

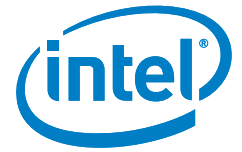
SOLUTION BRIEF

Intel® Storage Builders

Bigtera VirtualStor™ Scaler

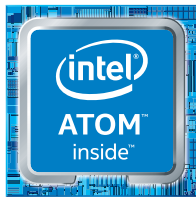
Next Generation of Intel Atom® Processor C3000 Product Family

Intel® Solid State Drive Data Center Family



Software Defined Storage for Media and Broadcasting Industry in China

**China Media and Broadcasting Industry Leverages Bigtera VirtualStor™
Scaler for Simplicity and Streamlining Business Processes**



Overview

The media and broadcasting industry in China has grown significantly at an average rate of 15% between 2009 and 2013.¹ This is having a substantial impact on IT requirements in the industry, as stations have outgrown their traditional infrastructures due to the following challenges:

- **Business complexity.** The many different media processes in the industry, such as collection, editing, broadcasting, archiving, and content management, have had an impact on IT. Different processes demand different characteristics for storage, such as protocols, performance, availability, etc. Thus, customers have purchased different storage technologies across their workflows, creating “storage islands,” where these systems have required high implementation costs, but have low utilization.
- **Rapid data growth.** The demand for high definition and 4K video continues to rise, placing pressure on storage capacity and scalability. A 90-minute standard definition TV program can consume 540 GB of space, while a high-quality 90-minute TV show’s raw materials might consume TBs of storage.² Because the traditional storage systems are unable to seamlessly scale-out, storage islands continue to grow, further increasing the complexity of managing infrastructure, data, and content.
- **The silo effect.** In a TV station or a media company, content data should migrate with the workflow. With multiple storage islands, data must be manually copied between heterogeneous environments, increasing workflow complexity, duplicating data, and wasting time and resources.
- **High cost of entry.** For smaller TV stations, buying, deploying, managing, and scaling the entire infrastructure is expensive and time consuming.

Customer Requirements

Bigtera VirtualStor™ Scaler is a distributed and scale-out storage system. It requires a minimum three nodes to build a fault-tolerant cluster. In this system solution, data will be replicated between nodes for data redundancy. The next generation of Intel Atom® processor C3000 product family is an improved system-on-chip (SOC) product that provides important gen-on-gen performance gains, on top of improved levels of integration and density at lower power TDP (Thermal Design Power) scenarios.

With integrated high-speed network with Intel 10GbE Ethernet (up to 4x10GbE), and increased SATA ports (up to 16), more PCIe3 lanes (up to 16), the next generation of Intel Atom processor C3000 product family can provide very short latency when replicating and synchronizing data, so as to ensure the service performance and data redundancy together.

Other key features such as Intel® Advanced Encryption Standard New Instructions (Intel® AES-NI) help Bigtera VirtualStor Scaler to protect the data stored in places such as storage resource pools. Intel AES-NI can significantly improve the server-side encryption (SSE). For instance, when storing the data with RESTful API, encryption can be enabled. Therefore, data can be protected even the disk is stolen or lost.

The rich feature set of the next generation of Intel Atom® processors make it possible for the virtualization and OpenStack* cloud technologies to enable new architectures for hyperscale and hyper-converged solutions like China's media and broadcasting community that needs advanced solutions that fulfill the following requirements:

- Simplify IT management
- Scale-out capacity and performance for data growth
- Reduce data movement time
- Low overhead in CAPEX and OPEX

Bigtera VirtualStor Scaler Offers a Unified Scale-Out Infrastructure

Bigtera VirtualStor Scaler offers a scale-out storage cluster built from industry standard servers rather than proprietary hardware. Powered by the next generation of Intel Atom processor C3000 product family and Intel® SSD Data Center family drives, the solution can scale out capacity and performance as needed.

VirtualStor Scaler moves companies to a far more effective and efficient pay-as-you-grow operating model. Most important of all, VirtualStor Scaler is a truly unified storage solution that can simultaneously offer multiple protocols. This is currently the only solution to fully support the media and broadcasting industry and the business processes from recording to broadcasting to archiving, with minimum data movement time between operations.

Bigtera VirtualStor Scaler Fulfills Demands for Small-Scale TV Stations

Based on Bigtera software-defined storage (SDS) technology on industry standard Intel® architecture, Bigtera VirtualStor Scaler offers a hyperscale cluster for the virtualized cluster that can host many 3rd-party TV and media systems, including content creation and acquisition, post production (with non-linear editing (NLE) and special effects), transcoding, archiving, and more.

