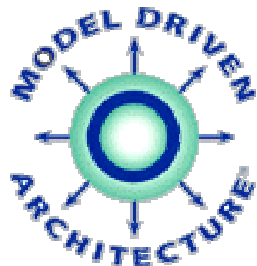




**A model-driven architecture
for
Distributed Information Integration**

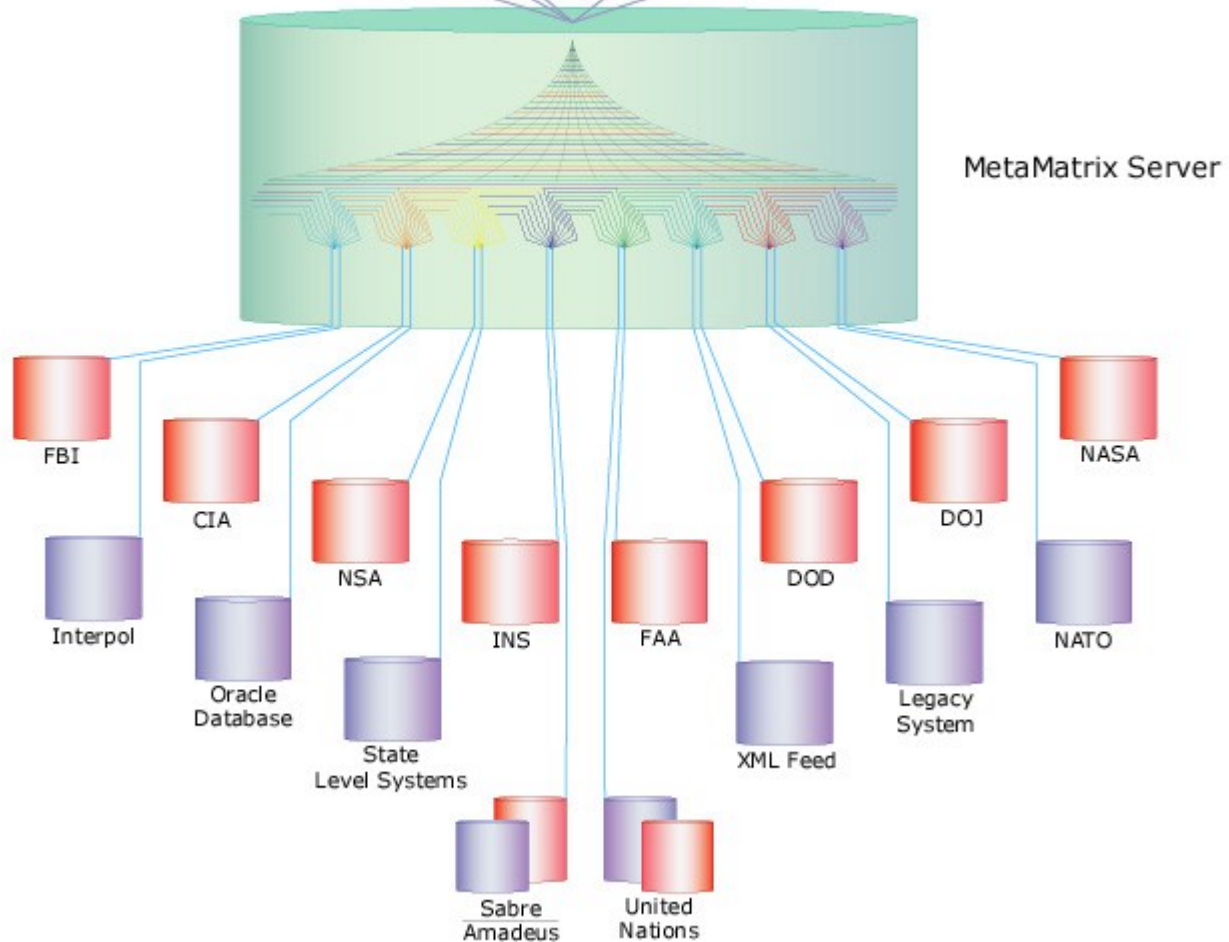


mission

metamatrix enables government agencies to reconcile all their information sources through a single server process.

architecture

Pattern Recognition Risk Alert Financial Intelligence Collaboration Logistics Tracking



distributed information integration

- The need:
 - Faster Time-To-Market
 - Integrate real-time and static data
 - Secure data retrieval and sharing
- The benefits:
 - Real-time information sharing
 - Greater efficiency and reduced costs
- The approach:
 - Use more effectively existing information sources
 - Eliminate redundant information
 - Leverage new information sources in applications
 - Decouple applications from information sources
 - *Don't copy or move information!*

solution is to use information metadata

- Understand information sources
 - Where is information? Which platform?
 - What form is it in?
- Understand information consumers
 - How is information used?
 - In what form is it expected?
- Integrate information
 - Is similar information related?
 - Is information a combination or transformation of other information?

