PLUG IT IN 4

# Cloud Computing

1. Introduction
2. What Is Cloud Computing?
3. Different Types of Clouds
4. Cloud Computing Services
5. The Benefits of Cloud Computing
6. Concerns and Risks with Cloud Computing
7. Web Services and Service- Oriented Architecture

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1. Describe the problems that modern information technology departments face.
2. Describe the key characteristics and advantages of cloud computing.
3. Identify a use case scenario for each of the four types of clouds.
4. Explain the operational model of each of the three types of cloud services.

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5. Identify the key benefits of cloud computing.
6. Discuss the concerns and risks associated with cloud computing.
7. Explain the role of Web

# PI4.1 Cloud Computing Introduction

- Six Stages of IT Infrastructure Evolution
  1. Stand-alone Mainframes
  2. Mainframe & Dumb Terminals
  3. Stand-alone Personal Computers
  4. Local Area Networks
  5. Enterprise Computing
  6. Cloud Computing and Mobile Computing

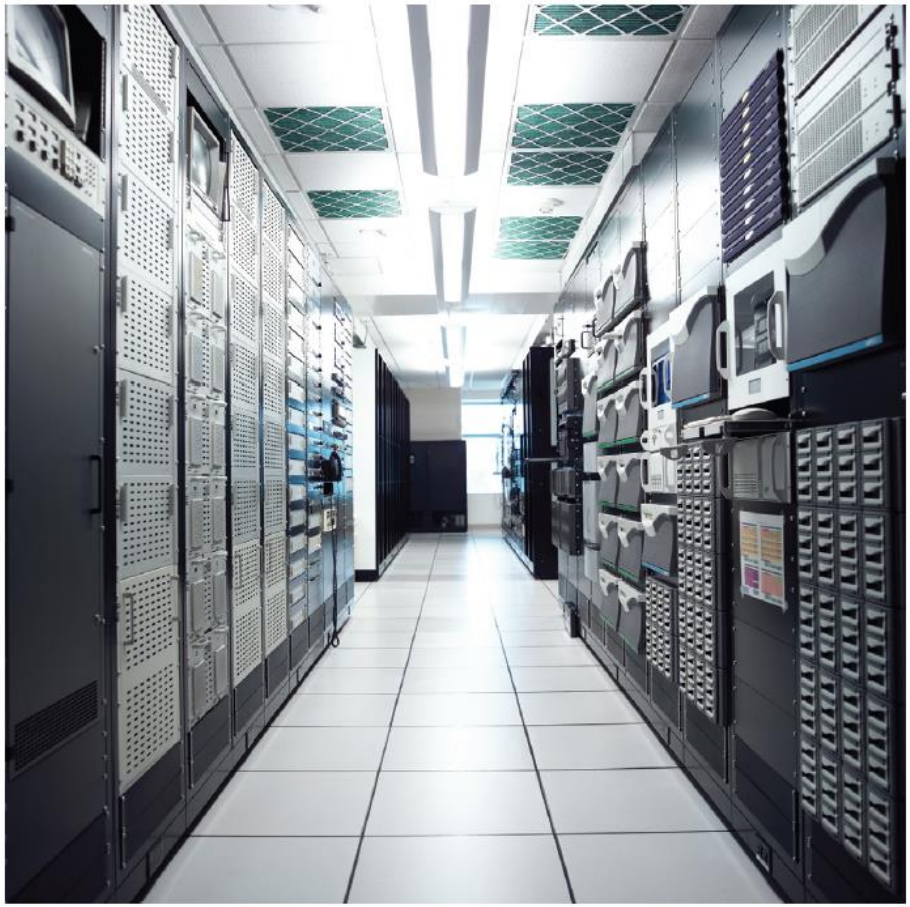
# PI4.2 What is Cloud Computing?

- Cloud Computing
- Cloud Computing Characteristics

# Cloud Computing Characteristics

- Provides On-Demand Self- Service
- Encompasses the Characteristics of Grid Computing
- Encompasses the Characteristics of Utility Computing
- Utilizes Broad Network Access
- Pools Computing Resources
- Often Occurs on Virtualized Servers

# Server Farms



Media Bakery

Figure PI4.1 A server farm. Notice the ventilation in the racks and ceiling.

