Advantech WebAccess

Browser-Based HMI/SCADA Software

Features

- Enables 100% web-based remote engineering, monitoring, and control
- Supports the MQTT protocol to provide big data to cloud platforms in the Publish/Subscribe pattern
- HTML5 Intelligent Dashboard provides a HTML5-based user interface for cross-browser, cross-platform data analysis as well as Widget Builder for creating custom widgets
- Open interface web services (RESTful API and SignalR), widget interface and WebAccess APIs
- Supports diverse drivers including Advantech's I/O modules, controllers, and major PLCs, as well as standard protocols Modbus, OPC UA, OPC DA, SNMP, and BACnet
- Easily integrated with third-party software, such as MES and ERP, via open interfaces
- Integrated with WebAccess/IVS, WebAccess/NMS, and WISE-PaaS/RMM
- HTTPS enabled for web security
- Redundant SCADA systems, ports, and devices for high availability

Introduction

Advantech WebAccess is a 100% web-based SCADA software solution that also serves as an IIoT platform by providing open interfaces for developing IoT applications aimed at various vertical markets. WebAccess also acts as a gateway by collecting substantial amounts of data from ground equipment and transferring this data to cloud applications via the MQTT protocol in the Publish/Subscribe pattern. In addition to traditional SCADA functions, WebAccess features an intelligent dashboard to facilitate cross-platform, cross-browser data analysis and provide a user interface based on HTML5 technology.

The basic components of WebAccess are as follows:

1. Project Node: This is the project development platform that also acts as a web server for all clients to connect to development projects, facilitating remote monitoring and system control. All system configuration settings, project database files, and graphics are stored in the project node.
2. SCADA Node: This node enables real-time communication with automation equipment as well as equipment control via serial, Ethernet, or proprietary communication protocols using the various built-in device drivers. The SCADA node not only allows local control and monitoring, but also provides real-time data to all remote clients.
3. ViewDAQ Client: Through Microsoft Internet Explorer's ActiveX control, ViewDAQ Client monitors and controls the SCADA node. Clients must first connect to the project node to obtain the address of the SCADA node before communicating directly with the SCADA node using proprietary communication protocols over a TCP/IP connection. Data is displayed in real time as dynamically animated graphics and presented along with real-time historical trends and alarm information. The ViewDAQ Client can be used to acknowledge alarms and change set-point and status data, as well as other information.
4. Dashboard Client: This enables users to access the dashboard server through any browser on any platform, such as a computer, pad, or smartphone equipped with iOS, Android, or Windows.

Feature Details

Supports Private/Hybrid Cloud Architecture

WebAccess is a 100% web-based HMI and SCADA software with private/hybrid cloud architecture. WebAccess provides large equipment vendors, SIs, and enterprises with the ability to access and manipulate centralized data and to configure, change/update, or monitor equipment, projects, and systems all over the world using a standard web browser. For WebAccess/Cloud applications, WebAccess also acts as a gateway, collecting substantial amounts of data from ground equipment and providing this data to cloud applications using the MQTT protocol. MQTT is an extremely lightweight Publish/Subscribe messaging transport protocol for M2M/IoT connectivity.

Business Intelligence Dashboard

WebAccess provides an HTML5-based dashboard as the next generation of WebAccess HMI. SIs can use the dashboard editor to create custom information page featuring analysis charts and diagram widgets. The built-in widget library contains numerous widgets, such as trends, bars, alarm summary, and map widgets, and the included Widget Builder can be used to create unique widgets. Once dashboard screens are created, end users can use the dashboard viewer to access data from various devices, including PCs, Macs, tablets, and smartphones, via various browsers, such as Explorer, Safari, Chrome, and Firefox, for a truly convenient viewing experience.

Widget Builder

Widget Builder is a widget development tool based on HTML5 and featuring an intuitive UI. Users can edit widgets remotely from any location using any browser and at any time. Widget Builder provides users with various design tools for creating widget components and drawing shapes and objects with a wide range of animations. Additionally, all widgets can be easily imported and exported for reuse.

Open Interface

WebAccess offers three types of interfaces, including RESTful API and SignalR, for various uses. First, WebAccess provides a web service interface for partners to integrate WebAccess data into apps or application systems. Second, a pluggable widget interface is opened for programmers to develop widgets and run WebAccess Dashboard. Finally, WebAccess opens WebAccess API, which is a DLL interface for programmers to access the WebAccess platform and develop Windows applications. By supporting these interfaces, WebAccess serves as a platform for developing IoT applications in various vertical markets.

Integrated with WebAccess/IVS

WebAccess is integrated with WebAccess/IVS to provide a comprehensive video management solution that supports real-time monitoring and video playback. With this intelligent video surveillance system, events can be displayed as alarms and video playback performed accordingly.

