

Solution in Detail

SAP Information Lifecycle Management

SAP® Information Lifecycle Management to Reduce Business Risk and Costs



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Quick Facts

Summary

The SAP® Information Lifecycle Management component helps you streamline your IT infrastructure by simplifying legacy system decommissioning and automating data retention management. You can archive data in accessible and searchable formats. Auditing and reporting functions for archived data and central management and enforcement of rules-based retention policies help you minimize business risk, reduce costs, and increase control.

Objectives

- Curb growth in IT system complexity
- Keep pace with increasing number and complexity of regulatory retention requirements
- Observe litigations requiring legal holds on data
- Leverage explosion in business data, but control associated IT costs

Solution

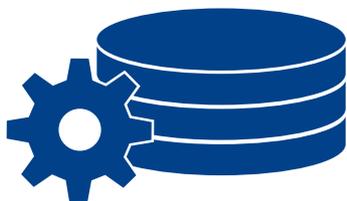
- Data archiving to store data volumes securely where they can be efficiently accessed
- Retention management to enforce retention policies across the enterprise and perform destruction of data based on policies
- System decommissioning to enforce retention policies on data from shut-down systems

Benefits

- Streamline IT infrastructure and lower costs through the safe, efficient decommissioning of redundant systems
- Reduce risk by delivering full auditing and reporting functionality, enforcing retention policies based on rules, and preventing destruction of important data
- Increase legal compliance by automatically managing the retention of data from your SAP applications based on retention policies and rules you define

Learn more

Contact your SAP representative, or visit www.sap.com/ilm.



ILM gives you complete control over your data and automates rules-based management of the retention and destruction of your data.

The Growing Complexity of Information Management

Information lifecycle management (ILM) is the way to gain complete control over your data. This includes complying with internal, external, and legal requirements for its retention and destruction. For this, you need the tools and solutions to tell you what kind of data your company deals with, where it resides, how long it must be retained, when it may be destroyed, and when it must be destroyed.

TACKLING A MULTIFACETED CHALLENGE

This definition of ILM represents a movement away from a purely technological approach to data management. It's now widely recognized that it is impossible to manage data and information from the time it is "conceived" through its final disposition by focusing only on storage hardware and software. A large amount of information is created in application software and resides there for some time before it can be moved to storage systems. And even when it has been moved to storage, the business application still "owns" and controls the data. So it is essential for applications and storage systems to communicate

and be compatible. From the SAP perspective, it means that ILM must evolve to address more than just archiving. To this end, the ILM approach at SAP is built upon three cornerstones:

- **Data archiving and data management**, which focuses on data-volume management. This is the traditional area of focus for information management and has been supported by SAP® software for years.
- **Retention management**, which addresses the management of the lifecycle of data up to the point of destruction. It uses retention policy management and legal holds to help you control the retention of your data during its entire lifecycle.
- **System decommissioning**, which covers the decommissioning of legacy systems by moving data into a central ILM system called the retention warehouse. It supports methods for tax and other types of reporting on data from decommissioned systems and includes all retention management functions for legally compliant storage of data.



The ILM approach at SAP is built upon three cornerstones: data archiving and data management, retention management, and system decommissioning.

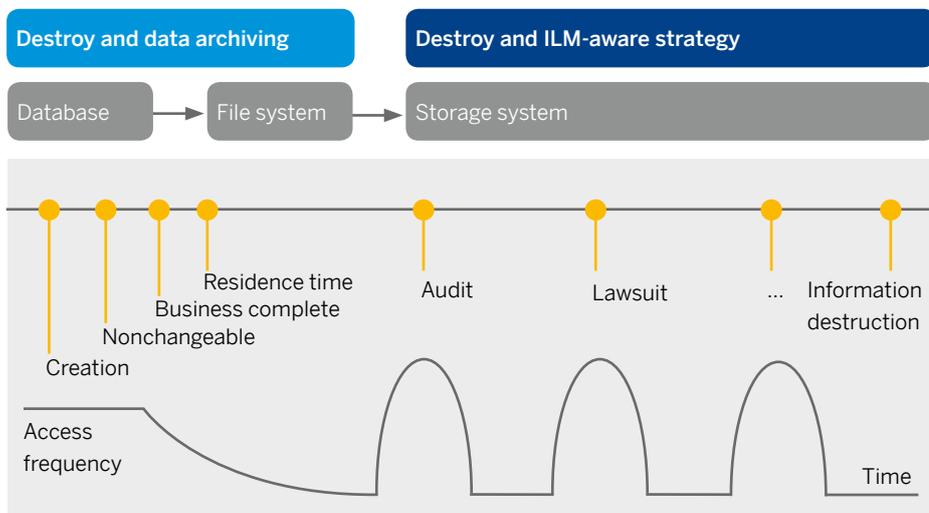


Retention management and system decommissioning represent a major step toward greater automation and completeness. Through ongoing dialog with the ILM influence council at the Americas' SAP Users' Group (ASUG) and other ILM customers, SAP gained detailed insight into the challenges companies are facing in their ILM and legal compliance strategies. The retention management and retention warehouse functionality addresses these challenges, developed with a focus on enhancing or building on existing functions to support nondisruptive innovation.

WHY FOCUS ON ILM?

Why the heightened focus on a holistic approach to information management today? Because companies of all sizes need to meet the demands of today's business world in part by getting a better handle on the increasing complexity of their IT system landscapes. The key drivers for ILM are diverse and continue to grow in complexity.

