

Bentley
Advancing Infrastructure



OpenFlows™ WaterOPS™ CONNECT Edition

Real-time Operational Decision Support Software for Smart Water Distribution

OpenFlows WaterOPS is a complete predictive modeling solution for real-time water network operations, maintenance, and forecasting. The application provides utilities key advancements for operating a safe, sustainable water supply and distribution system. Extending the capabilities of the Supervisory Control and Data Acquisition (SCADA) system and traditional hydraulic model functions, OpenFlows WaterOPS empowers network operators and operations engineers to update hydraulic models with live operational data. The application helps users achieve target optimization for events associated with pressure, pump outage, fire, leakage, energy allocation, and water quality and demand management. OpenFlows WaterOPS continually assesses system performance and alerts stakeholders of critical events before they occur, allowing for smart response strategies that minimize ensuing effects for customers.

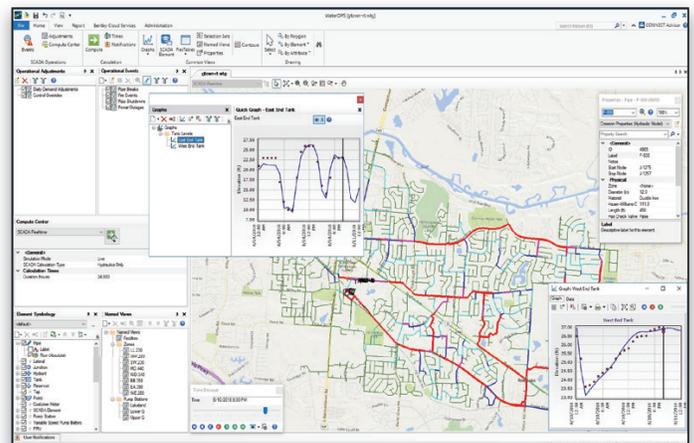
OpenFlows WaterOPS contains many capabilities found in OpenFlows™ WaterGEMS® CONNECT Edition, but is customized for operators with a user-friendly interface to simplify model building and design workflows.

The CONNECT Edition

The SELECT® CONNECT Edition includes SELECT CONNECT services, new Azure-based services that provide comprehensive learning, mobility, and collaboration benefits to every Bentley application subscriber. *Adaptive Learning Services* helps users master use of Bentley applications through CONNECT Advisor, a new in-application service that provides contextual and personalized learning. *Personal Mobility Services* provides unlimited access to Bentley apps, ensuring users have access to the right project information when and where they need it. *ProjectWise® Connection Services* allow users to securely share application and project information, to manage and resolve issues, and to create, send, and receive transmittals, submittals, and RFIs.

Flexible Operator Environment

Users do not require extensive hydraulic modeling expertise when deploying OpenFlows WaterOPS. Integrating live SCADA data with a calibrated hydraulic model, the application computes real-time conditions throughout water networks based on existing conditions and forecasted future conditions. Water network operators can instantaneously run hydraulic scenarios that factor energy consumption, weather, SCADA telemetry, demand history and prediction, and valve and pump control scenarios.



OpenFlows WaterOPS predicts the condition and performance of pipes and pumps for optimal decision making

A fully optimized interface enables network operators to see a complete map of all water infrastructure, including color coding and alerts for problem areas; graphs illustrating pressure and tanks levels, as well as evaluations for water age and constituent; and one-click reports for other various water assets. Because the software is integrated with Bentley's connected data environment (CDE), users can react faster to important tasks or day-to-day activities and then communicate results with the greater project network.

Accurate Simulations for Rapid Decision Making

In addition to efficiency and energy enhancements, OpenFlows WaterOPS can be configured to send critical warning messages in the event of emergency. Continuous interoperability with OpenFlows WaterGEMS allows operators to understand change impact at every step of the project lifecycle, including when modeling and assessing areas between monitored locations to help ensure success in business performance.

OpenFlows WaterOPS delivers key user interface enhancements that both boost efficiency and break down interdepartmental barriers that are created by traditional engineering functions. These capabilities include enhanced menus, toolbars, and workspaces that allow operators to launch multiple simulation runs, even while other users are reviewing or editing. The software is capable of computing complex network models that span large distances, enabling users to model, monitor, and forecast effectively.

