Running a System Decommissioning Project with SAP NetWeaver Information Lifecycle Management

A Hands-On, 7-Step Guide

Enterprises in nearly every industry are asking themselves the same question: How do we control our increasingly complex system landscapes and streamline IT operations? Here's an actionable, cost-saving answer: Look to your legacy systems and determine which ones you can safely shut down.

Few companies can afford to keep a fleet of expensive legacy applications up and running, especially in the current economic climate. Old legacy systems incur unnecessary hardware and maintenance costs – and from a green IT perspective, they consume unnecessary energy for operations and cooling.[1] Legacy systems also reduce the efficiency of recurring operations, such as system backups, and are risky because they're generally less reliable.

Yet many companies are afraid to shut down their legacy SAP systems. They're unsure of the legal repercussions, and they fear losing data they may need for imminent audits or reports. That's where SAP comes in, offering a standardized solution – SAP NetWeaver Information Lifecycle Management – and method for decommissioning legacy SAP systems.

System Decommissioning in 7 Steps

SAP NetWeaver Information Lifecycle Management allows companies to continue to use archived data for auditing and reporting purposes, even though the original system has been shut down. As we've discussed in previous *SAP Insider* articles, the solution enables companies to store data from decommissioned legacy systems in a single, lean system called the central retention warehouse.

SAP NetWeaver Information Lifecycle Management also allows for the application and continued enforcement of retention policies and parameters to data

from the decommissioned systems.[2] SAP NetWeaver Information Lifecycle Management has been generally available since May 2009. Throughout the customer ramp-up phase, we've gained plenty of valuable product and project experience (see sidebar at the top of the next page) around each of the seven steps of our standardized decommissioning approach.
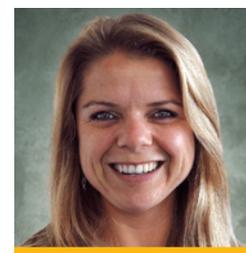
1. Analyze the Legacy System and Enable It for Archiving

Before you start transferring data, it's important to first understand the legacy system that houses it. Companies tend to have little knowledge about the data in their legacy systems, especially when it comes to the amount and types of data they contain.

Companies that aren't certain what kinds of data their system houses must either transfer all of their data into the retention warehouse of SAP NetWeaver Information Lifecycle Management, or analyze the system and move only data needed for later audits and reports. We recommend the analysis method; it gives greater control over data and reduces the volume of data you need to transfer and manage.

Analyzing Your Legacy System

SAP offers information lifecycle management services through its SAP Consulting organizations to help you assess your system and plan your decommissioning roadmap accordingly. These services help companies analyze their system characteristics, go over all filled database tables, determine the application components in use, list all company codes and document numbers, and determine which

[1] For more information on the expenses involved in running a legacy system, see Winfried Schmitt's article on page 59 of this July-September 2009 issue of *SAP Insider* (sapinsider.wispubs.com).

[2] For an overview of the main processes and concepts involved in ILM, see the Performance & Data Management Corner column, "Supporting Your ILM Needs from Start to Finish: A Holistic Look at the Information Lifecycle Management Solution from SAP" by Georg Fischer and Tanja Kaufmann in the July-September 2008 issue of *SAP Insider* (sapinsider.wispubs.com).

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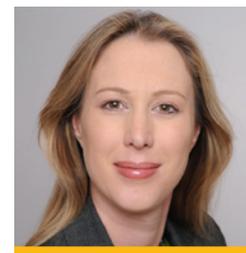
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Your System Decommissioning Project: Tips to Ensure Success

1. **Communication and collaboration across teams is essential.** A system decommissioning project requires a holistic approach. Your in-house information lifecycle management (ILM) team should be made up of experts from the application side, those skilled in ILM, as well as members of the business warehouse (BW) team.

2. **Don't go it alone.** Take advantage of SAP's consulting services — at least the first time you run a system decommissioning project with SAP NetWeaver Information Lifecycle Management. Skilled consultants can ensure that your project runs more quickly, more smoothly, and with much less risk.

