

SECURE

your data for the long run.

Compliant Archiving Solutions from HP and iTernity

Create a secure and cost-effective archiving solution.

Solution brief

The challenge of compliant archiving

Increasing digitalization has created new requirements regarding the handling of important business information, affecting the digital archive in particular. Today, legal rules and regulations need to be merged with organizational workflow management to achieve IT efficiency and cost control.

Also growing in significance across industries is the topic of compliance, which encompasses records retention, information security, and consumer privacy provisions of legislation. Whether tax-relevant information, product documentation, correspondence, or various types of data (e.g., patient, insurance, financial, construction, or research) are involved, companies must take measures to prevent manipulation and ensure that audits can be performed at any time. Audit-proof archiving requires extensive data migration, high scalability, and openness for future storage technologies to avoid locking data into a proprietary system or technology.

iCAS on HP with patented CSC technology

To help companies meet data archiving challenges, converged infrastructure technologies from HP – combined with the archiving technology from iTernity (iCAS) – provide an open archiving platform based on HP's complete portfolio of servers and storage systems. This solution delivers a new level of simplicity, integration, and automation that lowers costs and risk while enabling better utilization of information assets.

With the patented and certified Content Storage Container (CSC) technology, the system provides Write Once Read Many (WORM) functionality for data protection by using future-proof HMAC-SHA-512-bit hashes. The flexibility and openness of iCAS on HP give you the advantage of using existing or newly acquired storage capacity more efficiently, and saving costs as hardware, software, and training investments are protected. To include archive data in existing backup and restore processes, the archive LUN can

Table 1. The iCAS on HP Advantage

Security

- Technology (WORM, AES encryption, data shredder according to the U.S. Department of Defense(DoD) specifications)
- Extensive ISV support (OpenText, Symantec, etc.)
- KPMG compliance certification
- Customer references in all industries

Flexibility

- Hardware-independent
- Supports virtual machines (VMware, Hyper-V, Citrix, and Xen)
- Addressable by numerous content sources (ERP, DMS, Mail)
- Copy tool with logging for compliant data migration
- Scales from gigabyte to petabyte

Economy

- Investment protection
- Easy data migration
- License model
- Lowest total cost of ownership compared with proprietary archiving solutions

easily be added to these processes. Existing file servers and storage area network (SAN) systems can be easily expanded with iCAS on HP to create the frequently requested “Unified Data Storage.”

Secure for the future

During the long-term preservation period of 6, 10, 30, or more years, technological enhancements will occur, and storage technologies with increasingly favorable price-to-performance ratios will hit the market. iCAS on HP integrates seamlessly into any type of storage structure. For long-term availability, it is important that the archived data can be migrated to new technologies as easily as possible and at low cost during regular operation. iCAS on HP is based on open industry standards, which guarantees that your data can be migrated into future storage architectures and technologies and that you do not fall into the cost traps of proprietary storage systems.

The CSC technology compiles the archived data and documents with its corresponding index data, creation date, and retention date into a data container, which remains verifiable and can be stored on any storage medium. The file containers can be moved or copied on a system level from one storage technology to another. Data can also be optionally encrypted using AES-256 algorithms and then compressed by up to 50 percent, enabling better storage utilization, reduced energy use, and lower costs.

Certified-compliant archive solution

Federally mandated retention periods can be managed flexibly with iCAS for each container. Deletion is not possible before the retention period has expired. Once the retention period has expired, the data can be deleted according to the specifications of the U.S. Department of Defense (DoD), i.e., fully destroyed by means of multiple overwrites with changing bit patterns. Conformity with respective regulations – such as the Sarbanes-Oxley Act (SOX), EuroSox, Basel II, etc. – is guaranteed. To ensure smooth operation of your archive, iCAS exclusively uses certified storage systems. All HP StorageWorks storage products are extensively tested for compatibility with iCAS and successfully certified. Further, iCAS on HP has been appraised and certified by the auditing firm KPMG, among others.

Economical long-term archiving

The overall costs for archive projects are largely determined by two factors: data migration and recurring license costs for hardware replacement. Regular data migrations to new storage media are time-consuming and usually require high personnel overhead. iCAS on

HP significantly reduces this overhead, as migration takes place during regular operation on the storage level and without placing a load on the applications. A special copy tool allows compliant data migration by logging the migration process and verifying the copied data. The hardware independence of iCAS on HP enables sustained use of the archive license. Hardware replacement requires no renewed licensing.