the **key** to managing data
is managing **metadata**

Design-Time Metadata Management

- MetaData Modeler™
 - Visual tool to collect, model, and manage metadata for enterprise information sources
 - Stand-alone or used with MetaData Server™
- MetaData Server™
 - Repository for metadata
 - Manage and version models
 - Facilitate enterprise management and sharing

metamatrix information integration server

Runtime Metadata for Information Access

- Includes MetaBase™
- Information Integration™ Server
 - Scalable, fault-tolerant distributed server
 - Pluggable connectors for various information source platforms
 - Access disparate sources as if single source
- Connector Development Kit™ (CDK)
 - Bench-test environment for custom connectors
- Console
 - Tool for remote administration
 - Monitor, manage, and configure distributed servers

information integration using metamodels

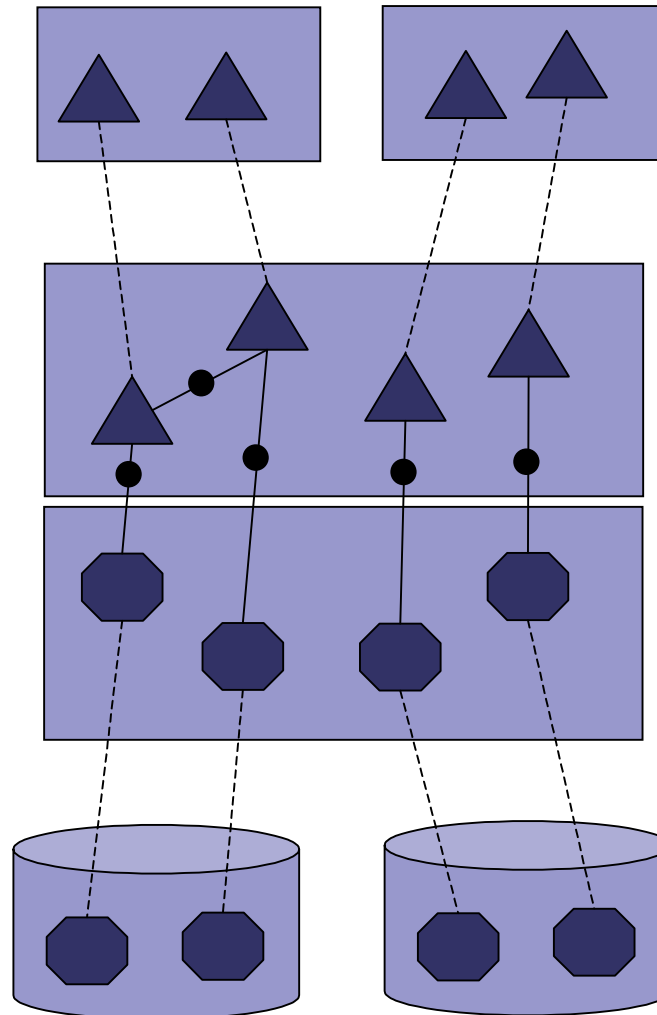
- Integration at the physical source level does not work: the structure of the data changes too rapidly
- The solution is abstraction
 - A metadata based model for each physical source is constructed
 - Metamodels are used to integrate information
- Executing query technology against a metamodel accomplishes Intelligence Information Integration

abstraction layer

Applications operate on virtual elements defining the domain in which the organization operates.

The logical and physical layers are bound statically during modeling or dynamically using rules.

Administrators can change physical data sources without affecting existing applications