3. **Test and retest.** Schedule sufficient time for testing and quality assurance.

4. **Know your legacy systems' limitations.** Systems tagged for shutdown often no longer have a normal system landscape, so development and consolidation systems might not be available. You'll need to keep this in mind when you plan quality assurance tests before shutting a system down.

5. **Give yourself enough time to be thorough.** Legacy systems often run on reduced hardware, which means that the performance of archiving runs might not be optimal. Plan enough time to fully empty out the legacy system before shutting it down or, if necessary, temporarily make additional hardware available for this operation.

6. **Note that the retention warehouse is not an online system.** To access data on demand, plan to use the BW functions.

What Is the Context Data Extractor?

The Context Data Extractor (CDE) is an archiving tool available with SAP NetWeaver Information Lifecycle Management that is used to archive any data — such as customizing data and some master data — that cannot be archived using traditional archiving objects and programs. This kind of data is important in a system decommissioning scenario because it allows you to interpret the archived data during reporting operations in the business warehouse. Please note: The CDE only creates snapshots and does not delete any data from the database. The CDE is preconfigured with tables that cover the scope necessary for tax reporting and tax audits. If you need to add tables and data to the CDE, you can take advantage of an SAP Consulting service to help you with this task. We strongly recommend that you don't adjust the customizing settings of the CDE without assistance.

FIGURE 1 ▲ Decommissioning legacy system requirements

application components were already archived. The goal of this analysis is twofold: Give companies the information they need to select which data should be migrated to the retention warehouse, and determine the best method of moving that data.

To analyze your data, we recommend running both a top-down analysis (using your reporting requirements as a starting point for determining which data should be kept) and a bottom-up analysis (using the database tables in your legacy system to determine which data should be kept). This dual-pronged approach will help you identify the following data types, which will in turn help you determine the best way to archive that data:

- **Transaction data:** This data can be archived using traditional archiving objects[3] that have been enhanced for ILM or, if no archiving object exists, can be archived using Context Data Extractor (CDE) snapshots (see sidebar).

- **Master data:** Master data needs to be kept for as long as the transaction data exists. Therefore, master data does not receive an expiration date and can be archived using the snapshot option of the enhanced archiving objects or using the CDE.

- **Customizing information:** This information — such as company codes or pricing conditions — can be extracted to the retention warehouse system using CDE snapshots.

- **Archived data:** For data that has already been archived, consider whether you'll still need to access it after the original system has been shut down. If so, you can apply retention rules and integrate that data into the retention warehouse system using the Information Lifecycle Management File Converter.

ILM-Enabling Your Legacy System

After analyzing your system, you need to make sure that it's set up to work with SAP NetWeaver Information Lifecycle Management (see **Figure 1**). You'll need to implement SAP Notes to install the CDE (see SAP Note 1089434) and ILM-enable any archiving objects (see SAP Note 1180653) to cover all the data you want to retain for future auditing and reporting purposes.

Note that SAP NetWeaver Information Lifecycle Management currently focuses on decommissioning

