Infor Enterprise Server Web UI Installation and Configuration Guide

Release 10.3

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Contents

About this Guide

Document summary

This guide is intended for System Administrators. It describes how to deploy and configure Infor ES Web UI on various Java Servlet containers.

Note:

- A number of screenshots in this document may be based on previous Web UI releases. They can differ slightly from your Web UI screens. However, the described functionality is identical.
- Web UI is supported for these Infor LN or Baan versions:
  - Infor Baan IV
  - Infor Baan 5
  - Infor LN 10.3 and earlier LN versions
- Web UI is not supported for LN 10.4 and later. These LN versions only support the HTML5-based Infor LN UI.

To obtain the latest version of the Web UI software and the related documentation, download solution 22881482 from Infor's support site.

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.

Introduction

1

Web UI is a user interface client for these Infor LN or Baan versions:

- Infor Baan IV
- Infor Baan 5
- Infor LN 10.3 and earlier LN versions

Web UI can be started in these ways:

- Using the browser. This requires the Java plugin.
- As a client application. This requires the Java Virtual Machine.

Infor ES Web UI includes Infor Web Help, a tightly integrated web-based help application. Infor ES Web UI does not use local resources, such as the registry. It offers global ‘any time, any place’ access to Infor LN. It offers a navigation framework that includes shortcuts, a navigation tree, starting/viewing (external) web pages, and the possibility to choose between several skins or color themes. Also, Web UI can be customized to a large extent.

To use the Web UI, the end user must point the browser to a web server where Web UI has been deployed into a Java servlet container.

There are two ways to deploy Web UI:

1. Deploy Web UI to a Java servlet container. See chapter 2.
2. Use the Infor Enterprise Server Installer, which will install Tomcat with Web UI pre-deployed. See chapter 3.

Note:

- Updating and uninstalling with the Enterprise Server Installer requires some files that were installed during the fresh install. If you use the first deployment method mentioned above, you cannot update or uninstall using the installer.
- For detailed information about deployment in a thin client environment, see *InforXtreme Knowledge Base Article 22881401*.
- Check the prerequisites.

  See "Appendix A" on page 61.
- For details about the usage of the LN Navigator context application in Infor Ming.leTM environments, see these guides:
  - *Infor LN Role Based Home Pages Administration Guide*
  - *Infor Ming.le-LN Plug-in - User Guide (Web UI)*

Caution: The Java Connector Architecture (JCA) JCAAdapter4ERPln.jar library that is embedded in this product is copyright and proprietary to Infor Global Solutions and contains interfaces and / or APIs that are strictly private to Infor. These interfaces and / or APIs cannot be used by external applications, devices, and / or software libraries. Usage of the JCA library will be monitored and illegal usage will be causing a non-compliancy situation.

Install Method 1 – Deploying Web UI to a Servlet Container

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Numerous Java servlet containers are available on the market and in the Open Source community. This chapter describes how to deploy Web UI to a Java servlet container.

For instructional examples of deploying Web UI to specific Java servlet containers, such as Tomcat and IBM Websphere Application Server, see "Appendix B, "Instructional Deployment Examples"" on page 67.

> **Caution:** When deploying on a Tomcat servlet container, ensure that the Web UI web application is defined using a Context Descriptor file with this attribute: `useHttpOnly="false"`.
>
> See "Appendix B, "Instructional Deployment Examples"" on page 67.

To deploy Web UI to a servlet container:

1. Locate the Web UI Web Archive (.war file).

   The Web UI software is archived in a standardized Web Archive. You need this Web Archive, webtop.war, to deploy Web UI. The webtop.war file is in the InstallableUnits/Webtop directory of the Infor Enterprise Server Installer installation media.

   See "appendix B" on page 67.

2. Deploy the Web UI war file in your Java servlet container.

   During deployment, the servlet container asks the root name for the Web UI Web application. Each application server uses various terms for this root name, such as the following:

   - Context Root.
   - Application URI.
   - URL Context Path.

In the remainder of this guide the notation [webui-root] is used to refer to this Web UI root name.

The [webui-root] determines the URL to the Web UI application. After deployment, you can access the Web UI through these URLs:

- `http://[hostname]:[port]/[webui-root]/servlet/admin`, for administrator login
- `http://[hostname]:[port]/[webui-root]/servlet/jws/admin`, for administrator login

- `http://[hostname]:[port]/[webui-root]/servlet/login`, for user login with server authentication
- `http://[hostname]:[port]/[webui-root]/servlet/jws/login`, for user login with server authentication
- `http(s)://[hostname]:[port]/[webui-root]/servlet/fslogin`, for Single Sign On user login using Infor Federation Services (IFS) authentication or Integrated Windows Authentication (IWA). For detailed information about the required configuration, see the *Infor Enterprise Server - Single Sign On User Guide*.

You can now continue with these actions:

- Configure Web UI.

  See "chapter 5" on page 23.

- Set up Web UI to connect to an Infor LN or Baan Server.

  See "chapter 6" on page 27.

Install Method 2 – Enterprise Server Installer

3

This chapter describes these topics:

Installing Web UI through the Enterprise Server Installer

The Enterprise Server Installer includes the installation of an Open Source Java servlet container and Tomcat. This installer is useful if you plan to use Tomcat as the servlet container, or if you want to be up and running quickly. The installer takes care of Web UI configuration.

Note:

- You can also use the installer to install Infor Enterprise Server Connector for Web Services
- Using the installer, usually only one Web UI version can be active on the web server. When installing in the same directory as before, an update is done. When installing in a new destination directory, you must use different ports (HTTP port, AJP port, and Shutdown port) and, for Windows Service, different Service names for the second Tomcat.

  Then start Web UI with the new HTTP port, for example: `http://localhost:8313`. For details on how to install Web UI on a clean system, see the *Infor Enterprise Server Installation Guide*

For details on how to install Web UI on a clean system, refer to the *Infor Enterprise Server Installation Guide*.

The Enterprise Server Installer can also be used to install a different version over an already existing installation. See "Install Method 2 – Enterprise Server Installer" on page 11.

Note: You can reuse the settings of the previous Web UI version in the new environment. To do this, copy the settings that you saved during the uninstallation to the `[new installation-directory]\webui\config` directory.

For information on how to save Web UI settings, see "Install Method 2 – Enterprise Server Installer" on page 11.

For details on how to uninstall Web UI, see "Install Method 2 – Enterprise Server Installer" on page 11.

For the system requirements for the web server and desktop, see "Appendix A" on page 61.

Starting and stopping the Tomcat web server on Windows

To start the Tomcat web server, click **Start > All Programs > Infor > ese > apache-tomcat-[version number] > Startup Tomcat (on Port [port no])** .

To stop the Tomcat web server, click **Start > All Programs > Infor > ese > apache-tomcat-[version number] > Shutdown Tomcat (on Port [port no])** .

Alternatively, complete these steps:

- To start the Tomcat web server, browse to the `[installation-directory]\apache-tomcat-[version number]\bin` directory and run `startupTomcat.bat`.
- To stop the Tomcat web server, browse to the `[installation-directory]\apache-tomcat-[version number]\bin` directory and run `shutdownTomcat.bat`.

Note: Do not use the batch files that are part of the standard Tomcat distribution, `startup.bat` and `shutdown.bat`; these do not set the environment variables JAVA_HOME and JRE_HOME to the required values.

Installing Tomcat as a service

If you want Web UI to run when the machine is booting, you can install Tomcat as a service. During the installation you are presented with the option to do so. If you did not choose that option and wish to register Tomcat as a service afterwards, click **Start > All Programs > Infor > ese > apache-tomcat-[version number] > Install Service (on Port [port no])** .

Alternatively, enter the following command on the command line:

```
[installation-directory]\apache-tomcat-[version number]\bin\installTomcat
Service.bat
```

Starting and stopping the service

To manually start the Tomcat service, complete one of these steps:

- Click **Start > All Programs > Infor > ese > apache-tomcat-[version number] > Start Service (on Port [port no])**.

- Specify this command on the command line:

  `net start [service name]`

  Note: Specify the service name that was set during the installation. The default name is `Infor EnterpriseServer`.

To stop the Tomcat service, complete one of these steps:

- Click **Start > All Programs > Infor > ese > apache-tomcat-[version number] > Stop Service (on Port [port no])**.
- Specify this command on the command line:

  `net stop [service name]`

  Note: Specify the service name that was set during the installation. The default name is `Infor EnterpriseServer`.

Uninstalling the service

To uninstall the Tomcat service, complete one of these steps:

- Click **Start > All Programs > Infor > ese > apache-tomcat-[version number] > Uninstall Service (on Port [port no])**.
- Specify this command on the command line:

  `[installation-directory]\apache-tomcat-[version number]\bin\uninstallTomcatService.bat`

Starting and stopping the Tomcat web server on Unix/Linux

1. Open a console and go to the installation directory to start the Tomcat web server.
2. Change directories to the `apache-tomcat-[version number]/bin` subdirectory.
3. To start the web server, run `./startup.sh`.
4. To stop the web server, run `./shutdown.sh`.

Installing Tomcat as a service

To have Web UI start automatically when the machine is booting, create an initialization script that will run when switching run levels. Please refer to the documentation of your Unix/Linux distributor for further details.

For a machine with a SysV style initialization, create a script in /etc/init.d and links in the /etc/rc *n*.d directories.

Updating a Web UI installation

If Web UI is already installed, you can run the Enterprise Server Installer again to update the current Web UI installation.

Points of attention

The location of the previous installation is not automatically detected. If you choose a destination directory that differs from the default, you must select the “Custom" install set. Then, in the Select Install Folder page, specify the correct destination directory.

Existing user contexts, web server, Web UI configurations, and log files are not affected by an update. The update overwrites only files that are directly related to the Web UI application. These files are preserved with an update:

- User contexts

  Any user contexts created by an administrator or an end user are preserved. User contexts are located in the `[installation-directory]\Webtop\config\usercontexts` directory.

- Web server configuration

  Configuration of the web server is not affected by an update. Tomcat configuration is stored in the `[installation-directory]\apache-tomcat-[version number]\conf` directory.

- Web UI configuration

  Configuration of the Web UI application is not affected by an update. Web UI configuration is stored in the `[installation-directory]\Webtop\config` directory. This includes company settings, smart links, Infor LN environments, and the Infor Web Help configuration.

- Log files

  Log files that were previously created are not removed with an update. The installation log of the update is appended to the current installationlog.txt file located in the installation root directory.

- Company logo and background image

  During an update the company logo and background image are not overwritten. If you customized the company logo or the background image, this customization is not affected by an update.

These files are modified or removed during an update:

- Web UI files

  All files located in the `[installation-directory]\Webtop\web` directory that were installed by the previous Web UI version are overwritten with the files contained by the update.

Note: You cannot update an old Web UI installation installed with a previous version of the Web UI Installer delivered with Web UI 8.4 and older. In this case you must uninstall the old Web UI, and then perform a "new installation" with the new installer. When you uninstall the old Web UI, ensure that you save your Web UI settings, so that you can reuse them for the new Web UI version. To save the settings, create a new directory in a location that will not be overwritten by the new installation. Then, copy the contents of the `[current installation-directory]\webtop\config` directory to the new directory. See these sections:

- "Install Method 2 – Enterprise Server Installer" on page 11
- "Install Method 2 – Enterprise Server Installer" on page 11

Procedure

Note: For details on the installer pages used in the procedure, refer to the installer's online Help.

To update a Web UI installation:

1. Stop the web server. If you do not stop the web server, the installer will stop the web server. However if you also want to update the bundled JRE (install with VM), you may get a warning that the old JRE is in use (by Tomcat) and cannot be updated. If you do not intend to update the JRE, this is OK. Otherwise you must stop Tomcat.

   Ensure the Tomcat web server is not running.

   In Windows, complete one of these steps:

   - If Tomcat is installed as a service, click **Start > All Programs > Infor > ese > apache-tomcat-[version number] > Stop Service**.

