

Is Server Consolidation in your Future?

Joe ALEXANDER

Director, GCOS Strategy & Planning



Agenda

- **Server Consolidation definitions**
- **Technologies**
- **Desire for Server Consolidation**
- **Predictions**
- **Bull solutions**
- **Summary**



Server Consolidation, what is it?

■ Logical consolidation

- Adopting **same processes and system management procedures** on all servers, regardless of location to simplify management

■ Physical consolidation

- **Co-location of multiple platforms** at fewer locations to reduce the number of sites to be managed

■ Rationalized consolidation

- Implementing **multiple applications on fewer, more powerful platforms**, usually through partitioning and workload management to reduce the number of servers in use and possibly also the number of server locations
- **First unification step** is usually similar workloads such as Web servers, file servers, printer servers, e-mail servers and database applications

Source: Gartner 2002



Benefits of server consolidation

- **Better management of systems**
- **Lower costs**
- **Better security**
- **Higher service levels**
- **Important to understand the impact of consolidation on software license costs**

Enabling technologies for rationalized server consolidation

■ Partitioning*

- The ability to take **a single system** capable of running a single instance of an operating system, and **divide it into multiple smaller systems**, each capable of running its own copy of an operating system.
- **Features to consider** when compared to your needs
 - **Flexibility** (dynamic or static reconfiguration)
 - **Granularity** of resources that can be reconfigured
 - Impact of **reconfiguration reboot**
 - **Shared resources** (CPUs, memory and I/O paths)
 - Maximum **number of partitions**

Source: * Gartner 2002



Enabling technologies for rationalized server consolidation

■ Logical partitioning (**Virtualization**)

- The Virtual Machine (VM – or logical partition) appears to be a separate system; however,
- It is **mapped onto the hardware**, and all **resources are potentially shared**.
- Highly dynamic and fine-grained control over resources

■ Physical partitioning

- A server is **physically partitioned at the hardware level** into separate machines, each with its own CPU, memory, and I/O resources.
- The **resources are not shared** and each partition must have whole units of resources (e.g., whole number of CPUs),

Enabling technologies for rationalized server consolidation

- **“VMware has established itself as the leader in Intel server virtualization”** source: 20 February 2003 META Group
- **“Enterprises should strongly consider VMware as a tactical solution . . .”** source: 20 February 2003 Gartner
- **Recommendation: “IT organizations that have completed the first phases of unification should investigate use of Intel virtual machines for consolidation of small, non-mission-critical workloads onto 4- and 8-way Intel servers.”**
source: 20 February 2003 META Group

Enabling technologies for rationalized server consolidation

■ Workload management*

- The techniques used to **enable diverse workloads to run together effectively** in a single instance of an operating system by balancing the different workloads' resource consumption to achieve business goals, especially during peak-usage periods.
- **Features to consider** when compared to your needs
 - Number and types of resources monitored and controlled
 - Policy hierarchy
 - Ease of mapping controls to business goals

Source: * Gartner 2002



Growing desire to consolidate servers

- **Mainframe server and workload consolidation commonplace for the past 20 years***

