



PBS ContentLink

Efficient Usage
of Modern Storage Systems as an Archive

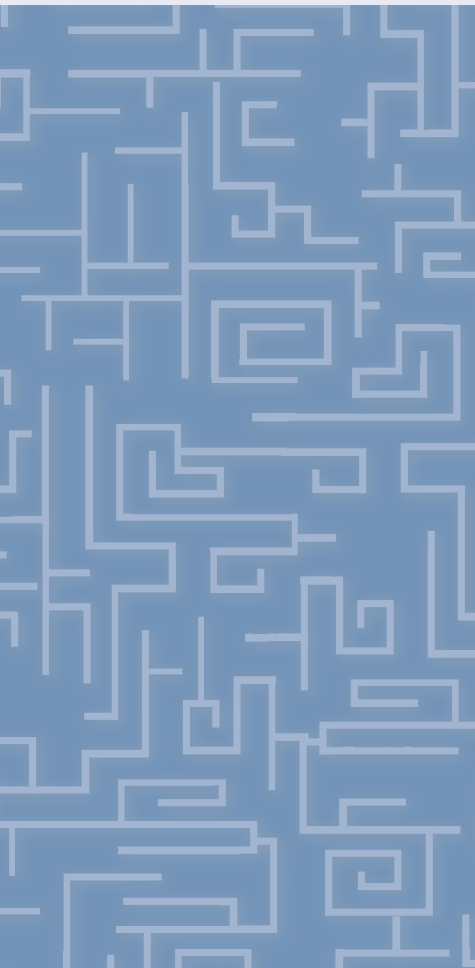


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PBS ContentLink

Efficient Usage of Modern Storage Systems as an Archive

Too little importance is often given to data archiving in many SAP environments. This is without good reason, because a consistent archiving strategy can strengthen and enhance the efficiency of a productive system. Such a strategy helps to shape business processes in an integrated way on the basis of unstructured and structured data. Using modern technologies ensures fast and companywide access to all archive data with low infrastructure and operating costs.

SAP provides a whole range of Enterprise Content Management functions in the standard with its SAP NetWeaver technology platform and its numerous applications. The storage of archive data alone requires the use of external archive or storage systems that can be acquired via third party suppliers.

PBS ContentLink enables a direct, cost-efficient usage of modern fixed content storage systems of leading manufacturers on the basis of SAP ECM standard functionality. The lean architecture ensures the implementation of a future-proof ECM strategy on the basis of the SAP protocols ArchiveLink and ILM WebDAV for the transfer of archive data. With PBS ContentLink there are no unnecessary maintenance and operating costs as was the case for many classical ECM implementations. PBS partners provide extensive support for respective implementations including, for example, migrations from existing ECM solutions to SAP ECM/PBS ContentLink.

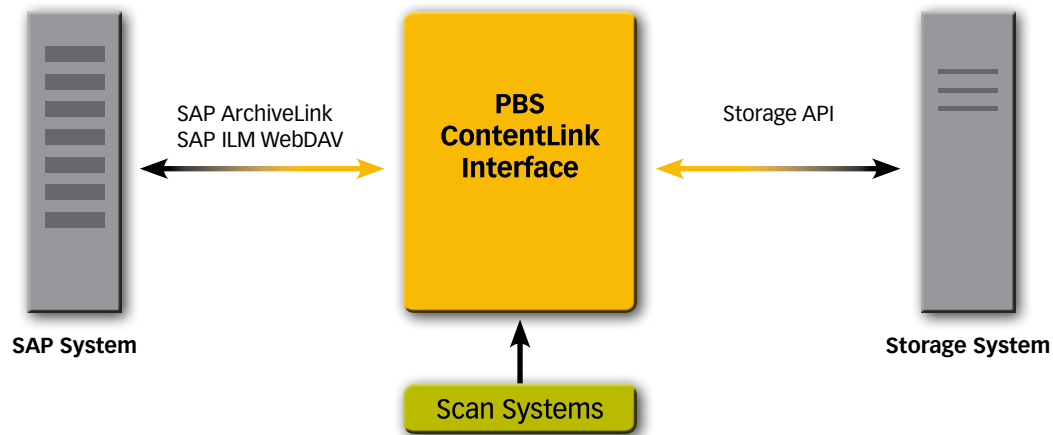


Figure 1
PBS ContentLink (PCL) is a lean software solution for compliant archiving of structured and unstructured SAP data on modern storage systems such as EMC Centera, EMC Celerra, Hitachi HCAP, IBM DR550, NetApp FAS or any NAS systems. It supports all SAP archiving scenarios, and was certified by SAP for both storage protocols ArchiveLink and ILM WebDAV.