With its flexibility and capacity, Bigtera VirtualStor Scaler can support multiple storage technologies in one cluster:

- **SAN storage**—supports database and VMDK for 3rd-party digital content application systems.
- **NAS storage**—supports content creation and acquisition systems and post production systems, such as NLE, transcoding, packaging, online media, and so on. Intel® SSD DC S3700 Series are also used for high-performance applications.
- **Object storage**—supports content service systems, such as data archiving, recording, near-line media, and so on.

Multiple virtual storage devices are housed by a single infrastructure. With functions like zero copy, they don't need to duplicate data across the workflow, creating a more agile and streamlined business.

Bigtera VirtualStor Scaler Can Easily and Flexibly Scale Out

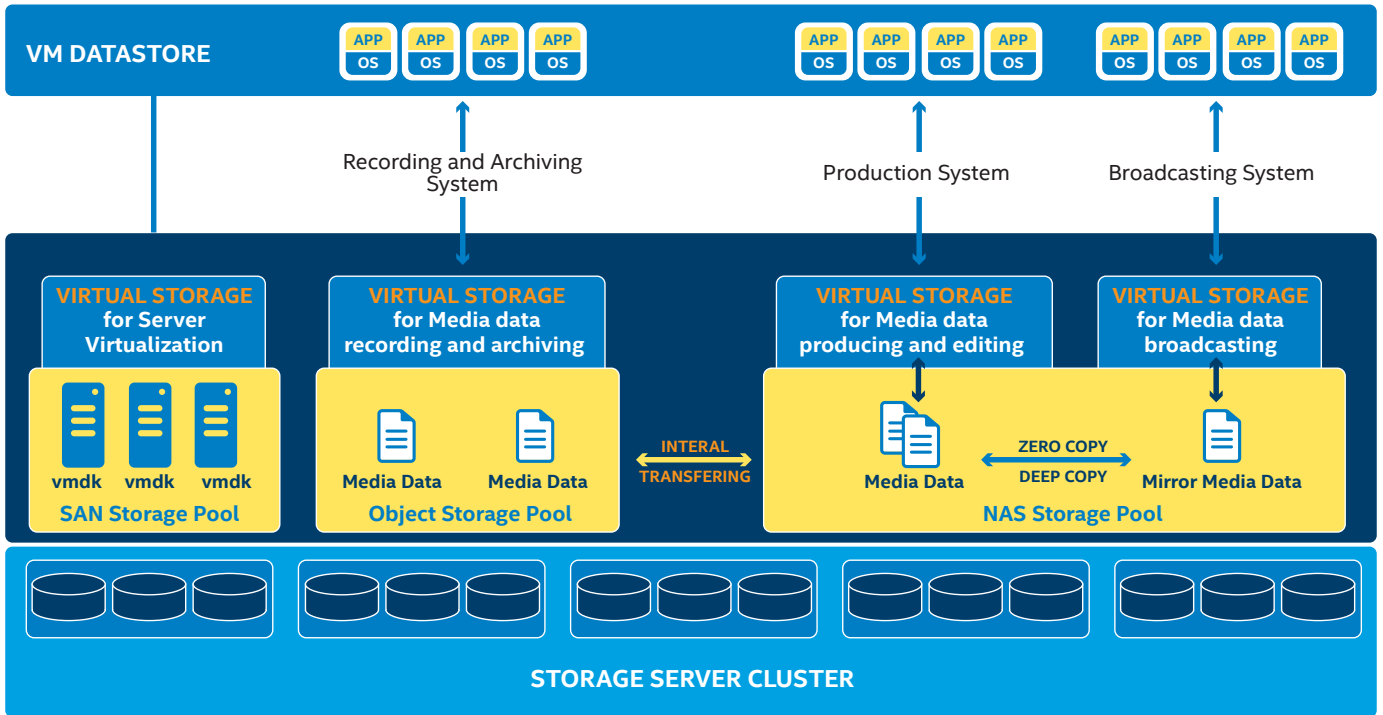
Unlike the traditional scale-up approach, Bigtera's SDS technology allows organizations to quickly increase capacity and performance by simply adding more Bigtera VirtualStor Scaler appliances. In addition, if an application runs under a single namespace, adding Bigtera VirtualStor Scaler will provide more storage space in the cluster. Plus, with remote replication, multiple replication, and erasure coding, Bigtera VirtualStor Scaler offer a high degree of data security and high performance for business applications.³

Intel-Powered Bigtera SDS Solutions

VirtualStor Scaler

The Intel Atom processor C3000 allows for efficient bare metal deployments of VirtualStor Scaler software. The software works in scale-out and server-based storage solutions that support different workloads in the enterprise. Accordingly, the VirtualStor Scaler benefits from Intel Atom processing power for high-throughput scenarios such as backup, archiving, surveillance, streaming, and cold and warm cloud storage.

