



# Purging and Archiving for JD Edwards - i5, Oracle, SQL Server

David Shea – ARCTOOLS, DCSoftware, Inc.

## Agenda

- Introductions
- Overview
  - Existing JDE purges, issues, solutions
- Purge Schemas
- ARCTOOLS/400 Solution – AS400/iSeries/i5
- ARCTOOLS Enterprise Manager – Oracle, SQL Server

## About David Shea

- Defense and commercial MRP/ERP since 1985
- Six years with a 'Big Eight' consultant
- Worked with AS/400 since 1988
- Also S/38, mainframe, Vax, Alpha, NT, others
- Sold, installed, supported many packaged applications – most without sufficient purge and archive functionality
- Ran an AS/400 ERP shop for 8 years
- Founded DCSoftware in 1996 to address the lack of archiving functionality in MACPAC (Andersen's AS/400 ERP software) purge-only programs. Created ARCTOOLS™.
- Enhanced ARCTOOLS to address other packages that lacked purge functionality.
- Started working on purging in a JDE environment in 2000.
- Began "ARCTOOLS Module for JDE" development in 2001
- JDE Implementation Consulting Partners World-wide

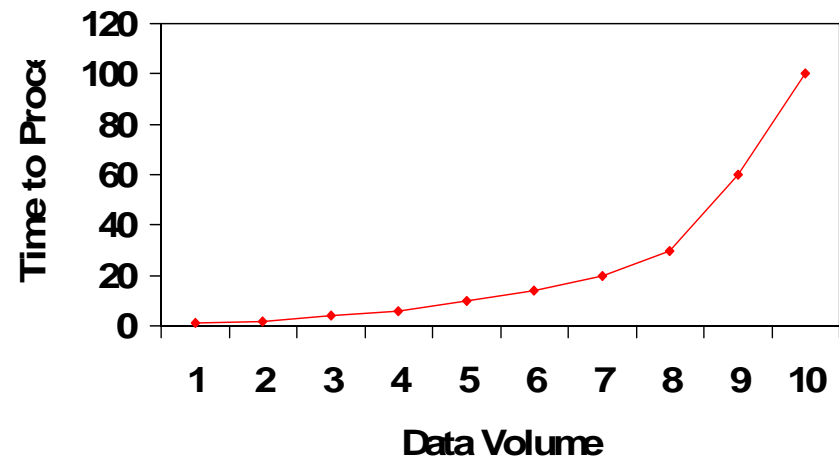
## Purge/Archive Project

1. System databases are growing out of control
2. System has slowed down - you may be facing a costly processor upgrade
3. Lack of purging ability within most ERP systems

**One of the most prominent  
Issues in IT shops today**

Other reasons:

1. Records retention policies
2. **Denver is now recommending purging prior to a JDE upgrade**



## JDE - Existing Purge Functionality

1. Some purge programs (ex: AP, AR, GL)  
Existing purge programs have issues...
2. P00Purge  
Handy, but limited functionality...
3. Purge schemas  
High level design a 'step in the right direction'. Schema presents purge approach at the 'document level'...

Schemas provide the 'road map' – the high level design and the approach to the purge of various functional areas.

In many cases, higher level considerations, such as batch integrity, can further complicate the requirements.

## J.D. Edwards Purge Functions

### Problems with Standard JDE Purge Programs:

1. Programs tend to be narrowly focused, ignoring data requirements from other modules in the software. This results in too much data being purged and data integrity problems in the live environment (ex: GL purge)
2. Programs do not purge related files, also leading to integrity problems in the production database (ex: AP purge)
3. Archived data does not come close to becoming an *environment*, so archived data is difficult to use.
4. Extended file locks, inability to stop/restart
5. Inability to purge other files

### Problems with P00Purge or SQL:

1. Too simple... not capable of building enough intelligence into the logic
2. Performance, stop / restart

## History

- SIG (Special Interest Group) #1 Request - position paper 2000
  - WAC – World Advisory Council
  - Financial
  - OneWorld Technical
  - Life Sciences
- Position Paper Requirements:
  - Purge J.D. Edwards and Non-J.D. Edwards files
  - Purge records while the files are active
  - Purge records according to the document trail
  - Archive records