     Alternatively, specify this command on the command line:

     ```
     net stop [service name]
     ```

     Note: Specify the service name that was set during the installation. The default name is `Infor EnterpriseServer`.

   - If Tomcat is not installed as a service, click **Start > All Programs > Infor > ese > apache-tomcat-[version number] > Shutdown Tomcat** . Alternatively, press CTRL+C in the Tomcat window that was opened when starting the Web UI server.

   In Unix/Linux, run `stoptomcat.sh` in the `apache-tomcat-[version number]/bin` subdirectory of the Web UI installation.

2. Ensure the contents of the Enterprise Server Installer media are copied to a local directory. Go to this directory and copy a different webtop.war file over the old webtop.war file in the `Installable Units\Webtop` subdirectory.

   Also copy the InstallableUnit.info file, which contains the latest Web UI version, release, and build information. If a new ESE Installer is available, you must copy the complete Staging Area.

   Note: the same applies to ReportViewer and Connector for Web Services (C4ws).

3. Read the installationinstructions.txt file in the Staging Area main directory. This file explains how you can start the installer for various platforms.
4. Start the appropriate installer for your platform.
5. In the Introduction screen, click **Next** to display the Select install set page.
6. Select **Custom** and then click **Next** to display the Select Install Folder page.
7. Accept the default folder and click **Next** to display the Select features page.
8. Select the **Web UI for LN [version number]** check box. Clear the remaining check boxes and then click **Next** to display the Select Java virtual machine page.
9. Click **Next** to display the Update page.
10. Read the information and then click **Next** to display the Administrator Password page.
11. Optionally, change the password and then click **Next** to display the ERP Backend page.
12. Optionally, change the settings of the Infor LN or Baan server and then click **Next** to display the Summary page.
13. Check the installation summary and then click **Install.**

    The installation starts.

When the installation successfully finishes, the Install Complete page is displayed.

All actions performed during this installation are logged into files in the Log folder in the installation root directory and in the [temp] folder log files, for example:

- BaseInstallerError110921150316.log
- BaseInstallerLog110921150316.log.

If you have encountered problems during the installation, you can read these files to identify the problem or send the files to Infor Customer Support.

Note: If you run the installation on Unix/Linux, the same information is also written to the console.

14 Click **Next** to display the Final actions page.

15 The installer prompts you to indicate whether you want to start the Tomcat Manager. Select the desired action and then click **Done** to display the Readme page.

16 View the Readme information:

- Read the instructions for the Web Help server. Note that the instructions written in this dialog box are not applicable for Baan IV. For information on how to install the help content for Baan IV, see "Install help content for Infor Baan IV " in "Chapter 6" on page 27.

  It is mandatory to manually define the Infor Web Help server after installation. After the installation, you can re-read instructions on how to do this by opening the postInstallMessage.htm file; this file is located on the installation media or in the `[installation-directory]\webtop` directory after the installation.

- Read the recommendation on generating forms. After the installation, you can re-read the message by opening the postInstallMessage_genForms.htm file; this file is located on the installation media or in the `[installation-directory]\webtop` directory after the installation.

17 To finish the installation, click **Done**.

Note: If your old Web UI installation was deployed to an older Tomcat version, you must install a new Tomcat version and deploy the new Web UI installation to the new Tomcat version.

For the Tomcat version required by Web UI, see "System Requirements" on page 61.

For an instructional example of deploying Web UI to Tomcat, see "Appendix B" on page 67.

Uninstalling Web UI

Note: When you uninstall the old Web UI, ensure that you save your Web UI settings, so you can reuse them for the new Web UI version. To save the settings, create a new directory in a location that will not be overwritten by the new installation. Then, copy the contents of the `[current installation-directory]\webtop\config` directory to the new directory.

To uninstall Web UI or another component, you can use the uninstaller that is created during the installation process. The uninstaller is available for the Windows platform as well as for the Unix/Linux platform.

Note: For details on the uninstaller pages used in the procedure, refer to the uninstaller's online Help.

To run the uninstaller:

1. Start the uninstaller.
   - On Windows

     Use the **Add/Remove Programs** option from the Control Panel. Select **Infor Enterprise Server Installer ([installation-directory])** and then click **Change/Remove**.
   - On Unix/Linux

     Open an xterm prompt and start `[installation-directory]/Uninstall_Enterprise_Server_Extensions/(No)VM/Uninstall.sh`.

   The Uninstall Infor Enterprise Server Extensions screen is displayed.
2. Read the information in the screen. Then click **Next** to display the Uninstall Options page.
3. Select **Uninstall Specific Features** and click **Next** to display the Select features page.
4. Select the features you want to uninstall and click **Next**.

   The installer prompts you to indicate what to do with files created since the installation, such as user settings and log files.
5. Select **Keep all files** or **Delete all files** and click **Next** to display a Summary page. Click **Uninstall**. The uninstall starts.

   When the uninstall is finished, the Uninstall Complete page is displayed. If you did not remove all Installable Units, the Final Actions page is displayed. If Connector for Web Services or Web UI is still available, you can select a check box to start the Tomcat manager.
6. To close the uninstaller, click **Finish**.

Using Java Web Start

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This section describes how to enable Web UI as Java Web Start application. If this is enabled, the behavior of the Web UI changes as follows:

- Web UI can be started to run as an application with these URLs:
  - `http://[hostname]:[port]/[webui-root]/servlet/jws/login`, for user login with server authentication.
  - `http://[hostname]:[port]/[webui-root]/servlet/jws/admin`, for administrator login.
- Existing and new desktop shortcuts, which are the result of a **Send To Desktop** action, run Web UI as an application.
- HTML or PDF reports that require a browser are displayed in a separate window using the client computer's default browser.

Note: If you run Web UI as an application using Java Web Start, technical limitations apply. These capabilities are not supported:

- Infor Ming.le-LN Plug-in
- Single Sign On authentication: Infor Federation Services or Integrated Windows Authentication
- Fujitsu Workflow integration
- BIRT reporting
- LN Workbenches

Using Web UI Administration Console to enable Web UI as Java Web Start application

1. Start the Web UI Administration Console.
2. Select **Infor Web UI Administration > Client Java Configuration**.
3. Select **Enable Web UI client program as Java application (Java Web Start)**.
4. Submit the change and exit the Web UI Administration Console.
5. Restart the Web UI web application, for example, by restarting the Tomcat service.

Using a text editor to enable Web UI as Java Web Start application

If the Web UI Administration Console is not available, you can use a text editor to change the Web UI configuration file.

1. Access the file system of the Web UI server, for example using a Remote Desktop Connection.
2. Stop the Web UI web application.
3. Locate the `WebtopProperties.xml` file in the Web UI configuration directory.
4. Open the file in a text editor with write access.
5. Change the file to ensure that it contains this fragment:

```
<CATEGORY NAME="General">
<PROPERTY NAME="jws.supported">true</PROPERTY>
</CATEGORY>
```

   Note: Ensure that the category with `NAME=”General”` exists only once!

6. Save the file and close the text editor.
7. Start the Web UI web application.

Installing LN Report Viewer

5

To view the reports in the homepages delivered with Infor LN, install the LN Report Viewer. You can install the Report Viewer on the Web UI server, or on any other machine.

To install the Report Viewer, you must deploy it to Tomcat.

Points of attention:

- The Report Viewer requires Java 7 and higher.
- The LN shared libraries, which are used to access the LN database, are 32 bits. These libraries can only be run within a 32-bit Java version running on a 32-bit Operating System. Therefore, the Report Viewer only supports 32-bit Java and Tomcat on a 32-bit OS.
- Choose Tomcat as your servlet container. The Report Viewer does not run in combination with other Java servlet containers, such as IBM Websphere Application Server.
- Install the appropriate Tomcat version.

  See "System Requirements" on page 61.
- Report Viewer and Web UI can run on the same machine, however this will impact on the performance adversely. Therefore, it is recommended to install Report Viewer and Web UI on different machines.
- The Report Viewer is not supported on HP-UX RISC platforms.

Installing and configuring the Report Viewer

To install and configure the Report Viewer:

1. Download solution 22944809 from the http://www.infor.com/inforxtreme site.
2. Manually deploy the Report Viewer into an already installed Tomcat servlet container.

   For an instructional example, see "Deploying Web UI and Report Viewer on Tomcat" on page 70.
3. Specify Report Viewer settings on the Web UI server.

   Complete these steps:

   a. Start the Infor ES Web UI Administration Console.

   b. In the **Infor Web UI Administration** pane, select **Infor LN**. Then click **Report Viewer**. The Report Viewer page is displayed.

c Among other things, specify the name of the machine where the Report Viewer application is installed. For details, see the description of the Report Viewer page in this guide.

4 Specify a "BIRT_TEMP" environment variable that points to a directory where the Report Viewer can store its temporary files.

Note: This directory must be present and writable for the user who runs the Report Viewer Web server.

Running the Report Viewer, Web UI, and LN on a single machine

You can run the Report Viewer, Web UI, and LN on the same machine. This can be desirable for consultants who want to perform demonstrations using their laptop standalone.

To run the Report Viewer, Web UI, and LN on the same machine:

1 Set the BSE and BIRT_TEMP variables.
2 Ensure the shared library path includes `$BSE/shlib`.
3 In the Web UI Administration Console, open the Report Viewer page. In the **Hostname** field, specify the DNS name of the local host.

See "appendix A, "System Requirements"" on page 61.

The Infor ES Web UI Administration Console

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Starting the Web UI Administration Console

To start the Web UI Administration Console, point your browser to one of these URLs:

- `http://[hostname]:[port]/[webui-root]/servlet/admin`
- `http://[hostname]:[port]/[webui-root]/servlet/jws/admin`

The administration pages navigation tree contains four categories:

- Infor ES Web UI administration. This is described in this chapter.
- Infor Web Help. This topic is covered in *Infor Enterprise Server Web UI - Installation and Configuration Guide for Infor Web Help*
- Infor LN. See "Setting up Web UI to connect to an Infor LN or Baan server" on page 27.
- Workflow. See "Configuring Infor Workflow" on page 37.

First installation method

If you have used the first installation method to deploy Web UI, the initial administration password is `webtop`. It is strongly advised to change this password. You can do this via the Web UI Administration Console.

During the deployment no configuration parameters are asked. This chapter describes the various configuration options.

Follow the steps in chapter 6 to setup a connection with an Infor LN server.

Second installation method

If you have used the second installation method, the Web UI is configured during the installation. You can use the Infor Web UI Administration Console to verify the connection setup. To defer from the Workflow default configuration, use the Infor Workflow Admin pages.

Web UI administration pages

This section provides a short introduction on the administration pages. For detailed information, see the online help. To view the online help of a page, open the page and press F1.

Change Admin Password

Use this page to change the administrator password.

Change Configuration Directory

Use this page to change the directory where the Web UI configuration files are stored.

Login Configuration

Use this page to define the Web UI login configuration.

Basic Authorizer

Use this page to restrict users from creating or modifying user profiles.

User Profiles

Use this page to specify the user-specific Web UI settings.

Languages

Use this page to change the default language.

Logging

Use this page to define the logging settings.

Compression

By default, messages between the browser and the web server are compressed. Use this page to adjust this setting.

Client Java Configuration

Use this page to specify Java configuration settings for all users running Web UI.

Diagnostics

Use this page to test whether your settings result in a successful connection.

Company Logo

Use this page to upload a new logo.

ERP Home Background Image

Use this page to upload a new background.

Setting up Web UI to connect to an Infor LN or Baan server

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Note: For details on how to configure connections based on Infor Federation Services or Integrated Windows Authentication, see the corresponding chapters in the *Infor Enterprise Server - Single Sign On User Guide*.

Infor LN administration pages

This section describes the administration pages to set up the Web UI to connect to an Infor LN server.

Points of attention:

- Configuring an Infor LN environment is mandatory. See "Configure an Infor LN Environment".
- If the Infor Ming.le integration is used, Logical ID mapping is mandatory. See "Logical Id Mapping".
- The other sections are optional.