Figure 1: An Overview of the Data Lifecycle



Lifecycle of Data Processed by SAP® Software

Figure 1 shows the lifecycle of data created and processed by SAP® software and the frequency with which it is typically accessed over its lifetime. Data is only modifiable and relevant for everyday business for a short period of time. The largest portion of the data lifecycle is the retention period, during which the data has to be kept but is accessed very infrequently. After the time has passed that you are legally required to keep the data, it can be – and in some cases must be – destroyed.

Growth in IT System Complexity

IT system landscapes continue to grow in size and complexity due to factors such as mergers and acquisitions and sheer business growth. Maintaining multiple systems – many of which are likely redundant – and countless legacy systems is very costly in terms of hardware and IT maintenance personnel. Yet companies do it routinely; they feel compelled to keep old systems running so that they can continue to access the data contained in them for auditing, litigation, and reporting purposes or to access its business context.

Growth in Regulatory Retention Requirements

Incidents such as the September 11, 2001, attacks and the collapse of Lehman Brothers Holdings Inc. in 2008 have triggered a staggering proliferation of legal requirements over the last decade that cover digital information. It is estimated that many thousands of regulations currently exist worldwide that mandate the maintenance of electronic data, and the number is steadily growing. Among them are the Basel III Accord released in September 2010 and the reworked e-discovery rules in the United States, which officially took effect on a federal level December 2006. By 2008, 17 states had incorporated the e-discovery law into their general civil procedures and codes.

As a result of these changes and new laws, the value of information in an enterprise has risen considerably. In fact, for some companies, information is the single most important asset. At the same time, the complexities associated with managing this information based on its value has increased to such an extent that traditional data

management strategies are no longer adequate. Laws are covering more and more data types and a growing number of industries and countries – and in some cases for longer periods of time. It is not unheard of, in the German public sector, for example, to have legal retention periods of 100 years. These laws are expected to lead to an even greater increase in data volumes that will eventually nullify – and even reverse – cost savings attained through the falling cost of storage.

Increase in Litigations

Companies are facing increasing demand to present corporate information in courts during litigation. For many, just locating the information and protecting it from unauthorized access and adulteration for the duration of the lawsuit can be very costly and extraordinarily time consuming. The data required may be 10 years old, have been stored in a long-forgotten storage device along with other unrelated information, and exist in a format that can no longer be read by the company's software.

Explosion in Business Data

Most companies now have a wide variety of enterprise applications that capture massive amounts of information about their customers and everyday business activities. These applications have resulted in the explosive growth of business data, all of which needs to be managed in a legally compliant manner both nationally and in accordance with the laws of any country where the organization conducts business. Keeping this amount of historical data accessible within the company's main database is costly and tends to impair system performance.



A Complete ILM Solution from SAP

STREAMLINING YOUR IT INFRASTRUCTURE

The SAP Information Lifecycle Management component enables you to streamline your IT infrastructure while preserving full auditing and reporting functionality for the data. The component offers rules-based enforcement of retention policies. You can decommission redundant systems but still audit and report on the data archived from those systems. At the same time, you can automatically manage the retention of the data from your SAP applications by applying specific retention policies and rules to the data, giving you complete control over data management.

Through support for archiving and data management optimization, SAP Information Lifecycle Management helps you reduce database volume growth. You can archive noncurrent data in readily accessible formats and track exactly where data is so you can find it whenever you need it. In addition, you can find and preserve data for legal

discovery processes – the software allows you to compile data in response to legal discovery requests – and enforce holds to restrict destruction of the data until a legal case is closed.

As summarized in the following table, the software supports all key phases of the information lifecycle.

ENABLING NONDISRUPTIVE INNOVATION AND EXTENSIBILITY

SAP Information Lifecycle Management offers functionality for automated and comprehensive ILM support. While the traditional archiving tools provided with SAP applications provide basic support for your ILM strategy, SAP Information Lifecycle Management builds upon and extends this functionality. Because the software is tightly integrated with the traditional data management tools provided with SAP software, implementing SAP Information Lifecycle Management does not disrupt your current data archiving practices.

Data Archiving	Retention Management	System Decommissioning
Analyze data volumes	Define and manage all retention policies across the enterprise	Decommission legacy systems to a central information lifecycle management (ILM) retention warehouse system
Securely move data from the database to the archive	Manage the responsible destruction of data based on policies	Enforce retention policies on data from shut-down systems
Efficiently access archived data	Enforce retention policies	Run reporting on data from shut-down systems
Archive data (as near-line storage) within the SAP NetWeaver® Business Warehouse application	Use secure ILM-aware storage, including the ILM database storage option based on SAP® IQ software	Use a predefined business warehouse tax content and reporting interface
	Perform e-discovery rules and set legal holds	Interpret and understand data in archives without the help of the original system



