SOFTWARE. HARDWARE. COMPLETE.

ORACLE

Creare Leggere - (Cloud Architectures) - Ottimizzando Un Datacenter

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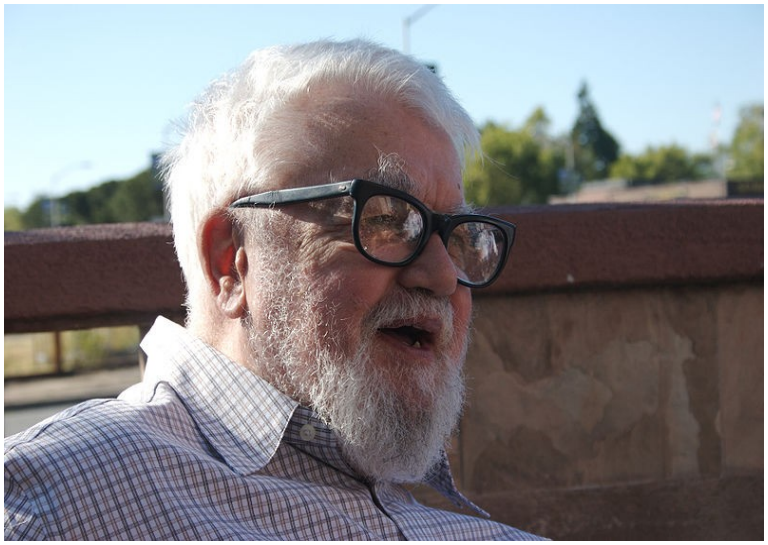
The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions.

The development, release, and timing of any features or functionality described for Oracle's products remains at the sole discretion of Oracle.

Agenda

- Cloud Computing: definizioni e modelli
- Cloud Pubbliche e Private
- La visione Oracle del Cloud
- La strategia Oracle per il Cloud
- I building block di Oracle per il Cloud Computing

IT historical people...



...& their historical quotes

Scott Mc Nealy: Sun's co-founder

"The Network is the Computer....." *February 1982*

"The Network ~~is~~ your the Computer....."

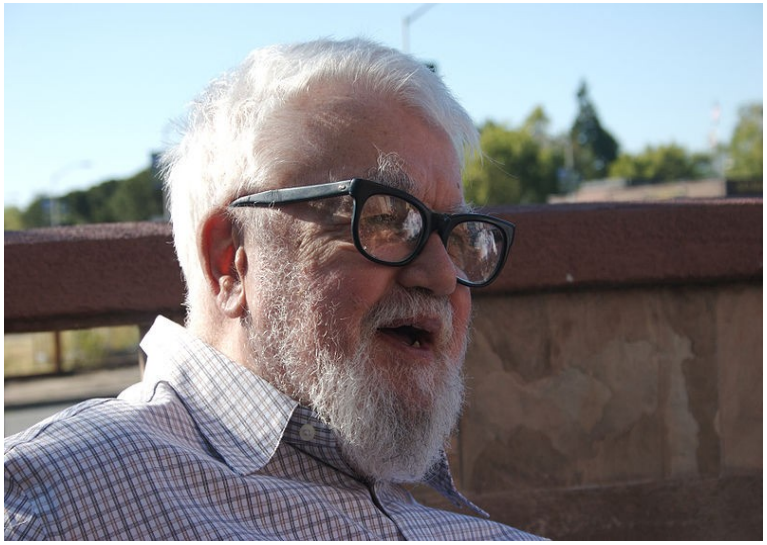
February 2008

Larry Ellison: Oracle's co-founder

"...we've redefined Cloud Computing to include everything that we already do... I don't understand what we would do differently ... other than change the wording of some of our ads."

