Platform and Framework for Distributed applications
- It is .Net based cloud computing platform
- Provides developers a rich set of API's
- Run time environment (for execution)
- Tool to manage cloud

Cont'd …..

- It acts as Private, Public, and Hybrid
- Market oriented Cloud development and management platform
- It provides Thread Model, Task Model, and Map Reduce.
- Thread : Requires high computational power
- Task : High Computational power and large multi tasking
- Map Reduce : Number of inputs – high
- Integrated Middleware package
- Supports multiple programming and application development

Cont'd …..

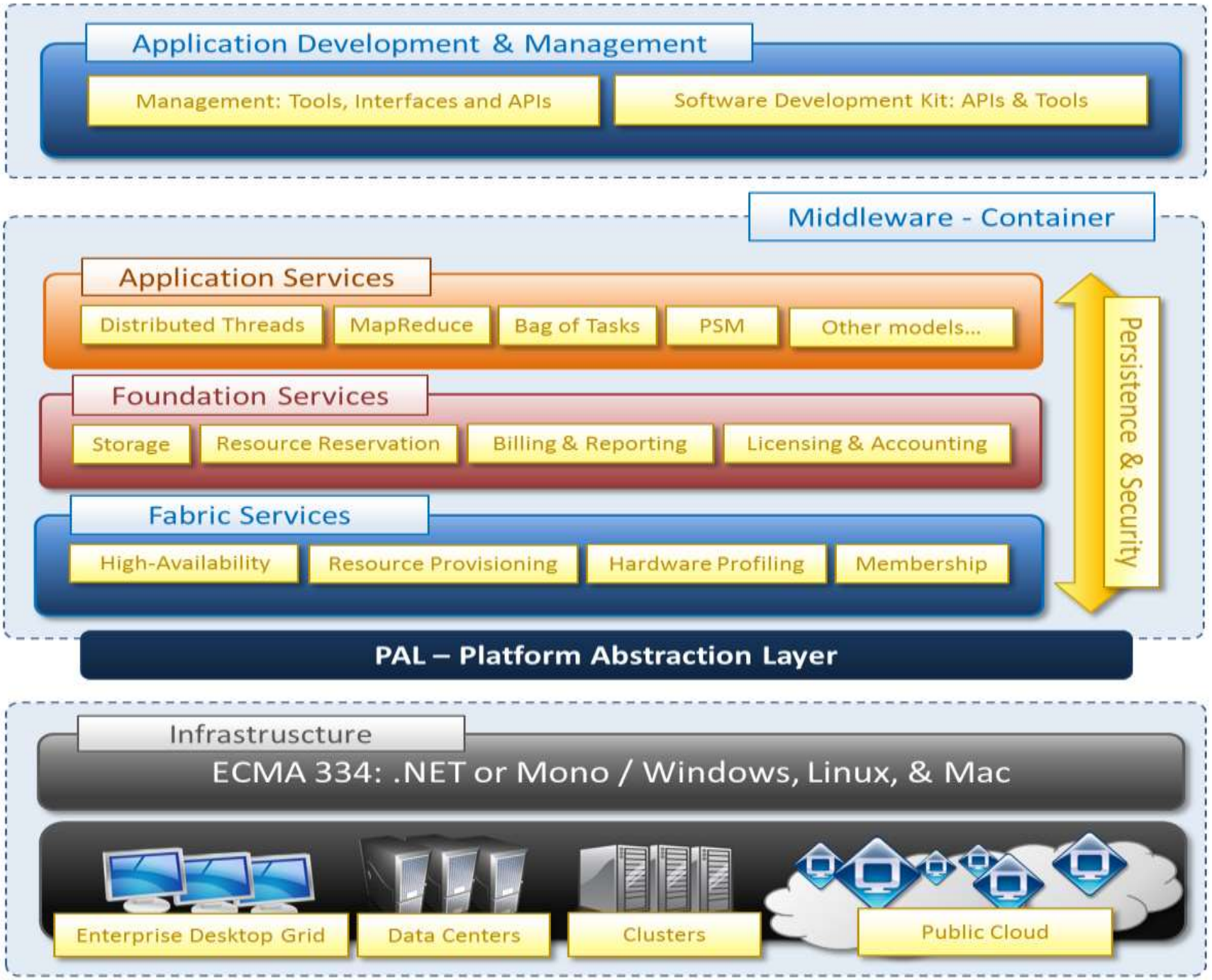
- Build : SDK (Tools, API's)
- Accelerate : Uses Physical machines as much as possible to get maximum utilization in local host environment
- Manage : GUI – set-up, manage, monitor, maintain and have accounting facilities also.

Aneka Container

- **Building block of the middleware and also represents runtime environment for executing applications.**

- **Container – 3 types of services**

  1. Execution Services : Scheduling and execution
  2. Foundation Services : Management
  3. Fabric Services : Resource provisioning services (done by PAL- PLATFORM ABSTRACTION LAYER – Elasticity property)


Application Development & Management
Management: Tools, Interfaces and APIs
Software Development Kit: APIs & Tools
Middleware - Container
Application Services
Distributed Threads
MapReduce
Bag of Tasks
PSM
Other models...
Foundation Services
Storage
Resource Reservation
Billing & Reporting
Licensing & Accounting
Fabric Services
High-Availability
Resource Provisioning
Hardware Profiling
Membership
Persistence & Security
PAL – Platform Abstraction Layer
Infrastruscture
ECMA 334: .NET or Mono / Windows, Linux, & Mac
Enterprise Desktop Grid
Data Centers
Clusters
Public Cloud

Let’s Explore More in the Next Class