Data Archiving: The Core of the Solution

ENHANCING ARCHIVING FUNCTIONALITY TO ADDRESS BROADER NEEDS

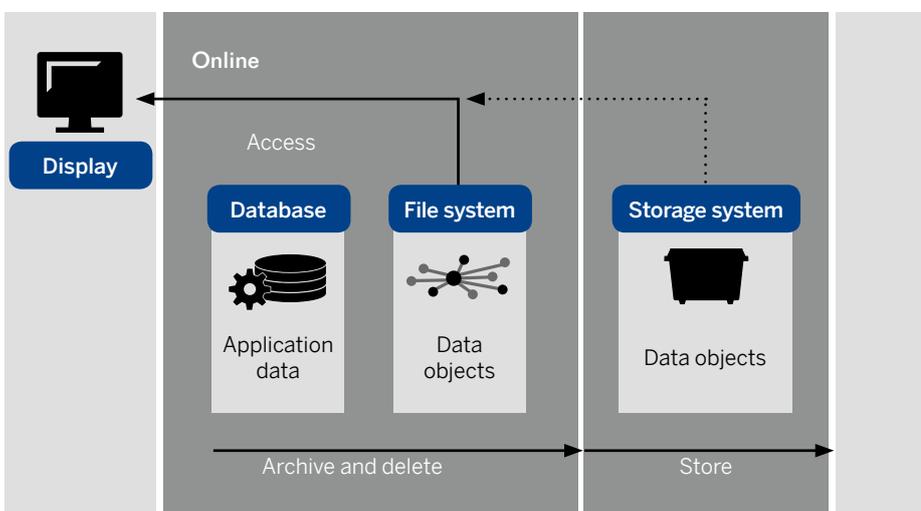
Data archiving is at the core of SAP Information Lifecycle Management – and the support for retention management and system decommissioning is built upon this functionality. If you have been archiving SAP software data for some time, you have a perfect foundation for a full-fledged ILM solution from SAP that can be implemented with minimal disruption to your business.

Data archiving means writing business-complete data from a database into archive files and then deleting the data from the database. The term “business complete” refers to data you no longer need to access on a regular basis and which will no longer be changed by current or future business transactions. Data archiving performed by SAP software handles structured data only – transactional or business data. It does not handle unstructured data, which includes document formats such

as Adobe PDF or TIFF. In an SAP software environment, unstructured data is often produced as a result of scanning incoming or outgoing documents, such as invoices. This type of data is usually stored in optical archives and is distinct from the archive files created with archiving functionality provided by SAP Information Lifecycle Management. However, SAP Information Lifecycle Management does handle storage of unstructured data. Please refer to the section “Retention Management” for details.

Figure 2 shows the steps involved in data archiving performed by SAP software. Note that archiving data does not remove the data from the system. Rather, it removes the data from the database connected to the SAP application. After data has been archived, it can be stored on third-party storage systems through the SAP Archiving application by OpenText. The data can still be accessed by the application until the data is permanently removed from the archive.

Figure 2: Overview of the Data Archiving Process



STREAMLINING ARCHIVING WITH INNOVATIVE ARCHIVING OBJECTS

The archiving object is one of the most valuable data archiving concepts in the approach to ILM that SAP supports. Not only does it greatly simplify the archiving process, but it also lays the foundation for effective, automated data retention management and system decommissioning.

An archiving object is a logical object made up of related business data and contains:

- **The definition of the logical units in business processes**, which include all of the database tables containing the data that makes up that archiving object and which must be archived in order to archive the entire associated business object – for example, a sales order in the SAP software made up of many different components, including data residing in several different database tables
- **The programs needed to archive the archiving object's data** – primarily “write” programs used to archive the data in archive files and “delete” programs used to delete the data from the database
- **The definition of the required customization settings for archiving the data** – for example, for a financial document, which may have a mandatory residence time of three months in the database after the business process is complete

SAP redesigned the archiving objects to integrate with the retention policy management or “rules engine” of SAP Information Lifecycle Management, where data retention rules are defined. This enables you to integrate rules into the archiving process so that they are automatically applied and enforced. It also makes the data available for:

- **The creation of snapshots** – which allows you to take a picture of live data without deleting it from the database
- **Data destruction** – which enables you to use an archiving object to destroy a document from a system running SAP software

To understand the concept of archiving objects more fully, consider the following example. When you archive a sales order, the data archiving programs need to archive data from all of the database tables that contain data relevant to the sales order and as required by various business processes spanning your organization in sales, finance, and other departments. The table shown in “Example: Archiving Sales Orders – Archiving Object SD_VBAK” lists some of the typical database table names that the archiving software needs to access in order to fully and completely archive the data of a sales order. When you archive the related business data predefined in the archiving object, the data is written from the database to archive files using the corresponding write program and then deleted from the database using the corresponding delete program.



IT system landscapes continue to grow in size and complexity, yet maintaining multiple systems is costly.



Example: Archiving Sales Orders – Archiving Object SD_VBAK

SAP offers hundreds of archiving objects and classes that you can choose from. The most common archiving objects are currently enabled for the SAP Information Lifecycle Management component, with fullest coverage provided in the areas of financials and tax. However, development at SAP enables additional archiving objects as the need arises, with the result that the number of ILM-enabled archiving objects available continually increases.

Technical Name of Database Table	Table Name
AUSP	Characteristic Values
CMFK	Storage Structure for the Error Log Header
CMFP	Storage Structure for Errors Collected
FMSU	FI-FM Totals Records
FPLA	Billing Plan
FPLT	Billing Plan: Dates
INOB	Link Between Internal Number and Object
JCDO	Change Documents for Status Object (Table JSTO)
JCDS	Change Documents for System/User Statutes (Table JEST)
JEST	Object Status
JSTO	Status Object Information
KANZ	Assignment of Sales Order Items – Costing Objects
KEKO	Product Costing – Header
KEPH	Product Costing: Cost Components for Cost of Goods Manufactured



KNKO	Assignment of a Cost Est. Number to Configured Object
KOCLU	Cluster for Conditions in Purchasing and Sales
KSSK	Allocation Table: Object to Class
NAST	Message Status
SADR	Address Management: Company Data
VBAK	Sales Documents: Header Data
VBAP	Sales Documents: Item Data
VBEH	Schedule Line History
VBEP	Sales Document: Schedule Line Data
VBEX	SD Document: Export Control: Data at Item Level
VBFCL	Sales Document Flow Cluster
VBLB	Sales Document: Release Order Data
VBSN	Change Status Relating to Scheduling Agreements
VBUK	Sales Document: Header Status and Administrative Data
VBUP	Sales Document: Item Status
VBUV	Sales Document: Incompleteness Log
VEDA	Contract Data

Retention management and system decommissioning represent a major step toward greater automation and completeness.



