# Fujitsu's Windows Strategy for Next-Generation Mission-Critical IA Server PRIMEQUEST

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**The family of PRIMEQUEST servers offers ultimate platforms for hosting advanced Windows applications. Class-leading performance and scalability, unmatched reliability, and superior flexibility are all key attributes. It is also evident that there is a clear market separation between Linux and Windows. PRIMEQUEST is an ideal platform for a range of customer circumstances. The features of PRIMEQUEST servers, coupled with the Windows operating system provide an easy platform to manage server environments and offer robust performance and scalability. Fujitsu understands that its customers have specific requirements and existing resource regimes in place. With this in mind and dependent on the circumstances, Fujitsu will provide PRIMEQUEST and promote its use with both Linux and Windows. In conjunction with Fujitsu's alliance with Microsoft and in combination with the Windows Server family of products, Fujitsu will be able to provide a vast range of solutions covering a variety of customer circumstances. Fujitsu will support robust and demanding databases, server consolidation requirements, and demanding computational and Online Transaction Processing (OLTP) workloads with PRIMEQUEST and the Windows family. Fujitsu's PRIMEQUEST and the Microsoft Server family will allow Fujitsu to lower the overall cost to its customers and provide much easier management while reaching the enterprise-class performance that is demanded.**

## 1. Introduction

To have a clear understanding of Fujitsu's Windows strategy for the next-generation, mission-critical Intel Architecture (IA) server PRIMEQUEST, it is important to identify the Fujitsu strategy as a whole. Fujitsu is, as we all know, very committed to enhancing its product portfolio.

The overall server strategy complements the business strategy with a plan to introduce additional Global Server mainframes, integrate PRIMEPOWER with Sun Microsystems, Inc. (to fully benefit from Solaris), and introduce the new mission-critical IA server PRIMEQUEST, which we unveiled to the industry at the beginning of April 2005.[1]-[3]

With this latest server technology, Fujitsu provides an mission-critical server that is compatible with both the Linux and Windows platforms. This paper highlights our Windows strategy for this server and describes how we provide assistance and guidance for customers by preserving their current assets as well as moving towards and capturing new technologies.

## 2. Fujitsu-Microsoft alliance

Fujitsu has long been allied with Microsoft Corp. (hereinafter called Microsoft), with the primary goal of the alliance being the establishment of a Windows world in the mission-critical arena. In 2002, Fujitsu and Microsoft announced a major expansion of their global alliance. The expansion primarily focused on the Windows platform enterprise infrastructure and application

solutions employing the Microsoft .NET framework and .NET enterprise servers. By combining the comprehensive expertise of Fujitsu and Microsoft in business-critical enterprise systems, our companies have greatly expanded their earlier collaborative efforts by launching new global-scale joint initiatives focused on three key areas: XML Web services, business-critical computing, and mobility. The next major expansion of the Fujitsu-Microsoft global alliance occurred on June 28, 2004. At that time, Fujitsu Chairman Naoyuki Akikusa and Microsoft. CEO Steve Ballmer announced a significant expansion of the companies' longstanding global enterprise relationship. The two companies agreed with respect to their companies' commitment to collaborate in the development of Fujitsu's next-generation server, an Intel Itanium based server for Windows Server 2003, and the next-generation Windows Server ("Longhorn Server"). Additionally, the agreement included collaboration in platform integration, services, and mission-critical customer support.

Under the expanded alliance, Fujitsu and Microsoft announced they would combine Fujitsu's mainframe systems and expertise with Microsoft Windows Server 2003 and .NET software to allow customers to implement flexible, trustworthy enterprise infrastructures and applications. The alliance had four major purposes: Fujitsu and Microsoft would:

1) Collaborate in the development of the next-generation Fujitsu Intel Itanium based server optimized for Windows Server 2003 and Longhorn Server.

2) Collaborate to develop and jointly market Fujitsu's system integration and solution offerings on the Microsoft platform. These areas include the TransMigration solution to modernize the traditional IT environment to Microsoft .NET, infrastructure services on Windows Server 2003, enterprise mobility solutions, and integration of Microsoft enterprise software into the Fujitsu TRIOLE strategy, which is designed to deliver flexible and adaptable IT infrastructures.

3) Reinforce support for customers running Windows in mission-critical environments by establishing a joint engineering support team in Redmond, WA.

4) Collaborate in software development to improve the operability between Microsoft and Fujitsu software, and extend the capabilities of Fujitsu software tools designed to help customers move mission-critical infrastructures and applications to the Microsoft .NET platform.