For safety reasons, company internal audit rules often require duplication to one or more sites. iCAS on HP enables this by using another backup path to a different site. Alternatively, standard storage tools (e.g., array-based replication, server-based replication) can be used to replicate the archived data to any remote site. With these simple technologies, it is easy and efficient to implement replication. With iCAS, only the net archive volume is licensed, which means no additional license costs arise when replacing an outdated data filing system.

iCAS on HP: How it works

iTernity's iCAS middleware technology enables the creation of a compliant archiving platform or storage repository that serves as the foundation for an archiving solution. In Figure 1, the platform consists of an appliance (the green box), the iCAS middleware on a standard HP ProLiant Storage Server. If you require greater capacity, you can add HP StorageWorks arrays (such as MSA, P4000, EVA, XP, or X9000) or utilize unused capacity that already exists in-house.

An ISV application is required to create a complete archiving solution. This could be a document management system (DMS) or enterprise content management (ECM) system or another application that interfaces directly with your enterprise applications or processes, such as Microsoft® Exchange, SharePoint®, or SAP. The ISV application extracts the data from Exchange or SAP and presents it to the iCAS on HP appliance, which preps the information to be properly stored on a StorageWorks array. Currently, iTernity supports more than 40 applications, permitting iCAS on HP to be used in a wide range of applications and markets.

The additional deployment of hierarchical storage management solutions (HSM) also enables the transfer of long-term data to low-cost media such as tapes. This is particularly important if the safekeeping procedures dictate that the data also has to be stored separately at a secure location, on an linear tape-open (LTO) WORM, for example.

None of these archive data replications require additional licenses, which makes iCAS on HP even more economical.

The HP StorageWorks Archiving Solution

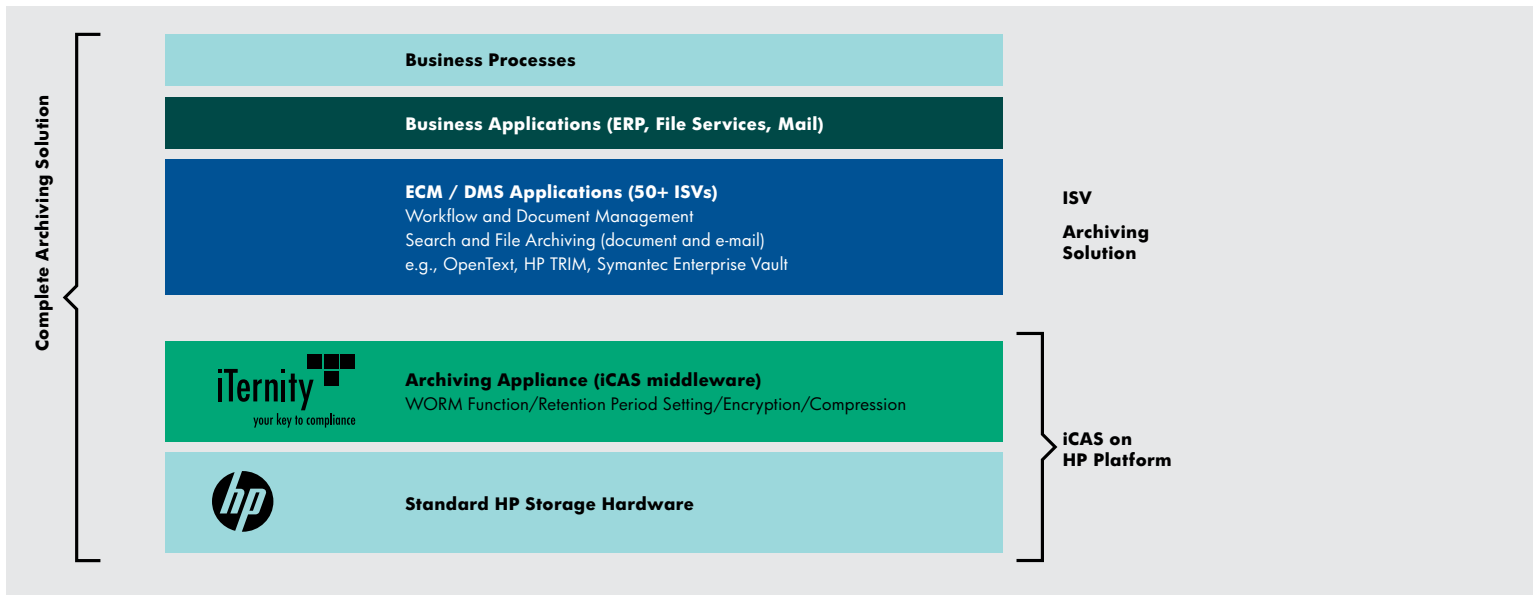


Figure 1. The iCAS on HP Integrated Archiving Solution offers secure, cost-effective data preservation.