Wall Street Journal, Sept. 26, 2008

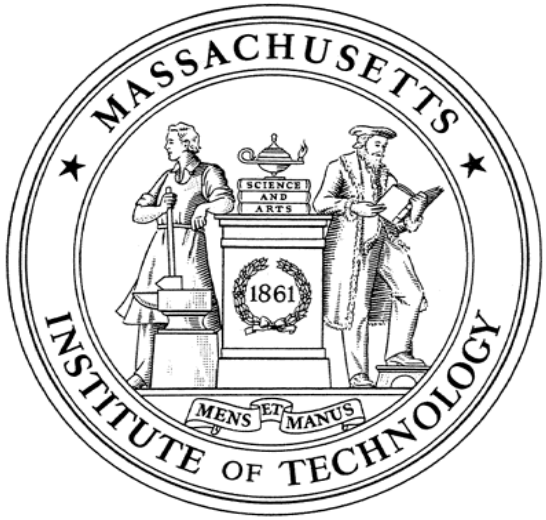
John McCarthy



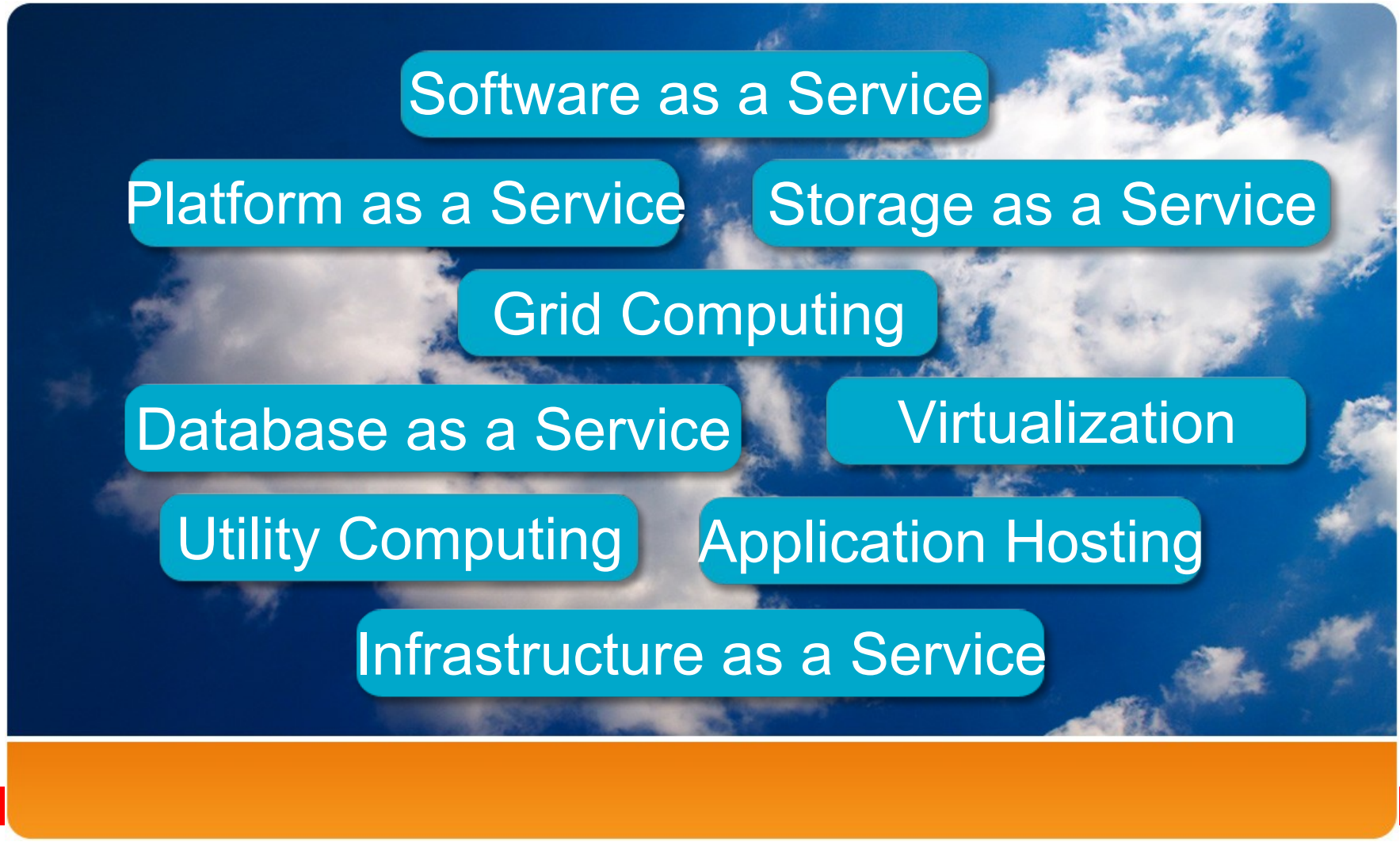
- John is one of the most famous american computer scientist and cognitive scientist
- He is the inventor of both Lisp programming language and the term "*Artificial Intelligence*"
- He received the *Turing Award* in 1971 for his major contributions to the field of Artificial Intelligence (AI)

What did I says, where, when..

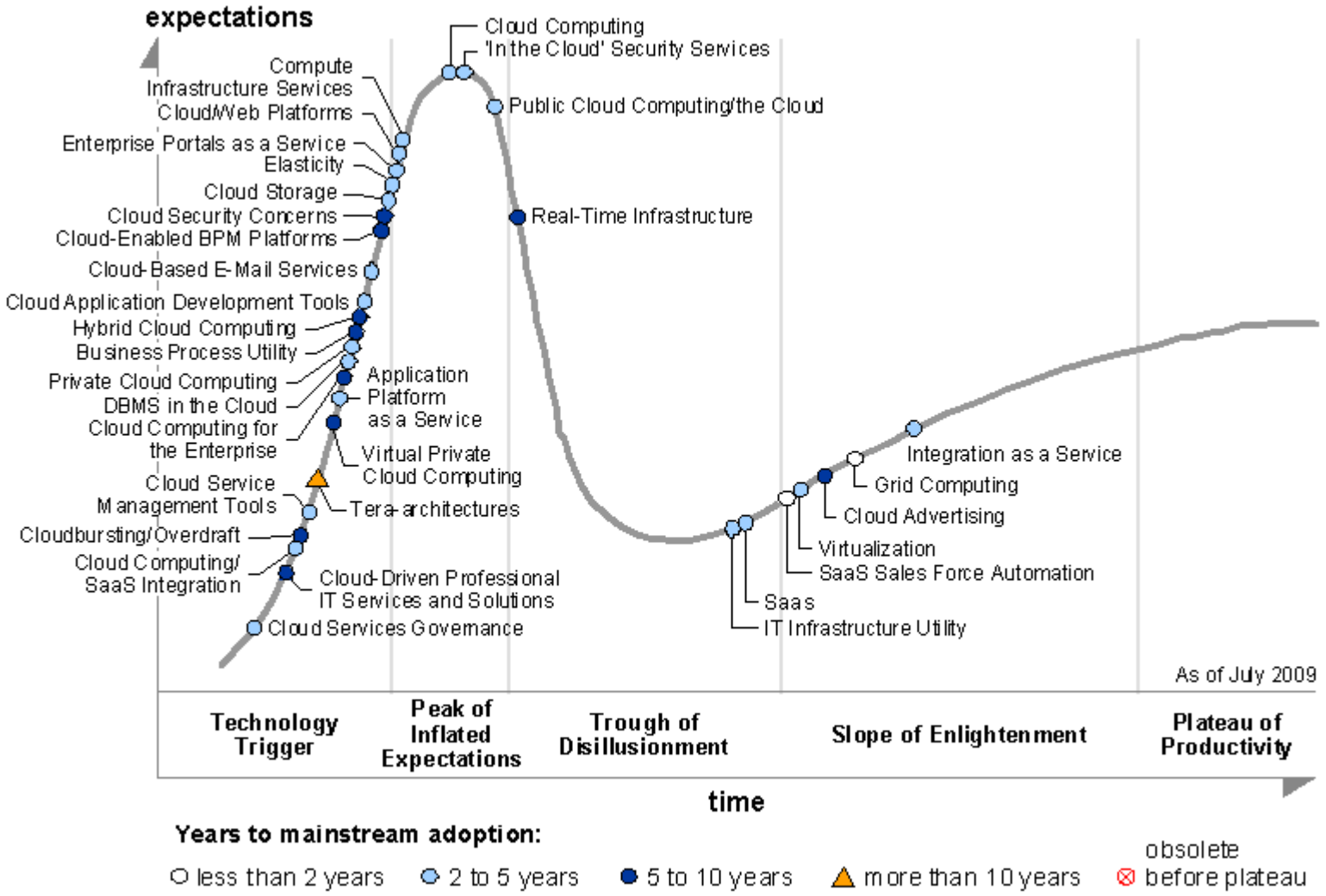
- *"...computer time-sharing technology might lead to a future in which computing power and even specific applications could be sold through the utility business model (like water or electricity)..."*
  - *speech given to celebrate MIT's centennial - 1961*