To check the requirements of your Infor LN Server, see "Appendix C, "Prerequisites for the Infor ERP Server"" on page 73.

Configure an Infor LN Environment

Use the Infor ES Web UI Administration Console to specify configuration settings for one or more Infor LN Environments. For each environment you must specify various settings, such as the host name and BSE directory where the environment resides. The configuration settings are stored on the web server. Therefore, all end users can use this configuration.

1 Start the Web UI Administration Console through one of these URLs:
   - `http://[hostname]:[port]/[webui-root]/servlet/admin`
   - `http://[hostname]:[port]/[webui-root]/servlet/jws/admin`
2 Enter the administrator password. Use the password specified during deployment of Web UI. If the password was not changed, the password is `webtop`.
3 In the **Infor Web UI Administration** pane, select **Infor LN > Infor LN Environments** . The Manage Infor LN Environments page is displayed. On this page, you can add, modify, or remove environments.

IMPORTANT: Infor Baan IV c4 and Infor Baan 5.0c require additional steps to use Web UI.

4 Specify the required information. For details on the fields, see the online help of the page.
5 Click **Save**. All values are saved on the web server.

BaanLogin SSL Protocol

If you select an environment that uses the BaanLogin SSL Protocol and click **Generate/Update Keystores**, the corresponding dialog is displayed.

Use this dialog to set configuration parameters for Single Sign On user login using Infor Federation Services authentication or Integrated Windows Authentication.

After specifying configuration parameters in the Generate/Update Keystores dialog, various other settings must be defined. See "Configuring Infor Federation Services " or "Configuring Integrated Windows Authentication" in the *Infor Enterprise Server - Single Sign On User Guide*.

Diagnostics (test the connection)

The second dialog is about Diagnostics. Click the environment you defined in the previous screen. This page can be used to test whether your settings result in a successful connection.

Company settings

You can give various companies each their own color.

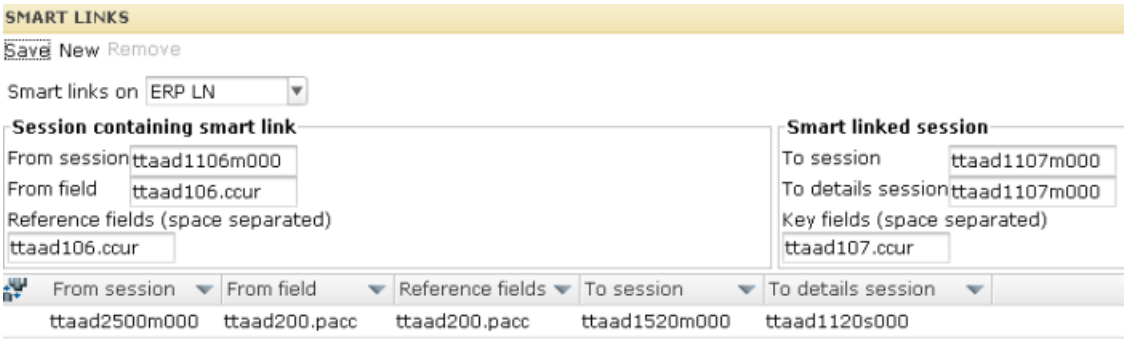
Smart links

Note: The functionality described in this section is not supported in combination with Enterprise Server 8.5 and higher.

From Enterprise Server 8.7, you can disable smart links in the Maintain Parameters (ttaad0100m000) session on the LN server.

This page deals with smart links. Smart links in Web UI provide a way to quickly zoom to a related session from an overview session.

This figure shows the Smart Links page:



These fields are available to make smart links:

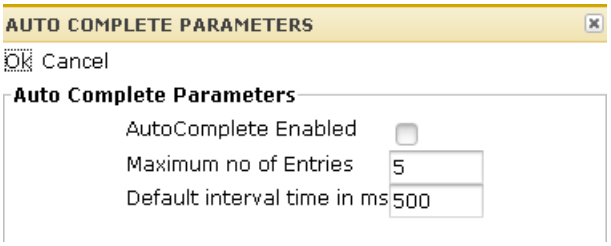
- **From session**: Specify the session code of the overview session in which the smart link must be available.
- **From field:** Specify the field name in the session from which the smart link must be available
- **To session**: Specify the session code of the overview session to which the smart link points.
- **To field**: Specify the field name in the session to which the smart link points.
- **Reference fields**: You must pass a key field to the linked session.

Auto Complete

Note: The functionality described in this section applies only to Web UI 8.4.2 and older versions.

From Web UI 8.5, Web UI users can define their own Auto Complete parameters. For details, refer to the Web UI online help.

This figure shows the Auto Complete Parameters page:



These parameters can be set for Auto Complete:

- **Auto Complete Enabled**: If checked the auto complete database on the web server will be filled and updated and an auto complete list will be shown on fields with zoom functionality.
- **Maximum no of Entries**: Tells the maximum number of possibilities which will be shown in the auto complete list.
- **Default interval time**: If on a field with zoom functionality the value is changed, auto complete sends at regular intervals a request to the web server. This is the interval time in milliseconds that is used if the web server is responsive. If the web server gets less responsive this interval will be used to automatically adjust the interval time.

Print to display

Reports that are printed through the Display option are displayed on the computer screen.

Use this page to specify whether a company logo and navigation buttons must be present on these reports.

Baan IV Help Content Installation

To install Baan IV Help files, you must start the Infor LN Admin Pages and choose **Baan IV Help Content Installation**. Use this function if you want your customized Baan IV help available for Web UI on Baan IV. This function converts all your Baan IV help into Infor Web Help format to make it available through Web UI on Baan IV. If you only want the standard Baan IV help, it is recommended that you install the help files as available on the installation media.

Note:

- Getting the help content from the Baan IV system and installing it as help content can take several hours.
- Ensure there is at least 100 MB of free disk space on the Baan IV system and on the web server.

Help is retrieved for the packages in the package combination and language of the attached user. If you want help information in another language, in the user's Web UI user profile, change the language code.

Report Viewer

To specify the settings for the Report Viewer, use this page. You can specify the following parameters:

Parameter	Description
Hostname	The host name of the machine on which the Report Viewer application is installed. Note: If the Report Viewer and Web UI run on the same machine, specify "localhost".
Http port number	The port number used to activate the Report Viewer application. The default port number is 80.
Https port number	The port number used by Web UI to communicate with the Report Viewer. The default port number is 8443.
Virtual directory	The virtual directory of the Report Viewer application. The default directory is "reportviewer". If you selected the default context path ("/reportviewer") during the installation of the Report Viewer, do not change this directory. If you selected a different context path during the installation, you must change the virtual directory accordingly.

Homepage Export

On the Homepage Export page, you can export homepages from a user profile.

When you export a homepage, the export process generates the following:

- A homepage archive file which contains the language independent content of the homepage, such as the structure of the homepage and its panes.
- A homepage property file, also known as a resource file. This file contains language-dependent content in the language the homepage was developed in. The homepages that Infor delivers are developed in English.

  A homepage property file only contains language-dependent content of the homepage itself, such as the homepage title and the titles of the panes. The file does not contain language dependent LN content used in the homepage, such as label and message descriptions.

The homepage archive files and homepage property files are automatically transferred to the LN server, and stored as additional files in the LN data dictionary. You can access the files in the Additional Files (ttadv2570m000) session.

Filenames

The names of the homepage archive files and the homepage property files have the following structure:

File type	File name structure
Homepage archive file	[homepage-id (max. 28 characters)].HPA
Homepage property file	[homepage-id (max. 28 characters)]_[ISO 639 language code]_[ISO 3166 country code].properties Note: The country code is optional, and is only used for a few languages.

For example, when you export the Warehouse Manager homepage, the following files are generated:

- warehousemanagerhomepage.HPA: Homepage archive file.
- warehousemanagerhomepage_en.properties: English Property file.

To export homepages

To export homepages:

1. Open the Homepage Export page. The homepages you can export are displayed per user and profile.
2. Connect to the LN server: In the **Login** group box, select an Infor LN or Baan environment, enter a login code and a password, and click **Connect**.
3. In the **Package Combination** field, select the package combination which contains the package VRC where you want to store the additional files that will be generated. A list of packages and the corresponding modules is displayed.
4. Select a user and a user profile. Subsequently, select the homepage you want to export from the list.
5. Select the package and module where you want to store the additional files that will be generated.
6. Click **Export**.

Note:

- You can only export homepages from user profiles which have the "homepage creator" role assigned.
- Use the Homepages Import page to import the contents of a homepage archive file into other user profiles.
- For more information, refer to "Homepages" in the Web UI online help.
- LN homepages are not supported in Infor Ming.le.

Translation

The homepages that Infor delivers are developed in English. To make these homepages available in other languages, you must translate the content of the homepage property files. For details on the translation procedure, refer to *Infor LN - Development Tools Development Guide*.

Homepage Import

Infor delivers various predefined LN homepages. During the installation of LN, these homepages are installed as additional files (homepage archive files and homepage property files). Updates will be available in PMC solutions.

Before Web UI users can use homepages, you must import the corresponding additional files into their Web UI user profiles.

To import homepages:

1. Open the Homepage Import page. The Web UI user profiles are displayed in the right pane.
2. Connect to the LN server: In the **Login** group box, select an Infor LN or Baan environment, enter a login code and a password, and click **Connect**.
3. In the **Package Combination** field, select a package combination The homepage archives in the selected package combination are displayed per package/module.
4. Select the homepage archives you want to import.
5. Select the user profiles into which you want to import the homepage archives.
6. Click **Import**.

Note:

- Before Web UI users can use the new homepages, they must log off and log on using the updated user profiles.
- Homepages created in the first release of Web UI 8.4 are delivered in .zip files. To import homepages from a .zip file, use the Homepage Import From File page, which is located under the **Infor Web UI Administration** node.
- You can export homepages in the Homepage Export page. You cannot export a homepage directly after it was imported. After an import, the Web UI users must first log off and log on using the updated user profiles.
- LN homepages are not supported in Infor Ming.le.

For more information, refer to "Homepages" in the Web UI online help.

Logical Id Mapping

This section is only applicable if you use Enterprise Server 8.5 or higher.

Use the Map Logical Ids to Web UI environments page to map logical Ids, which are used in Infor Ming.le and Infor LN environments.

The mapping between a logical Id and an Infor LN environment is used to drill back from high-level data, which is displayed in Infor Ming.le, to detailed data stored in the Infor LN environment. For details, see the Infor Ming.le documentation.

To map a logical Id to the corresponding Infor LN environment:

1. Start the Web UI Administration Console.
2. Select **Infor LN > Logical Id Mapping** . The Map Logical Ids to Web UI environments page is displayed.
3. Click **New**.
4. In the **Logical Id** field, specify the logical Id of the environment.

To find the logical Id of an environment, log on to Infor Ming.le and view the ID of the corresponding application. In Infor Ming.le, a logical ID consists of multiple segments. When you specify the logical ID in the Web UI Administration Console, the different segments must be separated by a period.

5 In the **Name** field, select the environment from the list.

6 Click **Save**.

Configuration settings on the Infor LN or Baan server

This section describes Web UI configuration settings, which must be defined on the Infor LN or Baan server.

Personalization settings

Through the Web UI interface, the end-user can easily personalize LN sessions. See "Personalize Infor LN or Baan sessions" in the Web UI online help.

To control whether an end-user is allowed to personalize LN sessions, use the **Application Personalization** check box in the User Data Template (ttams1110m000) session.

Easy Filtering

In overview sessions, Web UI users can enter filter criteria in the input fields above the grid. See "Easy Filtering" in the Web UI online help.

To configure easy filtering for LN:

1 Select an appropriate value in the **Allow Easy Filter** field in the Maintain Parameters (ttaad0100m000) session. This field determines if, and for which fields, easy filtering will be available.

2 Convert the changes to the Runtime Data Dictionary.

See the online help of the Maintain Parameters (ttaad0100m000) session.

