



Infor Factory Track Guide to Technology

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Publication information

Release: 6.01.10

Publication Date: February 23, 2018

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Use of this document

This document is intended for readers who understand basic network and infrastructure design models. The document leaves out some detail in order to provide a generalized technical document. Please read this document in its entirety.

This document is intended to provide information on the infrastructure deployment of Infor solutions. This document does not take into account all scenarios, infrastructure challenges, and solution options. We recommend that, if your intent is to purchase hardware or infrastructure to support or modify an Infor solution, you should contact your sales representative. The Infor sales representative can then get the appropriate resource involved to review the technical and infrastructure recommendation and possibly provide a specific configuration recommendation. This document is confidential and property of Infor. Unauthorized use of this document is strictly prohibited.

Contacting Infor

If you have questions about Infor products, go to the Infor Xtreme Support portal.

If we update this document after the product release, we will post the new version on this website. We recommend that you check this website periodically for updated documentation.

If you have comments about Infor documentation, contact documentation@infor.com.

Overview

Infor Factory Track is a comprehensive manufacturing, labor, and attendance operations and collection system. The application directly integrates to your ERP system, streaming up-to-date information directly to and from the shop floor. Infor Factory Track comprises three fully-integrated modules:

- Infor Shop Floor
- Infor Time Track
- Infor Warehouse Mobility

Infor Shop Floor is a paperless shop floor operations system featuring full touch-screen, barcode scanning, and label printing support for deployment on the shop floor. Users input labor and material transaction information directly from the shop floor. Infor Shop Floor formats the data and transmits it to your ERP system. When the Infor Time Track Module is implemented, users can also perform time and attendance transaction using the same streamlined touch-screen interface.

Infor Time Track collects attendance data, manages labor transactions, and organizes data for processing by your payroll and ERP applications. You can manage employee clock-ins and clock-outs for shifts, lunches, and breaks, and also track planned and unplanned absences. You can also manage job starts and stops and quantities of items produced by employees. Many useful reports for administrators and supervisors are accessible through an easy-to-use dashboard interface.

Infor Warehouse Mobility is a robust data collection system that simplifies operations by streaming real-time information between the shop floor and your ERP system. Infor Warehouse Mobility handles all communications with your ERP system. Users select transactions and scan bar-coded data by using mobile radio frequency (RF) scanners. Infor Warehouse Mobility formats the data and transmits it to your ERP system. Any feedback from ERP is presented to the user exactly as it was received.

Infor Factory Track is built on the Infor Mongoose software development framework. Mongoose provides for rapid development of applications using relational database technology. Mongoose is a core Infor technology, providing built-in support for other Infor core technologies.

The central defining goal of the Infor Mongoose framework is to create feature-rich applications while minimizing the amount of time and program coding required. Therefore, Mongoose maximizes the assets companies invest in IT infrastructure and provide end users the ability to adapt Mongoose-built applications quickly and cost effectively to react and adapt to emerging business requirements without sacrificing the ability to upgrade the application to newer versions.

By minimizing the need for program coding in adapting the Mongoose-built applications, changes are automatically upgradeable, development is accelerated, quality is increased through extreme code reuse, and your investment is protected and insulated from technology changes. Since creating some new code is inevitable, Mongoose streamlines the process by enabling your team to use familiar and standard Microsoft .NET technologies and tools.

Together with other factors, such as simplicity of installation and configuration, support for a wide range of integrations, a rich user interface for end user productivity, an automatic browser user interface, multi-device features, and cloud or on-premise deployment options, this makes Infor Mongoose an unparalleled value.