Applications

*Virtual
Metadata*

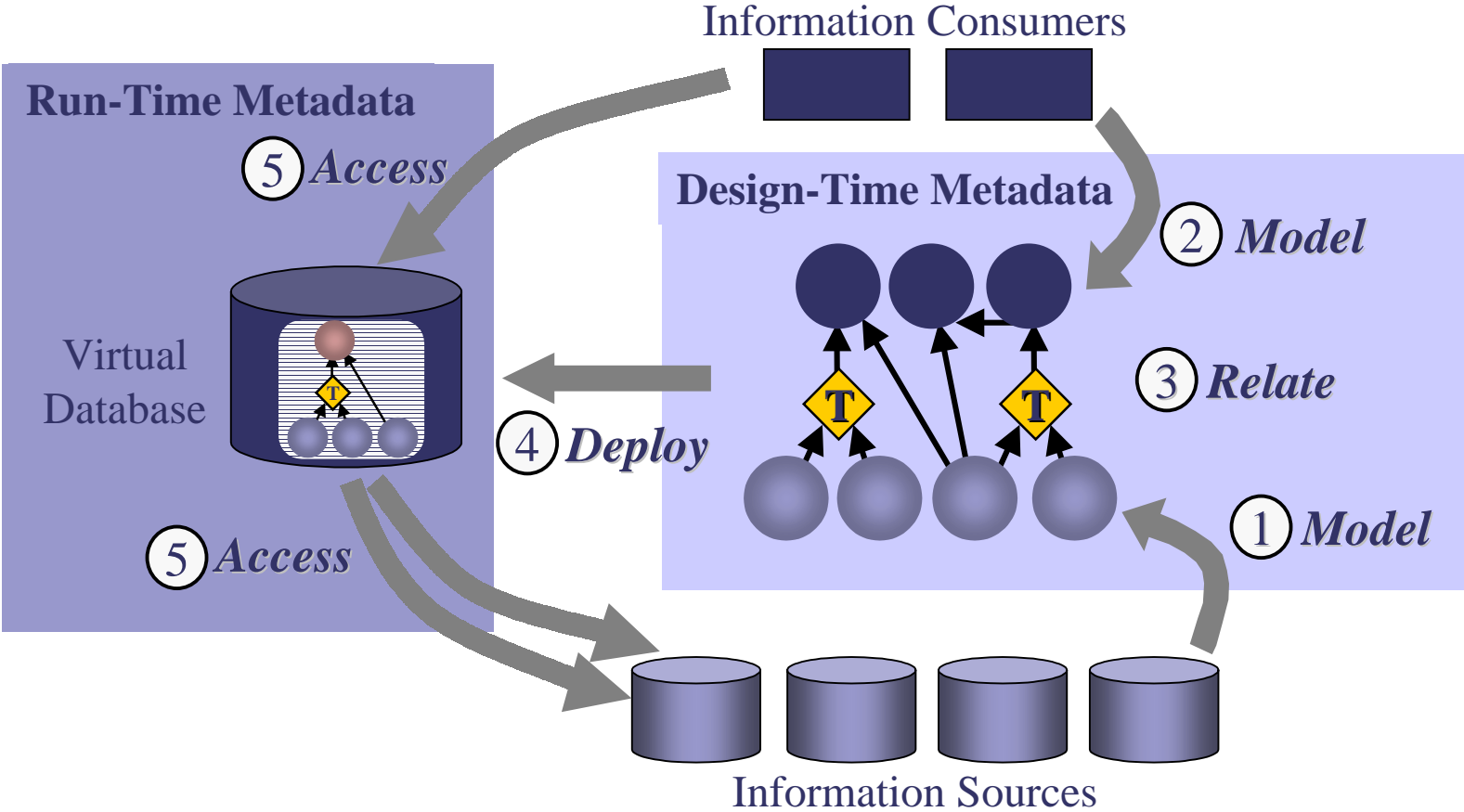
*Physical
Metadata*

*Data
Sources*

MetaMatrix
Server

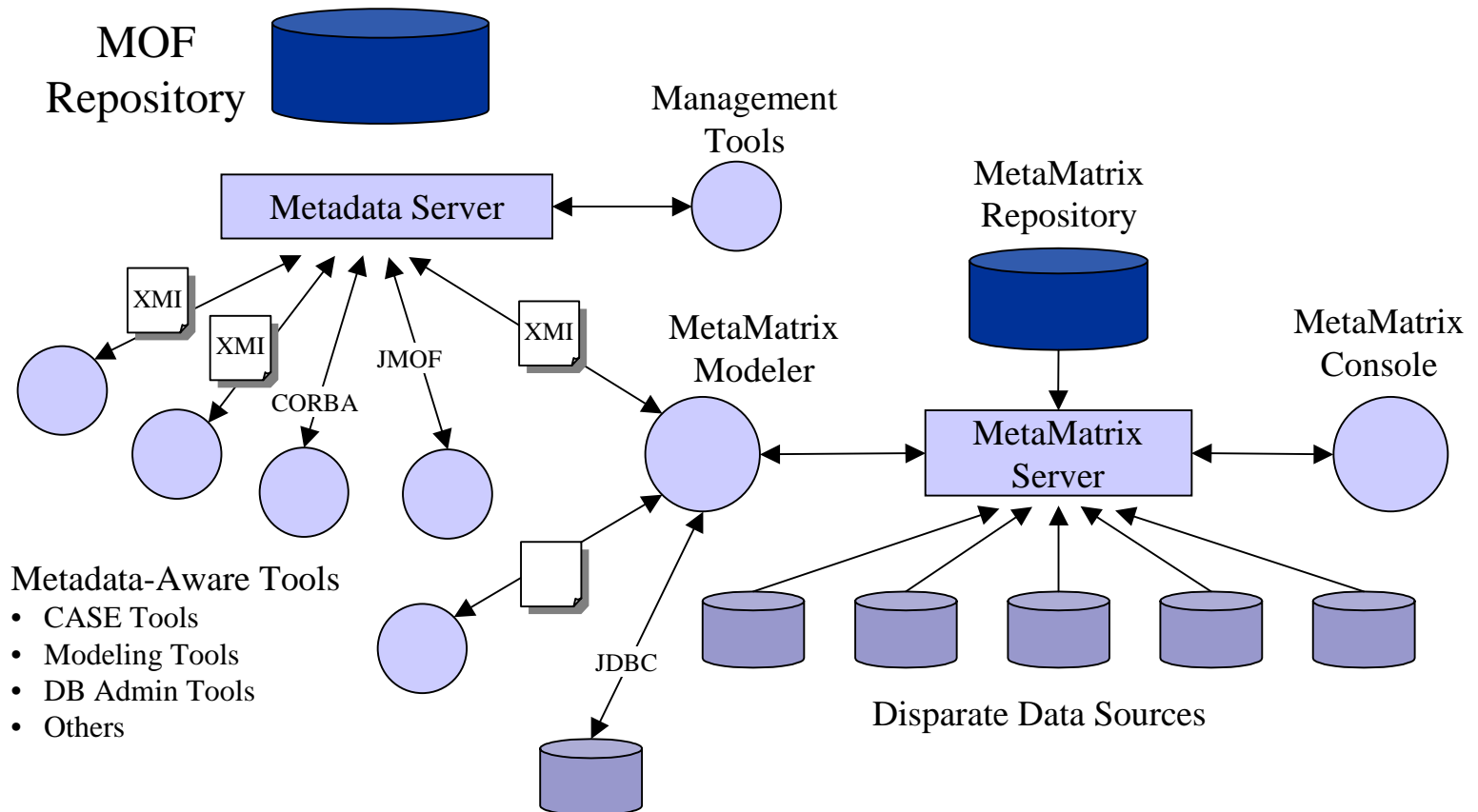
metamatrix MDA

Model Driven Architecture:
Formal models define access
functionality



metamatrix platform

Interoperability via XMI and MOF Repository



metamatrix tools

MetaData Modeler

- Capture, model, and maintain metadata from data sources
- Import from data sources
- Create and manage models
- Version control

MetaMatrix Console

- Administrative GUI for MM Server
- Monitor Server operations
- Configure Server
- Manage user accounts & entitlements
- Configure logger and view log entries

MetaMatrix QueryBuilder

- Utility for developers
- Submits queries to MetaMatrix Server
- Returns results, query plan information, and server messages

MetaMatrix Connector Development Kit

- Utility for programmers
- Simulates MetaMatrix Server
- Tests connectors against live data sources

integrate all information types

Reduces Costs

- Reduced total cost of integration per project
- Today 60-70 % of the cost of all software projects is integration

Increases Speed

- Fast application deployment times
- Fast time to market
- Uniform query method to disparate information


Improves Visibility

- Aggregated data visibility across any source
- Single API to all information

Extensible Framework

- Flexibility to develop new applications
- Foundation for intelligence
- Federated metadata map of all information
- Supports any data source and type

metamatrix model for Intelligence IT infrastructure

applications	Intelligence Applications <ul style="list-style-type: none">• Cross map• Patterns• Data mgmt	Data Management <ul style="list-style-type: none">• Staging DB• ETL• Virtual DW	Inter Agencies Applications <ul style="list-style-type: none">• Sharing• Communication• Collaboration
metamatrix abstraction layer	 metamatrix [®] Information Integration infrastructure, scaleable, extensible, dynamic		
data infrastructure services	any data from any source in any environment...		

metamatrix platform

- Global metadata repository creates a unified schema of disparate information sources across agencies and organizations
- Provides **uniform and secure** access to disparate data sources: news, web, flat files, email, relational, object, legacy, etc.
- Uses **metadata** to integrate disparate data sources
- Reconcile disparate data structures
- Controls data access through **entitlements**
- Scalability with J2EE and asynchronous operation

Distributed Information Integration