Integrated with WebAccess/NMS

WebAccess/NMS is a network device management system based on HTML5. WebAccess can be easily integrated with a web interface. Additionally, with WebAccess graphics, users can search the event logs and monitor the real-time status of network devices via the network topology.

Integrated with WISE-PaaS/RMM

Previously, WebAccess only supported sensor and device monitoring. Now, with the integration of WISE-PaaS/RMM, WebAccess also supports monitoring of the equipment and platform status, such as the CPU temperature, CPU usage, and board temperature, thereby enabling remote equipment monitoring.

Integrates Google Maps and GPS Tracking

WebAccess integrates real-time data of each geographical site with Google Maps and GPS location tracking. Regarding remote monitoring, users can remotely view the building energy consumption, field production rate, highway traffic flow, and alarm status information. By right-clicking on Google Maps or entering the coordinates of the target location, users can create a marker for the target and associate the real-time data of three sites with a display label. Furthermore, this function can be integrated with GPS modules to track the marker location in Google Maps, enabling the data to be shared with relevant vehicle systems.

WebAccess Express - The Auto-Configuration Tool

Advantech's WebAccess Express is an automated graphical remote control application program for making device information available online with a single click. WebAccess Express automatically discovers the ADAM and EKI modules connected to the network and serial ports, generates a database, and uploads real-time data with pre-built monitoring graphics. WebAccess Express also supports remote monitoring functions by allowing users to communicate and exchange data with SNMP, DiagAnywhere Server, or SUSI 4.0 APIs, and to check the CPU health, memory, temperature, and voltage of target machines. By integrating SNMP, DiagAnywhere, and SUSI API drivers, users can configure WebAccess to emit an alarm if any abnormal or suspicious data is detected.

Multiple Driver Support

WebAccess can support hundreds of devices. In addition to Advantech I/Os and controllers, WebAccess supports all major PLCs, controllers, and I/Os, such as those by Allen Bradley, Siemens, LonWorks, Mitsubishi, Beckhoff, and Yokogawa. For vertical market applications, WebAccess supports the DNP 3.0 protocol developed for the power and energy industry. WebAccess also supports standard protocols such as Modbus, OPC DA, and OPC UA, and can be easily integrated with other SCADA software. All of these device drivers are integrated into WebAccess and provided free of charge. For a complete list of WebAccess drivers, refer to webaccess.advantech.com.

Automated Excel Reports

WebAccess provides Excel reports to fulfil demands for self-defined reporting capabilities. Users can build self-defined Excel templates and generate on-demand or daily/weekly/monthly/yearly Microsoft Excel reports automatically. Additionally, the Excel report function is web-based, which means Excel reports can be generated and accessed via a web browser from any location.

Open Data Connectivity

Advantech WebAccess supports OPC UA/DA, DDE, Modbus, and BACnet Server/Client for real-time online data exchanges with third-party software, as well as MS SQL, Oracle, MySQL, and MS Access for offline data sharing.

Real-Time Database

WebAccess Real-Time Database (RTDB) is designed to meet industrial-level demands for high speeds and large quantity data access. The RTDB's fully integrated design means users do not need to learn how to operate this database. Just by enabling RTDB use on the WebAccess configuration page, the WebAccess SCADA node can conduct data processing (simultaneous collection and retrieval) at a rate of millions of records per second. Moreover, the RTDB maintenance feature automatically archives and deletes obsolete data.

Multi-Touch Gesture Support

WebAccess supports multi-touch operation and various pre-set gestures, such as flick to turn page and zoom in/out, as well as two-handed operation. This more intuitive handling style maximizes operating safety, increases usability, and reduces training time. Furthermore, WebAccess also supports the use of multi-point tap/grab/spread gestures to initiate pre-defined actions.

Redundant SCADA, COM Ports, and Devices

Advantech's WebAccess ensures continuous reliable communication to automation equipment. The WebAccess backup node activates when the primary node is down. WebAccess device drivers communicate with backup ports and devices if the primary connection is lost and automatically restore to the primary item when it becomes available.