Direct Compliant Usage of SAP ECM functionality

As an interface between SAP applications and compliant storage systems PBS ContentLink provides simultaneously reliable data storage with fast data access. This enables you to store documents and files via a direct access from an SAP system in a storage system and import them again. The archive data is stored in an unchangeable format to fulfill legal and regulative requirements. Data and documents can be evaluated at any time in their original format. This is ensured by the respective fixed content storage system.

The combination of the SAP ECM standard with PBS ContentLink provides the following functions without the need to run an external ECM system:

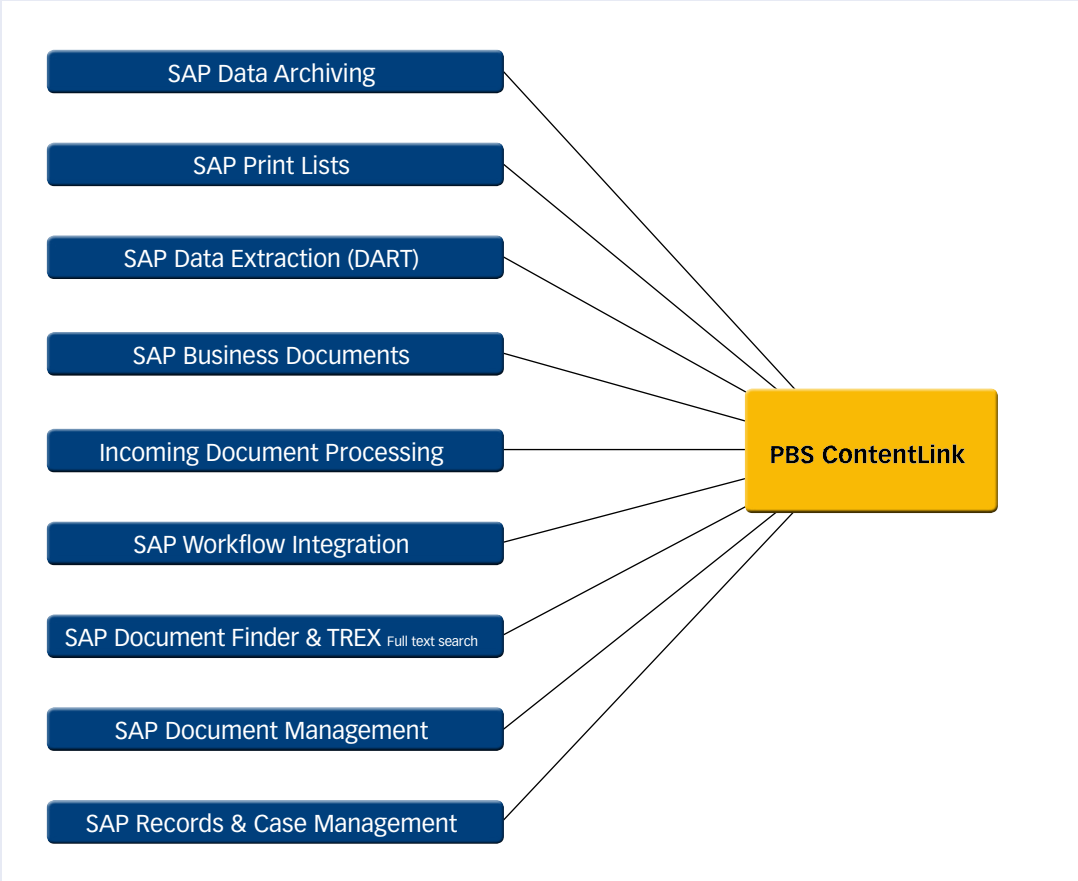


Figure 2

SAP Data Archiving

When PBS ContentLink is used for storing data, the files are archived on the storage system taking into consideration legal and internal storage guidelines. You can, however, access them quickly and easily at any time.

