Data Center 3.0
Infrastructure Transformation

“Le Datacenter au centre de la strategy de l’entreprise”

Emmanuel SCHUPP
Middle East & Africa, Business Development Mgr
La continuité des affaires ...

Qu’auriez-vous fait si :

- Le siège social et le data center étaient détruits ?
- Le réseau qui supportait plus de 5000 desktops et serveurs était hors d’usage ?
- Tous les employés du siège social étaient déplacés ?
- Toutes les communications des PBX étaient coupées?
- 45 agences distantes n’avaient plus accès aux applications informatiques de la compagnie ?
Recovering Applications and Data
Synchronized data centers across a metro network ensured fast recovery of data and applications

Continuous Communications
IP telephony network enabled continuous voice communications
Voice traffic rerouted over IP to alternate PSTN gateways in Europe, enabled communications with customers

Ensuring Continuous Access
Data and communications secured over public networks using VPN technology provided continued access
Instant offices in hotel rooms, using wireless and VPN technologies allowed key personnel to get back to work
Les coûts versus les Services : Quel Equilibre?

Bay Bridge:
- Original cost in 1936: $1.1 billion (adjusted for today’s $)
- Estimated cost to expand: $6.2 billion… and climbing

Golden Gate Bridge:
- Original cost to in 1937: $446 million (adjusted for today’s $)

A Poorly Planned Architecture
A Well Planned Architecture
Deux types de réflexion pour les dirigeants

Those that view the value that information technology can bring to their business as strategic

OR

Those that see IT as a cost center
Le besoin Business : Flexibilité & Optimisation

- Economics: Globalization demands flexibility
  Business processes: The only constant is change
  -> New products & services
  -> New customer expectations
  -> New sales channels
  -> ….

- Information: Greater availability
- Compliance issues increase
  Sarbanes-Oxley, PATRIOT Act, Basel II, HIPAA
- Reusable assets can cut costs
Services Oriented Architecture is #1 on CIO’s List

64% of CIO respondents plan to implement service-oriented architectures in the coming year.

Talking about how Services from the Network contribute to their SOA plans makes IT leaders relevant to the CIO

And no need to be intimidated!!

“…. interest persists even though many Executives have been unclear about the precise meaning of the term ‘SOA’”
Etendre le rôle du réseau dans le business de l’entreprise

Où est CISCO dans ce model SOA ?
Data Centers under Increasing Pressure

New Business Pressures

Operational Limitations

- Collaboration
- SLA Metrics
- Empowered User
- Global Availability
- Reg. Compliance
- New Business Pressures
- Power & Cooling
- Asset Utilization
- Provisioning
- Threat Prevention
- Bus. Continuance
The Applications Landscape Is Evolving (Need Agility)

**Centralized**
- Client-to-Server
- Data only
- Delays are OK
- Server-Centric
- Static documents
- Static repository
- Wired devices

**Collaborative**
- Any-to-Any
- Multimedia
- Real-time
- Server-Less or Server-Assisted
- Shared information
- Dynamic sharing
- Wired and Wireless devices
Le réseau est présent dans toutes les couches

<table>
<thead>
<tr>
<th>Action</th>
<th>Value</th>
<th>OSI Stack</th>
<th>Response</th>
</tr>
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<tbody>
<tr>
<td>See the Car</td>
<td>Interaction</td>
<td>7. Application</td>
<td>ANS</td>
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<tr>
<td>Talk to Salesperson</td>
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<tr>
<td>Car Is in Stock</td>
<td>Relevance</td>
<td>6. Presentation</td>
<td>IPS</td>
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<tr>
<td>Nearest Dealer</td>
<td>Location</td>
<td>5. Session</td>
<td>VPN</td>
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<td>CSA</td>
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<td>John’s Account</td>
<td>Validation</td>
<td>4. Transport</td>
<td>NAC</td>
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<tr>
<td>&gt; $50K</td>
<td>Protection</td>
<td>3. Network</td>
<td>POE</td>
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<td>PC Is Protected</td>
<td>Configuration</td>
<td>2. Data Link</td>
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<tr>
<td>PC Is Admitted</td>
<td>Compatibility</td>
<td>1. Physical</td>
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<tr>
<td>Connectivity Exists</td>
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NAC CSA VPN IPS POE ANS
The Expanding Role of the Network

The Logical Place To Begin To Build An Extended Shared Services Infrastructure

Today’s Infrastructure

- Extensions for common, shared application and resource services and protocols
- Siloed applications not designed for integration
- Extend Cisco’s industry leadership in protocol design, integration, and optimization
- Multiple application platforms
- Extend the network’s legacy as a virtualization enabler (connected)

Shared Services Infrastructure

Network

- ERP
- CRM/SFA
- Financials
- Purchasing
- HR
- Compliance
- Contracts
- Orders
- Manufacturing
- B2B Gateway
Cisco Data Centre Network Architecture

End-users, Customers, Partners

Front-end (Access) Network

Applications (DB, CRM, ERP, etc.)

