

The Hypertec Server Solution



www.hypertec.co.uk

Memory

Hypertec Server Memory

If you're thinking about Server Memory upgrades, then there's usually two key things you need to consider: reliability and price. If you're upgrading to improve productivity then you don't want to run the risk of investing in cheaper server memory only for it to fail. At the same time, OEM server memory demands you part with plenty of cash in comparison to other memory.

The perfect middle ground? Server memory from a trustworthy third party supplier such as Hypertec, who give you all the quality assurances of the OEMs without the staggering price premium added on.

Server Memory – What are the usual fears?

1. *Fear of Disruption...* Due to modules failure
2. *Fear of Disruption...* Due to OEMs refusing to service the machine if a 3rd party module is installed
3. *Fear of Disruption...* Due to the service provider not replacing the suspected 3rd party memory module
4. *Fear of Disruption...* Due to a spare for the 3rd party memory not being available in a time scale compatible with the SLA

Do these problems arise with Hypertec Memory?

No – Hypertec's Server Solution draws on the established cornerstones of Hypertec's success in the memory arena to address all of these issues in a reliable, efficient manner – enabling a real alternative to OEM Server memory products without adding to the total cost of ownership of the product.

Our SLAs are extremely comprehensive with **free issue of spares, pre failure warranty, cover of engineer costs, replacement cost of OEM modules** (if needed) and an **exceptionally low failure rate of 0.05%** among many other features. The cost saving is dramatic along with short lead times and **lifetime warranty** (the manufacturer offers three years at best).

How do we do it?

1. We avoid module failure by using **100% functional** test in our modules and only building modules using Grade A silicon from qualified sources. We provide a product **consistency** that is hard to match. Even OEM modules are sourced from a variety of suppliers and often vary in DRAM arrangement; Hypertec offer **consistent DRAM arrangements** and product build.
2. We avoid disruption caused by the OEM refusing to service a machine with a Hypertec module in it by:
 - a) Making you and the OEM aware of the **OEM's own warranty statement** regarding the non-invalidation of the machine warranty
 - b) Offering to **cover the cost** of the removal of the Hypertec memory module for the purposes of diagnosis*
3. We avoid disruption due to the OEM or service provider not replacing any suspected faulty Hypertec memory by:
 - a) For significant install base opportunities: providing **pool onsite spares stock** and reimbursing the OEM or service provider* to remove the suspect memory and replace with the pool Hypertec memory.
 - b) For smaller installations: removing the suspect Hypertec memory and replacing with genuine OEM memory, for which Hypertec will **reimburse** both the OEM or service provider and the service charge*.
4. We avoid SLA breach for key sites by providing on-site pool memory to enable its **rapid deployment** in the event of a Hypertec (or other) memory module failure – the latter resulting in a charge for the replacement memory. Hypertec will reimburse the OEM or service provider for the service charge*.

PLUS: In addition to the above measures Hypertec also offer a **pre-failure warranty** on all server memory modules. This involves the **advance replacement** of any modules shown to be degrading in performance by the server-based management utility. Pre-failure advance replacements allow for a scheduled maintenance shutdown of the server for preventative action.

AND: Hypertec offers **lifetime warranty** on all of its server memory products (which compares very favourably with OEM offerings), and are happy to liaise directly with the end user, reseller, or service provider in the provision of warranty and technical support.

* At Time & Material rates to a maximum of £100

Contact your Hypertec Account Team to discuss your requirements, and we will provide you with a tailored Hypertec Server Solution geared to your needs, SLA's and size of installation.

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The Hypertec Server Solution: OEM Warranties

IBM Warranty - [click to see source](#)

Unless IBM specifies otherwise, non-IBM products are not included under their warranty.

However, non-IBM manufacturers, suppliers, or publishers may provide their own warranties for these parts. IBM will not cover repair where a fault has been caused by the 3rd party product

Toshiba Warranty - [click to see source](#)

Toshiba make no reference to non-Toshiba options in their warranty statement except: 'Non-Toshiba peripherals such as printers, scanners etc., and consumables such as disks, etc., are excluded from the Toshiba warranty scheme, but may be covered under separate arrangements' From this, we can assume that other manufacturer's hardware does not affect the Toshiba warranty.

HP/Compaq Warranty - [click to see source](#)

'The warranty on your HP product will not be affected by the installation of a non-HP upgrade/option unless your HP product is damaged as a result of installation and/or operation of a third party option, such damage will not be covered by HP warranty.'

Dell Warranty - [click to see source](#)

'Dell's obligations do not apply ... if a defect is caused by an external cause such as ... hardware loaded onto or connected to Product by Customer where this ... hardware has not been supplied by Dell.'

The warranty is only affected if the hardware connected causes a problem with the Dell machine.