System Requirements

Platform Pre-requirements

OpenFlows WaterOPS runs without platform restrictions as a stand-alone application

Processor

As per minimum operating system requirements

Operating System

Microsoft Windows 10, Windows 10 x64, Windows 8, Windows 8 x 64, Windows 7, Windows 7 x64

Note: Windows 7 operating system is supported only with its service pack (SP1) installed

Memory

8 GB minimum, 16 GB recommended (more memory typically results in better performance)

Disk Space

1.8 GB of disk space for installation (additional space required for user model and data files)

Find out about Bentley at: www.bentley.com

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OpenFlows WaterOPS At-A-Glance

Interoperability and Graphical Interface

- Feature-rich stand-alone environment
- Unlimited undo and redo
- Aerial view and dynamic zooming
- Named views library

Hydraulics, Operations, and Water Quality

- Steady-state and extended-period simulations
- Constituent concentration analysis
- Multi-species water quality analysis
- Tank-mixing analysis
- Water-age analysis
- Rule-based or logical controls
- Water loss analysis
- Pressure-dependent demands
- Source tracing
- Air release valve element
- Override of pump and valve controls using historical SCADA data
- Conduct hydraulic and water quality analysis using a state-of-the-art hydraulic solver
- Emergency response simulations for pipe breaks, power outages, fires, and pipe shutdowns

Comprehensive Scenario Management

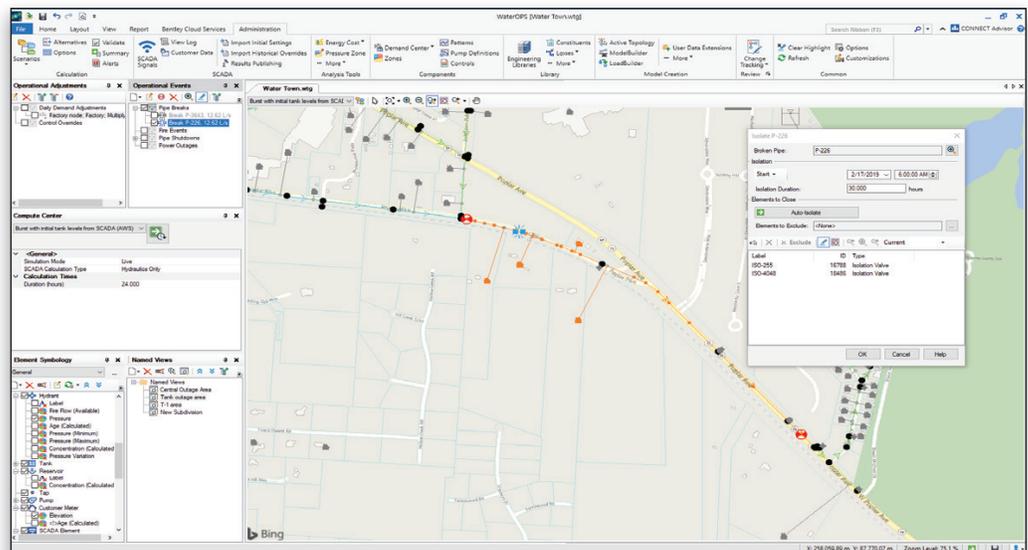
- Simulate emergency planning, without disturbing the system
- Forecast water levels by time or date
- Estimate pressure changes in event of network shutdown
- Calculate water delivery allocation by pump
- Calculate existing or future water velocity conditions
- Color-code and map water pressure at every point in the system, at any time
- Predict customer impact

Results Presentation

- Display results as tables, graphs, contours, annotations, profiles, and color coding with background maps
- Compare scenarios and elements
- Conduct advanced tabular reporting with FlexTables
- Record videos of result animation
- Develop customizable reports

Energy Management

- Analyze energy costs
- Evaluate pump and turbine energy analyses



Simulate water quality characteristics throughout the pipe network and within tanks, including evaluation of water age or concentration