Server Consolidation Services from IBM:
Optimizing your IT infrastructure for greater savings, flexibility and resiliency
## Agenda

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Executive summary

In today’s volatile business environment, forward-thinking organizations are striving to create innovative ways to stay competitive. They must be strongly positioned for growth with an IT infrastructure aligned with business goals and able to seamlessly introduce new functionality for smooth expansion into new marketplaces.

At the same time, with tighter budgets, organizations must increase efficiencies, reduce overall costs and complexities, and gain greater flexibility to meet the needs of an evolving business.

Server Consolidation Services from IBM can help you reduce IT infrastructure complexity to optimize performance, reduce operational management costs, and increase adaptability to facilitate business growth and change.

IBM’s tested methodology and tools coupled with deep expertise, experience and leadership in server consolidation projects enables you to reduce IT complexity and operating costs, while allowing you to embrace change and seize new opportunities for growth.
Industry situation
In today’s environment, it is essential to create alignment between IT and your business goals.

Organizations need to:

- Drive top-line revenue growth.
- Continue to deliver bottom-line profit growth.
- Run the business while changing the business.

These goals create specific IT needs.

- Partner with the chief executive officer (CEO) to drive innovation.
- Increase the flexibility of the business.
- Deliver new value from existing assets (information and people).
- Address governance, operational risk and compliance challenges.
- Reduce the cost and complexity of IT operations.
Many organizations face increasing IT complexity—often the result of unchecked server sprawl.

Sprawl can have many causes, including:

- Mergers and acquisitions
  - Integration of applications
  - Multiple locations
- New applications
- Multiple hardware platforms
- Multiple operating systems
- Demand or growth
  - New customers
  - New employees
  - Web traffic
And IT complexity negatively impacts the bottom line.

When you add servers as a stopgap measure to address a short-term demand, it creates an immediate and lasting increase in cost including:

**Hardware costs**
- More servers, more racks, more storage systems
- Distributed computing environments that mostly sit idle, with as little as eight percent of capacity utilized

**Software and application costs**
- More servers that require more licenses
- Management tools required to maintain performance

**Management costs**
- IT staff
- Ongoing training

**Site and facilities costs**
- Data center space, rack space
- Power, cooling, security, monitoring
As server total cost of ownership continues to grow, you need to reduce the number of servers without sacrificing computing power.

Many servers, much capacity, low utilization = US$140B in unutilized server assets*

Complex server environments also contribute to a lack of flexibility, hampering your ability to quickly respond to change.

**With complexity, you limit IT flexibility.**
- Increases difficulty of deploying new technologies and supporting advanced IT initiatives
- Requires disproportionate management resources to maintain appropriate levels of performance, security and availability

**With complexity, you limit business flexibility.**
- Saps budgetary and personnel resources
- Reduces capacity to rapidly respond to changing business conditions, due to unpredictable or poor application performance
Consolidation approaches
To help reduce costs and complexity, you need to start with consolidation.

**Consolidation means you need to:**
- Reduce the number of sites.
- Reduce the number of servers.
- Migrate to better performing, more expandable servers.
- Optimize the performance of remaining servers.
- Integrate new server investments with the broader infrastructure.
Consolidation is a foundation for other initiatives that can help your business become poised for rapid growth.

The ability to add new functionality and achieve further efficiencies from additional optimization solutions include:

- Virtualization
- Provisioning
- Service Oriented Architectures
- Streamline processes
- Energy efficient data centers
Consolidation can be achieved in several ways.

Server consolidation techniques include:

<table>
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<th>Centralization</th>
<th>Consolidating multiple servers within fewer sites</th>
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<td><strong>Physical consolidation</strong></td>
<td>Reducing the actual number of servers by replacing many servers with fewer, more powerful servers or clustered systems</td>
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<td><strong>Application integration</strong></td>
<td>Consolidating multiple applications into fewer servers and operating system instances, enabling business process integration and automation</td>
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<td><strong>Data integration</strong></td>
<td>Combining data from different sources across the same or disparate data types and architectures into a central resource</td>
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Server Consolidation Services from IBM provides a solid foundation for optimization.

- Delivers design, strategy, planning, implementation and testing services—For creating a consolidated environment from heterogeneous server infrastructures

- Provides access to consolidation methodologies and tools and a center of competency—To help you take advantage of the expertise of highly skilled IBM professionals

- Creates a foundation for more advanced optimization initiatives—including virtualization, Service Oriented Architecture (SOA), cloud computing and green data center initiatives
Savings
Server Consolidation Services from IBM enables you to take advantage of the benefits of a consolidated server environment.

