HA-AP APPLIANCE SUCCESS STORY

A Newspaper Media Group in China

Guaranteeing Zero-downtime Continuity for Cloud-based IAAS Datacenter

KEY HIGHLIGHTS

Industry: News Media

The Challenge

- Support zero-downtime business continuity of cloud-based IAAS datacenter, for a cross-group integral editing library system.
- Provide high-availability access and protection of media content residing on 2 Infortrend ESDS 3048R-D storage systems; support 6 physical servers, 24 cloud-based VMware virtual clients, and 100 TB of data.

HA-AP Benefits

- Modular, clustered active-active mirroring engines, provide business-level HA solution for mission-critical applications, with dual read/write capabilities and performance.
- Continuous availability of mission-critical media content editing for the entire business organization.
- Affordable, high-availability, easy-to-manage business-level storage HA solution; which protects against interruption to business continuity caused by failures of FC fabric and storage systems.
- Simple, centralized administration.

HA-AP Versatility

- Multiple HA-AP engines can be clustered over Fibre Channel SAN to create local and/or remote mirroring protection.

The Customer

Our case subject is a prominent China-based newspaper media group, which started out as a single daily newspaper in the late 1940's, grew to position itself as the mainstream regional news authority over the next half a century, and has structured and been operating the newspaper media group under its current name since the mid-2000's. To protect its privacy, our customer has requested that we write this story under a pseudo name. We honor that request and from here on out, will simply refer to it as CSMG, short for Case Study Media Group.

On the solid foundation of more than half-century with printed media, CSMG has also been expanding its influences into new media such as Internet and mobile devices in more recent years; it is committed to establishing dominant presence as a multi-media, multi-regional, multi-industry news provider. CSMG currently successfully operates a news network over 3 major media platforms: newspapers, magazines and publishing, Internet; consisting of 11 newspapers, 8 magazines, 5 websites, and 1 publishing house.

Background: Cloud Computing Technology in the Traditional Newspaper Industry

Cloud computing, when viewed from the 30,000FT level, is simply the centralization of traditional computing and storage technologies through networking and management, which forms a public or private resource pool that offers on-demand services to users. Today, as Internet and new media enters the cloud computing era, the traditional newspaper industry is catching on –- by transforming its legacy IT infrastructure to cloud-based IAAS (Infrastructure-as-a-Service) solutions.

In order to adapt to the impact of Internet and new media, and to expedite its corresponding business model transformation, CSMG launched an ambitious IT infrastructure re-structuring project in 2013, which aims to put cloud-computing, mobile Internet and big data analysis technologies to use for the traditional media industry. The new infrastructure will allow CSMG to create and sustain service models that meet ever-evolving market demands, which in turn helps extend traditional media products to Internet and mobile Internet.

An effective IAAS platform is at the heart of this new initiative.

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Challenge: Cloud-based IAAS Datacenter for a Cross-group Editing Library

The cross-group editing library supports all branches of CSMG, as the integrated central database for all editors and reporters to collect and compose materials. Raw materials such as text, pictures, charts, audio and video clips, are transmitted and deposited into the central database from email, material collection, documentation collection and various mobile press release systems; which can be used by multiple departments' applications. The library serves to integrate all news information resources, improve overall ratio of resource utilization, reduce total cost of resource processing, satisfy individual departmental production demands, and thus raise general core competitiveness for the entire group.

To accomplish these objectives, CSMG needs an effective cloud-based IAAS datacenter solution –- a platform that supports on-demand all-media production coordination, and delivers maximized resource utilization.

The IAAS datacenter's design must be of high availability (HA), which must be addressed at all levels, including application, host, network, and storage. A sound HA solution should deploy software-clustered hosts and virtual host technology, to ensure the availability of hosts and continuity of applications; as well as fully redundant SAN switches to ensure the availability of network paths. In addition, the storage must be enabled to deliver equivalent availability, so that an end-to-end redundancy from hosts through network to storage may be achieved.

While the applications of host virtualization and networking technologies for HA purpose have largely reached maturity, the same could not be said about storage HA. Therefore selecting a best-fit HA SAN architecture was identified as one of the key requirements for the project team.

Solution: HA-AP-enabled Active-active IAAS Datacenter

The new IAAS datacenter will transform from legacy datacenter infrastructure to cloud-based computing and storage, data protection, storage resource consolidation, and fully redundant infrastructure. The ultimate goal of the IAAS datacenter is to facilitate streamlined business practice, which requires data consolidation; while data consolidation in turn requires streamlined joint operations of storage, computing, and network resources.

