CA Repository Source Code Exchanges

Mainframe and
Multi-Platform Application
Development

MP104LN

ADC AUSTIN

caWorld'08 | discoverability

Abstract

Universal XML Exchange for CA Repository

> Provides new opportunities for software architects and DBAs to integrate metadata from multiple systems

> Enables enhanced management and understanding of complex object oriented software assets

> Provide practical insight into source scanning, metadata, and exchange technology use

Biography

> **John Rhodes**
Principal and CTO, ADC Austin

- Architect for enterprise application projects

> Speaker at four CA Worlds and other industry events

> Special focus on

- Model Based Development (2E, Plex, Gen, Repository)
- Large scale systems
- SOA
- RIA / Ajax / Web 2.0

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ADC Austin

- Founded in 1996 as division of Synon, ADC Austin has built large scale mission critical systems leveraging the ADC as a "*House of Architects*".
- ADC Austin has a special focus on automated legacy code modernization and SOA.
- ADC Austin primarily works with Microsoft Enterprise servers and IBM Enterprise platforms
- ADC Austin is a strategic partner and reseller for CA, MKS, Semantic Designs and other related tools

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Agenda

> XML Exchange solution – Overview

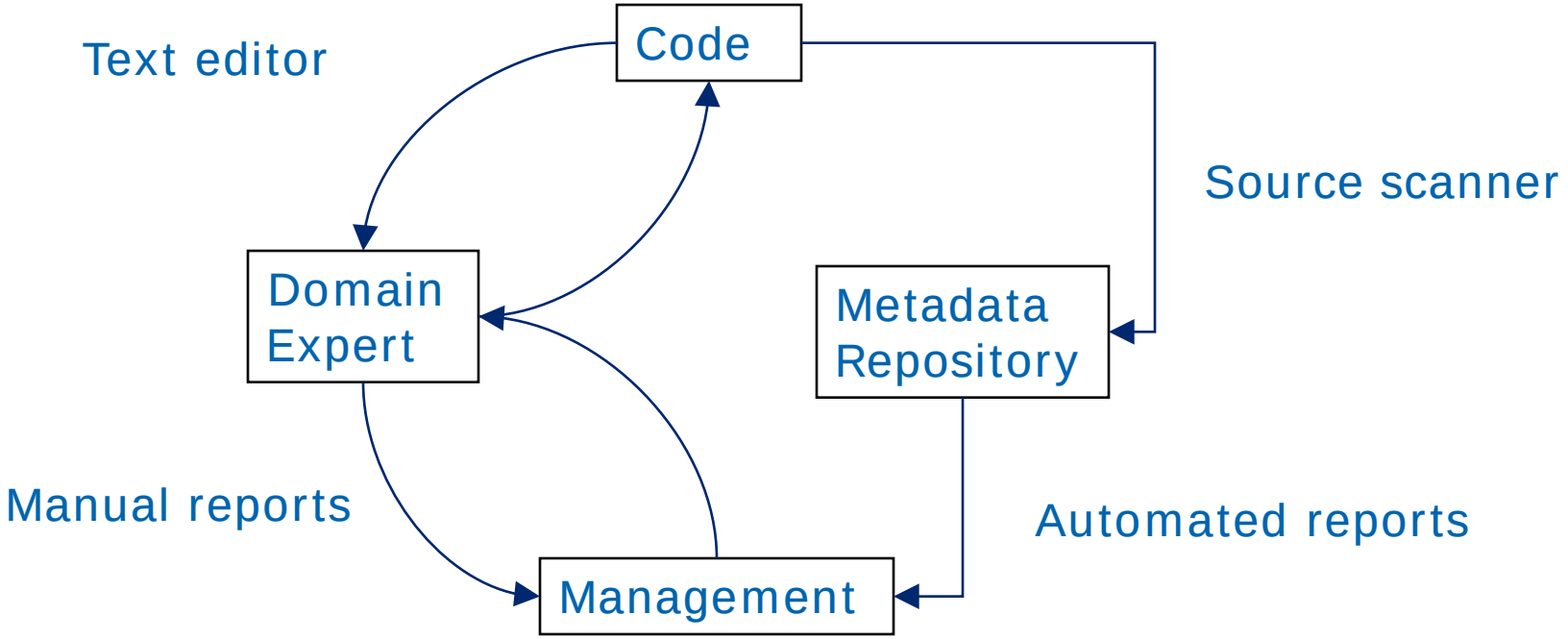
> Lab Session

> Q&A

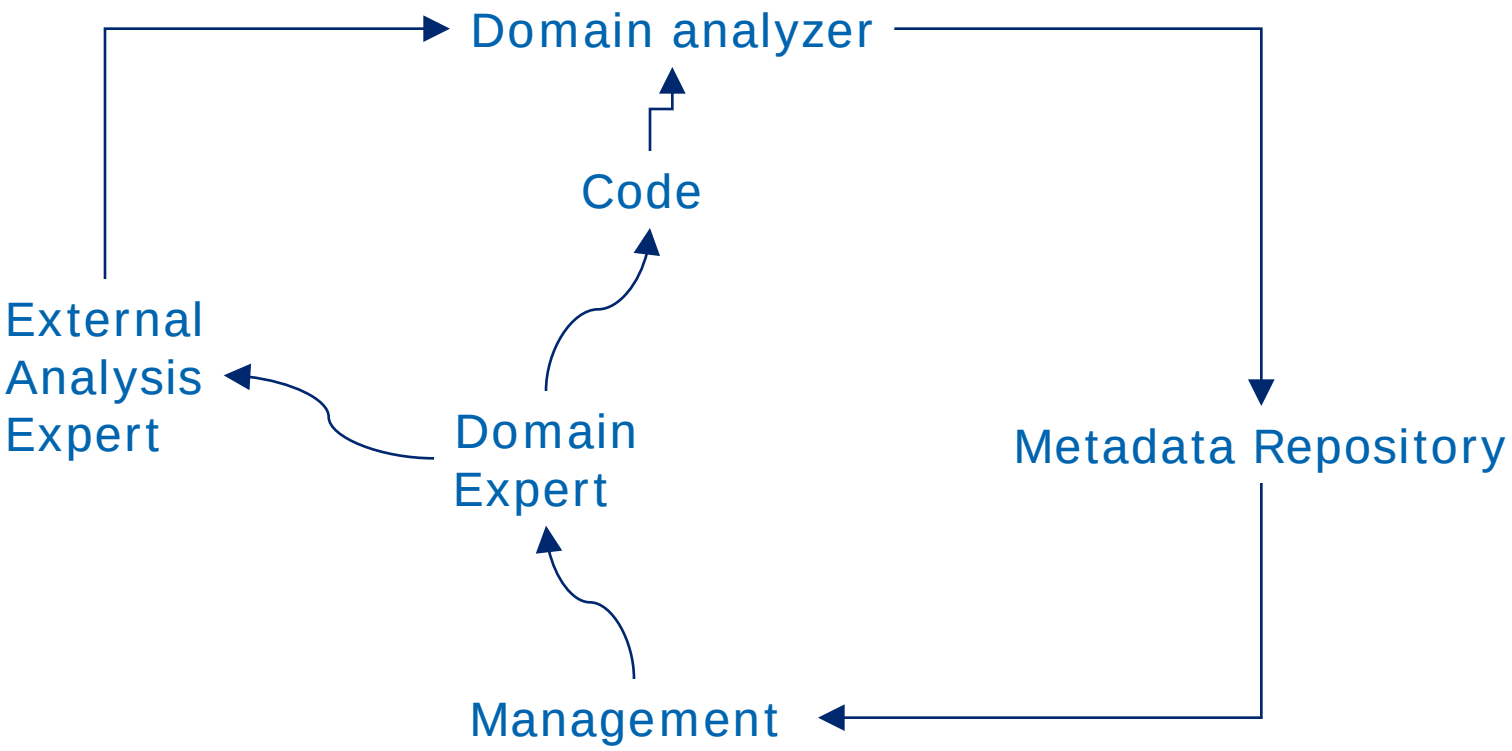
Universal XML Exchange

Typical Repository Methodology

> Limitations in source scanning lead to hybrid approach



Unified Repository Methodology



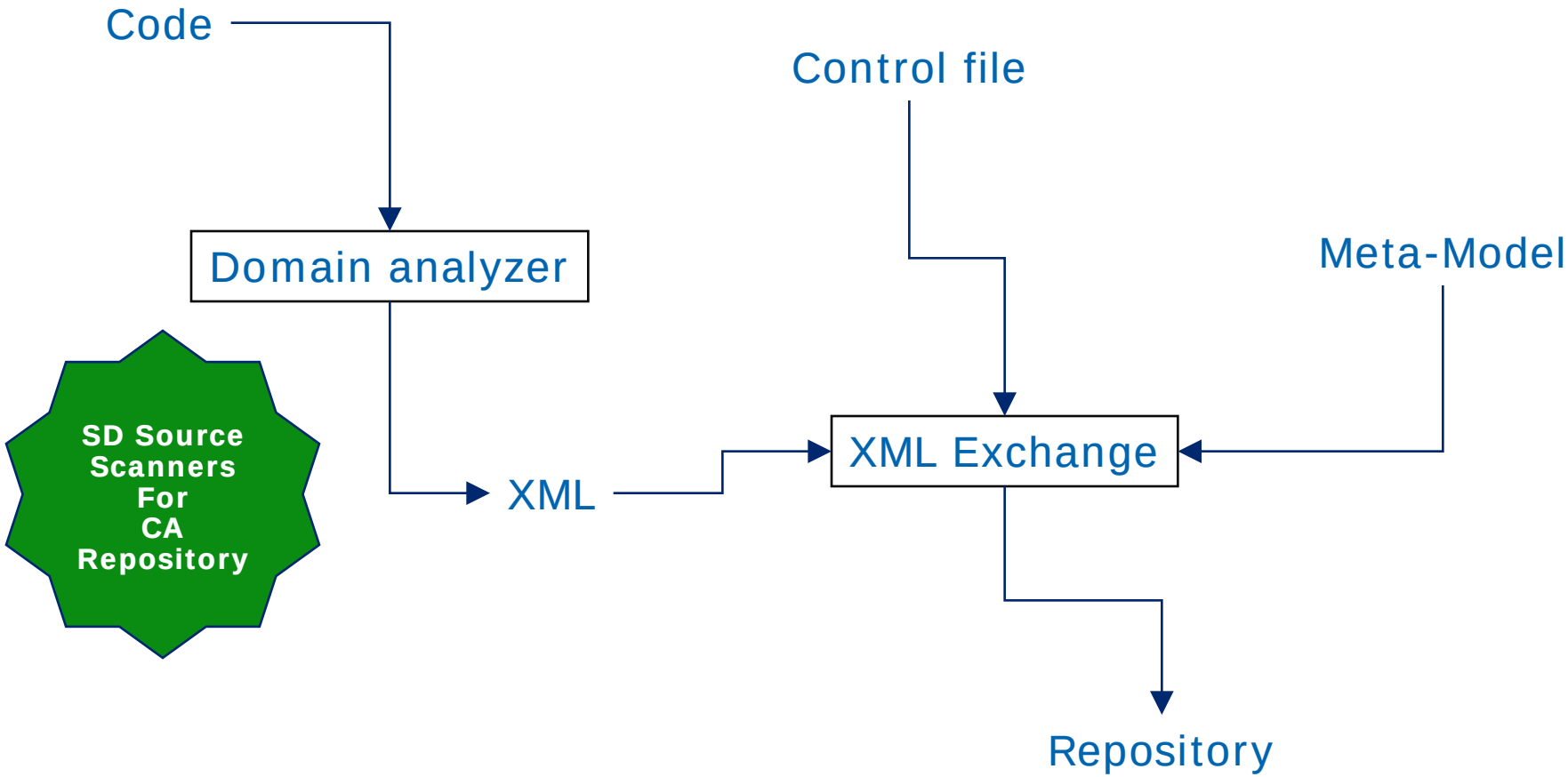
XML Exchange Solution –Overview

> Domain analyzer analyzes the source data and creates meta data from the source

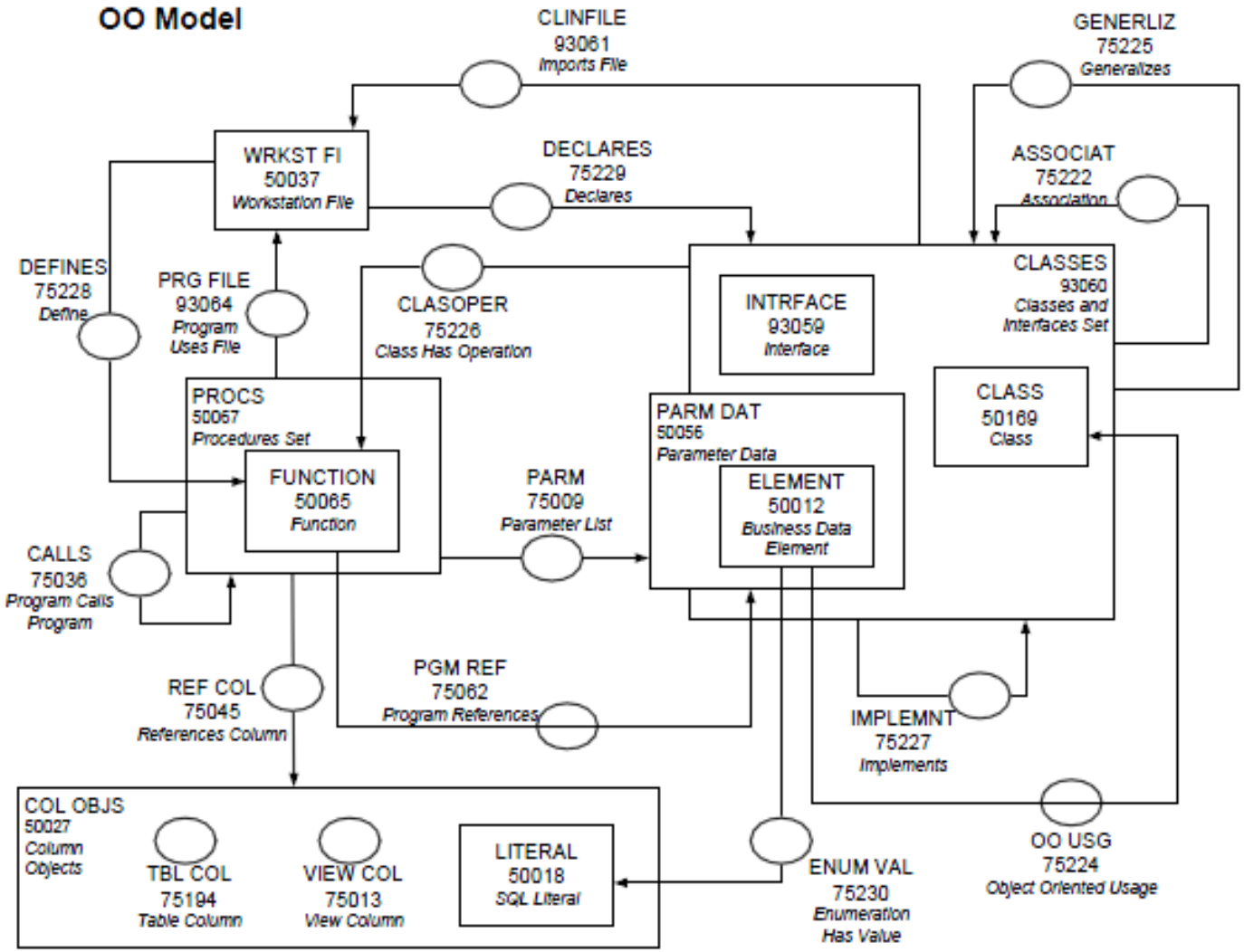
> Control File is an XML Document in itself that contains the rules on how to map an object in the XML Document to an object in the repository

> XML Exchange reads the source to produce an XML using control file, domain analyzer and the meta model which can be imported in to repository

XML Exchange Overview



Turn Java Source into…



XML Exchange – Enabling Software Asset Analysis

Oh…
and Where does Interline Accounting fit in?

How can I see the program calling chain?

What are the enterprise naming standards?

What other systems are effected by this change?

Has this code already been written?

Who wrote this?
Who is the domain expert?

What are the (business) requirements?

Where are the specs?

What external data was used?

XML Exchange Solution – Wider Application

> Opens up new possibilities to populate CA Repository

- Object Oriented Languages
  - Java, currently available with ADC Austin (V2.3)
  - More to come
- Web Services / SOA
  - Currently available with CA
- Any object types

XML Exchange Solution –Overview

> Lab Session

> Analyzing a Java based enterprise software application using Java / XML Exchange