Decimal/Thousand Symbol

You can specify which decimal sign and thousand sign will be used in amounts in LN sessions in Web UI.

Complete these steps:

1 Start the Maintain Parameters (ttaad0100m000) session.

2 Complete one of these steps:

- Select the **Use Decimal/Thousand Symbol Client** check box. The amounts are displayed using the decimal sign and thousand sign as defined in the Windows settings on your client PC. All amounts are displayed using the same decimal sign and thousand sign.
- Clear the **Use Decimal/Thousand Symbol Client** check box. The amounts are displayed using the decimal sign and thousand sign as defined in LN. In LN, decimal signs and thousand signs

are defined per software language and per currency. Therefore, different decimal signs and thousand signs can be displayed in fields in the same session.

3 To convert the changes to the Runtime Data Dictionary, click **Convert to ...**. All user files will be (re)built. To make the changes active at runtime, all users must log off and log on again.

See the online help of the Maintain Parameters (ttaad0100m000) session.

Icons in grid

In Web UI, icons can be displayed in enumerated fields in overview sessions. The icons are linked to enum constants and are displayed instead of the corresponding enum descriptions. This saves space in the grid.

If a user hovers over an icon in a grid, the corresponding enum description is displayed as a tooltip.

To ensure icons can be displayed in the grid:

1 Select the **Allow Icons In Grid** check box in the Maintain Parameters (ttaad0100m000) session.
2 Use the Domains to be Displayed as Icon (ttgfd4525m000) session to link icons to enum constants.

See the online help of the sessions mentioned.

Note: In Web UI, users can choose whether they want to view icons or the corresponding enum descriptions. See "Personalize Infor LN or Baan sessions" in the Web UI online help.

Pictures

Some LN sessions, such as the Contact (tccom1640m000) session, contain image fields where Web UI users can add pictures. See "Pictures" in the Web UI online help.

When a user adds a picture in a session, the picture is stored in an image repository on the LN server.

To ensure users can add images in sessions, complete these steps on the LN server:

1 Optionally, change the location of the image folder.
2 Assign authorizations for the image folder and its contents.

See "Image parameters" in the *Infor Enterprise Server - Administration Guide*.

Points of attention:

- The pictures are stored in “PNG” format, which is a highly compressed image format.
- For each image field in a session, the developer of the session has specified width and height properties. When a user adds a picture in a session, these width and height properties are taken into account: when the picture is larger than the image field on the form, the picture is scaled down automatically so it fits in the image field. The size of the picture stored on the file system is reduced accordingly.
- If the dropped image is smaller than the image field, a question is asked whether the image must be scaled up. If the answer is no, the image keeps its original size. If the answer is yes, the image is enlarged automatically so it gets the size of the image field on the form.

Password aging

To benefit from this feature, Enterprise Server 8.3 or higher is required for LN. For older Infor LN or Baan versions a Tools solution is required, and there is a minimum requirement for the porting set. All of this is described in Solution 22918287.

Default output format for Display devices

When an LN user prints a report to a device of type Display, such as device D, the report is displayed on the user's screen. Reports can be displayed in HTML format or in PDF format. You must select one of these formats as the default format. This default applies to all users.

To specify the default format for devices of type Display:

1. Start the WebUI Display Device Type (ttaad3108m000) session.
2. Select the default output format: PDF or HTML.

MS Excel integration

In various LN sessions, users can export data to MS Excel.

For details, see:

- "Exporting data to and importing data from MS Excel" in the "Basic tasks" section in the LN online help
- The Web UI help
- *Infor Ming.le-LN Plug-in - User Guide (Web UI)*

Note: This functionality is not supported in Baan IV and Baan 5.

Load balancer integration

By using the following url, load balancers can detect whether the web server and the Enterprise Server are up and running:

```
http://[hostname]:[port]/[webui-root]/servlet/com.ssaglobal.erp.servlet.
DiagnosticsServlet?category=checkenv&name=[environment-name]
```

The response contains an "OK"-string if the web server and the Enterprise Server are up and running. An http error 503 or 400 is displayed if they are not running. An http 400 error is displayed if a configuration problem is found and an http 503 error is displayed if login to the Enterprise Server does not succeed.

To configure this, add the following xml to `WebtopProperties.xml`:

```
<CATEGORY NAME="CHECKENV">
    <PROPERTY NAME="[environment-name].user">[username]</PROPERTY>
   <PROPERTY NAME="[environment-name].password">[password]</PROPERTY>
</CATEGORY>
```

In the above code, you must replace `[environment-name]` with the name of an existing environment defined for the designated Enterprise Server. If the environment is defined for the BaanLogin SSL protocol, you must leave the password property empty.

To activate the changes to `WebtopProperties.xml`, you must restart the web server.

Be aware that responses are cached. The Enterprise Server login is checked once in every minute. Intermediate requests show the cached response of the last real check.

Configuring Infor Workflow

8

Note: This section only applies to Infor Workflow 7.4 and 6.2.

Infor Workflow 10.1 and higher do not run in Web UI. For details on these versions, see these guides:

- *User Guide for Infor Workflow Extension and Baan IVc*
- *User Guide for Infor Workflow Extension and LN*

To configure Infor Workflow, use the Workflow Configuration page. The configuration page is available in the Infor ES Web UI Administration Console.

See the online help of the Workflow Configuration page.

LN to Infor Ming.le integration

9

This chapter describes the integration and explains the information needed to add Infor LN as a solution in Infor Ming.le.

About the integration

The Infor LN solution can run as an application inside the Infor Ming.le shell.

Prerequisites

- The LN solution must be installed on a server. To access online help from LN in Infor Ming.le, the help files must be installed on the same server where Infor Ming.le is installed, as described in this chapter.
- Sharepoint must be installed and configured according to the instructions in the appropriate guide.

  If you want to apply Single Sign On through Infor Federation Services (IFS), See the *Infor Ming.le Installation and Configuration Guide for Active Directory Federation Services*.

  If you want to apply Single Sign On through Integrated Windows Authentication (IWA), See the *Infor Ming.le Installation and Configuration Guide for Active Directory*.
- Infor Ming.le must be installed on a server and all of its prerequisites must be met.

  If you want to apply Single Sign On through Infor Federation Services (IFS), See the *Infor Ming.le Installation and Configuration Guide for Active Directory Federation Services*.

  If you want to apply Single Sign On through Integrated Windows Authentication (IWA), See the *Infor Ming.le Installation and Configuration Guide for Active Directory*.
- The LN and Infor Ming.le servers must be able to communicate.
- Web UI and Infor Ming.le must use Infor Federation Services (IFS) or Integrated Windows Authentication (IWA) to authenticate LN users. See the relevant chapters in the *Infor Enterprise Server - Single Sign On User Guide*.

Activating the LN solution in Infor Ming.le

A Infor Ming.le-LN Plug-in file is installed with Infor Ming.le. See solution 1004534 for details on how to find the plug-in deliverable. To activate this plug-in, select the Infor Ming.le-LN Plug-in option on the Infor Ming.le Configuration screen from the SharePoint Central Administration.

This creates an LN sub-site and adds an icon to the Infor Ming.le masthead.

For complete steps on how to enable the application, see the appropriate document:

- If Single Sign On with Infor Federation Services (IFS) is used, See the *Infor Ming.le Installation and Configuration Guide for Active Directory Federation Services*.
- If Single Sign On with Integrated Windows Authentication (IWA) is used, See the *Infor Ming.le Installation and Configuration Guide for Active Directory*.

Deploying the LN solution in Infor Ming.le

To connect to the LN application from Infor Ming.le you must provide information about LN in Infor Ming.le.

Complete these steps:

1 Log on

Log on to the Infor Ming.le suite with the site collection administrator account.

2 Open the Infor Application Deployment – New Item page

Complete these steps:

a Select **Site Actions > View all site content** .

b Click **Infor Application Deployments** in the **Lists** section.

There may already be an entry for LN in this list. If not, create a new item.

c On the Infor Applications Deployment List page, confirm that you do not already have an entry for the application that you want to configure. After confirming that no entry exists, click the **Items** tab above the Infor Ming.le toolbar, and click **New Item**.

3 Specify the required information

On the Infor Application Deployment – New Item page, specify this information:

Field	Description
Title	Specify **Infor LN** as the name of the deployed application.
Site	Use the drop-down list to specify the SharePoint sub-site associated with LN. The completed path looks like this: `https://server:port/ln` where `server` and `port` are the SharePoint server and port where Infor Ming.le is installed.

Field	Description
Logical ID	Specify the logical ID for the LN site associated with this LN site page of Infor Ming.le. The logical ID is a unique identifier provided during the installation of each Infor application. The value of the logical ID is unique for each instance of a given application. So, if you have more than one instance of LN installed, each instance has a logical ID. For example: `lid://infor.ln.north`, `lid://infor.ln.south`; or `lid://infor.ln.01`, `lid://infor.ln.02`. This ID, in the format `lid://infor.ln.site`, where site is your LN site name, allows Infor Ming.le to identify and communicate with the different applications with which it may be integrated. **Note:** • If drilling back from another application or ION Process to LN, ensure that the Logical ID matches the Logical ID in ION Connect for LN. See the *Infor LN – ION Integration Guide* for more information. • To create this mapping, use the Web UI Administration Console.
Application Version	Specify the version of LN. By default, the version is B61Ua7stnd.
Hostname	Specify the name of the LN Web/utility server. This hostname is also used for drill-backs to the application and for accessing the online help and documents from the Documentation context application. The hostname must be a Fully Qualified Name (FQN).
Port	Specify the port used by the LN Web/utility server. This must always be the https port. The default for LN is 8443.
Context	Leave this field blank for LN.
Use HTTPS	Select this option if SSL is enabled for the LN user interface. Always select SSL for LN.
Default Tenant ID	Specify the tenant identification assigned to the application, if applicable. For example, infor is typically the tenant ID.

4 Test whether the LN user interface is accessible

Sign out from the Infor Ming.le suite, and log on to it again with the site collection administrator account. You should see the user interface for LN when you click the Infor Ming.le toolbar icon associated with LN.

Configuring LN application and user properties in Infor Federation Services (IFS)

The information below is applicable if Single Sign On with Infor Federation Services (IFS) is used.

For information on configuring Infor Federation Services (IFS) for the Web UI application, see "Configuring Infor Federation Services" in the *Infor Enterprise Server - Single Sign On User Guide*.

After configuring IFS for the Web UI application, complete the following procedure to allow users to have access to the LN Web UI application tab in Infor Ming.le.

For details, see the *Infor Federation Services Administration Guide*.

Procedure

1. Sign in to IFS

   Open the following URL and sign in to the IFS application with a user account that is assigned to the Application Admin security role.

   `https://[IFS server]:[port]/IFS/`

2. Add "LN" security role and link users to this role

   Complete these steps:

   a. Select **Manage > Master Data** . The Master Data types are listed.
   b. Select the "Security Role" Master Data type and click **Details** to display the Security Role details.
   c. In the left pane, click **New**.
   d. In the right pane, specify this information:
      - **Node name**

        Specify "LN".
      - **Description**

        Specify a description for the new role.
   e. In the **Users in this Instance** pane, click **New** to start the Add Users dialog.
   f. Select the users that must use the LN application and click **OK**. The selected users are displayed in the **Users in this Instance** pane.

      Note: alternatively, you can use the Users page to link users to the "LN" role. To open this page, select **Manage > Users** . On the Users page you can also synchronize and/or upload users from Active Directory to the IFS application. See the *Infor Federation Services Administration Guide*.
   g. Click **Submit**.

3. Link "LN" security role to LN application

   Complete these steps:

   a. Select **Configure > Applications** .
   b. On the Applications list page, select the LN application. The available security roles are displayed in the **Security Roles** pane.
   c. Select the "LN" role and click **Submit**.

Adding users to the LN user group

The information below is applicable if Single Sign On with Integrated Windows Authentication (IWA) is used.