Everyone is Talking About Cloud Computing



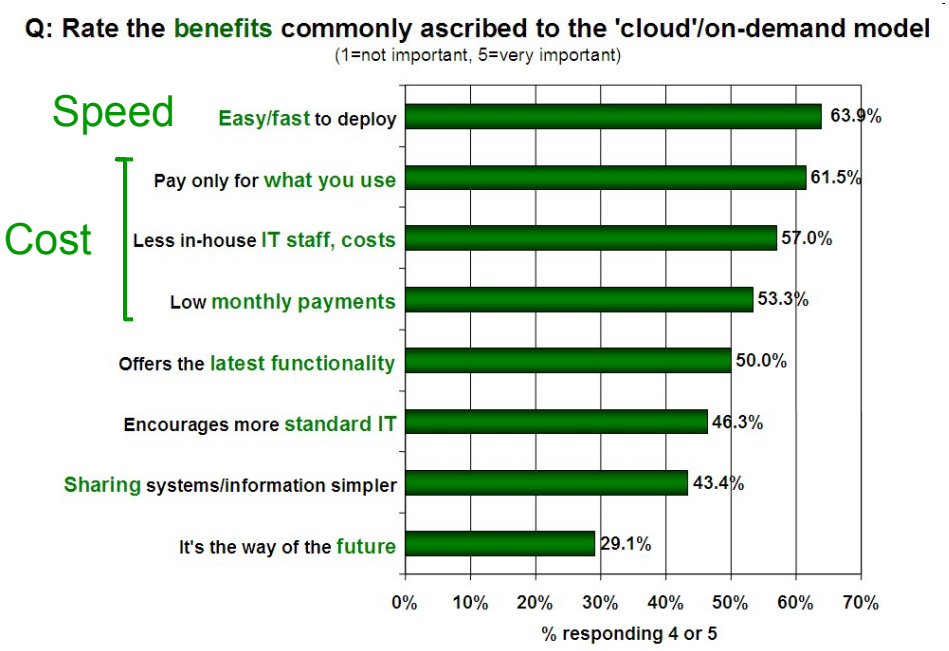
Cloud Is at the Peak of the Hype Curve



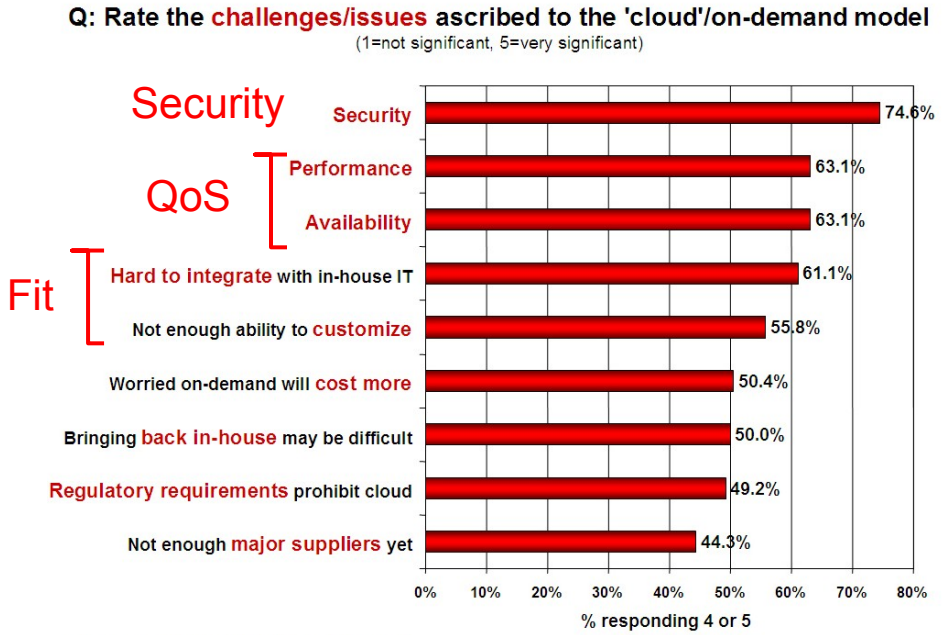
Source: Gartner "Hype Cycle for Cloud Computing, 2009" Research Note G00168780

Why Are Enterprises Interested in Cloud? What Are the Challenges Enterprises Face?

Benefits



Challenges/Issues



Source: IDC eXchange, "IT Cloud Services User Survey, pt. 2: Top Benefits & Challenges," (http://blogs.idc.com/ie/?p=210), October 2, 2008

Cloud is Top of Mind

CIO strategic technologies reflect increased interest in "lighter-weight" solutions

CIO technologies	Ranking of technologies CIOs selected as one of their top 5 priorities in 2010				
Ranking	**2010**		**2009**	**2008**	**2007**
Virtualization	1	↑	3	3	5
Cloud computing	2	↑	16	*	*
Web 2.0	3	↑	15	15	*
Networking, voice and data communications	4	↑	6	7	4
Business intelligence (BI)	5	↓	1	1	1
Mobile technologies	6	↑	12	12	11
Data/document management and storage	7	↑	10	9	9
Service-oriented applications and architecture	8	↑	9	10	7
Security technologies	9	↓	8	5	6
IT management	10		*	*	*

Source: Gartner. Leading in Times of Transition. The 2010 CIO Agenda

It's Not Just About Cheap Computing

Efficiency

Economics

Pay as-you-go

Op-ex vs. Cap-ex

SLA

Virtualization

Developer Centric

Rapid,
self provisioning

Faster deployment

Self service

API-driven

Flexibility

Standard services

Elastic

On demand

Multi-tenant

Driving IT Agility

- Resource pooling
- Rapid elasticity
- On-demand self-service
- Measured service
- Broad network access

BUT clouds can also be quite different

Layers

Business Models

Application Domains

Cloud Computing Layers

Software as a Service

Applications offered on-demand over the network (salesforce.com)

Platform as a Service

Developer platform with built-in services (Google App Engine, Oracle/Sun PAAS,...)