Advantech WebAccess

Browser-Based HMI/SCADA Software

Software Specifications

Advantech WebAccess Professional

- **Number of I/O Tags**: 75/150/300/600/1500/5000/20K/Unlimited
- **Number of Internal Tags**: 75/150/300/600/1500/5000/20K/Unlimited
- **Number of Web Clients**: 1024, free of charge
- **Number of Drivers**: Supports over 350 types of PLCs and RTUs

Graphics

- **Number of Graphic Pages**: Unlimited (limited by H/D size)
- **Variables Per Graphic Pages**: 4000
- **Built-in Gallery**: Yes
- **Multi-Touch Gesture**: Yes

HTML5 Dashboard

- **Cross Browser and Platform**: Yes
- **Built-in Widgets**: Yes
- **Open Widget Interface**: Yes
- **Widget Builder**: Yes

Web-enabled Integration

- **Video**: Yes
- **Google Maps and GPS Location Tracking**: Yes

Alarm and Trend Log

- **Number of Alarm Logs**: 5000
- **Number of Action Logs**: 5000
- **Number of Data Logging**: Number of IO tags license x 2
- **Alarm Groups per SCADA**: 9999

Scheduler

- **Holiday Configuration Group**: 9999
- **Time Zone Group**: 9999
- **Device Loop Group**: 9999
- **Equipment Group**: 9999
- **Scheduler Reservation Group**: 9999

Open Interface

- **Windows APIs**: Yes
- **RESTful API**: Yes
- **SingalR**: Yes

Network Architecture

- **SCADA Node Redundancy**: Yes
- **Device Redundancy**: Yes
- **Super SCADA with Breakpoint Resume**: Yes

Open Connectivity

- **Modbus Server**: Yes
- **BACnet Server**: Yes
- **OPC DA/UA Server/Client**: Yes
- **DDE Server**: Yes

Database

- **Database Server**: SQL Server/Oracle/MySQL/Microsoft Access
- **ODBC and SQL Query**: Yes

Report

- **Web-Based Report**: Yes
- **Excel Report**: Yes
- **Send Email by PDF or Excel**: Yes

Receipt

- **Recipes per Project**: Unlimited (limited by H/D size)
- **Unit per Recipe**: 999
- **Item per Unit**: 999

Others

- **Centralized Logs on Project**: Yes node via ODBC
- **Script Language**: TclScript/VBScript/JScript
- **Supports IPv6**: Yes
- **WebAccess Express**: Yes

Ordering Information

Professional Versions

- **WA-P82-U075E** WebAccess V8.2 Professional Software with 75 tags
- **WA-P82-U150E** WebAccess V8.2 Professional Software with 150 tags
- **WA-P82-U300E** WebAccess V8.2 Professional Software with 300 tags
- **WA-P82-U600E** WebAccess V8.2 Professional Software with 600 tags
- **WA-P82-U15HE** WebAccess V8.2 Professional Software with 1,500 tags
- **WA-P82-U50HE** WebAccess V8.2 Professional Software with 5,000 tags
- **WA-P82-U20KE** WebAccess V8.2 Professional Software with 20,000 tags
- **WA-P82-U64KE** WebAccess V8.2 Professional Software with unlimited tags

Options*

- **WA-X82-MQTTE** WebAccess MQTT driver and broker module

*Only for WebAccess Version 8.x.

Version Upgrade*

- **WA-X82-U000E** WebAccess Upgrade to Version 8.2

*Upgrade the WebAccess version from 7.x to 8.2.
*Free version upgrade from 8.x to 8.2.

Tags Upgrade*

- **WA-X82-U075E** WebAccess software license, 75 tags upgrade
- **WA-X82-U300E** WebAccess software license, 300 tags upgrade
- **WA-X82-U600E** WebAccess software license, 600 tags upgrade
- **WA-X82-U15HE** WebAccess software license, 1,500 tags upgrade
- **WA-X82-U50HE** WebAccess software license, 5,000 tags upgrade

* Original serial number from WebAccess Professional version is required to purchase WebAccess upgrade. The serial number can be found on the USB dongle.

Minimum Requirements

Project Node/SCADA Node

- **Operating System**: Windows XP (SCADA node only), Windows 7 SP1, Windows 8.1, Windows Server 2008 R2 or later, Windows 10 (does not support Home or Home Premium), IIS7.5, and Net Framework 4.5
- **Hardware**: Intel® Atom™/Celeron® dual-core processors or higher with 4 GB RAM minimum and 200 GB or more free disk space recommended
- **Display Resolution**: 1024 x 768 or higher (recommended) Lower resolutions also supported
- **USB Port**: USB port for License Hardkey on SCADA node

Dashboard Viewer

- **Hardware**:
  PC: Intel® Core™ i3 or higher with 4GB RAM or more
  iPhone: iPhone 5 or later version
  Android: 1.5 GHz quad-core or higher; 2GB RAM or more
  Windows Phone: 1.5 GHz quad-core or higher; 2GB RAM or more
- **Browser**:
  Internet Explorer: IE 11 or later
  Chrome: Version 37 or later
  Firefox: Version 31 or later
  Safari: Version 7 or later