

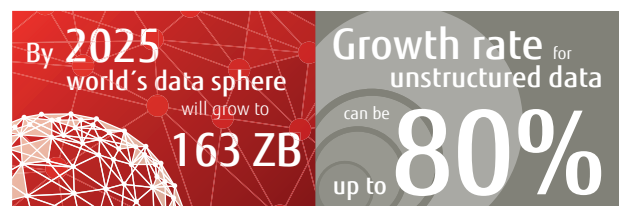


Ready for more
data than you
can imagine?

FUJITSU Hyperscale
ETERNUS CD10000

FUJITSU Storage ETERNUS CD10000 reference architecture makes sure that you can cope with exponential data growth – even when mountains of data reach breathtaking heights.

Thanks to the scale-out architecture offered by ETERNUS CD10000, you will be able to manage mass data fast, at low cost and without worries or any problems regarding lifecycle and migration. The reference architecture helps you combine software-defined storage (SDS) with enterprise-class service from our partners and is based on open standards. With nearly unlimited capacity and performance scalability, you can manage data growth with the utmost efficiency – even in the petabyte range.



Unimaginable masses of data will be generated within the next few years. Consider this fact: A staggering 90 percent of the world's data was created in the past four years! Forecasts are also astonishing: IDC estimates that by 2025 the global data sphere will grow to 163 ZB! What's more, according to Gartner, the growth rate of all data is 40 to 60 percent, but the growth rate for unstructured data can be up to 80 percent in business enterprises.

shaping tomorrow with you

FUJITSU

TAKE ADVANTAGE OF OPEN SOURCE ALONG WITH PARTNER SUPPORT

ETERNUS CD10000 is based on the Ceph enterprise open source platform. Ceph functions are enhanced with software optimizations, extended automation and simple management. For example, Fujitsu has optimized the Ceph Erasure Code and delivered it to the community along with integrated GUI-based management. In addition, the storage software is optionally supported by our partners RedHat and SUSE. Instead of dealing with hassles, customers can drastically reduce the time needed to initiate productive operation, enabling them to manage extraordinarily vast masses of data with minimal administrative effort.

- Based on open standards without risk
- Go into productive operation quickly
- Benefit from partner support for the complete solution

AUTOMATICALLY BENEFIT FROM AN ALWAYS-ON BUSINESS

ETERNUS CD10000 lets you create an autonomous and self-healing system that identifies changing events and automatically takes appropriate action in response. Using this fault-tolerant architecture, data is automatically and quickly restored if hard disks or complete storage nodes should ever fail, thus minimizing administration effort and costs. This architecture also offers multisite disaster recovery by design for even greater resilience. Cost-effective business continuity is guaranteed even in the event of a disaster.

- Benefit from a zero downtime architecture
- Minimize administration efforts to lower costs
- Prevent outages through maintenance or enhancements
- Avoid the headache of complex and time-consuming disk rebuilds

SCALE YOUR STORAGE AS MUCH AND AS OFTEN AS YOU LIKE

Now is the time to act – “Think big. Start small.” This architecture lets you start with a minimum configuration of four storage nodes and then expand your system as often as you want – up to several hundred nodes. In other words, you can begin with just a few terabytes and scale your system as needed over time – up to 50 petabytes and more. It’s easy – all you do is add nodes. With this reference architecture you can scale capacity and performance linearly with every additional storage node.

- Invest in capacity only when you need it
- Balance speed, costs and space with various storage node profiles and redundancy levels
- Consolidate various kinds of data in one universal system

EXTEND THE LIFECYCLE OF YOUR STORAGE SYSTEMS BY SEVERAL YEARS

The fact that ETERNUS CD10000 is a software-defined storage reference architecture makes it immortal. You can begin with a specific configuration and then upgrade it over the years with new hardware and software – you can even remove obsolete components step-by-step. This is possible without downtime and requires only minimum effort: The system recognizes changes in the infrastructure and automatically makes necessary adjustments by itself.

