



Quest Forum Digital Event

— Insights. Information. Education. —
Practical hands-on learning for the Oracle user community.

Innovation Week

April 20 - 24, 2020

Community Education

Cloud Week	May 27 - 29
PeopleSoft Week	June 1 - 4
JD Edwards Week	June 8 - 11
Database & Tech Week	June 15 - 18

Focus Days

Professional Development	June 5
Emerging Technology	June 5
Training & Workshops	June 12

Managing Application Security when Moving to the Cloud

Auditable, Efficient & Secure

Remember to provide your session feedback in the app!

Session ID:

102180

Prepared by:

Mike Ward

CEO

Q Software

@mikeaward

29th May 2020



Objectives – to Understand.....

- The Path to the Cloud
- How Application Security is Affected when moving to the Cloud
- A plan for Best practice in Managing AppSec
- Simple Auditing of Security in the Cloud





Mike Ward

- 45 Years IT Experience
- ERP from the Beginning
- 250 ERP Audits
- Leicester City FC since 1963
- @mikeaward





Tres Paul

20 Years IT Experience

Business Analyst

Technical Architect

Security Design

Multiple ERP – JDE, EBS

Supports Liverpool FC



Contents

- Introduction & Objectives
- Understand the Risks
- Moving to the Cloud
- AppSec Controls
- Auditing ERP
- Summary





Why is Security Necessary?

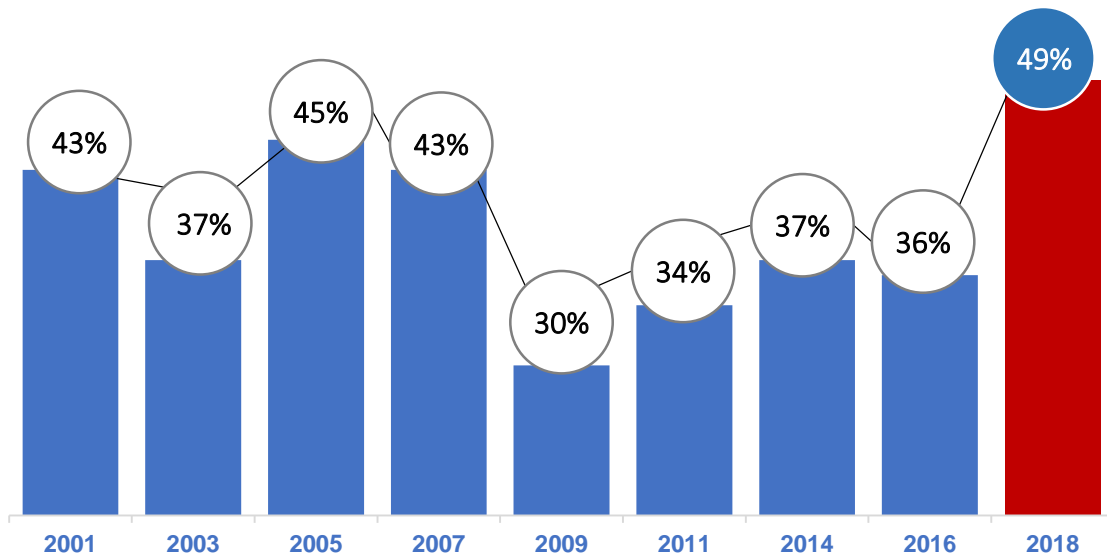
Your ERP system contains all your Key Company Data



Theft	Compliance	Internal Controls	Fraud
	Risk Management	Governance	

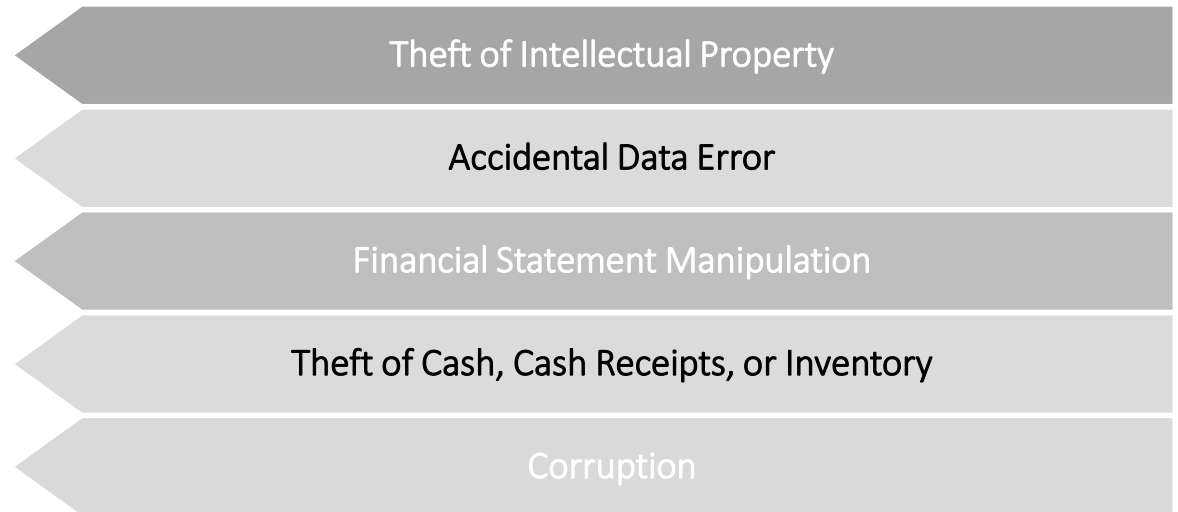
Fraud Exposure and Insufficient Controls

50% OF COMPANIES EXPERIENCE FRAUD



Source: PwC 2018 Crime & Fraud Survey

MOST COMMON TYPES OF FRAUD



ROOT CAUSES

Poor Internal Controls

Non-Segregation of Duties

Wide System Authorizations

Lack of Supervision

Business Pressure





INTERNAL CONTROL WEAKNESSES WERE RESPONSIBLE FOR NEARLY HALF OF FRAUDS



© ACFE 2018

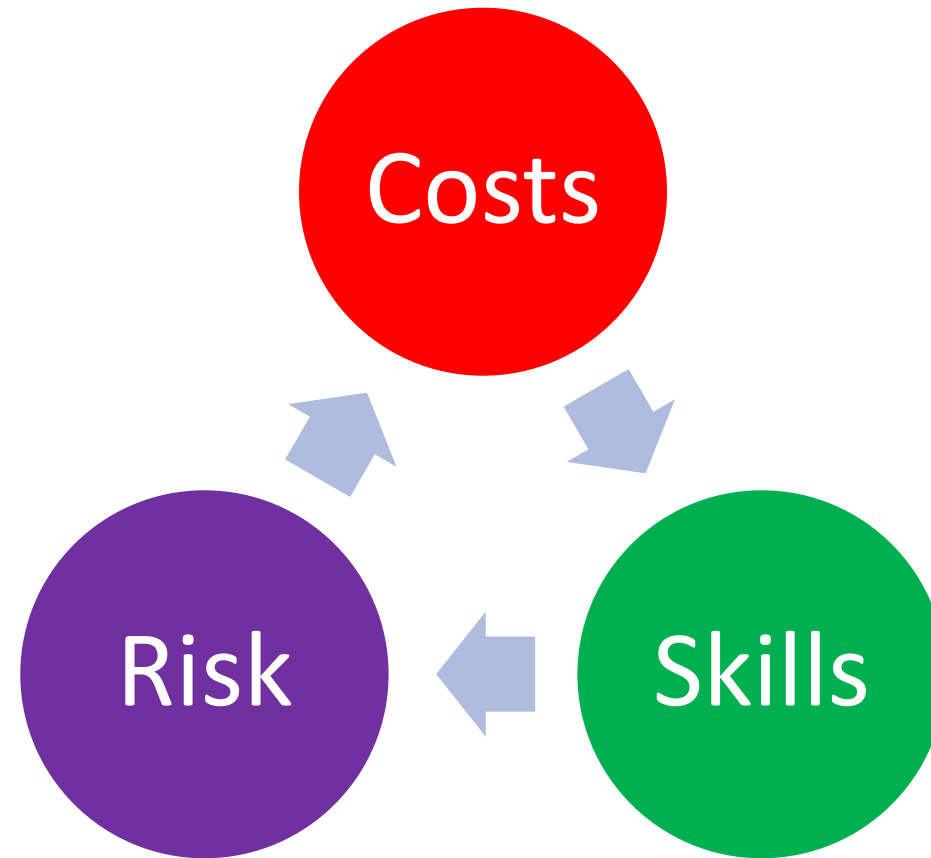


Fraud – The Business Suffers



© 2016 Association of Certified Fraud Examiners.