Retention Management

MINIMIZING RISK BY PROACTIVELY MANAGING DATA RETENTION

The groundwork for every successful ILM strategy relies not only on the technical identification of business objects in the SAP software but also on a comprehensive inventory of the policies and regulations that are specific to each organization. Data retention policies lay out exactly which data must be kept for how long and where it should be kept – for example, online or in some kind of a storage system. They may vary for a single piece of data, for example, different countries have different laws and legal requirements that must be taken into consideration.

Most large U.S. and global companies already have some type of policy regarding the retention of paper documents and electronic documents and data, as well as additional retention policies required by their legal department, such as legal hold orders. However, due to the complexity and number of laws worldwide that govern the retention of data, complying with these policies can be challenging. SAP Information Lifecycle Management delivers retention management functionality for managing all aspects of data retention based on legal requirements. This functionality supports retention policy management, ILM-aware storage integration, and the management of the destruction of data. In addition, it delivers tools for dealing with e-discovery and legal hold rules.

GETTING AN OVERVIEW OF RETENTION MANAGEMENT FUNCTIONALITY

The information retention management functionality available through SAP Information Lifecycle Management enables you to manage internal and external policies in a flexible, comprehensive, and automated way. The entire concept is based on audit areas, which help you categorize your data. From a business point of view, audit areas indicate the reason for keeping data, for example, to support a tax audit. From a technical point of view, audit areas contain all elements necessary to group data together technically, such as tables, data types, and object types. SAP delivers several audit areas as templates. Of these, tax and product liability are the most important. The audit areas cover data from the SAP ERP application and from the SAP for Utilities and the SAP for Oil & Gas solution portfolios. You can use audit areas to build your entire retention management strategy, as the audit areas span the entire process from beginning to end.

Based on the audit areas, you can specify rules and policies according to different criteria, including how long data should be kept, the starting point from which retention time counts, and the location where it should be stored. These policies can express external legal requirements or internal service-level agreements. They can cover structured and unstructured data (from both SAP and non-SAP software) and even paper documents that are linked to the data and stored in an enterprise data warehouse. Data can have its own policies and rules, or it can inherit policies from other superordinate data. For example, a scanned-in bank check may inherit the policies of its associated financial document.



To give you maximum flexibility in the creation of policies, the software enables you to group data into object types. For example, you would create a policy for accounting documents under the audit area “tax” for object type “FI_DOCUMNT.” Once the policy is created, you can enter rules that enable you to determine how long and where the data is to be stored – variables specified by tax laws you must comply with. You can enter as many rules as you need per policy. You have the flexibility to determine who is allowed to enter or change policies and rules. You can establish, for example, that only one person from the finance department may enter or change rules for the “tax” audit area.

You can use this same rules engine to record data retention policies for data outside of your system, for example, a policy on how long to retain certain paper documents. While the software cannot enforce the policies for information outside of the SAP software, it does provide a central location where you can keep track of all data retention rules. The automatic enforcement of the rules takes place on data from SAP software at the time of archiving.

To enable efficient, effective information lifecycle management, SAP has enhanced archiving objects to support the integration of rules in the archiving process. This allows you to manage retention requirements dictated by internal business processes, apply end-of-life data policies, and consistently execute a data retention schedule that meets external legal requirements. These requirements are often dictated by laws and regulations, such as the Sarbanes-Oxley Act or the Health Insurance Portability and Accountability Act (HIPAA). They determine:

- How long you have to hold on to data – a question of data retention
- Where data is to be kept – a question of retention location
- When data needs to be destroyed – a question regarding the end of life of your data

Use the Cockpit Functionality for Retention Management

To facilitate the performance of retention management activities, SAP Information Lifecycle Management delivers an administrator role and a line-of-business role to be used within the SAP NetWeaver® Business Client software. The work, which is performed in a retention management cockpit, enables the user to perform specific retention management functions, such as defining rules and starting archiving programs. The roles are suggested templates and can be adjusted as needed.



Incidents such as the Enron upset have triggered a staggering proliferation of legal requirements over the last decade that cover digital information.



Perform Data Archiving and Data Destruction

Due to its flexibility, SAP Information Lifecycle Management is the ideal software to help you store and manage all of your company's retention rules, as well as enforce them for the data generated within SAP software. By enforcing rules automatically to help you manage data, the software clearly demonstrates its value. For example, SAP has enhanced the functionality of archiving objects to enable you to apply retention rules to data within SAP Business Suite software at the time of archiving so that, going forward, these rules are applied and enforced without human intervention – unless overridden by a legal hold. The write program for an ILM-enhanced archiving object, as delivered by the software, lets you choose from three different ILM actions: archiving, taking a snapshot, and data destruction. You simply select the option that's appropriate for what you need to accomplish from a data retention perspective.

Archive Option

Archiving functionality within SAP Information Lifecycle Management allows you to archive business-complete data. The software runs an "archivability" check to confirm that an object really is in the business-complete stage. During the write archiving phase, the software checks the retention management rules for each object instance to determine how long it should be stored and where. Based on the rules, the software writes the data to an archive file, organizing the archived data based on the rules you specified in SAP Information Lifecycle Management.

Snapshot Option

You can take a snapshot of data using SAP Information Lifecycle Management to copy data from open business processes to the archive. Because this option is intended for data from ongoing business processes that is still subject to change, the software does not perform an archivability check. This functionality complements the standard functionality for archiving business-complete data. In the archive, the snapshot is kept separate from the business-complete data. This option is especially important in a system decommissioning environment.