Infrastructure as a Service

Basic storage and compute capabilities offered as a service (Amazon web services, A-Server, Oracle/Sun IAAS, Mosso,...)

Cloud Ownership Models

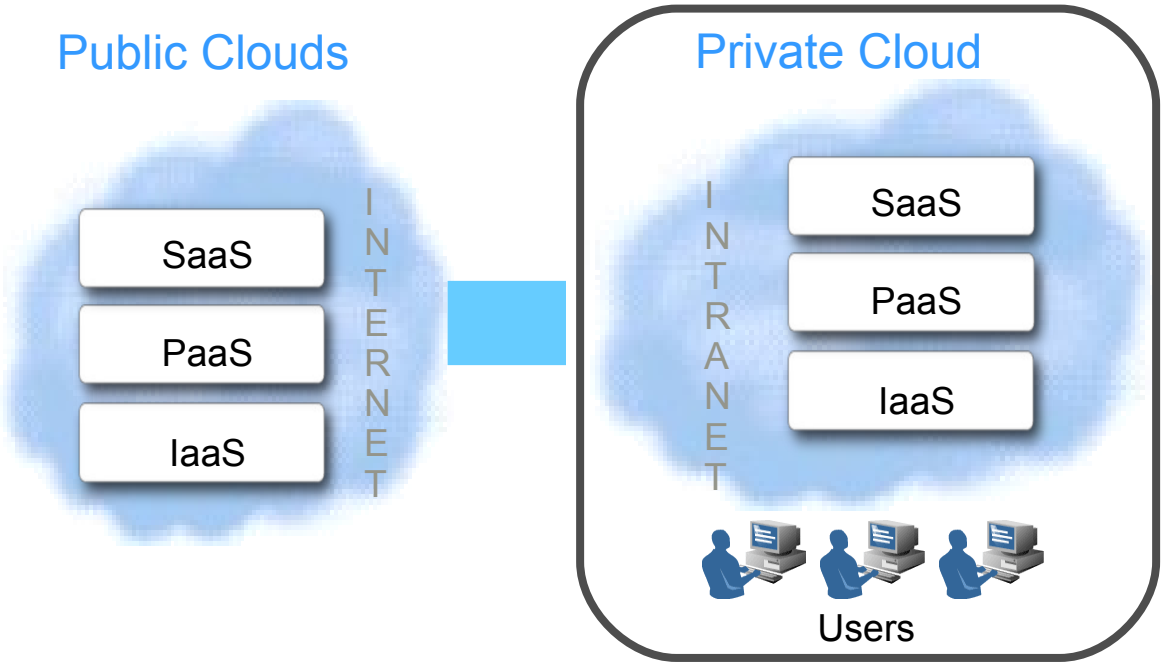
USE the Cloud *(no datacenter ownerships)*	**LEVERAGE** the Cloud	**BUILD** My Own Internal Cloud	**BE** the Cloud
			
• Startup • SMB • Research projects	• Temporary on-demand load • Functional off- load	• Enterprise infrastructure grid • Drive internal IT economics • Standardized development environment/ services	• Redefine services • New business offerings • Hosting and operations partners • Software vendors

Business Models

Public	Private	Hybrid
		
You don't know who else is on the same server, network or disk that you are	You own the server, network and disk, and decide who gets to run on it with you	You own some parts and are sharing some parts, though in a controlled way

Public Clouds and Private Clouds

- Used by multiple tenants on a shared basis
- Hosted and managed by cloud service provider
- Limited variety of offerings



- Exclusively used by a single organization
- Controlled and managed by in-house IT
- Large number of applications

Public Clouds:

- Lower *upfront* costs
- Economies of scale
- Simpler to manage
- OpEx

Both offer:

- High efficiency
- High availability
- Elastic capacity

Private Cloud:

- Lower *total* costs
- Greater control over security, compliance & quality of service
- Easier integration
- CapEx & OpEx

Cloud Computing: the Oracle's Perspective

- Characterized by real, new capabilities, but based on many established technologies
- Compelling benefits as well as serious concerns
- Enterprises will adopt a mix of public and private clouds