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[3] Refer again to the Performance & Data Management Corner column in the July-September 2008 issue of *SAP Insider* (sapinsider.wispubs.com).
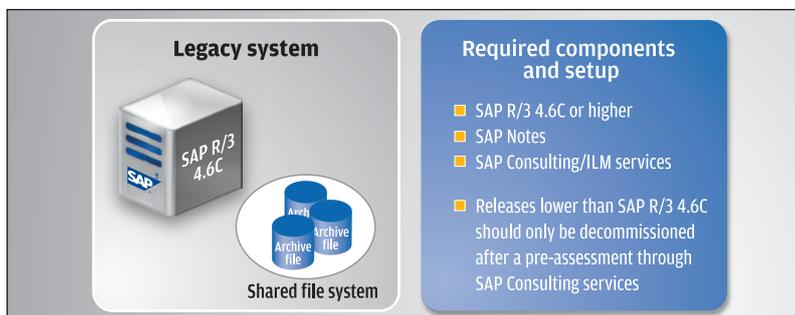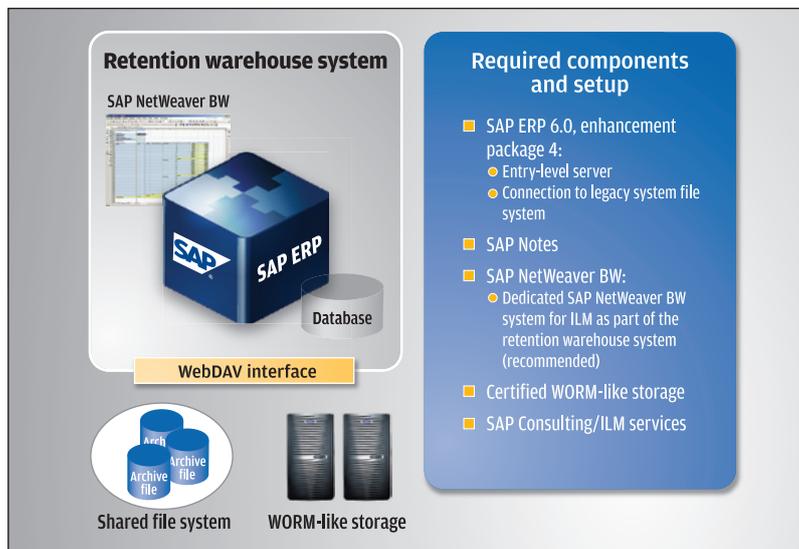
legacy system releases SAP R/3 4.6C or higher. Companies looking to decommission systems housing earlier releases can take advantage of SAP Consulting's services and set up a special project to meet the specific needs of an older system.

Also important is a shared file system, which will receive the archive files from the legacy system. Later, the Information Lifecycle Management File Converter accesses this file system to get and convert these archive files and then store them in the retention warehouse storage system (we'll delve into this more deeply later). Keep in mind that when setting up this file system, it must be large enough to receive all archive files, snapshots, and CDE snapshots you create in the legacy system. Also note that during the file conversion process, the files in this system will be held redundantly for a short time period before they are moved to the certified WORM-like storage system of the retention warehouse system.

2. Set Up the Central Retention Warehouse

Before you can begin shutting down your legacy system, you'll need to set up the central retention warehouse to receive the data from the system that's being decommissioned. This central retention warehouse must be an SAP ERP 6.0 enhancement package 4 system running on at least support package 4 (see **Figure 2**).

We recommend running this system on an entry-level server – that is, a server with a total of eight

Retention warehouse system

SAP NetWeaver BW

SAP ERP

Database

WebDAV interface

Archive file
Archive file
Archive file

Shared file system   WORM-like storage

Required components and setup

- SAP ERP 6.0, enhancement package 4:
  - Entry-level server
  - Connection to legacy system file system
- SAP Notes
- SAP NetWeaver BW:
  - Dedicated SAP NetWeaver BW system for ILM as part of the retention warehouse system (recommended)
- Certified WORM-like storage
- SAP Consulting/ILM services

FIGURE 2 ▲ The components supporting your SAP NetWeaver Information Lifecycle Management decommissioning initiative

cores and a minimum of 16GB of memory (a small 6,000 SAPS server). You'll also need to do some ILM customizing, define the used fields, and set up the retention rules for the retention policy engine, called the Information Retention Manager (IRM; a component of SAP NetWeaver Information Lifecycle Management) to work with your retention warehouse. To store your archived data in the retention warehouse system, we recommend that you use a certified WORM-like storage system.[4] In addition, both the ABAP and the Java stacks must be installed in your system landscape, since the storage system will be connected to the Java stack.