For information on configuring Integrated Windows Authentication (IWA) for the Web UI application, see "Configuring Integrated Windows Authentication" in the *Infor Enterprise Server - Single Sign On User Guide*.

After configuring IWA for the Web UI application, complete the following procedure to allow users to have access to the LN Web UI application tab in Infor Ming.le.

To add users to the LN user group:

1. Log on as site collection administrator to the Infor Ming.le site.
2. Click the LN icon on the Infor Ming.le toolbar to ensure that you are on the LN home site.
3. Select **Site Actions > Site Permissions** .
4. Add users or groups to the list by clicking **Grant Permissions** in the ribbon. You can create groups with different permissions. The minimal permission required is Read.
5. Click **OK**.

Installing the Help Files for LN

The LN online help files are not included in the Infor Ming.le-LN Plug-in. To access the online help within Infor Ming.le, you must add the help files to the server where Infor Ming.le is installed.

Complete these steps:

1. Download the help files from Infor Support Solution #22944448.
2. Create an “Infor.LN” folder in the "%PROGRAMFILES%\Common files\Microsoft Shared\Web Server Extensions\14\TEMPLATE\LAYOUTS" folder.
3. Create a “help” folder in the new "Infor.LN” folder.
4. Unzip the contents of the LN help files, baanerp_ *.zip, EnterpriseServer_*.zip, webtop_*.zip, into the new "help” folder.

After you install these files and you access the LN sub-site in Infor Ming.le, you see the LN documentation in the Documentation context application.

The default LN version is B61Ua7stnd. This version contains the FP7 online help and PDF documentation. If you create multiple LN versions, you must complete additional steps to view the online help and PDF documentation of the additional LN versions.

See "Viewing online help of other versions" and "Viewing PDF documentation of other versions".

Viewing online help of other versions

This section provides an example on how to view online help of other versions.

Example - Viewing FP6 online help

To view the FP6 online help:

1. Install the FP6 online help on the Infor Ming.le Server. A folder named "B61Ua6stnd" is created.
2. Specify B61Ua7stnd as Application Version in Infor Ming.le.
3. Start a session in Infor Ming.le and press F1. A window pops up.
4. To maximize the window and view the URL, press F11.

   For example, if you press F1 in the Sales Order - Lines (tdsls4100m900) session, the URL has this format:

   ```
   https://[server name].pmm.com/_layouts/Infor.LN/help/en-US/ln/B61Ma6/
   default.html?helpcontent=help/td/pur/tdpur4100m900.html^tdpur400.otad&infor
   ThemeName=InforBlue
   ```

5. The version in the URL, B61Ma6, is retrieved from the LN server to which you are connected. This version must correspond with a folder on the Infor Ming.le server. Therefore, complete these steps:
   a. If no "B61Ma6" folder exists, create a copy of the B61Ua6stnd folder that was created during the installation of the FP6 help.
   b. Rename the new folder to “B61Ma6”.

Viewing PDF documentation of other versions

The default LN version is B61Ua7stnd. This version shows the FP7 PDF documentation.

To view documentation of other versions:

1. In Infor Ming.le, select **Site Actions > View All Site Content > Infor Applications** .
2. Ensure the Application Version of the Infor application matches the name of the folder that was created during the installation of the help files.

   For example, if you installed the FP6 help files, a "B61Ua6stnd" folder is created. To view the FP6 PDF documentation, change the Application Version of the Infor application to "B61Ua6stnd”.

Running multiple LN instances in Infor Ming.le

You can run multiple instances of LN inside a single instance of Infor Ming.le. Each LN instance runs in a separate tab.

Note: Because of the high memory usage of the LN user interface, we do not recommend running multiple instances of LN inside a single instance of Infor Ming.le.

To add an additional LN environment to Infor Ming.le:

1. Log on, as site collection administrator, to the site collection where you want to add the new environment.
2. Click **Home** to navigate to the Infor Ming.le home site.
3. Select **Site Actions > New Infor Ming.le Site** .

4 On the Infor Ming.le Site page, specify this information:

- **Plug-in Name**

  Select **Infor Ming.le-LN Plug-in - Site Collection Level Feature**.

- **Title**

  Specify the name that must be displayed in the new tab. For example, LN Test, or LN Demo.

- **[Infor Ming.le server URL]/<URL name>**

  Specify a URL name, for example, lntest or ln2. This name is used to create the URL for the new sub-site.

Note: The **Application Home URL** field is read-only because it is configured automatically as part of the Infor Ming.le-LN Plug-in.

5 Click **OK**.

6 Refresh the page. The new tab is created. A new icon, with the title of the new site, is displayed in the panel on the left side of the page.

A message is displayed.

7 Create a deployment. Complete these steps:

a Select **Site Actions > View All Site Content** .

b Select **Infor Application Deployments**.

c Click **Add new item**.

d Specify the required information for the new deployment.

See "LN to Infor Ming.le integration" on page 39.

Note: The **Title** and **Logical ID** of the new deployment must differ from the **Title** and **Logical ID** of the already existing LN deployment.

e Click **Save**.

The application is now running in the new tab.

LN Navigator

Infor Ming.le-LN Plug-in users can use the LN Navigator context application to navigate to LN applications and to find applications on code or description.

Dependent on the user profile, the LN Navigator can contain these tabs:

- **Processes**

  This tab contains the DEM Process Browser. Users can navigate to LN applications based on predefined DEM process flows.

- **LN**

  This tab contains a folder tree to navigate through the LN menu structure, and start sessions.

- **Options**
  Use this tab to start sessions by code, and to switch to another LN company number.

See the *Infor Ming.le-LN Plug-in - User Guide (Web UI)*

For details about the installation of the LN Navigator context application, See the *Infor LN Role Based Home Pages Administration Guide*

Support information

The support for the context applications and the corresponding Infor Ming.le technology depends on the combination of the LN application version and LN Tools version.

Note:

- In LN, only Infor Ming.le version 11.0.3 or later is supported.
- For LN 10.2.1 and 10.3, ION v11 is required.

This table shows, per combination of LN application and Tools version, which Infor Ming.le features are supported :

Infor Ming.le features	**Application**	**10.2.1**	**10.3**
	Tools	**10.2.1**	**10.3**
Tasks context application		Yes	Yes
Alerts context application		Yes	Yes
Paparazzi context application		Yes Requires BOD references to be sent as part of JSON message. See these InforXtreme Knowledge Base Articles: • Apps *InforXtreme Knowledge Base Article 1384493*, July 2013 • Tools *InforXtreme Knowledge Base Article 1384449* (weekly 1389216), March 2013	Yes

Infor Ming.le features	Application	10.2.1	10.3
	Tools	**10.2.1**	**10.3**
Sharing LN application drillback links via Infor Ming.le shell		Yes	Yes
Social objects		Yes	Yes
Drillbacks (BODs)		Yes	Yes
Metrics		Yes	Yes
Infor Federation Services - Single Sign-On		Yes	Yes
In-Context BI		Yes	Yes

This table shows, per combination of LN application and Tools version, which other context applications and features, used by Infor LN, are supported:

Context application / Feature	Application	10.2.1	10.3
	Tools	**10.2.1**	**10.3**
Infor LN Navigator		Yes	Yes
Infor LN Home Page		Yes	Yes
Infor LN Session		Yes	Yes
In-Context URL Viewer		No	Yes
Documentation context application		Yes	Yes
In-Context Help		Yes	Yes
Twitter		Yes	Yes
Maps		Yes	Yes
SSO Integrated Windows Authentication		Yes	Yes

Note: For the latest support information, see *InforXtreme Knowledge Base Article 1441844*.

Exchange Synchronizer

10

This chapter describes how to configure and start the Exchange Synchronizer.

The Exchange Synchronizer synchronizes contacts and calendar events between Microsoft Exchange and LN CRM. See "Synchronization of CRM contacts and activities to Microsoft Exchange" in the Infor Web Help.

Prerequisites

One of these Microsoft Exchange versions must be installed on the Exchange server:

- Microsoft Exchange 2007 with SP1 or a higher SP
- Microsoft Exchange 2010
- Microsoft Exchange 2013

Configuring and starting the Exchange Synchronizer

The Exchange Synchronizer runs on the Web UI web server. Before you can start the Exchange Synchronizer, various configuration settings must be specified.

To configure and start the Exchange Synchronizer:

1. Configure Microsoft Exchange
   See "Configuring Microsoft Exchange" on page 50.
2. Make Microsoft Exchange trusted in Tomcat
   See "Making the Exchange server trusted in Tomcat" on page 55.
3. Configure the Exchange Synchronizer in LN
   See "Configuring the Exchange Synchronizer in LN" on page 57.
4. Start the Exchange Synchronizer
   See "Starting the Exchange Synchronizer" on page 58.

Troubleshooting

For an overview of possible problems and solutions, see "Troubleshooting" on page 58.

Configuring Microsoft Exchange

Prerequisites

Basic authentication must be allowed for the Exchange webservice, only on https. In a default Microsoft Exchange Server configuration, basic authentication is allowed.

To enable Basic Authentication on the Exchange Web Services, run the following Exchange command; there is no GUI equivalent to set the Authentication:

```
Set-WebServicesVirtualDirectory -Identity * BasicAuthentication $True
```

To confirm that Basic Authentication is enabled on the Exchange Web Services, run this command:

```
Get-WebServicesVirtualDirectory |FL
```

Verify that the BasicAuthentication parameter has the value ‘True’. See http://technet.microsoft.com/en-us/library/aa997233(EXCHG.80).aspx.

Impersonation

To use the Exchange Synchronizer, impersonation must be allowed and configured on the Exchange Server. See these sections:

- "Configuring Microsoft Exchange" on page 50
- "Configuring Microsoft Exchange" on page 50

This table shows the user account types that are used in the impersonation configuration:

Impersonation User	A user who can impersonate a given user account. The impersonation user can perform operations with the authorizations of the impersonated account, instead of the impersonation user's own authorizations. The user account of the impersonation user matches the Exchange account specified in the MS Exchange Synchronization Settings (ttaad2140m000) session.
Impersonated user	A user for whom changes must be done, by the Exchange Synchronizer, via the impersonation user. The user accounts of the impersonated users match

the E-mail addresses of the users specified in the MS Exchange Synchronization Users (ttaad2141m000) session.

Enabling the impersonation (Exchange Server 2007)

To enable the impersonation, you must grant extended permissions. Complete these steps:

1. Start a Powershell on the Client Access Server.
2. Grant the impersonation user permission to submit an impersonation call through a Client Access Server

   Run this command:

   ```
   Add-AdPermission -Identity (Get-ExchangeServer -Identity "[Client Access Server]").Identity -User "[Impersonation User]" -ExtendedRights ms-Exch-EPI-Impersonation
   ```

3. Grant the impersonation user permission for the account(s) to be synchronized (the so called impersonated accounts)

   To grant impersonation user permission, complete either of these steps:

   a. To grant permission to impersonate a single account, run this command:

      ```
      Add-ADPermission -Identity "[Impersonated User Identity]" -User "[Impersonation User]" -ExtendedRight ms-Exch-EPI-May-Impersonate
      ```

      Repeat this step for each account to be synchronized.

   b. To grant permission to impersonate all accounts for all databases, run this command:

      ```
      Get-MailboxDatabase | ForEach-Object {Add-ADPermission -Identity $_.DistinguishedName -User "[Impersonation User]" -ExtendedRights ms-Exch-EPI-May-Impersonate}
      ```

      Note: Running this command grants the 'May-Impersonate' role to the impersonation user for all your Exchange user mailboxes.

4. Verify the changes

   To verify your changes, run these commands:

   a. Get all accounts that have the permission to submit an impersonation call through the referenced Client Access Server:

      ```
      get-adpermission -identity (get-exchangeserver -identity "[Client Access Server]").identity | where {$_.extendedrights -like "ms-exch-epi-impersonation"} | FL
      ```

   b. Get the impersonated accounts:

      ```
      get-adpermission -identity "[Impersonated User Identity]" | where {$_.extendedrights -like "ms-Exch-EPI-May-Impersonate"} | FL
      ```

For detailed instructions, see http://msdn.microsoft.com/en-us/library/bb204095(v=exchg.80).aspx.

