

Leveraging Mobile Technology for Oracle Databases Management

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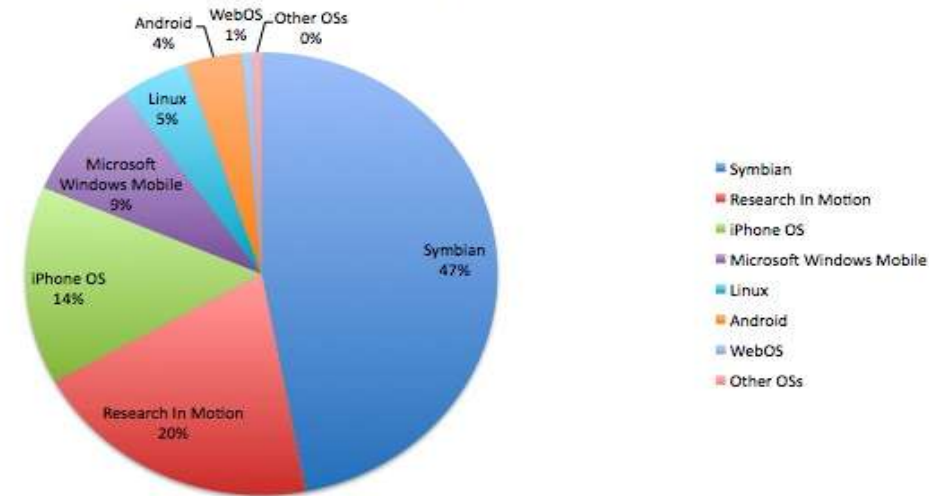
Mobile Market.....

“The total number of PCs will reach 1.78 billion in three years, while the number of smart phones and Web-enabled phones will shoot past 1.82 billion units and continue to climb after that.” (Gartner)

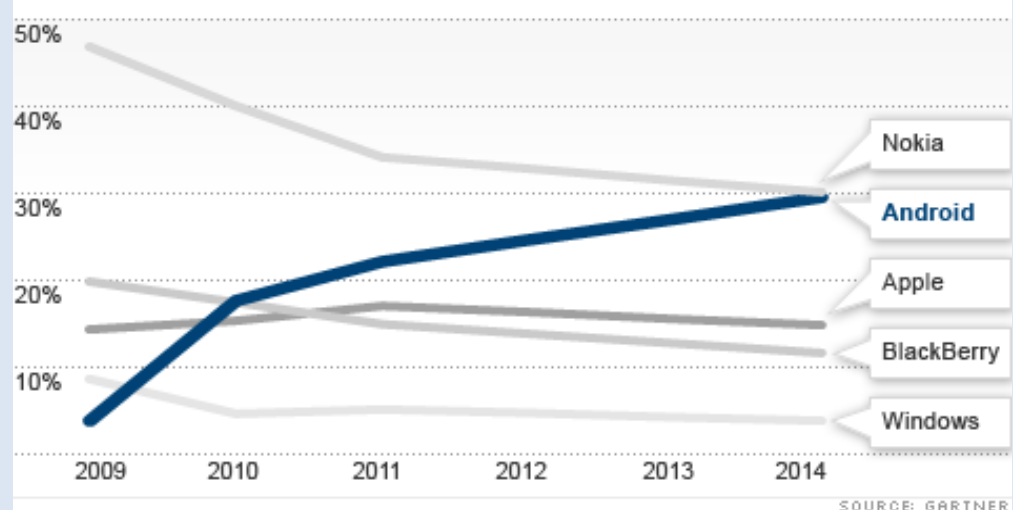
Leading Players

By 2012, Symbian’s market share will shrink to 39% while Android is projected to surge to 14% of the global Smartphone market followed by iPhone (Gartner)

Mobile OS 2009 market share Gartner)

