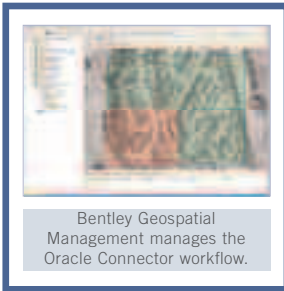


BENTLEY PROJECTWISE CONNECTOR™ FOR ORACLE

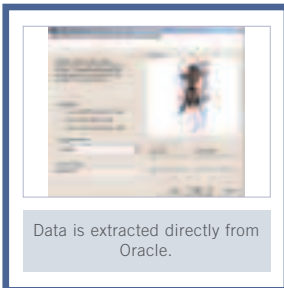
For Workflow using Oracle as the Enterprise Data Store



The ProjectWise Connector for Oracle enables seamless information integration between Bentley engineering and mapping applications and Oracle's 9i and later databases. It allows organization-defined spatial information to be extracted for use in Bentley applications and provides for subsequent posting to Oracle of modifications. The workflow maintains full data integrity and is managed by Bentley Geospatial Management, an extension of ProjectWise. The connector is a high-performance server product ideal for organizations that use MicroStation® applications with Oracle as their main data repository in integrated engineering and mapping workflows. Information is extracted to the XML Feature Modeling (XFM) environment supported by the MicroStation GeoGraphics, Bentley PowerMap™, and applications built upon them.

An Extract, Modify, and Post Paradigm

The Connector for Oracle offers much more than just data exchange. It ensures fidelity of the information extracted from Oracle by bringing with it relations, validation rules, projections and other information for use in the MicroStation application. No pre-defined schema is required; the Connector discovers the current Oracle schema.

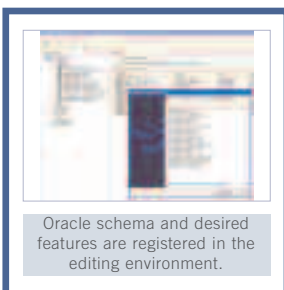


Once extracted, the information is in an XFM DGN file with attribution and metadata included. Editing sessions in the MicroStation application rely upon the information from Oracle to ensure data integrity. Via an easy-to-use Administrator, users can select symbology and configure rules such as placement and editing for use in the MicroStation XFM environment. Symbology can be property based and placement methods can be chosen from the existing placement library or custom methods and user interfaces can be implemented.

Modifications are tracked so that only changes are sent back to Oracle upon completion. All the updates are managed through Oracle versioning via Oracle Workspace Manager, allowing multi-user editing in long-transaction workflows. The Oracle versioning used takes an optimistic approach to multi-user management, meaning that no information is locked from users at any time. Reconciliation tools are provided that allow inspection of versions, version reconciliation, conflict visualization, and conflict resolution for both geometric and attribute information.

Native Oracle Support

The ProjectWise Connector for Oracle takes advantage of Oracle Spatial standards and the native spatial data types inherent in Oracle, ensuring full interoperability with other Oracle compliant applications. It supports Oracle Spatial Geometry including point, curve, polygon, polygon with holes, arcs, circles, multipoint, multilinestring, multipolygon. Most Oracle field types for attribution are supported, as well as database views. Text and feature-linked text are supported based on point tables.



Administration is simple via an easy-to-use administration tool provided. After initial configuration, a ProjectWise Explorer client can use a simple wizard to order extractions from the Oracle database content into managed DGN files or can post the content of managed DGN files into the Oracle database.

Oracle is rapidly becoming the defacto standard for open enterprise level interoperability between ERP, CRM, Operational, and other types of systems. The Projectwise Connector for Oracle enables departments involved in engineering and mapping operations to easily interact with the corporate database while meeting their specialized requirements. Data is shared more easily and with less effort, data isolation is resolved, and efficiencies increased.

The connector also facilitates interoperability with other geospatial information technology systems that take advantage of Oracle Spatial. Information created in MicroStation can be posted to Oracle via the connector and used by other systems for analysis or other functions. The ProjectWise Connector for Oracle offers an unbeatable combination of open corporate database integration, powerful content and workflow management via ProjectWise, and Bentley's robust geospatial applications.