Example

This table shows the parameters that are used in this example:

Client Access Server		server.domain.com
Impersonation user	Domain	Domain
	Username	ImpersonationUser
	Identity	Impersonation User ID
Impersonated user	Domain	Domain
	Username	ImpersonatedUser
	Identity	Impersonated User ID

To enable the impersonation, you run these commands. The step numbers correspond with the step numbers in the "Enabling the impersonation" procedure.

See "Configuring Microsoft Exchange" on page 50.

1. Start a Powershell on the Client Access Server.
2. Grant the impersonation user permission to submit an impersonation call through a Client Access Server

   Run this command:

   ```
   Add-AdPermission -Identity (Get-ExchangeServer -Identity "server.domain.com").Identity -User "Domain\ImpersonationUser" -ExtendedRights ms-Exch-EPI-Impersonation
   ```

3. Grant the impersonation user permission for the account(s) to be synchronized (the so called impersonated accounts)

   Complete either of these steps:

   a. To grant permission to impersonate a single account, run this command:

      ```
      Add-ADPermission -Identity "Impersonated User ID" -User "Domain\ImpersonationUser" -ExtendedRight ms-Exch-EPI-May-Impersonate
      ```

      Repeat this step for each account to be synchronized.

   b. To grant permission to impersonate all accounts for all databases, run this command:

      ```
      Get-MailboxDatabase | ForEach-Object {Add-ADPermission -Identity $_.DistinguishedName -User "Domain\ImpersonationUser" -ExtendedRights ms-Exch-EPI-May-Impersonate}
      ```

4. Verify the changes

   To verify your changes, run these commands:

   a. Get all accounts that have the permission to submit an impersonation call through the referenced Client Access Server:

      ```
      get-adpermission -identity (get-exchangeserver -identity "server.domain.com").identity | where {$_.extendedrights -like "ms-exch-epi-impersonation"} | FL
      ```

      This figure shows an example:

```
Mark Machine: nlbavwpmmcaht1 | Scope: pmm.com
[PS] C:\Windows\System32>get-adpermission -identity (get-exchangeserver -identit
y "nlbavwpmmcaht1.pmm.com").identity | where {$_.extendedrights -like "ms-exch-e
pi-impersonation"} | FL


User                : PMM\svc-wsdltest
Identity            : NLBAVWPMMCAHT1
Deny                : False
AccessRights        : {ExtendedRight}
ExtendedRights      : {ms-Exch-EPI-Impersonation}
IsInherited         : False
Properties          :
ChildObjectTypes    :
InheritedObjectType :
InheritanceType     : All

User                : PMM\Devimpsync
Identity            : NLBAVWPMMCAHT1
Deny                : False
AccessRights        : {ExtendedRight}
ExtendedRights      : {ms-Exch-EPI-Impersonation}
IsInherited         : False
Properties          :
ChildObjectTypes    :
InheritedObjectType :
InheritanceType     : All
```

b Get the impersonated accounts:

```
get-adpermission -identity "Dev impsync" | where {$_.extendedrights -
like "ms-Exch-EPI-May-Impersonate"} | FL
```

This figure shows an example:

```
Machine: nlbavwpmmcaht1 | Scope: pmm.com
[PS] C:\Windows\System32>get-adpermission -identity "Pmm WSDL Test" | where {$_.
extendedrights -like "ms-Exch-EPI-May-Impersonate"} | FL

User                 : PMM\svc-wsdltest1
Identity             : pmm.com/Business Testing/WSDL Testing/PMM WSDL Test
Deny                 : False
AccessRights         : {ExtendedRight}
ExtendedRights       : {ms-Exch-EPI-May-Impersonate}
IsInherited          : False
Properties           :
ChildObjectTypes     :
InheritedObjectType  :
InheritanceType      : All

User                 : PMM\svc-wsdltest2
Identity             : pmm.com/Business Testing/WSDL Testing/PMM WSDL Test
Deny                 : False
AccessRights         : {ExtendedRight}
ExtendedRights       : {ms-Exch-EPI-May-Impersonate}
IsInherited          : False
Properties           :
ChildObjectTypes     :
InheritedObjectType  :
InheritanceType      : All

User                 : PMM\svc-wsdltest3
Identity             : pmm.com/Business Testing/WSDL Testing/PMM WSDL Test
Deny                 : False
AccessRights         : {ExtendedRight}
ExtendedRights       : {ms-Exch-EPI-May-Impersonate}
IsInherited          : False
Properties           :
ChildObjectTypes     :
InheritedObjectType  :
InheritanceType      : All

User                 : PMM\svc-wsdltest4
Identity             : pmm.com/Business Testing/WSDL Testing/PMM WSDL Test
Deny                 : False
AccessRights         : {ExtendedRight}
ExtendedRights       : {ms-Exch-EPI-May-Impersonate}
IsInherited          : False
Properties           :
ChildObjectTypes     :
InheritedObjectType  :
InheritanceType      : All

User                 : PMM\svc-wsdltest5
Identity             : pmm.com/Business Testing/WSDL Testing/PMM WSDL Test
Deny                 : False
AccessRights         : {ExtendedRight}
ExtendedRights       : {ms-Exch-EPI-May-Impersonate}
IsInherited          : False
Properties           :
ChildObjectTypes     :
InheritedObjectType  :
InheritanceType      : All
```

Enabling the impersonation (Exchange Server 2010 and higher)

To assign permissions to accounts, Microsoft Exchange Server 2010 and higher use Role-Based Access Control (RBAC).

See http://msdn.microsoft.com/en-us/library/exchange/bb204095(v=exchg.140).aspx.

For example, to enable impersonation with user 'syncuser' for all users:

1 Open the Exchange Management Shell.

2 Run this command:

```
New-ManagementRoleAssignment –Name:exchangeImpersonation -
Role:ApplicationImpersonation –User:syncuser
```

Making the Exchange server trusted in Tomcat

When the Exchange Synchronizer is used, messages are sent between the Web UI server and the server where the Exchange webservice runs (the Client Access Server). These messages are sent in https. The Web UI server must trust these messages, so it must trust the Client Access Server. Therefore, you must import the certificate into the truststore.

Procedure

Complete these steps:

1 Get the certificate from the Exchange instance.

To complete this step successfully, you need the URL of the Client Access Server. The URL is specified in the **MS Exchange URL** field of the MS Exchange Synchronization Settings (ttaad2140m000) session.

Assuming that Internet Explorer 10 is used, complete these steps to obtain the HTTPS certificate of the Client Access Server:

a Start the browser and navigate to the Client Access Server URL.

b Click the padlock in the browser's address bar. The website identification is displayed.

c Select **View certificates**.

d Select the **Details** tab.

e Click **Copy to File**. The Certificate Export Wizard starts.

f Click **Next** and select **DER encoded binary X.509**.

g Save the file and make a note of the name of the resulting `.cer` file.

h Close the browser.

2 Import the certificate into the truststore of the Java VM of Tomcat.

Complete one of these steps:

- Create a truststore and import the certificate:

  If there is no trust/keystore for the VM, run this command to create a store and import the certificate into the store:

  ```
  keytool -import -alias [certificate alias] -file [certificate file of
  step 1] -keystore [truststore file to be created]
  ```

Example: `keytool -import -alias pmm -file NLBAVWPMMCAHT1.PMM.com.cer -keystore truststoretest.jks`

After running the command, you must specify your password twice. Then confirm that you trust the certificate.

- Import the certificate into an existing key/truststore:

  If the truststore exists, run this command to import the certificate:

  `keytool -import -alias [certificate alias] -file [certificate file of step 1] -keystore [filename of existing truststore]`

  Example: `keytool -import -alias pmm -file NLBAVWPMMCAHT1.PMM.com.cer -keystore truststoretest.jks`

Note:

- Keytool is present in any java JDK.
- For the certificate alias, you can specify anything. Ensure you remember what the certificate alias refers to. The name must be unique.

3 Set the truststore in the Java VM.

For a Windows-based web server, complete the steps below to set the truststore in the Java VM that is used by Tomcat. Replace <password> with the password used during step 2 above; replace <filename> with the full pathname of the keystore file, such as `C:\keystores\truststoretest.jks`, resulting from step 2 above:

a Run the Windows registry editor as administrator.

b Navigate to the registry node of the Java parameters of the Tomcat service for Web UI, such as `Computer\HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Apache Software Foundation\Procrun 2.0\InforEServerExtensions\Parameters\Java`

c Edit multi-string key Options and add the following value data:

```
-Djavax.net.ssl.keyStore=<filename>
-Djavax.net.ssl.keyStorePassword=<password>
-Djavax.net.ssl.trustStore=<filename>
-Djavax.net.ssl.trustStorePassword=<password>
```

d Save the changes and exit the registry editor.

e Restart the Tomcat service to activate the registry changes.

For a non-Windows based web server, consult the web server documentation on how to add these Java VM options:

```
-Djavax.net.ssl.keyStore=<filename>
-Djavax.net.ssl.keyStorePassword=<password>
-Djavax.net.ssl.trustStore=<filename>
-Djavax.net.ssl.trustStorePassword=<password>
```

Configuring the Exchange Synchronizer in LN

The Exchange Synchronizer runs on the Web UI web server. Before you can start the Exchange Synchronizer, configuration settings must be specified on the LN server.

To configure the Exchange Synchronizer:

1. Log on to the LN server.
2. When using the synchronizer, the table sharing of the tables which are synchronized is impacted. In LN you can have multi site setups such as single logistic/multi finance and multi logistic/multi finance. MS Exchange is not aware of these company structures, so you cannot synchronize activities in a specific company. Therefore, you must ensure these tables are shared:
   - Contacts:
     - tccom140 - Contacts
     - tccom190 - Contacts Synchronization Table
   - Activities:
     - tccom600 - Activities
     - tccom605 - Attendees
     - tccom690 - Activity Synchronizations
     - tccom691 - Activity Synchronization Users
   - All tables related to the tables mentioned

   See "Table Sharing Modeler" in the Enterprise Server online help.
3. Select the **Synchronize Contacts** check box in the COM Parameters (tccom0000s000) session if you want to enable contact synchronization. If this check box is selected, you must also specify ISO codes in the Countries (tcmcs0510m000) and Languages (tcmcs0146m000) sessions.
4. Select the **Synchronize Activities** check box in the COM Parameters (tccom0000s000) session if you want to enable calendar synchronization.
5. Start the MS Exchange Synchronization Settings (ttaad2140m000) session and define a configuration.
6. In the MS Exchange Synchronization Settings (ttaad2140m000) session, click **Users**. The MS Exchange Synchronization Users (ttaad2141m000) session starts. Specify the users that require synchronization of their contacts and calendars.

See the session help.

Note: To synchronize activities for attendees of the **Employee** type, who are specified in the Attendee (tccom6105m000) session, the following must be applicable for the employee:

- The **User** field is specified in the Employees - General (tccom0101m000) session.
- The **E-Mail** field is specified in the Employees - People (bpmdm0101m000) session.
- The **Email Address** in the MS Exchange Synchronization Users (ttaad2141m000) session is equal to the **E-Mail** field in the Employees - People (bpmdm0101m000) session.

Invitations to an activity can only be sent to the attendees' calendars if the activity's **Meeting Organizer**, as specified in the Attendee (tccom6105m000) session, is also defined in the MS Exchange Synchronization Users (ttaad2141m000) session. The reason for this is that MS Exchange generates the invitations for the organizer.

Starting the Exchange Synchronizer

To start the Exchange Synchronizer:

1. To open the Synchronizer Control page, in the Web UI Administration Console, select **Infor LN > Exchange Synchronizer** .
2. Specify the required information, such as the CRM environment for which the Exchange Synchronizer must be started. See the online help of the Synchronizer Control page.
3. Click **Start**. The Exchange Synchronizer is now running for the specified environment.