To reinforce support for customers running Fujitsu-Microsoft solutions, the companies established a joint engineering support team at the Global Escalation Center at Microsoft's headquarters. The team focuses on accelerating the identification and resolution of issues by working closely with the Windows Server development team using supportability tools developed by both companies.

This partnership with Microsoft is an ideal framework for an effective and successful Windows strategy. The Fujitsu-Microsoft alliance has proven to be a cutting-edge collaboration, and the current and future plans strongly indicate that the application technologies and platforms resulting from the partnership will significantly enhance enterprise mobility. As you will see from the new initiatives and the history and achievements of the Fujitsu-Microsoft relationship, this alliance is extremely strong and continues to get stronger.

## 3. PRIMEQUEST

### 3.1 Ultimate mission-critical IA server

The Fujitsu PRIMEQUEST server family represents mainframe-class reliability, best-in-class performance, and superior flexibility for Intel's Itanium-based systems. From the ground up, the PRIMEQUEST server is designed to support demanding sever consolidation requirements and non-stop operation.

Fujitsu, using its high-reliability mainframe heritage, has worked with Microsoft and Linux vendors, notably Red Hat, Inc. and Novell, Inc., to improve the reliability, availability, and robustness of their respective operating systems.

Fujitsu is actively extending the boundaries of high-reliability computing by removing the barriers to use of commodity products for the most important and demanding business and IT infrastructure tasks. Although the cost benefits of open systems have long been known, until now, many organizations seeking mission-critical operation have had to forego those benefits because of reliability and scalability concerns. Instead, they have limited their choice to the high-reliability and business-continuity benefits available with more proprietary systems.

PRIMEQUEST enables and supports the growing capabilities of Windows and Linux systems as they move into the mission-critical arena, by providing new hardware platforms designed using mainframe-class hardware reliability, availability, and serviceability (RAS). This leaves Windows and Linux customers free to enjoy uncompromised investment protection, freedom of choice, and the ability to expand without restriction. Business continuity comes from architecture that includes fault-immunity systems at every level. The combination of Intel Itanium 2 processors and the Fujitsu chipset deliver the best-in-industry standard implementation of RAS. At the systems level, there is unmatched error prevention and redundancy. The new Dual Synchronous System Architecture enables all memory modules and crossbar interconnects to operate in a duplexed mode. This brings exemplary operational continuity: errors can be isolated without a system halt. The Flexible I/O (FIO) enables I/O resources to match real-time performance requirements on-demand. This flexibility and standard redundancy mean that maintenance downtime can be reduced by up to 90% compared with current industry figures.

For business efficiency and flexibility, the new technologies allow up to eight partitions to operate safe from any single point of failure. Each fully independent PRIMEQUEST partition provides all the flexibility and operational characteristics of the overall system, without restriction. When Windows and/or Linux resources — including memory, CPU, and I/O — are run in parallel partitions, they can be independently and dynamically adjusted to match the load requirements throughout the day. This means that PRIMEQUEST is always quick to adapt to change while delivering excellent resource efficiency, flexibility, and stability as standard.

PRIMEQUEST's ability to reduce an organization's total cost of ownership can be highlighted by:

1) Reductions in the cost of physical infrastructure management from the in-build management systems and fault-tolerant circuitry.

2) Reductions in the cost of System Board (SB) and I/O sets through PRIMEQUEST's FIO, which allows reconfiguration with an independent SB or I/O.

3) Approximately 50% reductions in the expensive installation footprint and energy consumption compared to those of competitors.

4) Extension of the life of each IT investment through PRIMEQUEST's adherence to the Intel 64-bit processor roadmap and the enabling of multi-generation processor upgrades.

Further, because Fujitsu offers a wide range of IA based servers, PRIMERGY, and new PRIMEQUEST servers in combination, it can provide top-to-bottom coverage in the data center. This meets the needs of open-systems organizations looking to maximize their investments in existing Windows and/or Linux.

## 3.2 Fulfilling customer needs

In conversations and meetings with many customers around the globe, it became evident that a majority of those customers had the per-

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ception that Linux would be an adequate replacement for the Windows operating environment. But, looking at current market trends, it rather seems that, despite its obvious cost savings and more open credentials, Linux is still a close member of the UNIX family.

There has been a clear market separation between Linux and Windows. Rather than both platforms competing against each other, they now seem to be complimenting each other. There are advantages on both sides of this story, with different requirements and viewpoints attracting customers towards one side or the other.

