

CA Repository Source Code Exchanges

Mainframe and
Multi-Platform Application
Development

MP104LN

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

ADC Austin

The logo for ADC Austin, featuring the text "ADC AUSTIN" in a bold, sans-serif font. The text is white and set against a dark grey rectangular background. A thin red horizontal line is positioned directly beneath the text.

- > 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

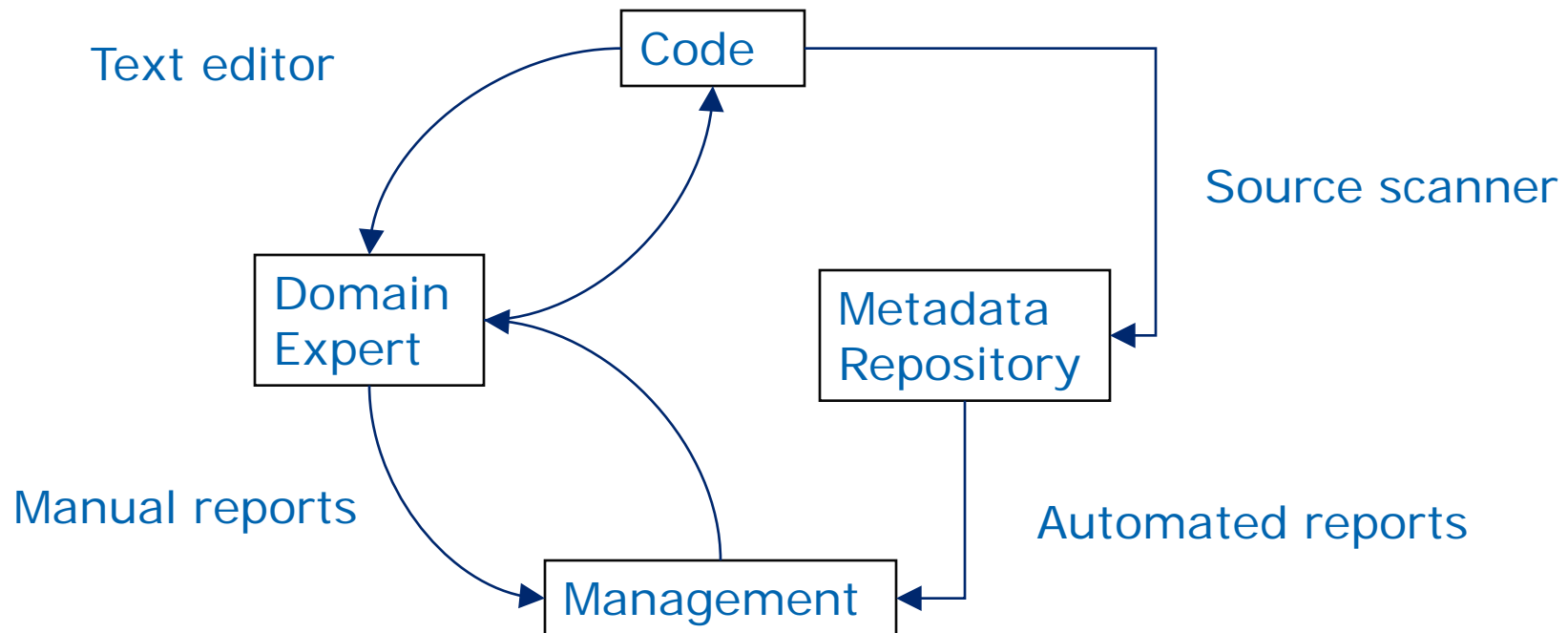
Agenda

- > XML Exchange solution – Overview
- > Lab Session
- > Q&A

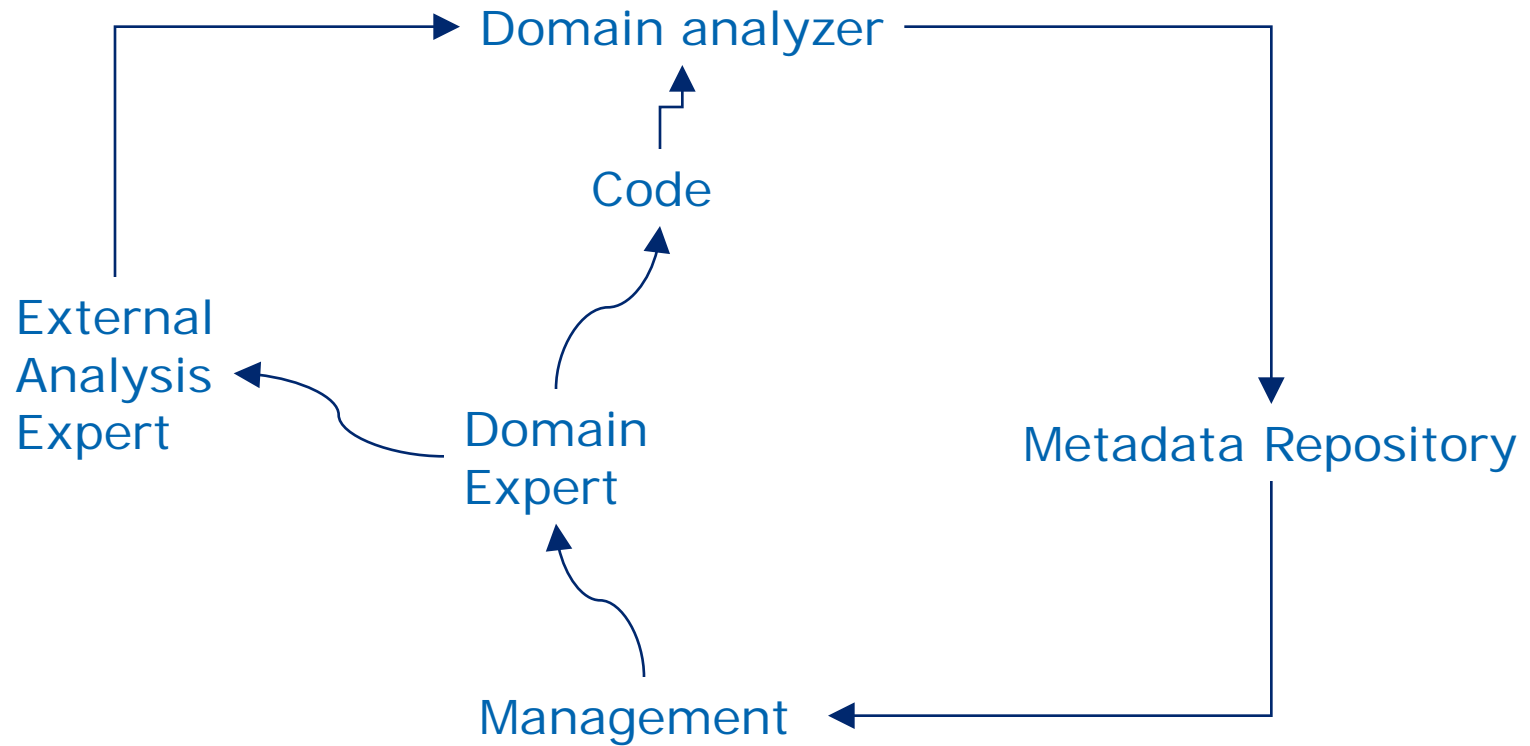
> Universal XML Exchange

Typical Repository Methodology

> Limitations in source scanning lead to hybrid approach



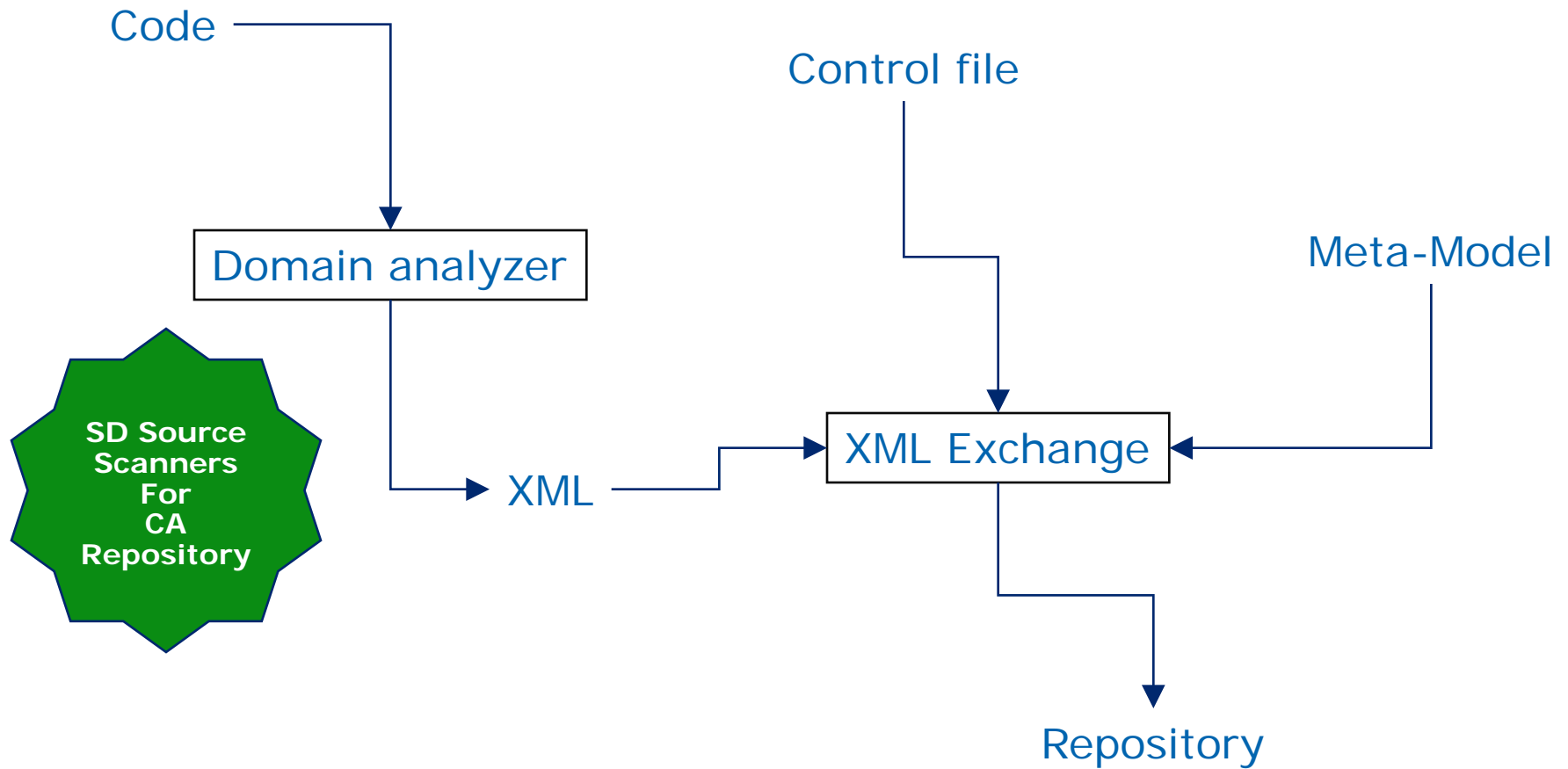
Unified Repository Methodology



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



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

Address <http://localhost:8080/hipergate/login.html>

Address <http://localhost:8080/hipergate/crm/crmhome.jsp?selected=2&subselected=-1>

hipergate
v3.0 - Start Session

E-mail: administrator@hipergate-test.com
Password: TEST

Application optimized for Internet Explorer 6 or Firefox 1.5 at 1024x768

Project Management | Content production | Corporate Library | Shop | Training | Configuration
Lists | Sellers

Recent
SEMANTIC DESIGNS, INC. 51244412211

Passwords for the development version are:

Individuals

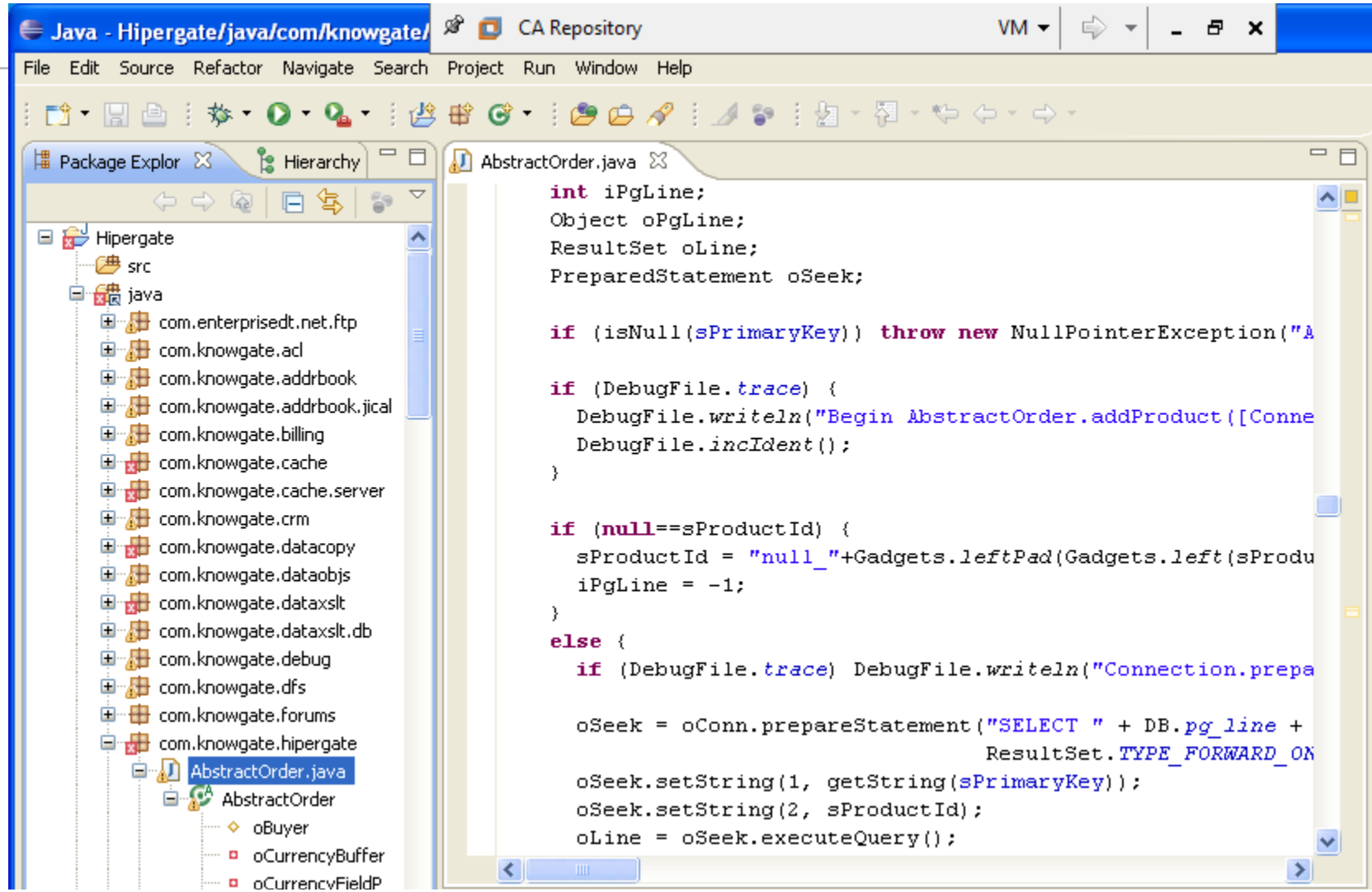
Distribution Lists

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 Logic



```
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

> 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

Run SD Source Scanner – Domain Analysis

The screenshot shows the Eclipse IDE interface. The Package Explorer on the left displays a project named 'Hipergate' with a 'java' package containing several classes. The main editor area shows a file explorer