Repeat this step for each CRM environment for which the Exchange Synchronizer must be started.

Note: To stop the Exchange Synchronizer for an environment, select the environment in the Synchronizer Control page and click **Stop**.

Troubleshooting

This table shows possible problems and solutions:

Error Message/Situation	Explanation	Solutions
`Synchronizer ExecutionException occured attempting to get a Future java.util.concurrent.ExecutionException: com.sun.xml.ws.client.ClientTransportException: request requires HTTP authentication: Unauthorized`	This error occurs if the Exchange Synchronizer cannot gain authorization to the Microsoft Exchange Webservice.	In the MS Exchange Synchronization Settings (ttaad2140m000) session, complete these steps: • Verify the **User** and **Password** of the MS Exchange User. • Check if the **Domain** is correctly specified.
`MsExchangeModule Failed to subscribe to Exchange with URL [http://nlbavwtech3.infor.com:8070/websync/ExchangeNotificationServicePort]` `com.sun.xml.ws.client.ClientTransportException: request requires HTTP authentication: Unauthorized`	This error occurs if the Exchange Synchronizer is not authorized to access the Microsoft Exchange service.	Verify the password that is specified in the **MS Exchange Administrator Settings** section in the MS Exchange Synchronization Settings (ttaad2140m000) session.
`Synchronizer ExecutionException occured attempting to get a Future java.util.concurrent.ExecutionException: com.sun.xml.ws.client.ClientTransportException: HTTP transport error:`	The certificate for the Exchange server was not successfully added to the keystore of the Tomcat server.	This could be one of several problems with the adding of the certificate. Possibly, the certificate was not added, or the certificate may be corrupted. For details on how to add the certificate for the Exchange server to the keystore of the Tomcat server, see "Making the Exchange server trusted in Tomcat" on page 55.

Error Message/Situation	Explanation	Solutions
`javax.net.ssl.SSLHandshakeException: sun.security.validator.ValidatorException: PKIX path building failed: sun.security.provider.certpath.SunCertPathBuilderException: unable to find valid certification path to requested target`		
`java.util.concurrent.ExecutionException: com.sun.xml.ws.client.ClientTransportException: request requires HTTP authentication: Unauthorized`	“Impersonation user” is not allowed to log on for the web-service	• In the MS Synchronization Settings, a wrong user password is specified for the MS Exchange User. Specify the correct password. • Basic authentication is not allowed. For details on how to enable basic authentication, see "Configuring Microsoft Exchange" on page 50.
`javax.xml.ws.soap.SOAPFaultException: The server to which the application is connected cannot impersonate the requested user due to insufficient permission`	“Impersonation user” has insufficient permissions	• Ensure you executed all impersonation steps described in the "Configuring Microsoft Exchange" section, and verify the result. See "Configuring Microsoft Exchange" on page 50. • Ensure that the Exchange User that is specified in the MS Exchange Synchronization Settings (ttaad2140m000) session is the same user that is defined while executing the scripts.
Nothing is synchronized		• In the Web UI Administration Console, check whether the Exchange Synchronizer is running. • Check the error log and restart the Exchange Synchronizer. • Ensure at least one user is set to **Active** in the MS Exchange Synchronization Users (ttaad2141m000) session.
Nothing is synchronized for a specific user		• In the Web UI Administration Console, check whether the Exchange Synchronizer is running. • In the MS Exchange Synchronization Users (ttaad2141m000) session, check if the user is set to active. • Restart the Exchange Synchronizer.

System Requirements

A

This appendix supplies information about the web server system requirements and the desktop system requirements.

For more specific information, see *InforXtreme Knowledge Base Article 22881401*.

See also: "Prerequisites" in the *Infor Enterprise Server - Single Sign On User Guide*

System requirements for the web server

Required disk space

This table shows the required disk space per component:

Component	Required disk space (MB)
Web UI Code	200
Infor LN or Baan Online Help documents (for each language)	40
Report Viewer	200

Extra disk space is required when you convert 4GL reports to XML report designs. For details, refer to *Infor LN - Development Tools Development Guide*.

Java servlet container

The web server requires a Java servlet container that implements servlet API 2.4 or higher.

The following table shows a number of servlet containers and application servers supported with Web UI. These servlet containers are supported on various Operating Systems. For information about the supported Operation Systems, refer to the servlet container's documentation.

Supported Java servlet containers	
Product	**Provider**
WebSphere Application Server v8.5.5 **Note:** Web UI supports WebSphere Application Server v8.5.5. However, the LN Report Viewer requires Tomcat.	IBM: http://www.ibm.com
Tomcat 7.0.x	Apache: http://tomcat.apache.org/
Tomcat 8.0.x **Note:** Support for this version of Tomcat will end during 2018, see https://tomcat.apache.org/tomcat-80-eol.html.	
Tomcat 8.5.x	
JBoss Application Server 6, version 6.1.0	Red Hat/JBoss http://www.jboss.org

Note: From Tomcat 7, the default value of the **useHttpOnly** Context attribute equals **true**. To run Web UI the value of this attribute must be **false**. If you upgrade from a previous version of Tomcat, we recommend that you check the `[CATALINA_HOME]/conf/Catalina/localhost/webui.xml` file and ensure that the Context element for Web UI has this attribute setting: `useHttpOnly="false"`.

See this example:

```
<Context path="/webui" docBase="c:\webui\webapp" debug="0"
useHttpOnly=”false” >
</Context>
```

Java Runtime Environment

Web UI requires Java SE 8 and is compatible with Java SE 7. A recent build of Oracle Java SE 8 is included in the installer.

Time zone data

To accommodate daylight saving time changes in all time zones, the web server requires a Java Runtime Environment (JRE) containing the most recent time zone data.

Depending on the type of your Web UI installation, the following actions are required:

Actions to ensure the JRE contains the most recent time zone data	
You manually installed a JRE, and manually deployed Web UI into a servlet container.	Complete one of these steps: • Install the latest JRE version. • Run the Java SE Platform TZupdater Tool. See http://www.oracle.com/technetwork/java/javase/tzupdater-readme-136440.html.

Actions to ensure the JRE contains the most recent time zone data	
You installed Web UI through the latest version of the Enterprise Server Installer.	No action is required, because the installation contains a JRE version with recent time zone data.
You installed Web UI through an older version of the Web UI installer, such as the Web UI 4.2 installer.	The installation contains a JRE with outdated time zone data. To correct this, complete one of the following steps: • Run the TZupdater Tool. • Uninstall the old Web UI version and install the latest Web UI version. Note: When you uninstall Web UI, you can decide to keep the files that contain the Web UI configuration settings. After the new installation, you can move these files to the appropriate folders under the new Web UI installation folder.

Note: If no Java environment is installed on the Web UI server, you are prompted to install Java when you start Web UI.

Java heap space

Ensure the Java heap space is sufficient. If the heap space is too small, running multiple 'big' sessions in Web UI (inside a browser) can cause "OutOfMemoryError" messages. To prevent these errors, you can increase the heap space. Infor recommends a heap space of 128 Mb.

To ensure an adequate heap space, complete the following steps:

1. Check the allocated heap space

   Complete the following steps:

   a. In the system tray, right-click the Java icon and select **Open [version number] Console**. The Java Console starts.
   b. Type `s`. The system and deployment properties are displayed.
   c. View the "javaplugin.maxHeapSize" property. The displayed value is in Mb.

      For example: 96m means 96 Mb.

2. If necessary, increase the allocated heap space

   If the allocated heap space is less than 128 Mb, complete the following steps:

   a. Open the Windows Control Panel.
   b. Click **Java**. The Java Control Panel starts.
   c. Go to the **Java** tab.
   d. In the **Java Runtime Environment Settings** group, click **View**. The Java Runtime Environment Settings dialog starts.
   e. Perform this step for each row in the dialog.

      Double-click the **Runtime Parameters** column and specify this value:

      `-Xmx128m -Djavaplugin.maxHeapSize=128m`

Note: If you perform an update of the JRE, a new entry is added to the list of JREs. After an update, you must add the same parameters for the new version.

User limits (Linux)

On a Linux web server you must set the following limits for the user who starts the web server:

User limit	Value
nofile (soft limit)	65535
nofile (hard limit)	65535

Set these limits in the /etc/security/limits.conf file.

Example

The web server is started by user root. You specify the following in the /etc/security/limits.conf file:

```
root    soft    nofile  65535

root    hard    nofile  65535
```

Environment variables

DISPLAY

On Linux/Unix-systems, the DISPLAY environment variable must be set to see the charts of Infor LN 6.1. These chart images are generated on the web server.

System requirements for the desktop

The "Client Requirement" chapter in the *Infor Ming.le with Infor ES Web UI Sizing and Deployment Guide* describes some hardware and software requirements. You can obtain this document through *InforXtreme Knowledge Base Article 22881401*. In addition, note the information in the following sections.

Windows desktop

If Web UI is run in the browser using the Java plug-in, Microsoft Internet Explorer 10 and 11 are supported.

We recommend that you update the browser frequently.

Web UI requires installation of the Java Runtime Environment and browser plug-in. Web UI runs on Oracle Java SE 7 and 8.

Web UI is supported on the Windows 8¸ 8.1, and 10 operating systems, but only if the browser is running in Desktop mode.

If Web UI is run using Java Web Start, Web UI requires installation of the Java Runtime Environment. Web UI runs on Oracle Java SE 7 and 8.

Linux desktop

Web UI requires installation of the latest version of Oracle Java 7 JRE.

If Web UI is run in the browser, a browser with NPAPI plug-in support and the Java browser plug-in is required. Alternatively, Web UI may be run using Java Web Start.

See "Using Java Web Start" on page 19.

For an overview of limitations when using Web UI on non-Windows platforms, see *InforXtreme Knowledge Base Article 1350677*.

To open files that are exported to Excel, we recommend that you install these packages:

- OpenOffice package
- The xdg-open package

Instructional deployment examples

B

This appendix contains several examples to deploy Web UI.

Deploying Web UI on IBM WebSphere Application Server v8.5.5

Before you begin the deployment of Web UI, consult the IBM WebSphere v8.5.5 documentation and ensure that these prerequisites are met:

- IBM WebSphere Application Server v8.5.5 must be up and running
- The IBM WebSphere SDK Java Technology Edition installation package (Version 7.x.x.x) must be installed. This is required because Web UI supports Java 7 and later.

You can use the following procedure to perform these actions:

- Deploy Web UI for the first time (first installation).
- Deploy a new Web UI version in an existing environment (Web UI upgrade).

Note:

- Before you start an upgrade, copy the `webtopProperties.xml` and `smartlink.properties` files from the `[installation-directory]\webtop\config` directory to a directory that will not be overwritten by the new installation. After the upgrade, you can restore the files.
- WebSphere does not always provide feedback when it is processing changes. Some processes take minutes.

Preparations

1. Specify global security settings.
   a. In the WebSphere Integrated Solutions Console, open the **Security** section and select **Global Security**.
   b. In the **Global Security** section, under **Authentication**, expand **Web and SIP security** and click the Single sign-on (SSO) link.

c In the **Single sign-on (SSO)** section, ensure that **Set security cookies to HTTPOnly to help prevent cross-site scripting attacks** is cleared.

d Click **OK** and click **Save directly to the master configuration**.

2 Specify application server security settings.

a In the WebSphere Integrated Solutions Console, open the **Servers** section and select **Server Types > WebSphere application servers**.

b Open the **Configuration** properties by clicking the server link.

c Under **Container Settings**, click the Session management link.

d In **Session management**, click the Enable cookies link.

e In **General Properties**, ensure that **Set session cookies to HTTPOnly to prevent cross-site scripting attacks** is cleared.

f Click **OK** and click **Save directly to the master configuration**.

3 Activate the usage of Java 1.7.

a In the WebSphere Integrated Solutions Console, open the **Servers** section and select **Server Types > WebSphere application servers**.

b Open the **Configuration** properties by clicking the server link.

c Under **Server Infrastructure**, click the Java SDKs link.

d Select the 1.7 version and click **Make Default**.

e Click **OK** and click **Save directly to the master configuration**.

f Restart the WebSphere server.