The Efficiency Conundrum



Let's Move to the Cloud

What Happens to Risk?



More Complex Security Environment



Data Management – Better/Worse?



Management & Monitoring



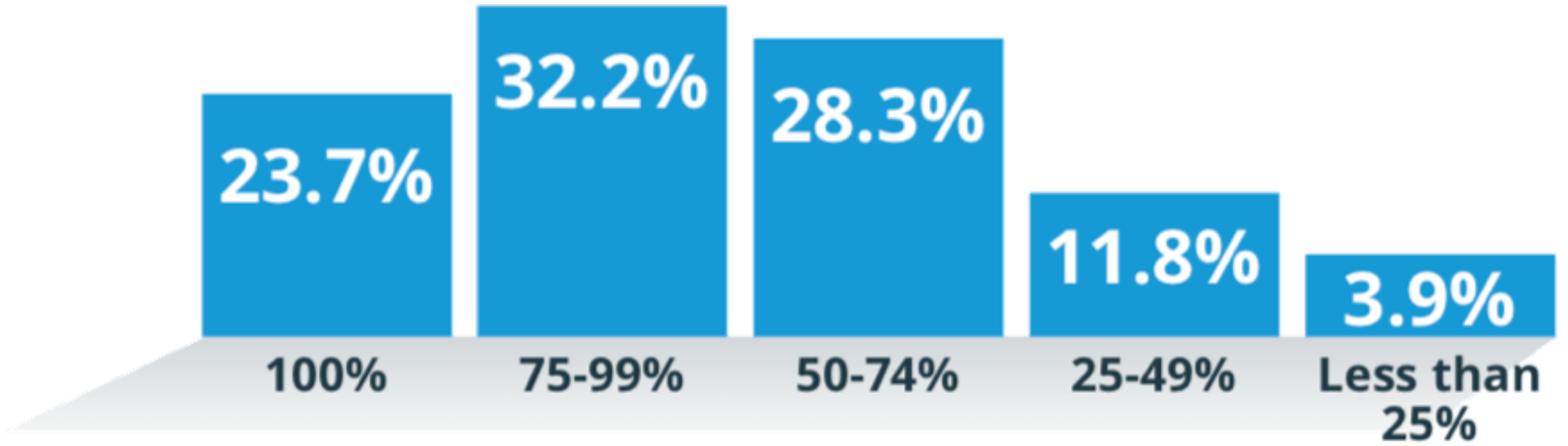
Skills & Expertise



- Introduction & Objectives
- Understand the Risks
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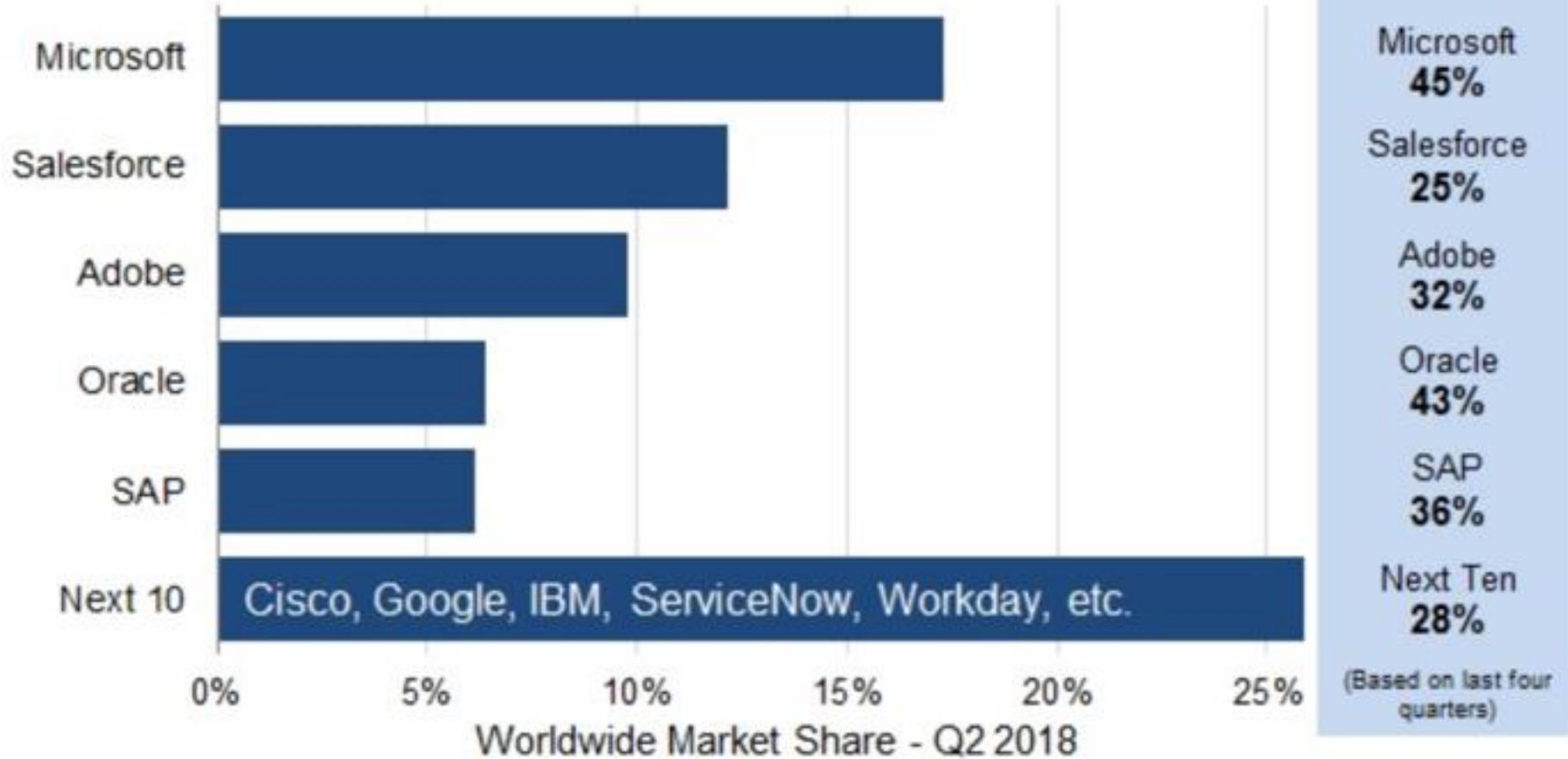
%age of Workload in the Cloud in 2020