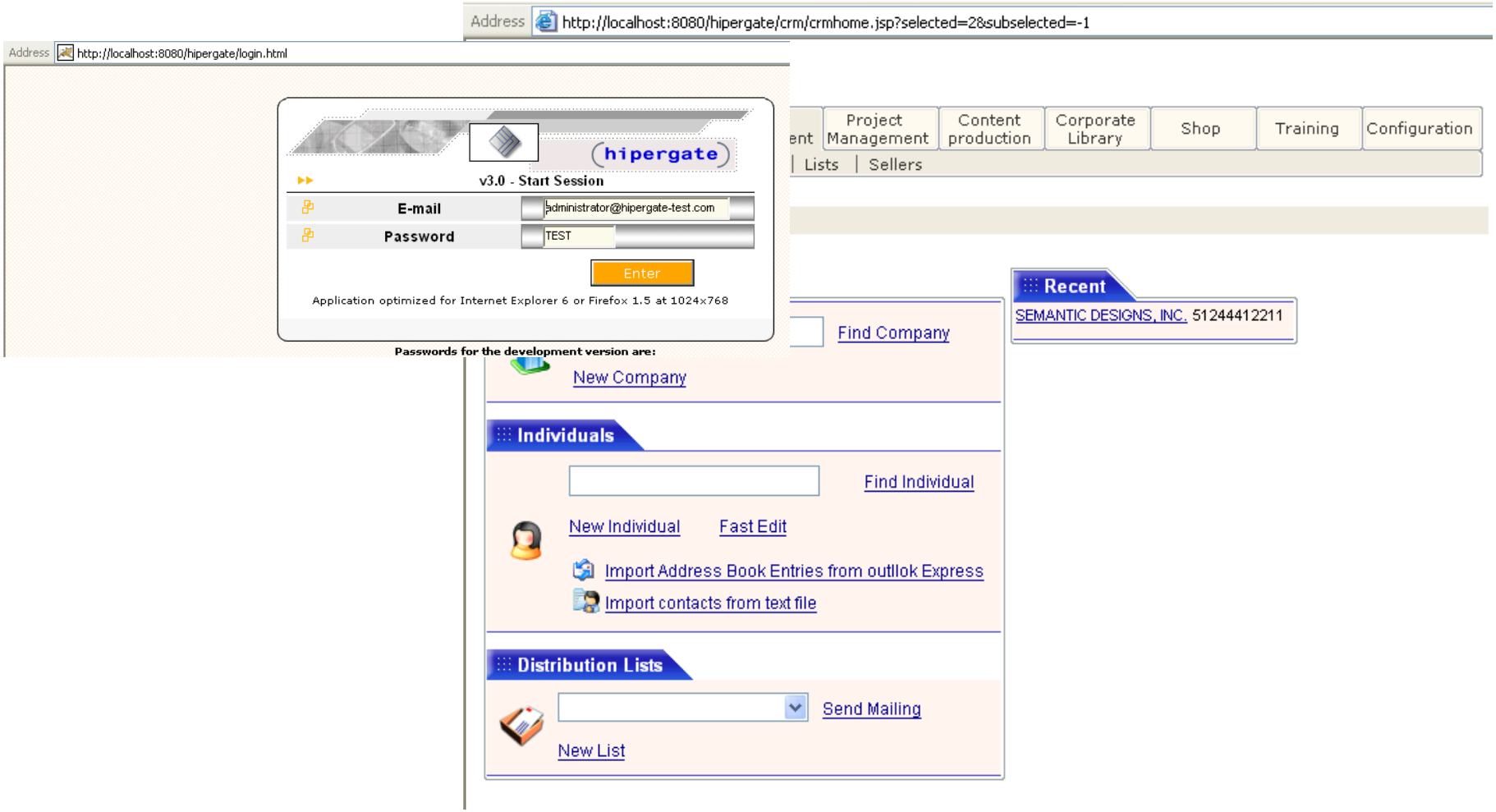
- Hipergate – Open Source CRM
- 150K Lines of java source
- SQL Server back end

XML Exchange Solution –Overview

> Demo Flow

- Examine application
- Examine source
- Run Domain Analysis (SD Source Scanner) to produce XML
- Load XML into repository
- View data shopper and client results

Application



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Application Logic

Java - Hipergate/java/com/knowgate/ | CA Repository | VM

File Edit Source Refactor Navigate Search Project Run Window Help

Package Explor | Hierarchy

- Hipergate
  - src
  - java
    - com.enterprisedt.net.ftp
    - com.knowgate.acl
    - com.knowgate.addrbook
    - com.knowgate.addrbook.jical
    - com.knowgate.billing
    - com.knowgate.cache
    - com.knowgate.cache.server
    - com.knowgate.crm
    - com.knowgate.datacopy
    - com.knowgate.dataobjs
    - com.knowgate.dataxslt
    - com.knowgate.dataxslt.db
    - com.knowgate.debug
    - com.knowgate.dfs
    - com.knowgate.forums
    - com.knowgate.hipergate
      - AbstractOrder.java
        - AbstractOrder
          - oBuyer
          - oCurrencyBuffer
          - oCurrencyFieldP

AbstractOrder.java

```
int iPgLine;
Object oPgLine;
ResultSet oLine;
PreparedStatement oSeek;

if (isNull(sPrimaryKey)) throw new NullPointerException("A

if (DebugFile.trace) {
  DebugFile.writeln("Begin AbstractOrder.addProduct([Conne
  DebugFile.incIdent();
}

if (null==sProductId) {
  sProductId = "null_"+Gadgets.leftPad(Gadgets.left(sProdu
  iPgLine = -1;
}
else {
  if (DebugFile.trace) DebugFile.writeln("Connection.prepa

  oSeek = oConn.prepareStatement("SELECT " + DB.pg_line +
                                 ResultSet.TYPE_FORWARD_ON
  oSeek.setString(1, getString(sPrimaryKey));
  oSeek.setString(2, sProductId);
  oLine = oSeek.executeQuery();
```