4 Set the Java heap size.

a In the WebSphere Integrated Solutions Console, open the **Servers** section and select **Server Types > WebSphere application servers**.

b Open the **Configuration** properties by clicking the server link.

c Under **Server Infrastructure**, expand **Java and Process Management** and click the Process definition link.

d On the Process definition Configuration page, under **Additional Properties**, click **Java Virtual Machine**.

e Under **Additional Properties**, click the Java Virtual Machine link.

f Ensure that the values in the **Initial Heap size** and **Maximum Heap size** fields are at least 1024 MB.

g If you changed the values, click **Apply** and **OK**, and click **Save directly to the master configuration**.

h Restart the WebSphere server.

Installation

To deployWeb UI:

1 If you have not already done so, save the configuration and then restart your WAS servers.

2 Start the IBM WebSphere Administrative Console.
3 Open the **Applications** section.
4 Select **New Application**.
5 Under **Install a New Application**, select **New Enterprise Application**.
6 Specify the **Full path** to the `webtop.war` file. We recommend that you store the war file on the local file system.
7 Click **Next**.
8 In the next screen also click **Next**.

   The first page of a 6-step wizard is displayed.

   Complete these steps in the wizard:

   a Step 1: Click **Next**.
   b Step 2: This is an important step. In this setup you must ensure that the Web UI module is also configured in the plug-in configuration file.
      - In the **Clusters and servers** field, select the correct server.
      - Select the WebUI module check box in the list and click **Apply**.
      - Click **Next**.
   c Step 3: Click **Next**
   d Step 4: In the **Context Root** field, specify **/webui** , and click **Next**.
   e Step 5: Click **Next**.
   f Step 6: Click **Finish**.

   Web UI is now being installed. Wait until the installation is finished.
9 Check the displayed messages for warnings or errors.
10 Click **Save directly to the master configuration**. The deployment is now finished.

Starting the WebUI application

1 Start the IBM WebSphere Administrative Console.
2 Open the **Applications** section.
3 Expand **Application Types** and open **WebSphere enterprise applications**.
4 In the Enterprise Applications page, select the **webtop_war** application and click **Start**.

You can access the Web UI through these URLs:

- `http://[hostname]:[port]/[webui-root]/servlet/admin`, for administrator login.
- `http://[hostname]:[port]/[webui-root]/servlet/jws/admin` , for administrator login.
- `http://[hostname]:[port]/[webui-root]/servlet/login`, for user login with server authentication.
- `http://[hostname]:[port]/[webui-root]/servlet/jws/login`, for user login with server authentication.

- `http(s)://[hostname]:[port]/[webui-root]/servlet/fslogin`, for user login using Integrated Windows Authentication. To use this, various settings must be defined. See the *Infor Enterprise Server - Single Sign On User Guide*.

Deploying Web UI and Report Viewer on Tomcat

To keep the Tomcat application "clean", install your applications in a directory structure outside the Tomcat file hierarchy.

For example, this table shows the structure you must use in Linux:

`/opt/webapps`	Parent directory.
`/opt/webapps/webtop`	Directory for the Web UI application.
`/opt/webapps/config`	Directory for the configuration files, and user profiles, of Web UI.
`/opt/webapps/reportviewer`	Directory for the Report Viewer application.
`/opt/webapps/warfiles`	Directory for the warfiles, "`webtop.war`" and "`reportviewer.war`."

In Windows, use a similar structure:

- `C:\webapps`
- `C:\webapps\webtop`
- `C:\webapps\config`
- `C:\webapps\reportviewer`
- `C:\webapps\warfiles`

To deploy the Report Viewer and Web UI:

1. Create the directories mentioned previously, and put the warfiles in the `warfiles` directory.
2. Manually unzip the warfiles into their application directories:

   For Linux:

```
cd /opt/webapps/webtop
$JAVA_HOME/bin/jar xf /opt/webapps/warfiles/webtop.war
cd /opt/webapps/reportviewer
$JAVA_HOME/bin/jar xf /opt/webapps/warfiles/reportviewer.war
```

   For Windows:

```
cd C:\webapps\webtop
%JAVA_HOME%\bin\jar.exe xf c:\webapps\warfiles\webtop.war
cd C:\webapps\reportviewer
%JAVA_HOME%\bin\jar.exe xf c:\webapps\warfiles\reportviewer.war
```

3 Create a configuration file "`webtop.xml`" to specify a new context for Tomcat, and save it in the `/opt/webapps` or `C:\webapps` directory. The file must contain the following:

```
<Context docBase=”/opt/webapps/webtop” useHttpOnly=”false”>
  <Parameter name="WebtopAdminPassword"
    value="TopSecret"
    override="false"/>
  <Parameter name="WebtopConfigPath"
    value="/opt/webapps/config"
    override="false"/>
  <Logger className="org.apache.catalina.logger.FileLogger"
    prefix="localhost_webtop."
    suffix=".txt"
    timestamp="true" />
</Context>
```

Note:

- The paths in this example are in Linux style. For Windows, change them accordingly.
- The "context path" that Tomcat uses is derived from the file name: If you use the default name "`webtop.xml`", Tomcat will find your application at the "`http://[hostname]:[port]/webtop`" URL. If you plan to have multiple versions of Web UI on the same server, you can use a "context path" other than "`/webtop`", such as "`/webtop8_7`". In this case, you must rename your configuration file to "`webtop8_7.xml`". The URL to access the Web UI application changes accordingly to "`http://[hostname]:[port]/webtop8_7`", for example.
- The value of the "WebtopAdminPassword" parameter specifies the password that is required to log on to the Web UI Administration Console. Change it to an appropriate value.

4 To specify a new context for Tomcat, create a configuration file "`reportviewer.xml`", and save it in the `/opt/webapps` or `C:\webapps` directory. The file must contain the following:

```
<Context docBase="/opt/webapps/reportviewer">
  <Logger className="org.apache.catalina.logger.FileLogger"
    prefix="localhost_reportviewer."
    suffix=".txt"
    timestamp="true"/>
</Context>
```

Note:

- The paths in this example are in Linux style. For Windows, change them accordingly.
- It is recommended not to change the name of the configuration file. Web UI expects the Report Viewer to be present at the context path "`/reportviewer`". If you decide to use another configuration file name (and therefore another context path), you must use the Report Viewer page in the Web UI Administration Console to change the location where Web UI expects to find the Report Viewer: Start the Web UI Administration Console and open the Report Viewer page. In the **Virtual directory of Report Viewer application** field, specify the new context path (without the leading "/"), and click **Submit**.

5 Copy both context files ("`webtop.xml`" and "`reportviewer.xml`") into the "`conf/Catalina/localhost`" directory inside your Tomcat installation.

   Note: On Windows, you can find the Tomcat installation in a location such as `C:\Program Files\Apache Software Foundation\Tomcat 7.0.30`. On Linux, the administrator might have chosen a location such as `/opt/tomcat7.0.30" or "/usr/share/tomcat7.0.30`.

6 Stop and restart Tomcat to ensure the applications are deployed.

Deploying Web UI on JBoss 6.1

To deploy Web UI on JBoss 6.1:

1 Create a `webui.war` directory under `[JBOSS 6.1 installation directory]/server/default`.
2 Unzip the warfile into this new directory.
3 In the top of `run.bat`, add this line:

   ```
   set JAVA_OPTS=-Xms128M -Xmx512 -XX:MaxPermSize=256M
   ```

4 Restart JBoss.

Prerequisites for the Infor LN server

C

This appendix contains information about the requirements for the Infor LN or Baan Server. The table below provides an overview of the minimum requirements for the Infor LN or Baan server per supported Infor LN or Baan release.

	Porting set	Tools Service Pack	Tools Solutions	Application Service Pack	Application Solutions
Infor Baan IV c4	6.1c.07.03	SP15	22918281 22915993	SP14	-
Infor Baan 5.0c	7.1d.06	SP15	22866553 22915840 22934184	SP11	22901929 22917198
Infor LN 6.1	8.5a	8.5	-	-	-

The following section provides some detailed information on the prerequisites of different Infor LN releases.

Conversion of personalization settings

If your previous Web UI version was lower than 8.6, a conversion of the session personalizations is required. For details, refer to the *Enterprise Server 8.7 - Technical Notes*.

If your previous Web UI version was 8.6 or higher, no conversion is required.

SLM license (not needed for Infor LN 6.1 SP2 and up)

You must have a server with Infor Solution License Manager 2.1 (or higher) installed. The SLM client needs to be installed on the LN Server. The Infor Solution License Manager setup can be found on the Infor Enterprise Server installation media.

To license Web UI, you must perform these actions:

- Register product ID 7002 to the SLM server; the license type is Server License
- Assign the required server to this product ID.

  Web UI licensing is based on the number of Arp servers. So you need to register each LN server here that will be used via Web UI.

  To obtain the server ID, you can run the BclmID program on the LN server. You can find BclmID in the SLM directory.

  Note: For some older versions of the LN server, the server does not expect the BclmID. In this case you need to provide the ID returned by [BSE]/bin/hostid for creating the server license.

Refer to *Infor Solution License Manager - Installation and Configuration Guide* for more information about how to configure the SLM server.

Prerequisites for Infor Baan IV c4

Install tools solutions

Download PMC solution 22918281.

Note: This solution needs a number of pre-requisite solutions. Therefore, you must run the following sessions:

- Generate FTP Script (ttpmc2211m000)
- Download, Scan, and Connect Solution (multi-Level) (ttpmc2210m000)

After these sessions, you can install the solution on the backend with the Process Solutions (ttpmc2101m000) session.

XML Models

Determine if the XML MODELS are present on the Infor LN or Baan Server in the $BSE/lib/XML_MODELS directory.

The XML_MODELS directory must contain three XML files. If this is not the case please download the three XML files from:

- http://secure2.support.baan.com/ftpdownload/updates/B40_c/XFE_model_domain.xml
- http://secure2.support.baan.com/ftpdownload/updates/B40_c/XFE_model_form.xml
- http://secure2.support.baan.com/ftpdownload/updates/B40_c/XFE_model_session.xml

Register Web UI-enabled sessions

Not every Baan IV session is suitable to run in the Web UI. Therefore, before you can load the cache, you must run the Conversion of Web UI Enabled Sessions (ttconwebtop) session. This session adds a property to the sessions, which indicates whether a session can be run in the Web UI. Take the following steps to initialize this property to the correct value:

1 In Worktop, enter the **Run program** command on the Infor LN or Baan back end.
2 Start the ttconwebtop session and then click **Continue**.

Prerequisites for Infor Baan 5.0c

XML Models

Determine if the XML MODELS are present on the Infor LN or Baan Server in the $BSE/lib/XML_MODELS directory:

The XML_MODELS directory must contain three XML files. If this is not the case please download the three XML files from:

- http://secure2.support.baan.com/ftpdownload/updates/7.1_a_tt/XFE_model_domain.xml
- http://secure2.support.baan.com/ftpdownload/updates/7.1_a_tt/XFE_model_form.xml
- http://secure2.support.baan.com/ftpdownload/updates/7.1_a_tt/XFE_model_session.xml

Create the $BSE/lib/XML_MODELS directory and copy the files to the directory.

Register Web UI-enabled sessions

Before you can load the cache, you must run the Register Web UI-enabled sessions session. Not every Infor LN or Baan session is suitable to run in the Web UI. The Register Web UI-enabled sessions session, adds a property to the sessions, which indicates whether a session can be run in the Web UI. Take the following steps to initialize this property to the correct value:

1 In Worktop, enter the **Run Program** command on the Infor LN or Baan back end.
2 Start session ottdsk4200. Note that this session runs without a user interface.

To verify whether a specific session is Web UI-enabled, use session ottdsk4500.

Note: For Infor LN 6.1 there is no "register Web UI-enabled sessions" session, because the " Web UI enabled" settings are set correctly from the first release onwards.