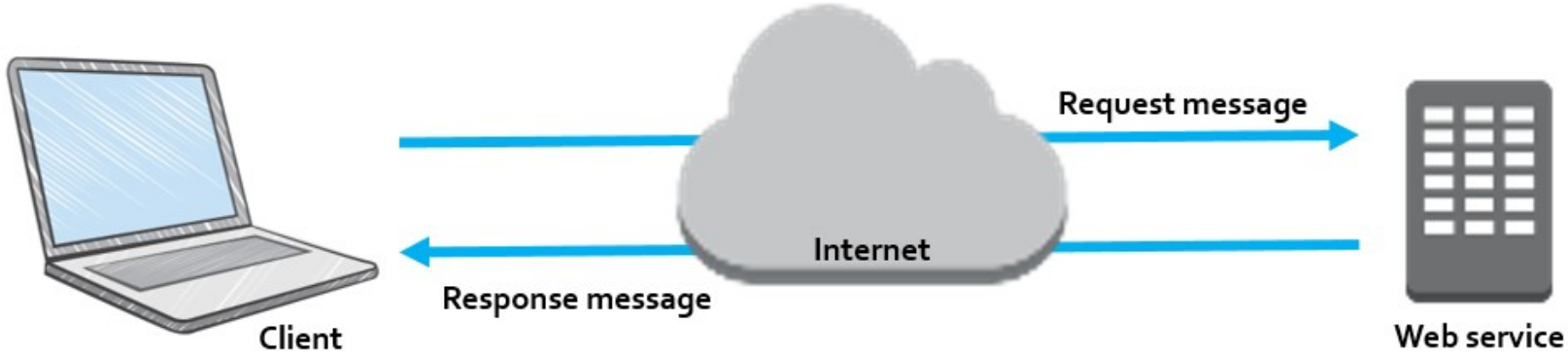
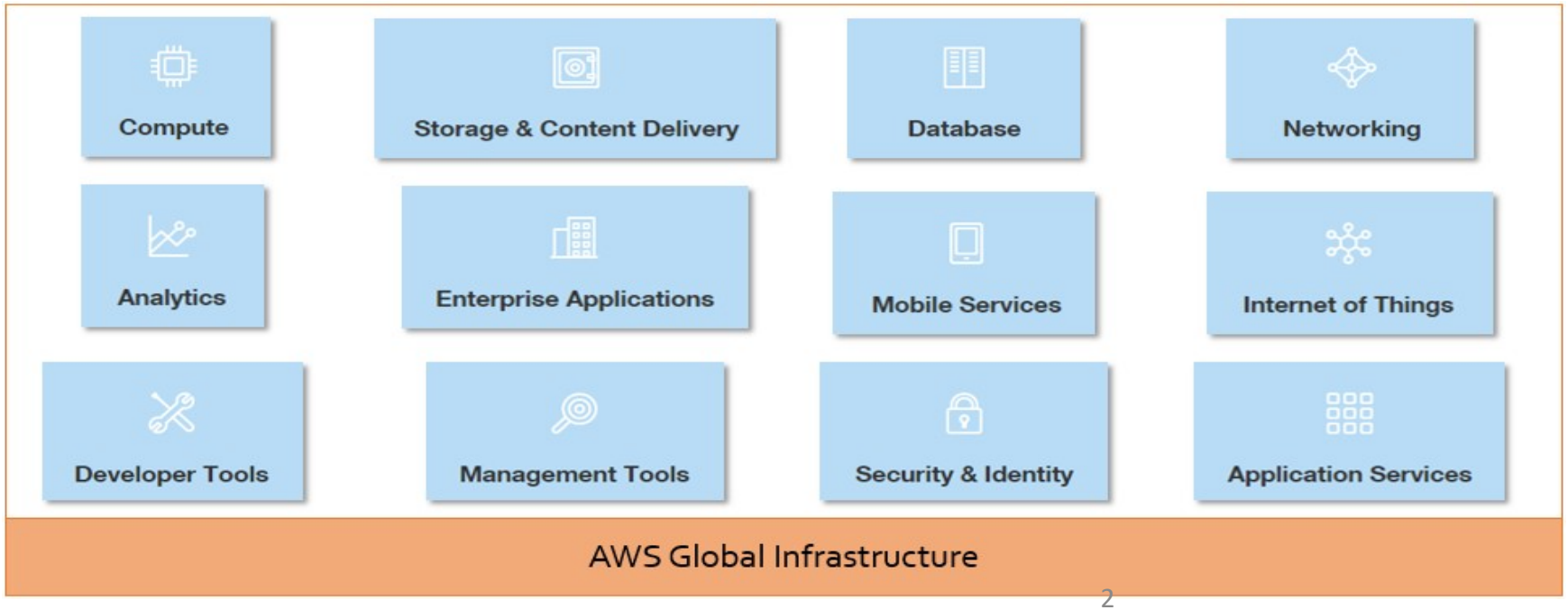
Introduction to AWS

- **What are web services ?**
  - A **web service** is any piece of software that makes itself available over the internet and uses *standardized format* such as XML or JSON fro the request and the response of an **API** interaction.