One clear major decision criteria for customers is the total cost of ownership of a system or environment. Changing platforms can be a very expensive task, with the true costs of software, support, development, and maintenance often well above expectations.

As stated previously, the strategy behind PRIMEQUEST is to enable organizations to avoid costs by maximizing their existing Linux and/or Windows skills. Retraining Windows-skilled administrators and other technology staff when changing to another platform puts a lot of unnecessary stress on an organization. Organizations choosing to change platform will be required to train staff for that new platform: hence, there are additional costs. Also, the subsequent decrease in skill levels and experience for those staff members that will occur, at least initially, may cause some to leave the organization. Because of these considerations, unlike IBM Corp.— which offers a proprietary Linux — Fujitsu offers an industry-standard Linux.

To get an idea of the Microsoft skills in the market, you can look at the shares of the server market. Microsoft has an extremely large share of the server market: for example, in 2004, Microsoft had the remarkable share of 64.8%. By comparison, the closest competitor was Linux, with 17.4%. These numbers are due to the large number of low-end servers running the Windows platform. Taking such facts into consideration, it

is obvious that organizations with a large Windows presence have skilled developers and administrators for that platform. Fujitsu is therefore able to target customers with a large base of Windows platforms for the replacement of existing mission-critical systems using PRIMEQUEST. Such customers will fully benefit from their already developed skill-set and will avoid the costs and trauma of new training and new staff acquisition for the new platform.

A number of organizations have a mixture of platforms, with some customers focusing on UNIX and others focusing on Windows. Customers who have a large number of Windows servers may opt to introduce Windows for the high-end platform in place of their UNIX high-end servers, thereby maximizing their use of available resources.

Organizations can have vast numbers of skilled technical and development staff, covering multiple or specific platforms. Fujitsu's strategy is to go into markets and cater to the specific requirements of each customer and their dependency on existing environments and resources. This is why the combination of PRIMERGY, PRIMEQUEST, and Fujitsu's Solaris-based PRIMEPOWER family gives Fujitsu a truly open-system server family, covering Solaris, Linux, and Windows.

Importantly, PRIMEQUEST extends the options for organizations looking for mission-critical platforms. The new features of PRIMEQUEST servers, coupled with advances in the Windows operating system, provide an easy-to-manage server environment that offers robust performance and scalability.

Regarding database consolidation, as the hardware configuration grows, PRIMEQUEST servers provide near-linear scalability. This allows these servers to host larger aggregated database images without degrading performance. Furthermore, the dynamic reconfiguration function that is now under development will make it possible to grow the database domain and create partitions on the fly, thereby accommodating

business growth and further system consolidation as needed.

In combination with third-party software products, Fujitsu will also be able to provide a growing array of solutions that meet the varying customer circumstances. Fujitsu's PRIMEQUEST and the Microsoft Server family, for example, will allow Fujitsu to lower the overall cost to its customers, not only by providing much easier management, but also by achieving enterprise-class performance with a growing population of Windows-based enterprise-capable applications.

## 3.3 Extending partnerships

It is quite clear that a vendor's enthusiasm for a platform is a necessity for it to be successful in the market. When independent software vendors (ISVs) are also enthusiastic about a platform, more and important benefits follow. These benefits include quality performance tuning, regular product releases and fixes, and high levels of support. Windows on Intel Corp. has more ISV enthusiasm than any other platform, which is one other important reason why many customers are using or wishing to migrate to the Widows platform.

Fujitsu holds very strong global strategic and local alliance partnerships. Fujitsu also has been developing a vast range of partnerships with multiple ISVs, including its long-term relationships with industry frontrunners Oracle Corp. and SAP AG. In conjunction with Fujitsu's alliances with Microsoft and Red Hat, Inc., Fujitsu can now provide ultimate value and a range of integrated and customized solutions.

## 4. Conclusion

The family of PRIMEQUEST servers offers platforms specifically designed for hosting advanced Windows applications. They offer class-leading performance and scalability, unmatched reliability, and superior flexibility. Fujitsu is aware that there is a clear market separation between Linux and Windows. With PRIMEQUEST,

rather than Linux and Windows platforms competing against each other, they can be used in the most complimentary way for the market.

Fujitsu's strategy is to go into both the Linux and Windows markets with PRIMEQUEST, cater for the specific requirements of its customers, and match PRIMEQUEST to each customer's environment and existing resources. In combination with Fujitsu's Solaris-based PRIMEPOWER family, Fujitsu can truly claim to provide an open system server family that covers Solaris, Linux, and Windows and is scalable from single processors up to the largest systems available.

## References

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