3. Archive the Legacy System Data

Once you've prepared your legacy system and set up your retention warehouse, you can begin to extract the data from the legacy system. Here you can largely follow any traditional archiving procedure that you have used in the past to archive data in your SAP systems. Keep in mind that, you'll need to set up relevant archiving customization, including company-specific file names, paths, and residence times.

When archiving transaction data, you will need to first run the regular archiving sessions and deletion runs. In this case, you do not need to worry about selecting the data based on company code or fiscal year, for example, because the files will later be reorganized based on the policies and rules that you set up within the IRM — an integrated part of the retention warehouse system.

For any data — such as data from business processes that are still open — that is not archivable by traditional means, you can run snapshot sessions to pick up all data that is leftover after your archiving session. This snapshot functionality is available within the archiving programs of ILM-enhanced archiving objects. Any additional data — such as customizing or master data — can then be extracted using the CDE, which also creates snapshots. Both

FIGURE 3 ▼ The rule maintenance screen in the Information Retention Manager

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[4] For a list of ILM-certified storage partners, visit www.sdn.sap.com/irj/sdn/interface-certifications or see page 60 in this issue of *SAP Insider*.

the archived files and the regular and CDE snapshot files will be written to the shared file system.

4. Perform the Technical Migration

Please note that, because you are using a shared file system in this step, you will need to migrate only the administration data of the archiving runs rather than the archive files themselves. This is because the physical files need only be migrated if no shared file system is available. To ensure that the retention warehouse will recognize the legacy data and that the archiving runs are interpretable, you'll need to transfer the archiving runs' technical and administration data to the central retention warehouse system. This information is located in the ADMI* tables. SAP Consulting also offers a service that supports you in this endeavor.

5. Set Up Policies and Rules

To ensure that your data will be kept in a legally compliant manner and that any retention rules continue to be enforced until that data reaches its set expiration date, you'll need to set up retention policies and rules in the IRM and then apply these rules to the archived data. Data rules are maintained per IRM objects, which are very closely related and largely map to the archiving objects. This means, for example, that you can determine that financial documents with company code 100 need to be kept for 10 years and those with company code 200 need to be kept for seven (see **Figure 3**). For each company code, you can also specify criteria you used to calculate the expiration date, such as end of fiscal year, or the last change date.

It's also possible to specify different stores for different data types. For example, you can specify that data with company code 100 be stored in archive store 1, and company code 200 in archive store 2. Then, when you convert the ILM files, the data will automatically route to the area you specified.

6. Convert the Data to Ensure Legal Compliance

In a system decommissioning scenario, retention rules are applied to the legacy data *after* the archive

Rules for Policy Rules for Policy TEST

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	001		ABC		200				7		Year ▼	End of Fiscal Year	2			

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files have been created. Because legacy systems don't contain the ILM functionality needed to apply the rules you set up in the Information Retention Manager, you'll need to use SAP's Information Lifecycle Management File Converter. Once you begin the file conversion, the archived legacy data files, still located in the shared file system, are opened up and reorganized based on your ILM retention rules. The system then creates new, ILM-enabled archive files.

After the conversion, you should run a quality assurance check to make sure all of the rules were applied as expected. You can do so by viewing the archive administration data in transaction SARA of the retention warehouse system. If you see any runs labeled "delta runs," this means that the system did not attach your rules to the data in that run. If this happens, you'll need to check the conversion to figure out why the rules you set up were not applied to this data. Perhaps, for example, the data is based on a company code that wasn't maintained in the rules, or a field used to calculate the start date is empty.

Once you've ensured that all of your rules were successfully applied to your legacy data, you can trigger the storage step through transaction SARA in the retention warehouse system. Then you can move your archive files from the shared file system to the WORM-like storage area of the retention warehouse system. At this point, you can use the Information Lifecycle Management Store Browser to navigate the hierarchy to check whether all data was stored correctly (see **Figure 4** on the next page).