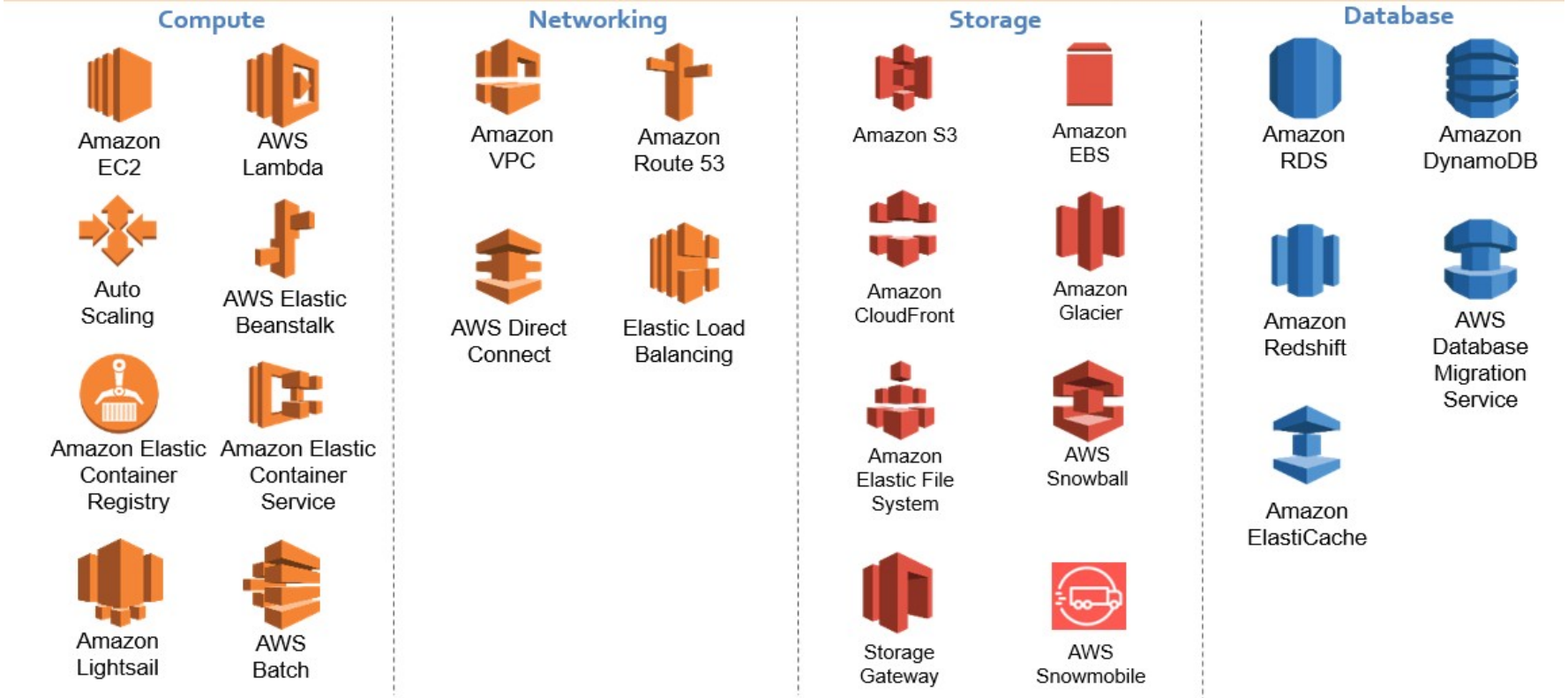


Introduction to AWS

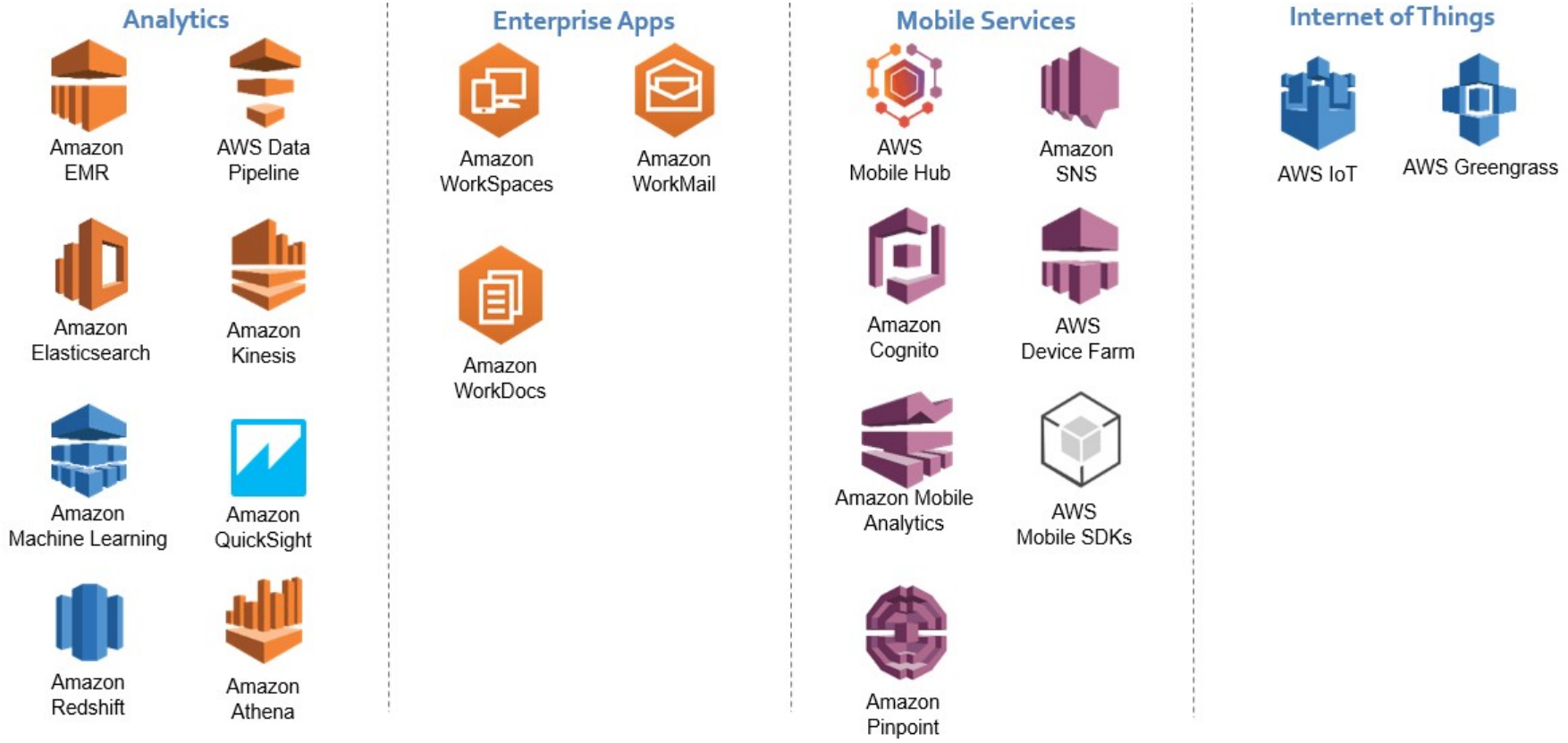
- AWS is a secure cloud platform with more than 200 different services that include solutions for:



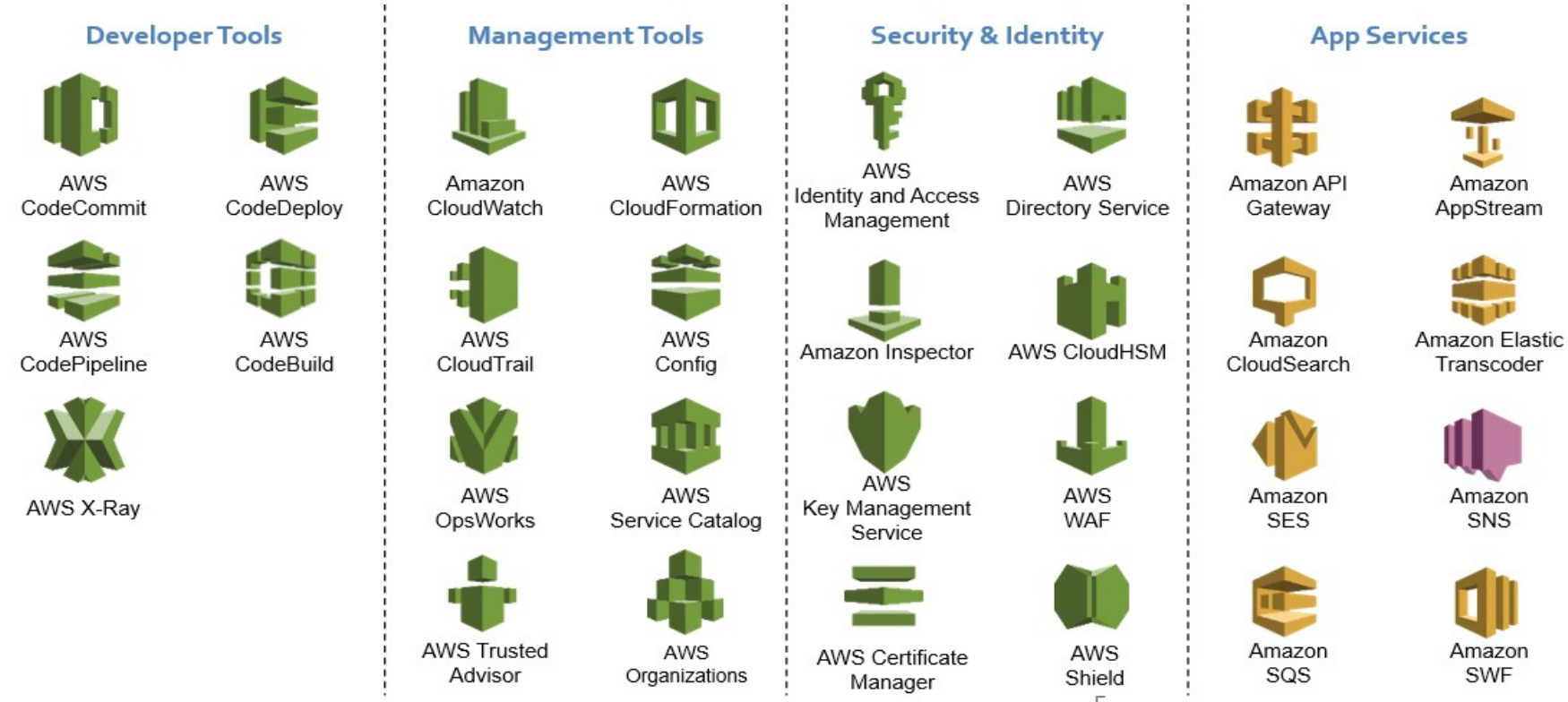
AWS by Category: Core Services



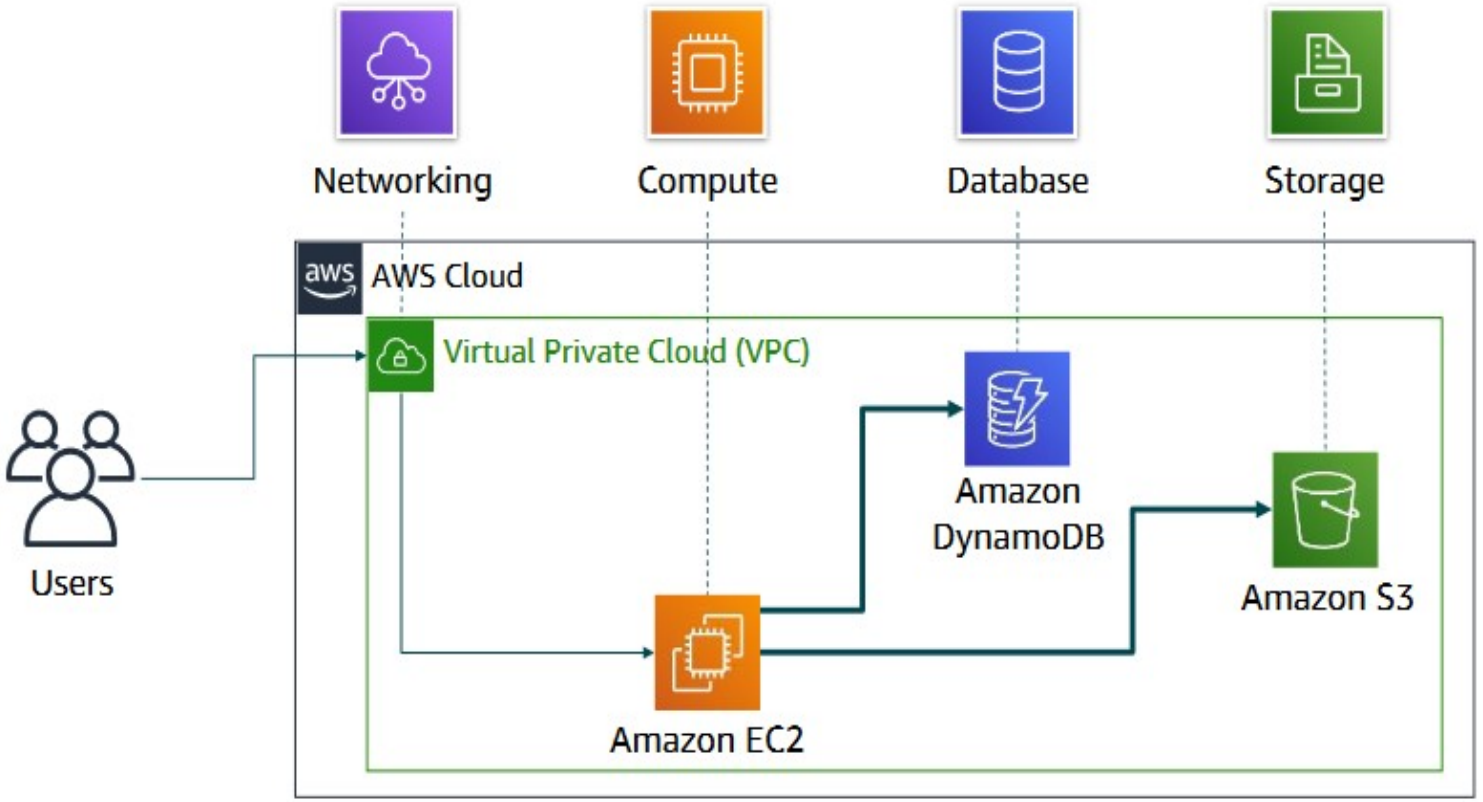
AWS by Category: Foundational Services



AWS by Category:
Developer and Operations Services

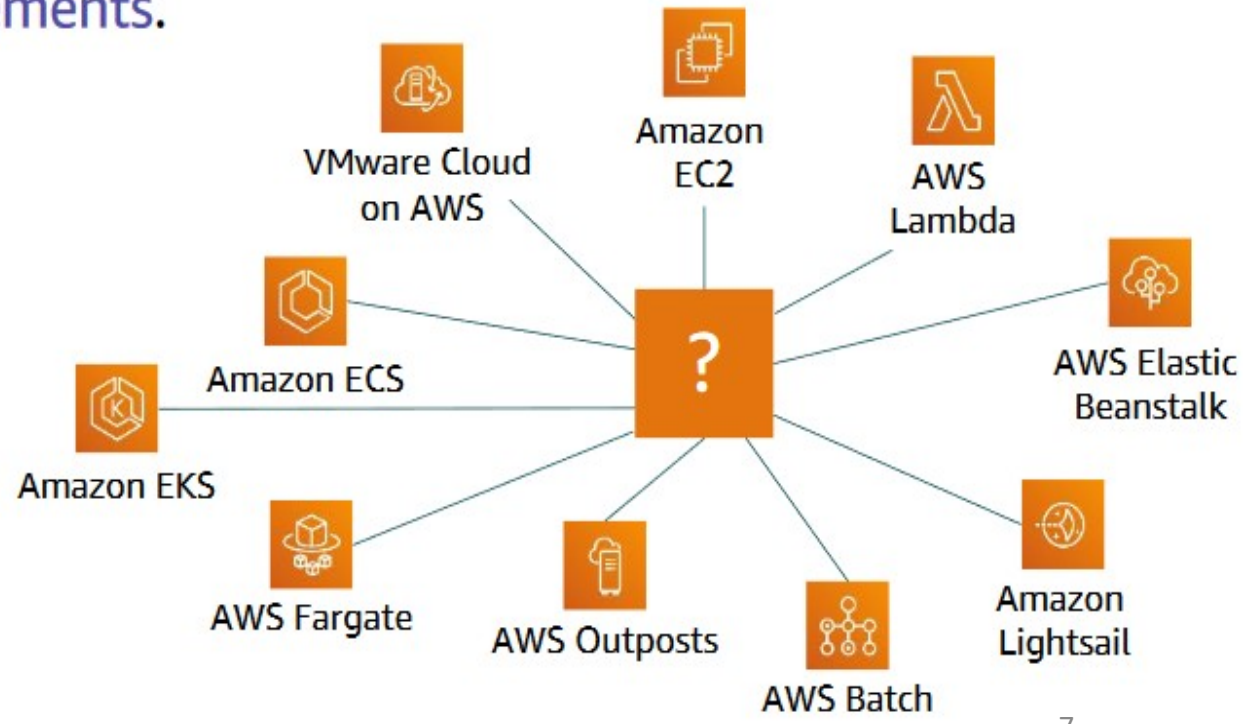


Simple Solution example

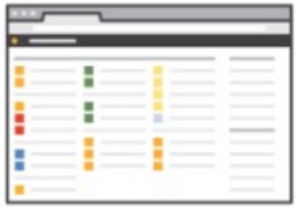


Choosing a service

The service you select depends on your business goals and technology requirements.



3 ways to interact with AWS



AWS Management Console

Easy-to-use graphical interface

Command Line Interface (AWS CLI)

Access to services by discrete commands or scripts

Software Development Kits (SDKs)

Access services directly from your code (such as Java, Python, and others)

Moving to the AWS Cloud

- **AWS Cloud Adoption Framework**
  - AWS CAF provides guidance and best practices to help organizations build a comprehensive approach to cloud computing across the organization and throughout th IT lifecycle to *accelerate successful cloud adoption*
  - AWS CAF is organized into *six perspectives*
  - **Perspectives** consist of sets of capabilities.

AWS Cloud Adoption Framework

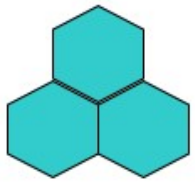