SAP Data Extraction (DART)

Are you one of the SAP customers who use DART for a data extraction during tax audits? Using PCL you can archive all DART files in a compliant and – at the same time – compressed way. This results in a memory space saving of about 90 percent.

SAP Business Documents

In addition to manually linking original documents to the SAP documents from different application modules you can save completely automatically, for example, outgoing invoices using PBS ContentLink.

SAP Workflow Integration

By using early archiving scenarios, PBS ContentLink is integrated seamlessly with SAP workflows. You can, for example, implement easily an invoice verification.

PBS ContentLink connects SAP processes with your corresponding documents. Company documents are connected with the respective business objects and the related business processes.

SAP Print Lists

You can store print lists in compressed form using PBS ContentLink, which results in a 90 percent memory space saving. You can access print lists that were archived in PCL directly via the SAP frontend or a web application.

SAP Document Management

PBS ContentLink enables status-dependent document storage using SAP document management and a modern storage system. You can define, for example, write protection and a minimum retention period for released DMS objects.

SAP Document Finder & TREX Full Text Search

You can search for stored and also archived documents with the “Document Finder”, and use keywords or a full text search via TREX. The search criteria can be adapted to meet your needs.

SAP Records & Case Management

You can define in the Customizing for SAP Records & Case Management that via SAP KPro linked documents are stored in a manner acceptable for auditing purposes using PBS ContentLink.

Incoming Document Processing

If you use an SAP ArchiveLink-compatible scan system, you can implement incoming scenarios in an inexpensive way using PBS ContentLink.

Cost Savings and Increase in Performance

PBS ContentLink contributes to the massive cost savings during the implementation of archiving scenarios with the integral functions below:

- Pure interface for directly connecting modern fixed content storage systems to SAP systems without using a separate database
- Modern software architecture for scalability and high availability
- Monitoring of the PCL server and of the connected storage system via the SAP system
- Data compression for an optimal usage of storage platforms
- Extensive functionality for the retrieval of data, documents, and print lists via the SAP system.

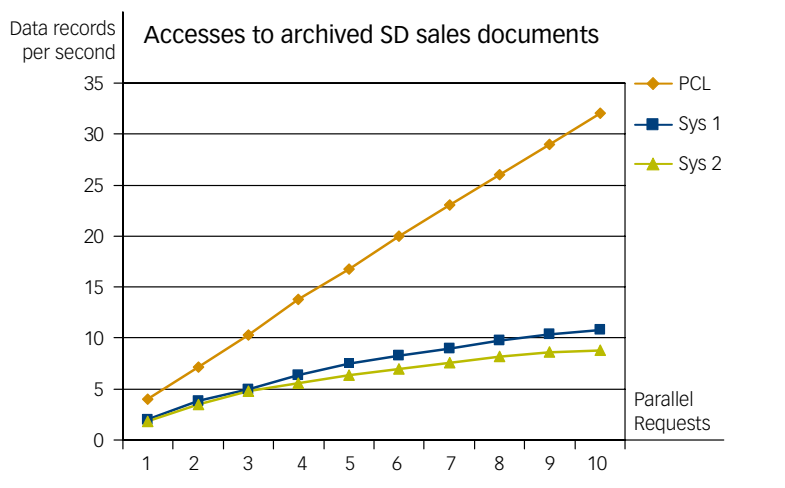


Figure 3
PBS ContentLink demonstrates excellent performance values and high scalability thanks to its multithreading architecture. The graphic displays the results of comparable measurement values of PCL with two classical ECM systems.

Monitoring and administration are executed directly in the SAP system. PBS ContentLink does not need its own user interface. Thus costs for installation, configuration and opera-

tion are kept to a minimum, which results in a considerable reduction in costs for your SAP archive data management.

Costs per month	Legacy Archive Solution	PBS ContentLink	Savings
Hosting costs for server hardware	13.101 EUR	2.033 EUR	85 %
Outsourced archive server administration cost	3.883 EUR	0 EUR	100 %
Unscheduled maintenance and upgrades	160 hours	4 hours	98 %

Figure 4
The overall costs for PBS ContentLink are significantly lower compared to other archiving solutions, which is clearly shown by the table above displaying data from a customer installation.