for the directory 'C:\Program Files\SemanticDesigns\DMS\Executables'. A 'File and Folder Tasks' dialog is open, showing a table of files:

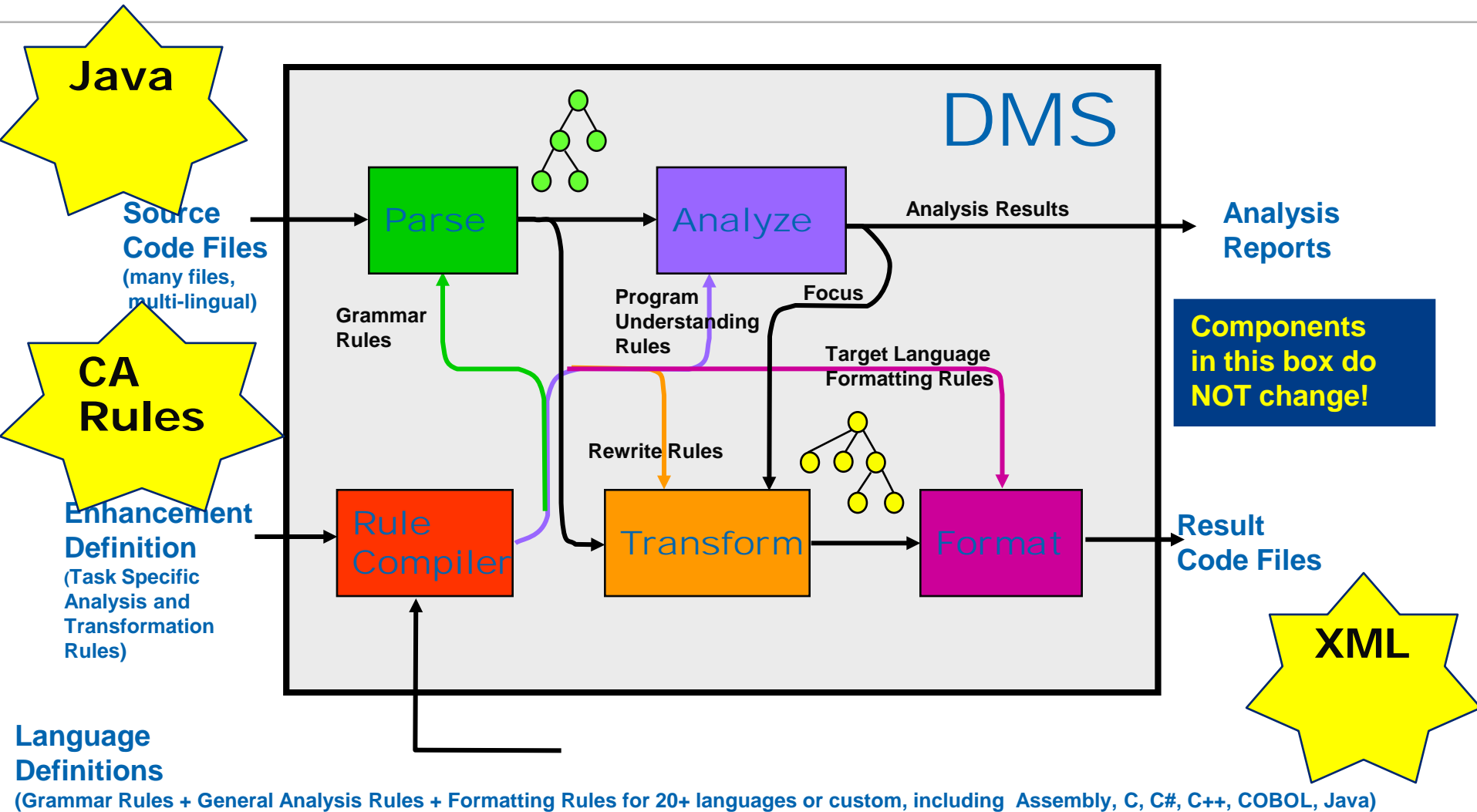
Name	Size	Type
Demo-SDCARRepositoryScanner.cmd	1 KB	Windows NT Co
Demo-SDCARRepositoryScanner-large.cmd	1 KB	Windows NT Co

Below the file explorer, a command prompt window titled 'C:\WINDOWS\system32\cmd.exe' is open, displaying the output of a source scanner. The output lists several Java files and their counts:

```
C:\Software\hipergate-3.0.40-en\hipergate-3.0.40-en\java\com\knowgate\cache\serv
er\DistributedCacheCoordinator.java
file count=+27
C:\Software\hipergate-3.0.40-en\hipergate-3.0.40-en\java\com\knowgate\cache\serv
er\DistributedCacheCoordinatorBean.java
C:\Software\hipergate-3.0.40-en\hipergate-3.0.40-en\java\com\knowgate\cache\serv
er\DistributedCacheCoordinatorBeanInfo.java
file count=+28
C:\Software\hipergate-3.0.40-en\hipergate-3.0.40-en\java\com\knowgate\cache\serv
er\DistributedCacheCoordinatorBeanInfo.java
file count=+29
C:\Software\hipergate-3.0.40-en\hipergate-3.0.40-en\java\com\knowgate\cache\serv
er\DistributedCacheCoordinatorHome.java
C:\Software\hipergate-3.0.40-en\hipergate-3.0.40-en\java\com\knowgate\cache\serv
er\DistributedCacheCoordinatorHome.java
file count=+30
C:\Software\hipergate-3.0.40-en\hipergate-3.0.40-en\java\com\knowgate\crm\Attach
ment.java
C:\Software\hipergate-3.0.40-en\hipergate-3.0.40-en\java\com\knowgate\crm\Attach
mentUploader.java
file count=+31
C:\Software\hipergate-3.0.40-en\hipergate-3.0.40-en\java\com\knowgate\crm\Attach
mentUploader.java
C:\Software\hipergate-3.0.40-en\hipergate-3.0.40-en\java\com\knowgate\crm\Attach
mentUploader.java
```

What is it doing?

SD Source Scanner (DMS Engine)



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

> 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

Run SD Source Scanner – Domain Analysis

CA Repository Universal XML Exchange Scanner

Repository | Parser | Batch Parse | Create PCD | Loader | Directories

Repository Information

Repository: ADCCards

User ID: sa

Password: *****

Test Connection

Note: Required properties are shown in bold.

Execute Cancel Apply Help

warnings (100 of 1761 items)

CA Repository Universal XML Exchange Scanner

Repository | Parser | Batch Parse | Create PCD | Loader | Directories

Load Information

Work unit: Demo

PCR File: tory\cdata\xml\OO_Metamodel.pcr ...

PCC File: tory\cdata\xml\OO_Metamodel.pcc ...

Log File: C:\Repository\XML\hipergatechang ...

Container:

Type	Name	Status	Version	New	...
------	------	--------	---------	-----	-----

Status: DEV

Version: 1

Verify Only

Note: Required properties are shown in bold.

Execute Cancel Apply Help

warnings (100 of 1761 items)

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](#)

Data Shopper

CA Repository Data Shopper Option - CA Repository

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites

Address <http://localhost/datashopper/>

CA Repository Data Shopper Option

Navigations

- ▶ Topics
- ▶ Containers
- ▶ Data Warehouse
- ▶ Glossary
- ▶ Search
- ▶ Explore

Index Search

Information

- ▶ What's New!
- ▶ Help
- ▶ Online Reference

Options

Welcome to the CA Repository for Distributed Systems!

Please pay attention to the following news items:

SD Source Scanners Populate OO-Java with XML Exchange
Java classes and methods updated

Search Index Updating on ADCCards finished on 2008-10-21-16.15.21
Search Index Updating indexed 56822 instances totally.

Client

CA Repository for Distributed Systems CA Repository VM

File Help

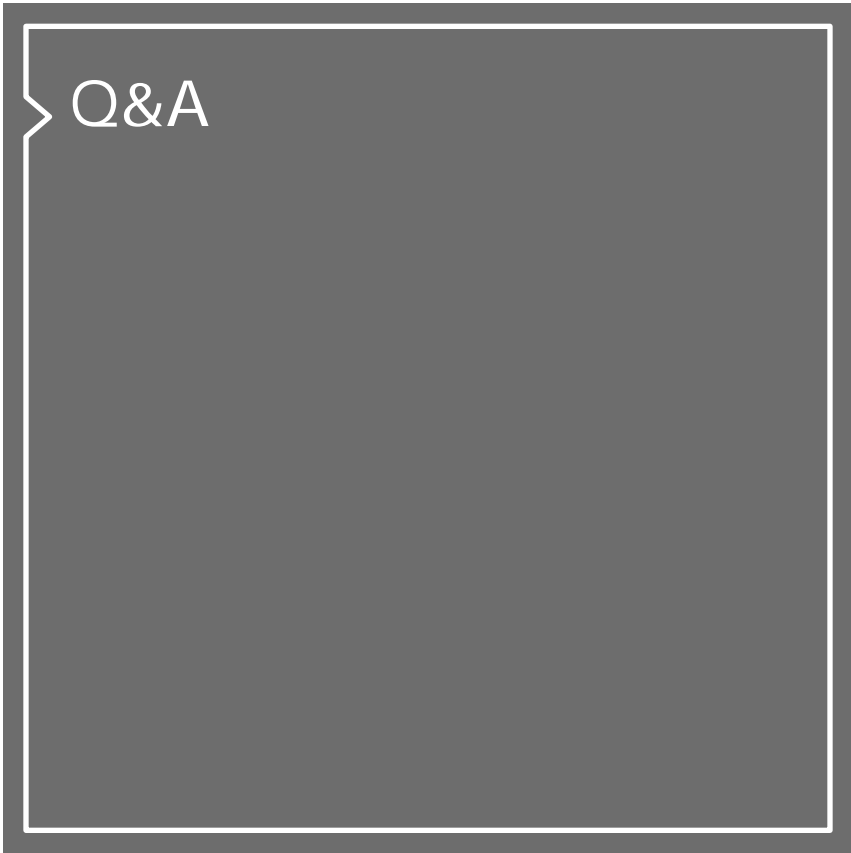
Home Back Search Help

- 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.b5kipHolidays
 - 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
 - Program Calls Program:repeat.getRooms
 - Program Calls Program:repeat.Meeting
 - Program Calls Program:repeat.stora

| 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 Params | |
| 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



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