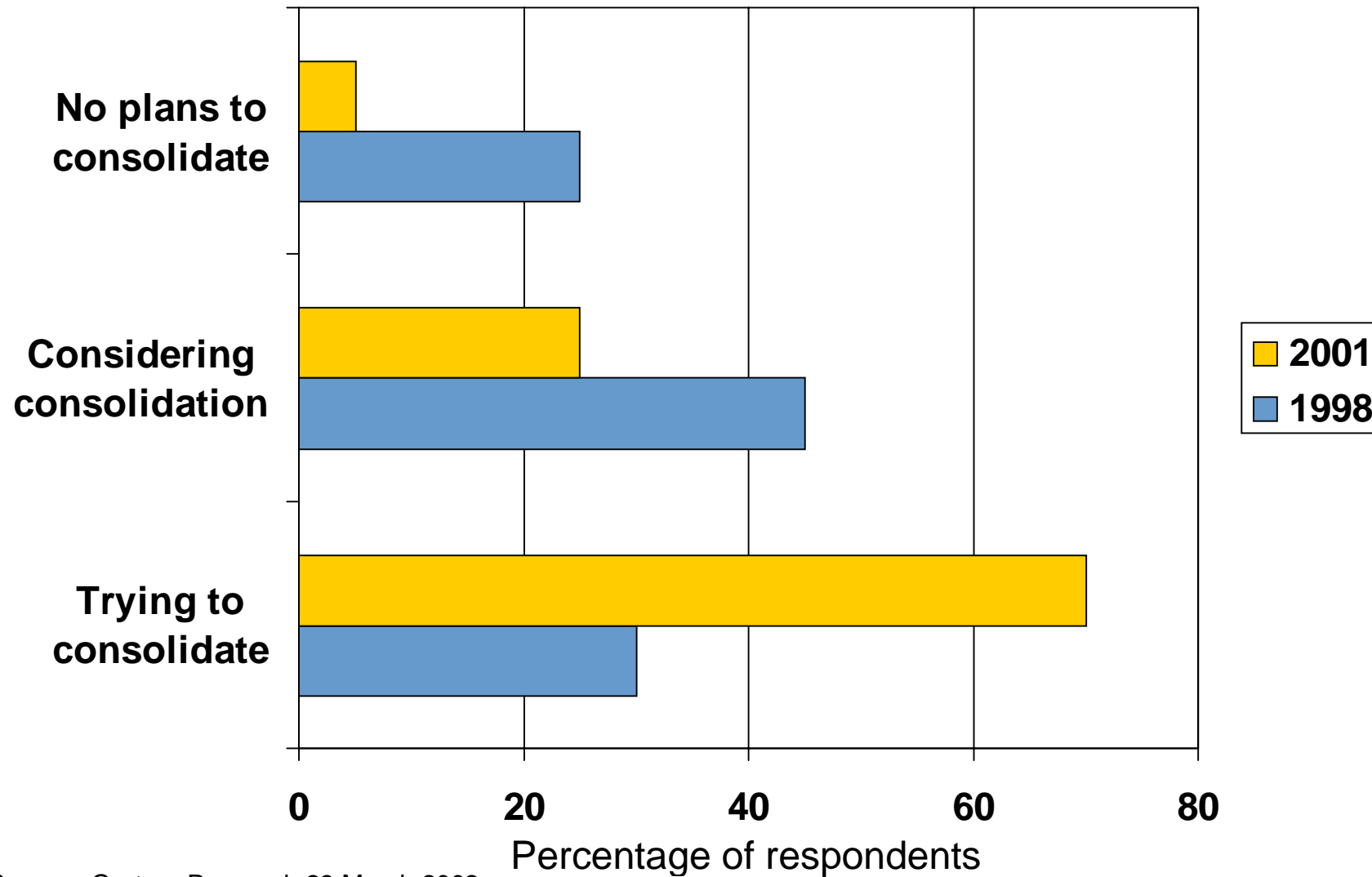
- **Focus is now on distributed platforms***
 - **Unix** platform consolidation started in 1997/8
 - **Windows** platform consolidation began to increase in late 2000 and early 2001

Source: *Gartner Research 28 March 2002



Growing desire to consolidate servers

Led by enterprises in Western Europe, United States and Canada



Source: Gartner Research 28 March 2002



2003 predictions

- **Strong tactical focus on IT cost reduction** resulting from
 - **Loss of IT's credibility as a strategic investment**
 - Y2K
 - Dot-com meltdown
 - Disappointing returns on past initiatives such as e-Commerce, supply chain and ERP.
 - **Weak economy**

- **Under scrutiny**
 - **IT staffing**
 - **IT infrastructure**
 - **Application portfolio**

Source: 19 December 2002 Gartner



2003 predictions

- **70%** of IT organizations will **have implemented the initial phases of infrastructure unification** (e.g., physical co-location, centralized operations/management, shared storage, same-workload consolidation)
- **Through 2004**, high-end “consolidation” servers will face aggressive **competition from well-managed Intel servers.**
- **By 2006/07**, high-end RISC/Unix servers will be all but **replaced by Intel offerings from HP, Dell, IBM and Bull** that leverage native and 3rd party consolidation features.
- **Most IT organizations support roughly 5 to 10 times more Windows servers than Unix servers, we believe Windows consolidation represents the larger and simpler opportunity for TCO reduction.**

Source: 20 February 2003 META Group



2003 predictions

- **Cost reduction and economies of scale are not automatic**
 - **Require project work** to standardize and process-enable a consolidated IT infrastructure
 - **Being overzealous** in reduction and not having a plan will result with higher long-term IT costs and brittle IT environment with deterioration in service damaging ones ability to execute IT projects needed to leverage economic improvement
- **Recommendations:**
 - reduce costs in a way that **preserves the ability to support and sustain a high rate of change**
 - In 2003 focus on **improving the integration of business applications** with other internal systems to improve business value. Also better integration with external systems.

Source: 19 December 2002 Gartner



Bull Products that support Server Consolidation in 2003/04

- Consolidation support for AIX, Windows and Linux
- Physical Partitioning
 - FAME (IA-64)
 - Helios on FAME
 - Diane on FAME
- Logical Partitioning
 - Diane [VMware on IA-32 Intel Servers]
 - AIX
 - DBSP (consolidate databases)

Summary

- **Act Tactically but think Strategically**
 - **Leverage legacy** in your infrastructure architecture
 - **Evaluate Open Source** Software Infrastructure as an alternative
 - **Consider** how **Server Consolidation** applies

GCOS

a long term commitment from Bull