To meet these objectives, Infor Mongoose uses a model defined by metadata (data defining the application behavior, stored in rows and columns in databases) for the user interface (forms), the mid-tier business objects (Intelligent Data Objects, or IDOs) and business processes (Application Event System, or AES). Infor Mongoose provides metadata-driven constructs and patterns to build your application. Therefore, developers and customizers do not need to worry about building them. In summary, Infor Mongoose provides:

- A single developer experience. Develop and test in the same integrated environment. Core forms and wizards let you define Intelligent Data Objects (IDOs) that represent your business logic and application events (AES) without programming. A simple click turns Infor Mongoose into a powerful form development tool.
- Software development life cycle. Version control, development, test, preproduction, production environments and synchronization tools help you manage and organize the entire software development life cycle and deployments.
- Form templates. Mongoose provides for a consistent user experience across the application.
- Prebuilt common objects. Mongoose has, built into it, UI components, validations, standard events, messages, menus, variable support, scripting APIs, user-defined fields, and more.
- Internationalization. Mongoose provides easy translation of string literals based on the end user's default language, and the ability for end users to switch languages "on the fly" without restarting the application.
- Security. Security is provided at user, role, and site-based levels for all forms and IDOs.
- Licensing. System and end users can be assigned licensing on a variety of modules.
- Documents and notes management. A virtually unlimited number of notes and documents can be attached to any data.
- Data and process replication. Mongoose supports customer policy for both transactional and asynchronous XML options for sites in both your local intranet and across the Internet.
- Easy and powerful integration with other software. Exchange information with other software using Web services, XML, or another application's Web UI embedded in a form.
- Background task execution. You can schedule various tasks, such as report outputs and notifications, running stored procedures, and other tasks to run automatically in the background.
- Reporting interfaces. Mongoose includes a number of prebuilt report options, as well as a set of templates for creating your own reports.
- Customer extensibility. The same powerful integrated development environment is available to end users of Mongoose-built applications to extend and adapt them. More importantly, all the changes are preserved during upgrades easily, using synchronization tools.

- Source control support. Mongoose integrates with Microsoft Visual Source Safe, Microsoft Team Foundation Server, and Apache Subversion for the purpose of maintaining metadata change histories and source version control.

Operating systems - servers

Microsoft Windows Server 2012 / 2012 R2 Standard or Enterprise Edition, 64-bit and Windows 2016 operating system.

It is important to understand the differences in editions, as features in Standard and Enterprise editions vary and might be desirable. For instance, there are limitations in the Standard versions that are not present in Enterprise releases. Currently, there is no official support for Itanium 64-bit operating systems.

Database technology

Microsoft SQL Server 2012 / 2014/ 2016/ 2019

- Standard or Enterprise Edition, 64-bit
- SQL Server Reporting Services installed
- Windows 2016 operating system

It is important to understand the differences in editions, as features in Standard and Enterprise editions vary and might be desirable. For instance, there are limitations in the Standard versions that are not present in Enterprise releases.

Infor is a reseller of Microsoft SQL Server. Contact your sales representative if you need to purchase SQL server for your deployment.

For additional information, see Microsoft's Web site at www.microsoft.com.

Infor Factory Track clients

It is important to understand the type of clients that are available with Infor Factory Track.

Client types for Infor Factory Track include:

- Smart Client in Windows
 - Requires a supported Windows Operating System with .NET framework
 - Deployment method: Installed using Click-Once and updated automatically
 - Commonly used across LAN, WAN, and Internet connections
 - Each user running over a WAN connection consumes approximately 50Kbps to 100Kbps of bandwidth. The Wide Area Network (WAN) configuration is recommended as follows:
50Kbps per active user (50Kbps * 10 users = 500Kbps)
- Smart Client in windows deployed from browser
 - Windows client that includes the ability to run in Design Mode and runs within Internet Explorer.
 - Requires a supported Windows Operating System with .NET framework
 - Deployment method: Installed using Browser
 - Commonly used across LAN, WAN, and Internet connections
- Web Client
 - HTML5 client that can run in common browsers on popular devices
 - Commonly used across LAN, WAN, and Internet connections

Infor Factory Track Smart Clients supported platforms

It is important to understand the type of clients that are available with Infor Factory Track.