© AllCloud



Enterprise SaaS Vendor Market Share & Revenue Growth



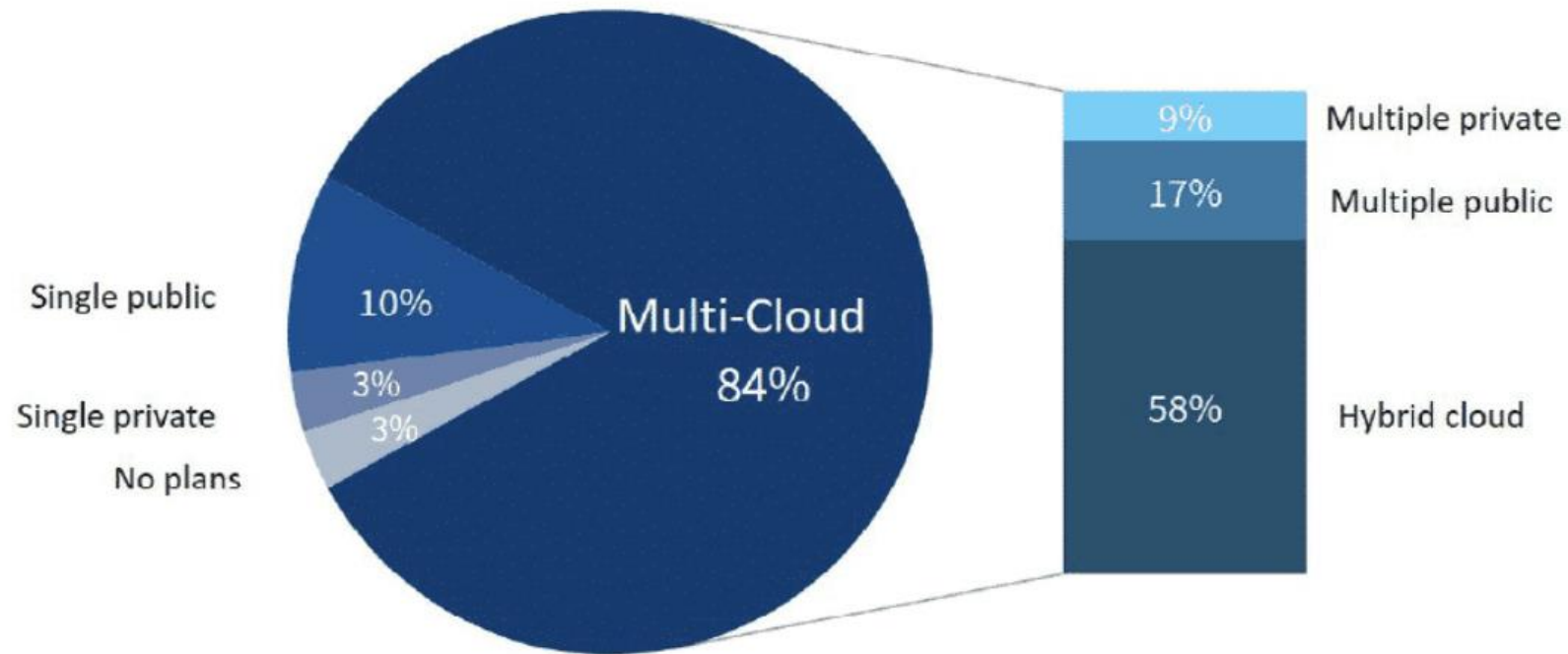
Source: Synergy Research Group



Multi-Cloud is the New Normal

Enterprise Cloud Strategy

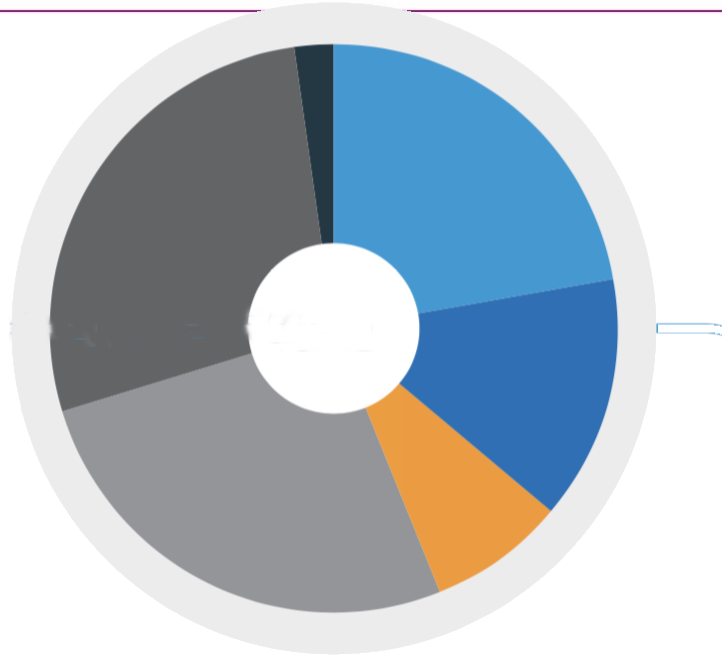
1000+ Employees



Source: RightScale 2019 State of the Cloud Report from Flexera



Primary Goal in Going to the Cloud?



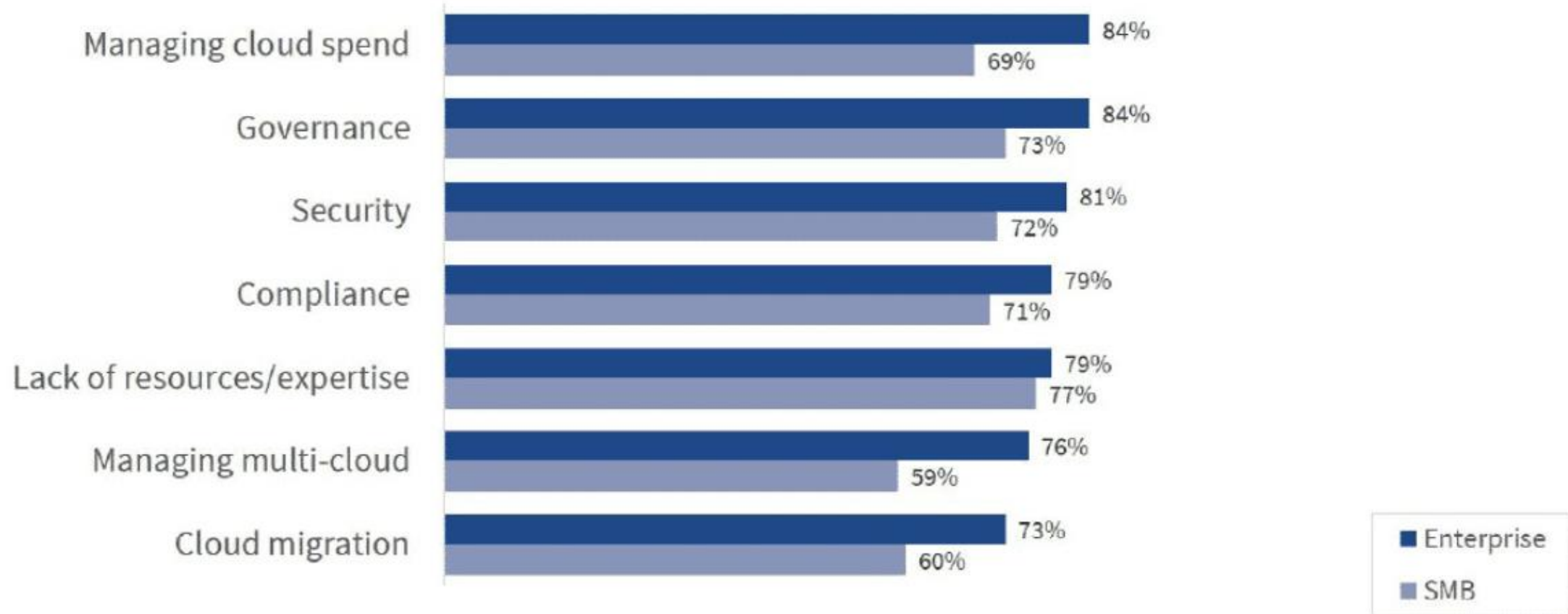
27.6% ■ Security
26.3% ■ Reliability
22.4% ■ Flexibility

13.8% ■ Cost
7.9% ■ Integrations
2.0% ■ Internal knowhow, available resources

© AllCloud

Cloud Challenges by Company Size

% of Respondents

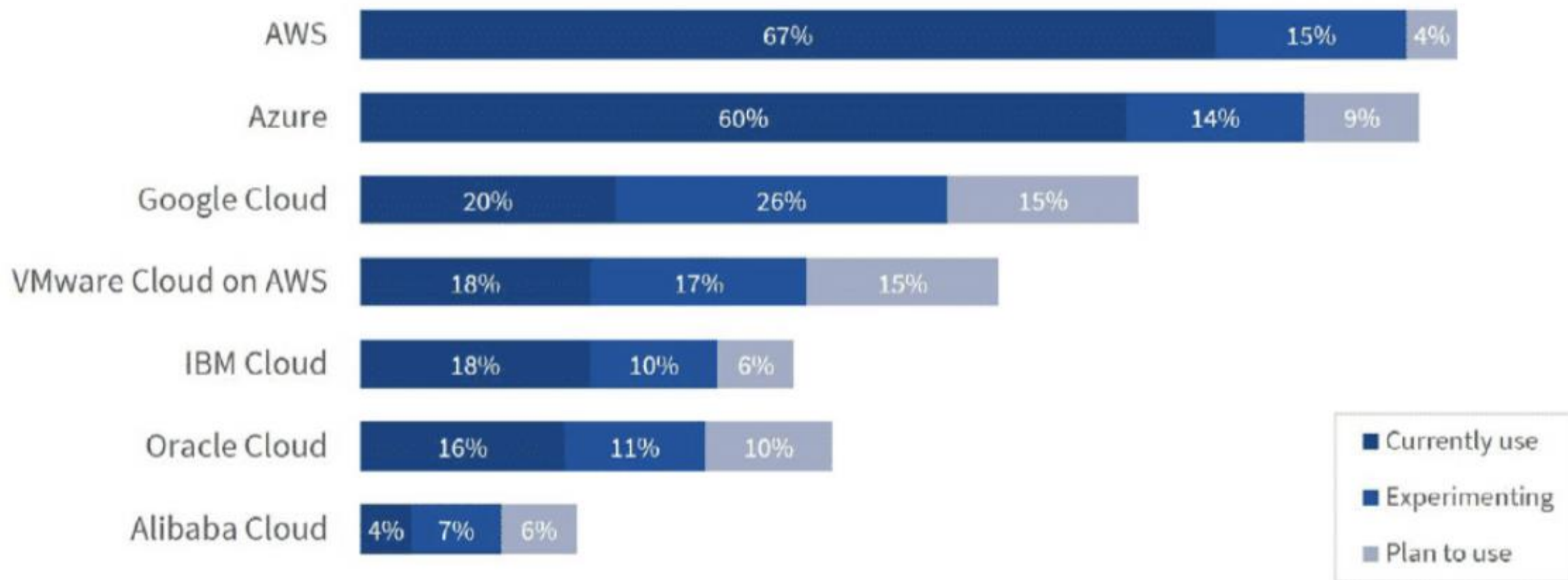


Source: RightScale 2019 State of the Cloud Report from Flexera



Public Cloud Adoption - Enterprise

% of Respondents



Source: RightScale 2019 State of the Cloud Report from Flexera

Stampede to the Cloud?