## Solution

- JDE provides the table/file relationships and documentation (“schemas”)
- DCSoftware provides the tools for purging and archiving (ARCTOOLS™, AEM)
- DCSoftware develops the custom purge scripts and methodologies for JDE (ARCTOOLS™ Module for J.D. Edwards)



## Purge Schemas and Beyond

- Purge Schemas – a good start...
  - Standard purge approach
  - Files, joins, selection criteria, (some) gotchas
- But... beyond the schemas:
  - Related files considerations
  - Batch considerations
  - Example – Accounts Payable

## Schema – Accounts Payable

Schema – file definitions, join criteria, purge selection criteria, related file joins and selection criteria at a **document level**.

|       |        |        |                      |
|-------|--------|--------|----------------------|
| F0411 | F0413  | F0414  | F0911                |
| RPKCO |        | RNKCO  | GLKCO                |
| RPDOC |        | RNDOC  | GLDOC                |
| RPDCT |        | RNDCT  | GLDCT                |
| RPSFX |        | RNSFX  |                      |
|       | RMPYID | RNPYID |                      |
|       |        |        | <b>Note: AE's...</b> |

### Selection Criteria:

- date must be less than horizon
- must have been posted to the GL
- must not be a recurring item
- open amount/quantity = zero

## “Data Integrity” – The Hard Part...

### Textbook:

- headers and details

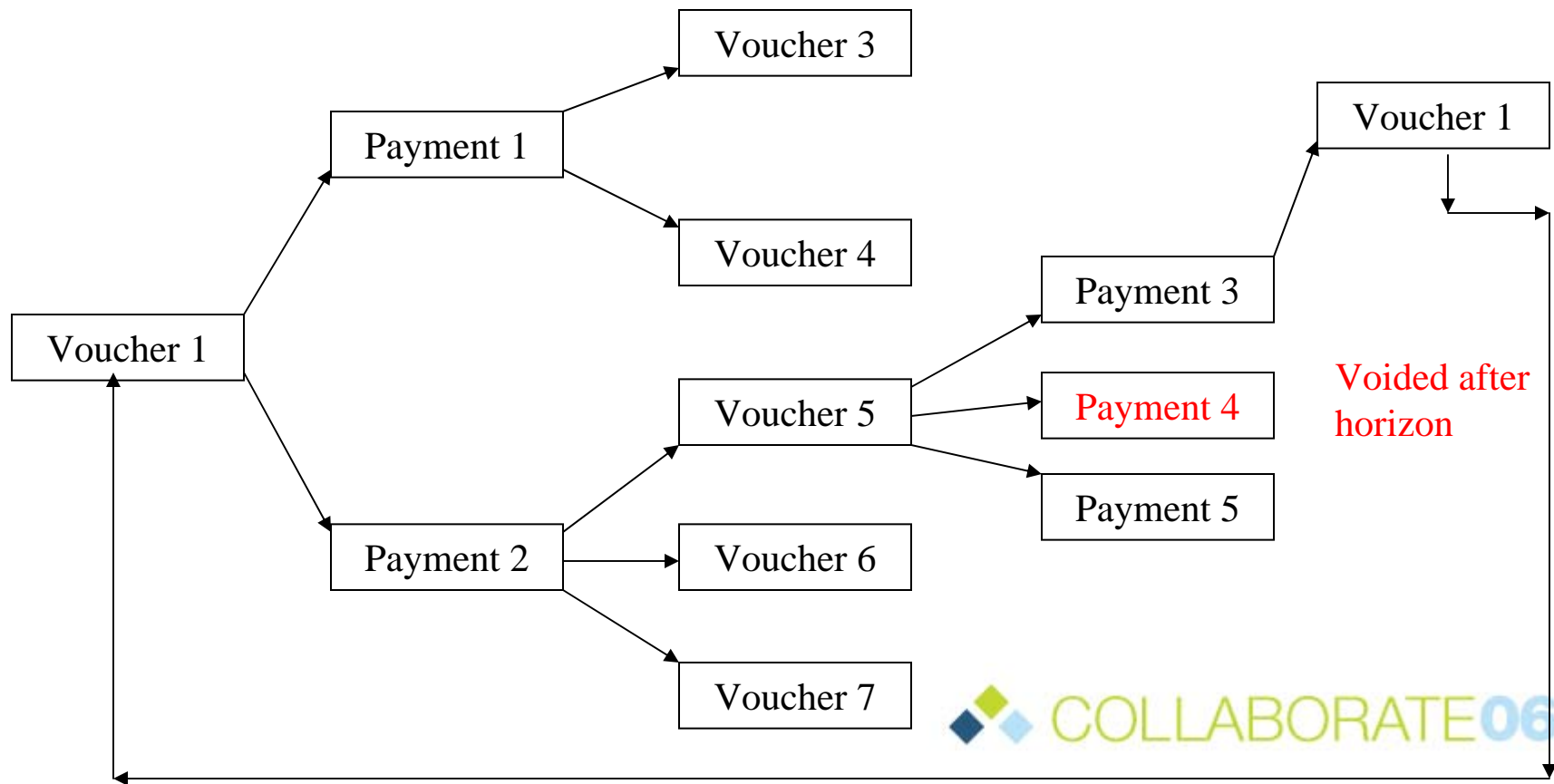
### JDE Specific:

- Batch – GL/AP/AR batches
- Cross functional area – AP/GL integrity, orders/cardex...

JDE programs are often expecting certain data to exist in other modules.

## Integrity Issue #1 - Related Documents

Voucher=>Payments=>More Vouchers...



## Integrity Issue #2 – Batch Integrity

### Voucher Batch

|     |     |
|-----|-----|
| 101 | YES |
| 102 | YES |
| 103 | YES |
| 104 | NO  |
| 105 | YES |

Purging at the document level can result in some docs in a batch getting purged and others getting left in production.

Purging at the document level requires some assumptions regarding purge of AE records in the F0911.

Purging at the batch level makes things easier, especially F0911.

Results in less data getting purged, but a cleaner result.

## Integrity Issue #3 – Batch to Batch Integ

### Voucher Batch

|     |     |
|-----|-----|
| 101 | YES |
| 102 | YES |
| 103 | YES |

### Payment Batch

|     |           |
|-----|-----------|
| 101 | YES       |
| 104 | YES       |
| 112 | <b>NO</b> |

Voucher 101 and payment for 101 are both OK to purge. Voucher batch gets purged. Payment batch not purged due to payment 112. Result is a voucher gets purged but it's related payment does not.

*Theoretically*, we should reference each batch to every other batch it's related to and every other batch that they are related to... and so on... and so on...

*In reality*, this may not be practical... may end up with little data being purged.

## Intro to ARCTOOLS/400™ and JDE Module™

- ❑ Purge and archive files without programming and without locking out the users.
- ❑ Create purge routines as easily as writing a query. More flexible and maintainable than RPG code.
- ❑ RPG code generator processes data safely – no “risky SQL schemes”.
- ❑ ‘Stop-by’ functionality allows purges to be run in increments
- ❑ Throttle feature controls resource utilization.
- Analyze complex JDE data relationships using simple queries (AS400 query and/or SQL), run purges using menu driven user interface
- Top-down, bottom up, process of inclusion, process of elimination, iterative approaches
- Keep related data together in both live and archive (a.k.a. JDE data integrity)
- Numerous functional area purges pre-defined
- Over 150 JDE customers on six continents
- Recommended by Denver as part of A9 upgrade strategy

## ARCTOOLS Enterprise Manager™ (AEM)

- Partnership between DCSoftware and Whitehouse Consultants
- Purge and archive without programming
- Created for Oracle database, written in PL/SQL, Java front end
- PL/SQL code generator
- **Not a UBE.** Runs in the native database
- Completely rules driven – front end feeds inclusion, exclusion, iterative approaches
- JDE Module™ purge methodology ‘ported’ to AEM™
- Useful for any other application on Oracle or SQL Server, simply through configuration



## DCSoftware/JDE Collaboration

- Early 2001 – my customer points me to Denver
- June 2001 – met Sue Brown at Focus
- July thru... developed ‘proof of concept’ purges
- June 2002 – presented sample purges at Focus 2002
- Sept 2002 – went to Denver to work with GSS. Developed ‘first pass’ at most of the SIGs top ten
- Oct 2002 – went to Cargill to implement
- Jan 2003 – first “JDE Module” released
- 2005 – AEM in development, beta test at Materis (Paris)
- Early 2006 – 150<sup>th</sup> JDE customer signs on with ARCTOOLS
- Q1 2006 – AEM officially released

