Upgrade and Migration and Archiving Strategies for Your Enterprise Applications

IBM Optim Solutions
Today’s Discussion

• What Drives Upgrades Today?
• Archiving and Upgrades
  • Concepts & Benefits
  • Key Requirements
• Incorporating Archiving into the Upgrade Project
  • Archive before the Upgrade
  • Archive as part of Upgrade
• Questions & Answers
What Drives Upgrades Today?

• Changing business processes/requirements
• Application Instance Consolidation
• Technology – Out with the old, in with the new
  • New features; industry compliance
  • Obsolete hardware, middleware & database platforms
• Vendor-imposed upgrade deadlines
Drivers of Project Success

If you measure success by ability to...

- Streamline & automate business processes
- Increase ROI from investments in ERP systems
- Reduce the time to “go live,” minimize downtime
- Improve “compliance readiness”
- Control project costs
- Improve application performance & service levels

...Archiving can play an important role in improving the success of your upgrade project
What is Archiving?

- Segregate historical enterprise application data by age, status, event or other criteria
- Copy historical records to a secure archive
- Delete transaction details from production system
- Retain access to information for query, reporting, customer service, audit and discovery requests
What are the Benefits?

• **Streamline the upgrade project – success from Day One**
  - Reduce downtime during conversion by 50% or more
  - Improve application performance from old version to new version by reducing OLTP workload

• **Maintain a Superior Ownership Experience – ongoing**
  - Reduce backup and disaster recovery time by hours
  - Lower database maintenance time for tasks like reorganizations, refreshes, clones
  - Support “compliance readiness”
  - Ensure consistent performance to Service Level objectives
  - Reduce cost of storage and overall TCO
Data Archive Strategy: Questions to Consider

• What data should I be saving, for how long and for what reasons?
• What data should I be deleting?
• How am I going to find the data when I need it?
• What do I do with the data when I no longer need it?
• What is the most appropriate solution to meet my archiving needs?
• What is the cost/benefit analysis to support an archiving solution acquisition?
# Archiving Solution: 5 Key Requirements

<table>
<thead>
<tr>
<th></th>
<th><strong>Application Intelligent</strong></th>
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<tbody>
<tr>
<td>1</td>
<td>• Understand the enterprise packaged application logic and architecture</td>
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<table>
<thead>
<tr>
<th></th>
<th><strong>Take the right data out</strong></th>
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<tr>
<td>2</td>
<td>• Complete Business Object</td>
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<td></td>
<td>• Apply Functional Condition Checks</td>
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<td></td>
<td>• Accommodate Unique Business Requirements</td>
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<th><strong>Store it where you want</strong></th>
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<td>3</td>
<td>• Support &amp; automate data retention policies as per ILM business requirements</td>
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<td></td>
<td>• Multiple formats – DBMS, File</td>
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<table>
<thead>
<tr>
<th></th>
<th><strong>Access archived data when &amp; how you want</strong></th>
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<tbody>
<tr>
<td>4</td>
<td>• Native application access</td>
<td></td>
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<td></td>
<td>• Application independent access</td>
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<tr>
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<th><strong>Full leverage-able solution</strong></th>
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<tbody>
<tr>
<td>5</td>
<td>• Multiple applications</td>
<td></td>
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<td></td>
<td>• Test Data Management</td>
<td></td>
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<tr>
<td></td>
<td>• Data Privacy</td>
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</tbody>
</table>
Application Intelligent Out-Of-Box Application-Specific Templates

- **Complete Business Object**
  - Includes pre-defined related tables specific to the packaged application

- **Integrity Checks**
  - Custom columns are recognized automatically

- **Additional custom tables can be added visually**

- **Clean environment makes maintenance requirements nominal**

- **Selection criteria or integrity checks may be applied to any column: Automatically applied to all related rows.**
2 Take the Right Data Out

- Access Definitions
- Complete Business Object
- Business Rules
- Validations

Production Database

Extract

Data Management Solution

1 - 2 Years
Current Data
Take the Right Data Out
Archiving a Complete Business Object

• Represents application data record – payment, invoice, customer
  • Referentially-intact subset of data across related tables and applications; includes metadata
• Provides “historical reference snapshot” of business activity
Archive the Right Set of Data

Complete Business Object Example – JD Edwards General Ledger

- F0008 Fiscal Data Pattern
- F0101 Address Book
- F0006 Business Unit Master (closed jobs)
- F0010 Company Master
- F0011 Batch Control
- F0012 AAI's
- F0018 Tax Table
- F0025 Ledger Type Master
- F0101 Master (closed jobs)
- F0408 Tax Area
- F0901 Account Master
- F0902 Account Balances
- F0909 Chart of Accounts
- F0911 General Ledger
- F0911T GL Tag
- F0911T GL Tag