XML Exchange Solution –Overview

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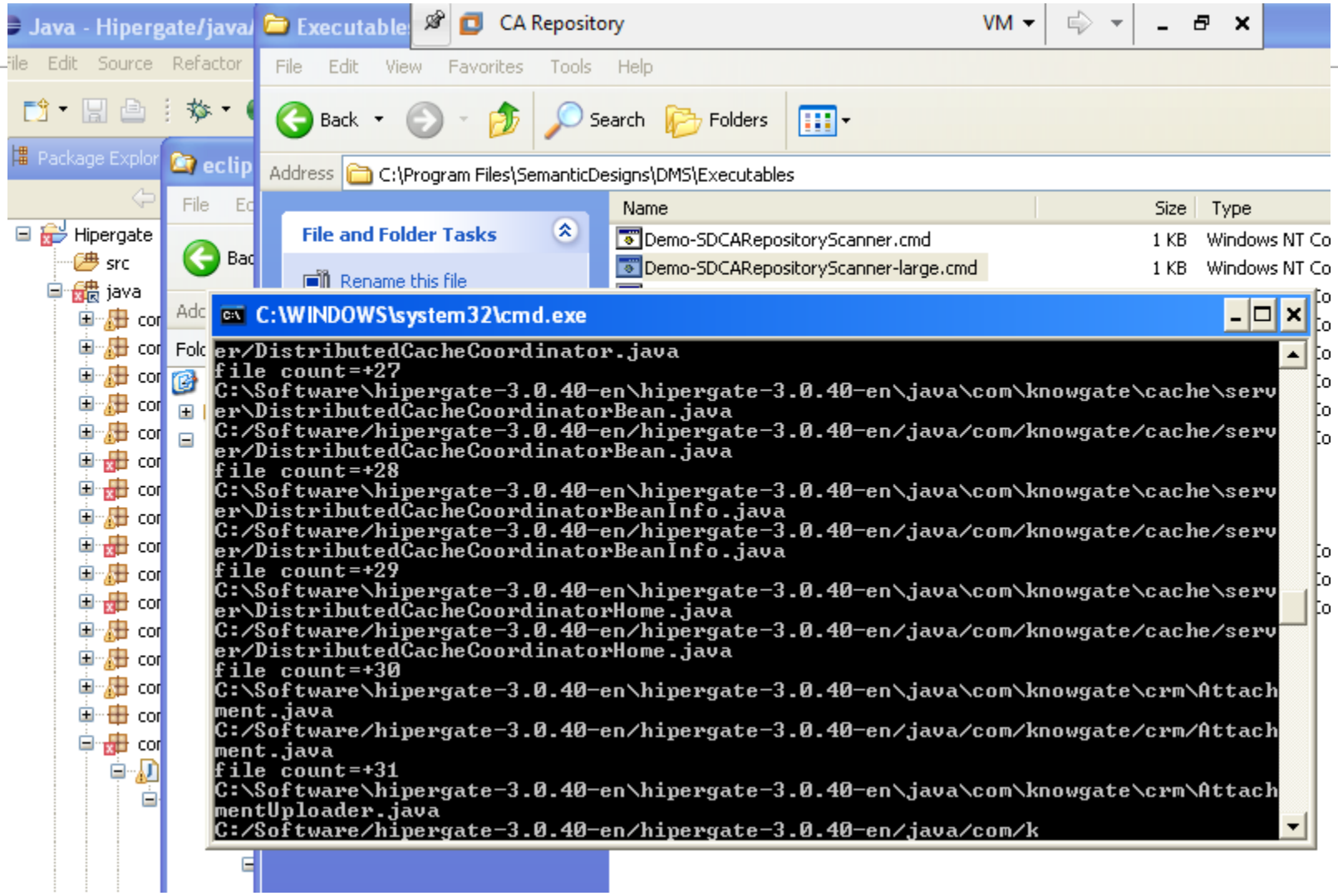
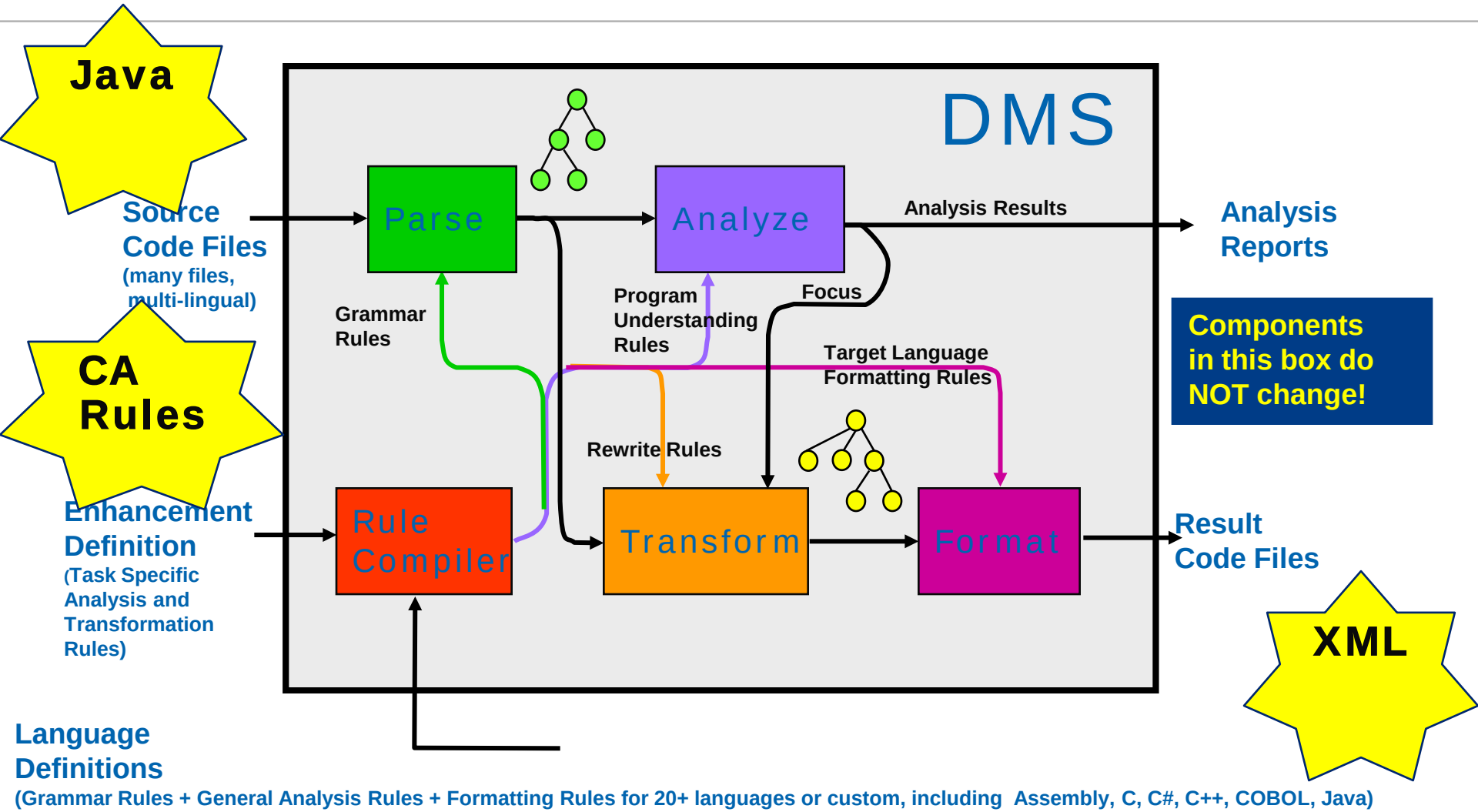
Run SD Source Scanner – Domain Analysis