Client types for Infor Factory Track include:

- Microsoft Windows 7 Professional
- Microsoft Windows 8 Professional
- Microsoft Windows 10 Professional
- Microsoft Server 2012
- Microsoft Server 2012 R2, Windows 2016
- Citrix Server add-on
- Browsers for Infor Factory Track – Latest Editions of Edge, IE, Chrome and Firefox

Infor Factory Track Web Client supported platforms

- Device agnostic – Latest Editions of Edge, IE, Chrome and Firefox
- Mobile via browser– Android, iPhones

DMZ – The 'DeMilitarized Zone'

There are several deployment options available for Infor Factory Track applications. These include certain scenarios where the framework and application components might be exposed to a public network (the Internet, in most cases) for access to users or other systems. This perimeter network is usually a physical or logical subnetwork that contains and exposes external services to the public network. Access between this DMZ subnetwork and the Internet, for example, are usually limited to only certain ports and methods of access. Additionally, there are rules for the server or services that are residing in the DMZ to access systems that are on the organization's private network. This limits the amount of system exposure to public attacks.

Examples and features

Examples of Infor Factory Track use cases or applications that might be accessed through the DMZ include but are not limited to:

- Windows server with Internet Information Services (IIS)
 - "Smart client" (WinStudio) users
 - Web client users
 - Mobile users
 - Web services requests

One feature included in Factory Track is the DMZ server installation option. A server that is installed in the DMZ could be used for this functionality. The installation of the Factory Track DMZ server includes the IDO Request Service and Web client without the full utility server components. You would choose this option if you do not want to expose your utility server with all the utility server components into your DMZ.

In all scenarios, verify that your Microsoft Server and Microsoft SQL Server licenses are correct for the type of user and data you are planning to expose.

The Factory Track DMZ Server

Below is an example of a DMZ server specification. This specification generally should support 100 or more named devices. The count is for this server and the count still needs to be considered for the utility server with the IDO Runtime service that is on the private network.

Operating System	Windows 2012 / 2012 R2 , Windows 2016 operating system
Processor size	Xeon 2.0 GHz (or better)
Number of processors	4-8 (must be expandable)
Memory size	12 GB
Disk I/O Configuration	Two 72 GB SCSI / SAS drives, RAID 1
Other	<ul style="list-style-type: none">• Internet Information Server (IIS)• Infor Factory Track DMZ framework
Network interface	1 Gb ethernet adapter

Virtualization

For Infor Factory Track, Infor supports customers running a production Factory Track solution suite in a Microsoft Hyper-V or VMware virtual environment. It is expected that the customer is running the guest virtual machines and components using the supported technologies defined for the specific release of the Factory Track solution. The Factory Track solution functions in a virtual environment (also known as “hypervisor”) as if running on physical native hardware. If Infor Factory Track Support suspects that the virtualization layer is the root cause of an error or issue, you are required to contact the virtualization solution provider to resolve the virtualization issue.

Virtualization sizing

With the support of virtual environments for Infor Factory Track, it is your responsibility as a customer to work directly with the hypervisor provider of choice to ensure that the sizing of the host server hardware, versions, configuration, setup, and device mappings are correct. Because of the number of variables that can be introduced into such an environment, Infor does not provide hardware sizing for virtualization environments. You should work closely with your hypervisor provider to ensure that the correct hardware sizing and configuration are selected to match your requirements.

Other virtualization solutions

Virtualization is a growing segment of the technology market. Infor has chosen Microsoft Hyper-V and VMware as the only virtualization solutions that are officially supported for Infor Mongoose. There are many other virtualization solutions in the market from providers like Citrix and RedHat. Using other virtualization solutions still allows you to receive support for Infor Mongoose, but you should read and understand this Non-Standard Software Deployment statement concerning Infor Mongoose:

- Support Policy for Infor Mongoose Non-Standard Software Deployments

Infor Mongoose is designed, developed, tested, and documented to run in a multi-tier/multi-server deployment using various software components at specific versions and service pack levels. These components include such things as the operating system (OS), databases, and other components as listed in the technical documentation provided with each Infor Mongoose release. This document addresses support provided by Infor for its software running in configurations that do not conform to the standard documented software deployment.

Infor does not test or maintain any support environments of Infor Mongoose software running in non-standard software deployments. Therefore, Infor will require any support issue reported to be reproduced in a standard software deployment system, before an APAR (software defect) will be logged. Where the issue is confirmed to be unrelated to the non-standard software deployment, Infor will support its software in a manner that is consistent with support provided when that software is running on a standard software deployment.