# Server Farms in Relation to the Internet

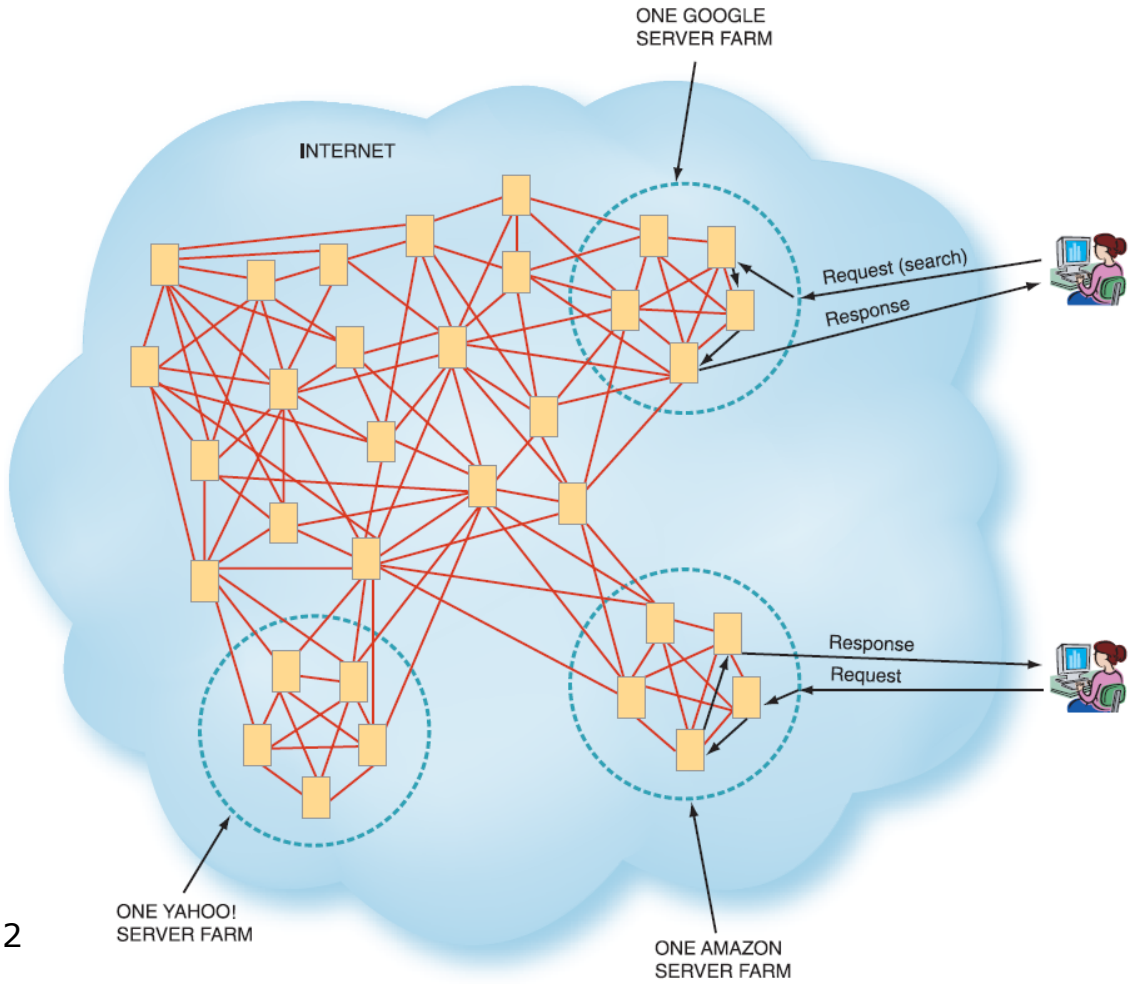



Figure PI4.2

- Amazon, whose online music store competes with Apple's, has "moved music into it's cloud" to solve two problems.
  1. Music Libraries have typically been scattered
  2. Amazon wants more people to buy music from its proprietary store instead of from Apple's iTunes.