- Profit from maximum investment protection
- Reap the long-term benefits of an immortal system
- Avoid the need for migrations
- Leverage existing and new technologies at the same time

The image consists of six panels arranged in a 2x3 grid, each with a red background and white text and icons. The top row panels are: 1. 'Optimized open standards supported by Partners' with a handshake icon. 2. 'Zero downtime reference architecture for always-on business' with a clock icon. 3. 'Think big - scale up to several hundred nodes. Start small - at least with 4 nodes' with a bar chart icon. The bottom row panels are: 4. 'Extend the lifecycle by several years with an immortal system' with a clock icon and a plus sign. 5. 'Manage exponential data growth with ease and minimize TCO per GB' with an upward-pointing arrow icon. 6. 'Reach project targets faster with validated solutions' with a person holding a checkered flag icon.

MANAGE THE GROWING MOUNTAINS OF DATA WITH UTMOST EFFICIENCY

With the ETERNUS CD10000 reference architecture you can move mountains of data and drastically reduce the total cost of ownership (TCO) compared with traditional RAID storage systems. This reference architecture is based on open standards, at the same time offering you the freedom to build your own stack. Another significant factor is the cost of operation. Our partner solutions provide extensive automation and consistent management via GUI, contributing to lower operational costs for the entire system. The intelligent use of various storage nodes and configuration options is a third key aspect: Customers are able to strike the right balance between performance and capacity requirements, in addition to minimizing the costs of floor space and energy.

- Reduce project, procurement and implementation costs
- Drastically reduce your operating costs
- Reduce the TCO per GB in comparison with conventional high-capacity systems
- Manage unexpected data growth at expected estimated costs

MAKE YOUR LIFE EASIER WITH VALIDATED SOLUTIONS

ETERNUS CD10000 is ideal for OpenStack projects and all scenarios where tremendous and often unexpected data growth needs to be managed. Typical users are cloud, IT and telecommunications enterprises, broadcasting companies, etc. – in other words, businesses that want to break new ground or take on challenges that demand the use of big data and business analytics. The holistic concept behind the reference architecture offers validated solutions for such application scenarios. Fujitsu develops these based on best practices from customer projects. Validated solutions are available for OpenStack projects for customers who want to build online archives, for web services and cloud backup, not to mention enterprise file sharing projects.

- Reach your project targets much faster
- Reduce costly delays, risks and reworks during implementation and system operation
- Reduce your project costs

