

# Getting Started with the IBM Smart Business Developers' Kit



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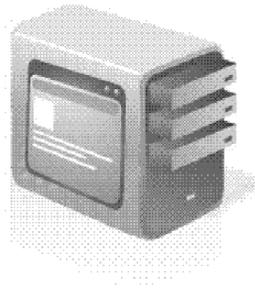
## Chapter 1. Introduction to the IBM Smart Business Developers' Kit

IBM® Smart Business is an offering that features hardware that is preloaded with configured software and offers user interfaces to help manage both the hardware and software in an easy and consistent way.

The IBM Smart Business Developers' Kit provides tools to package existing applications and deploy them to the Smart Cube or IBM Lotus Foundations Server. Additionally, you can create fix projects that enable you to update existing projects. In as much, the IBM Smart Business Developers' Kit provides a mechanism for managing the lifecycle of your applications and deploy updated versions of them to a Smart Cube or IBM Lotus® Foundations Start.

The IBM Smart Business Developers' Kit has a predefined set of integration points that help you to take advantage of facilities for application maintenance and monitoring.

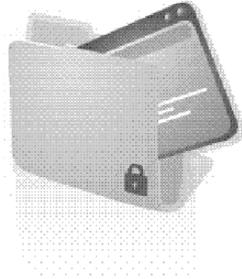
There is a four-step approach to using the IBM Smart Business Developers' Kit. The four steps are as follows:



### Step 1: Prepare your application

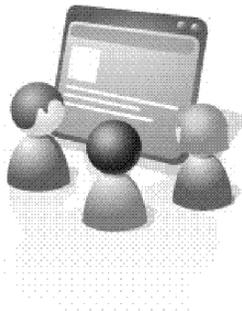
The IBM Smart Business Developers' Kit helps you package applications for delivery on the IBM Smart Business or IBM Lotus Foundations Start platform. There are several wizards that help you package your application components into a package that can be deployed on the Smart Cube or IBM Lotus Foundations Server. To prepare an application for use with the IBM Smart Business Developers' Kit, make sure the application resides on a computer to which you have network access, or resides on the computer on which you have installed the IBM Smart Business Developers' Kit. Information about the application is retrieved from that computer.

Before you begin using the IBM Smart Business Developers' Kit to package an application, you should read the information provided in the "Before you begin" on page 8 topic. This topic provides many considerations and tips to help you use the IBM Smart Business Developers' Kit most effectively.



### Step 2: Package your application

Use wizards to assemble the application and all necessary components into a package which can be installed on the Smart Cube or IBM Lotus Foundations Server.



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### Step 3: Test your application

Test the application package on the Smart Cube or IBM Lotus Foundations Server to be sure it has been packaged correctly.



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### Step 4: Distribute your application

Export the application package when you are finished, and make it available for IBM Smart Business or IBM Lotus Foundations Start customers to deploy on the Smart Cube or IBM Lotus Foundations Server.

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## Components of the IBM Smart Business Developers' Kit

The IBM Smart Business Developers' Kit contains components that help you define the different components that collectively compose an application, identify the network resources used by the application, and integrate the application with IBM Smart Business.

The following components are integral to the IBM Smart Business Developers' Kit:

#### **Installation Component**

The installation component works in conjunction with the IBM Solution Assembly Toolkit to provide an installation for the IBM Smart Business Developers' Kit. You can download the installation component from IBM Smart Business Marketplace. After you download the installation component, a launchpad is displayed and provides you with options for installing the IBM Smart Business Developers' Kit.

#### **Integration Framework Plug-in**

The Integration Framework Plug-in provides several task-based wizards that enable you to provide information that is required to create a business

application that can integrate into the IBM Smart Business Developers' Kit. By integrating a business application into the IBM Smart Business Developers' Kit, you are providing the installation, configuration information, service information and backup and recovery options for the application.

#### **Documentation**

The documentation component contains all of the help content for the integration framework and other task-based information to help you accomplish tasks when using the integration framework.

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## **Audience of the IBM Smart Business Developers' Kit documentation**

This information is intended for business partners who plan to create, configure, and deploy applications using the IBM Smart Business Developers' Kit.

This information provides a description of the basic processes necessary to use the IBM Smart Business Developers' Kit, an overview of the end-to-end process of using the IBM Smart Business Developers' Kit, and in-depth information on the following topics:

- The value of using the IBM Smart Business Developers' Kit
- The functionality included with the IBM Smart Business Developers' Kit
- User roles typically required to use the IBM Smart Business Developers' Kit
- The process for developing an application package
- Options for deploying an application
- System requirements for the IBM Smart Business Developers' Kit
- Starting the IBM Smart Business Developers' Kit

To distribute an application using the IBM Smart Business Developers' Kit, you create an IBM Smart Business Developers' Kit project. This project contains the application installation files and information about and how it gets distributed, and integrates and operates on the Smart Cube, Smart Desk, the Administrator Panel, or on IBM Lotus Foundations.



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## Chapter 2. Installing the IBM Smart Business Developers' Kit

The topics in this section provide instructions for installing the IBM Smart Business Developers' Kit.

In this section, information regarding prerequisites, installation procedures, and uninstallation are provided.

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### System requirements for the IBM Smart Business Developers' Kit

There are specific system requirements for installing and using the IBM Smart Business Developers' Kit. This topic lists these system requirements.

#### Operating system support

The following operating systems are supported:

- Windows® Vista Business SP 1
- Windows Vista Enterprise SP 1
- Windows Vista Ultimate SP 1
- Windows XP Professional SP 3

#### Windows development server hardware and software requirements

The following table details the hardware and software requirements for installing the IBM Smart Business Developers' Kit on a computer that is running Windows XP or Windows Vista.

Table 1. Windows development server hardware and software requirements

Memory		Processor		Disk Space	
Minimum	Recommended	Minimum	Recommended	Max Total	Temporary
1 GB	2 GB	Intel® Pentium® 4 processor with a minimum clock speed of 1.7 GHz	Intel Pentium 4 processor with a minimum clock speed of 1.7 GHz	850 MB	410MB

#### Other Requirements

- Administrative authority (required for product installation and uninstallation)
- TCP/IP or DNS network support for deploying solutions to network-attached target computers.
- An SVGA monitor with a minimum 1024 x 768 video resolution configured to display a minimum color depth of 256 colors.
- One of the following Web browsers:
  - Internet Explorer 6.0 SP1 +
  - Mozilla 1.7 or SeaMonkey 1.x or later
  - Firefox 1.x or later
- For Windows Vista, if you install into the default location under Program Files, you must either turn user account control off for the logged-in user or select Run as Administrator when you launch the shortcut for IBM Smart Business Developers' Kit.

