BellHawk® Systems Corporation
Real-Time Operations and Materials Tracking Systems
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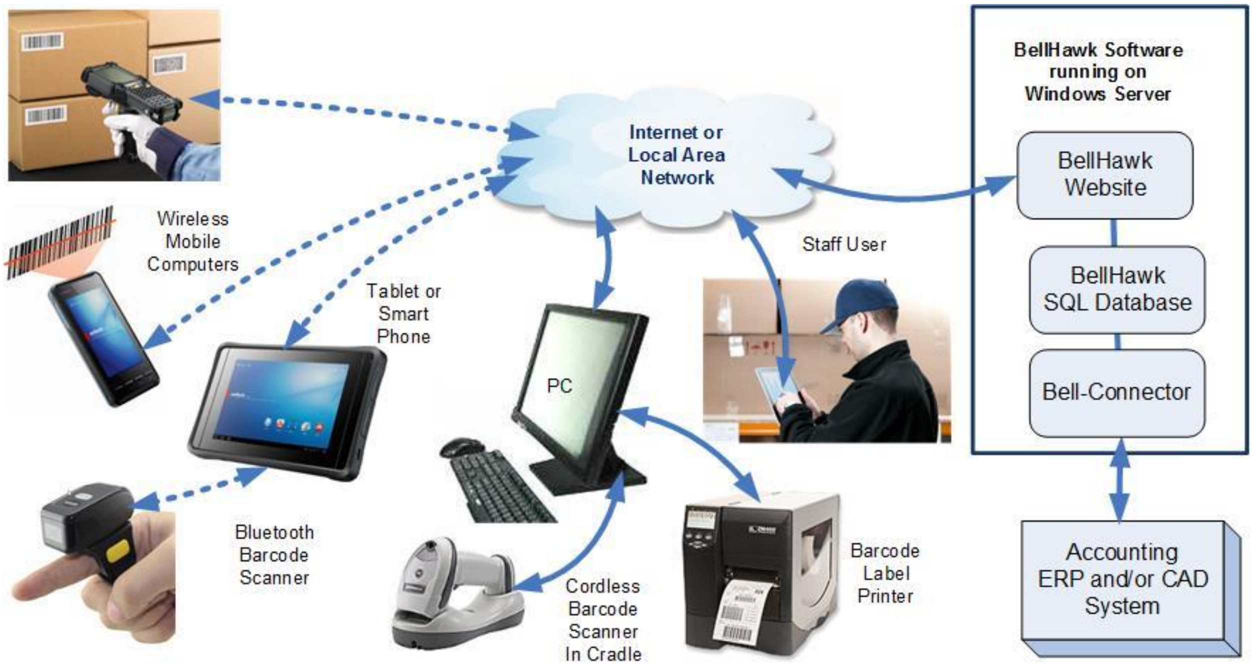
# Installing the BellHawk Software - Overview


BellHawk Software running on Windows Server
Internet or Local Area Network
BellHawk Website
BellHawk SQL Database
Bell-Connector
Wireless Mobile Computers
Tablet or Smart Phone
PC
Staff User
Bluetooth Barcode Scanner
Cordless Barcode Scanner In Cradle
Barcode Label Printer
Accounting ERP and/or CAD System

## Introduction

This document provides information about how the BellHawk software is installed on a Windows Server computer. It is intended to provide background information for a client's IT support people, whether internal or external to the client, about how BellHawk is installed. This is so that the IT support person can:

1. Install the BellHawk software themselves, or
2. Provide remote access to the Windows Server, with adequate administrative privileges, such that a BellHawk Systems staff member can perform the remote installation.

## Facts about BellHawk Systems Software Installation

1. The BellHawk software runs on a Windows Server computer.
2. The base BellHawk software consists of several sub-systems:
   a. The BellHawk website, which provides a user interface that can be accessed over the client's local area network or the Internet or the mobile phone data network using a web-browser on a wide variety of Windows, Android, and IOS based devices. This website runs under control of IIS and can also provide web access to the SOAP/XML web-services interface.

    b. The BellHawk database, which is a SQL Server database that is accessed using mixed mode, such that the BellHawk software can use a SQL Server login to access the database.

    c. A session state SQL Server database in which BellHawk stores the session state for all the user interface sessions.