Overview Matrix for Choosing the Right Hardware for the iCAS on HP Solution

	Appliance	Virtual Machine	HP X1400 / HP X1600 iCAS SE	HP X1800	HP X3800	HP X9000
Criteria						
Archive size						
Less than 5 TB	✓✓	✓✓✓	✓✓	✗	✗	✗
Greater than 5 TB	✓✓	✓	✓✓	✓✓	✓✓	✓✓✓
Large number of archive objects	✓	✓	✓✓	✓✓✓	✓✓✓	✓✓✓
Hardware availability	✓✓	✗	✗	✓✓	✓✓	✓✓✓
High availability						
Cluster	✗	✗	✗	✓✓	✓✓	✓✓✓
VMware	✓✓	✗	✗	✗	✗	✗
Storage Mirroring	✗	✓	✓✓	✓✓	✓✓	✗
Performance	✓	✓	✓✓	✓✓	✓✓	✓✓✓
JBOD	✓	✓✓	✓✓	✗	✗	✗
SAN (Fibre Channel, iSCSI)	✓	✗	✓✓	✓✓	✓✓	✗
Enterprise file services	✓	✗	✓	✓✓	✓✓	✓✓✓

✗ = Not very well suited ✓ = Okay ✓✓ = Well suited ✓✓✓ = Very well suited

Table 2. Determine the best iCAS configuration by assessing factors such as archive size, high availability, performance, and storage type.

Note: The following configurations are examples only. Your actual configuration will vary, depending on your requirements. Consult with your HP or iTernity representative for an official recommendation that meets your unique needs.

iCAS – JBOD Configuration Example

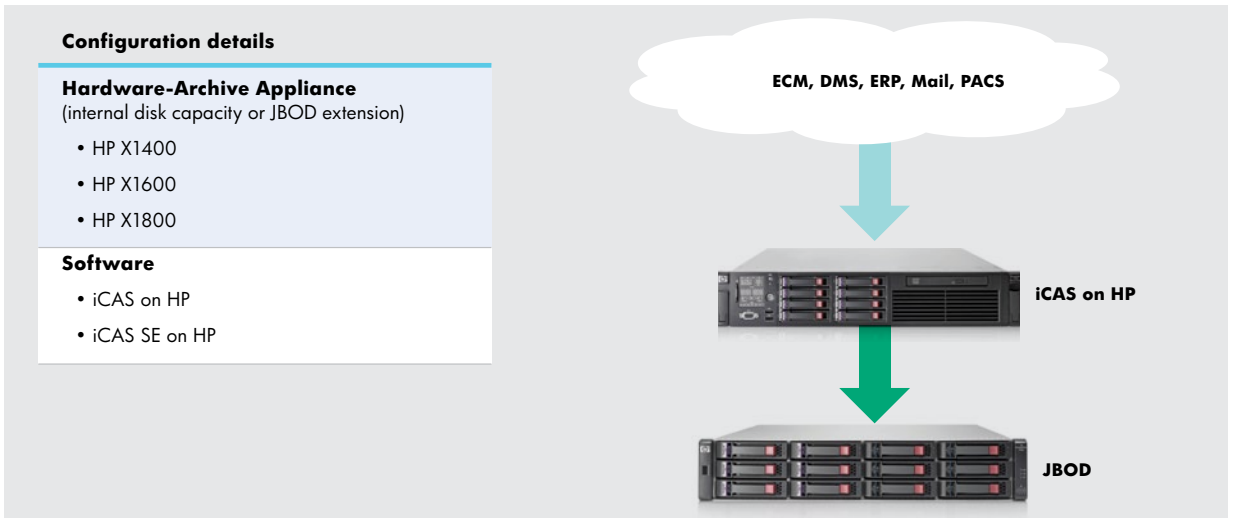


Figure 2. A typical JBOD configuration in which the storage is internal or directly attached to the iCAS on HP appliance.