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## Installing the IBM Smart Business Developers' Kit

You can install the IBM Smart Business Developers' Kit with IRU\_kit.exe. This file is a self-extracting executable file that automatically unpacks the IBM Smart Business Developers' Kit installation image and starts the installation program.

### Before you begin

#### Note:

Only users with administrative user access can install the IBM Smart Business Developers' Kit. Check that the logged-on user has administrative access to the computer prior to installing.

1. Run the IRU\_kit.exe file. This unpacks the IBM Smart Business Developers' Kit installation image.
2. The Welcome page displays the name of the product to be installed. Read the text and click **Next**.
3. The Software License Agreement page is displayed. To install the IBM Smart Business Developers' Kit, you must accept the terms of the license agreement. Read the license agreement information. Select **I accept both the IBM and the non- IBM terms** and click **Next**. Otherwise, select **I do not accept the terms of the license agreement** and click **Cancel** to exit the installation.
4. The installation directory page prompts for a destination for the IBM Smart Business Developers' Kit. Either accept the default Directory Name or specify a new directory name. Additional subdirectories are created under the destination directory. You can either manually enter a directory name or click **Browse** to navigate to a directory where you want to install the IBM Smart Business Developers' Kit. Click **Next**.
5. The summary page summarizes installation information such as the installation directory and the estimated total size of the installed product. Review this installation summary before beginning the installation. To make changes, click **Back** to return to the previous pages and make any necessary changes. Click **Next** to begin the installation.
6. The final installation page indicates whether the installation was successful. You can choose to start First Steps for the IBM Smart Business Developers' Kit. First Steps provides links to information and functions to help familiarize you with the IBM Smart Business Developers' Kit and its capabilities. If you want to start First Steps, click **Launch First Steps**. Click **Finish** to exit the installation wizard.

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## Chapter 3. Getting started with the IBM Smart Business Developers' Kit

This section contains information that is intended to help you get started using the IBM Smart Business Developers' Kit.

Information regarding understanding the uses of the IBM Smart Business Developers' Kit, planning to use it, and getting started using it is provided in the topics contained in this section.

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### Welcome to the IBM Smart Business Developers' Kit

The IBM Smart Business Developers' Kit is an Eclipse-based development tool that helps you package an application for deployment into a Smart Cube or IBM Lotus Foundations Start environment. You can also create fix projects for applications that you have already packaged for the Smart Cube, enabling you to deliver fixes to your applications in the same way as you deliver them initially.

You can add the following types of application components:

#### **Database**

For components that need to create or populate databases in DB2®.

#### **Lotus Domino®**

For components that run in Lotus Domino. If your application targets the IBM Lotus Foundations Start platform, Lotus Domino components are the only type of component that can be added to your project.

**PHP** For components that run in a PHP server.

#### **WebSphere®**

For J2EE application components that run in WebSphere Application Server.

#### **Custom**

For components that can be installed or run silently from a command line or that are not covered by any of the other application component types.

For each of the application components that you add, a wizard prompts you for information necessary to deploy the component to the Smart Cube or IBM Lotus Foundations Start Server. Information such as the source files, data files, engines, configuration data, and variables used by the types of application components that you want to use in an application is gathered by the wizards. This information can be shared by the various application components that you add to an application. For more information, see the "Properties accessible to applications" topic in the information center.

When you have provided all of the information that the IBM Smart Business Developers' Kit requires for application components, the IBM Smart Business Developers' Kit prompts you for information regarding the ways in which your application is installed, managed, and even translated. In this way, the IBM Smart Business Developers' Kit helps you configure and deploy a complex business application that consists of multiple components in one step. This document provides an overview of using the IBM Smart Business Developers' Kit.

Help for specific tasks is located in the IBM Smart Business Developers' Kit Information Center. You can access the IBM Smart Business Developers' Kit Information Center by selecting **Help > Help Contents**. Most of the panels of the wizards that you encounter when using the IBM Smart Business Developers' Kit feature a help button that you can click to get specific help related to the task that you are currently performing.

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## Before you begin

This topic contains information regarding the types of background knowledge you should have about the application you want to package using the IBM Smart Business Developers' Kit.

Before you begin using the IBM Smart Business Developers' Kit, you can save yourself significant time by having some of the following information available:

### Global considerations

Before you start a new IBM Smart Business Developers' Kit project, you should know the following information:

1. Be aware that any errors, warnings, or informational messages that are presented during the course of using the IBM Smart Business Developers' Kit are logged in the log file that is available in the following location:

```
<installation location>\SolutionEnabler\workspace\.metadata\.log
```

By default, <install location> is C:\Program Files\IBM\ISBDK\1.0.

2. Do you have access to all computers where any components of your application reside? Establish the necessary access before you begin.
3. Do any of your application components require a response file? If so, what type is the response file?
4. Into what target languages do you want to translate the application resources? The application resources are items such as textual names, descriptions, and so on, that are collected by the IBM Smart Business Developers' Kit to describe your application in the various components of the IBM Smart Business and IBM Lotus Foundations platforms. It is helpful, though not required, to have translated versions of the licenses and other documentation available before you begin to package an application.
5. Do you have any generic log adaptors or symptom catalogs that you want to use for problem determination of your application created and available? You can find information about creating symptom catalogs in the "Creating a symptom catalog" topic in the information center. You can find information about creating generic log adaptors in the "Creating a new Generic Log Adapter" topic in the information center.
6. Do you have access to a Smart Cube or IBM Lotus Foundations Server that you can use to test the deployment of an application? You should know the host name, and a user ID and password with the appropriate authority to test a deployment.
7. Ensure that the names of the various components that your application uses have unique names. If application components have the same names, deployment fails. Furthermore, ensure that if you are supporting Lotus Foundations as a target, that the team names you use in an application project are unique. You should not copy a project as a way to begin a new project. This causes both projects to have the same unique ID, so that the new project would replace the original project when it is deployed.

8. Bookmark the IBM Smart Business User's Guide, available at the following URL: <http://www.ibm.com/smartmarket/support/help/userguide>. This document provides information of interest to users who are targeting IBM Smart Business deployment targets.
9. You might need to set the environment variable `MOZILLA_FIVE_HOME` to the folder containing your Firefox or Mozilla installation. For example, set `MOZILLA_FIVE_HOME` to `/opt/mozilla/lib`. If you do not set this environment variable, then when you run the product you might see the following error message: `org.eclipse.swt.SWTErrror: No more handles [Unknown Mozilla path (MOZILLA_FIVE_HOME not set)]` .
10. Ensure that you can connect to computers where component resources reside. To connect to computers, ensure that the following criteria are met:

#### Windows

- A local area network (LAN) connection. For Windows Vista targets, file and print sharing must be enabled.
- TCP/IP or DNS network support.
- For Windows XP target computers, Simple File Sharing, the Internet Connection Firewall (ICF) and the Windows Firewall must be disabled.
- For Windows Vista target computers, Windows Firewall must be disabled. Remote registry administration must be enabled.
- Administrative authority
- For Windows Vista target computers, you can use the built-in Administrator account to connect, but you must enable the account first. To use a different administrator user account to connect, you must first turn off user account control for that user.

