Consolidation Conundrum

August 1, 2011
INTRODUCTION – Consolidation Conundrum

With OMB keenly focused on reducing the number of data centers in the Federal government, consolidation is on every agency’s menu.

Yet as the Federal government reduces the number of data centers to reduce cost, the complexity of the remaining data centers will increase.

As the complexity of data centers increases, the cost of managing those data centers also increases jeopardizing the savings from consolidation.

Juniper Networks surveyed Federal IT professionals in June 2011 to obtain their predictions for the change in capacity demand, and their readiness to address the associated management, security, and performance issues.
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EXECUTIVE SUMMARY

Not as Easy as it Looks: As agencies execute more data center consolidations, they increasingly recognize how complex consolidations can be:

- Just 10% believe Feds will meet OMB's mandate of consolidating 800 or more data centers by 2015
- Nearly a quarter (23%) believe the government will have more data centers in 2015 than now

Shrink and Grow at the Same Time: As they consolidate, agencies must also address the need for increased computing capacity:

- Feds estimate their computing needs will increase by 37% over the next 5 years
- Further, Feds estimate their data centers will need to be scaled up by 34% to meet their growing needs

Fewer Data Centers = More Complex Data Centers: Complex legacy systems and reluctance to change compounds the challenge of increasing data center capacity for the remaining data centers:

- Nearly half (48%) are running 20 or more management software applications
- 62% don't believe it's reasonable for their organization to utilize managed services from other organizations
FOCUSED BUT REALISTIC

Feds are working to meet the OMB mandate to consolidate 800 data centers by 2015, but few think they can get there.

And, nearly a quarter (23%) anticipate there will be more rather than fewer data centers in 2015.

10% of Federal IT professionals believe the Feds will reach or exceed the 2015 goal.
FEWER DATA CENTERS BUT MORE DATA

Agency data centers are approaching capacity. Yet by 2015, agencies will have nearly 40 percent fewer data centers to do nearly 40 percent more work.

**Today:**
- Feds estimate they use 61% of data center computing capacity

**Tomorrow:**
- Agencies are cutting approximately 38% of their data centers (800 data centers)*
- but, estimate:
  - Computing needs will increase by 37% in the next five years
  - Agencies will need to scale data center infrastructure by 34% to meet needs

*800 of 2,094 Federal data centers
CONSOLIDATION CHALLENGES

Adding capacity is infinitely more difficult than just flipping a switch. Training and security are significant barriers.

What are the most significant challenges you face when increasing the computing capacity of your data centers?*

**People**
- Training staff on the new technology (42%)
- Training managers to handle more or different people (18%)

**Processes**
- Securing funding for new investments (40%)
- Securing funding for more, or the right, personnel (38%)
- Ensuring an on-time/on-budget transition (27%)

**Technology**
- Complying with security policies (45%)
- Avoiding disruptions in application performance (42%)
- Minimizing latency (24%)

*Respondents asked to select all that apply
CONSOLIDATION CHALLENGES

Agencies must upgrade to meet growing needs

What steps must your organization take to ensure its data centers can meet its growing computing needs?*

- Improve network bandwidth: 46%
- Increase scalability: 44%
- Improve computing speed: 40%
- Implement new architecture: 38%
- Improve overall data security: 38%
- Reduce operating costs: 37%
- Improve data center redundancy: 36%
- Implement server virtualization: 32%
- Implement storage virtualization: 30%
- Centralize computational resources: 29%
- Improve data center backup and power capabilities: 29%

*Respondents asked to select all that apply
HIDDEN COMPLEXITY: VIRTUAL SIDE EFFECTS

Agencies are increasingly relying on virtualization. Virtualization results in latency. More virtualization = more latency

Percent of workloads predicted to be virtualized **in 2015**
- 64%

Percent of workloads virtualized **today**
- 38%

Of respondents who have virtualized infrastructure:
- 70% say increased latency for applications or security services/policies is a problem
- 69% say latency unpredictability for applications and/or security services/policies is a problem
HIDDEN COMPLEXITY: DATA CENTER DIVERSITY