iCAS – Virtual Machine Configuration Example

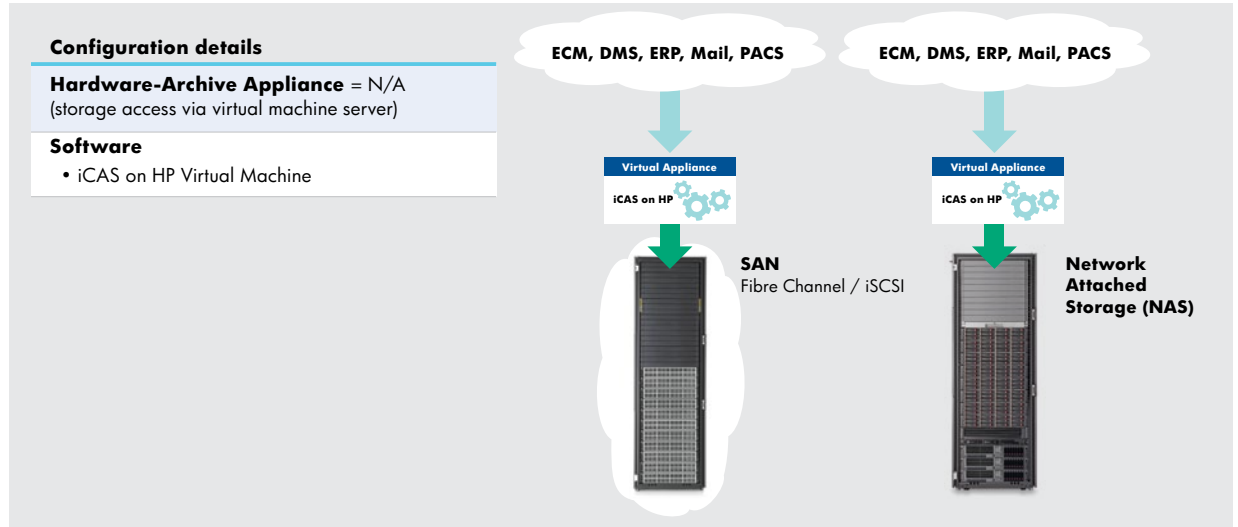


Figure 3. A typical virtual machine configuration that uses a VMware appliance to store the archived content on either a SAN or NAS storage device.

iCAS – SAN / NAS Configuration Example

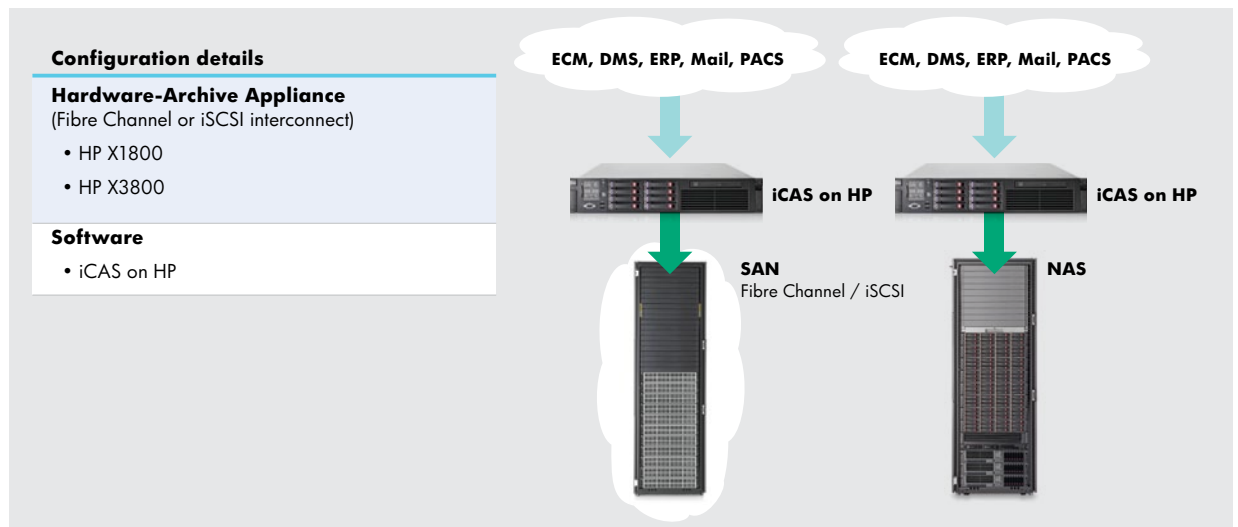


Figure 4. A typical SAN/NAS configuration that uses an iCAS on HP hardware appliance to store the archived content on either a SAN or NAS storage device.

Scalable

The iCAS on HP archiving platform is scalable for mid-market and enterprise businesses, making it ideal for new implementations of any size. High-maintenance and slow optical jukeboxes can also be replaced. Cluster configurations ensure a high data throughput, availability, and security for archive operations.