Oracle Cloud Computing Strategy

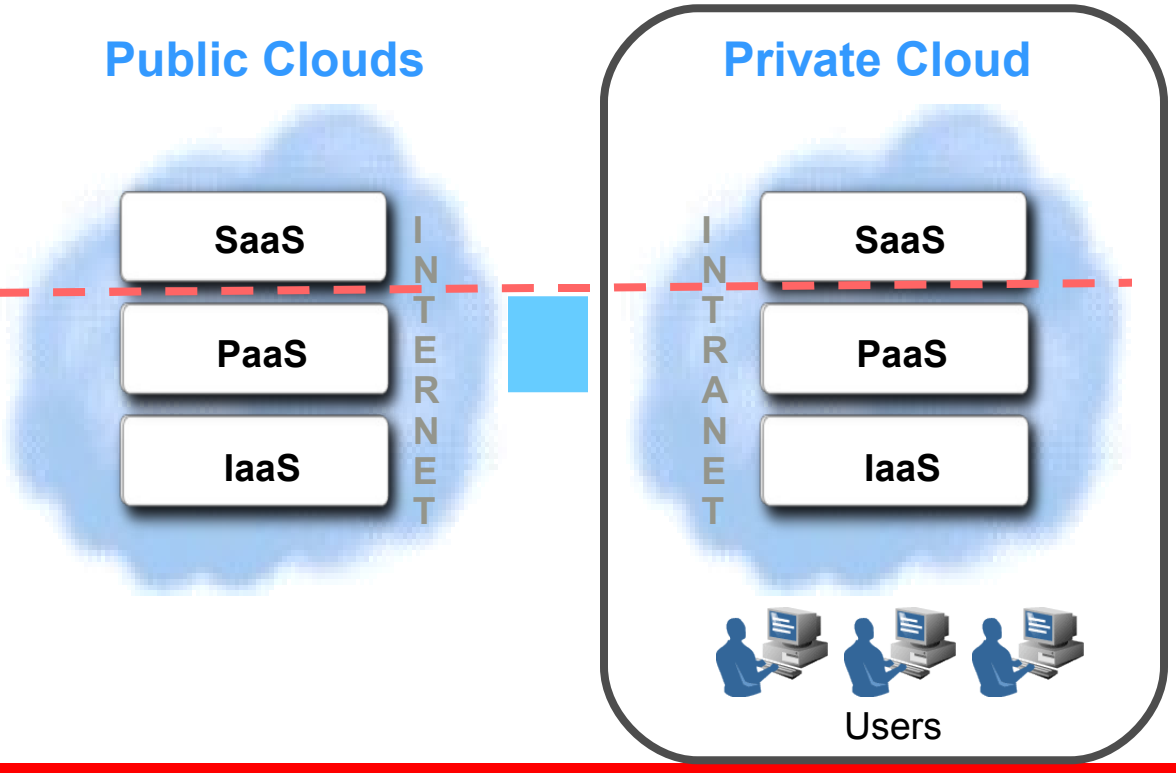
Oracle Cloud Computing Strategy

Our objectives:

- Ensure that cloud computing is fully enterprise grade
- Support both public and private cloud computing – give customers choice

Offer Applications deployed in private shared services environment or via public SaaS

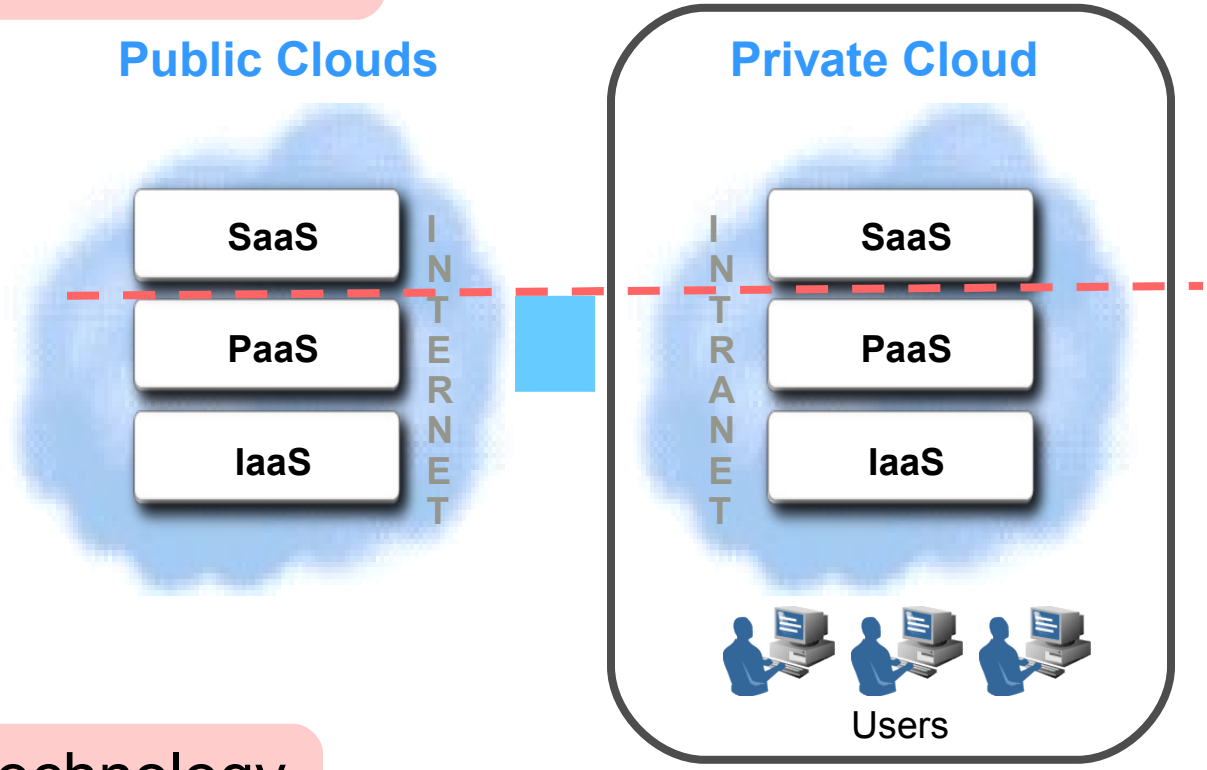
Offer Technology to build private clouds or run in public clouds