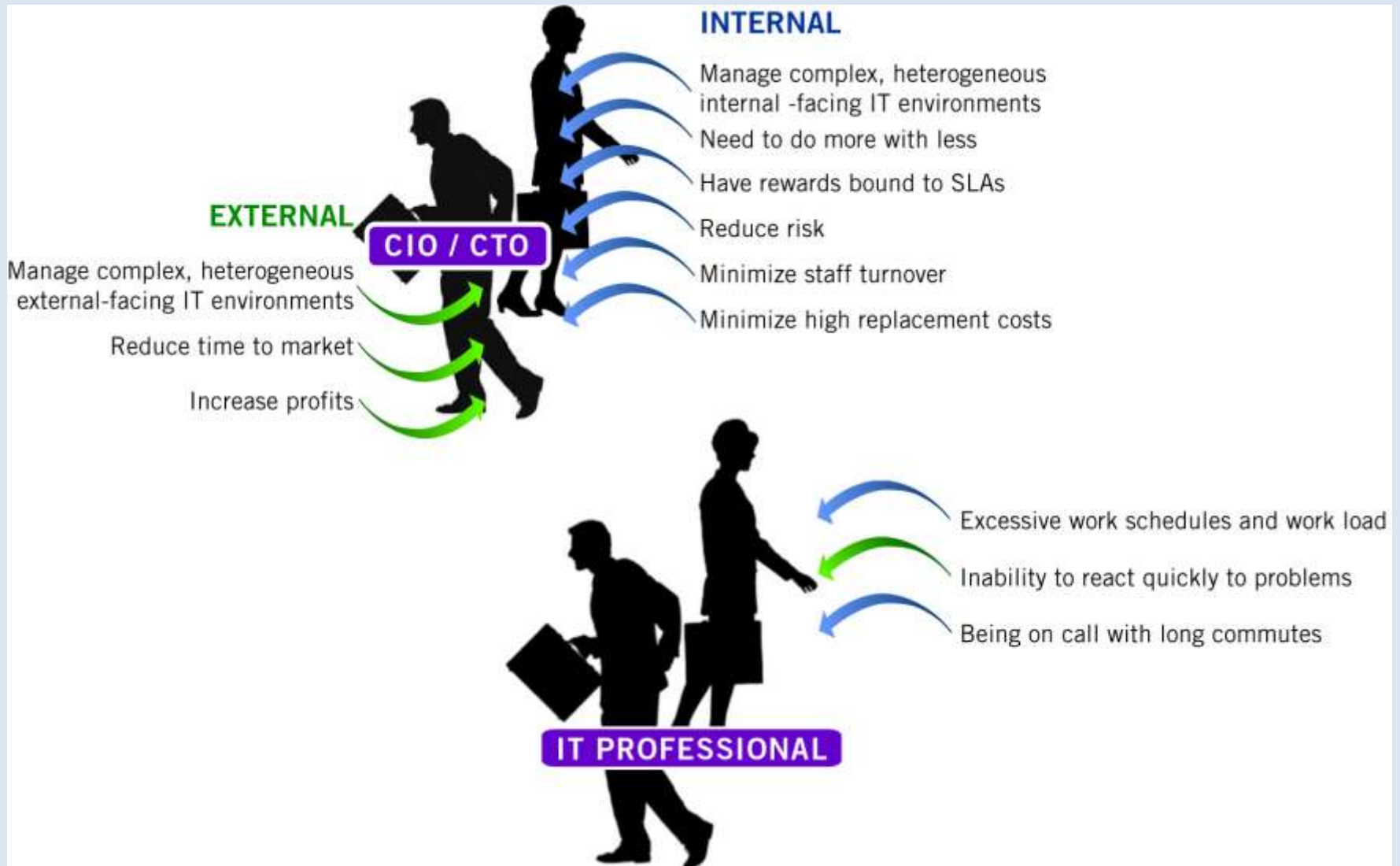


SMARTPHONE MARKET SHARE FORECAST



SOURCE: GARTNER

IT Problems Harmfully Impact the Entire Enterprise



Managing in a Mobile World

“Managing complex systems in multiple locations remotely is the key benefit of mobile software to the enterprise.... It will be a key tool in reducing the cost of managing the enterprise while increasing both productivity and quality of life for IT professionals.”