Each field in the rules represents one node in the archive hierarchy. The archive files are stored under their respective collections in whichever archive store you specified when you set up the data rules in the previous step. The system also calculates and attaches an expiration date to each archived file.
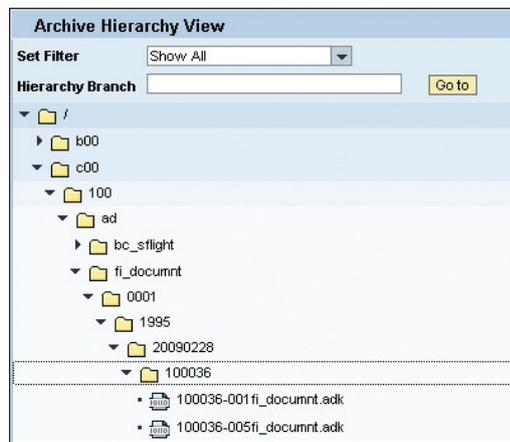
7. Test for Quality Assurance

Before you can finally shut down the legacy system, it is essential to verify that all of your data is complete and available in the ILM-aware storage system. Otherwise, you might lose that data when you shut down the original system. You should also check the archive files and snapshots to make sure that all relevant tables are contained within them. Also, be sure that the number of data records per table corresponds to the expected number of data records per archive file.

✔ **NOTE!**
Once you've moved the data into your retention warehouse, you can manually destroy the redundant data within your file storage system.

After you've converted and stored the archive files in the retention warehouse, you can access them through the Information Lifecycle Management Store Browser. IT teams can also perform a quality assurance check after a deletion run by verifying that all relevant data records were deleted from the corresponding tables.

We recommend that the business team spot-checks that all necessary data has been extracted by the IT team. Only after you've ensured that the data you want to retain from your legacy system is accounted for should you shut down the original system.

Use Case: Reporting for an Imminent Audit

Decommissioning your legacy system and moving archive files into a new, lean retention warehouse saves time, money, and resources – all without losing access to your important legacy information. You can still run reports and audits from the data in your retention warehouse system simply by using the business warehouse functionality provided by a dedicated SAP NetWeaver Business Warehouse (SAP NetWeaver BW) system for ILM. The content for a tax audit, for example, already comes preconfigured in SAP NetWeaver Information Lifecycle Management.

This content contains the complete definition of the audit area, as well as the BW content needed for tax audits and reporting. This means that the BW content already contains the most important queries and reports for a tax audit and can be configured with less time and effort.

The retention warehouse method for auditing and reporting also offers a lot of flexibility both on the data selection side and on the reporting side. For audits other than tax audits, for example, you can define audit areas based on your specific needs. An audit area determines which data should be extracted from the archive store or stores and enables you to create groups of data that are logically related.

Based on the audit area and the work package you have defined, the data model in SAP NetWeaver BW is then automatically generated on demand. All you need to do is generate the BW structures and upload the data into the system when you are ready to run an audit from that data. This also gives you more flexibility from a reporting point of view since the data is loaded directly into different InfoProviders, enabling you to use different front ends in SAP NetWeaver BW to run your reports.

What Does the Future Hold for ILM?

Customers that are using SAP's information lifecycle management functionality are doing so with an eye to the future – they are setting themselves up now to take advantage of the cost savings and improved overall efficiency that will only grow with each legacy system they decommission. SAP too is keeping an eye to the future, planning several enhancements to SAP NetWeaver Information Lifecycle Management that will continue to make the decommissioning process smoother and easier. For example, future enhancements to the solution will include more support for SAP ArchiveLink attachments, more predefined content, including product liability, and process simplification with end-to-end audit areas.

Future releases of SAP NetWeaver Information Lifecycle Management will include support for additional SAP applications (such as SAP Customer Relationship Management and SAP industry solutions), software-as-a-service (SaaS) and security functionality, and the ability to decommission non-SAP systems.

For more information about decommissioning legacy systems with SAP NetWeaver Information Lifecycle Management, visit **www.sap.com/ilm** or **www.service.sap.com/ilm**. ◼