Figure 1. HA-AP Dual-engine Cluster

This requirement raises the bar for storage availability considerably. Fortunately, the project team finds that a HA-AP-enabled, fully redundant, dual active-active storage solution fits the bill perfectly. It protects against any single-point logical or physical failure, handles instantaneous failover and failback automatically without human intervention, and meets high business continuity requirements.

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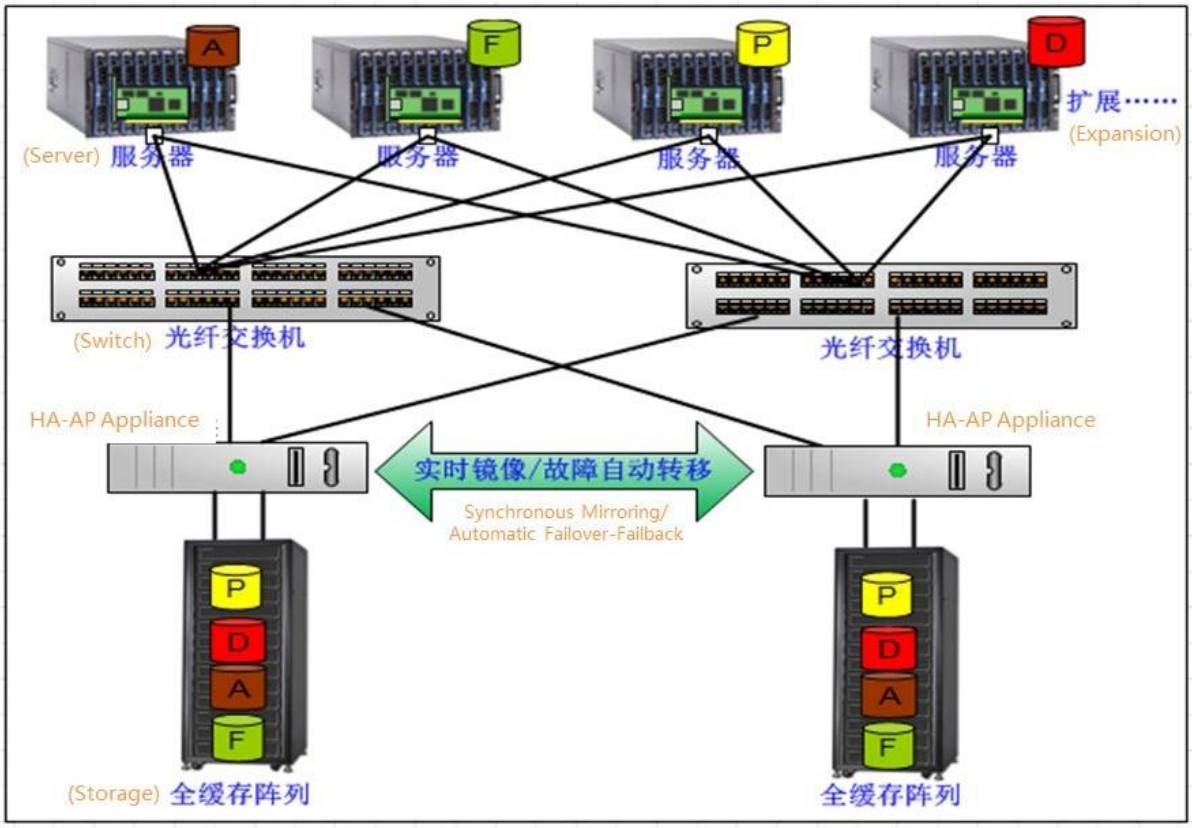

Figure 2. HA-AP-enabled Active-active IAAS Datacenter Configuration

Upon further research, the team identifies that the HA-AP Appliance solution offers the following technical advantages:

1. Enables active-active-mirror of two, or all-active-mirror of multiple storage systems, which eliminates system downtime caused by a single-point-failure of any storage system; provides enterprise-grade data availability and business continuity protection with instantaneous automatic failover and failback upon hardware failure, while no interruption to the applications or human intervention is required. The solution meets true RPO=0 and RTO=0 requirements.
2. Supports and manages heterogeneous storage systems of different brands and models.
3. Requires no agent or driver software on the servers, additional servers can be added by simple configuration update, which makes the solution a lot more open and desirable for future system expansion.
4. Supports all mainstream applications and operating systems, including Windows, Linux, UNIX system platforms; also server virtualization solutions such as VMware, CITRIX, HYPER-V, and KVM.