AWS CAF perspectives

Six core perspectives

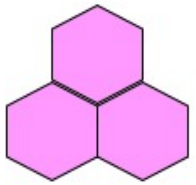
Focus on business capabilities

Focus on technical capabilities

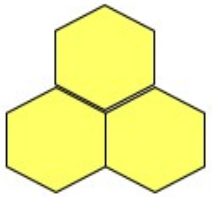
Six core perspectives



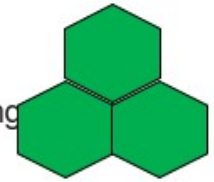
Business Perspective
How will your architectural approaches **align technical delivery to business imperatives**?



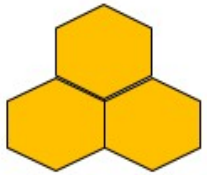
Platform Perspective
What patterns, guidance, and tools are necessary to optimize your use of **technology services** on AWS?



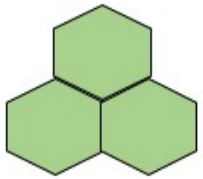
People Perspective
What **skills** are needed in order to adopt the AWS cloud platform? Examples include guiding processes of role descriptions, training, certification, and mentoring.



Security Perspective
How will you define and implement the required levels of security, governance, and risk management to **achieve compliance**?



Governance Perspective
How to update the staff skills and **organizational processes** necessary to ensure business governance in the cloud, and manage and measure cloud investments to evaluate business outcomes?