**Note:** To verify DNS lookup, you can issue an `nslookup` from the computer you have the toolkit installed to the remote machines that have the server components. If the target computer is behind a firewall, the firewall must be configured to allow inbound connections on port 139.

Note:

#### Unix

- A local area network (LAN) connection.
- TCP/IP or DNS network support.
- SSH is installed and enabled.
- Password authentication is set to `yes` in the `/etc/ssh/sshd_config` file. After setting the password authentication, the SSH daemon must be stopped and restarted.

**Note:** To verify DNS lookup, you can issue an `nslookup` from the computer you have the toolkit installed to the remote machines that have the server components. If the target computer is behind a firewall, the firewall must be configured to allow inbound connections on port 22.

- For target computers using the REXECProtocol, if the target computer is behind a firewall, the firewall must be configured to allow inbound connections on port 512. Any available local port on the target computer is used to connect back to the deployment computer.
- For target computers using the RSHProtocol, if the target computer is behind a firewall, the firewall must be configured to allow inbound connections on port 514. The first available local port between 600 and 1023, inclusive, on the target computer is used to connect back to the deployment computer.

## IBM i

- A local area network (LAN) connection.
- TCP/IP or DNS network
- SECOFR user with the following permissions (required for product installation and uninstallation):
  - ALLOBJ
  - SAVSYS
  - JOBCTL
  - SERVICE
  - SPLCTL
  - SECADM
  - AUDIT
- To verify DNS lookup, you can issue an nslookup from the computer you have the toolkit installed to the remote machines that have the server components.
- The following PTFs:
  - i5/OS® (5722SS1) , V5R3M5, or V5R4
  - For V5R4 Cumulative PTF pack and SF99291 Java™ Group minimum PTF level 2
  - Host Servers (5722SS1, option 12)
  - QShell (5722SS1, option 30)
  - Java Developer Kit 1.5 (5722JV1, option 7) Note: Java Runtime Environment version 1.5 is shipped with i5/OS version 5 release 4. For i5/OS version 5 release 3 servers, order PTF SI17529 and refer to the cover letter for instructions.
  - The Open Source version of the IBM Toolbox for Java (JTOpen release 4.9 or higher)
  - Secure Sockets Layer (SSL) optionally installed and enabled to support SSL-secured communications. Additional software for SSL includes:

**Restriction:** You should not copy a project as a way to begin a new project. This causes both projects to have the same unique ID, so that the new project would replace the original project when it is deployed.

## Custom components

Custom components do not fit into any of the other component types and are available only for IBM Smart Business target platforms. They are not typically deployed into any of the middleware containers that the other types deploy into (for example, WebSphere Application Server, Domino, DB2, and so on). Common examples of custom components are ISMP installation programs, IBM i programs and commands, Java programs, Ant, RPM, operating system commands, and other shell programs or executables. For Custom application components, you should perform the following steps:

1. Ensure your custom component can be installed silently using a command line invocation.
2. Identify any input, for example, installation location, IDs, passwords, host names, ports that need to be passed into your custom component. You can use the IBM Smart Business Developers' Kit to define variables to collect this information and provide access to other information about the Smart Cube that can be passed into your custom component using a response file or as

arguments when your custom component installation is started. For more information, see the "Properties accessible to applications" topic in the information center.

3. If you select IBM Smart Business for i as the target for your IBM Smart Business Developers' Kit project, you must ensure that the mapping to the IBM i drive from the client is not multithreaded. Certain files and objects, such as save files, cannot be copied or moved over multithreaded connections. To avoid this issue, you can either map the initial network drive to a share over /QDLS or run the following command on the server:

```
QSYS/RMVPJE SBS(QSERVER) PGM(QZLSFILET)
```

When that command is completed, run the following command:

```
ENDPJ SBS(QSERVER) PGM(QZLSFILET)
```

Running these commands forces the server to run in non-multithreading mode for all connections. This option should be used with caution, as it performs a system-wide change and could cause performance and user issues.

Alternatively, you can FTP a save file to the local file system. Ensure that the file is transferred in binary mode and is saved with the .FILE file extension. You can then add this file as an argument using the **Insert save file** button on the Main program information panel of the Custom Deployment Component wizard.

4. If you select IBM Smart Business for i as the target for your IBM Smart Business Developers' Kit project and plan to create custom components using IBM i commands, ensure that the command can be run in a batch environment.
5. If your custom component accepts input using a response file, identify what type of response file your custom component uses. The following types of response files can be used:
  - CID: The Configuration, Installation, and Distribution response file format supported by DB2 applications.
  - ISMP: The response file format for InstallShield MultiPlatform Edition installations.
  - ISS: The response file format for InstallShield installations.
  - XML: XML file format. Products such as WebSphere Business Modeler and Installation Manager use a response file based on XML.
  - Properties: Standard properties file format typically used by Java programs.
6. Identify any ports that your custom component binds. Information about your bound ports is collected to help prevent port conflicts at deployment time on the Smart Cube. A list of the ports that are reserved by the Smart Cube are provided in the topic in the information center.
7. Ensure that you have the user ID and password of the computer where the custom application component resides.
8. Identify the locations of the ANT, IBM i, ISMP, Java, RPM, or other types of files that the custom component uses.
9. If the custom component must be run under a specific user ID during installation, ensure it switches to that user ID. By default, all components are installed under the "adminsyst" user ID.

## Database components

For database components, you should be aware of the IBM Smart Business Developers' Kit approach for deploying databases on the Smart Cube.

The Smart Cube on the x86 platform comes preloaded with DB2 9.5. All databases deployed into DB2 on the x86 platform share the same instance, DB2INST1. You are not required to create any database user ID on the Smart Cube.

If you are using a System i™ product, you have DB2 UDB for iSeries®. The level of DB2 UDB for iSeries is based on the i5/OS operating system and is independent of the DB2 versioning scheme. Because DB2 UDB for iSeries is included with the i5/OS operating system, the version, release, and modification level of DB2 UDB for iSeries is the same as that of your operating system. This is typically expressed as VxRyMz, where x is the version, y is the release, and z is the modification. If you do not know the version, release, and modification of your operating system, follow these steps:

1. From iSeries Navigator, right-click your system.
2. Select **Properties**.
3. If it is not already selected, click the General tab.

During deployment of a database, a user ID and password are generated and the corresponding OS user is created. This user is granted DBADM and SECADM authorities to the database that is created at deployment time (on x86). This user ID does not have authority to create instances or database. Although it is not recommended, you can provide a specific user ID to have created at deployment time. For security reasons the password is always generated.

