Automated Security Management of the 3rd Platform and Next Generation Data Centers using SPECS

Automated Cloud SecSLA Management

William M. Fitzgerald & Said Tabet

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Talk Outline

• The 3rd Platform (a new era).
• Importance of ngDC within the 3rd Platform.
• ngDC & role of SPECS SecSLA Management.
The 3\textsuperscript{rd} Platform Era...

- **BILLIONS** of users
- **HUNDREDS OF MILLIONS** of users
- **MILLIONS** of users

3\textsuperscript{rd} Platform:
- Mobile
- Cloud
- Big Data
- Social

Mobile Devices

2\textsuperscript{nd} Platform:
- LAN/Internet
- Client/Server
- PC

1\textsuperscript{st} Platform:
- Mainframe, Mini Computer
- Terminals

Source: Executive presentations, IDC

4/3/2014
FP7 SPECS SecureCloud 2014 Satellite Workshop
Growth in Next Gen Apps driving 3rd Platform

Traditional Applications

<table>
<thead>
<tr>
<th>Year</th>
<th>Count</th>
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<tbody>
<tr>
<td>2016</td>
<td>141M</td>
</tr>
<tr>
<td>2012</td>
<td>83M</td>
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Next Gen Cloud Applications

<table>
<thead>
<tr>
<th>Year</th>
<th>Count</th>
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<tbody>
<tr>
<td>2016</td>
<td>48M</td>
</tr>
<tr>
<td>2012</td>
<td>6M</td>
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</tbody>
</table>

70% increase from 2012 to 2016 for both categories.

Sources: Gartner, IDC, AWS Workload Estimates

- NATIVELY MOBILE
- SOCIAL AND COLLABORATIVE
- POWERED BY REAL-TIME ANALYTICS
- MULTIPLE SOURCES OF BIG DATA
Deployment of Next Gen Apps in New Stack Layers

Packaged Applications

Custom Applications

Virtualized

VMware ESX

IaaS

Modernized

Web Server

App Server

DB Server

PaaS

SaaS

Gmail

NETSUITE

workday

salesforce

service now

Virtualized

Modernized

Packaged Applications

Custom Applications
Challenge:
Orchestration of On-Demand & Dynamic Security Management

Sophisticated Attacks
APT, Traditional

Dynamic Infrastructure
Virtual, User-Centric, Mobile

Dynamic (Built-In) Defenses
Automated Policy, Analytics, Compliance & SecSLA
Traditional View Of The Data Center

- MESSAGING
- ERP/CRM
- DATABASE
- MISSION CRITICAL
- BIG DATA
- HPC

Storage
Compute
Network
Security
Management
Next Gen: Software-Defined Data Center

4/3/2014

FP7 SPECS SecureCloud 2014 Satellite Workshop
Problem Domain: SDDC SecSLA Management

Customer

• Non-standardized vocabulary
• No automated SLA negotiation
• No CSC self-monitoring of CSP SLA
• No automated CSU enforcement
• ....
Problem Domain: SDDC SecSLA Management

One Possible Solution: SPECS PaaS Framework

Customer

SPECS PaaS Framework

- Negotiate
- Monitor
- Enforcement

Brokerage

Enhanced Security
SPECS: Automated SLA Negotiation For SDDC

Example Interaction Model where SDDC hosts & manages SPECS

1. Request SecSLA Capabilities
2. Search, Evaluate, Rank
3. Final Agreed SecSLA capabilities
4. Negotiate & Sign SecSLA Offering
5. Federation
6. Replication
7. Migration
8. SDDC Bursting
Summary

• New security paradigms within the 3rd Platform

• SPECS – Automated SecSLA Management
  – Users: CSC, CSP, 3rd party brokers, admin, end-users ... 

• Exploitation:
  – Leverage SPECS PaaS Framework within SDDC

• Vision (SPECS):
  – Aid the adoption of the 3rd Platform
  – Aid Trust and Transparency on the Cloud