Oracle Cloud Computing Strategy

Oracle Applications On Demand

Oracle Applications



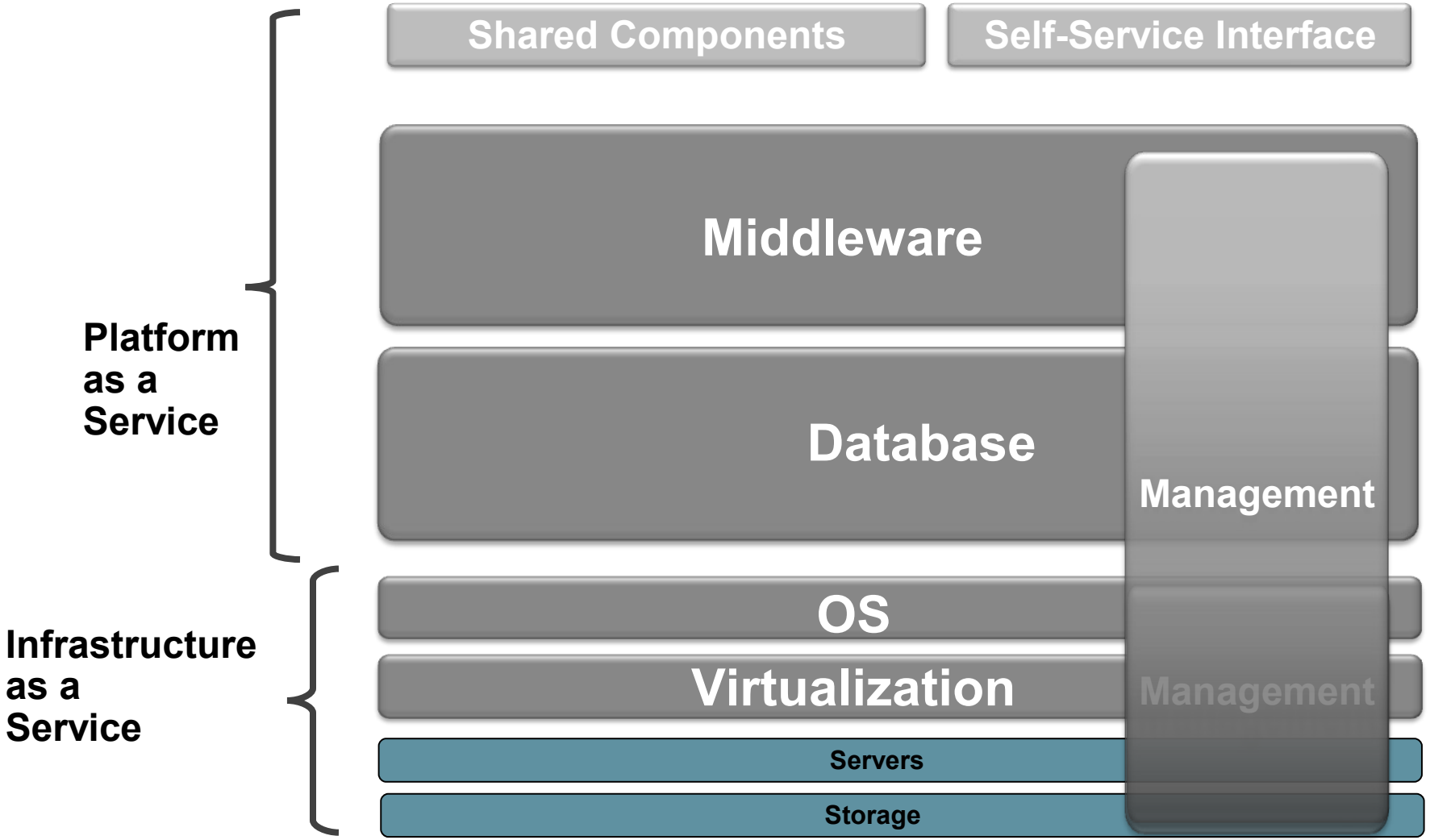
Oracle Technology in public clouds

Oracle Private PaaS

Why Sun ORACLE for Cloud Computing?

- Sun Servers and Sun Storage offer world class performance, scalability, reliability and security
  - Best-of-breed components
  - Integrated systems with Oracle software
  - Exalogic and Exadata help you to deploy your Enterprise grade Cloud Computing Architecture
- We provides highly scalable, secure and reliable technology for Infrastructure as a Service (*IaaS*)
  - Solaris features like *built-in virtualization, ZFS, DTrace, self-healing* and *security* make it the best operating system for clouds
- We offer the most Complete, Open and Integrated SW stack for Platform As A Service (*PaaS*)

Private Cloud Building Blocks



Private IaaS vs. Private PaaS

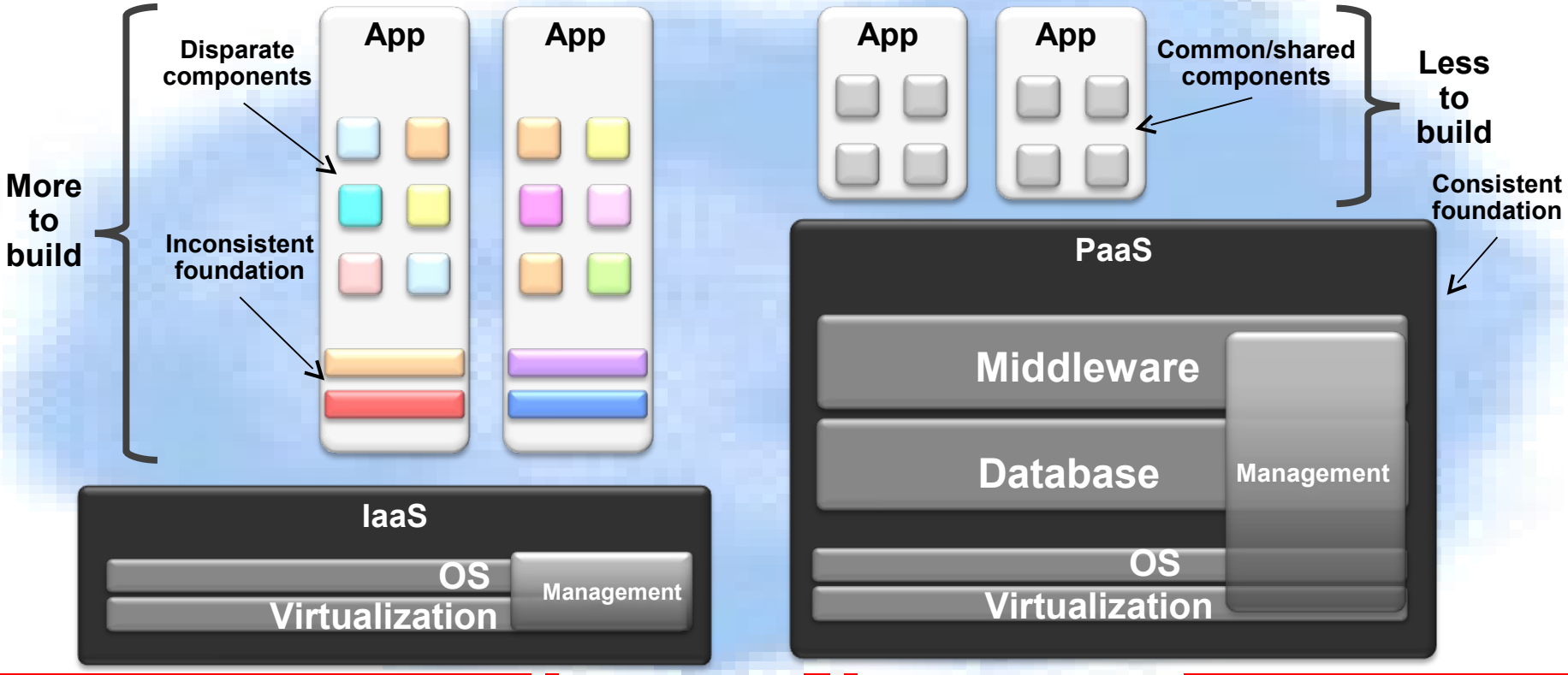
PaaS Is the Natural Strategy for Enterprises