Elastic Resources

Capital/Cost Savings

Deployment & Maintenance

Focus on Operations not IT

Infrastructure

More Modern

Functional Match

Business Case

Strong SoD & Access Control

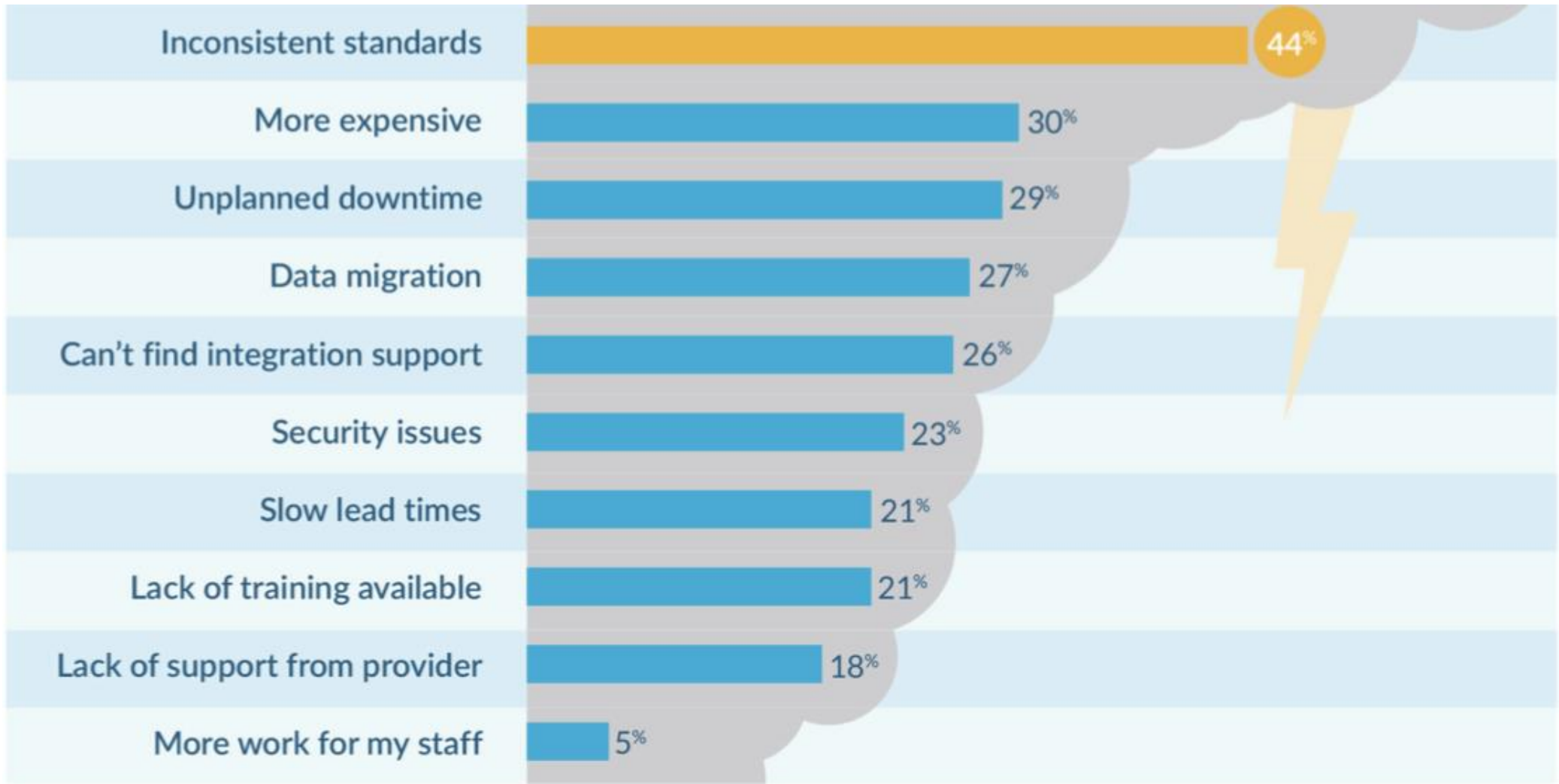
IT General Controls

Risk Controls

SLA, Support, Managed Services



Challenges of the Cloud



© Syntax/ASUG



Successes & Failures

2019

2018

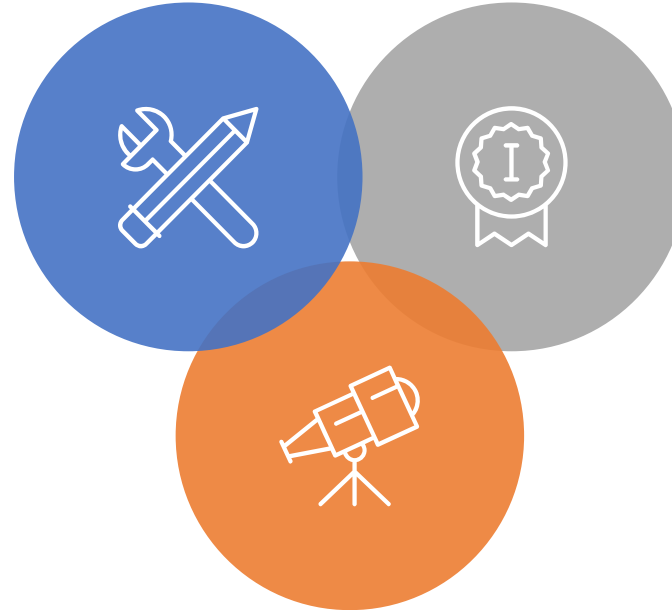
	SATISFIED	DISSATISFIED	SATISFIED	DISSATISFIED
Reduced workload for IT staff	82%	73%	82%	65%
Cost savings	64%	46%	76%	48%
Easier data management	35%	24%	39%	28%
Great data security	 33%	19%	 33%	13%
Better integration with other systems	28%	17%	22%	17%
Ability to hibernate systems	24%	14%	20%	11%

CLOUD STRATEGIES

A Progressive Path

LIFT & SHIFT

Hosting
Lose the Infrastructure
Management
Cost Modelling
Skills
Business Benefits
Data Security



CLOUD ERP

Oracle & Lock In
Watch for Functional Match
ROI & Efficiency
Turn up the Volume
Who Owns the System
Business Benefits
Digital Initiatives