Most companies have a wide variety of enterprise applications that capture massive amounts of information about everyday business activities.

Destroy Option

When you choose to destroy data, the software does not run an archivability check. It checks the retention rules you entered for the archiving object. Data that can be destroyed immediately is written to an archive file. (The destroy option takes legal holds into account; if a legal hold has been placed on any data or document, destruction does not take place.) The transparency of this operation is of great benefit to you. Not only does it help ensure consistent handling of data destruction for online data, but it also supports you in case of an audit. For example, it generates logs that allow you to prove what data was destroyed during archive runs. After the data to be destroyed is removed from the database, the delete program deletes the archive file from the file system, so the archived data is never stored.

Destruction of Data in Archive

A second and separate destroy option eliminates data from the archive after the expiration date has been reached, indicating the data is eligible for destruction. This function offers you all archive files eligible for destruction based on their expiration date. From this list you can create a work list of items to be destroyed and then, in a second secure step, execute the work list to destroy the data. For extra security, a second person may run the actual destruction job. Any object with a legal hold appears in the work list if it has reached its expiration date but is not eligible for destruction due to the legal hold.

Automate E-Discovery

Companies today are dealing with legal hold and e-discovery requirements more and more – especially in the United States – because of critical changes to the e-discovery law. The legal case management functionality within SAP Information Lifecycle Management allows you to set up legal cases and manage all information related to each case. E-discovery functions help you collect all of the information relevant to a specific case. In a complex, distributed IT environment, this isn't always easy. The retention management functionality available through SAP Information Lifecycle Management enables you to do this – both automatically and manually.

E-discovery is facilitated by special reports connected to a legal case. The software delivers sample e-discovery reports that can be used directly or as a customizable template for special reports you may need to generate for cases. For all objects discovered and associated with a case, you can set a legal hold as required for the case.

Set a Legal Hold

Legal holds are freezes placed on information and data that are – or could be – involved in a legal case and were gathered during the e-discovery phase. This means that even though the retention period for certain data may have already expired (and, as a result, is due to be destroyed), the data must be retained until the legal proceedings have been completed.



You can even manage multiple legal holds for different cases on the same data. Once a legal hold has been placed on a specific document or group of documents, all other policies and rules for that document are overridden until the legal hold has been lifted. This means that not one of the affected documents – either in the database or the archive – will be destroyed until all legal proceedings have ended or the case has been closed.

Manage Unstructured Data

You can handle the retention of any unstructured data that is attached to structured data managed by SAP Information Lifecycle Management. You store the attached, unstructured data in a storage system using SAP ArchiveLink® software or the SAP Archiving application by OpenText. The references to the locations of the unstructured data are then stored in a second hierarchy that corresponds to that of the structured data. The location of each unstructured document is stored in the corresponding collection in a hierarchy that mirrors its hosting archived business object (see Figure 3). This way, the unstructured data appears close to its corresponding structured data and inherits the same lifecycle metadata.

Even though unstructured data is stored using a different interface than the structured data, both can be stored in the same storage system if the system supports both interfaces.

EXPLOITING ILM-AWARE STORAGE INTEGRATION

SAP recognizes that an ILM strategy is only complete when both the application and storage aspects of information management are taken into consideration. That's why an essential part of retention management functionality within SAP Information Lifecycle Management is ILM-aware storage integration based on secure storage technology.

With SAP Information Lifecycle Management, the lifecycle actions that occur with your SAP software data are based on the policies you enter into the rules engine. As data is moved to the archive, metadata is simultaneously passed on as WebDAV¹ properties. This metadata needs to be accepted, understood, and enforced by the third-party storage system – functionality referred to by SAP as ILM-aware storage. Storage vendors can obtain an ILM certification from SAP to show that their storage systems are ILM-aware.



SAP Information Lifecycle Management enables you to streamline your IT infrastructure while preserving full auditing functionality.

1. World Wide Web Distributed Authoring and Versioning.

Choose the Right Storage Partner

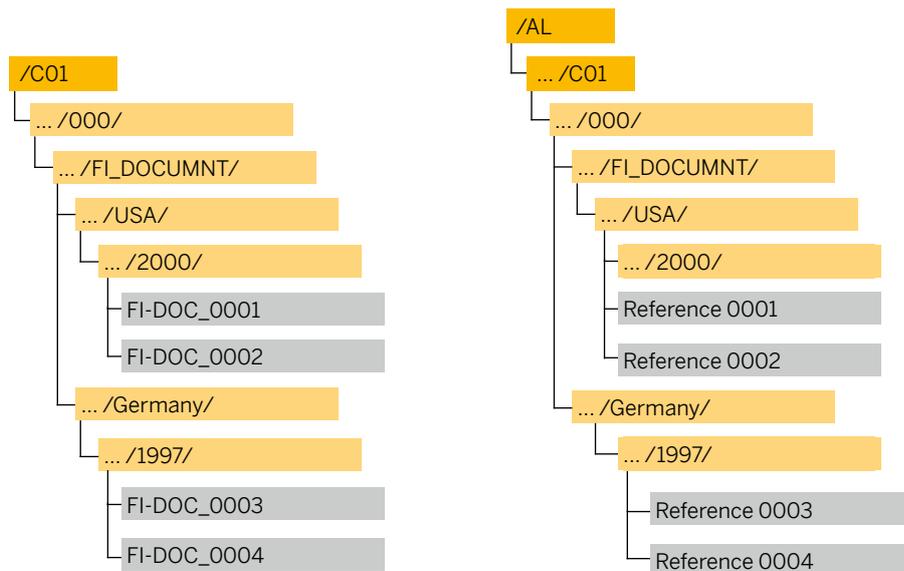
At SAP, we believe that a holistic approach is indispensable when implementing an ILM strategy. For example, you need to ensure that data retention and destruction rules managed within SAP Information Lifecycle Management can be mapped to the archived data, which is held in a third-party storage environment. This means that application vendors like SAP must form close ties with storage vendors. SAP has been extremely active in this area and has, among other things, set up partner certification programs for data archiving and ILM-aware storage.