IaaS

- More freedom
- More work

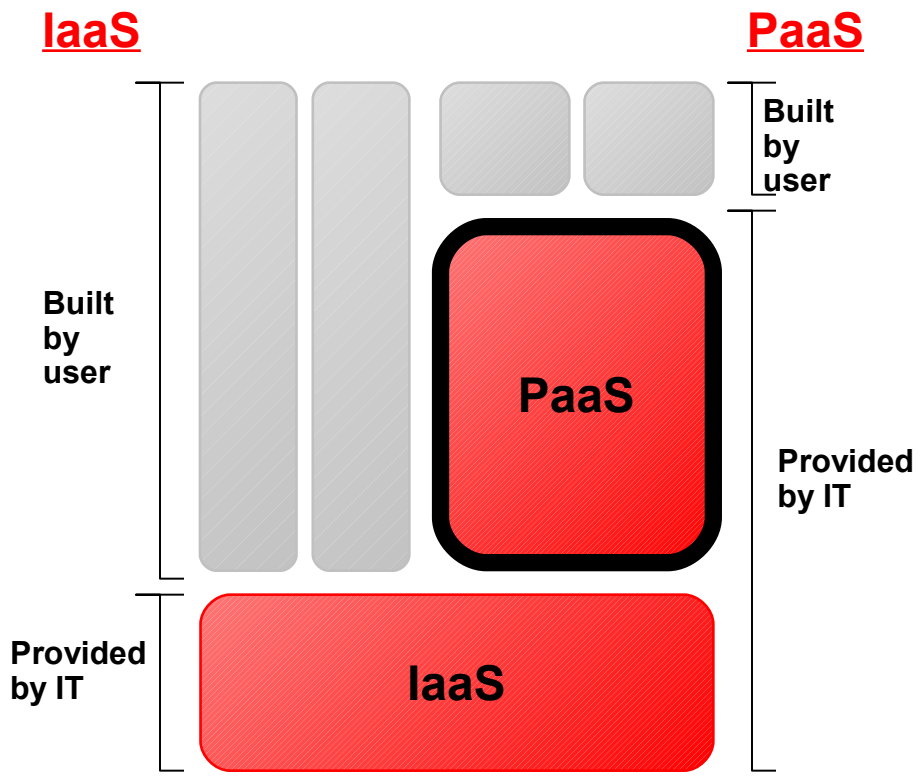
PaaS

- More secure
- More manageable
- More agile
- More efficient



Why Enterprise Private PaaS

- Why Cloud?
  - Agility and speed
  - Efficiency and cost
- Why Private?
  - Security
  - Compliance
  - Control (particularly over QoS)
  - Easiest evolution of existing expertise and practices
- Why Platform?
  - Maximizes component re-use
  - Minimizes hand coding
  - Maximizes flexibility and control



What: Oracle Cloud Platform for PaaS

Third Party Applications | **Oracle Applications** | **ISV Applications**

Platform as a Service

Shared Services

Integration: SOA Suite | **Process Mgmt:** BPM Suite | **Security:** Identity Mgmt | **User Interaction:** WebCenter

Application Grid: WebLogic Server, Coherence, Tuxedo, JRockit

Database Grid: Oracle Database, RAC, ASM, Partitioning, IMDB Cache, Active Data Guard, Database Security