- Records in table removed from database during archive process
- Table captured as reference table during archive process
- All Records included
## Take the Right Data Out

### Functional Condition Checks Example

<table>
<thead>
<tr>
<th>General Ledger</th>
<th>Archive Ledgers and Journals for any Accounting Period, Business Unit and Ledger Group values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounts Payable</td>
<td>Archive Vouchers and Payments for any Accounting Period, Bank Set ID and Bank Code values</td>
</tr>
<tr>
<td>Accounts Receivable</td>
<td>Archive Items and Payments for any Accounting Date and Business Unit values</td>
</tr>
<tr>
<td>Billing</td>
<td>Archive Invoices (as well as consolidated Invoices) for any Accounting Date and Business Unit values</td>
</tr>
</tbody>
</table>
3 Store It Where You Want

- Access Definitions
- Complete Business Object
- Business Rules
- Validations

1 - 2 Years
Current Data

Data Management Solution

Production Database

Extract

2 - 4 Years
Active/Historical Online

Compressed Archives
XML
Archive Database

4 - 6 Years
On/Near-Line Archive

ATA File Server
EMC Centera™, DR550, Etc.

6+ Years
Off-Line Archive

Off-line Retention Platform
CD, Tape, Optical, WORM
HP StorageWorks™, IBM TSM
NetApp NearStore® SnapLock™
IBM Total Storage® solutions
(including the DR550)
EMC Centera™.
Access Archived Data

1 - 2 Years
Current Data

Production Database

Data Management Solution
- Access Definitions
- Complete Business Object
- Business Rules
- Validations

Extract

2 - 4 Years
Active/Historical Online

Compressed Archives
XML
Archive Database

2 - 4 Years
On/Near-Line Archive

Non DBMS Retention Platform
ATA File Server
EMC Centera™, DR550, Etc.

4 - 6 Years
Off-line Retention Platform
CD, Tape, Optical, WORM
HP StorageWorks™, IBM TSM
NetApp NearStore® SnapLock™,
IBM Total Storage® solutions
(including the DR550)
EMC Centera™

6+ Years
Off-Line Archive

6+ Years
Off-Line Archive

Access Archived Data

ERP/CRM Applications
- Oracle
- Siebel
- PeopleSoft
- JD Edwards
- Custom/Other

IBM Mashups
- Business Objects
- Crystal Reports
- Cognos

Report Writers

Additional Options
- ODBC / JDBC
- XML
- SQL
- Excel
- Access
Native Access allows you to view:

- Archived transactions only
- Combined archived transactions and production transactions
- Inquiry only view within the enterprise application (e.g. PeopleSoft, JD Edwards)
Access Archived Data
Direct Access Through Reporting Solutions

Reporting Solution Options
• Report Writers:
  • Cognos
  • Business Objects
  • Discoverer
• Excel
• Access
• Any SQL-based tool set
• Browser
• Java Application

• Open & independent
• No training of end users or audit staff
• Leverage existing tools and skills
• OLTP not required
Full Leverage-able Solution
Test Data Management

Data Management Solution

Production Environment

Baseline Subset Clone

Extract/Archive File

Dynamically load relational intact data sets & objects based on selection criteria

Test

Dev

QA
Full Leverage-able Solution

Data Privacy

A comprehensive set of data masking techniques to transform or de-identify data, including:

- String literal values
- Character substrings
- Random or sequential numbers
- Arithmetic expressions
- Concatenated expressions
- Date aging
- Lookup values
- Intelligence

Example 1

Client Information

<table>
<thead>
<tr>
<th>Client No.</th>
<th>SSN</th>
<th>Name</th>
<th>Address</th>
<th>City</th>
<th>State</th>
<th>Zip</th>
</tr>
</thead>
<tbody>
<tr>
<td>123456</td>
<td>333-22-4444</td>
<td>Erica Schafer</td>
<td>12 Murray Court</td>
<td>Austin</td>
<td>TX</td>
<td>78704</td>
</tr>
</tbody>
</table>

Data is masked with contextually correct data to preserve integrity of test data.

Example 2

Personal Info Table

<table>
<thead>
<tr>
<th>PersNbr</th>
<th>FirstName</th>
<th>LastName</th>
</tr>
</thead>
<tbody>
<tr>
<td>10000</td>
<td>Jeanne</td>
<td>Renoir</td>
</tr>
<tr>
<td>10001</td>
<td>Claude</td>
<td>Monet</td>
</tr>
<tr>
<td>10002</td>
<td>Pablo</td>
<td>Picasso</td>
</tr>
</tbody>
</table>

Event Table

<table>
<thead>
<tr>
<th>PersNbr</th>
<th>FstNEvtOwn</th>
<th>LstNEvtOwn</th>
</tr>
</thead>
<tbody>
<tr>
<td>10002</td>
<td>Pablo</td>
<td>Picasso</td>
</tr>
<tr>
<td>10002</td>
<td>Pablo</td>
<td>Picasso</td>
</tr>
</tbody>
</table>

Referential integrity is maintained with key propagation.
Where Does Archiving Fit?