What is it doing?
SD Source Scanner (DMS Engine)



Language Definitions
(Grammar Rules + General Analysis Rules + Formatting Rules for 20+ languages or custom, including Assembly, C, C#, C++, COBOL, Java)

What is it doing

> Analysis
- Name and Type Resolution
- Inspecting inheritance across system
- Usage Analysis (Call Graph)
- Database access*

> Formatting XML per rules

What can it do?

> Virtually anything

- Compiler grade analysis engine, all program information is cataloged for analysis
- Examples
  - Clone detection / Component reuse
  - Complex database usage scenarios
  - Audit / SOX

> Need to define to SD Source Scanner Engine

- Metamodel (CA Repository)
- Analysis rules

XML Exchange Solution –Overview

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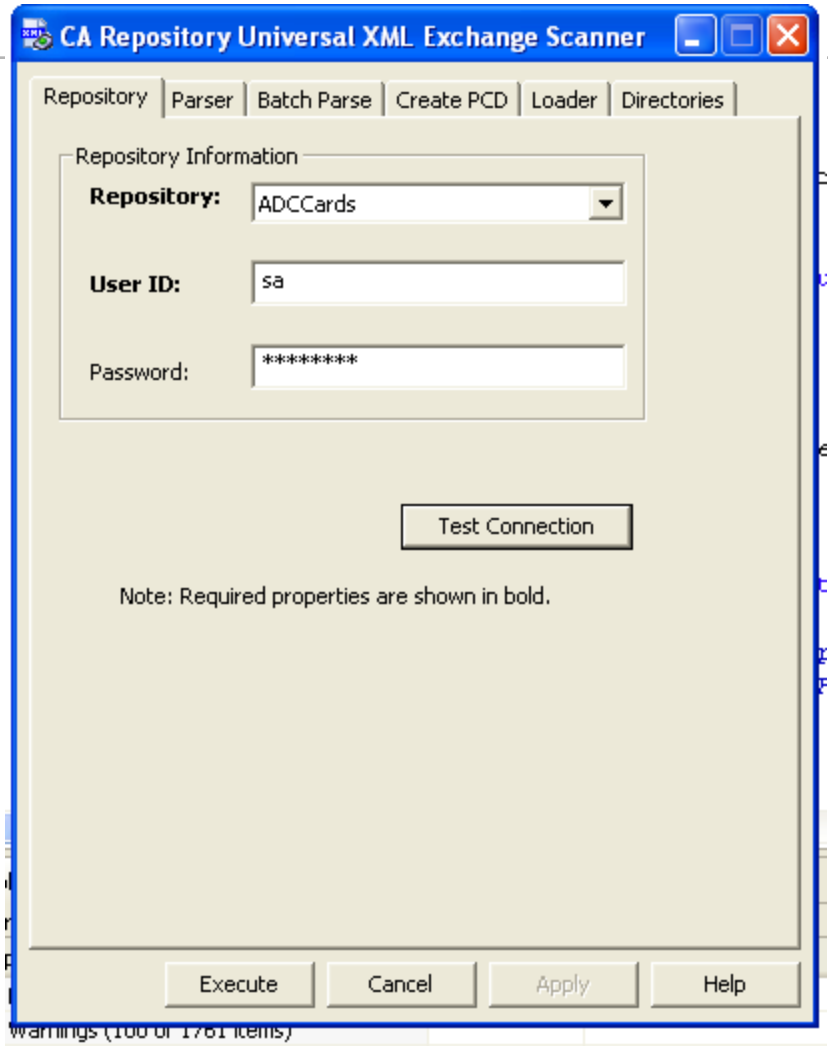
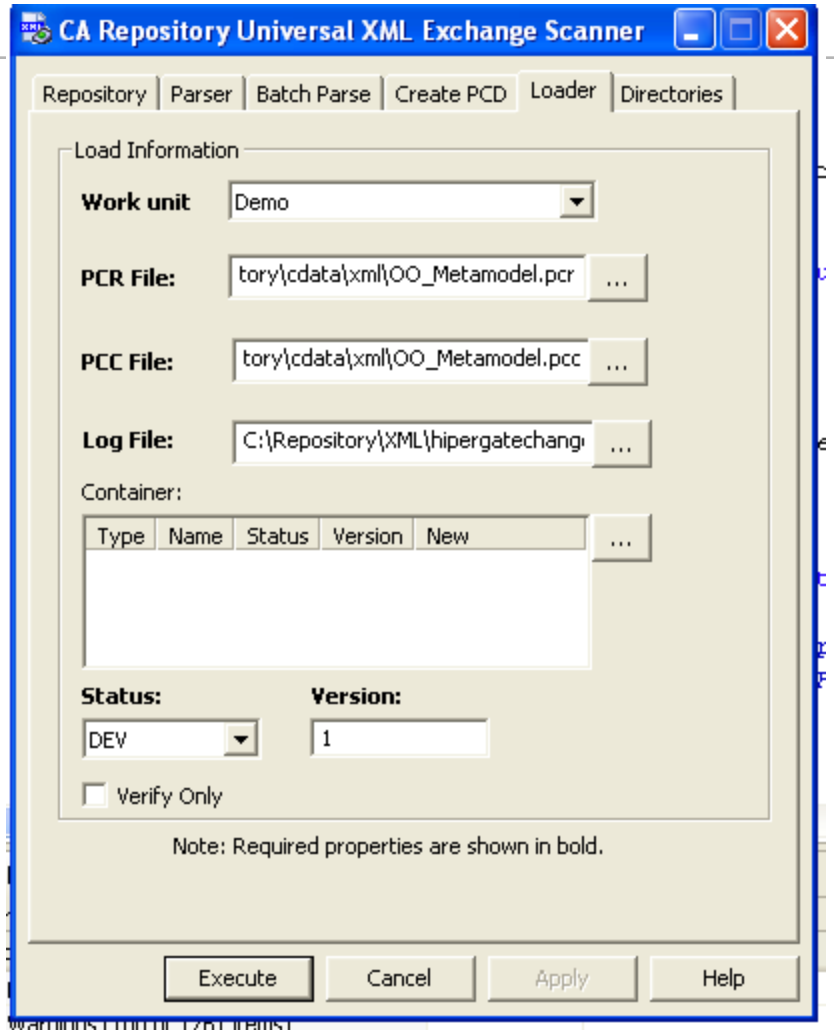
Run SD Source Scanner – Domain Analysis