IT managers also profit from use of the familiar HP storage portfolio. For example, an administrator may make use of HP StorageWorks P2000/MSA, EVA, or XP disk arrays or the P4000 SAN solution. Once capacity limits are reached, SAN storage can be expanded; maintenance of a separate and isolated storage system is no longer required. For high-availability reasons, iCAS on HP can be set up as a cluster configuration or the enterprise clustered file service system HP X9000 can be used.

The multi-subscriber capability of iCAS on HP allows departments, subsidiaries, and customers to archive separately. Different storage paths can be defined for each subscriber, ensuring spatial separation of the individual data stacks.

Compliance archive in virtual environments

iCAS can be used to virtualize even complex high-availability archive structures simply, manageably, and economically. The deployed hardware is completely separated from the deployed applications (e.g., DMS, ECM, enterprise resource planning (ERP), or e-mail system) by the virtualization level created using iCAS. This additional virtualization level enables full exploitation of the known advantages of a hardware-independent architecture. Hardware upgrades or migrations to new hardware systems can be carried out simply during scheduled downtime periods.

The iCAS solution itself can also be virtualized; technologies such as VMware®, Citrix®, Xen®, and Microsoft® Hyper-V™ are fully supported. SAN virtualization such as the HP SAN Virtualization Services Platform (HP SVSP) and HP P4000 SAN solution can also be included in an archive concept with iCAS. iCAS thereby enables a comprehensive virtualization of the entire archive infrastructure and offers users the complete range of associated advantages with regard to flexibility and economy.

iCAS – integration into a wide variety of applications

For the use of ERP, DMS, and in the case of Picture Archiving and Communication Systems (PACS) and other systems for document and data administration, archive solutions should integrate seamlessly into each system. iCAS provides an application programming interface (API) or a file system interface for this purpose. The compatibility between HP and iCAS and numerous renowned ERP, ECM, and PACS systems has been certified in comprehensive tests. The iCAS on HP solution currently supports more than 40 ISVs, including Open Text, Symantec – Enterprise Vault™, HP TRIM, IBM FileNet®, and GE Medical Systems.

“The introduction of iCAS on HP was a successful first step to a future-proof central archive. Patients’ data will have a secure place in iCAS, along with SAP (receipts and bills), e-mail, and document archiving. The benefits of this solution are scalability and compliant and tamper-proof archiving as well as an easy integration.”

Martin Overath, Head of IT, Johann Wolfgang Goethe University Medical Facility

“For the upgrade of our storage and archiving infrastructure, the combination of HP EVA 4400 storage systems and the iCAS archiving software was the optimal solution. We were able to consolidate our storage while migrating our tamper-proof long-term archiving from magneto-optical jukeboxes to hard disks. Data access time went from minutes to seconds. In addition, the management and administration with the iCAS solution is so much simpler.”

Timo Kaufmann, system administration, ILLE Papier-Service GmbH

“The archive has to seamlessly integrate into the new configuration with SAP. We chose iCAS on HP because it is a tamper-proof solution, and because we can expect reliable support. The options to connect to third-party applications and the ease of extending the system convinced us.”

Wolfgang Köhler, head of the IT department, LVIM Pfalz

iTernity and HP Solution in action

The storage infrastructure for Ille Papier Service in Germany was no longer sufficient for the ERP application, and the response time of the existing archiving solution based on Magneto Optical (MO) disks was not fast enough.

To simplify the storage operation and its administration, Ille decided to consolidate the archive data with the ERP data in a single storage environment. The challenge, however, was to adhere to statutory requirements while ensuring the audit-proof archiving of the data in this new landscape.

To build this consolidated storage environment, Ille used an HP StorageWorks Enterprise Virtual Array (EVA) 4400 and two HP ProLiant DL380 G6 servers to form one large storage pool with the option of additional expansion. Using the archiving middleware iCAS from iTernity running on an HP DL380 G6, the archive data can be stored legally – and in accordance with all required guidelines – on any HP StorageWorks disk systems.

iCAS on standard HP StorageWorks disk arrays made this storage consolidation possible, providing a high availability solution that improved IT efficiency and controlled costs by improving application and database performance while simplifying the administration of the entire storage infrastructure. And with their archiving solution based on standard HP disk arrays, Ille is improving the reuse of their information assets to boost productivity and save time to make better business decisions.

According to Timo Kaufmann, IT systems administration with Ille Papier Service GmbH, “This solution seemed to be far more future-oriented. Instead of having to continue operating and managing two different media and technologies, we were able to implement our storage and archiving requirements with one system.”

Resources

To learn more about solutions from HP and iTernity, visit www.hp.com/go/allianceone/program (select “Find a partner solution,” and enter “iCAS”) and http://iternity.com/hp-icas_en.html.

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