



Bentley Map Enterprise V8i (SELECTseries 4)

Powerful, Extensible 2D/3D GIS for the World's Infrastructure

Bentley Map Enterprise is a fully featured GIS that is intrinsically 3D. It is designed to address the unique needs of organizations that map, plan, design, build, and operate the world's infrastructure. Bentley Map Enterprise supports the creation, maintenance, analysis, and sharing of 2D and 3D geospatial information, even in the field. It is also ideal for developing custom GIS applications.

Support for Leading Spatial Databases

Bentley Map Enterprise supports Oracle Spatial and Graph, and Microsoft SQL Server Spatial databases that allow organizations to store and manage very large volumes of spatial data. Bentley Map Enterprise can edit 2D and 3D data directly in any standard Oracle Spatial environment. Bentley Map Enterprise's connection to Oracle enables raster and vector data to be stored in a centralized database using native Oracle Spatial object definitions. Spatial data is streamed to the desktop to improve productivity. Bentley Map Enterprise supports Oracle Spatial textures, non-top view queries of 3D data, B-Spline curves and non-circular arcs in Oracle 12c.

Support for Reality Modeling

Bentley Map Enterprise allows you to work directly with point clouds, raster data imagery, scalable terrain models and reality meshes from ContextCapture to speed geospatial workflows.

Intelligent Geospatial Object Creation

Bentley Map Enterprise includes advanced 2D and 3D design productivity innovations to create and maintain engineering-quality spatial data. Geospatial objects can be intelligently created with ease using interactive snapping tools. Bentley Map Enterprise also includes dimensioning, annotation, raster display and editing, printing, publishing, and much more.

Spatial Analysis and Presentation

The software also includes a full collection of spatial analysis and presentation capabilities using 2D and 3D data. Among these are tools for creating buffers around objects, performing topology overlays, creating thematic maps, 3D collision detection, labeling, and more.

Improved Interoperability

Users can leverage the tools in Bentley Map Enterprise to improve interoperability with other GIS formats. They can reference directly from the Bentley Map Enterprise interface Esri SHP files, MapInfo TAB files, Oracle Spatial, ODBC, WMS, Google KML/KMZ, Esri File Geodatabase, 3D PDF, i-models, SQL Server Spatial, Bing Maps, and others. Data can also be exported into these formats and with



Image courtesy: City of Quebec

Experience native Oracle Spatial support for 2D and 3D objects including the support of textures.

other engineering disciplines. Moreover, Bentley Map Enterprise interfaces to FME from Safe Software, greatly extending interoperability.

Symbology Synchronized With Attribution

Bentley Map Enterprise has administrative tools to define features, attributes, symbology, behavior, and placement tools. It also includes tools to promote simple geometries to intelligent features with full attribution. The product ensures that feature symbology remains synchronized with attribution.

Powerful Rendering Tools

Powerful 3D rendering tools are included to generate scenes and fly-throughs of urban models. Capabilities include shadow studies, line of sight, view corridors, street profiles, disaster scenario studies, and more.

Advanced Map Finishing Tools

Bentley Map Enterprise's advanced text display capabilities allow map features to be presented with drop shadows, halo effects, linear gradated fill, cartographic styles, and other map finishing effects. Advanced support for the placement and manipulation of curved text enables users to create and modify text and annotations associated with any spatial element.

Field Access

Bentley Map offers support for the Bentley Map Mobile for tablets and Bentley Map Mobile Publisher, which together provide mobile workers access to rich Bentley Map project information, allowing them to make better informed decisions in the field.

System Requirements

Refer to the 'Requirements' section of the Bentley Map's ReadMe file:

www.bentley.com/BentleyMap-Spec

Find out about Bentley at: www.bentley.com

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Bentley Map Enterprise At-A-Glance

Engineering Workflows

- Clash detection with point clouds
- Extract pipe runs with single click
- Create and adjust elbows
- Raster digital elevation model export
- Drape element and contour export for scalable terrain models
- Raster editing tools

Mapping and GIS

- Compile and edit data efficiently
- Build and publish accurate maps and infrastructure models
- Enforce business and topological rules
- Brings CAD accuracy and ease to GIS
- Cartographic line symbology