For the IBM i, here is an example of the CL command used to create the database user which shows the privileges that are temporarily granted: CRTUSRPRF USRPRF(JJADAMS) PASSWORD(S1CR2T) USRCLS(\*SECOFR) SPCAUT(\*USRCLS) PWDEXPITV(\*NOMAX) When the installation is complete, here is an example of the command used to reduce the user authority which shows the rights it will retain: CHGUSRPRF USRPRF(JJADAMS) PASSWORD(S1CR2T) USRCLS(\*USER) SPCAUT(\*USRCLS) INLMNU(\*SIGNOFF).

To rapidly package your application and ensure successful deployment of your database, you should perform the following steps:

1. Ensure that the deployment of your database does not rely on any hard-coded paths, user IDs and passwords. Your application might require access to information pertaining to your database deployment, for example, user ID, password, dbname, db port, or other information about the Smart Cube. The IBM Smart Business Developers' Kit allows you to obtain this information by adding a custom component that takes information as input into a properties file or on the command line when the custom component installation or script is run.
2. If you are packaging a database that is already loaded into a database management system, identify the user ID and password of the computer where the database application component resides. On x86 systems, if your database application component resides on an Smart Cube you must open the db port on the firewall so that the Database Deployment Component wizard can retrieve it. On x86 systems, this is port 50001 for DB2. On IBM i systems, this is port 446.
3. If you are packaging DDL, SQL, or other files that compose a database application that you want to load into a database (or schema on IBM i), you need to know the locations of those files.
4. If the database name already exists on the server, the deployment will not succeed. To help alleviate this risk, you should select the checkbox to enable modifying the value at deployment time. Selecting this checkbox enables the

administrator to select a different database name in the event that the one you specified already exists. Regardless of whether or not you select this option, you should try to specify database (or schema) names that are specific to your applications or company so that collisions do not occur.

## Domino components

For Lotus Domino components, you should be aware of the IBM Smart Business Developers' Kit approach for distributing Domino applications on the Smart Cube or IBM Lotus Foundations Server. The Smart Cube or IBM Lotus Foundations Server comes preloaded with Lotus Domino 8. All Domino applications deployed on the Smart Cube or IBM Lotus Foundations Server share the same Domino instance. Lotus Foundations Start includes Domino 8, but it is not pre-loaded. Only the Lotus Foundations Start server includes Domino. Other Lotus Foundations servers do not.

It is important to remember the following information when you are creating a Lotus Domino application that you plan to distribute to the Smart Cube or IBM Lotus Foundations Server:

- You can use the IBM Smart Business Developers' Kit to distribute Lotus Domino applications that reside on a Domino server that meets the requirements enumerated in the system requirements section of this document. To retrieve this application from the server, you need to have appropriate access to the server where the application resides. The Lotus Domino server cannot be confused with a Lotus Notes® Client.
- If the application mentions Lotus Foundations groups, it is important to remember that Lotus Foundations groups can be alphanumeric, and contain the dash (-), underscore (\_), and period (.) characters. You cannot use other special characters in a Lotus Foundations group name.
- The IBM Smart Business Developers' Kit enables you to leverage Lotus Notes Agents to configure applications. For example, you can use agents to perform tasks such as configuring server settings, notes.ini settings, and other such tasks.
- If an application requires specific Lotus Domino configuration settings, for example, mail-in db support, foreign domains, the ability to create databases, and other similar settings, ensure that you use the capabilities provided in the IBM Smart Business Developers' Kit to let system administrators know that they need to make such configurations before they distribute the application to end-users.
- Pay careful attention to case-sensitivity when providing file names. This is a common source of errors for people who are accustomed to developing on Windows platforms and deploying to Linux® platforms. Ensure that file names used in any applications match the files themselves.

To rapidly package your application and ensure successful deployment of your Domino application, you should perform the following steps:

1. Ensure that you have access to all computers where any Lotus Domino applications reside. The Domino applications must reside on a server, not a Lotus Notes client, or a development environment. This Domino Server must be one of the following versions
  - IBM Lotus Domino v8.0
  - IBM Lotus Domino v8.0.1
  - IBM Lotus Domino v8.0.2

2. Ensure that your Domino application does not require manual updates to the notes.ini or server document. If so, you should consider writing an agent to automate this. You can also document any manual steps required in a readme document that you provide in the IBM Smart Business Developers' Kit. However the preferred method is to eliminate manual steps if possible.
3. Ensure any desired attributes that you want for your Domino application nsfs and ntf's are set. These attributes are preserved by the Lotus Domino Deployment Component wizard.
4. Provide support contact information in the About This Application help page for your Domino application. This practice ensures that help requests are routed to the appropriate contacts in the event that the user encounters problems with the application.
5. Ensure that the server ID has access to the specific applications that you want to add. The server ID might be on the access control list, however, the server ID might not be able to access the application depending on the user ID that performed the replication, and if the Enforce a consistent Access Control list across all replicas control is selected. You can change this option in the advanced settings panel for the applications access control list, by deselecting the **Enforce a consistent Access Control list across all replicas** control. You can also give the default ACL entry access to the application which also provides the server the necessary access.
6. Identify the user ID and password of the computer where the Lotus Domino application component resides. On Linux operating systems, you must enter the ID of the user that runs the Domino server. If you are connecting to a Domino server running on Windows, you must have administrator privileges. On Linux operating systems, you must enable SSH and enter the ID of the user that runs the Domino server or the Linux root user. To enable root over ssh you must modify the file: /etc/ssh/sshd\_config. Ensure "PermitRootLogin yes" is specified. Then restart ssh by running /etc/init.d/sshd restart. On IBM i systems, use the adminsys user ID, or use a user ID that is \*SECOFR class and has the following special authorities:
  - \*ALLOBJ
  - \*AUDIT
  - \*IOSYSCFG
  - \*JOBCTL
  - \*SAVSYS
  - \*SECADM
  - \*SERVICE
  - \*SPLCTL

**Note:** Adminsys applies only if you connect to a Smart Cube.
7. Identify the location of the notes.ini file where your Domino application component resides.
8. Identify the Domino application files (.nsf) and template files (.ntf) that the application component uses.
9. Identify the tasks within the notes.ini file that the application component uses.
10. If you are planning to use agents with any Domino applications, know the locations of these agents. A discussion of using agents with Domino applications is provided in the "Use agents to configure Domino applications" topic in the information center.

11. If the Domino application name already exists on the server, the deployment will not succeed. Specify Domino application names that are specific to your applications or company so that collisions do not occur.
12. If you intend to use a Lotus Domino application that resides on the Red Hat Linux platform, ensure that the SELinux option is set to disabled or permissive mode. To set disabled or permissive mode, perform the following steps:
  - a. From the Linux Desktop, select **System > Administration > SELinux Management**.
  - b. Ensure that both **System Default Enforcing Mode** and **Current® Enforcing Mode** are either set to permissive or disabled.