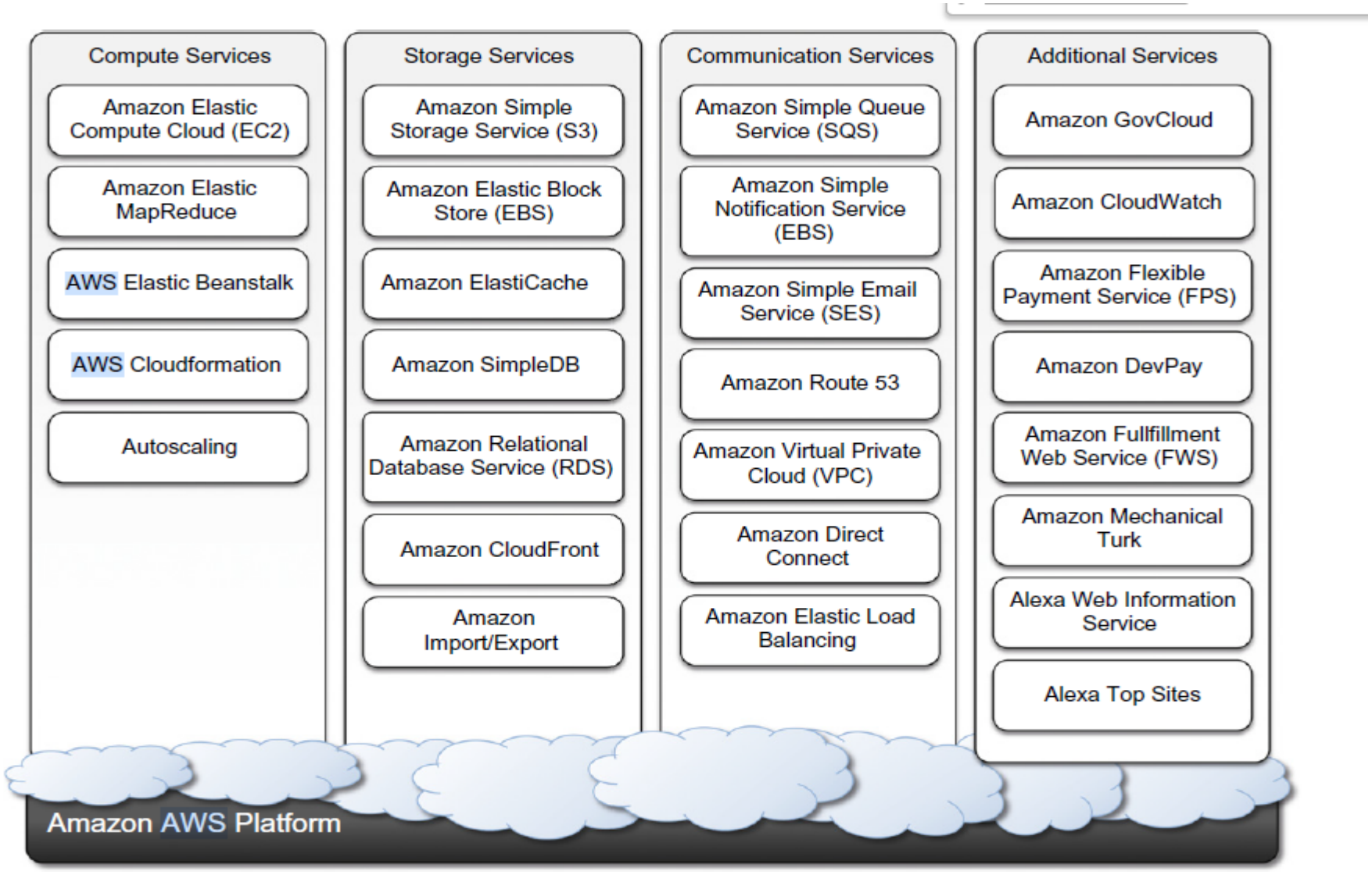


Operations Perspective
How will you provide process, guidance, and tools for optimum **operational service management** of the AWS environment?