Flexible Retrieval

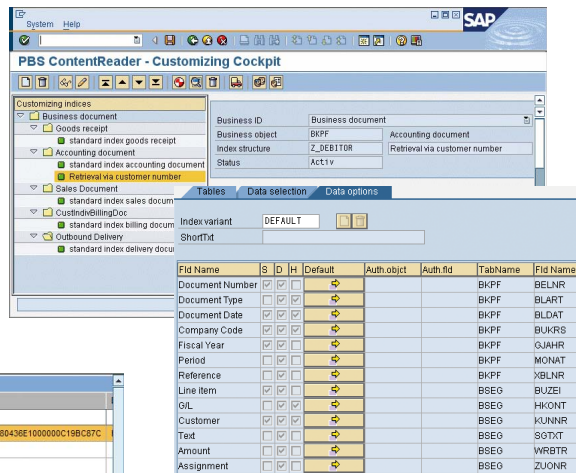
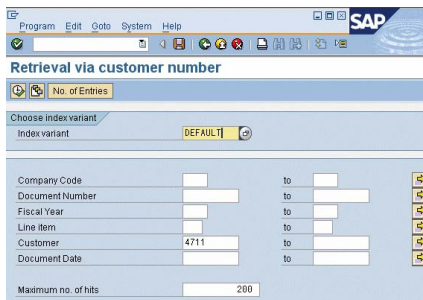
In addition to compliant data storage, the retrieval of documents and print lists also belongs to the central requirements of the user departments. For example, the retrieval of goods receipts for sales orders in a specific period. This retrieval is executed via SD sales orders and goods receipts from the SAP database and displays the linked original document.

The ContentReader, which is part of PBS ContentLink, enables you to define in an extremely flexible manner, special retrieval indices, selection screens, and output lists including variant control and a detailed authorization concept. Thanks to the definition of hierarchical dependencies in an index you can also easily display complex document structures and thus create user-specific document and print list retrievals.

Having defined the indices and generated the index data you can either easily search for the required data via the SAP GUI or the supplied web interface.

The control via index variants enables different views of an index. Frequently used search criteria is saved as user-specific variants.

A particular advantage is the ability to perform a retrieval via already archived SAP database data that was indexed using the PBS archive add ons. This enables a seamless, configurable retrieval via current and archived database data, documents and print lists. PBS archive add ons are software packages that are developed in an identical way to the SAP modules, and that provide seamless data access even after archiving has taken place.



Figures 5

A search performed via the supplied web interface provides you the same convenient retrieval options as via the SAP GUI including variant control, archive data access and authorization concept.

Information Lifecycle Management – the Interaction makes the Difference

Storage systems also have to meet various requirements from a compliance and audit perspective. This also includes the final deletion of structured and unstructured archive data after the legal retention periods have expired. A particular challenge here is the synchronized deletion of SAP database documents with related original documents. PBS provides you an SAP-compliant solution based on the SAP customizing of object links during the maintenance of retention periods. When doing this, PBS follows the idea of connecting SAP business objects with runtime information and passing this on to the storage system via PBS ContentLink.

The fixed content storage system being used then adopts the retention period for each stored object and protects it against overwriting within this period. The object can only be removed from the storage system by a final deletion after the retention period has expired.

This process has to be triggered explicitly by the application system.

PBS ContentLink also supports current SAP developments related to their Information Lifecycle Management solution. Among these are the SAP Retention Manager and the SAP Retention Warehouse. Both components require an SAP WebDAV interface to connect to a fixed content storage system. PBS ContentLink supports not only the widely-used ArchiveLink but also the new ILM WebDAV procedure for storing archive data. Thus all ILM scenarios are supported directly by the simultaneous support of both protocols.

An example is the storage of FI documents with defined retention period via SAP WebDAV and the simultaneous connection with original documents that are stored via ArchiveLink. After the legal retention period has expired, PBS ContentLink enables you to carry out a synchronized final deletion of archived SAP FI documents and the related original documents.

Object Type	Document t	S	Cont. Rep.	Retention
BKPF	FIIINVOICE	X	31	3650
BKPF	FIIINVPREL	X	E6	3650
BKPF	FIIPAYMENT	X	E6	1095
BKPF	FIODUNNING	X	E6	1095
BKPF	MMICREDIT	X	E6	

Figure 6
PBS ContentLink enables the definition of retention periods that are transferred directly to the storage system. Values for financial accounting and sales documents are defined in the table.