# PI4.3 Different Types of Clouds

- Public Cloud
- Private Cloud
- Hybrid Cloud
- Vertical Cloud

# Public Clouds, Private Clouds, and Hybrid Clouds

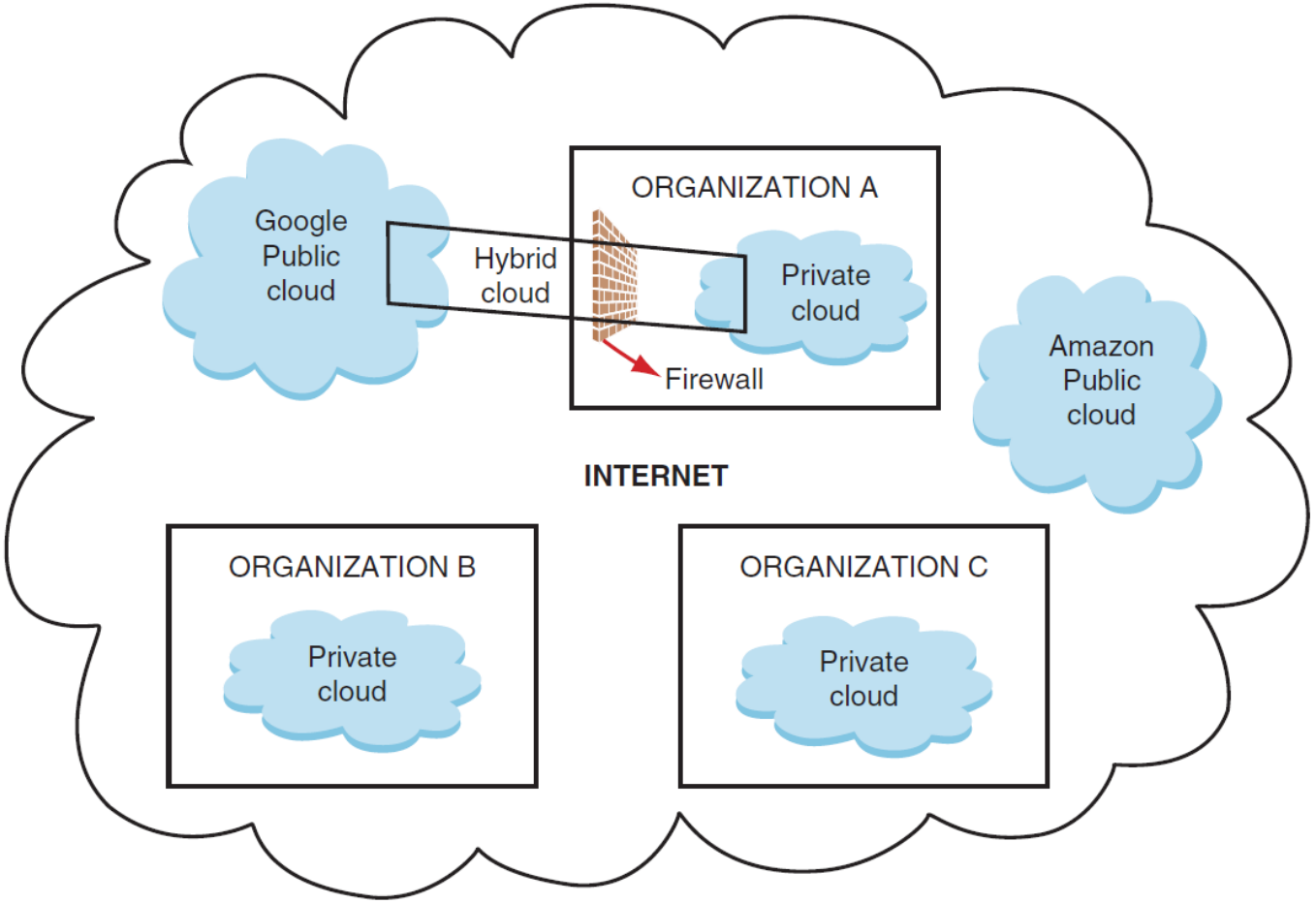
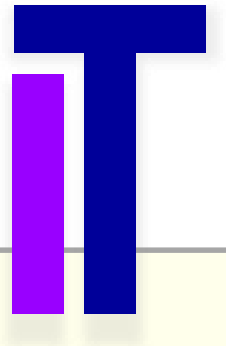



Figure PI4.3 Public clouds, private clouds, and hybrid clouds.

# PI4.4 Cloud Computing Services

- Infrastructure-as-a-Service (IaaS)
- Platform-as-a-Service (PaaS)
- Software-as-a-Service (SaaS)



# “THE CLOUD”

# PI4.5 The Benefits of Cloud Computing

- Benefit 1: Making Individuals More Productive
- Benefit 2: Facilitating Collaboration
- Benefit 3: Mining Insights from Data
- Benefit 4: Reduce Costs
- Benefit 5: Expand the Scope of Business Operations

# PI4.5 The Benefits of Cloud Computing (Continued)

- Benefit 6: Respond Quickly to Market Changes
- Benefit 7: Customize Products and Services

# PI4.6 Concerns and Risks with Cloud Computing

- Concern 1: Legacy IT Systems
- Concern 2: Reliability
- Concern 3: Privacy
- Concern 4: Security
- Concern 5: The Regulatory and Legal Environment
- Concern 6: Criminal Use of Cloud Computing

