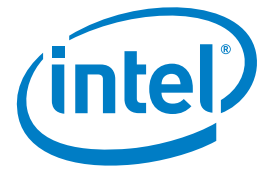


CASE STUDY

Intel® Xeon® processor 5600 series
Cisco Unified Computing System*

Cloud Computing



Telefónica moves into the cloud

Leading Telco turns to Intel® Xeon® processor 5600 series and Cisco Unified Computing Systems* (UCS) to drive forward with its cloud strategy

Telefónica is one of the world's leading integrated operators in the telecommunication sector, providing communication, information and entertainment solutions, with a presence in Europe, Latin America and Asia. The company's growth strategy is focused on the territories in which it has a strong foothold: Spain, Europe and Latin America. To galvanize its marketplace position and provide small and medium enterprises with IT infrastructure services via a monthly subscription model, it decided to launch cloud-based services. To enable this, it turned to the Intel® Xeon® processor 5600 series and Cisco Unified Computing System* to provide the compute foundation for these cloud-based virtualized services.



Telefonica

"This processor is scalable, energy-efficient, and reliable and ensures service continuity.

We also needed a common platform from which to launch new services and the Intel® Xeon® processor 5600 series provides this."

Juan Antonio Sánchez Cañibano,
Computing Services Manager, Telefónica



CHALLENGES

- **New services:** Telefónica wanted to launch new cloud services to all its customer segments, from enterprises to consumer as well as expanding its portfolio to SME/SMB and multi-national companies throughout Europe and Latin America
- **IT infrastructure required:** To achieve this, it needed to develop a new IT infrastructure on a common platform that could be scaled as services grew

SOLUTIONS

- **Comprehensive solution:** The company implemented Cisco Unified Computing System* (UCS) cross architecture, powered by the Intel® Xeon® processor 5600 series
- **Hardware-based features:** The Intel Xeon processor 5600 series includes a number of hardware-based features that make it suitable for cloud services
- **Platform benefits:** Cisco UCS provides simplified, stateless blades and centrally provisioned, configured and managed servers
- **Power savings:** These include energy-efficiency features, lower power consumption and automatic movement to low power state when required

IMPACT

- **Family of four services:** The company has now launched two new services from the Intel Xeon processor 5600 platform; Aplicateca* software-as-a-service and Terabox* ubiquitous and flexible storage. It is also set to launch desktops and virtual data centers, in both public and hybrid flavours, during 2011
- **The future is cloud:** Telefónica's future strategy is based on developing more cloud services as it moves to become a fully integrated multimedia provider. Intel® Xeon® processors are at the center of this strategy

Going global

Telefónica understands that in lean economic times, enterprises need new tools and efficiencies to help them increase profits, gain more flexibility and decrease the time to market for new products. But substantial up-front costs for large software license deals, or CapEx for IT infrastructure, can be prohibitively costly. As such, an enterprise often finds this a barrier to buying and deploying software or infrastructure that could help them operate and compete more effectively. To meet these requirements Telefónica decided to launch a series of cloud-based services across its main market segments of Europe and Latin America. These territories consist of Spain, Germany, Czech Republic, UK, Ireland, Brazil, Argentina, Columbia, Chile, Peru and Miami, Florida, in the U.S.

The company has now launched two new services from the Intel® Xeon® processor 5600 platform; Aplicateca* software-as-a-service and Terabox* ubiquitous and flexible storage. It is also set to launch desktops and virtual data centers, in both public and hybrid flavours, during 2011. Software-as-a-service had already been launched as well as Terabox and 3GBox, an innovative USB device that provides 3G connectivity with unlimited storage. Aplicateca included initially 16 applications made available to customers including Open Office*, accounting software, customer relationship management software, applications for industry verticals and security software.

However, the main goal of the project was the launch of Global IaaS*, a new global-services IT infrastructure, to support existing services and to provide new advanced services like Virtual Desktop and Virtual Data Center.



Intel® Xeon® processor 5600 series provides the foundation for new cloud services

One thousand servers

Juan Antonio Sánchez Cañibano, computing services manager for Telefónica, said: "We estimated that we needed 1,000 servers for the first launch. We'd already established that we wanted to use the Cisco UCS, since it includes Intel architecture with enterprise class services and various components suitable for a virtualized environment."

The Cisco platform represents a radical simplification of traditional blade server deployments by providing simplified, stateless blades and a blade server chassis that is centrally provisioned. Cisco UCS is part of the Unified Service Delivery solution, the foundation of Cloud Services deployment. The platform allows Telefonica to automate the development of virtual data centers and software-as-a-service applications.