When you are choosing a storage system to support your ILM strategy, it is important to make sure it meets certain criteria. For example, it should support “nondeleteability” as well as

destruction of data upon request. This will preserve your data for the entire retention period required by law and then destroy it at the correct time.

Another important factor to consider is whether the storage system lets you reduce redundancy as much as possible. A storage system should also be able to guarantee that stored data cannot be changed or modified in any way. From our experience, WORM²-like magnetic storage technology is best suited for an ILM solution. You can also use the storage solution from SAP to store archived data from SAP Business Suite software, including archive indexes, with SAP IQ database software.

Figure 3: Sample Archive Hierarchy for Structured and Unstructured Data



2. Write-once, read-many.



System Decommissioning

SUPPORTING LEGAL COMPLIANCE EVERY STEP OF THE WAY

It's not uncommon for large companies to have hundreds of legacy systems they need to decommission. In the current economic climate, nobody can afford to maintain a whole fleet of expensive legacy systems just to keep their legacy applications up and running. Old legacy systems incur unnecessary costs, not only in terms of hardware and maintenance but also from a sustainability perspective. Old systems are inefficient and consume unnecessary energy for operations and cooling. In addition, legacy systems reduce the efficiency of recurring operations, such as system backups, and tend to be risky because they become increasingly unreliable.

Until now, there has not been a standardized solution to deal with what can be the daunting task of system decommissioning. Many companies are afraid to shut down their legacy SAP software, because they are unsure how to deal with legal requirements affecting the data from that software. Major questions they need to resolve include:

- How to fulfill legal compliance for the decommissioned data
- How to continue to leverage the value of the information without keeping the original system alive and incurring the associated costs

SAP Information Lifecycle Management gives you a standardized way to decommission legacy SAP software. However, you can continue to use the archived data for auditing and reporting purposes, even though the original system has been shut down. Specifically, it enables you to:

- Decommission several large legacy systems into a single, lean ILM system called a retention warehouse
- Reuse the archived data outside the original system in the retention warehouse
- Continue to apply and enforce retention policies and parameters to the data moved to the retention warehouse
- Benefit from the destruction function for archived data

TAKING A CLOSER LOOK AT THE RETENTION WAREHOUSE

In a typical decommissioning scenario, you have one or more systems that will be shut down and a dedicated retention warehouse system that will receive the data you want to retain from the original systems. The retention warehouse consists of:

- A dedicated, "lean" SAP ERP application running SAP Information Lifecycle Management
- A dedicated business warehouse software product from SAP
- Third-party ILM-certified storage hardware



Through support for archiving and data management optimization, SAP Information Lifecycle Management helps reduce database volume growth.

Because SAP Information Lifecycle Management is an integral part of the retention warehouse, data from decommissioned systems is organized according to audit areas and covered by the retention policies you define and manage using the software. This means that retention times and legal holds apply to the data maintained in the retention warehouse, just as they do for nondecommissioned (or live) systems.

The system that is to be shut down is first emptied of its data using standard and ILM-enhanced archiving objects and programs. You can archive all the business-complete data and then use snapshot functionality to archive data from objects that are not yet business-complete as well as any related master and context data.

LOOKING AT A TYPICAL SCENARIO

For a given decommissioning project, there are multiple steps that can be roughly grouped into two categories, as summarized in the following table. Each step is fully supported by SAP Information Lifecycle Management and additional services offered by SAP.

Analyze the Legacy System

It's not uncommon for IT departments to have only limited knowledge of their legacy systems, particularly with respect to the amount and types

of data they contain. If you don't know what your legacy system "looks" like, you have the option of either moving everything over to the retention warehouse system or you can run an analysis of your system and move only the specific data you will need later for auditing and reporting purposes. The system analysis, which is usually performed before the project is set up, should cover the following types of SAP software data:

- Transaction data – You need to determine which data can be archived using traditional archiving objects. If there is data without an archiving object, you can extract it from the system using the context-data extractor functionality.
- Master data – Master data needs to be kept for as long as transactional data exists, so it should be archived using the snapshot option.
- Customization information – Customization information can be extracted to the retention warehouse system using the context-data extractor functionality.
- Already-archived data – You need to determine if you will have to access this data after the original system has been shut down. If yes, you can migrate it to the new retention warehouse system and then use a special ILM file conversion function so that retention rules can be applied to it.

What Is a "Lean" SAP® ERP Application in an ILM Context?

A "lean" SAP® ERP application is a standard SAP ERP application that is not used as the company's production enterprise resource planning (ERP) software. It either has no or very few logged-in users, and its database contains very little data. This lean application runs solely to serve the data in the archive and contains information lifecycle management functionality. It has very limited hardware requirements and, as a result, can be installed at minimum cost.



