

# ARCHIVE APPLIANCE OR ARCHIVE SOFTWARE?

Which is the Better Choice for Long-Term Data Archiving?



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## Introduction

To meet internal or external business requirements for data retention and preservation, almost every organization archives at least some of its data. However, most organizations may not realize that designing a successful archive can be much more challenging than designing a backup. The most important reason for this is that the data in the archive will outlive the server and storage platforms.

In other words, the storage hardware has a shorter predicted life than the data it is storing. Although archive storage has a longer life than other forms of storage, with an expected useable life of 8 to 15 years, the data archived may need to be available for 25 or even 50 years. For this reason, organizations will inevitably need to plan for data migration and create an archive solution that will easily grow and change, as technology changes and as individual organizational requirements grow and change.

## Pros and Cons: Archive Software / Archive Appliance

Archive software has been available for over 25 years and requires installation on a suitable server provided by the User / Organization.

Storage “Appliances” came to market in the last 20 years. These appliances were seen as a way to simplify the integration of disk storage devices by creating “network attached” devices. Some appliances include storage and some are sold independently of the storage they manage. More recently, appliances specifically related to the archive market have appeared.

An Archive Appliance typically consists of a CPU, Disk and RAM, Ethernet and interface cards (FC, SAS etc.), redundant power supplies, operating system, software with required functionality, graphical user interface and remote access software.

This paper will review the pros and cons of using an Archive Appliance or Archive Software from a long-term usability and cost perspective. We will examine five areas:

1. Value for money
2. Flexibility
3. Integration
4. Maintenance and Support
5. Longevity

## 1 Value for money

The cost of hardware for an appliance can be considerably more than the cost of buying a correctly specified server. Many organizations have greater purchasing power than the appliance manufacturer, and so receive significant discounts on servers. Some appliances are manufactured in very small quantities and due to a lack of “economies of scale” production costs are higher. In addition to this, some appliance manufacturers have to inflate prices to build in additional margin for channel partners.

Purchasing software only solutions, allow organizations to choose the server supplier of their choice and leverage their own purchasing power and that of other server purchasers to keep cost low. Alternatively an existing server or virtual machine could be used.

Some appliances and archiving software requires a disk cache often in the form of RAID. In an appliance, it is built into the system, with the same issues as above inflating the cost again. For a software solution, the disk cache can be a dedicated or shared resource, potentially allocating capacity from an existing store, such as NAS or SAN disk.

## 2 Flexibility

Appliance manufacturers generally have a “one size fits all” philosophy, offering only a few different models. The user has to modify their requirements to best fit the appliance that is available to them. In most cases, customization of the appliance is not possible.

An organization that needs extremely fast ingestion may have their system performance restricted due to the provided hardware. Conversely users who don’t require fast performance end up paying for higher specification hardware that they do not need. Pre-configured CPU, disk and memory capacities, and interface cards, limit choice and force the user to adopt the manufacturer’s preferred configuration.

With archiving software, users have the flexibility to purchase higher or lower specification systems to best fit their individual requirements for performance and cost. Additionally, an appliance is often designed to only work with one archive storage technology. Software has the flexibility to support many archive technologies and allow a user to migrate data to a new storage technology, as their needs change.

### 3 Integration

Generally, appliances can be easier to integrate into an existing environment. The appliance has a standard configuration and so the user has fewer options. Most appliances are fixed to one operating system that is pre-installed and often not upgradeable. Appliances typically are built using either a Microsoft Windows Storage Server or Linux operating system. It is important for the user to know which. Integrating a Linux based appliance into a predominantly Windows network (or visa versa) is possible using standard CIFS or NFS network protocols. However, many appliances do not support Extended File Attributes or Access Control Lists, which to some organizations are a critical part of their overall deployment.

Archiving software can be compiled for many different operating systems, allowing users to choose the best server environment for their individual network security model. Some manufacturers provide software for Windows, Linux, UNIX and Mac operating systems. They also allow users to update their operating systems with critical patches and updates that may not be available for appliances. In addition, if the organization decides to upgrade their production servers to a new operating system, the archive server can also be upgraded, when using archive software. Finally, they allow the archive to be moved from one operating system to another, allowing the organization to standardize on a single server operating system for their entire network.

### 4 Maintenance and Support

As an appliance consists of hardware and software, providing maintenance and support can be challenging. Ensuring the necessary spare parts are in the correct physical location can be logistically difficult and expensive. To avoid this cost, some appliances are sold with return-to-manufacturer warranty, which can be highly disruptive to the user. Generally, the cost of onsite maintenance for appliances is high and in some regions it may not be offered.

Archive software is installed on a server chosen by the user and so the hardware maintenance can often be rolled in with other server maintenance contracts. The organization will select the server manufacturer with which they are most familiar. Server maintenance is significantly cheaper than appliances. Software maintenance is provided from a remote location using remote desktop functionality. This allows trained support engineers to be anywhere in the world, which improves response times and keeps cost low.

## 5 Longevity

In an archive environment, data often outlives the hardware. Migrating data from an old archive to a new one, can be a time consuming and an expensive operation, and so should be done as infrequently as possible. Appliances have a limited life of approximately 5 years, after that maintenance contracts are difficult to purchase. The only option available to the user is to buy something new, perhaps another appliance from the same manufacturer. However, this will be a completely new purchase, repurchasing both hardware and software.

A software license is indefinite and as long as a user purchases maintenance each year, they are entitled to updates. Users can upgrade their server or operating system whenever they feel it is most prudent.

As new and improved archive storage technologies are constantly coming to market, organizations should have the flexibility to adopt new technology as they see fit. However, archive technology migration may be impossible with either an appliance or software only approach. Organizations should check if their supplier currently supports more than one archive technology.

## Conclusion

In conclusion, an appliance designed for either the primary storage or backup markets have often been successful. They are sold in similar quantities to a server and simplify installation and operation.

An appliance for the archive industry does not have these advantages. They are generally more expensive because they are manufactured in small quantities, they are less flexible, with fewer options, have support and maintenance issues and have a limited useable life.

Archiving software installed on a server, will allow organizations to create a customized solution that best fits their own requirements, take advantage of their own purchasing power and stay current with server, operating system and functionality updates.

In the long-term, a software solution will provide greater flexibility at a lower Total Cost of Ownership than a similar appliance solution.

## About QStar Technologies

Since 1987, QStar has delivered enterprise class data management and archival storage software solutions to customers around the world. QStar consistently meets increasingly sophisticated requirements with an industry leading technology platform, which has the capability and flexibility to meet the demands of today's challenging business climate.

QStar's archive solutions are part of a complete archive and data management platform that is hardware, system and data independent. This unique architectural approach enables customers to optimize their existing IT infrastructure while minimizing disruption and capital expense. With thousands of customers across a wide range of industries, QStar provides corporations, government agencies, and medical facilities with the strategies and solutions to manage a changing technology landscape while protecting their valuable digital assets for the future. [www.qstar.com](http://www.qstar.com)