EDGE APPLICATIONS

HR, Expenses, CRM
Procurement, Supply
Chain
Self Service
Experience

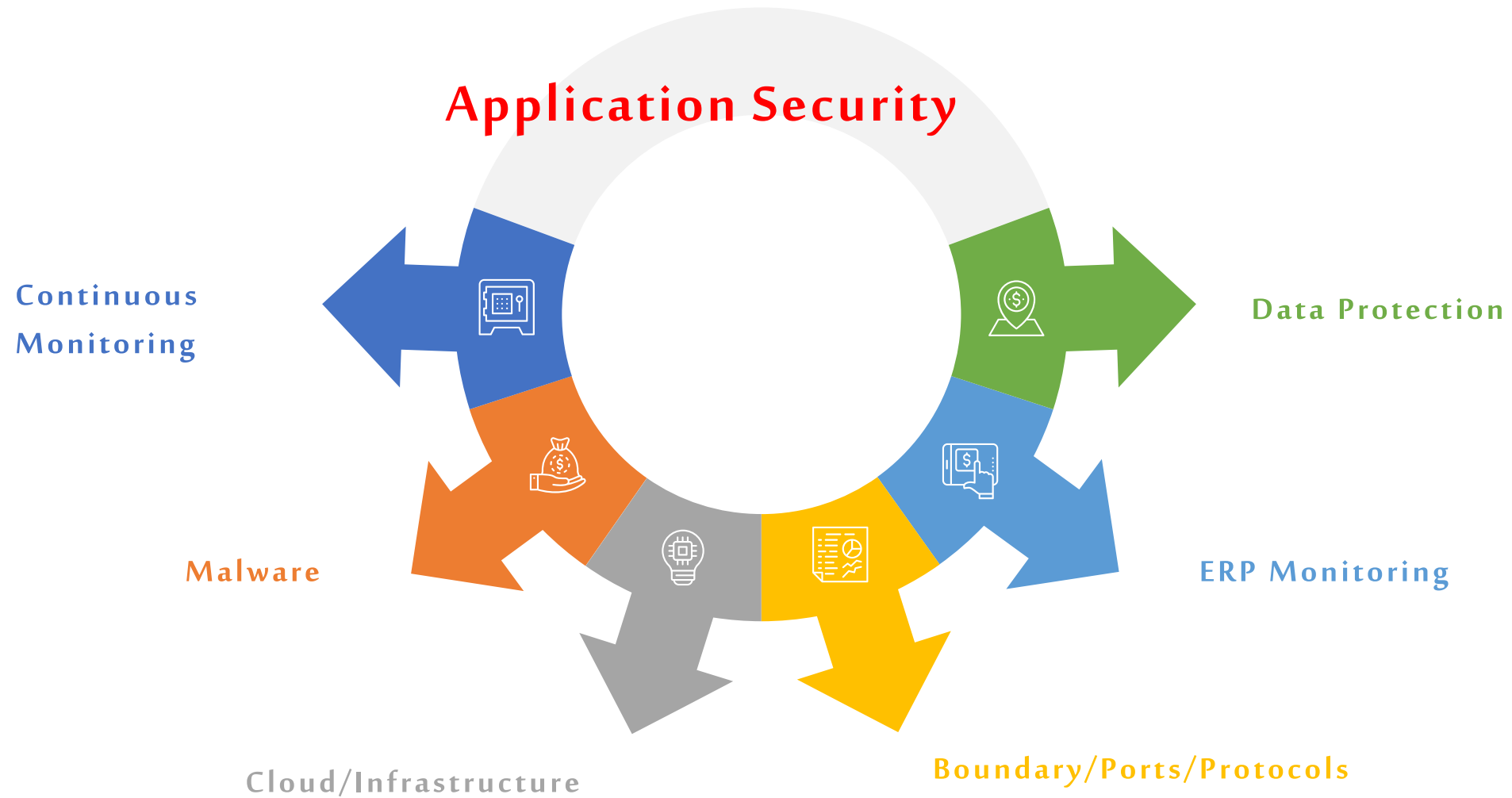


Managed Services – Manage Risk & Cost

- Specialized Staff
- Automated Processes
- Control & Discipline
- Backup, Replication, DR, etc
- Visibility & Management Dashboard
- SLA



Securing Your ERP



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- Auditing ERP
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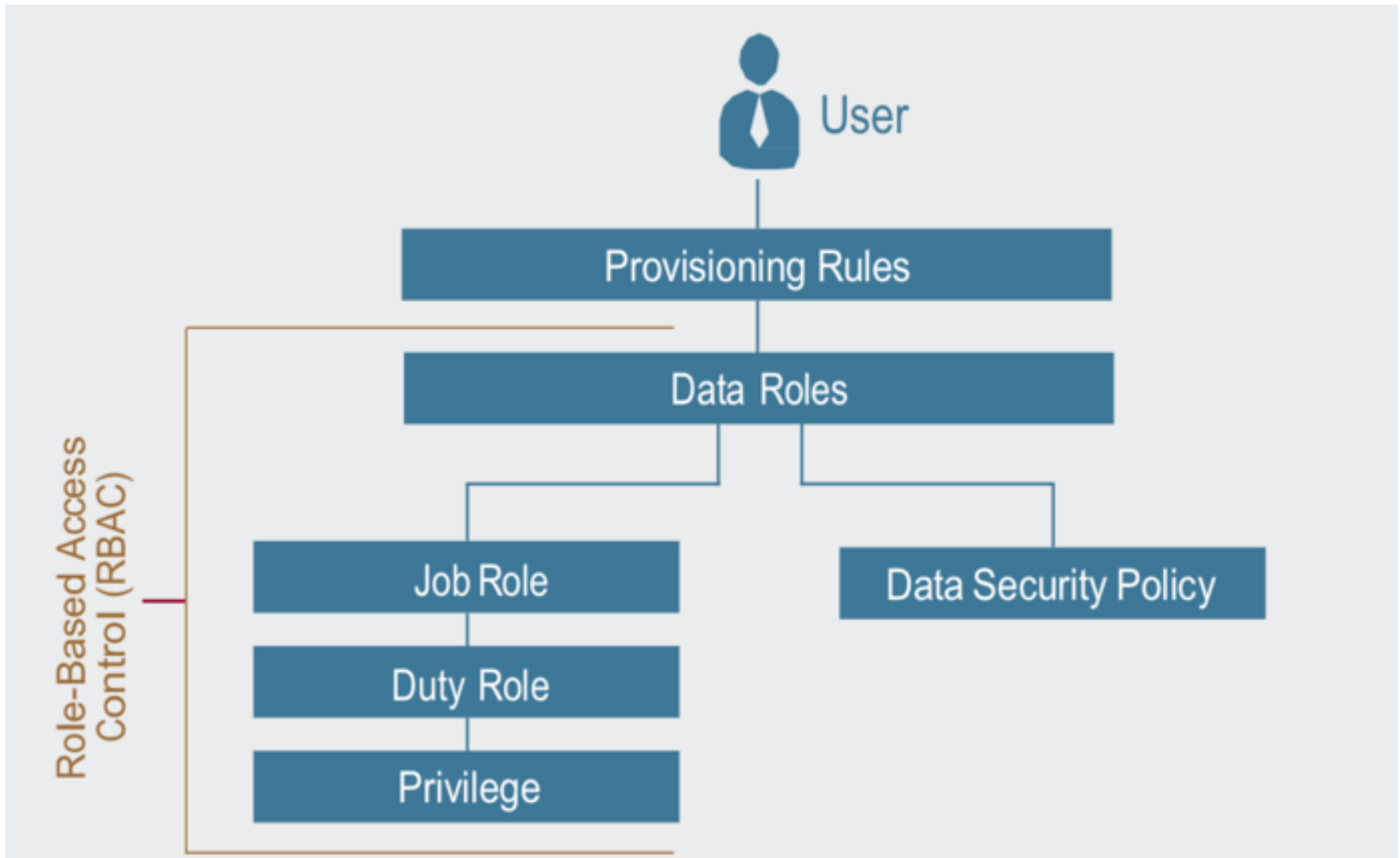


Application Security

- User Authorization
- Access
- Segregation of Duties
- Role Design
- Auditing & Reporting
- Compliance

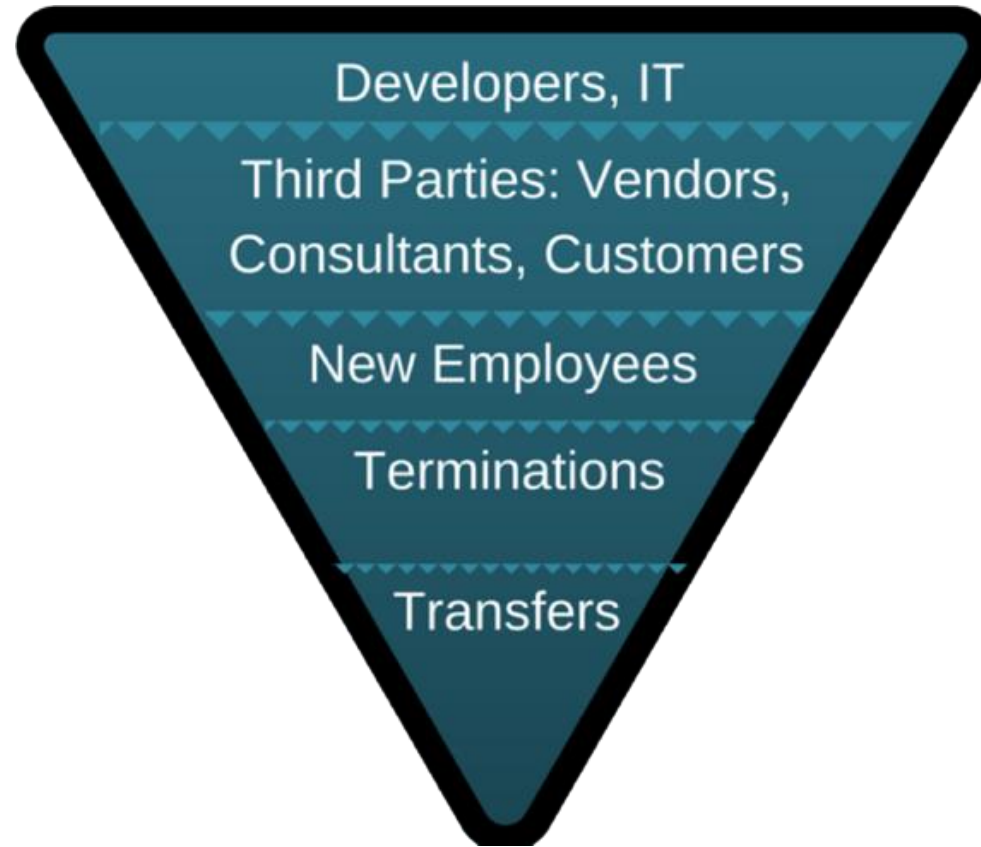


Oracle ERP
Cloud
Security





Review Risk – Who Needs Access?