For the Legacy System

- Analyze the system
- Prepare the legacy system for shutdown
- Archive data
- Archive context data
- Conduct testing and quality assurance

For the Retention Warehouse

- Install a lean SAP® ERP application
- Set up audit areas, policies, and rules
- Move archived data to the retention warehouse system
- Convert and store the archive files and apply rules
- Generate business warehouse queries using archived data or run a local reporting option

Enable the Legacy System for Archiving

Once you have identified the data you need to retain and the tools you need to retain it, you can enable the legacy system for archiving. Since SAP Information Lifecycle Management is delivered in the newest release of the SAP ERP application, your legacy system has to receive the necessary ILM functions. For SAP R/3® 4.6c software and SAP R/3 Enterprise 4.70 software, SAP provides an add-on to implement these functions. For other releases, the enhancements can be implemented through the SAP Notes tool or by extracting the data using tools from other SAP software, such as SAP Landscape Transformation software or SAP Data Services software. This includes enhance-

ments for archiving objects, snapshot functionality, and the context-data extractor functionality for data not covered by archiving objects. The context data extractor functionality is preconfigured and covers the current scope necessary for tax reporting and product liability reporting, including specific objects for the SAP for Utilities and SAP for Oil & Gas solution portfolios. For example, it is preconfigured to archive the context data needed to interpret the data involved in tax reporting.

Legacy System Analysis Services from SAP

SAP offers information lifecycle management services. They include an analysis that examines system characteristics, analyzes all filled database tables, determines the application components in use, lists all company codes and document numbers, and identifies the application components for which archiving has already taken place. This analysis helps you decide whether the data in each database table should be moved to the retention warehouse and, if so, how that data should be moved.

Set Up the Retention Warehouse

After preparing your legacy system to be shut down, you can set up the retention warehouse to receive the data from the system you want to decommission. Your lean SAP ERP application should be set up and connected to a third-party storage system, which should be an ILM-certified product. If you are using the SAP Archiving application by OpenText for your archiving needs, you can automatically use it for ILM as well. (To find an ILM-certified partner, visit www.sdn.sap.com/irj/sdn/interface-certifications.) In addition, you need to connect a business warehouse software product from SAP. We recommend that you use dedicated business warehouse software for your data retention warehouse. The business warehouse software included in your SAP NetWeaver technology platform is sufficient for the task.

Extract Data from Legacy Systems

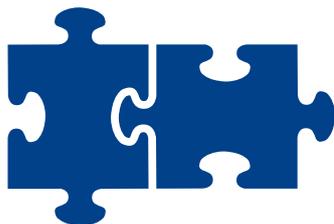
Once the legacy system and retention warehouse are prepared, you can extract the data from the legacy system using the enhanced functionality you implemented either through the add-on software or via SAP Notes. This includes enhanced ILM archiving functionality, such as the snapshot option (one of the archiving options), and the context-data extractor functionality. After you have “emptied” the legacy system, moved data to the retention warehouse, and performed testing, you can shut the legacy system down.

Snapshot Functionality

Snapshot functionality is one of the ILM enhancements that is added to individual archiving objects. It is a first step toward helping you retain all necessary data. This functionality complements the standard functionality used to archive business-complete data, as it allows you to copy data from open business processes to the archive as well. This data is kept separate from the archived data in the retention warehouse. The snapshots provide a solid basis for system decommissioning projects. In order to get a complete picture of your original system, you have to move data from open business transactions to the retention warehouse – something that was not possible before snapshot functionality was available.

Functionality to Extract Context Data

After moving all business-complete and business-incomplete transactional data out of the system that is being decommissioned, you need to enrich the archive with context information. To do this, you can use functions to extract context data provided by SAP Information Lifecycle Management. These functions move complete customization and master data – as well as information not covered by the archiving objects – to the archive. You can decide on a table-by-table basis what information you want to retain. To facilitate the selection of relevant tables, SAP Information Lifecycle Management delivers preconfigured programs as part of the context-data extractor function to cover information defined as “retention relevant” for tax and product liability purposes.



SAP Information Lifecycle Management offers functionality for automated and comprehensive ILM support.



The context-data extraction functionality provided by the SAP® Information Lifecycle Management component is preconfigured to cover information defined as “retention relevant” for tax and product liability purposes and covers the scope necessary to support tax and product liability reporting. If you must cover additional database tables and data, you can adapt the customization settings in the software. SAP offers a service that quickly adjusts the settings of the context-data extractor for you.

Support Non-SAP Software with ILM Functionality from SAP

It is entirely possible to decommission a non-SAP software system to a retention warehouse to which you decommission SAP software systems. This is of great advantage, because you need only one environment for your SAP and non-SAP legacy software systems. The process for non-SAP software is exactly the same as that for SAP software, except for the extraction step. Since a non-SAP software system contains neither SAP Information Lifecycle Management functionality nor archiving objects, the data needs to be extracted in a different manner. The recommended way is to use SAP Data Services or SAP Landscape Transformation to extract the data into flat files, which are then mapped onto the ILM objects in the retention warehouse system. Once in the retention warehouse, all other steps, such as the rules application step, are the same as for SAP software data.

Use the Cockpit Functionality to Decommission Systems

To expedite the work of decommissioning systems, SAP Information Lifecycle Management delivers an administrator role and a line-of-business role to be used within the SAP NetWeaver Business Client software. The work is performed in a system decommissioning cockpit, where you perform the functions specific to decommissioning a system. The cockpit greatly facilitates the process by supporting the sequence of steps in which the work must be performed.



ILM represents a change in thinking – a new mindset regarding information management that needs to become a priority for all employees.

Transfer Data and Apply the Rules

Once you have archived the data from your legacy SAP software, the data must be brought into the retention warehouse system and rules applied to it in the conversion step. SAP Information Lifecycle Management offers a function that provides all the tools necessary to perform these steps. The steps can also be easily called up in the correct order from the system decommissioning cockpit. During the transfer, convert, and store phase, it is important to perform the steps in the correct order. Because it serves as the basis for all other operations in the retention warehouse, the context information needs to be converted and stored first. All remaining snapshots should be converted and stored next, followed by the remaining archive files.