3. Installing the BellHawk software is described in the "BellHawk Installation and Configuration Guide".

4. Optionally, if BellHawk Systems TAG rules-based barcode label printing software is used, then the following are installed on the server:

    a. The LabelPrintS program which is launched by BellHawk to print out labels on Barcode Label Printers. It reads the print queue and calls the

    b. The BarTender Automation software from Seagull Scientific, which includes the following components:

        i. The BarTender SDK

        ii. The BarTender Licensing Server

        iii. One or more drivers for network accessed barcode label printers

        iv. Optionally the label layout tool for use in creating new labels

5. Installing the TAG software is described in the "TAG Installation and Configuration Guide".

6. Optionally, if the BellHawk Systems Bell-Connector automated data exchange software is being used then the following components are installed:

    a. A Bell-Connector control website, which runs under IIS, and provides the monitoring and control user interface to Bell-Connector.

    b. A control database which is a SQL Server database that is used by Bell-Connector.

    c. A Launcher process that runs as an autonomous process to launch one or more data transfer process on a periodic basis. This may be installed as a user or system process.

    d. One or more transfer processes that are launched by the Launcher process to perform the transfer of data between systems.

7. Installing the Bell-Connector is described in the "Bell-Connector Installation and Configuration Guide".

Typically, one test and one operational BellHawk website and related database are installed along with one copy of the TAG software and one test and one operational version of the Bell-Connector software.

BellHawk can be installed on a Virtual Server but please be aware that the amount of memory allocated to the IIS Application Pool and to SQL Server as well as the CPU priority for that server can have a significant impact on the user interface responsiveness. It will be the responsibility of the IT person to adjust these allocations to achieve the desired performance.

## Access Privileges Required for Remote Installation

In order to perform the installation, BellHawk Systems' staff needs:

1. Remote desktop access to the Windows Server. This should preferably be provided using the Microsoft Remote Desktop capabilities which provide the most secure, encrypted way of remotely accessing a windows server computer.

   It is not recommended to use:

   a. Third party tools such as LogMeIn, which are less secure than those provided by Microsoft's Remote Desktop capabilities and are not recommended by Microsoft as they are not fully integrated with Microsoft's security mechanisms.

   b. Using a VPN link, which can dramatically increase the installation cost to the client as we then have to set up a separate, isolated computer on its own network at our end that is disconnected from our internal network (for security reasons) so that it can become part of the client's internal network via a VPN connection. We consider this a high security risk, especially given how the recent spate of ransom-ware attacks have propagated from one computer to another on VPN networks.

2. Administrative privileges on the server to be able to:

   a. Download files via FTP over the Internet

   b. Install files on the disk

   c. Setup IIS websites and application pools

   d. Create SQL Server databases

   e. Install system processes

For on-going support, BellHawk needs remote desktop access with the same privileges.

## Ports and DNS Access

For purely internal use, at its most simplistic, we bind each of the websites used by BellHawk within IIS to different ports, typically ports 8080, 8081, etc. This enable users to access the websites with a web-browser using a URL such as 192.168.0.xxx:8080, where xxx is the internal IP sub-address of the server.

In this case, the installer will add these to available inbound access ports on the software firewall for the windows server. It will be the responsibility of the IT support person to make sure that users on the client's network have appropriate access privileges to access this server on these ports in order to use the BellHawk software.

We can also, or alternately, set the bindings for the websites to respond to a URL such as operations.ABC-Comany.com, test.ABC-Company.com, etc. The IT person then needs to set the internal DNS server to route these to the internal IP address of the server. In this case only Port 80 for HTTP access to IIS on the Server is needed.

If the BellHawk websites are to be externally accessible then an external URL DNS mapping for *.ABC-Company.com, for example, needs to be registered with a DNS service provider and be routed to the external IP address of the Windows firewall. The NAT translation in the Internet firewall device then needs to be setup such that external IP requests for the BellHawk websites will be routed to the windows server used by BellHawk.

As part of the installation, BellHawk can be setup to respond to encrypted https website requests as well as http requests. For external access, it is strongly recommended that only encrypted https transmission be transmitted to the website.

The benefit of enabling external access to the BellHawk websites is that it facilitates BellHawk Systems to provide remote operational and training support by being able to come in as a user or systems administrator.

## Commentary

While the installation of BellHawk and its optional modules are well documented in the Installation guides, this installation should only be undertaken by IT people with in-depth experience in performing such installations on a Windows Server. Otherwise the installation should be performed remotely by BellHawk Systems' technical staff over the Internet.

The installation guides are available for download from www.BellHawk.com . Click on the [Find] button at upper right and select the link to User Manuals. Then select the link to installation guides.

To get installation questions quickly answered, please send an Email to support@BellHawk.com. This is monitored by a number of people and the appropriate person will respond.