**Note:** For Lotus Domino 8.0.1, SELinux must be disabled.

13. For IBM Lotus Foundations Start targets, ensure that the ports you want to use have been fast forwarded. Instructions for fast forwarding ports are provided in the Perform a test deployment section of this document.

## PHP components

For PHP components, you should be aware of the IBM Smart Business Developers' Kit approach for deploying PHP applications on the Smart Cube. The Smart Cube comes preloaded with Zend Core 2.5.0, PHP 5.2.4 and Apache 2.2.4. All PHP application components deployed on the Smart Cube share the same PHP instance and hence configuration.

To rapidly package your application and ensure successful deployment of your PHP application, you should perform the following steps:

1. Ensure that your PHP application does not require manual updates to the php.ini. If so, you should consider adding a custom component, for example, a script, or a java class to automate any needed updates. You can also document any manual steps required in a readme document that you provide in the IBM Smart Business Developers' Kit. However the preferred method is to eliminate manual steps if possible.
2. If your application takes input from an application configuration file, identify what information if any you want to update in it at deployment time. The IBM Smart Business Developers' Kit helps facilitate dynamically updating this file.
3. Ensure that you have the user ID and password of the computer where the PHP application component resides.
4. Identify the location of the PHP application files that the application component uses.
5. If the PHP application name already exists on the server, the deployment will not succeed. Specify PHP application names that are specific to your applications or company so that collisions do not occur.

## WebSphere components

For WebSphere J2EE components, you should be aware of the IBM Smart Business Developers' Kit approach for distributing WebSphere applications on the Smart Cube. The Smart Cube comes preloaded with WebSphere Application Server 6.1.0.13 and Apache 2.2.4. All of the WebSphere application components within a single IBM Smart Business Developers' Kit application package have their own profile, application server and Web server if needed. The user ID used to secure the profile is always the "adminsyst" user ID, which is created on the Smart Cube when the Setup and Configuration wizard is run.

To rapidly package your application and ensure successful deployment of your WebSphere application, you should perform the following steps:

1. Ensure that the deployment of your WebSphere application components does not rely on hard-coded paths, profile name, app server name, Web server name, user IDs and passwords. All of this information is dynamically computed during the deployment of your application. If your application needs access to this information or other information about the Smart Cube, you can use the IBM Smart Business Developers' Kit to define variables that collect this information. You can then add a custom component that takes the information as input into a properties file. For more information, see the "Properties accessible to applications" topic in the information center. If you are comfortable writing JAACL or Jython, the WebSphere Deployment Component wizard helps you add scripts that are executed by wsadmin during the deployment of your WebSphere application. These scripts can be used to retrieve Websphere related information, for example, profile name.
2. Identify any profile and server level modifications that your WebSphere application requires. The WebSphereDeployment Component wizard facilitates modification of the initial and max heap size, maximum output and error log count, classpath , boot classpath and jvm properties. If you need to make additional modifications, you need to create Jacl or Jython scripts to perform these modifications. During the Websphere Deployment Component wizard you can specify what scripts you want executed during the deployment of your WebSphere application and what stage of the deployment it needs to be executed.
3. Ensure that you have the user ID and password of the computer where the Websphere application component resides.
4. Identify the location of the WebSphere Application Server profile that contains the application component that you want to use.
5. Service Integration Bus (SIB) resources in configuration archive (CAR) files exported from WebSphere Application Server are not portable across profiles. Before you export CAR files from WebSphere Application Server, you should modify the export logic to exclude the SIB directory entirely.
6. If the application name already exists on the server, the deployment will not succeed. Specify application names that are specific to your applications or company so that collisions do not occur.

---

## Start IBM Smart Business Developers' Kit and access help

When you have all of the information you need to start using IBM Smart Business Developers' Kit, you can get started packaging and distributing your application.

To start using IBM Smart Business Developers' Kit, choose one of the following:

- On the First Steps, click **Start the IBM Smart Business Developers' Kit**.
- Click **Start > Programs > IBM Smart Business Developers' Kit 1.0 > Developers' Kit**.

At any time while IBM Smart Business Developers' Kit is displayed, you can access help by selecting **Help > Help Contents**.

Before you start packaging your application using IBM Smart Business Developers' Kit, you should review the "Before you begin" on page 8 topic in this information center to ensure that you have the information you need to use the IBM Smart Business Developers' Kit .

---

## Understanding Fix projects

You can use the IBM Smart Business Developers' Kit to create fix projects for applications that you have already packaged, enabling you to deliver fixes to your applications in the same way as you deliver them initially.

When creating a fix project, you need to specify an existing IBM Smart Business Developers' Kit project to use as a base project. The fix project inherits the components from the base project. A component that was present in a base project cannot be removed in a fix project.

There are two types of fix projects that you can use the IBM Smart Business Developers' Kit to create; cumulative fixes and hot fixes. A cumulative fix is a step in a product life cycle. For example, a cumulative fix might be something like version 2.2.1, which could be further developed with a subsequent fix project for version 2.2.2. A hot fix is a terminal fix that is intended as a one time application to a base project or a cumulative fix.

Fix projects are only applicable to IBM Smart Business platforms and not Lotus Foundations Start. The current mechanism for using the IBM Smart Business Developers' Kit to deliver fixes to the IBM Lotus Foundations Start platform is to create a different base project.

Existing base components that are modified in a fix project are redeployed when the fix project is deployed.

**Note:** For Lotus Domino components, be aware that if the Lotus Domino applications that are part of existing components are redeployed, the application is overwritten and user data can be lost. For this reason, you should create a new component rather than modifying existing ones for Lotus Domino components.

---

## Create IBM Smart Business project

Create a new IBM Smart Business project and specify basic information about your application.

**Note:** The steps provided in this topic are for creating an initial, or "base" version of a project. If you want to read the steps for creating a fix project, or a project that provides fixes to an existing base project, refer to the Create an IBM Smart Business Fix Project.

To create an IBM Smart Business Developers' Kit project, follow these steps:

1. Start the IBM Smart Business Developers' Kit.
2. If the Welcome page is not displayed, click **Help > Welcome** to display the Welcome page.
3. Click the **Get started with a new IBM Smart Business project** link on the Welcome page. The New IBM Smart Business Project Wizard is displayed. Alternatively, you can select **File > New > IBM Smart Business Project**. This also launches the wizard.
4. Specify a name for the IBM Smart Business project. This name is used to identify the project in the Eclipse workspace. An example name would be something similar to ApplicationWithWASAndDB2.
5. Specify the default language for this application. This is the language in which the IBM Smart Business Developers' Kit treats all strings entered during the

creation of this project and is the fallback language for those fields during execution of the Server Application Installer and the Administrator Panel.