SAP Information Lifecycle Management enables you to set up and define the audit areas and data retention policies and rules that are applied during the conversion step within the retention warehouse. The rules, which see to it that data is kept in a legally compliant manner, are enforced by the ILM-aware storage system until the data reaches its assigned expiration date (barring a legal hold on the data).

During ILM file conversion, the archive files you created and transferred from the legacy system are opened and reorganized into new archive files based on audit areas and retention rules. The rules set up the hierarchy in which the archive files are organized in the ILM-aware storage system. Each folder in the hierarchy reflects a part of the rule. For example, if you have an accounting document (covered by the information lifecycle management object FI_DOCUMENT) from system B00, client 100, from 1997, which must be kept for 10 years, then it would be stored in a hierarchy that reflects these rules (see Figure 4). The expiration date is calculated based on the criteria entered in the rule and attached to each accounting document as a property. For accounting documents, the basis for calculating the expiration date might be the end of the fiscal year or the last change date.

Preconfigured Tax and Product Liability Audit Areas

The audit areas so important to retention management play an equally important role in system decommissioning. For the audit areas “tax” and “product liability,” SAP offers preconfigured content. This content contains not only the complete definition of the respective audit area but also the business intelligence content necessary to support tax audits and reporting, specifically, the most important queries and reports for tax and product liability audits. These queries and reports can be configured with relatively little time and effort.



Compare Data Using Check Sums

During your system decommissioning projects, a safety check built in by the SAP software allows you to compare the transferred data before and after conversion. An optional step in the sequence of steps mentioned above, it must be performed twice on the archive files of the transactional data only – once before file conversion and once after file conversion and storage. This lets you compare the check sums, which can be drawn based on different criteria, before and after conversion. If the check sums differ, you can check to see if you forgot to convert certain data or if some archive files were not converted and stored correctly.

Generate Reports for an Imminent Audit

In the event of an audit, SAP Information Lifecycle Management makes it possible for you to readily generate the reports you need. Based on the audit areas that you set up before defining your rules, you can choose or create audit package templates. These templates contain a subset of the data contained in an audit area and serve as a preselection of the data you want to select from the archive for your audit.

Figure 4: Hierarchy of Archive Files



The actual data selection takes place through an intermediary “audit package” function that helps you prepare the business warehouse structures, define the selected data, and upload it to the data retention warehouse or local reporting option. Based on an audit package template, you select both the data and snapshots – which provide contextual information to interpret the data – from the archive. You then temporarily copy them to the enterprise business warehouse or load them to the local reporting function. You can define the data set you want to view in the audit by a variety of selection criteria, including a time window. This allows you to define precisely what data is selected by the audit package and subsequently copied to the business warehouse or local reporting option.

Based on the audit package template and audit package you defined, the data model in the business warehouse is automatically generated. All you need to do is upload the data into the business warehouse or local reporting option when you are ready for reporting. As the data is loaded directly into the different information providers or elements of the business warehouse, you can display the results of queries using different reporting front-end software, including SAP HANA® software and the SAP Crystal Reports® family of offerings. The local reporting option offers a rudimentary table browser to display the same data without using the SAP NetWeaver Business Warehouse applica-

tion. From here the data can be provided in the format used by the auditing tool from SAP, the audit information system. This is a common format that financial authorities use to evaluate financial data employing their own auditing tools.

REAPING THE BENEFITS OF DECOMMISSIONING WITH SAP SOFTWARE

One of the biggest advantages of using SAP Information Lifecycle Management is that you can decommission multiple SAP and non-SAP legacy software systems – usually large and inefficient systems – into a single, lean retention warehouse. This allows you to drastically reduce the total cost of ownership for your IT landscape and achieve a quick ROI that tends to improve as you decommission additional systems. For the first project, you have the one-time cost of setting up the retention warehouse as well as traversing for the first time the learning curve for implementing a decommissioning project. With each additional system you shut down, your costs decrease and your learning curve accelerates. After the sixth system is decommissioned, SAP estimates you can achieve an ROI within less than six months.

You also benefit from comprehensive reporting functions that equip you to support internal and external audits with far less time, effort, and cost. At the same time, you can substantially reduce risk through automated legal compliance with external requirements.

Through ongoing dialog with the information lifecycle management (ILM) influence council at the Americas’ SAP Users’ Group and other ILM customers, SAP gained detailed customer insight into the challenges companies are facing in their ILM and legal compliance strategies. The retention management and retention warehouse functionality in the SAP® Information Lifecycle Management component addresses these challenges, developed with a focus on enhancing or building on existing functions to support nondisruptive innovation.



For More Information

GETTING STARTED ON YOUR ILM JOURNEY

ILM represents a change in thinking – a new mindset regarding information management that needs to become a priority for all employees. In fact, it represents an evolution affecting the entire information management industry.

But implementing ILM is a gradual process – not something that can be done overnight. How can you get started? One good way is by decommissioning a legacy system, which delivers quick ROI in terms of lower IT costs. It gives you the opportunity to learn the decommissioning process, test best practices, and get started on defining your audit areas and retention rules. You'll find that decommissioning gets easier – and more cost-effective – with each subsequent project. Alternatively, if you are just getting started with your

archiving strategy, SAP experts suggest that you invest in a full ILM solution from day one, as you can lay the groundwork for a comprehensive solution that will give you far better control over data going forward.

For more information about how SAP can help you, please call your SAP representative or visit us at www.sap.com/ilm.



The archiving object is one of the most valuable data archiving concepts in the approach to ILM that SAP supports.

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