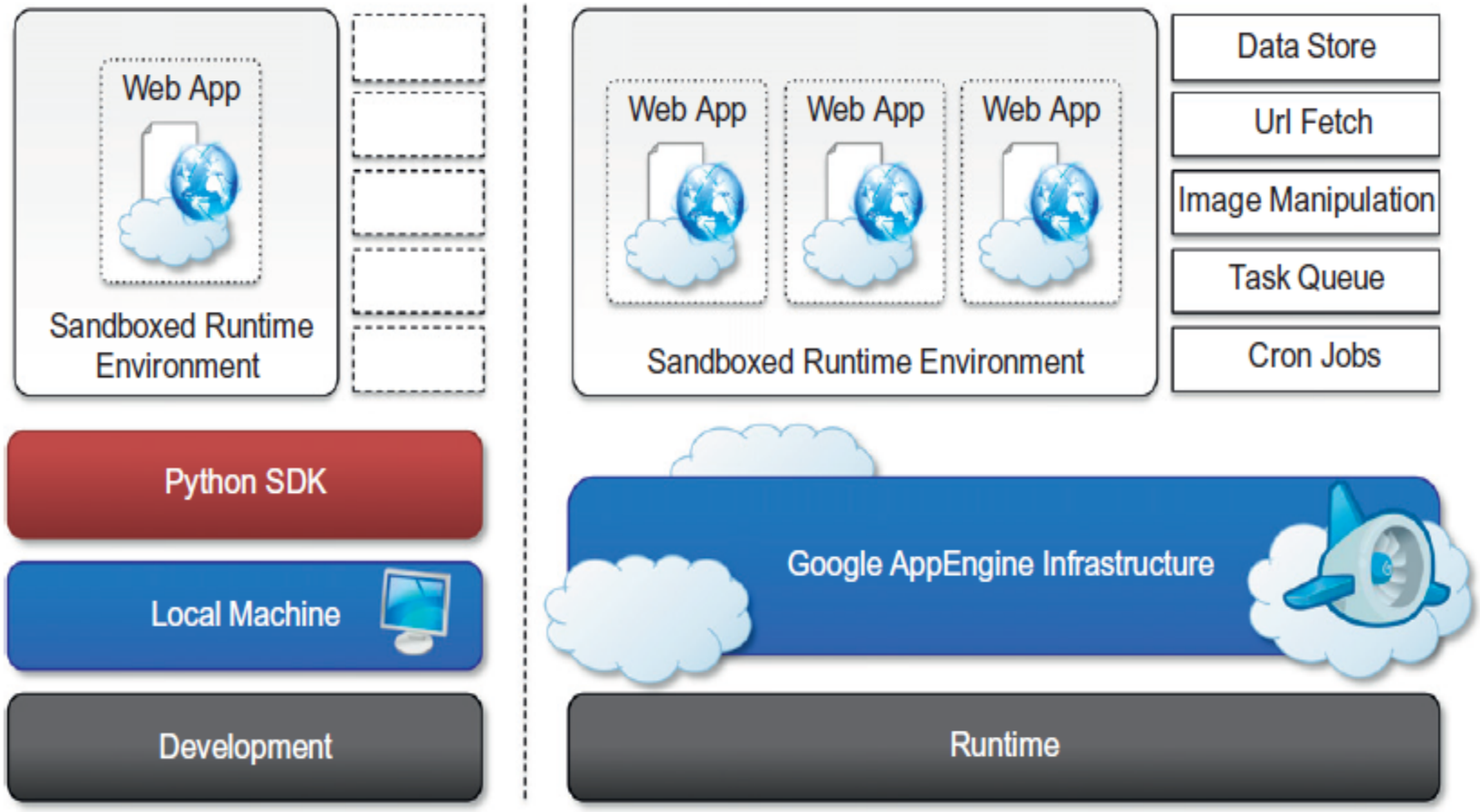
Cloud Computing Services

Vendor/Product	Service Type	Description
Amazon Web Services	IaaS, PaaS, SaaS	Amazon Web Services (AWS) is a collection of Web services that provides developers with compute, storage, and more advanced services. AWS is mostly popular for IaaS services and primarily for its elastic compute service EC2.
Google AppEngine	PaaS	Google AppEngine is a distributed and scalable runtime for developing scalable Web applications based on Java and Python runtime environments. These are enriched with access to services that simplify the development of applications in a scalable manner.