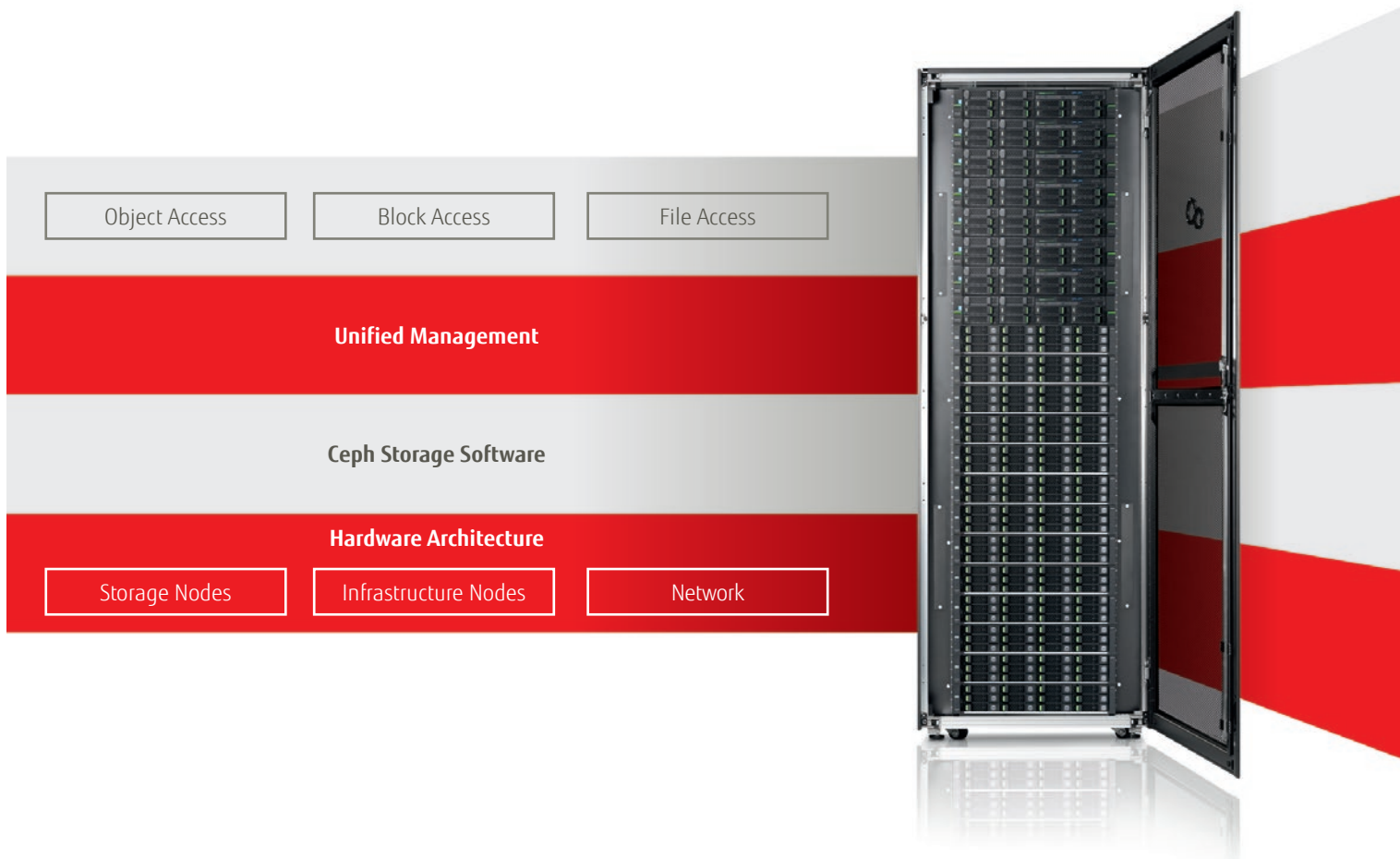


"With the new IT we changed the way we collaborate and share research information, not only in the state of Rhineland-Palatinate, but also in our international scientific activities. Fujitsu's ETERNUS CD10000 hyper-scale storage system contributes to our vision of IT structures, serving the needs of our fast growing research capabilities."

Prof. Dr.-Ing. André Brinkmann,
Head of the Data Processing Center
Johannes Gutenberg University – Mainz, Germany

ETERNUS CD10000

Reference Architecture

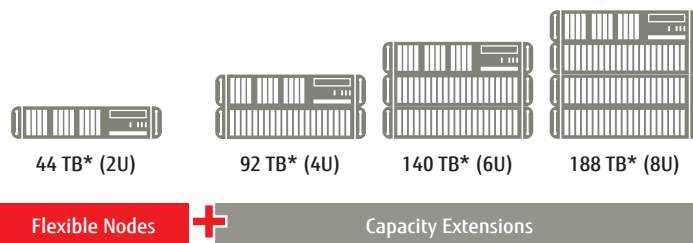


Sample Configuration

Flexible nodes:

Find the right balance between performance, capacity and cost!

Flexible nodes are well-suited for various kinds of applications and workloads. As they are based on rack servers, which can be enhanced with capacity extensions, flexible options for scaling performance and capacity are possible. Upgrades with PCI SSDs, as well as capacity enhancements, can be performed on-site. Choosing the latest hard drive technology increases node capacity.



* All capacities shown are for illustration purposes only.

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