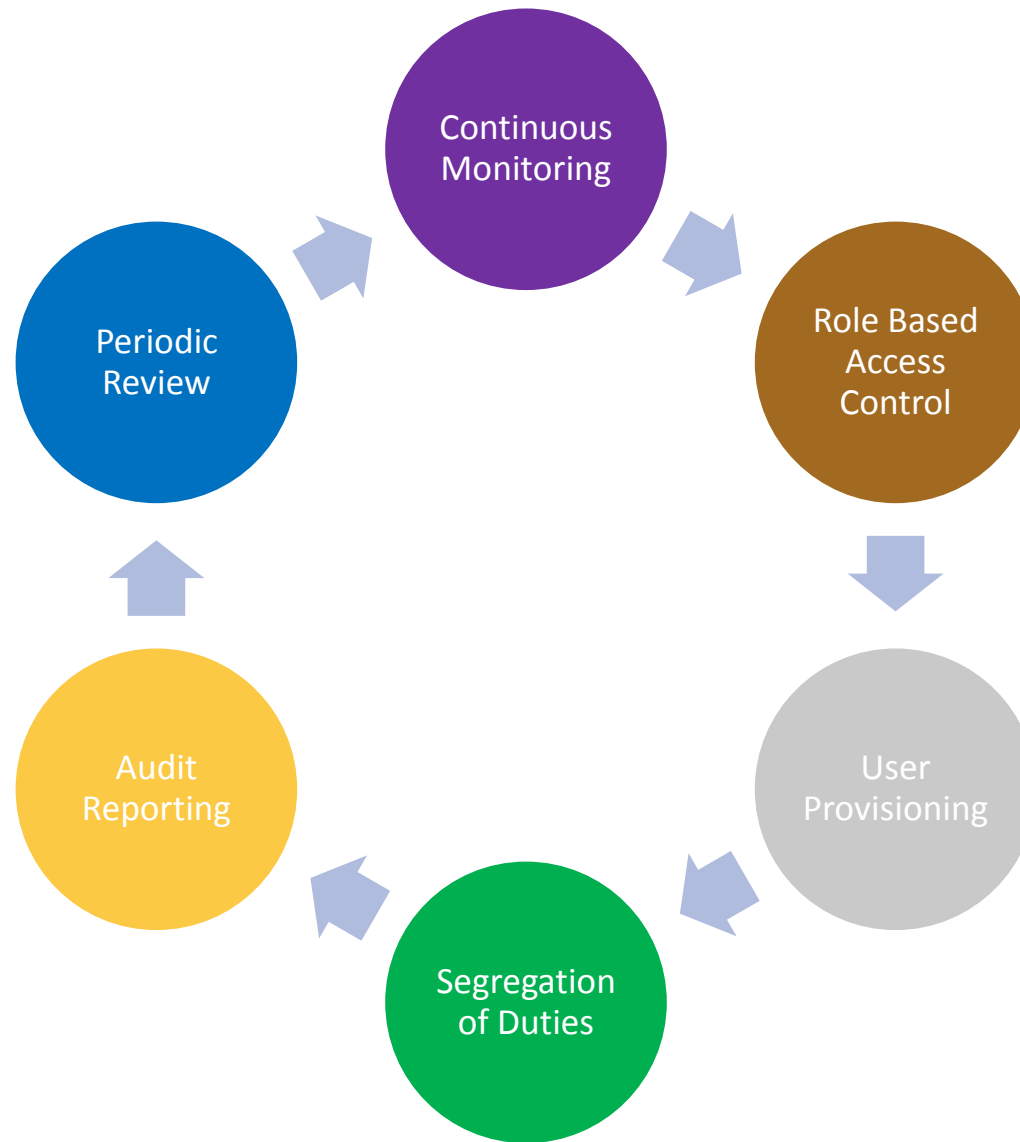


Least Privilege





The ERP Security Life Cycle





Check Access, Prevent Security Creep – Pro-Active Controls

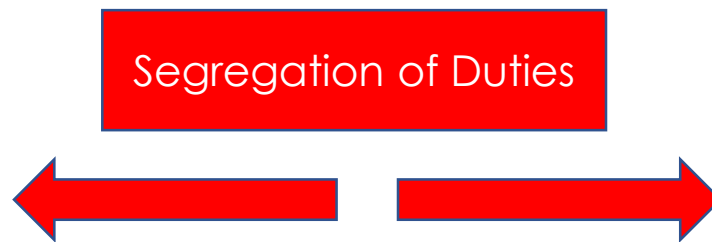
Segregation of Duties Rules



Are used as a measure of Internal Control to minimize the chances of error or fraud in the workplace. Dividing duties is an ideal way to lessen the chance of human error or fraud.



Maintains cash balances



Maintains custody of cash on hand



Your Risk Model

Ranking	Description	Risk / Impact	Action	Responsibility
Critical	Approve Pay Rates & Employee Master Data Maintenance	An individual with this access could approve salary/wage rate increases and update HR master data without any independent review.	Remediate	Payroll Manager
High	Approve Invoices (Vendor Payments) & Approve Purchase Orders	An individual could approve a fictitious or inappropriate purchase order and enter an invoice against that order. This covers two of the three-way match controls, thereby weakening the three-way match control.	Mitigate	Controller
High	Cash Disbursement & Create / Maintain Bank Accounts	An individual could create a fictitious bank account which appears to be part of the company and re-direct funds to this bank account by authorizing cash disbursements records.	Remediate or Mitigate	Controller

