EDS-Unigraphics
MIS DataBroker Architecture

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UG/MIS DataBroker Architecture

Topics

- UG/MIS Problem Domain
- Requirements for New Architecture
- Selection of Java
- Developing Java Based Intranet Solutions
- Current Status

UG/MIS DataBroker Architecture

UG/MIS Problem Domain

- EDS-Unigraphics provides *Enterprise Engineering* solutions to help its customers achieve a competitive advantage. These solutions are directed at the areas of Product Modeling (Unigraphics CAD/CAM/CAE), Product Data Management (Information Manager), and Process Modeling and Reengineering (consultative services). Please visit our external Web Page at : *http://www.ug.eds.com* for additional information.
- EDS-Unigraphics employs ~1600 people world-wide. Revenue for 1996 was approximately $320M.

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UG/MIS Problem Domain

- UG/MIS provides internal support for the business processes of the EDS-Unigraphics Division.
  This support includes systems for :

Billing and Revenue Reporting	Export Compliance
Hardware Product Delivery	Software Product Delivery
License Transfer	Maintenance Billing
Resource Management	Sales Inquiry
Sales Order Management	Installed Base Reporting
Maintenance Release Order	Product/Customer/Employee DB

- Enterprise Data stored in CA-Ingres RDBMS.
- Legacy Systems primarily 4GL based, character based UI, run on RDBMS node through VT emulation.

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Requirements for New Architecture

- Graphical User Interface
- Single Logon, User-Specific Application Palette
- Improved Application Library Release Management
- Distributed Network Solution
- Standards Based
- Consistent, extendible, secure API for RDBMS access
- Support for Heterogeneous Client Environment
- Coexistence with Legacy Systems during transition
- Improved Performance
- Easy to use Development Toolkits

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Selection of Java

- Use of Java directly supports :

  Graphical User Interface
  Single Logon, User-Specific Application Palette
  Improved Application Library Release Management
  Distributed Network Solution
  Standards Based
  Consistent, extendible, secure API for RDBMS access
  Support for Heterogeneous Client Environment
  Coexistence with Legacy Systems during transition
  Improved Performance
  Easy to use Development Toolkits

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Selection of Java

- Other Benefits from Java :

  Automatic Documentation Generation (javadoc)
  Object-Oriented Model
  APIs (java.*) are “part of the Standard”
  Good Market Momentum / Industry Acceptance

  Language / API features :

Exceptions	Event Model
Threads	Object Serialization
Sockets	Interfaces

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Developing Java Based Intranet Solutions

- Three Tier Architecture

  Client (*Applications*)

  Runs on user desktop (PC / Unix workstation)
  Presents GUI layout of data, responds to user actions
  Business Rules related to usage of data

  Middle Tier (*DataBroker*)

  Runs on (one of) UNIX/NT Intranet Servers
  Receives data requests from Client, obtains data from Database Server, applies data-related Business Rules, format and returns response to Client

  Database Server (*Enterprise Database*)

  Runs on (one of) UNIX/NT Database Servers
  Serves information from RDBMS based on SQL requests