Microsoft Azure	PaaS	Microsoft Azure is a cloud operating system that provides services for developing scalable applications based on the proprietary Hyper-V virtualization technology and the .NET framework.
SalesForce.com and Force.com	SaaS, PaaS	SalesForce.com is a Software-as-a-Service solution that allows prototyping of CRM applications. It leverages the Force.com platform, which is made available for developing new components and capabilities for CRM applications.
Heroku	PaaS	Heroku is a scalable runtime environment for building applications based on Ruby.
RightScale	IaaS	Rightscale is a cloud management platform with a single dashboard to manage public and hybrid clouds.

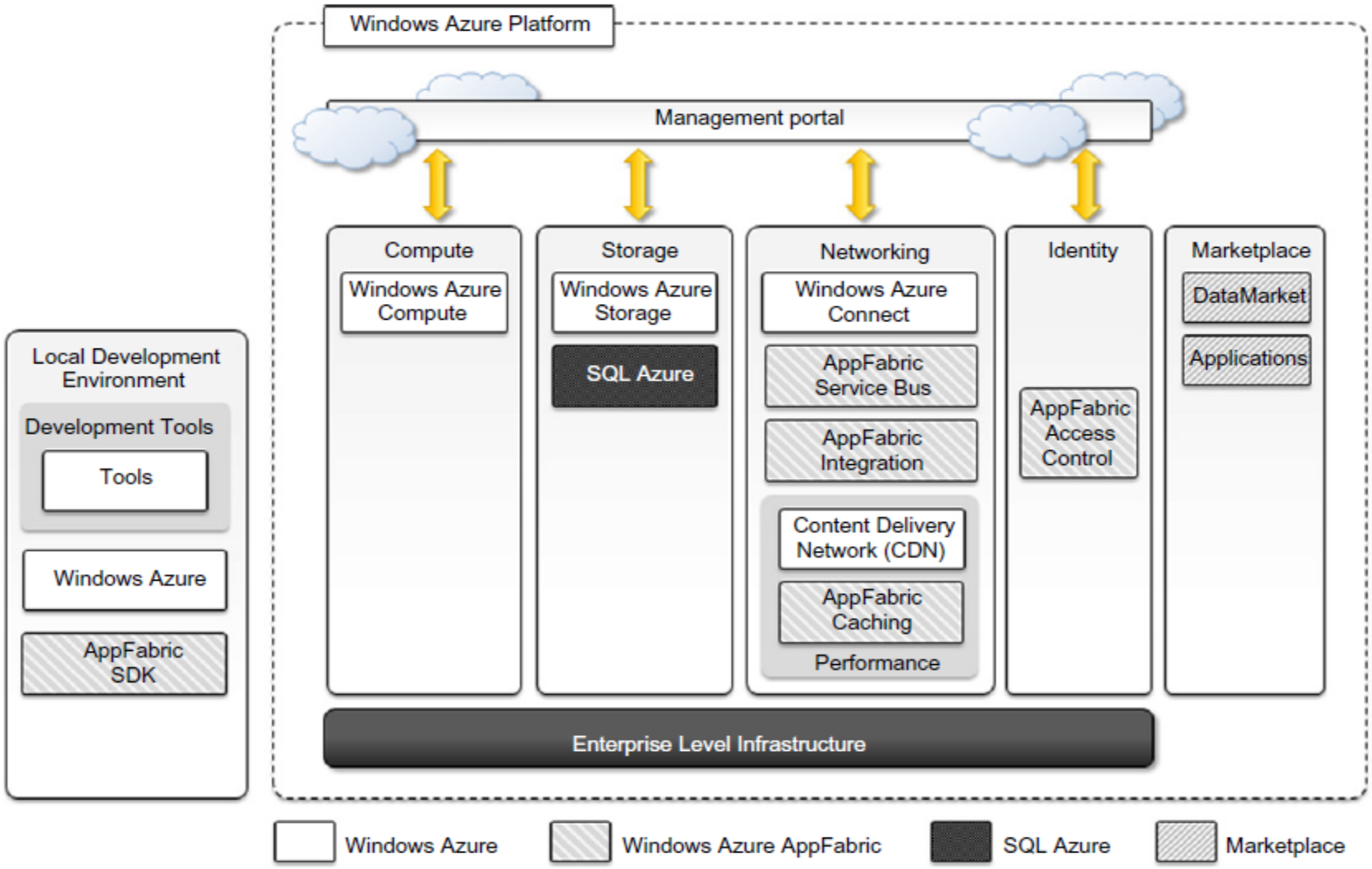
Amazon Web Services ecosystem.