## Cargill

- Stuck on World A6.2 – never went to A7.3 due to conversion time constraints
- Needed to purge prior to JDE upgrade – not enough time to run conversion for large environments
- 10 production environments
- 3 TB disk space
- Nearly 500 million F0911 records across production environments

## Cargill

### **Bill Tritch, JDE Product Manager, Cargill, Inc.**

"We have been running JD Edwards for 10 years and were unable, until now, to purge data without losing referential integrity. With some relatively simple Query type data selection, we were able to reduce some of our larger databases by approximately two thirds. In one general ledger file that had over 175 million records, we were able to reduce it to 65 million records. This tool has helped us to maintain an aggressive upgrade schedule. Without ARCTOOLS, we would not have been able to meet the deadline. As a side benefit, our users have seen reduced run times on many reports and on-line inquiries."

"It has been a great tool for us to quickly reduce our database sizes with minimal effort."

## J.D. Edwards Module

- A '**cookbook**' for **purging JDE**
- A collection of ARCTOOLS rules, procedures, documentation, queries and CL programs designed to purge data from J.D. Edwards databases **with integrity** – both in the production and archive environments
- Initially developed in Denver. Refined and enhanced at Cargill and numerous other customer sites. Development ongoing.
- Allows JDE users to get up and running very quickly.
- Other files (F55xxx, custom files, interfaces, etc) easily added as inputs to the purge criteria or as files to be purged

## ARCTOOLS Module for J.D. Edwards

- Save file:
  - Standard rules for 'vanilla' JDE
  - Query definitions, SQL, CL programs for complex data analyses
- Documentation
  - Extensive, detailed documentation
  - Overview of approach to each purge
  - Detailed steps for setting parameters, running analyses, running purges
  - Sample query definitions, ARCTOOLS reports
- ***A collection of simple steps***
  - Easy to understand. ***Not a 'black box'***.
  - Easy to tweak, easy to replicate to other areas, other software packages
  - Easy for the machine to process → high performance

## Modules

- General Ledger
- Accounts Payable
- Accounts Receivable
- Purchasing
- Sales Orders
- Work Orders
- Inventory
- EDI
- Job Cost (in progress)
- Payroll (In progress)
- Property Management
- Generic Text
- Media Objects

## JDE Module™ V3

- Drives the complex analysis of the JDE data
- Menu driven
- Easy to use
- Horizon dates entered on screen
- Override libraries on screen

## JDE Module™ V3 – Simplicity Under the Covers

- AS/400 Query or SQL used for data analysis engine
- SQL based equivalent engine in development
- Simple approach to answer a complex question
  - Easy to understand, modify, clone
  - Easy for the machine to process



## The architecture behind the AEM solution

### **AEM Engines :**

- A specific engine for Oracle and SQL/Server
- No ERP proprietary middleware, using native database language
- A 3 stage process
  1. Identification of the data to purge
  2. Archiving of the data (to a separate environment)
  3. Purging the data (once the data to be archived has been validated)

# Overview of the solution

AEM modules for JDE E1

DST

MFG

FIN

AEM Engines

Driving File

Purge

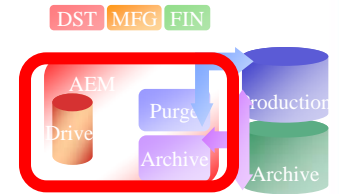
Archive

Production Database

Archive Database

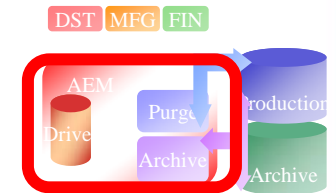
Outlines data to be archived or purged

## AEM Engine – Create Driver Files



- Interprets the rules defined in the AEM modules for JD Edwards E1
- Generates the driver file which allows you to see the data to be purged and archived (or kept)

## AEM Engine - Archive and Purge



### Archive:

- The selected data is copied into a separate archive environment which allows the user to access the archived data using the standard JD Edwards software

### Purge:

- The selected data is deleted in the production environment and this allows a physical reorganisation of the files

### Reverse:

- If required, copy the archived data can be restored back into the production environment, retaining all the inherent JDE integrity.