Special PBS ContentLink Features

ZERO Administration

Since PBS ContentLink does not need a separate database, virtually no administration is necessary while operating the system. Even the effort required for planned maintenance (for example, upgrade or HW migration) is manageable.

High Availability

In addition to the modern hardware virtualization, PBS ContentLink also supports classical scenarios such as hot/cold standby for implementing a high availability environment.

Caching

To improve the reading speed, the data can be written to the local cache of the PBS ContentLink server. The cache optimizer ensures that always the latest files of specific data archiving files are in the cache of the PBS ContentLink server in order to achieve optimal performance. In addition, PBS ContentLink supports the SAP Cache server to accelerate accesses from connected WAN networks.

Retention Management

Retention periods can be defined and set generically via the ILM protocol WebDAV 2.0 in the latest SAP release. PCL fully supports this functionality and was certified for this accordingly. Moreover, PCL also enables the use of retention periods for the ArchiveLink protocol on the basis of document type and category from SAP ERP 4.6C.

Monitoring in the SAP System

The SAP application support is not only able to monitor the status and the usage of the PBS ContentLink server but also the connected storage system via the PCL Cockpit. Log files can be downloaded via this Cockpit for an error analysis.

Programming Interface

PCL contains an ABAP API with which customer-specific programs can be used to read and set, for example, the status of stored objects or the minimum retention period in the storage system.

Software Replication

Fixed content storage systems generally control internal replication mechanisms that form a basis for safeguarding system stability. Redundant storage systems can be populated with data directly or synchronously with PBS ContentLink. You do not need the internal mechanism of the connected storage system when doing this. This functionality can simplify considerably the management of the storage system.

Scalability

PBS ContentLink is installed in instances. Each instance supports a separate repository. Since these instances are independent of one other, they can be combined, for example on one server, or also distributed on different servers. PCL can be scaled in various combinations.

Data Security

Access protection is ensured during storage via PBS ContentLink not only by using signed URLs, but also by checking the IP addresses that try to access. The data integrity is checked while reading by an MD5 Hash.

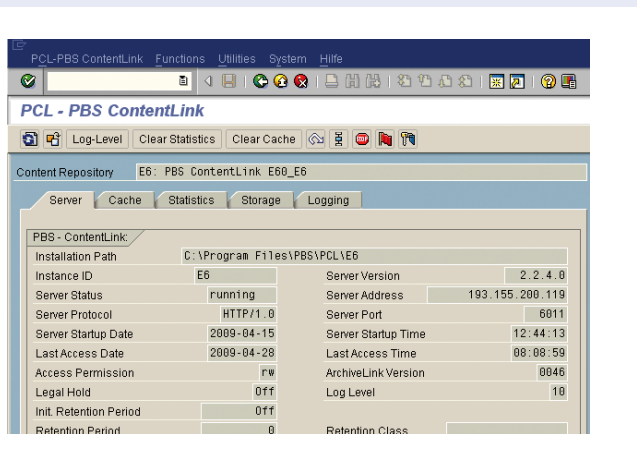


Figure 7

The PCL server can be monitored directly via the connected SAP system using the PCL cockpit. In this way, the server can be monitored directly by SAP administrators.

Implementation Scenarios

Embedding in the SAP Infrastructure

PBS ContentLink enables you to set up a connection between one storage system and multiple SAP systems.

A typical SAP environment contains development, test, QA and production systems. Each of these SAP systems can be connected individually via a specific PBS ContentLink program instance and a corresponding content repository (SAP ArchiveLink customizing parameters) to the storage system.

The figure 8 shows a typical SAP system environment. In addition to the usage in the production environment it is also possible to develop, test and evaluate archive scenarios on the basis of the respective storage platform. PBS ContentLink can be used in the same way in other SAP systems such as SAP NetWeaver Business Warehouse.

The figure also shows how archived data from a production system can be read from other systems. This feature enables evaluations in mirrored systems without increasing the load in the production system. The archived data only needs to be kept once. Operating costs can be reduced significantly by intensive archiving in the production system. This effect is multiplied by each mirror system.

A further benefit can be achieved by using the same storage system simultaneously from other applications. These include for example email archiving systems and file server systems.