However, Telefónica needed a processor for the platform. It chose the Intel® Xeon® processor 5600 series partly based on its previous experience with Intel® Xeon® processors. However, the Intel Xeon processor 5600 series also includes hardware-based features that make it particularly suitable for cloud-based services.

Regulated power consumption

The Intel Xeon processor 5600 series also automatically regulates power consumption to combine industry-leading energy efficiency with intelligent performance that adapts to the workload. A smaller server footprint also means significantly lower energy consumption, which also boosts TCO and delivers a smaller carbon footprint.

Servers based on the Intel Xeon processor 5600 series include several technologies that improve virtualization capabilities, and the security and power efficiency of the compute infrastructure. Intel® Virtualization Technology¹

FlexMigration (Intel® VT Flexmigration) provides the flexibility to efficiently migrate workloads to fewer servers at night to save energy. Intel® Trusted Execution Technology² (Intel® TXT) provides hardware-based resistance to malicious software attacks. Intel® Advanced Encryption Standard-New Instruction³ (Intel® AES-NI) provides hardware acceleration for AES-based encryption of data in transfer or on rest. Intel® Intelligent Power Node Manager provides a granular method, on the platform level, to optimize and manage power and cooling resources in the data centers. Intel's power management techniques seamlessly integrate into the Cisco cloud, ensuring top performance across the entire system.

Santi Magazù, commercial development director for Telefónica, said: "We essentially needed a new IT infrastructure for Global Services, the division from which we are launching these cloud services. We need to be very competitive in the marketplace and our strategy is based around the cloud to launch new offerings and provide new services to customers within minutes.

Scalable and energy-efficient

Juan Antonio Sánchez Cañibano added: "This processor is scalable, energy-efficient, and reliable and ensures service continuity. We also needed a common platform and, importantly, the Intel Xeon processor 5600 series provides this. It ensures we have a standardized platform, which is critical for cloud services. We have a focus on multinational customers, so standards are very important to ensure interconnection between services whatever their geographic location."

The company implemented approximately 1,000 servers, each powered by the Intel Xeon processor 5600 series.

The software-as-a-service offering has been expanded from Spain to Argentina and will be shortly made available in other countries. The storage and share service was previously available in Spain for residential customers,

Spotlight on Telefónica

Telefónica is the fourth largest Telco worldwide in terms of marketplace capitalization and the first European integrated operator and the second major company in Europe according to the Eurostoxx Top 50* ranking. Its brands include O2*, movistar* and Terra*. It has a presence in 25 countries, employs approximately 264,000 people and, in 2009, marked up revenues of EUR 56.7 billion [USD 77.5 billion].

but has now also been introduced to Argentina, with international roll-out set to follow soon. This service consists of an ADSL subscription bundled with 100GB of storage.

Cloud platform for the future

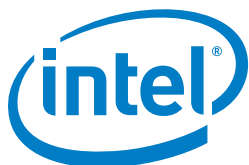
Telefónica is making its biggest investment, in the virtual data center due to its self-provisioning portal and value-added services. This is initially being made available in Spain, with full-roll out to follow. Aimed initially at the SME market segment the Cisco/Intel solution signifies an evolution of the traditional hosting model to a virtual environment. Users have access to a portal which allows them to configure new servers, create VPN links, storage, security, monitoring and back-up via a self-provisioning facility, while retaining the security and flexibility of a traditional hosting service.

Juan Antonio Sanchez Cañibano says: "Our cloud initiative is one step towards becoming a global integrated provider. Traditional data and voice services are converging with new IT services. We have to position ourselves to deliver these converged services over the cloud.

The Intel Xeon processor 5600 series is a fundamental building block in this strategy, providing the foundation for us to move forward into the future."

Find a solution that is right for your organization. Contact your Intel representative or visit the Reference Room at www.intel.com/references

Also see www.cisco.com/go/ucs



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¹ Intel® Virtualization Technology requires a computer system with an enabled Intel® processor, BIOS, virtual machine monitor (VMM). Functionality, performance or other benefits will vary depending on hardware and software configurations. Software applications may not be compatible with all operating systems. Consult your PC manufacturer. For more information, visit <http://www.intel.com/go/virtualization>

² No computer system can provide absolute security under all conditions. Intel® Trusted Execution Technology (Intel® TXT) requires a computer system with Intel® Virtualization Technology, an Intel TXT-enabled processor, chipset, BIOS, Authenticated Code Modules and an Intel TXT-compatible measured launched environment (MLE). Intel TXT also requires the system to contain a TPM v1.s. For more information, visit <http://www.intel.com/technology/security>

³ Intel AES-NI requires a computer system with an AES-NI enabled processor, as well as non-Intel software to execute the instructions in the correct sequence. More on <http://software.intel.com/en-us/articles/intel-advanced-encryption-standard-instructions-aes-ni/>

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