# Purge Results

| Purge Module | Table        | Description       | Total Records     | Archived Records | Purged Records   | Archive Time | Purge Time | Gigabytes Gained |
|--------------|--------------|-------------------|-------------------|------------------|------------------|--------------|------------|------------------|
| Receivables  | F03B11       | Invoice           | 1,481,130         | 597,614          | 597,614          | 5m 40s       | 45m        | 0.50             |
|              | F03B13       | Receipts          | 293,701           | 191,256          | 191,256          | 40s          | 5m         | 0.15             |
|              | F03B14       | Receipt Detail    | 2,146,335         | 1,190,682        | 1,190,682        | 7m           | 1h 45m     | 0.90             |
|              | <b>F0911</b> | G/L               | <b>10,087,257</b> | <b>3,680,649</b> | <b>3,680,649</b> | 1h 7m        | 3h 15m     | 2.60             |
| Payables     | F0411        | Vouchers          | 371,442           | 172,634          | 172,634          | 4m           | 10m        | 0.15             |
|              | F0413        | Payments          | 195,372           | 128,035          | 128,035          | 1m           | 3m         | 0.20             |
|              | F0414        | Payment Detail    | 326,721           | 164,073          | 164,073          | 2m           | 2m 20s     | 0.05             |
|              | <b>F0911</b> | G/L               | <b>6,406,608</b>  | <b>349,558</b>   | <b>349,558</b>   | 20m          | 45m        | 0.25             |
| GL           | <b>F0911</b> | G/L               | <b>6,057,050</b>  | <b>750,788</b>   | <b>750,788</b>   | 19m          | 1h         | 0.60             |
| Purchasing   | F4301        | PO Header         | 532,480           | 193,466          | 193,466          | 1m           | 9m         | 0.15             |
|              | F4311        | PO Detail         | 922,263           | 382,657          | 382,657          | 4m           | 21m        | 0.60             |
|              | F43121       | PO Receptions     | 1,189,718         | 752,654          | 752,654          | 3m 30s       | 35m        | 0.75             |
|              | F43199       | PO History        | 858,243           | 235,774          | 235,774          | 3m           | 15m        | 0.30             |
| Inventory    | F4111        | Cardex            | 5,694,074         | 503,611          | 503,611          | 5m 30s       | 1h         | 0.40             |
| Sales Orders | F42019       | SO Header History | 247,682           | 245,849          | 245,849          | 2m           | 14m        | 0.30             |
|              | F42119       | SO History        | 4,056,853         | 1,871,622        | 1,871,622        | 16m          | 1h 25m     | 1.50             |
|              | F49219       | SO Tag History    | 2,692,554         | 1,179,491        | 1,179,491        | 8m           | 1h 5m      | 0.50             |

## ARCTOOLS Enterprise Manager - Materis

“We used ARCTOOLS Enterprise Manager (AEM) to purge JD Edwards historic data on our Oracle/Unix platform. We successfully purged 45% of our business data while adhering to the integrity rules inherent in JD Edwards, our business managers’ expectations and French compliance regulations. The AEM product worked first time and was fast, efficient and secure. We would recommend to all JD Edwards users to partner with Whitehouse Consultants for their purge and archive needs.”

Roger Beesley

CIO, Materis DS, Paris, France

## Who's Running **ARCTOOLS/400™**?

- **More than 200 companies** running JDE, BPCS, JDA, JBA, Infinium, MACPAC, others, custom apps
- Customers on six continents
- **170+ JDE customers alone**

## ARCTOOLS/400™ - Summary

- ARCTOOLS allows you to purge and archive without programming and without locking out the users. Stop, restart, throttle features.
- The ARCTOOLS Module for JDE allows you to get up and running quickly, and to purge with integrity.
- ReorgWizard allows you to reorganize your files without locking out the users.



## Wrap up & Questions



**ARCTOOLS/400**

**ReorgWizard™**

**DCS**  
oftware

DCSoftware, Inc.  
[www.arctools.com](http://www.arctools.com)  
[dshea@arctools.com](mailto:dshea@arctools.com)  
+1 508 435 8243