--Database Trends & Applications,

October 2002

The Confluence of IT Tools

Mobile IT Management is a “Best Practice” and is becoming the norm for IT shops



Why Database Management Is important ?

- *"Average database downtime costs vary considerably across industries, from approximately \$90,000 per hour in the media sector to about \$6.48 million per hour for large online brokerages."*
(source:Information-Management.com).



How Much A Downtime Cost

THE **COST** OF DOWNTIME

INDUSTRY SECTOR	REVENUE/HOUR	REVENUE/EMPLOYEE-HOUR
Energy	\$2,817,846	\$569.20
Telecommunications	2,066,245	186.98
Manufacturing	1,610,654	134.24
Financial institutions	1,495,134	1,079.89
Information technology	1,344,461	184.03
Insurance	1,202,444	370.92
Retail	1,107,274	244.37
Pharmaceuticals	1,082,252	167.53
Banking	996,802	130.52
Food/beverage processing	804,192	153.10
Consumer products	785,719	127.98
Chemicals	704,101	194.53
Transportation	668,586	107.78
Utilities	643,250	380.94
Health care	636,030	142.58
Metals/natural resources	580,588	153.11
Professional services	532,510	99.59
Electronics	477,366	74.48
Construction and engineering	389,601	216.18
Media	340,432	119.74
Hospitality and travel	330,654	38.62
Average	\$1,010,536	\$205.55

Source: IT Performance Engineering & Measurement Strategies: Quantifying Performance Loss, Meta Group, October 2000.

What's different about mobile?

- **Key security challenges for mobile devices**
 - Flash memory
 - Device is constantly connected to the Internet
 - Combines highly sensitive personal and corporate data, making perfect device to target
 - Operating system is in constant state of fluxRace to the next feature
 - Security is an afterthought (corporate user/pass example)
 - Traditional security techniques useful but more advanced ones are needed to secure mobile

Mobile Management Value Proposition

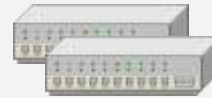
- **Increase Productivity**
 - Administrators have the tools to be both reactive and proactive
 - End-user productivity increases as down-time decreases
 - Service Level Agreements (SLAs) are met or exceeded
- **Avoid Revenue Loss**
 - Under-performing systems slow down revenue flow
 - Disabled systems stop revenue altogether
- **Simplify IT Management**
 - Heterogeneous IT management: Manage any database, server or network device throughout the enterprise
 - Single console – any form-factor: Dynamically adjusts to any screen size including wireless handheld, tablet, laptop, sub-notebook or desktop
- **In summary, with mobile management, organizations can economize on people, on skills and get more out of established equipment and software**

Existing Mobile IT Management Options

Network Layer



Routers



Hubs



Firewalls

Server Layer



Windows 2000
Domain Controller



2000 / XP
Professional Exchange Server

Domain



Windows 2003
Domain Controller



Exchange Server 2000 / XP
Professional

Domain



Unix



Linux

Database Layer



SQL Server



Oracle



DB2 UDB



Teradata

A Mobile Enterprise Integrates with Alerting and Monitoring Tools



2 System sends alert to IT Admin

3. Admin receives alert from the field



Service Monitoring and Control

Secondary DCAM

MOM Primary DCAM

Microsoft Windows Active Directory
Microsoft Exchange Server
Microsoft SQL Server