XML Exchange Solution –Overview

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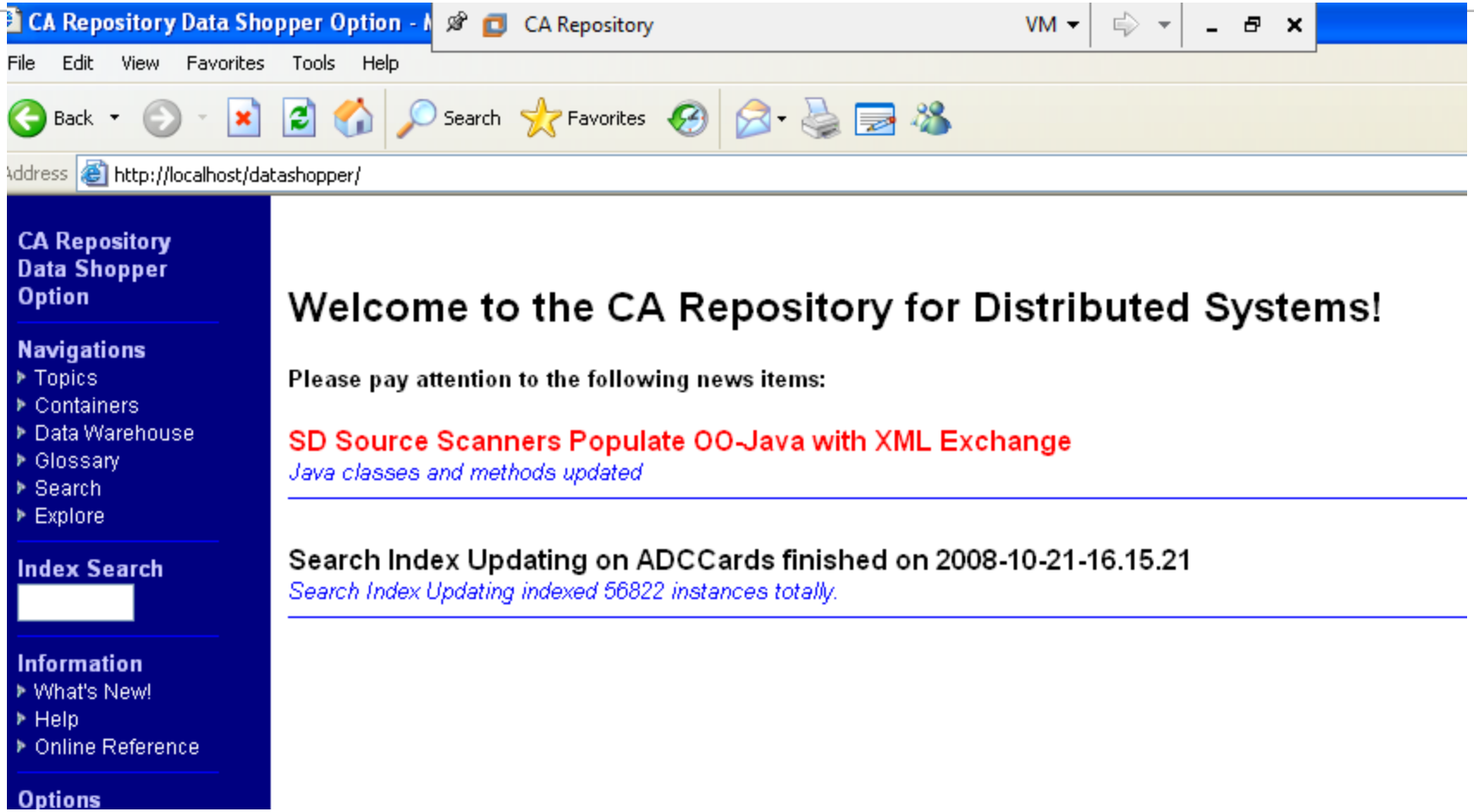
Data Shopper