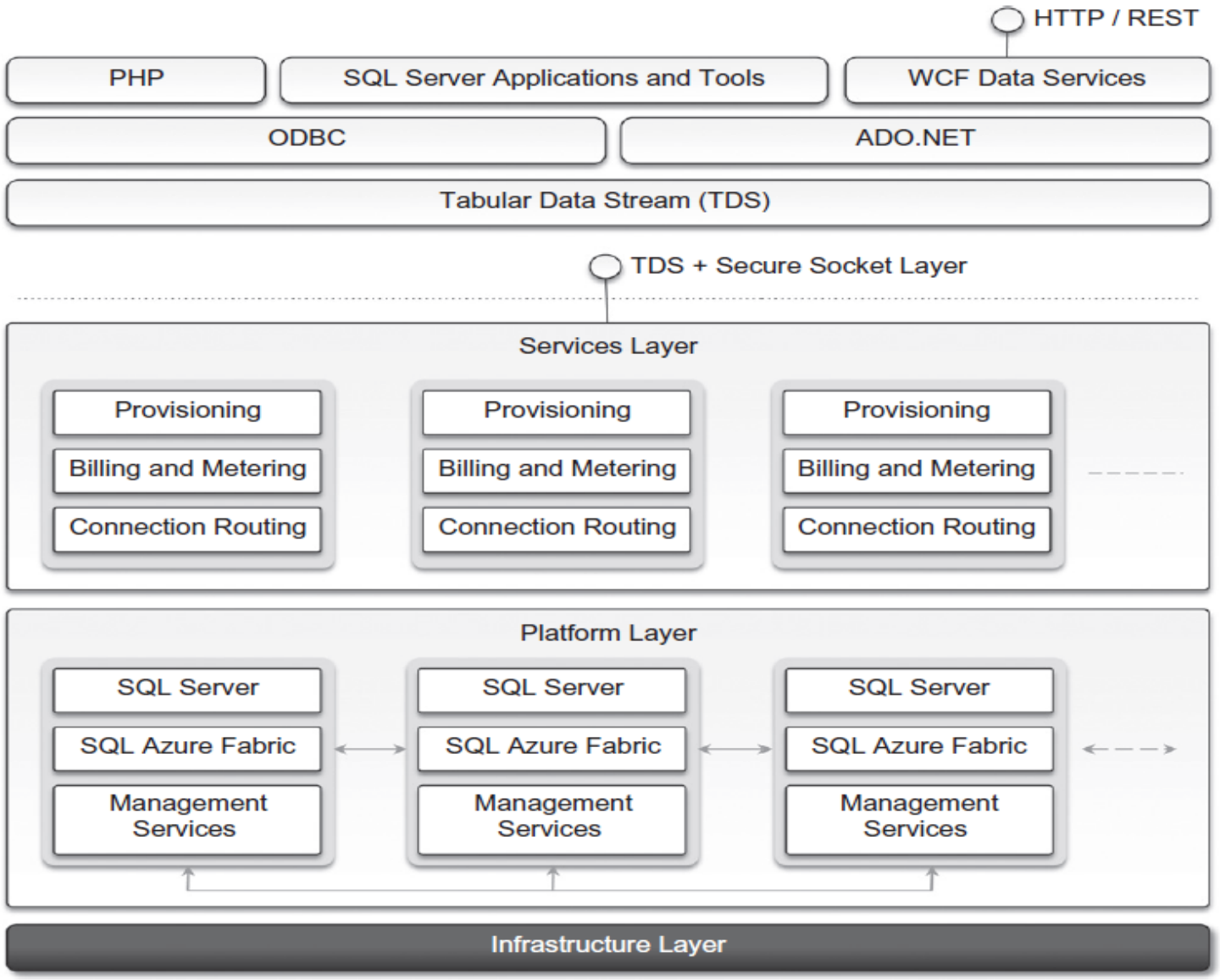
Google AppEngine platform architecture.



Microsoft Windows Azure Platform Architecture



SQL Az


HTTP / REST
PHP
SQL Server Applications and Tools
WCF Data Services
ODBC
ADO.NET
Tabular Data Stream (TDS)
TDS + Secure Socket Layer
Services Layer
Provisioning
Billing and Metering
Connection Routing
Provisioning
Billing and Metering
Connection Routing
Provisioning
Billing and Metering
Connection Routing
Platform Layer
SQL Server
SQL Azure Fabric
Management Services
SQL Server
SQL Azure Fabric
Management Services
SQL Server
SQL Azure Fabric
Management Services
Infrastructure Layer

SUMMARY

Some cloud platforms that are widely used in industry for building real commercial applications :Amazon Web Services, GoogleAppEngine, and Microsoft Windows Azure.

Amazon Web Services(AWS) provides solutions for building infrastructure in the Amazon Cloud. Amazon EC2 and Amazon S3 represent AWS score value offerings. The former allows developers to create virtual servers and customize their computing stack as required. The latter is a storage solution that allows users to store documents of any size. These core services are then complemented by a wide collection of services, covering networking, data management, content distribution, computing middleware, and communication, which make AWS a complete solution for developing entire cloud computing systems on top of the Amazon infrastructure. Google App Engine is a distributed and scalable platform for building Web applications in the Cloud. AppEngine is a scalable runtime that offers developers a collection of services for simplifying the development of Web applications. These services are designed with scalability in mind and constitute functional blocks that can be reused to define applications. Developers can build their applications in either Java or Python, first locally using the AppEngineSDK.

Once the applications have been completed and fully tested, they can deploy the application on AppEngine.
WindowsAzure is the cloud operating system deployed on Microsoft data centers for building dynamically scalable applications. Azure's core components are represented by compute services Expressed in terms of roles, storage services, and the AppFabric, the middleware that ties together all these services and constitutes the infrastructure of Azure. A role is a sandboxed runtime environment specialized for specific development scenarios: Web applications, background processing, and virtual computing. Developers define their Azure applications in terms of roles and then deploy these roles on Azure. Storage services represent a natural complement to roles. Besides storage for static data and stored data, WindowsAzure also provides storage for relational data using the SQLAzure service.
AppEngine and WindowsAzure are PaaS solutions. AWS extends its services across all three layers of the Cloud Computing Reference Model, although it is well known for its IaaS offerings, represented by EC2 and S3.