Infor will provide code corrections, according to the Infor Mongoose On-Demand Patch Policy, which are developed and tested in systems that are running on a standard software deployment. These code corrections will be made available by means of the normal code correction systems and procedures used by all customers running Infor Mongoose.

Customers running non-standard software deployments of Infor Mongoose can also access and apply these code corrections using standard procedures. Infor makes no warranty, implied or otherwise, regarding the use of these fixes in non-standard software deployments.

Additional information about non-standard software deployments

Customers most often request non-standard software deployments when they order new hardware with software components that are more advanced than the software on the approved deployment list, and they cannot “back level” the software to the standard versions. Another common occurrence is that a non-Infor software vendor has suggested applying one or more fixes to one of the non-Infor software components, and this requires installing a service pack level that is higher than the one on our standard software deployment list. In most cases, service packs or newer versions of these components will support all of the functions and commands found in the currently supported version. For this reason, the risk of installing the newer code is small. However, we have seen situations where new versions or service pack levels have caused issues that have impacted Infor Mongoose and required the new software to be removed.

Specific information regarding normal software deployment requirements is available from our Infor Xtreme Support Web site (<http://www.inforxtreme.com>) > Documentation > Mongoose Framework

product line. Infor support can update or change the Standard Software Deployment list as new versions of software are available and can be tested internally.

Since the support teams only have access to standard documentation and systems running in standard software deployment configurations, we are unable to assist with specific non-standard software deployment installation, setup, or performance questions and recommendations. Any and all information related to setting up a non-standard software deployment is solely your responsibility as a customer. This information can be obtained from various sources which are not part of Infor support, and can result in successful deployment of the software for a specific customer environment.

You, the customer, assume all risks associated with conflicts that arise between various system component software including, but not limited to, performance and system settings.

Infor software might not work as intended in non-standard software deployments, because of unknown conflicts between Infor Factory Track and the new software version or component. If these issues cannot be resolved by means of normal code fixes, you might have to implement a standard software deployment system to correct the issue.

This information is subject to change, without notice, at any time.

Note: If you plan to deploy in the Web, then when sizing the utility server, treat one session as three concurrent sessions. For example, a utility server configured for 300 named devices for Infor Factory Track using WinStudio (the smart client) supports only 100 Web-rendered clients instead. The reason for this additional overhead on the server is that the rendering of forms and form scripts, which is otherwise done by WinStudio, must be handled by the server in a Web-rendered presentation. Both WinStudio and the Web-rendered presentation methods work across LAN, WAN, and Internet connections. This sizing model for Web rendering would only apply to the utility server load if the DMZ server is not used.

For sizing your development environment, consider 1-20 and 21-50 named devices for combined servers.

Size and configuration recommendations

Note that the recommendations in this section are only recommendations. You might need to conduct level and performance evaluations to determine the configuration for your specific needs.

1-20 Named Devices

Database/Utility Servers (combined servers)

Operating System	Windows 2012 / 2012 R2, Windows 2016
Processor Size	Xeon 2.0 GHz (or better)
Number of processors	4 cores
Memory size	12 GB (must be expandable)
Disk I/O configuration	(6) 72/144/300 GB SCSI / SAS Drives
Other	<ul style="list-style-type: none">• Terminal Server Remote Administration• SQL 2012 / 2014 / 2016• Infor Factory Track application code

Network interface	1 Gb ethernet adapter
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21-50 Named Devices

Database/Utility Servers (combined servers)

Operating System	Windows 2012 / 2012 R2 , Windows 2016
Processor Size	Xeon 2.0 GHz (or better)
Number of processors	8 cores
Memory size	16 GB (must be expandable)
Disk I/O configuration	(6) 72/144/300 GB SCSI / SAS Drives
Other	<ul style="list-style-type: none">• Terminal Server Remote Administration• SQL 2012 / 2014 / 2016• Infor Factory Track application code
Network interface	1 Gb ethernet adapter