All the Power of MicroStation

- Smart, quick drawing, and editing of GIS features
- Raster management
- AccuSnap, AccuDraw®
- Display priority, transparency
- Coordinate system assignment and on-the-fly re-projection
- Full 3D modeling

Map Manager

- Intuitive, easy-to-use, persisted map definitions
- Drag-and-drop layers to control display order
- Control all aspects of map display
- Automatic creation of thematic map from template
- Export of layers to MicroStation elements

XML Feature Modeling

- XML metadata-driven GIS
- Property-based symbology and annotation
- Convert simple elements to smart GIS features

Geospatial Administrator

- Manages the XFM framework through one interface
- Runs outside MicroStation
- Defines and maintains XFM project files
- Defines features, properties, and the tools used to build those features

Choice of Data Stores

- Three-tier connection to Esri ArcGIS
- Self-contained XFM DGN files
- Any RDBMS/DGN supported by MicroStation

Data Capture and Maintenance

- 3D geometry cleanup
- Polygon parallel creation
- Dynamic domain lists

Geographic Coordinate Systems

- Custom datum/ellipsoid
- Create custom grid/graticule definitions

- Integrated alternate coordinate system (ACS) input and readout

Oracle Spatial Editing

- Fully Oracle Spatial and Graph compliant
- Two- or three-tier connection
- 3D object support including textures
- Adherence to native Oracle Spatial feature and topology models
- Support for GeoRaster, long transactions, valid time, and historical tables

SQL Server Spatial Editing

- Two-tier direct connection
- 3D object support

Topology Modes

- Workflows for cadastre management (split, merge, build)
- Topology maintained while editing

Integrated COGO Editor

- Input precision coordinate geometry
- Create parcels from legal descriptions

Measurement Tools and Linear Adjustment

- Place points through radial or rectangular measurements from a baseline
- Create list of radial or rectangular staking measurements
- Perform linear adjustments on inaccurate data

Point-cloud Processing

- Drape and snap elements
- Classification editing
- Smart snap
- Visual explorer
- Batch tile export
- Export to POD, LAS, and XYZ files
- Extraction of planar and cylindrical elements including pipes and elbows

Scalable Terrain Modeling (STM)

- Displays very large digital terrain models
- High resolution image draping on STM
- Display modes: smooth shading with shadows, aspect angle, elevation, slope, contours
- STM synchronization with DGN, Civil DTMs, point clouds, and XYZ files

Presentation and Analysis

- Spatial, solar/shadow analysis
- Thematic display
- Buffer creation
- Dynamic labeling
- Curved text placement
- Text and element halo tools
- Direct data access (DDA)
- Automatic geo-location of features*

Support for Reality Models

- Displays reality models created by ContextCapture
- Snap, measure, render and interact with the model to help improve design
- Drop to MicroStation mesh element for editing

Map Generation and Printing

- Interactive location map index with references
- WYSIWYG plot generation with user-defined templates and legends
- Publishing to intelligent PDF, PostScript, color separates
- Data cleanup and integrity tools
- Solve integrity problems with imported or legacy data
- Easily adopt XFM schema for imported or legacy data through Dynamic Feature Scoring

Interoperability

- Direct reference geospatial formats
- Support for Bing Maps**
- MapInfo (TAB, MID/MIF), SHP files, Oracle Spatial and Graph, CSV, GML, Esri File Geodatabase, SQL Server Spatial, and ODBC sources
- Import/export tools
- Integration with Safe Software's FME
- Publish i-models with RDBMS properties
- Spatial data streaming
- Web feature service client - read (query) access

Image Editing Tools

- Clean up and vectorize scanned documents
- Convert, edge match, and rectify many formats of aerial imagery
- Rectify and texture 3D models with digital photographs
- Display DEMs in various shading modes
- Publish to Bentley Map Mobile

GIS Development Platform

- Utilize Open API, C/C++, C#, NET other modern programming languages

Field Access Support

- Support for Bentley Map Mobile and Bentley Map Mobile Publisher
- Android and iOS Tablets
- Fast access to large geospatial databases
- Easy to use with standard tablet based gestures
- GPS integration
- Google and Apple Maps integration
- Disconnected, view-only operation for access without a network connection

* Only applies to direct data access (DDA) graphical source connections (e.g. Oracle Spatial, SQL Server, WFS, etc.).

**User provides Bing Map licenses.