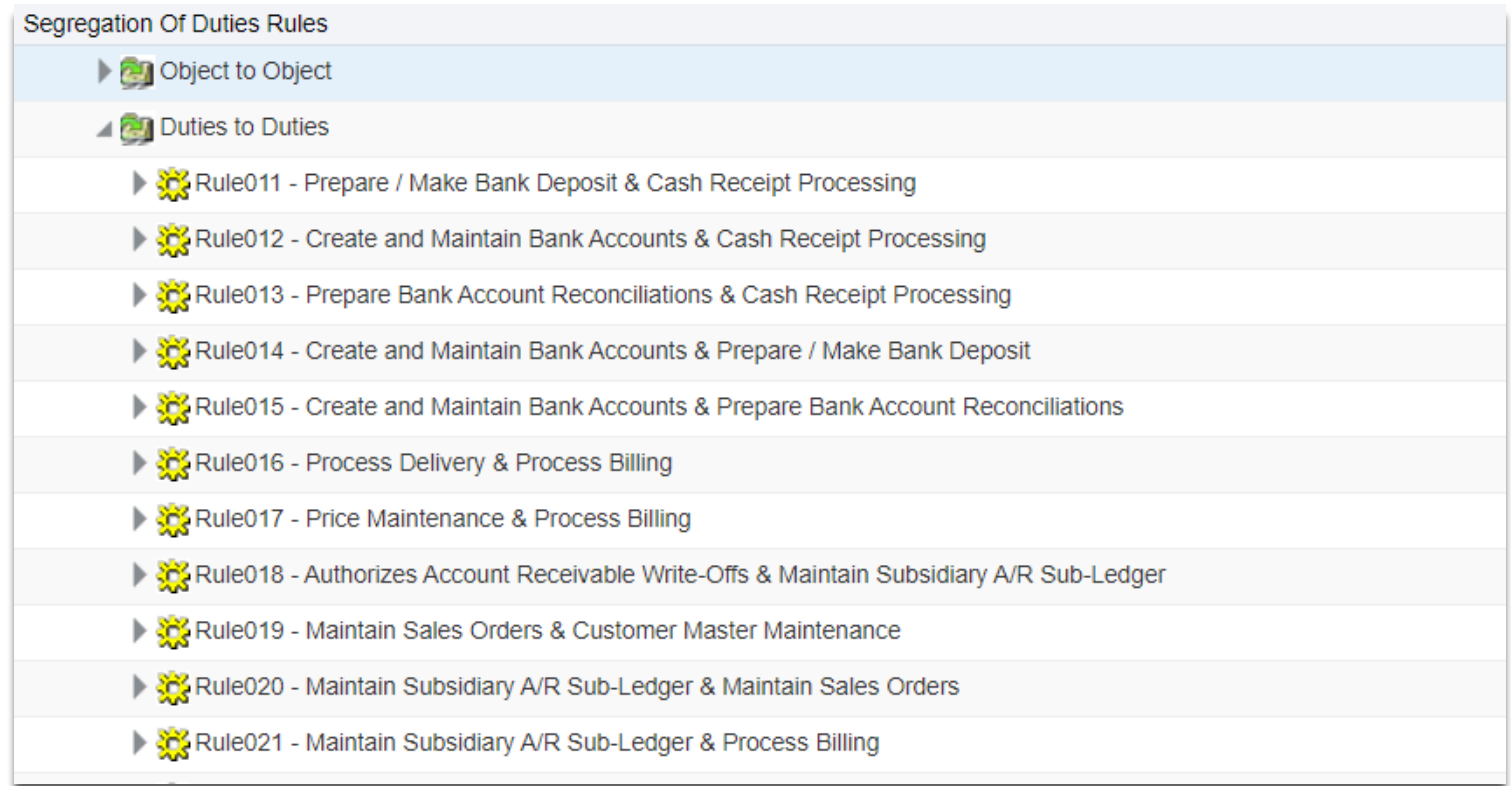


Getting Started – Sample Rules



Sources

- External Audit
- QSoftware





Top 5 Audit Reports

Q Cloud Audit for [EBS DEMO]	
General Metrics Summary	
Sep 10 2018	
General Metrics Description	Value
Total Number of Active Users	3151
Total Number of Inactive Users	255
Average number of Responsibilities per user	6.41205
Responsibilities with Conflicts	1165
Average Number of Users Per Responsibility	5.48537
Percent of Users without Conflicts	66.3599
Percent of Users with Conflicts	33.6401
Total Conflicts	7327
Average Conflicts Per Responsibility	97.0197
Responsibilities Assigned to users	3860
Users Not Assigned a Responsibility	103
Policies with conflict	16
Inactive Responsibility Count	770
Users Assigned a Responsibility	3303
Total Number of Users with Conflicts	1060
Average Conflicts per User	6.91226
Total Number of Active Policies	16
Average Number of Applications Per Responsibility	5.49677
Active Responsibility Count	4357
Total Responsibility Assignments	21179
Policies without conflict	0





Top 5 Audit Reports

- General Metrics
- Rule Details
- Violation Summary
- Violation Details
- Mitigations

Q Cloud Audit for [EBS DEMO]	
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Planning – 7 Essentials

- 1. Role/Responsibility Design**
Take care with Seeded Content
- 2. Base on Processes**
Reduce Security Management
- 3. Segregation of Duties**
Reduce likelihood of Fraud
- 4. Continuous Monitoring**
Second line of Defense
- 5. Processes - Provisioning & Role Maintenance**
IT General Controls
- 6. Periodic Review**
Involve the Business
- 7. Audit**
Have to know your starting point

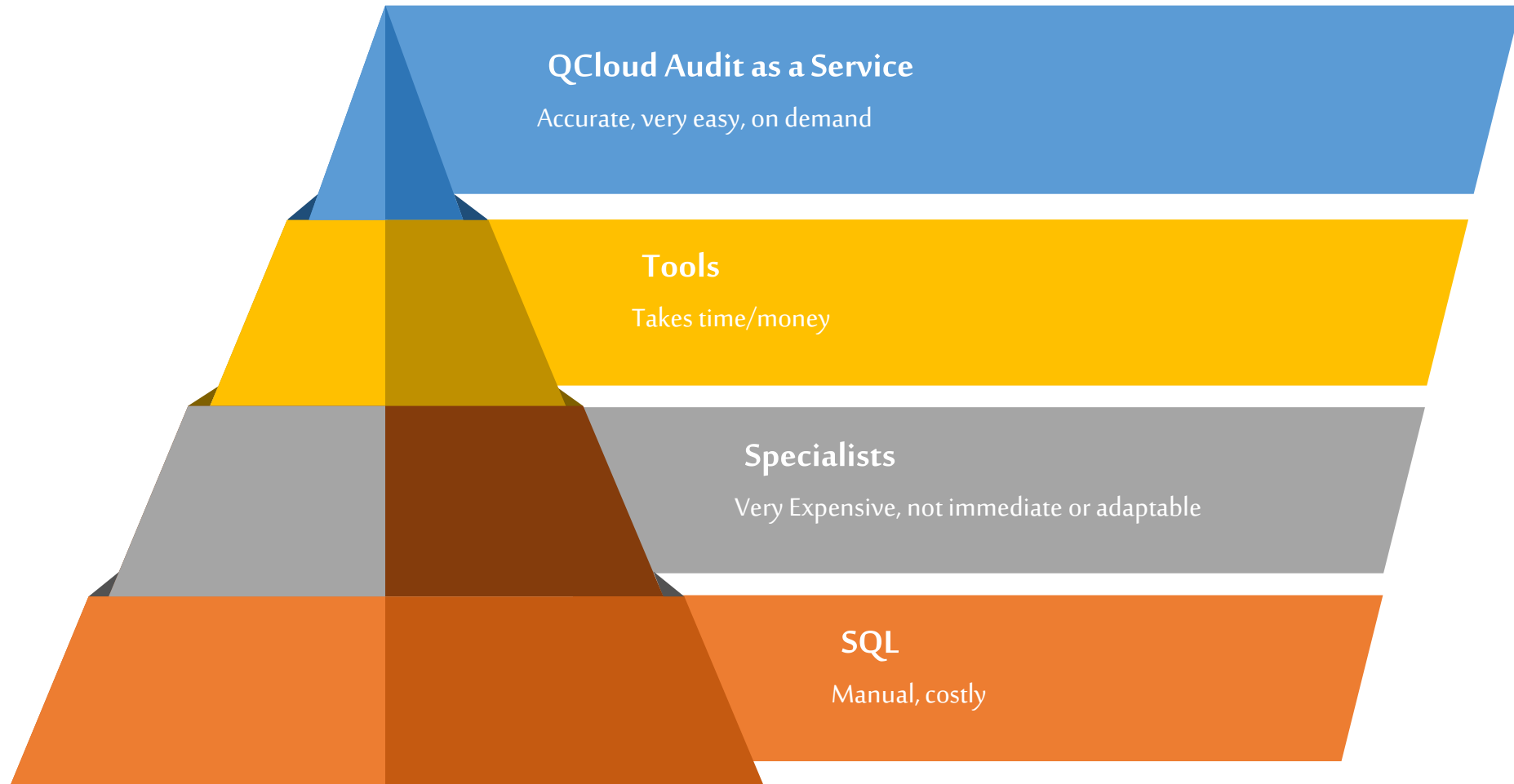


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Audit your ERP Security

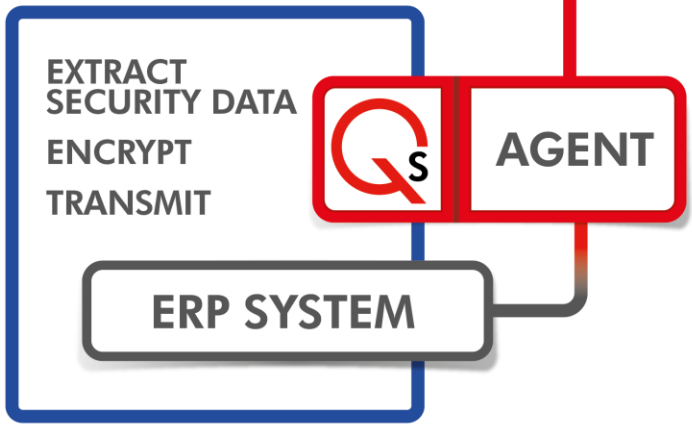
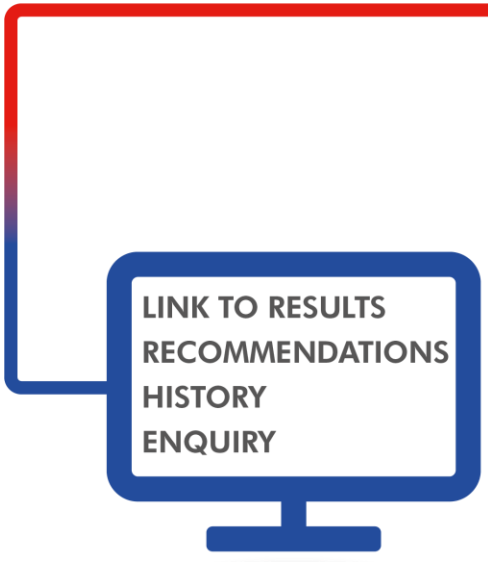
Plan Remediation, Understand Risk





HELPER

- RECEIVE DATA
- DECRYPT
- RUN ANALYSIS
- PRODUCE RESULTS



QCloud Demo....