1. Archive before an Upgrade
   • Reduces amount of data to convert during production cutover
   • Reduces downtime during upgrade

2. Archive in Parallel with an Upgrade
   • Combines common technical and functional tasks to save overall elapsed time
     • Technical Tasks: Validate individual steps (such as moving query tables forward), validating new technical environment, performance testing
     • Functional/Business Tasks: Reconciling “before” & “after” results, regression testing on key business processes (such as payroll processing or financial close)
1. Archive Before Upgrade

**Older Version**

![Application Data](image)

**Upgrade Project**

![Archives](image)

**Upgraded Version**

![Current Data](image)

**Universal Access to Application Data**

![Application](image)

![ODBC / JDBC](image)

![XML](image)

![Report Writer](image)
2. Archive & Upgrade Projects in Parallel

Older Version

Upgrade Project

Application Data

Archive Planning

Application

Upgraded Version

Archive

Application

Universal Access to Application Data

Application

ODBC / JDBC

XML

Report Writer

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Success: Improved Service Levels with Application Upgrade

About the Client

Industry
Construction & Mining

Annual Revenue
$4.8 Billion (Australia)

Application
JD Edwards® EnterpriseOne

Solution
Optim™ JD Edwards EnterpriseOne Solution

Challenges:

- Minimizing business disruption during the upgrade from JD Edwards® EnterpriseOne V8.0 to 8.12 by reducing the size of the production dataset to complete the upgrade conversion cutover within one weekend
- Improving JD Edwards EnterpriseOne service levels to support business operations by addressing continued application data growth and delayed online and batch processing that could impact over 180 sites throughout the organization

Client Value:

- Reduced the volume of audit trail & workflow activity records by 63%, from 13.1 millions to 4.8 million rows.
- Improved JD Edwards EnterpriseOne service levels to support business users and daily operations by initiating scheduled and automated archive processing to manage continued data growth
Success: Streamline Application Upgrade & Save Storage Costs

About the Client

Industry
Consumer Packaged Goods

Annual Revenue
$7.1 Billion

Application
JD Edwards® EnterpriseOne

Solution
Optim™ JD Edwards EnterpriseOne Solution

Challenges:

- Leveraging the JD Edwards application for manufacturing, shipping and finance. Since installing JD Edwards in 2003, the system has grown tremendously, from 300 GB to more than 1 TB of information.
- Calculated it would take 5 to 7 business days to perform the upgrade and data conversion from JD Edwards v8.0 to v8.12. That amount of downtime for a business critical application would be unacceptable.

Client Value:

- The JD Edwards upgrade and data conversion was completed over a 3-day weekend, eliminating the need for downtime during business hours.
- Archived data is still accessible to functional users via an archive database, so there was minimal training needed.
- Archived data was stored on “tier 2” storage. Plus, the additional instances of the production system (used for development and testing) also became smaller. This provided an estimated annual savings of $75,000-$80,000 in storage costs.
- In addition, the archiving project was completed 3 weeks ahead of schedule, allowing for additional preparation time for the upgrade project itself.
Questions?
Thank You
About IBM Optim

• **Proven leader in Integrated Data Management (IDM):**
  • Manage and Control Data Growth
  • Data Retention, Compliance & Discovery
  • Speed Application Delivery & Quality with Test Data Management
  • Speed Application Upgrades & Migrations
  • Application Retirement
  • Improve Storage Management – ILM
  • Improve Application Performance and SLAs

• **Solving complex data management issues since 1989**
• **Global company: 2500 clients; 50% of Fortune 500**
• **Recognized by Gartner, IDC, META as EDM industry leader with 46% market share.**
Optim™ Solves the IDM Challenge

- Archiving
  - Improve performance
  - Control data growth, save storage
  - Support retention compliance
  - Streamline upgrades
- Test Data Management
  - Create targeted, right sized test environments
  - Improve application quality
  - Speed iterative testing processes
- Data Privacy
  - Mask confidential data
  - Comply with privacy policies
- Application Migration & Retirement
  - Maintain referential integrity
  - Eliminate Systems
IBM Optim: Enterprise Architecture

IBM Integrated Data Management

Database Design, Development & Administration, Data Growth, Data Privacy, Test Data Management, Application Upgrades & Retirements, Data Retention & E-Discovery

Enterprise Environments

Oracle, SQL Server, Sybase, Informix, DB2, IMS, Teradata, VSAM, Adabas, XML, More...

Windows XP/2000, Solaris, HP/UX, Linux, AIX OS/390, Linux, z/OS, i-series, NAS, SAN, ATA, CAS, Optical, Tape
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