Safeguarding Our Data –

DevOps Friend or Foe
“a ‘change’ is any activity that is physical, logical, or virtual to applications, databases, operating systems, networks, or hardware that could impact services being delivered.”

Gene Kim, The Phoenix Project: A Novel About IT, DevOps, and Helping Your Business Win
Disrupt or Disrupted: Businesses Must Master Applications

ENTERPRISE APPLICATIONS

BUY

BUILD

MOVE

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Modern Pressures

- Governance
- Competition
- Incomplete Requirements
- Security
- Cost Controls
- Project Backlog
- Audit / Compliance
- Environment Limitations
Traditional Software Development

- Each Step is separate
- Each Step is siloed

- Project Management
- Security
- Application Development
- Testing
- Release Management
- Operations
Along Came DevOps

- Born from agile development.
- Rapid Software Development
- Collaboration
- Automation

- Improved deployment frequency for Businesses.
DevOps Market

DevOps Dangers

- Automating the wrong processes,
- Poor metrics
- Measuring risks & threats that are easy
- Changes on business units to be Agile
DevOps – People / Process
A great team doesn’t mean that they had the smartest people. What made those teams great is that everyone trusted one another. It can be a powerful thing when that magic dynamic exists.”

Gene Kim, The Phoenix Project: A Novel About IT, DevOps, and Helping Your Business Win
Business Lives on Applications

For an enterprise to win markets, enterprise apps must win on:

<table>
<thead>
<tr>
<th>QUALITY</th>
<th>SPEED</th>
<th>COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Mobile, web, e-commerce</td>
<td>• App time to market is business time to market</td>
<td>• Hit continuous target with constrained budget</td>
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<tr>
<td>• Direct customer contact with apps</td>
<td>• New regions, new LOBs wait on software</td>
<td>• Meet growing needs of existing stack while accelerating delivery</td>
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<tr>
<td>• Code quality as business differentiator</td>
<td>• New standard: continuous development</td>
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DevOps techniques and tools are the answer
A Mindset

- Philosophy, a cultural shift
- Trust, honesty and responsibility.
- See the perspective of the other
- Continual improvement
MicroServices vs. The Big Bang

- **Decompose application architecture**
- **Avoid the “big bang” release approach**
- **Small updates can be rolled out more frequently.**
- **Continuous Delivery**
The DevOps Stack

**AUTOMATION**
- Self service environment creation
- Continuous integration, release delivery

**VIRTUALIZATION**
- Virtualized runtime environment
- Instantiate base system image

**CONFIGURATION MANAGEMENT**
- Install and configure software
- Configuration as code

**MONITORING**
- Find and correct problems
- Analyze and tune performance
Automation is critical

- **Delivery at weekly and daily intervals.**

- **Inconceivable with manual processes.**

- **DevOps Tools Market Predicted to Grow 21% by Gartner.**
DevOps Automation

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DevOps – Data Delivery / Data Management
“When the auditors found out that we couldn’t secure access to all the data, we spent weeks cobbling together something that satisfied them. “It’s like the free puppy,” I continue. “It’s not the upfront capital that kills you, it’s the operations and maintenance on the back end.”

Gene Kim, The Phoenix Project: A Novel About IT, DevOps, and Helping Your Business Win
Data Governance

- Creating or utilizing structures and routines to ensure policy compliance.
- Taking into account the organizational, technological and cultural changes that will need to take place.
Find and Categorize Sensitive Data

- Determines how valuable data assets are handled.
- Focus resources securing the most sensitive data.
- Determines who should have access.
- Defines when breach notification should occur.
Protiviti’s IT Security and Privacy Survey mentions that organizations:

- **Lack confidence** in their ability to prevent a breach.
- **Lack a data classification** scheme.
- Have limited or no knowledge of **what constitutes sensitive data**.
Application Projects Require Data Movement, Management