6. Select the target platforms that you want to deploy your applications to. The target platform check boxes that you select determine what options are made available to you when you use the IBM Smart Business Developers' Kit. Ensure that you select the check boxes for all of the target platforms that you want to deploy applications to.
7. Click **Finish**.

---

## Provide basic application information

Provide basic information about the application.

If you selected IBM Lotus Foundations Start as a target for your application project, see the "Provide basic application information (Foundations Start)" topic in the information center for instructions specific to that platform.

To provide basic application information, follow these steps:

1. Specify a product name. The product name corresponds to the name of the application.
2. Specify a display version and a product version. End users of the application are presented with the value that you use as the display version. The product version is a value that you provide to help manage the lifecycle of your application in the Administrator Panel. For example, a product version is used so proper versioning can be applied to a product, enabling the appropriate application of fixes to an application.
3. Browse to both small and large icons that are used to identify the application. A large icon that you provide must have the dimensions of 42x42 and be in .jpg, .gif, or .png format, and the small icon that you provide must have the dimensions of 24x24 and be in .jpg, .gif, or .png format. The icons are used in different places in the Administrator Panel to identify your applications. As a general rule, you should provide two versions of the same icon. While the IBM Smart Business Smart Desk requests both large and small icons, both are used to distinguish your application.
4. Specify a brief description for this application that is displayed in the IBM Smart Business Administrator Panel.
5. Specify a brief description for this application that is displayed during the installation. This description is used in the IBM Smart Business Application Installer and is displayed to the end customer.
6. Click **Next**.

Some of the basic application information you provide is displayed on the IBM Smart Business Administrator Panel. The following image is a sample Administrator Panel, with highlighted text displaying entries for a product name (IBM Lotus Domino) and a brief description (Mail and Calendars).

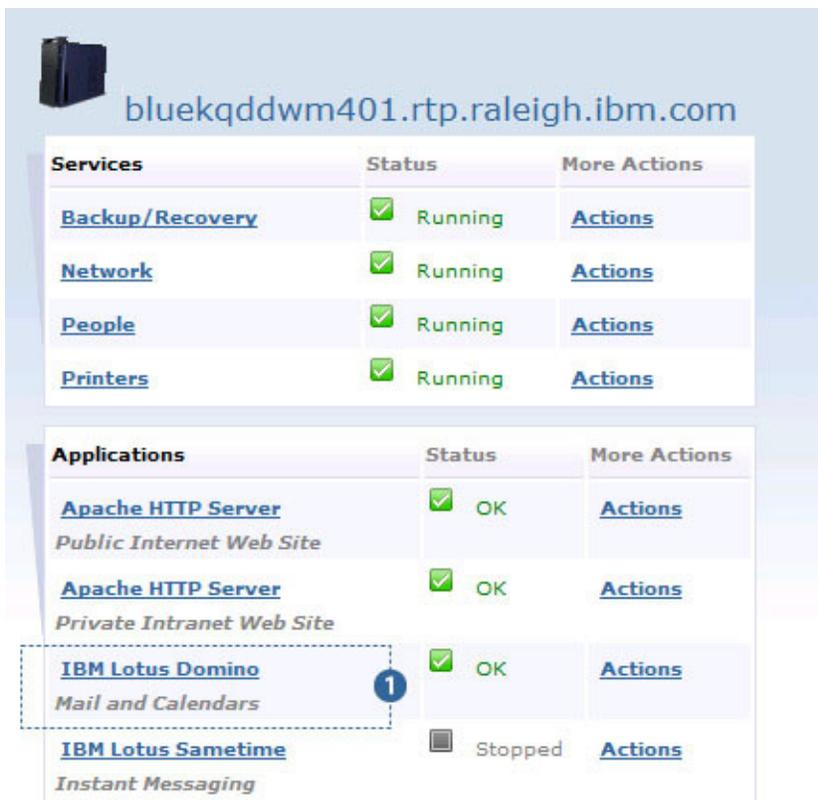


Figure 1. Sample IBM Smart Business Administrator Panel, with product name and description highlighted

## Provide server component information

Specify and configure the components that the application contains.

To specify and configure the components that the application contains, follow these steps:

1. Select the check boxes that correspond to the types of components that the application contains. You can select the following components:
  - DB2 database
  - Lotus Domino component

**Note:** If you select IBM Lotus Foundations Start as the target for your project, you can only add Lotus Domino components to the application.

- PHP component
  - WebSphere component
  - The application needs custom software components installed on the server
2. Click **Next**.

For each type of component that you selected, a page is displayed that enables you to initiate a wizard that prompts you for information so that you can define the component for your application.

3. When you have specified each of the components, click **Next**.

**Note:** If you have added one or more components, you can edit the information about the component or remove the component from the application by clicking the corresponding link.

---

## Add a client software component to an application

Use the Client Applications page to add client software components to an application.

### Before you begin

Before you use the Client Applications page, ensure that client application that you want to add is on your local computer.

**Note:** The information contained in this topic does not apply to IBM Lotus Foundations targets.

### About this task

To add a client application, complete the following steps:

1. Select the Add Client Application check box and click **Add a new client application**.
2. Select the type of client application you want to add. You can choose to create either a rich client application or a Web client application. Select **Add a rich client** if you have an installation image that must be downloaded and installed on the user workstation. Select **Add a Web client** if the user accesses the application by connecting to a Web server. Select the checkboxes that correspond to the target platforms that you want to deploy this application to. Click **Next**.
3. Enter a name for the client component. This name is used in the toolkit to specify the component. Also specify the version of the application that you want to add.
4. Enter the version of the application.
5. Optionally, type the fully qualified path to an icon that is used to identify the client application or click **Browse** to locate the icon in the file system. The recommended size for an icon image that you provide is 32x32 and the file should be in .jpg, .gif, or .png format.
6. Enter a description of the application.
7. Select the languages that your application supports for the list. Click **Next**.
8. If you selected **Add a rich client** in step 2, provide the following information about the installation of the rich client:
  - a. Enter the fully qualified path to the installation image for your client component, or click **Browse** to locate the installation image in the file system.
  - b. Enter the name of the executable file for the client application. For example, myApp.exe.
  - c. Select the operating systems that are supported by your client component.Click **Finish**.
9. If you selected **Add a Web client** in step 2, provide the following information about the Web client:
  - a. Select the protocol that is used to connect to the Web application. If the protocol that you want to use is not provided, you can enter it in this field.

- b. Type the host name of the computer that hosts the Web application.
  - c. Select the variable that you want to use to resolve the host name to. You can not type in this field - you must select a value from the pull down list.
  - d. Click **Set** to select a port to use to connect to the Web application. Click **Clear** to clear port information that was added previously.
  - e. Type the path to the Web application. To use the value of a variable to provide the path, click **Add Variable** and select the variable.
  - f. Select the browsers that are supported by your application.
- Click **Finish**.