Infrastructure as a Service

Oracle Solaris | Oracle Enterprise Linux

Oracle VM for SPARC (LDom) Solaris Containers | Oracle VM for x86

Cloud Management

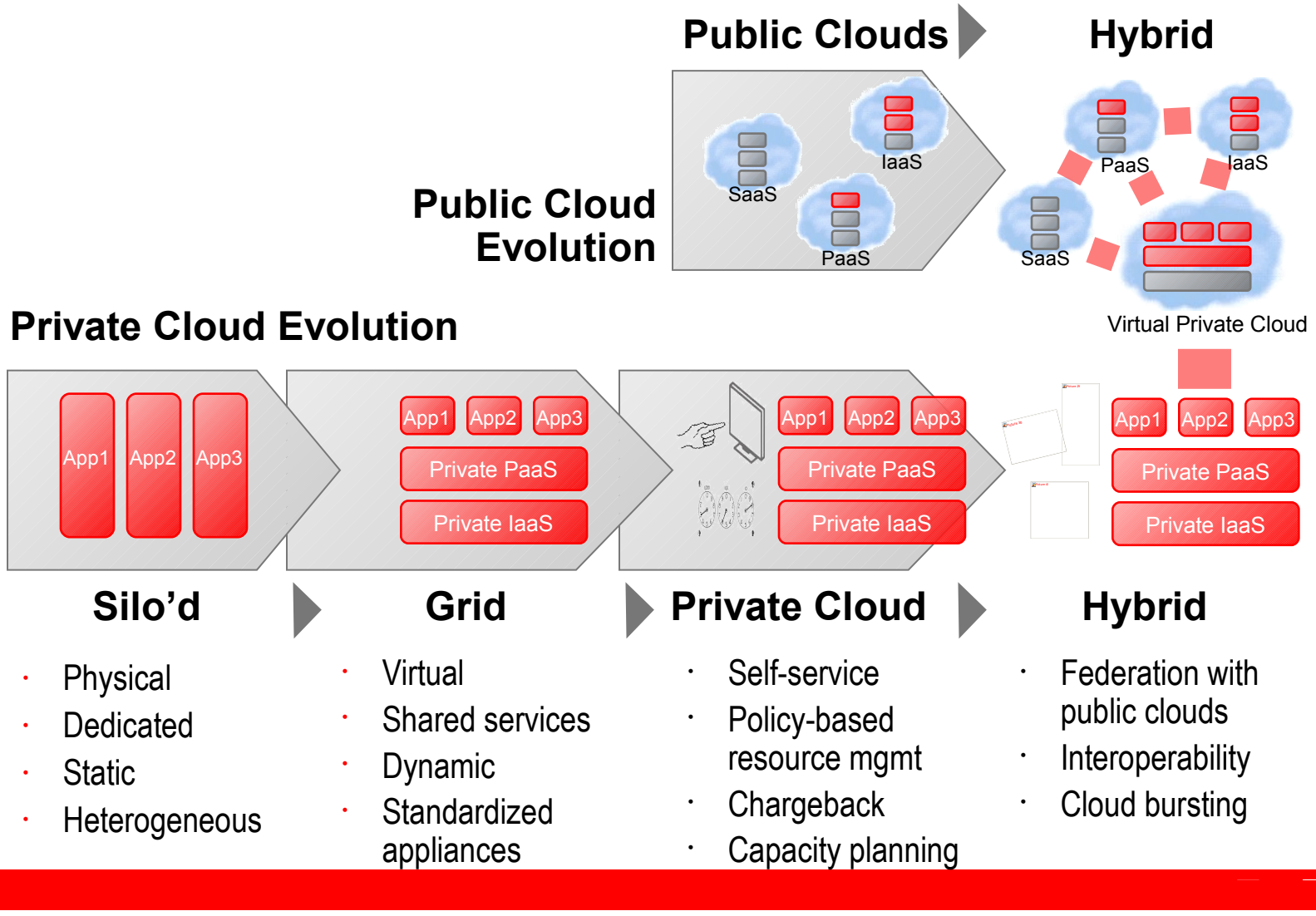
Oracle Enterprise Manager

- **Configuration Mgmt**
- **Lifecycle Management**
- **Application Performance Management**
- **Application Quality Management**

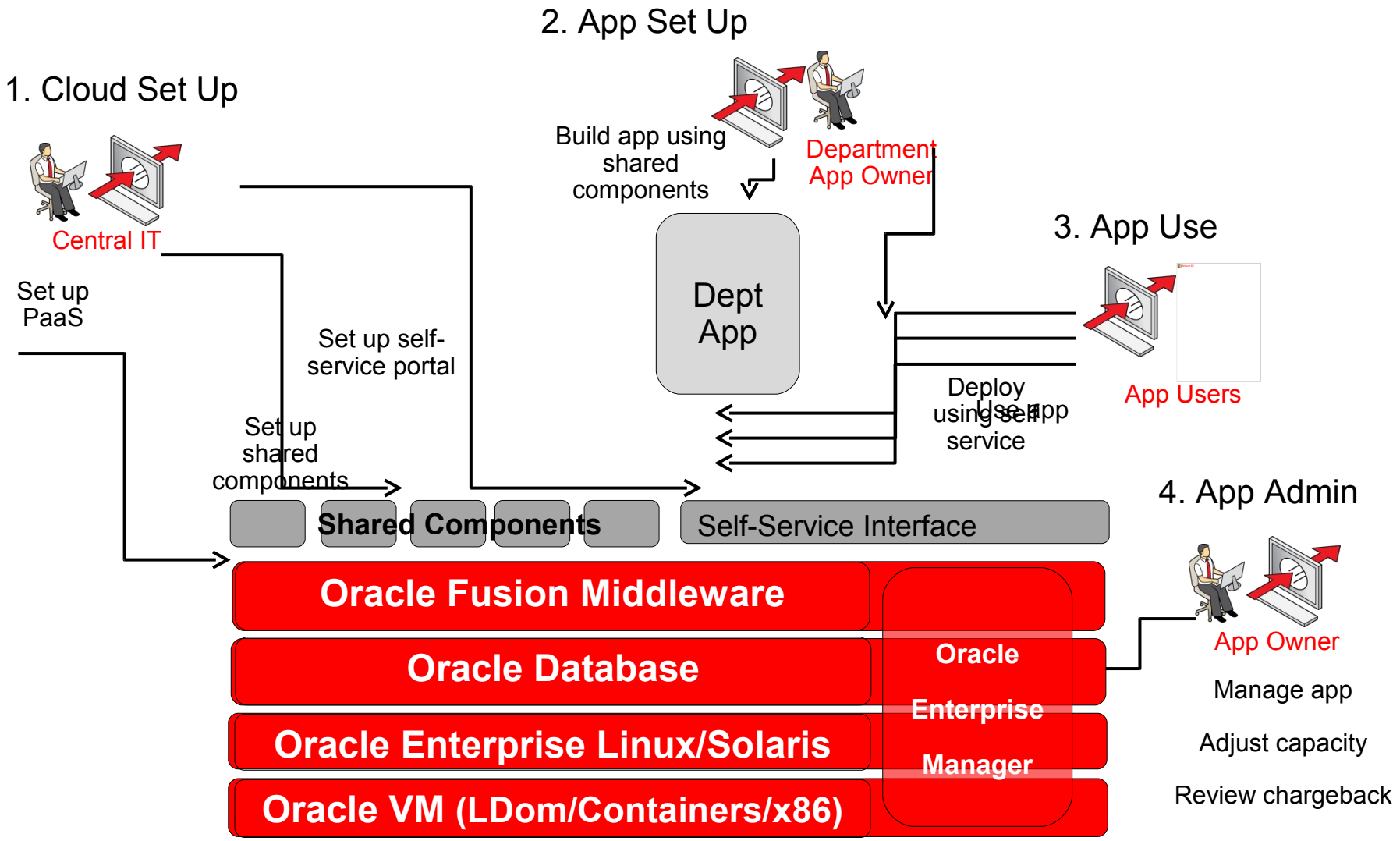
Ops Center

- **Physical and Virtual Systems Management**

How: Enterprise Evolution To Cloud



Private PaaS Lifecycle




Sun
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