**Cost savings:** Based on IBM’s experience, the following represents the typical savings that organizations may realize*:

- Hardware costs: Reduced 33 to 70 percent
- Maintenance costs: Reduced up to 50 percent
- Support costs: Reduced by as much as 33 percent
- Floor space and facility costs: Reduced up to 33 to 50 percent

**IBM can help you***:

- Realize return on investment in six months or less
- Reduce total cost of ownership by 30 percent to 70 percent
- Increase server utilization rates of up to 80 percent (compared with the typical 5 to 15 percent)
- Realize consolidation ratios ranging from 8 to 1 to 30 to 1
- Lower power and cooling costs because fewer servers are needed

* Source: Based on previous IBM sales engagements.
IBM enables you to take advantage of the benefits of a consolidated server environment. (continued)

Higher utilization rates and improved performance from existing investments
   Extended return on investment for existing servers

The ability to add new functionality and achieve further efficiencies from additional optimization investments
   Virtualization
   Provisioning
   Service Oriented Architectures
   Cloud computing
A consolidated server environment can optimize your IT infrastructure energy efficiency.

Before consolidation (based on IBM’s experience)
- Servers account for 50 to 75 percent of the data center’s total floor space
- Server sprawl is a challenge, resulting in high maintenance and support costs
- Server utilization is only 5 to 15 percent on average

After consolidation (based on IBM’s experience)
- Servers typically account for 20 to 50 percent of the data center’s total floor space
- Consolidation ratios from 6:1 to 20:1
- Typical total cost of ownership (TCO) savings from 30 to 70 percent
- Server utilization rates up to 80 percent

Plus, IBM can help with financing, so that you can make needed investments.

**Actions to take:**

- Manage liquidity and risk while making investments necessary to drive business success.

**How IBM Global Financing can help:**

**Economic Uncertainty? IBM funds IT.**

Don't let the economic downturn and dwindling credit options stop clients from getting the capital they still need to operate and improve their businesses. While many lenders have drastically curtailed credit availability, IBM Global Financing remains well positioned to support clients' technology investment needs and help them mitigate financial risk.
Business case
Case Study (based on real client case)

**Initial Situation**
- 27 Physical Servers

**Final Situation**
- 2 Physical Servers

**Costs Elements**

**Recurrent Costs**
- Operations Costs
- Software
- Facilities
- Maintenance
- Staff
- Servers Growth & Refreshment

**Capital Expenditure**

**One Time Costs**
- Migration Costs
- HW & SW purchase
BASIS on REAL CUSTOMER CASE

Net Cash Investment: 1.026
Operating Cost Reduction over 5yrs: 3.326
Net Saving over 5yrs: 2.299
Payback Period: 20 months

5 year cost scenarios

K€

6.000
5.000
4.000
3.000
2.000
1.000
0

CAPEX

498
837

Server growth
Server refreshment

Server Staff

Server Maintenance

Server Facilities

Server Software

Hardware & Software purchase: 726
Server Migration: 300
Cash investment

NET SAVING OVER 5 YEARS: 2,3M€

Operations Costs

2442
908

Continue with current infrastructure
45 logical servers and 27 physical servers

1

1400

Change for consolidation
45 logical servers and 2 physical servers

2

346
330

Operations Costs

300
5 year cost scenario

- **Net Cash Investment:** 1.026 M€

- **Operating Cost Reduction over 5 yrs:** 3.326 M€

- **Change for consolidation:** 45 logical servers and 2 physical servers

- **Net Saving over 5 years:** 2.299 M€

- **Continue with current infrastructure:** 45 logical servers and 27 physical servers

- **Including IBM Financing:**

  - Year 1
  - Year 2
  - Year 3
  - Year 4
  - Year 5

- **20 months**
How do we deliver?
Based on extensive experience, IBM has developed a consolidation methodology that comprises three distinct phases.

Consolidation projects comprise three stages:

| Solution Framing                  | ▪ Assessment  
|                                 | ▪ Strategy    
|                                 | ▪ Solution approach |
| Plan and Design                  | ▪ Detailed client environment analysis |
|                                 | ▪ Business case |
|                                 | ▪ Macro design |
|                                 | ▪ Micro design |
|                                 | ▪ Detailed assessment |
|                                 | ▪ Detailed transition plan |
| Implement                      | ▪ Solution build |
|                                 | ▪ Testing     |
|                                 | ▪ Deploy      |
Standard tool: Cirba

- P2P, P2V, V2V Mappings
- Granular Remediation Plans
- Virtual Cluster Design

Flexible Data Acquisition:
- Agents
- Agentless
- Discovery
- Scripts
- Data Import

Configuration Data
- Business Attributes
- Workload Patterns

Rules:
- Virtualization
- App Stacking
- DB Stacking
- Platform Migration
- Hardware Refresh
- DC Consolidation

- Maintenance Win
- Ownership
- Physical Locations
- Availability Levels
- Security Zones
- Lease Cycles

Math:
- CPU Usage
- Memory Usage
- Disk I/O Rates
- Network I/O
- VM Overhead
- iSCSI Models

Results:
- Multi-Dimensional Analysis "Cube"
- Virtualization
- App Stacking
- DB Stacking
- Platform Migration
- Hardware Refresh
- DC Consolidation

- Technical Constraint Analysis
- Business Constraint Analysis
- Workload Constraint Analysis

IBM
Thank you for your time today.

For more information: Please visit:
Server Consolidation Services from IBM

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