51-100 Named Devices

Database Server

Operating System	Windows 2012 / 2012 R2 , Windows 2016
Processor Size	Xeon 2.0 GHz (or better)
Number of processors	8 cores
Memory size	20 GB (must be expandable)
Disk I/O configuration	(8) 72/144/300 GB SCSI / SAS Drives
Other	<ul style="list-style-type: none">• Terminal Server Remote Administration• SQL 2012 / 2014 / 2016• Infor Factory Track application code
Network interface	1 Gb ethernet adapter

Utility Server

Operating System	Windows 2012 / 2012 R2 , Windows 2016
Processor Size	Xeon 2.0 GHz (or better)

Number of processors	8 cores
Memory size	12 GB
Disk I/O configuration	(2) 72 GB SCSI / SAS Drives RAID 1
Other	<ul style="list-style-type: none"> • Internet Information Server (IIS) • Infor Factory Track application code
Network interface	1 Gb ethernet adapter

101-200 Named Devices

Database Server

Operating System	Windows 2012 / 2012 R2 , Windows 2016
Processor Size	Xeon 2.0 GHz (or better)
Number of processors	8 cores
Memory size	24 GB (must be expandable)
Disk I/O configuration	(10) 72/144/300 GB SCSI / SAS Drives
Other	<ul style="list-style-type: none"> • Terminal Server Remote Administration • SQL 2012 / 2014 / 2016 • Infor Factory Track application code
Network interface	1 Gb ethernet adapter

Utility Server

Operating System	Windows 2012 / 2012 R2 , Windows 2016
Processor Size	Xeon 2.0 GHz (or better)
Number of processors	8 cores
Memory size	16 GB
Disk I/O configuration	(2) 72 GB SCSI / SAS Drives RAID 1
Other	<ul style="list-style-type: none"> • Internet Information Server (IIS) • Infor Factory Track application code
Network interface	1 Gb ethernet adapter

201-300 Named Devices

Database Server

Operating System	Windows 2012 / 2012 R2, Windows 2016
Processor Size	Xeon 2.0 GHz (or better)
Number of processors	8 cores
Memory size	48 GB (must be expandable)
Disk I/O configuration	(12) 72/144/300 GB SCSI / SAS Drives
Other	<ul style="list-style-type: none">• Terminal Server Remote Administration• SQL 2012 / 2014 / 2016• Infor Factory Track application code
Network interface	1 Gb ethernet adapter

Utility Servers (1 or 2)

Operating System	Windows 2012 / 2012 R2 , Windows 2016
Processor Size	Xeon 2.0 GHz (or better)
Number of processors	8 cores
Memory size	16 GB
Disk I/O configuration	(2) 72 GB SCSI / SAS Drives RAID 1
Other	<ul style="list-style-type: none">• Internet Information Server (IIS)• Infor Factory Track application code
Network interface	1 Gb ethernet adapter

300+ Named Devices

It is possible that a customer end-user base could include more than 300 named devices. We recommend that you complete some level or performance evaluation for any application you create with Infor Factory Track and adjust your system configuration to meet your needs.

A Smart Client provides the fully functional and user-friendly graphical interface of desktop applications with the communication protocol http/http(s) to allow internet or WAN deployment. The client leverages “click-once” deployment for ease of installation and is auto-updating from the Factory Track servers.

Operating systems	Windows 8.1 Professional Windows 10 Professional
Processor size	Multi-core, 1.6 GHz (or better)
Number of processors	2-4 cores
Memory size	2/3 GB (depending on the OS)
Other	<ul style="list-style-type: none">• .Net Version 4.6.1 framework• Network connection

Web client (Internet browser-based)

Forms that are supplied with Infor Factory Track, whether personalized or created from scratch, can be rendered in a Web browser after the forms are saved and permissions are assigned. These browsers are supported for form Web rendering:

- Latest Editions of Edge
- Internet Explorer
- Firefox
- Chrome

Interface Hardware

Infor Global Solutions is the one-stop shop for our customers' warehouse needs. You can contact the Product Manager to get details with regards to the hardware specifications to meet your organization requirements.