This provides customers with a cost-effective scale-out storage solution that allows them to pay as they grow. Running on Intel® technologies, Scaler's architecture provides the flexibility to specify the storage type (NAS, SAN, or object storage), performance (IOPS and throughput), and efficiency, all while delivering resilient and secure capacity.



Intel® Technologies

Next Generation of Intel® Atom® Processor C3000 Product Family

These processor families provide energy efficiency and it is optimal for this class of workloads to help remove bottlenecks, decrease latency, and increase throughput. When combined with quality storage software, the next generation of Intel Atom processor C3000 product family can enable data centers to run more efficiently and use less power.

Intel® Solid State Drive Data Center Family

Intel SSD Data Center family drives can offer high performance with low latency and high endurance for enterprise and service provider needs. NVM-based Intel SSDs also can offer amazing performance for storage needs.

Intel® Advanced Encryption Standard New Instructions (Intel® AES-NI)

Intel AES-NI implements strong encryption and decryption while greatly reducing the associated processing time that strong security³ requires. Therefore, using Intel AES-NI to protect data can provide security without compromising the performance.

Intel® QuickAssist Technology (QAT)

The Next Generation of Intel Atom processor C3000 product family offers integrated Intel® QuickAssist Technology (QAT) with up to 20 Gbps. Intel QuickAssist Technology is designed to optimize the use and deployment of crypto and compression hardware accelerators. It creates a new compute paradigm in cloud services. VMs with virtualized acceleration services allow for network function virtualization as a standard practice. More important, it helps protect the data in IT, focusing on data compression, secure storage and networking, analytics (Hadoop), efficient VM migration, wireless infrastructure, WAN optimization, and much more.

Conclusion

Legacy storage infrastructures not only fail to meet business needs, but also unnecessarily increase IT costs. Today's media and broadcasting industry in China can benefit from a new storage architecture—one that can accommodate traditional IT infrastructure, while meeting the needs for digital content growth, new applications, and user requirements.

Bigtera VirtualStor Scaler, together with Intel products and technologies, easily and effectively integrates all the business applications for media and broadcasting. It offers the flexibility, simplicity, and scalability to work with a physical or virtual computing environment at any scale. Bigtera VirtualStor Scaler comprehensively supports the storage needs of media and broadcasting.

“It's time for modern media and broadcasting organizations to eliminate the pain points associated with storage. Legacy storage infrastructures not only fail to meet business needs, but also unnecessarily increase IT costs.”

GET MORE INFORMATION

To find more about Bigtera SDS solutions, visit www.bigtera.com.

To learn more about Intel storage products and technologies, visit www.intel.com/storage.

¹ Based on "Annual growth in total output of the Chinese media industry from 2013 to 2017" by Statista, <http://www.statista.com/statistics/383540/china-media-industry-output-annual-growth/>

² Intel does not control or audit third-party benchmark data or the web sites referenced in this document. You should visit the referenced web site and confirm whether referenced data are accurate. Cost reduction scenarios described are intended as examples of how a given Intel- based product, in the specified circumstances and configurations, may affect future costs and provide cost savings. Circumstances will vary. Intel does not guarantee any costs or cost reduction.

Intel technologies' features and benefits depend on system configuration and may require enabled hardware, software or service activation. Performance varies depending on system configuration. No computer system can be absolutely secure. Check with your system manufacturer or retailer or learn more at intel.com.


³ No computer system can provide absolute security under all conditions. Built-in security features available on select Intel® processors may require additional software, hardware, services and/or an Internet connection. Results may vary depending upon configuration. Consult your system manufacturer for more details. For more information, see <http://security-center.intel.com/>

Intel disclaims all express and implied warranties, including without limitation, the implied warranties of merchantability, fitness for a particular purpose, and non-infringement, as well as any warranty arising from course of performance, course of dealing, or usage in trade.

Intel technologies' features and benefits depend on system configuration and may require enabled hardware, software or service activation. Performance varies depending on system configuration. No computer system can be absolutely secure. Check with your system manufacturer or retailer or learn more at intel.com/storage.

© 2017 Intel Corporation. Intel, the Intel logo, Intel Inside, the Intel Inside logo, and Intel Atom are trademarks of Intel Corporation in the U.S. and/or other countries.

© 2017 Bigtera Inc. All rights reserved. Bigtera, VirtualStor, VirtualStor Converger, and VirtualStor Scaler are trademarks of Bigtera Inc. in the U.S. and/or other countries.

*Other names and brands may be claimed as the property of others. Printed in USA 0817/YMB/HBD/PDF  Please Recycle 334843-002US