Client

CA Repository for Distributed Systems | CA Repository | VM

File Help

Home Back Search Help

- Class Has Operation:Meeting.getMinute
- Class Has Operation:Meeting.getMinuteEnd
- Class Has Operation:Meeting.getRooms
- Class Has Operation:Meeting.lastModified
- Class Has Operation:Meeting.Meeting
- Class Has Operation:Meeting.Meeting
- Class Has Operation:Meeting.Meeting
- Class Has Operation:Meeting.repeat
  - is contained by Category:HipergateChangesDemo
  - (Source) Class:Meeting
  - (Target) Function:repeat
    - Parameter List:repeat.bSkipHolidays
    - Parameter List:repeat.nDaysGap
    - Parameter List:repeat.nTimes
    - Parameter List:repeat.oConn
    - Program Calls Program:repeat.getContacts
    - Program Calls Program:repeat.getFellows
      - is contained by Category:HipergateChangesDemo
      - (Source) Function:repeat
      - (Target) Function:getFellows
        - Parameter List:getFellows.oConn
        - Program Calls Program:repeat.getFellows
        - Class Has Operation:Meeting.getFellows
          - is contained by Category:HipergateChangesDemo
          - (Source) Class:Meeting
          - (Target) Function:getFellows
            - Parameter List:getFellows.oConn
            - Program Calls Program:repeat.getFellows
            - Class Has Operation:Meeting.getFellows
            - is contained by Category:HipergateChangesDemo
        - is contained by Category:HipergateChangesDemo
    - Program Calls Program:repeat.getRooms
    - Program Calls Program:repeat.Meeting
    - Program Calls Program:repeat.store

Property Name	Property Value
Object Type:	Class
Name	Meeting
Status	DEV
Version	7
Cardinality	
Created By	sa
Create Date Time	2008-11-17-14.40.15.000000
Modified By	sa
Modified Date Time	2008-11-17-14.40.15.000000
Description	
Class Alias	
Stereotype	
Class Parms	
Collection	
Class Constraints	
Prefix	
Class Role	
Overridability	
Concurrency	
Persistence	
User Interface	
Visibility	
Derived	0
Link	0
Utility	0
Reserved	0
Composite	0
Object Flag	0
External Flag	0
Template	0
Interface	0
Kind	
Phase	
QUALIFIED_NAME	
ISABSTRACT	
ISSTRICTFP	

Summary

> XML Exchange enables the CA Repository to

- Jump the hurdles to a wider repository application
  - **Announcing Java capability**
    - **With 2.3 GA**
- Eliminate tradeoff between technological progress and manageability

> Specialized program analysis gives

- Multi-domain support
- Custom property derivation

Q&A

Exhibition Center
Related CA and Partner Technology

> Presentation

- MP207SN – XML exchange 9:45 Wednesday – Semantic Designs

> CA

- Mainframe 430 – CA Repository for z/OS, CA Repository for Distributed Systems

> Partner

- Booth 436 — ADC Austin and Semantic Designs/Language Exchanges for CA Repository

> Exhibition Center Tours

- Sign up at the Info Desk in the Exhibition Center

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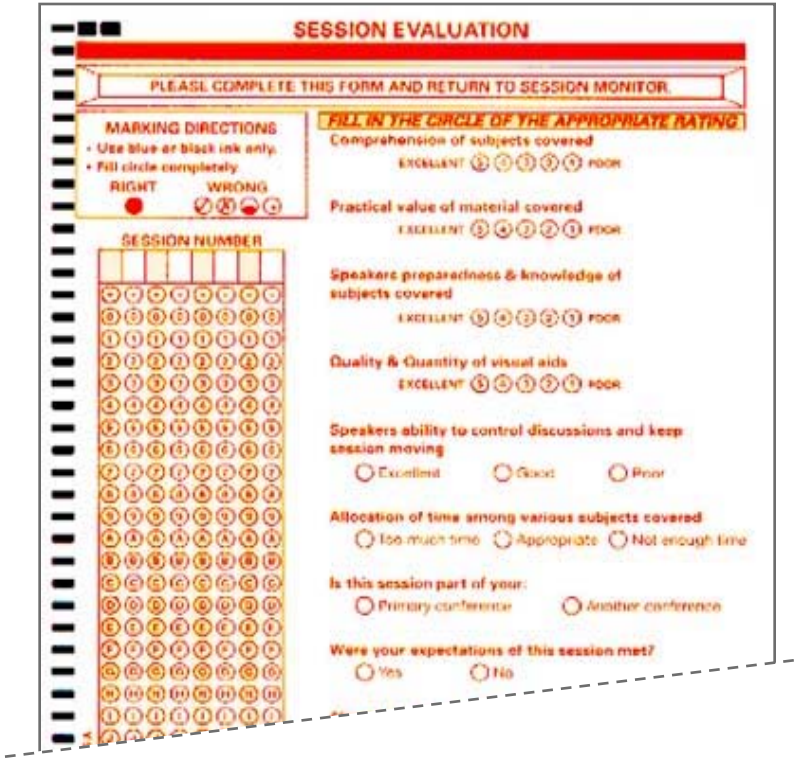
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PLEASE COMPLETE THIS FORM AND RETURN TO SESSION MONITOR.

MARKING DIRECTIONS
- Use blue or black ink only.
- Fill circle completely.

RIGHT WRONG

SESSION NUMBER

FILL IN THE CIRCLE OF THE APPROPRIATE RATING

Comprehension of subjects covered
EXCELLENT 5 4 3 2 1 POOR

Practical value of material covered
EXCELLENT 5 4 3 2 1 POOR

Speakers preparedness & knowledge of subjects covered
EXCELLENT 5 4 3 2 1 POOR

Quality & Quantity of visual aids
EXCELLENT 5 4 3 2 1 POOR

Speakers ability to control discussions and keep session moving
Excellent Good Poor

Allocation of time among various subjects covered
Too much time Appropriate Not enough time

Is this session part of your:
Primary conference Another conference

Were your expectations of this session met?
Yes No