



THE TOTAL ENTERPRISE SOLUTION

40-node database cluster with IBM DB2 for Linux on IBM @server xSeries

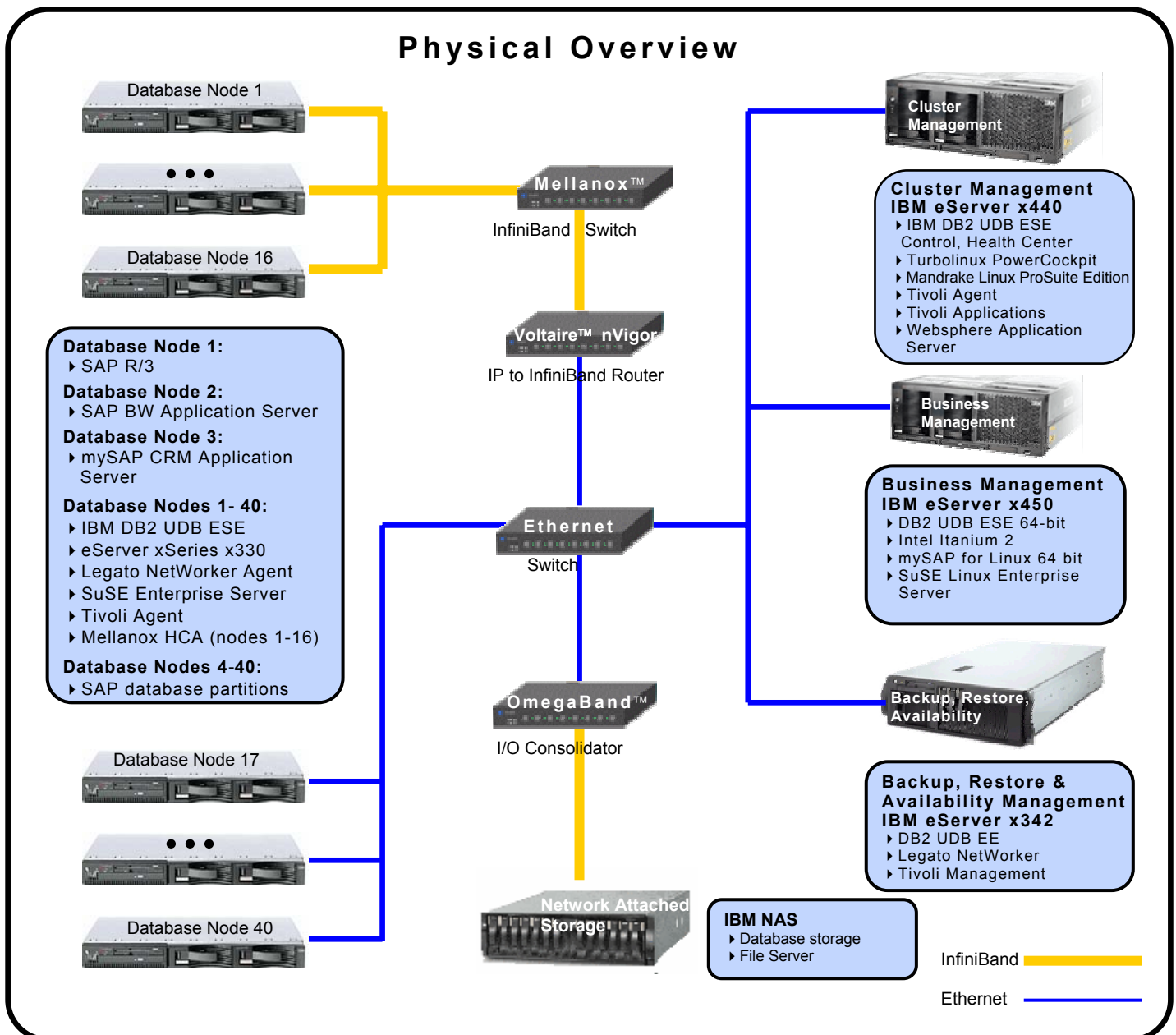
Highlights

As many IT professionals are aware, the success of an enterprise solution is determined by how well its technical components interact.

IBM DB2 for Linux in a clustered environment provides:

- Increased availability
- Greater reliability
- Better performance
- Excellent scalability

Clustering is made easier with the right choice of software and hardware. This Total Enterprise Solution demonstrates just that!



Technical Overview

At the heart of the solution is a 40-node cluster powered by IBM DB2 Universal Database for Linux V8.1. Each of the 40 nodes contains a single database partition and runs on an IBM eServer xSeries x330 server, for X-architecture™ performance, reliability and scalability.

DB2 uses a shared-nothing architecture that makes full use of the cluster's computing power. With this approach, each node works on a subset of the entire database and is fully independent with its own memory, CPU(s) and disk(s). Therefore there are no resource contentions between the database partitions, ensuring extremely fast performance. This approach also makes the cluster highly scalable. If 40-nodes aren't enough, just add more as needed!

It is also possible to create very large databases on a single node using the 64-bit version of DB2 on an xSeries 450¹ server running multiple Intel® Itanium™ 2 processors. The physical storage for the vast amounts of data on this node is

accommodated on a network attached storage device like the IBM TotalStorage™ NAS 100.

Linux offers excellent scalability, security and performance. The distributions used in the cluster include SuSE Linux Enterprise Server, and Mandrake Linux ProSuite Edition.

Two different types of interconnects are showcased, Ethernet and InfiniBand. The communication across the different interconnects is handled by an OmegaBand™ I/O Consolidator, and a Voltaire™ nVigor IP to InfiniBand Router.

In this demo, sixteen servers are interconnected using switches based on Mellanox InfiniBand silicon creating a fast subnet that participates in the full 40-node heterogeneous database cluster. All database traffic in the InfiniBand subnet, including storage and communication, is directed over 4X (10Gb/s) and 1X InfiniBand connections.

To enhance reliability, the cluster's backup and restore facility is provided by Legato

NetWorker®. It provides automated online protection for DB2 UDB databases through backup scheduling, autochanger support, and tape cloning, thus providing 24/7 data protection and availability.

Tivoli applications centralize the system management tasks, and provide control of the heterogeneous cluster. Thus allowing ease of such tasks as deployment of new or upgrade existing software.

All these components work to provide an environment that is stable, reliable and available, for any application that is run on it, including IBM WebSphere Application Server, SAP R/3, mySAP CRM Application Server, and SAP BW Application Server.

For more information please visit: ibm.com/db2/linux

To view the physical cluster, please visit the IBM Booth.



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¹Available 2H02.