Back-end Network

Pooled resources (Storage & Computing)

Amélioration ➔ Risques de migration
➔ Temps de réponse
➔ Contrôle des coûts

Imbedded Network Services
Application, Security Resilient Access

Resources Consolidation
Network, Server, & Storage

Resources Virtualization
Network, Server, & Storage

Network Services Integration
Security, Storage, & Compute

Network Services Automation
Application offload, Provisioning Services orchestration
Data Center Virtualization via the Network
Introducing the Cisco Nexus Family

Transport Flexibility

Operational Continuity

Infrastructure Scalability

Cisco Nexus
The Cisco Data Center Revolution

Unified Fabric

Intelligent Fabric Applications
SAN Storage Consolidation & Virtualization

- Storage Networks allow sharing and Consolidation of Disc & Tape across multiple servers
- Utilization increased to ~50%
- Leads to SAN Proliferation and ‘Islands’ based on capacity
SAN Storage Consolidation & Virtualization
Solution: Intelligent Storage Services

- Storage Networks allow sharing and Consolidation of Disc & Tape across multiple servers
- Utilization increased to ~50%
- Leads to SAN Proliferation and ‘Islands’ based on capacity
- Virtual SANs (VSANs) allow the further consolidation and virtualization of SAN islands into a large common resource pool
- Utilization increases to ~70%
Addressing Critical Challenges
Cisco Application Networking Solutions

WAAS
MDS 9500 w/ Fabric Services
Enterprise Class Storage
Web Servers
Application Servers
Catalyst 6500
ACE
ACE XML Gateway

• Virtualized application services
• Application Switching and Server Offload
• Application Acceleration
• Application and Server Farm Security

Solution Benefits:
• Faster application deployment/scale
• Maximum availability & performance
• Comprehensive security
• Ready for SOA evolution
• Fully integrated into the network

• WAN Optimization
• Multi-DC application traffic mgmt
• Data Center Service Orchestration

• Network services for SOA & Web 2.0 applications
Data Center Assurance: Tested Models, Best Practices

# Data Center Assurance Program (DCAP)

## A Range of Selling Resources

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<tr>
<th>Solutions</th>
<th>Products &amp; Services</th>
<th>Ordering</th>
<th>Support</th>
<th>Training &amp; Events</th>
<th>Partner Central</th>
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<tr>
<td>HOME</td>
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<td>SOLUTIONS</td>
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<td>ENTERPRISE DATA CENTER</td>
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<td>APPLICATION NETWORKING SOLUTIONS</td>
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<td>Cisco Application Partner Solutions</td>
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### Application Networking Solutions

#### Cisco Application Partner Solutions

Through the expanded Data Center Assurance Program, Cisco is working with key application vendors to jointly validate their applications on the Cisco network infrastructure.

- **BEA Weblogic**
  - BEA Weblogic Server provides industry-leading, standards-based enterprise infrastructure software to accelerate the secure flow of information and services, reduce IT complexity, and deploy service-oriented architectures (SOA) to improve business agility and efficiency.
  - Learn More

- **IBM WebSphere Portal and iNotes**
  - IBM WebSphere Portal software provides a composite application framework, the advanced tools needed for flexible, SOA-based solutions, and industry-leading scalability.
  - Learn More

- **Isilon Systems**
  - Isilon Systems is a leader in clustered storage systems and software for digital content and unstructured data. Their award-winning family of X2 clustered storage systems combines with Isilon OneFS operating system software to deliver modular, pay-as-you-grow, enterprise-class storage solutions. Isilon’s clustered storage systems speed access to critical business information while dramatically reducing the cost and complexity of storing it.
  - Learn More

- **Microsoft Exchange Server and Office SharePoint Server**
  - Microsoft Exchange Server provides industry-leading e-mail, calendaring, and unified messaging solutions. Office SharePoint Server facilitates collaboration, provides content management, and supplies access to information that is essential to organizational goals and processes.
  - Learn More

- **Oracle E-Business Suite, Fusion Middleware, Siebel, and PeopleSoft**
  - Oracle E-Business Suite, Siebel Customer Relationship Management, and PeopleSoft Enterprise address complex business requirements and enhance the customer experience. Oracle Fusion Middleware spans from portals and process managers to application infrastructure, developer tools, and business intelligence.
  - Learn More

- **SAP Business Suite and SAP NetWeaver**
  - SAP Business Suite applications, based on SAP NetWeaver, combine composition technologies and application functionality to reduce IT complexity and increase business flexibility.
  - Learn More
...and Real Results for Your Customers

Siebel 8.0 over T1, 80ms latency, .1% packet loss

- Round-Trip Time (Seconds)
- Add Contacts: 2.0x Faster
- Add Opportunity: 2.0x Faster
- Display Contacts: 1.8x Faster
- Display Opportunity: 2.0x Faster
- Login/out: 3.2x Faster

Microsoft SharePoint -- server CPU savings

- Average % CPU Usage
- SSL on Server: 50% Decrease
- SSL on Cisco ACE: 71% Decrease

SAP Enterprise Portal

- Average response time (seconds)
- Login/logout: 41.8x faster
- Knowledge management: 32.5x faster
- Document management: 1.1x faster
- Customer record: 3.3x faster

PeopleSoft Enterprise over T1, 80ms latency, .1% packet loss

- Round-Trip Time (Seconds)
- Baseline: 8.1X Faster
- With Cisco WAAS: 8.7X Faster
- With Cisco ACE and WAAS: 7.3X Faster
In Summary

Important changes to customer and market requirements are taking place:
• Data Center consolidation and virtualization
• Web 2.0 and SOA
• Continued branch office growth

New customer requirements include:
• Simplifying deployment of Web2.0 and SOA
• Dynamic provisioning of DC infrastructure
• WAN Optimization maintaining security & visibility

To meet these requirements you need solutions, not point products

Cisco ANS solutions extend application awareness end-to-end. Any application, anytime, anywhere