---

## Provide application installation information

Provide information about the order in which application components are installed, the license file that is displayed to the Smart Cube administrator, collection of license key information, and a readme file which contains important information about the application such as the next steps to perform after installing the application and how to uninstall the application.

If you selected IBM Lotus Foundations Start as a target for your application project, see the "Application Installation (Foundations Start)" topic in the information center for instructions specific to that platform.

To provide application installation information, follow these steps:

1. When you work through the server components section of the IBM Smart Business Developers' Kit, you specify one or more types of components to add to an application. The components that you selected and provided information about in the application components section are displayed on this page. Use the **Component installation order** field to specify the order in which the application components are installed when the application is deployed. Application components are listed by the deployment targets that they are associated with. To change the order of the components listed in the **Component installation order** field, select a component and click **Move Up** or **Move Down** until it is displayed in the appropriate location in the order.
2. Click **Browse** to locate a default license file for the application.
3. Click **Import translated license files** to import translated versions of the license files. When you specify a directory that contains translated license files, the IBM Smart Business Developers' Kit expects to find the translated license files in folders with language specific names. For example: *<the folder you specify>\xx* where *xx* can be en, cs, es, de, fr, it, ja, ko, pl, tr, zh/CN, zh/TW, or pt/BR. All of the translated license files that reside in these folders must have the same name as the license file that is in the default language. Click **Finish**.
4. Click **Browse** to locate a Readme document for the application. A Readme document should be used to provide installation instructions, any necessary postconfiguration steps, information to help end users get started with your application when it is installed, and instructions about how to uninstall the application.
5. Click **Import translated readme files** to import translated versions of the readme file. When you specify a directory that contains translated readme files, the IBM Smart Business Developers' Kit expects to find the translated readme files in folders with language specific names. For example: *<the folder you specify>\xx* where *xx* can be en, cs, es, de, fr, it, ja, ko, pl, tr, zh/CN, zh/TW, or pt/BR. All of the translated readme files that reside in these folders must have the same name as the readme file that is in the default language. Click **Finish**.

6. Select a **License key collection** option.

**Note:** This option is not available for applications targeted to IBM Lotus Foundations Start.

Select **None** if no license key is needed. Select **Absolute** if the path to the script used to apply the license key is absolute and type the path, including the name of the file, to the script. Select **Relative** if the path to the script used to apply the license key is relative to the installation directory for the component. Then select the component, and type the relative path. The installation for the application is started after the Smart Cube receives the license key from the IBM Smart Market. The license key is passed as a string as the only parameter to the application program. The behavior of the license key is determined by the way it is defined by the installation program or script.

7. Click **Next**.

---

## Provide application management information

Use the application management page to specify problem determination information, advanced administration URL, and security. Additionally, you can provide commands to start, stop, restart and check status of the application.

**Note:** The information contained in this topic does not apply to IBM Lotus Foundations targets.

To provide application management information, perform the following steps:

1. Select **Define Administrator Panel actions** if you want to configure code that resides on the server to control aspects of the application. For example, you can configure code to get the status of an application, start, stop, or restart the application. Administrator Panel actions are mostly targeted towards custom applications. For example, Domino and Database components do not support Administrator Panel actions such as stop, start, and restart, because the containers running these applications must be acted on as opposed to the application themselves; to stop a Domino component, the Domino server must be stopped, not just the Domino component.
2. Select **Monitor log files for problems** if you want to extend the problem determination functionality that is provided in the IBM Smart Business platform. You can use a symptom catalog that works in conjunction with various log files that you specify. If any of the log files contain information that is provided in the symptom catalog, information is provided that helps you determine the causes of any problems that occur. Information regarding the problem determination capabilities of the IBM Smart Business platform is provided in the Problem determination section of the information center.
3. Select **Customize the list of files to be gathered for support** if you want to specify various files that are provided to support when support is sought. For example, if an application contains a WebSphere Application Server component, and a DB2 Database component, the various log files that these application components generate are useful to a support technician when attempting to analyze a problem with the application.
4. Select **Provide access to advanced administration** if the application that you are assembling with the IBM Smart Business Developers' Kit features an administrative Web page that you can use to conduct administrative tasks.
5. Click **Next**.

Some of the information you provide on the Application Basics and the Application Management pages is displayed on the Administrator Panel. The following image is a sample Smart Cube, with highlighted areas corresponding to entries made on the Application Basics or Application Management pages. These entries are explained in the list following the graphic.



1. Product name, as entered on the Application Basics page.
2. Product icon, as entered on the Application Basics page.
3. Administrator Panel description, as entered on the Application Basics page.
4. Administrator Panel actions, as entered on the Application Management pages.
5. Advanced administration links, as entered on the Application Management pages.

Figure 2. Sample Smart Cube



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## Chapter 4. Cheatsheets for adding application components

The topics contained in this section contain specific instructions for adding application components to application projects.

Use the information contained in the topics in this section to add application components to application projects. For more information about the types of information in each topic, refer to the IBM Smart Business Developers' Kit information center. You can access the IBM Smart Business Developers' Kit information center at any time from within the IBM Smart Business Developers' Kit by selecting **Help > Help Contents**.

---

### Add a database deployment component

Use the Database Deployment Component wizard to add database deployment components.

#### Before you begin

You can use the wizard to derive the database definition and initial content from an existing database, which serves as the prototype. Or you can define the database and its initial content directly by providing SQL schema statements, also known as data definition language (DDL) statements, and SQL data and data change statements, also known as data manipulation language (DML) statements.

**Note:** Terms used in this document are as follows:

#### Database management system (DBMS)

This term is used when talking about the type of database management system (for example, DB2).

#### Database

This term is typically used when talking about a collection of records. However, when the context is unambiguous, the term database is often used to refer to a DBMS.

#### Structured Query Language (SQL)

This term is used when talking about the language statements (typically supplied in a file) used to specify processing of the database or individual records. There are two types of SQL statement discussed:

##### Data definition language (DDL)

These are statements used to define the structure of the database and its records.

##### Data manipulation language (DML)

These are statements used to access and manipulate the records in the database.

If you are going to replicate an existing database, then before you use the Database Deployment Component wizard, ensure that you have either local or remote access to the database server that has the database that you want to replicate installed on it.