Data center consolidation results in diverse server, network, and software populations. More consolidation = more diversity

Complex Operating Systems:

- **60%** running **20+** operating systems
- **16%** running **100+** operating systems

Complex Application Environments:

- **48%** have **20+** management software applications
- **6%** have **100+** management software applications
- **20%** don't know how many they have

76% believe that any increases in data center capabilities will be limited by the need for all hardware/software to be interoperable with existing architecture.
THE NET RESULTS

Application performance suffers. Poor performance = unhappy end users. Unhappy end-users weaken the will to consolidate

Which of the following benefits is your organization realizing from your virtualization implementation to date? Please select all that apply.

- Improved application performance (23%)
- Improved computing speed (26%)

Is it reasonable for your organization to decommission your current data centers and utilize managed services from another organization?

- Yes (22%)
- No (62%)
- Unsure (16%)

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SOLVING THE CONUNDRUM – RECOMMENDATIONS
IMPROVE SPEED AND SIMPLICITY

Looking forward, Feds say their agencies must improve network bandwidth and simplicity while maintaining security

What steps must your organization take to ensure its data centers can meet its growing computing needs?*

- Improve network bandwidth (46%)
- Improve computing speed (40%)
- Improve overall data security (38%)
- Implement new architecture (38%)
- Improve data center redundancy (36%)
- Implement storage virtualization (30%)
- Centralize computational resources (29%)
- Improve connections between application components in our data centers (28%)
- Implement network management and monitoring tools (27%)

*Respondents asked to select all that apply
GET BETTER WHILE GETTING BIGGER

What is your organization doing to overcome the challenges you face when increasing the computing capacity of your data centers?

**People**

"Implementing an enterprise-wide training program to train all users as we migrate from server-based applications to new cloud-based applications"

"Increasing training, consolidating programming languages used in application development, and consolidating data centers"

**Processes**

"Conducting a top down review of IT processes"

"Developing working groups to identify possible courses of action to obtain funding and technologies"

"Attempting to reinvest savings from initial consolidation into future consolidation"

**Technology**

"Standardizing and automating procedures, policies, and hardware/software"

"Becoming more centralized"
SUPPORTING THE FEDERAL DATA CENTER REVOLUTION

Consider both evolution and revolution

- Multiple remote sites can be consolidated through use of Data Center Interconnect and server virtualization
- Fabric technologies can create much simpler single data center architectures which scale

Pick which aspect to optimize most

- Management – using a single operating system
- Scale – using fabric technologies
- Performance – using a simplified network infrastructure

Identify and group applications into data centers by growth requirements

- Move the high-growth applications to fabric technologies for scale
- Manage the low-growth applications to virtualized infrastructure for cost
METHODOLOGY AND DEMOGRAPHICS

MeriTalk, on behalf of Juniper Networks, conducted an online survey of 200 Federal government IT decision makers in June 2011. The report has a margin of error of +/- 6.9% at a 95% confidence level.

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<th>Agency</th>
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<tbody>
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<td>DoD/Intel</td>
<td>38%</td>
</tr>
<tr>
<td>Civilian</td>
<td>62%</td>
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<th>Title</th>
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<tbody>
<tr>
<td>Chief or Deputy Chief Information Officer</td>
<td>5%</td>
</tr>
<tr>
<td>Chief or Deputy Chief Technology Officer</td>
<td>4%</td>
</tr>
<tr>
<td>Information Technology (IT) Director/Supervisor</td>
<td>20%</td>
</tr>
<tr>
<td>IT Manager</td>
<td>44%</td>
</tr>
<tr>
<td>Data Center manager</td>
<td>2%</td>
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<tr>
<td>Other IT management</td>
<td>25%</td>
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100% of respondents are familiar with their agency’s data center technologies and plans.
THANK YOU

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