1. Alert Notification

4. Mobile software used to identify and resolve the issue (for databases, networks, servers)



5 System is aware event has been resolved / averted

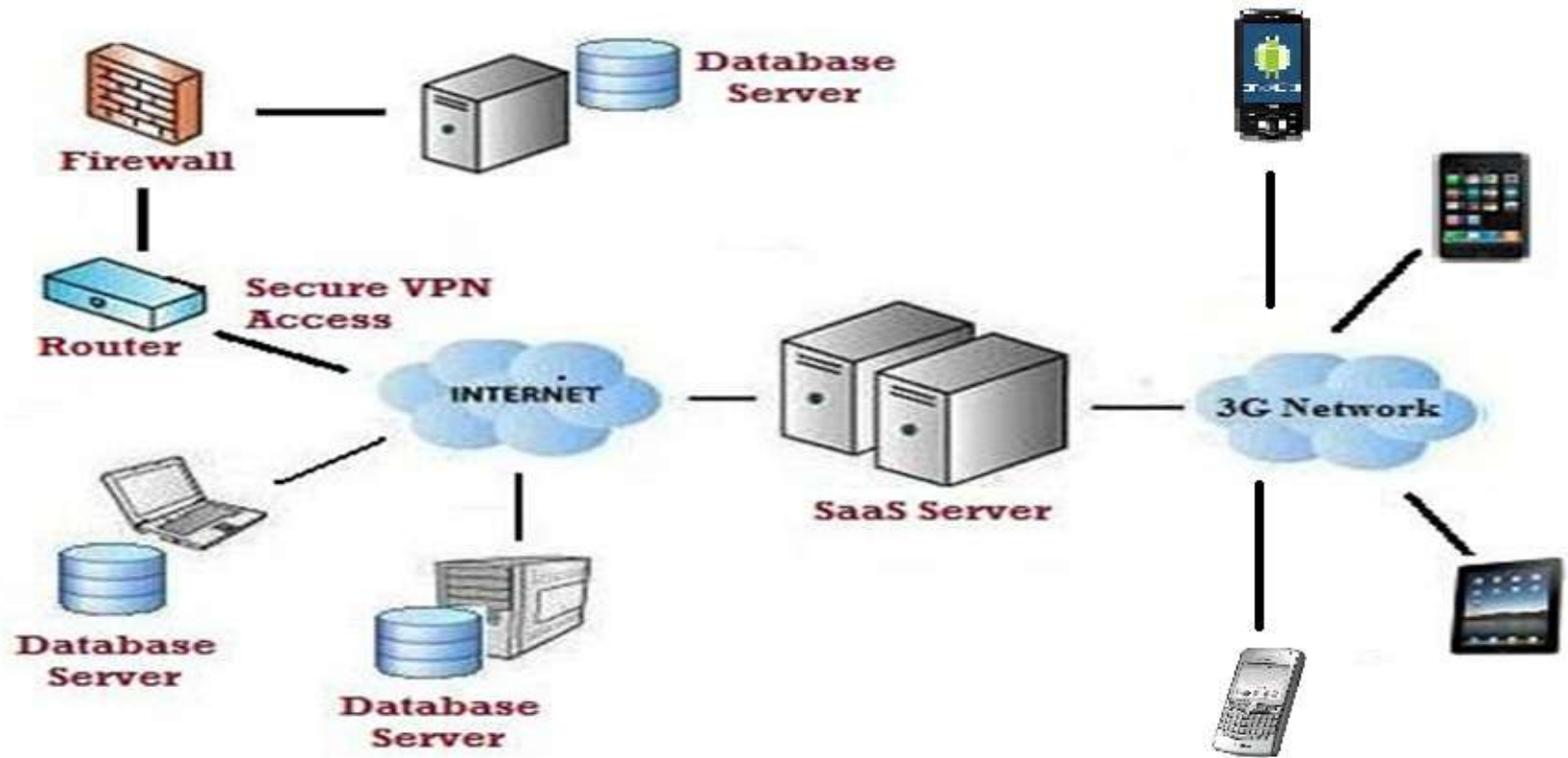


Mobile Management Architecture

Deployment Models

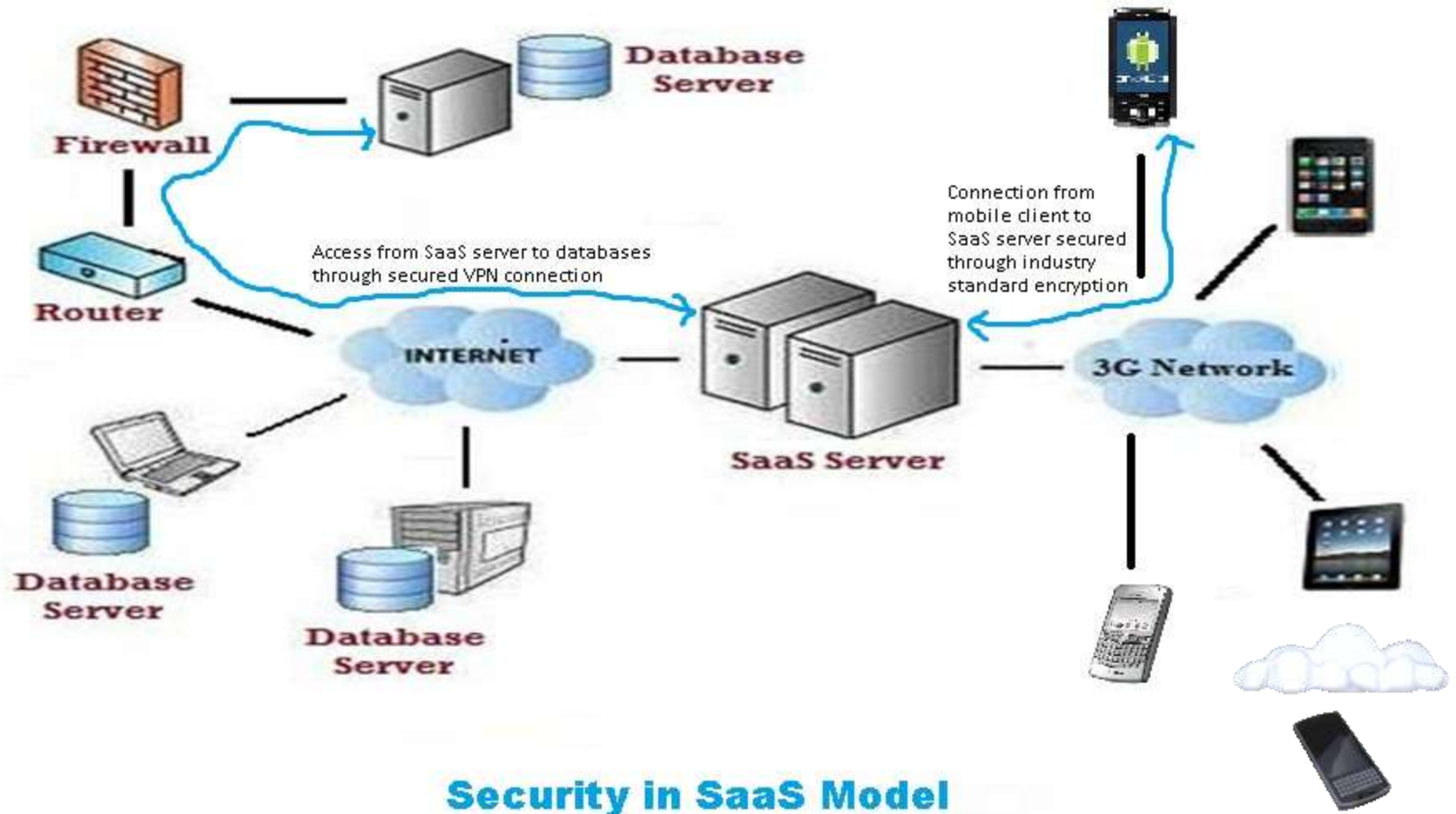
- **Software-as-a-Service (SaaS) Model**
 - A hosted solution model
 - Multiple users belonging to different companies accessing multiple databases through a single SaaS server.
 - A Multi-layer security model required to ensure end-to-end security
- **Enterprise Model**
 - Multiple users belonging to same company accessing databases through the enterprise server.

