



OpenCities® Map Advanced

Transform heterogeneous data into structured geospatial information and maps for cities, utilities, airports, and infrastructure

OpenCities Map is a powerful geospatial tool for engineers, architects, and city planners. It digitally transforms cities, utilities, airports, and infrastructure by documenting and modeling 2D and 3D assets. OpenCities Map integrates engineering, geospatial, and reality data from many sources into structured spatial information and maps. This single source of truth enables better collaboration and informed decision-making. CAD-based mapping workflows preserve engineering data accuracy and use MicroStation® editing power for digital infrastructure.

OpenCities Map Advanced enables CAD-based mapping workflows by expanding MicroStation's capabilities with feature-based modeling and support for seamless data persistence in spatial databases. The application improves productivity, efficiency, and data security by enabling a secure multi-user editing environment in which individual features can be locked when connected to a spatial database. OpenCities Map Advanced improves access to information and decision-making through a single source of truth that manages your data in a centralized database, regardless of the size of your dataset. MicroStation users, even with those on in-house or third-party applications, can quickly adapt to OpenCities Map Advanced.

Define a feature data model with business properties

Whether you are an operator, asset manager, engineer, or a network modeler, you need to work in an environment that integrates federated data spread across multiple

systems with the power of real-time analysis. OpenFlows™ WaterSight® connects all data sources and creates a continuous, consistent digital representation of your operated assets. The solution's secure, browser-based portal provides an easy framework to visualize and communicate with stakeholders from any device.

Customize the display of your maps

OpenCities Map Advanced component, Map Manager, lets you customize the visual representation of your assets. List recognized features, organize their display order, or control which ones will be visible. Modifying the rendering of feature instances of a layer is easy and effective. Map Manager allows you to change the appearance of your map based on business data or the current display scale. Change the font, which cells are displayed, and their size and orientation. These stylized mapping capabilities let you dynamically emphasize the variation or distribution of data for a selected property without changing how the elements are stored in the file or the database.

Connect natively to the most popular spatial databases

OpenCities Map Advanced seamlessly and intuitively integrates with the most common spatial databases, including Oracle Spatial, SQL Server Spatial, PostgreSQL (PostGIS), and Esri (File Geodatabase), ArcGIS Server, and ArcGIS Online). Establishing a single source of truth for your entire project provides guaranteed up-to-date data for everyone who

needs access. The application enables access to the entire dataset from one location, enabling you to perform complex, efficient searches. OpenCities Map Advanced locks assets when they are modified, ensuring secure, multi-user editing.

Customizable feature-oriented placement methods

OpenCities Map Advanced placement methods can convert CAD element creation capabilities into feature-based element creation capabilities. CAD users can use familiar MicroStation capabilities to create feature-based map elements without learning a new workflow. Create in-house placement methods for more specific needs. The Promote feature enables you to convert an existing CAD element into an OpenCities Map feature, then add semantic information.

Synchronize symbology with attribution

Asset symbology is not saved in spatial databases, which only store the geometry and the values of its semantic properties. OpenCities Map Advanced assigns and applies the appropriate symbology to the queried assets. A Geospatial Administrator feature defines schemas and automatically processes all queried assets so that they display as expected based on their property values.

System requirements

Minimum: Windows 11 (64-bit), Windows 10 (64-bit), Windows Server 2022, or Windows Server 2019, Intel or AMD processor 1.0 GHz or greater, 4 GB memory, 25 GB disk space
Recommended: 16 GB memory, up to 40 GB disk space

OpenCities Map Advanced At-a-glance



Mapping and GIS

- Create and edit GIS Features
- Build and publish maps and infrastructure models
- Enforce business and topological rules defined by the geospatial administrator

Map manager

- Persistent map definitions
- Drag and drop layers to control display order
- Control all aspects of map display
- Export layers to MicroStation elements
- Automatic creation of thematic map from a template

XML feature modeling

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

Geospatial administrator

- Manage the XFM framework through one interface
- Runs outside MicroStation
- Define and maintain XFM project files
- Define features, properties, and the capabilities used to build those features
- Placement methods can be leveraged by third-party applications

Choice of data stores

- Connection to spatial database
- Self-contained XFM DGN files
- Support for RDBMS/DGN

Data capture and maintenance

- Digital terrain model support
- Dynamic domain lists

Map generation and printing

- Publish to intelligent PDF, PostScript
- Solve integrity problems with imported or legacy data
- Easily adopt XFM schema for imported or legacy data through Dynamic Feature Scoring

Microstation capabilities

- Drafting tools to efficiently create geometry
- Raster management
- Display priority and transparency
- ProjectWise Projects
- Define custom datum and ellipsoid
- Solar/shadow analysis
- Coordinate system support and on-the-fly reprojection

Presentation and analysis

- Spatial analysis
- Thematic display
- Buffer creation
- Dynamic labeling
- Direct database access (DDA) using the Data Browser

Interoperability for import/export

- Direct reference geospatial formats
- Google Maps support
- Google Photorealistic 3D Tiles
- Import from most common spatial file formats and spatial databases
- Web Feature Service (WFS) connection
- Spatial data streaming
- Safe Software's FME import and export capabilities, if the software is installed and licensed
- DGN2DB to upload your DGN to a spatial database
- Dynamic feature inference rules
- Export feature inference definition to OpenCities Map persistent schema

Spatial database support

Oracle

- Oracle Spatial compliant
- Two-tier connection
- 3D object support
- Adherence to native Oracle Spatial models
- Valid time and historical tables
- Long transactions, optimistic, and pessimistic locking

SQL Server

- Two-tier direct connection
- 3D object support

Post GIS

- Two-tier direct connection
- 3D object support

ArcGIS Server/ArcGIS Online

- Two-tier direct connection
- 3D object support

GIS development platform

- Utilize Python API and Python Editor, Open API, C/C++, C#, NET, VBA, and other modern programming languages

Find out more at [Bentley.com](https://www.bentley.com)

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