The project team comes to the conclusion that, the Loxoll HA-AP Appliance would fully satisfy CSMG's objectives. With that decision, all pieces of the ISSA puzzle are then in their right places. The complete system structural design includes the following major components:

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- Two Infortrend ESDS 3048R-D enterprise-grade storage systems at the back-end, with 100TB capacity
- Two Brocade 320 enterprise-grade FC switches connect with the storage systems to provide the backbones of the HA SAN
- A MySQL database and various applications of the cross-group editing library on the front-end
- Six cloud-based servers and about 24 VMware-based virtual clients
- A clustered 2-engine Loxoll HA-AP Appliance connecting the front and back ends
- Note that the Off-line Backup Storage and Shared Storage in the design diagram are used for independent functions not related to HA-AP Appliance and therefore not discussed here.

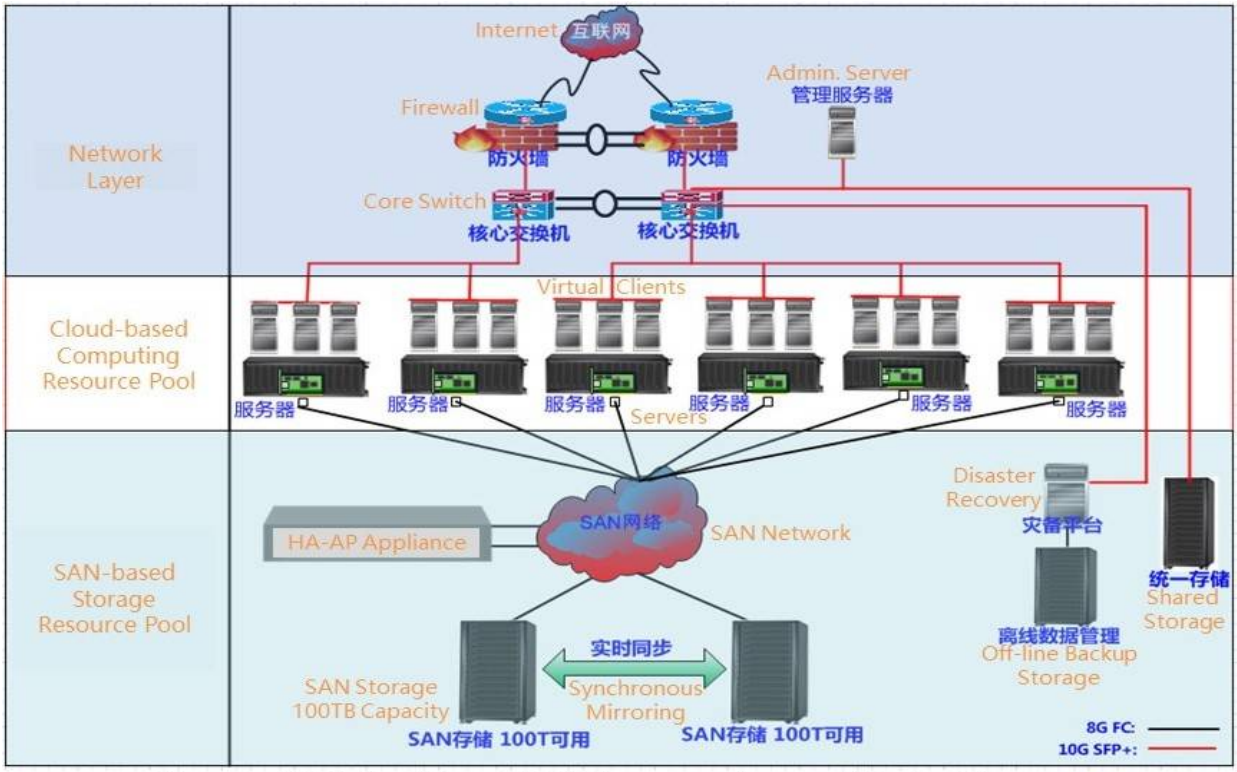

Figure 3. CSMG Cloud-based IAAS Datacenter Structural Design Diagram

Benefits: Affordable Zero-downtime Business Continuity

The system has been installed, tested, and in production with highly satisfactory results. The SI's manager-in-charge, Mr. Wang, passed on these customer comments, "The Loxoll HA-AP Appliance fully meets our functional and performance requirements. We are also most impressed by how it handles failover/failback smoothly without disruption to the applications during testing."

Mr. Wang also drew his own conclusion, "The Loxoll HA-AP Appliance is a very affordable, high price-performance value HA SAN solution. It assures zero-downtime business continuity for our customers. We strongly recommend this solution to any customer that has the need for high business continuity."