SaaS Deployment Model



Software-As-A-Service Model

SaaS Deployment Model



Security in SaaS Model

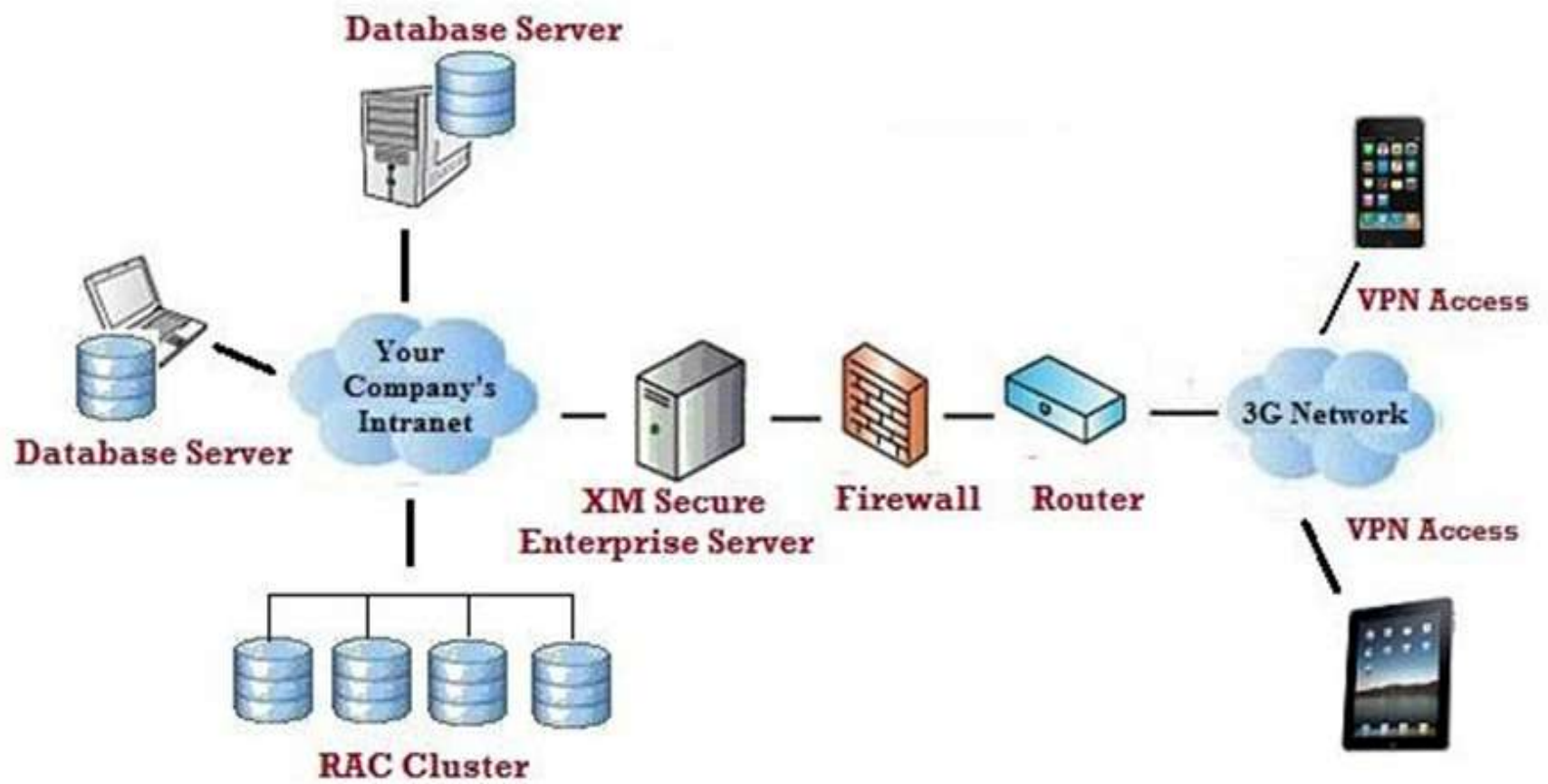
■ Client Device to SaaS Server

- Connection from mobile client to SaaS server secured through industry standard encryption.
- Client application need to encrypt/decrypt