The Future of Security Audit has Arrived





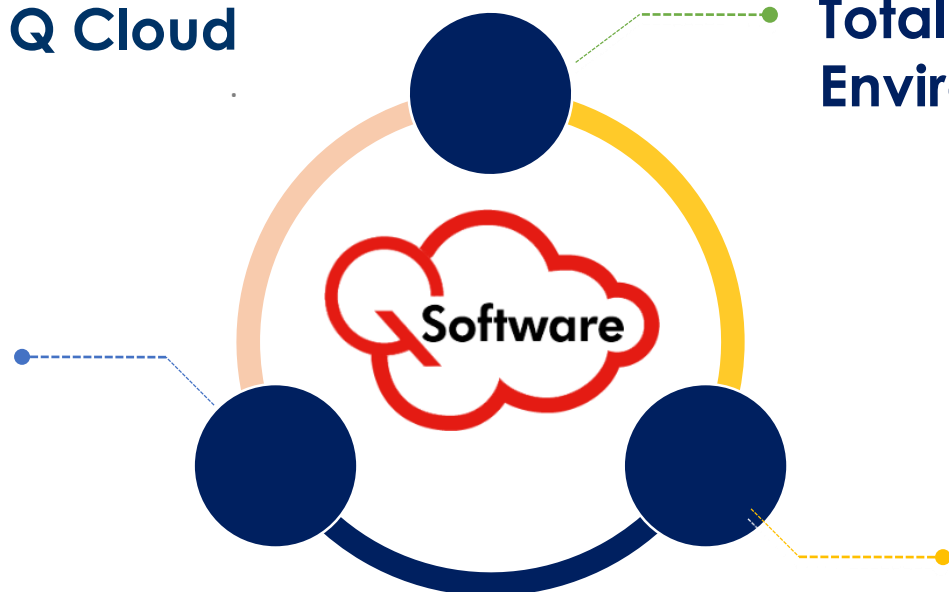
Security of Customer Data

ISO/IEC 18033-3:2010 Part 3 Encryption (Oracle Standard)

**No Business Data
Uploaded to the Q Cloud**

**Hosted at AWS/OCI
Totally secure
Environment**

**Encrypted in Flight
From customer site
to QCloud**



**Encrypted at Rest
in the QCloud**



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- **Summary**



A Worldwide Business



-  Sales Office
-  Product Development
-  Regional Support Desk

Q Software By the Numbers

Over

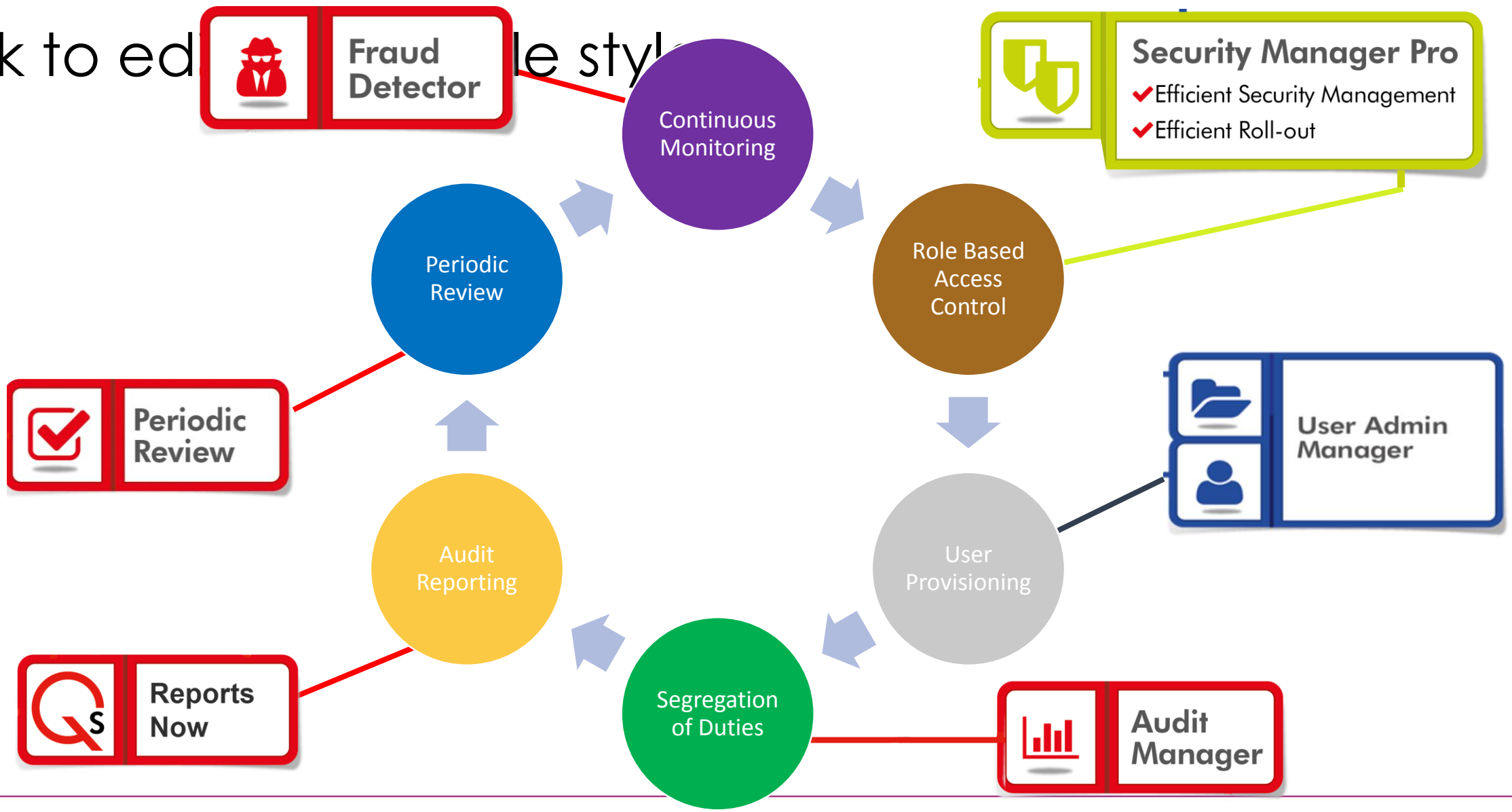
- 🕒 **20+ Years in Audit & Security Management**
- 🌍 **320 Customers Worldwide**
- 📊 **95% Customer Retention Rate**
- 📋 **350+ Audits (100 on QC)**
- 👥 **100+ Man years development**



Energy	 <p>Canadian Natural Delivering the Future</p>				 <p>Reliable Connections</p>			
Manufacturing/ Distribution	 <p>Making business flow</p>			 <p>packaging excellence</p>				
Construction/ Engineering								
Retail								
Pharmaceuticals								
Food								
Finance/ Government								
Leisure/ Entertainment								

Click to edit

the style





10 Best Practice Tips for ERP Security in the Cloud

1. Evaluate the Risks (experience is key)
2. Encryption & Authentication
3. Know your Business Processes
4. Audit Live Security
5. Plan your Roles - Authorization
6. A Risk Matrix (yours not someone else's)
7. Build IT General Controls
8. Use the Tools & the Experience
9. Periodic Review – Involve the Business
10. Least Privilege



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- ▶ Interact directly with Oracle product leaders and industry innovators.
- ▶ Get hands-on, practical, deep dive product education.
- ▶ Gain useful insights to further your company's technology roadmap and strategy.



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JD Edwards
Community



Quest
PeopleSoft
Community



Quest
Oracle Cloud
Community



Quest
IOUG Database
& Technology
Community





Q&A

Mike Ward:
mikew@qsoftware.com

Session ID:

102180

*Remember to provide your
session feedback in the app!*



Quest Forum Digital Event

Quest Forum Digital Event Continues!

Cloud Week

Wednesday, May 27 - Friday, May 29

PeopleSoft Week

Monday, June 1 - Thursday, June 4

Professional Development & Emerging Technology Day

Friday, June 5

JD Edwards Week

Monday, June 8 - Thursday, June 11

Training & Workshops Day

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Database & Technology Week

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REGISTER TODAY!