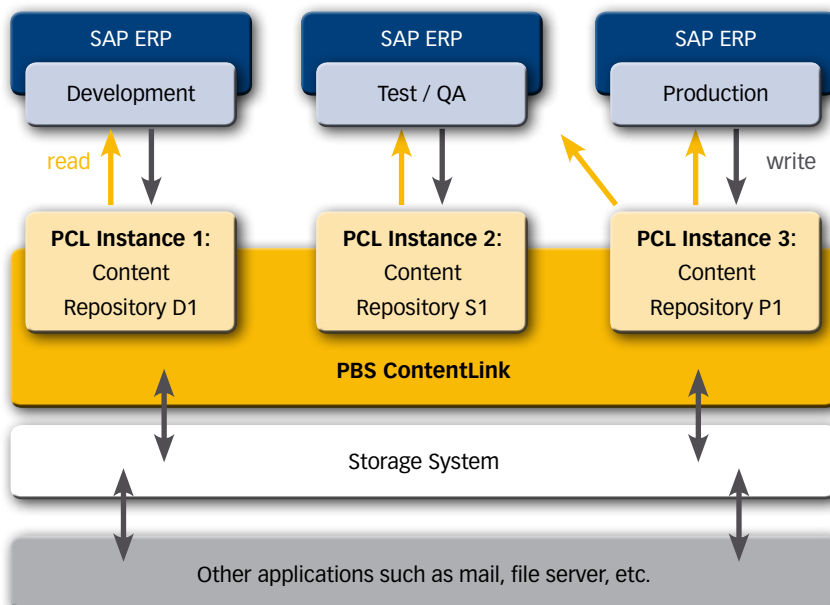


Figure 8
PCL can be used very flexibly in SAP system landscapes. For example, test and QA systems can have read access to productive data but, at the same time, create and read own archive data via separate content repositories.

System Requirements

Hardware

- IPC server hardware (Pentium IV)
- SUN, HP, IBM server hardware for corresponding Unix variants
- Main storage min. 512 MB
- Disk space: min. 4 GB without file cache
- Disk space: min. 72 GB with activated file cache

System Software

- Windows Server 2003: MS Internet Information Server 6.0
- Windows Server 2008 R2: MS Internet Information Server 7.5
- AIX 5.3: IBM HTTP Server 6.0.2 (contains Apache 2.0.47)
- AIX 6.1: IBM HTTP Server 6.1 (contains Apache 2.0.47)
- HP-UX11 v2: Apache HTTP Server 2.0.52
- HP-UX11 v3: Apache HTTP Server 2.0.59
- Solaris 10: contains Apache HTTP Server 2.0.63
- Linux (each from): Suse 9.1, SLES 9, RHEL 4, Debian 4.0, Mandriva 9 (Apache HTTP Server 2.0.54)

SAP Software

- ERP: all releases from SAP R/3 4.5B to SAP ECC 6.0
- BW: all releases from SAP BW 3.0 to SAP BW 7.0
- in addition Industry Solutions such as SAP IS-U or SAP IS-Health
- SAP ArchiveLink 0045 and 0046

Storage Systems

- EMC Centera (CentraStar 2.4 to 4.1)
- EMC Celerra (DART 5.6)
- NetApp Filer (Network Appliance Data ONTAP™ 6.5.6 to 7.3)
- IBM DR550 (IBM TSM 5.3.2 to 5.3.3 and SSAM 5.4.0)
- Hitachi HCP (Hitachi HCAP from version 2.4)
- NAS via CIFS/SMB or NFS

Scan Software

- DICOM: Kofax Ascend Capture 7.0
- EMC: Captiva Accel / KGS
- all ArchiveLink-enabled scan systems



PBS Software GmbH

PBS Software is a leading provider of add-on software for SAP solutions in the areas data archiving, extraction and storage as well as system closings and has been considered as an expert for complex, integrated data accesses to archived or nearline data in SAP applications for many years. In addition to the classical SAP data archiving the extensive PBS solutions also support the SAP BI-specific nearline storage concept that enables completely new ILM application scenarios together with the column-based analytics server Sybase IQ.

PBS develops pragmatic ILM tools in close collaboration with SAP and supports the new SAP ILM solution as SAP software solution partner.

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Integration with SAP NetWeaver®

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