- May use AES 256-bit hardware encryption to protect all data at rest (supported by most smart phone devices).

• SaaS Server to Databases

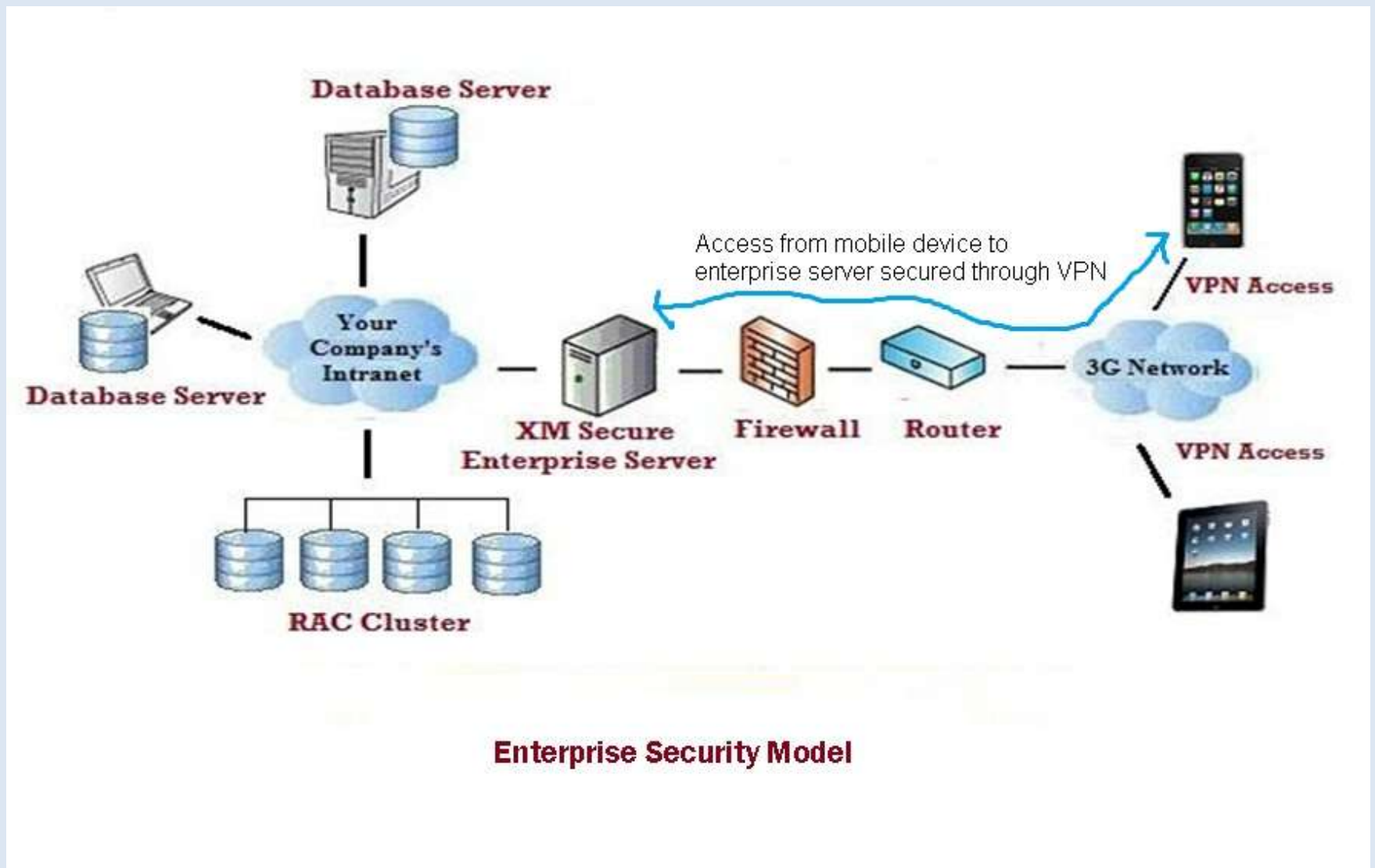
- Access to database from SaaS Server secured through VPN
- Server maintains pool of VPN connections.
- Additional layer of security by encrypting server side data using standard 128 bit encryption. (V 2.0).