- Amazon Web Services

# PI4.7 Web Services and Service-Oriented Architecture

- Web services
- Benefits of Web Services
- Service-oriented Architecture
- Four Key Protocols of Web Services
- Extensible Markup Language (XML)
- Hypertext Markup Language (HTML)
- HTML5

# Comparison of On-premise Software, IaaS, PaaS, & SaaS

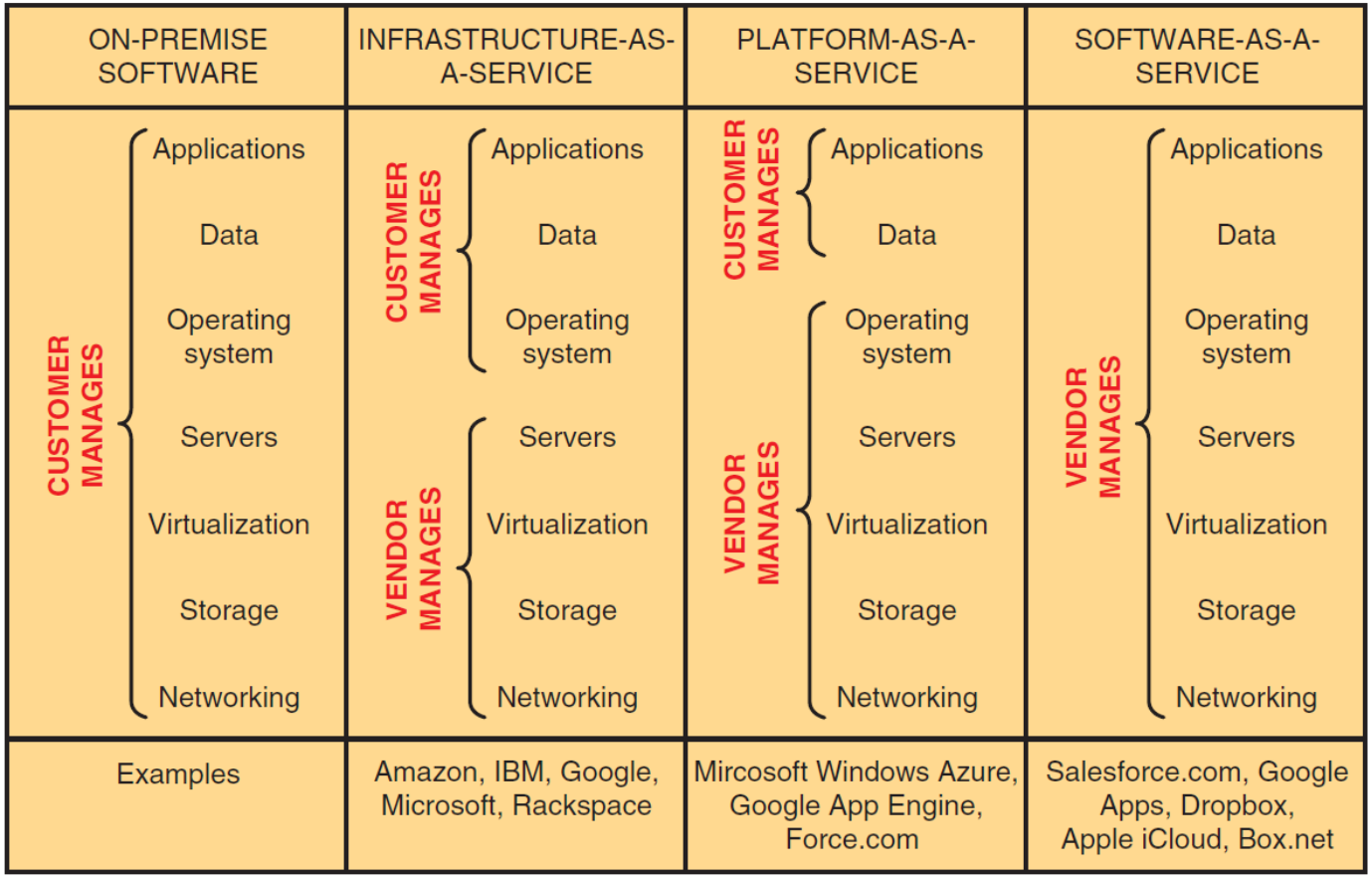



Figure PI4.4 Comparison of on-premise software, infrastructure-as-a-service, platform-as-a-service, and software-as-a-service.

# Benefits of Web Services

- The organization can utilize the existing Internet infrastructure without having to implement any new technologies.
- Organizational personnel can access remote or local data without having to understand the complexities of this process.
- The organization can create new applications quickly and easily.