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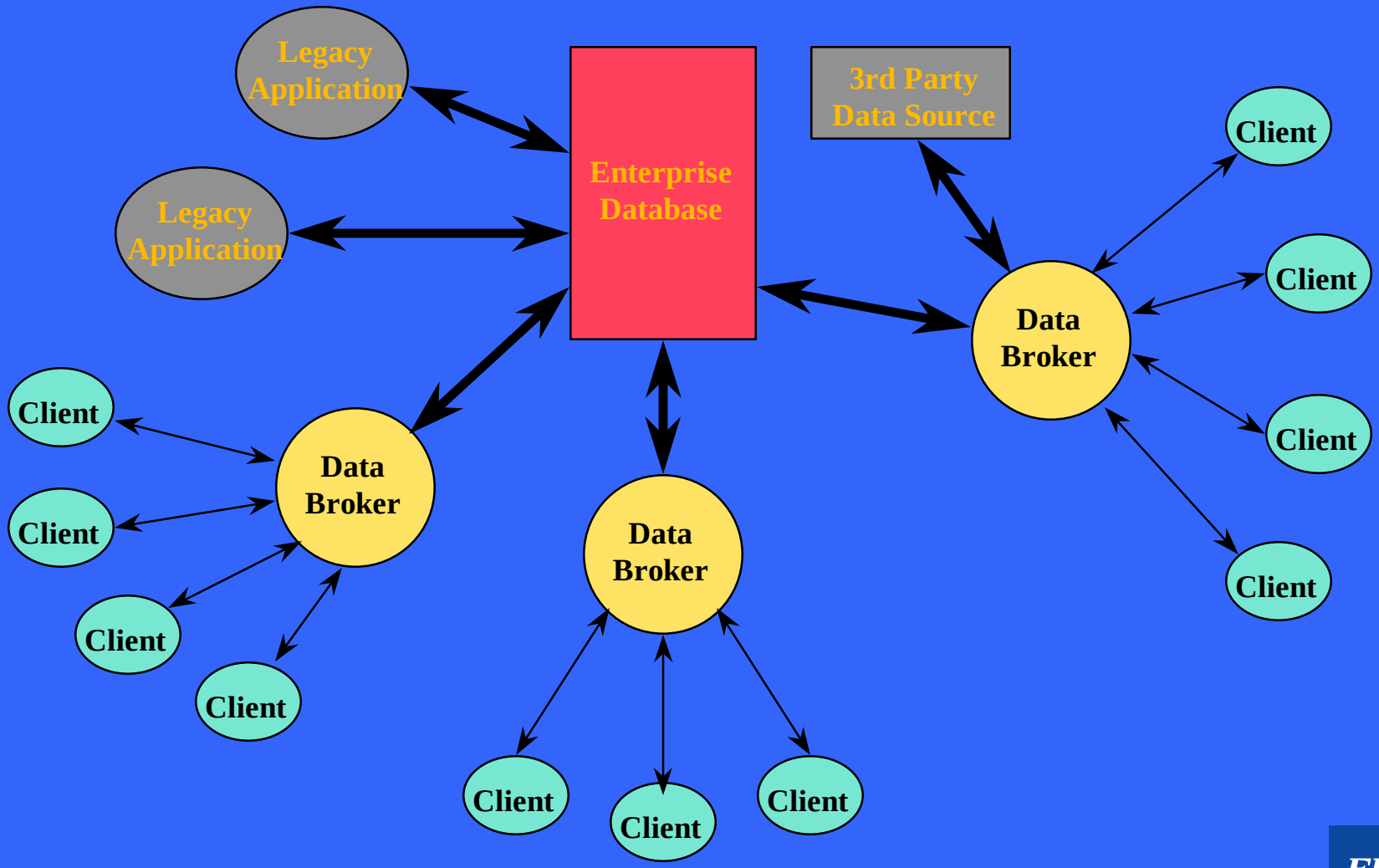

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DataBroker Architecture Components

- Enterprise Database

  A Relational Database that is the central repository for the vast majority of company data. The Enterprise Database serves as the primary integration point between existing legacy systems and the new, intranet-based applications that have been deployed using the DataBroker Architecture.

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DataBroker Architecture Components

- Legacy Application

  Existing application that provides a point solution for part of the enterprise. It is important for these applications to become integrated to the point that they share a common Enterprise Database wherever possible. These applications must continue to operate until they are replaced by applications using the new architecture. Some legacy applications may never be replaced.

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DataBroker Architecture Components

- Client Applications

  Applications written for the new, intranet-based architecture. They typically are written using HTML, CGI (shell scripts), and Java. They are run from within a web browser, such as Netscape. A common feature of all of these client applications is that they are capable of communicating with the DataBroker to obtain data from the Enterprise Database (and possibly other sources). This communication is based on a well-defined API.

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DataBroker Architecture Components

- DataBroker

  A Java server application that receives API requests from client applications, processes those requests, and returns the resulting objects. Processing the request usually will involve accessing data in the Enterprise Database, via the Java JDBC interface. Other data sources may also be accessed, if required.

  Using a three-tiered architecture means that changes to the database schema, security policy, or data source location are centralized in the DataBroker. Individual client applications are unaware of these details and therefore protected from changes to them.

  Any number of DataBroker servers may be deployed, in a variety of configurations, based on network performance, network topology, and number of users.

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DataBroker Architecture Components

- 3rd Party Data Source

  In some cases, data that must be accessed by the DataBroker to process a client API request may not be owned by the enterprise. In these cases, an interface may be developed to the third party data source to enable acquisition of the data.