Enterprise– Deployment Model



Enterprise Deployment Model

Enterprise– Deployment Model



Enterprise Security Model

Security in Enterprise Model

- Client
 - Connection from mobile client secured through VPN (SSL VPN, WPA2 Enterprise Wi-Fi and IPSec).
 - Leverages certificate-based authentication to make connecting to VPN servers transparent to users.
 - May use AES 256-bit hardware encryption to protect all data at rest (on client device).
- Server
 - Server is installed within customer's corporate network and can be configured according to their corporate security policies and standards.
 - Access calls to/from the back-end server can be monitored or audited by system administrator at any
 - Additional layer of security by encrypting server side data using standard 128 bit encryption. (V 2.0).

A network diagram consisting of several small circular nodes connected by red lines. The nodes are scattered across the frame, and the lines form a complex web of connections. The background is a light blue gradient.

Mobile app security philosophy

If you secure it, they won't come...





AT&T 3G 4:00 PM 52%

Back Options

-  Active Sessions
-  Active Users
-  Blocking Sessions
-  View Patches
-  Top SQLs
-  View Init Parameters
-  Execute Query
-  Custom Reports

Dashboard Settings Help





Back

Custom Reports

Close

Pre-Define Reports

Database Size By Filenames

Reserved, Used and Free space of the database

Database SGA Memory Map

Database growth in MB per month for the last year

RMAN Backups in the Last 24 Hours

Database Buffer Cache, Library Cache and Dictionary Cache Hit Ratios

Locked Objects in the Database

Check Locks in the Database



Dashboard



Settings



Help



Top Issues with Mobile monitoring Solutions

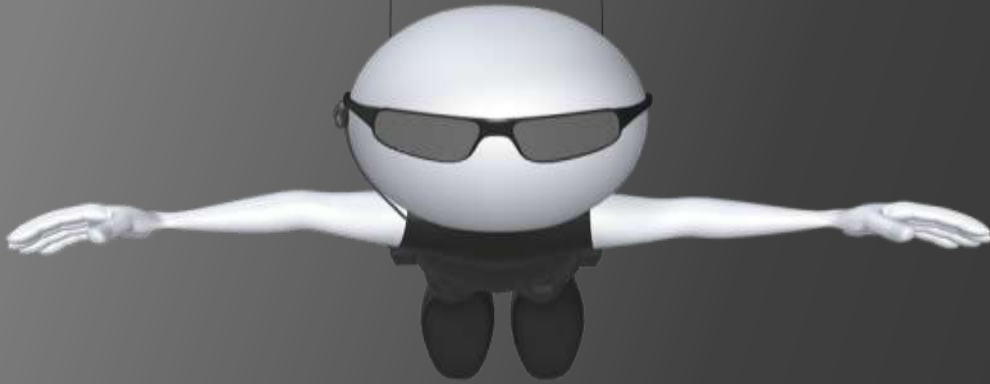
Security

Real Estate

Current Solutions are built for regular web interface

ssh clients on PDA are not really an option to perform the work.





Questions? Comments?

We are happy to help you!

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