BENTLEY PROJECTWISE CONNECTOR FOR ORACLE AT-A-GLANCE



The target coordinate system is specified via the Extract/Post Wizard.

BENTLEY PROJECTWISE SYSTEM REQUIREMENTS

Bentley ProjectWise Server

- Processor:
Pentium II Processor
- Operating System:
Windows 2000 Server
Windows 2003 Server
- Memory: 512MB Minimum, 1 GB recommended
- Software Requirement: IIS and MSMQ and ASP.NET. Access to Oracle Locator or Spatial Release on 9.2.0.5 and higher or 10G Release 1 (10.1.0.2 and up)

Bentley ProjectWise Client Workstation

- Processor:
Pentium Processor
- Operating System:
Microsoft XP Professional,
Microsoft Windows 2000
- Memory:
256MB
- Software Requirement:
Internet Explorer 5.5 or higher (including WebFolder Support), Support for Java 2 runtime environment 1.4 (Web Explorer client)

Geospatial Connector Reconciliation Extension

- Intel Pentium II or AMD Athlon
- Operating System: Microsoft Windows 2000 (SP2 or higher recommended), Windows XP Professional, Windows 2000 Server, Windows 2003 Server
- Memory:
256MB
- Prerequisite Application:
Microstation GeoGraphics V8 (8.5.2.11 and higher)
- Memory: 256MB minimum 512MB for optimal performance
- Software Requirement: Access to Oracle Locator or Spatial Release on 9.2.0.5 and higher or 10G Release 1 (10.1.2.0 and up).

Geospatial Management, ProjectWise and Oracle

- Extract Oracle content into XFM DGN files
- Post XFM DGN content into the Oracle
- Open enterprise level database integration with Oracle 9i and later databases

Native Oracle Support

Support of native Oracle Spatial Geometry

- Point
- Curve
- Polygon
- Polygon with Holes
- Arcs
- Circles
- Multipoint
- Multilinestring
- Multipolygon
- Support of Oracle field types and database views, text and feature linked text

Richer DGN content with XFM

- Define symbology rules to be applied to features
- Geometries and attributes integrated to support disconnected editing
- Metadata associated with DGN documents is managed in Geospatial Management

A Framework for Automated Workflows

- Workflow Management via Geospatial Management
- Extract or post operations involving hundreds of files can be automated
- Server infrastructure allows reliable management of large scale jobs
- Disconnected editing possible in XFM based Bentley applications

Easy Administration and Customization

- Easy-to-Use Administrator provided with the Connector
- Oracle database schema, domain constraints, and other information extracted from Oracle to XFM Metadata
- Subject matter experts can define rich features and automated intelligent workflows
 - association of geometries and attributes
 - placement methods
 - symbology
 - validation rules
 - Standard placement library
- Productive customization through the usage of the Geospatial Administrator as well as Web Services, XML and .NET languages

On-the-Fly Coordinate Systems Transformation

- Extract from multiple coordinate systems and transform to target coordinate system
- Post to original or desired coordinate systems
- On-the-Fly Transformations
- 5500 systems supported by MicroStation GeoGraphics
- 1000+ supported by Oracle
- User defined coordinate systems

Versioning and Conflict Resolution

- Modifications tracked so only updates posted
- All updates managed through Oracle versioning via Oracle Workspace Manager
- Multi-user editing in long-transaction workflows
- Version inspection and visualization of conflicts
- Conflict resolution tools for geometric and attribution conflicts

ABOUT BENTLEY

Bentley Systems, Incorporated provides software for the lifecycle of the world's infrastructure. The company's comprehensive portfolio for the building, plant, civil, and geospatial vertical markets spans architecture, engineering, construction (AEC) and operations. With 2004 revenues exceeding \$300 million, Bentley is the leading provider of AEC software to the Engineering News-Record Top 500 Design Firms and major owner-operators.

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