BUY
IMPLEMENT, CUSTOMIZE, UPGRADE

BUILD
DEVELOP & TEST

MOVE
MIGRATE & MODERNIZE
# Automation of Data Delivery

## Data Delivery

### Automation
- Self service environment creation
- Continuous integration, release delivery

### Virtualization
- Virtualized runtime environment
- Instantiate base system image

### Configuration Management
- Install and configure software
- Configuration as code

### Monitoring
- Find and correct problems
- Analyze and tune performance

### Data Delivery

- How do you supply production data?
- How do you share the data?
- How do you stand up data in new environments?
Data Delivery

- Core applications sit atop large data sets
- App staff require full, fresh, independent copies of data sets for maximal speed and effectiveness
- Each new copy compounds ops time and infrastructure cost to deploy
- Each new copy must be secure.
Ernst & Young’s Global Information Security Survey.

- The **perimeter** is no longer stable, and a **fence** no longer possible.
- Need to **secure data** assets
- **AND Businesses still need to move fast.**
## Automation of Data Management / Data Delivery

### Automation
- Self service environment creation
- Continuous integration, release delivery

### Virtualization
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### Configuration Management
- Install and configure software
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- Find and correct problems
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### Data Delivery
- How do you supply production data?
- How do you share the data?
- How do you stand up data in new environments?
DevOps – Security Automation
“The only thing more dangerous than a developer is a developer conspiring with Security.”

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DevOps Security Complications

- **Blurs the lines**
- **Segregation of duties**
- **No time to ensure the security is hardened.**
Automation of Security

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CONFIGURATION MANAGEMENT
- Install and configure software
- Configuration as code

MONITORING
- Find and correct problems
- Analyze and tune performance

DATA MANAGEMENT
- How do you supply production data?
- How do you share the data?
- How do you stand up data in new environments?

SECURITY MANAGEMENT
- How do we manage policies?
- How do we deploy and manage controls without human intervention?
Automation – Security Orchestration
Built-in Automation – Security Orchestration

- **Flexible Policy Definition**
- **Layered Approach**
- **Automated Deployment Pipeline**
- **Orchestration Tools**
Security Automation is Critical

➢ Security at Every Stage
➢ Centrally Manage
➢ Intelligent Agents
➢ Acceptance Tests
Automation of Security

- **Automation**
  - Self service environment creation
  - Continuous integration, release delivery

- **Virtualization**
  - Virtualized runtime environment
  - Instantiate base system image

- **Configuration Management**
  - Install and configure software
  - Configuration as code

- **Monitoring**
  - Find and correct problems
  - Analyze and tune performance

**Security Management**

- How do we deploy and manage controls without human intervention?
- How do we manage policies?
Review

- Keep Up or Risk Falling Behind

- *Have the Right People and the Right Processes*

- Automate, Measure, Re-Automate

- *Data is Critical to DevOps*

- Automate Security at each step

- *The Process of DevOps is a Project*
“IT is not just a department. IT is a competency that we need to gain as an entire company.”

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Delphix at a Glance

• Enterprise software (on premise and cloud): radically improves data delivery & security of data

• **Virtualizes data inside** databases, data warehouses, applications and files
  
  • Continuously collects data from apps, versions all changes, and shares data blocks
  
  • Virtual data: 1/10th space of physical copies, 1/100th delivery time (minutes vs. months)
  
  • **Accelerates business critical application projects by 50% on average**
  
  • **Secures non-production environments where 80% of sensitive data resides**

• **Founded in 2008, HQ in Menlo Park, California, with offices around the world**
  
  • Acquired DMsuite Data Masking in 2015

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### Investors

- Greylock Partners
- Lightspeed Venture Partners
- IQT Investments
- Battery Ventures
- Fidelity Investments
- Jafco Ventures
- Summit Partners

### Select Customers

- Walmart
- IBM
- Cisco
- Apple
- Bank of America
- eBay
- New York Life

### Select Awards

- Forbes 2014 Americas Most Promising Companies
- CRN The 10 Coolest Virtualization Startups 2014
- San Francisco Business Times CEO of the Year 2013
- Gartner 2013 Cool Vendor
- Trend Setting Products 2014
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