The Technology: Registered SDRAM, DDR1 and DDR2

Still current, but no longer being shipped in the majority of Intel based servers, is Registered DDR1 and DDR2 technology. Hypertec supply a comprehensive range of these technologies in speeds and capacities and using DRAM technologies appropriate to the machine for which they are manufactured and specified. All of Hypertec's server memory undergoes extensive Pre-release and In-Life compatibility testing to ensure that modifications to systems and BIOS implementations have not affected compatibility of module builds. In addition, all Hypertec server memory is 100% functionally and stress tested using an impressive array of specialist equipment and software.

All of Hypertec's registered or FB server products support chipkill correct, are correctly recognised by Server Management utilities and are covered by our Server Solution and Pre-Failure Warranty Provisions. All modules support chipkill correction and chipkill modules are built with 4 bit wide DRAM technology to comply with the requirements of the OEM server specifications and are supplied in matched kits to satisfy the Physical Bank Size requirements of each server. All registered modules use data register/buffers and PLL control to ensure the integrity of the data.

Full Buffered Technology is the latest technology for server memory and is designed to break the 4 slot boundary in server machines. Previous technologies used a "stub bus" technology which contributed to data corruption when the longer buses necessary for multiple sockets were implemented. This meant that servers typically had no more than 4 sockets for memory. 64 bit operating systems and applications need large memory arrays and hence more than the maximum memory provided by the old 4 slot registered DDR2 systems. The full buffered DIMM technology makes possible the scenario whereby one day servers may be able to support Terabytes of memory.

That's not all though, the design requirements for the full buffered DIMM has ensured that fault tolerance and reliability has been taken to new heights! The design goals are to support much larger capacities, much higher performance, and significantly higher reliability by being able to address "Silent Errors" in addition to the usual "hard" and "soft" errors.

Full Buffer or FB DIMMs will cope with a chip, a DIMM or even a channel failing without crashing the system. This is achieved by using extensive CRC checking on all commands and data and "Bit Lane Failover" which prevents the impact of any failure of the above components from bringing the system down. All in all, Full Buffer DIMM technology is **the** safest server memory technology to emerge and will contribute significantly to the reliability of servers in today's complex environments. If you would like to know more about FB-DiMM technology, ask your account manager to provide you with our FB DIMM technology brief.

Contact your Hypertec Account Team to discuss your requirements, and we will provide you with a tailored Hypertec Server Solution geared to your needs, SLA's and size of installation.

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The Hypertec Server Solution: the reality

Hypertec is as good as its word. We have numerous server installations with many prestigious clients who are now taking advantage of the Hypertec Server Solution:

1. A **pharmaceutical company** using Sun servers, with IBM Global Services providing break fix on the entire install base.

With Hypertec's Dataram product installed in these servers, manufactured to designs licensed from Sun, these servers operate **faultlessly**. More importantly the end user is not losing any sleep over disruptions in service in the event of a failure. With Hypertec **onsite spares** being held by IBM Global Services, in a location appropriate to maintaining service levels in the event of a failure, the user can be assured that there will be no difference or delay in the effectiveness of the **support** provided by the service provider.

2. A **large cellular network provider** has Hypertec server memory installed as the total memory configuration in over **140 high availability servers** in a number of regional and international installations.

By arrangement with the incumbent Server OEM these servers are supported by the **OEM's service arm**. The Hypertec memory is treated as if it were OEM memory from the perspective of being removed and replaced from the replenishable Hypertec **spares pool**, in the unlikely event of a failure. Thanks to the availability of Hypertec on-site spares, this is all done comfortably within the SLAs imposed by the client. Once again, no deviation from the levels of **support** that would be anticipated if the memory was all OEM supplied.

3. A **top insurance company** has Hypertec server memory installed in a recent roll out of servers running VMWare.

Populated with 32GB of memory in a total of **40 servers**. Direct liaison with the OEM Service and the provision of warranty services directly to the OEM service provider and **on site spares** has meant that this installation also runs smoothly and without fear of disruption in the event of a failure of memory.

4. A **prominent bank** uses Hypertec memory in a number of large capacity servers. By arrangement with the server OEM, these systems are **supported by the OEMs service arm**, using Hypertec server spares held at **convenient** locations to enable full compliance with the SLA in place.

5. A **major solutions provider** to the public sector and the emergency services regularly specifies Hypertec server memory as its standard for new builds and upgrades. Working with their incumbent service provider, Hypertec ensures the **seamless support** of these Hypertec equipped systems by making spares stock available at the service provider's spares locations, and offering all of the benefits of Hypertec **warranty** directly to the service provider, thus reducing their costs.

6. A **leading outsourcing organisation** specifies Hypertec memory for the majority of its Intel server solutions and upgrades so as to provide the best value for its clients without cutting corners on **quality** and **supportability**. By liaising with the organisations service provider - and in turn with their spares organisation - Hypertec have ensured that spares are available at **all necessary locations** to meet the requirements of the service provider in meeting all relevant SLAs. This is supported by a web based system which reports on spares availability at each location and by machine type.

These are just a few examples of how Hypertec puts its theories into practice. By utilising Hypertec's server solution you can take advantage of the savings afforded by using Hypertec memory over OEM memory, without sacrificing quality and reliability, and without impinging on the cost and delivery of support.

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