## About this task

To add a new database, follow these steps:

1. Select **DB2 Database** on the Server Components panel.
2. Select **Add a new database**.
3. Enter a **display name** for the new database deployment component. This name is used in the IBM Smart Business Developers' Kit to specify the component. It is also used in the IBM Smart Business Application Installer. Click **OK**.
4. Select the method for creating the database, and populating it with data. You can use an existing database to be replicated, or specify your own SQL files that contain the database information. Typically you would use an existing database.
  - a. In the **Create a database** section (x86), or **Define the structure of a schema** (IBM i), choose **Use an existing DDL file** or **Duplicate an existing database** on x86 or **Duplicate an existing database** on IBM i.
  - b. In the **Populate a database with data** section, choose **Use an existing SQL file** or **Populate from an existing database**.
  - c. After making the selections, click **Next**
  - d. Provide information about the database that is updated during deployment. Enter or modify the **Deployment database name**. Choose to **Generate a new deployment database user name** (on x86) or **Generate a new iSeries user ID** (on IBM i) , or **Specify a new deployment database user name** (on x86) or **Specify a new iSeries user ID** (on IBM i). Enter the user name if you choose to specify it, and optionally choose to **Enable modifying this value during deployment**, in which case you should enter or modify the **Label text** and **Help text** to be displayed during deployment. If the database name already exists on the target platform, the deployment will not succeed. To help alleviate this risk, you should select the checkbox to enable modifying the value at deployment time. Selecting this checkbox enables the administrator to select a different database name in the event that the one you specified already exists. Regardless of whether or not you select this option, you should try to specify database names that are specific to your applications or company so that collisions do not occur. Click **Next**.
5. Specify the location of the SQL files or the existing database, on a **Local computer** or **Remote computer**. To ensure that you can connect to the remote computer where the component resides, verify that both your local computer and the computer that you want to connect to meet the criteria specified in the before you begin topic. Click **Next**.
6. Specify the information needed to access an existing database, including the user ID and password. Click **Next**.
7. Choose whether to replicate the complete database definition or only selected tables. Click **Next**.
8. Choose whether to replicate the complete database content or only selected tables. Click **Next**.
9. Choose whether to generate a basic database definition file or to customize the options for the db2look command. (This is only for advanced users. The db2look command is only available for DB2 LUW; it is not applicable to i5/OS.) Click **Finish**.

10. The database application is displayed as part of the project. You can choose to add another database or edit or remove any databases that are displayed. When you have finished specifying databases for this project, click **Next**.

## What to do next

Ensure that services required by your application are enabled on the target database server. If required services are not enabled, applications might fail to install or start. For detailed instructions on enabling services, refer to the documentation for the specific database server.

---

## Add a Lotus Domino component to an application

Use the Lotus Domino Deployment Component wizard to add Domino components to an application.

### Before you begin

Before you use the Lotus Domino Deployment Component wizard, ensure that you have either local or remote access to the Lotus Domino server that has the application that you want to add installed on it.

If you selected IBM Lotus Foundations Start as a target for your application project, see the "Add a Lotus Domino component to an application (Foundations Start)" topic in the information center for instructions specific to that platform.

### About this task

To add a new Domino component, complete the following steps:

1. Select **Add a new Domino component**.
2. Enter a display name for the new Domino component. This name is used in the IBM Smart Business Developers' Kit to specify the component. It is also used in the IBM Smart Business Application Installer. Select the check boxes that correspond to the target platforms that you want to deploy this application to. Click **OK**.
3. Locate the Domino server. Select whether the Domino server resides on a local or a remote computer. If you select a remote computer, complete the following steps:
  - a. Provide the fully qualified host name or the IP address of the computer.
  - b. Provide the administrator user name and password. If you are connecting to a Domino server running on Windows, you must have administrator privileges. On Linux operating systems, you must enable SSH and enter the ID of the user that runs the Domino server or the Linux root user. For information about enabling SSH, see Test deployment. On IBM i systems, use the adminsys user ID, or use a user ID that is \*SECOFR class and has the following special authorities:
    - \*ALLOBJ
    - \*AUDIT
    - \*IOSYSCFG
    - \*JOBCTL
    - \*SAVSYS
    - \*SECADM
    - \*SERVICE

- \*SPLCTL
- c. Type the fully qualified path to the folder containing the notes.ini file for the Domino server, or click **Browse** to locate the folder. The notes.ini file provides configuration information for the Domino server that features the application component you want to add, such as the way it is set up and how it locates files. This information is used to re-create the server configuration on the target computer at deployment time.

**Note:** To ensure that you can connect to the remote computer where the component resides, verify that both your local computer and the computer that you want to connect to meet the criteria specified in the Before you begin topic.

Click **Next**.

4. Select the Lotus Domino application or applications that you want to add. You can select files with either the .nsf or .ntf extension. A file with the .ntf extension typically does not contain data, whereas a file with the .nsf extension typically does. By default, the data associated with an .nsf file is included with the application. If you do not want to include the data, deselect the corresponding **Include data** check box. By default, and .ntf file that is selected is deployed as an .nsf file. If you want to install the .ntf file as a template, select the corresponding **Install as template** check box. Additionally, perform the following steps:
  - a. Using the **Up** and **Down** buttons next to the **Installation order** field, put the applications in the order in which they should be deployed on the Smart Cube.
  - b. Select **Reboot Domino server at the end of deployment** if you want to restart the Domino server after your applications have been deployed.
  - c. Ensure that the server ID has access to the specific applications that you want to add. The server ID might be on the access control list, however, the server ID might not be able to access the application depending on the user ID that performed the replication, and if the **Enforce a consistent Access Control list across all replicas** control is selected. You can change this option in the advanced settings panel for the access control list of the application, by deselecting the **Enforce a consistent Access Control list across all replicas** control. You can also give the default ACL entry access to the application which also provides the server the necessary access.

Click **Next**.

5. Configure the applications that you selected for the target computer by completing the following steps. You can provide a title for each application, configure groups, and select whether or not the application receives mail. In addition, you can choose to create or select to run an agent to perform post-configuration tasks on the application. The file name that is displayed is relative to the data directory. The application configuration panel is displayed for each application that you selected previously. Click **Next**.
  - a. Type a title and a file name for the application. The file name must include the path, relative to the Domino data directory, and the file extension must be .nsf if it is an application or .ntf if you are deploying it as a template.
  - b. Add, modify, or remove Access Control List entries for the application as necessary.
  - c. Optionally, create a full, searchable text index for the application. Selecting this option can speed up searches for documents, but might also use considerable disk space.

- d. If your application receives mail, select the **Application receives mail** check box. Provide a mail-in name for the mail-in database that is created at deployment time. Users and applications use this name to send mail to the database. Type a description for the mail-in database, and provide an internet mail address if needed. The internet mail address allows internet users to send mail to the database. You can type the full internet address, or select to have the domain of the Smart Cube resolved at deployment time.
- e. If your source application is a template (file extension of .ntf), and is designated a master template, you can select to update the application design if the application is already installed.

**Note:** The update process replaces both hidden and unhidden design elements with the design elements from the provided master template.

- f. If agents exist for the application, you can select an agent to automate postconfiguration tasks on the application. Select the check box and then select the agent from the list. You can select different agents for fresh installations and refresh installations.

For more information about working with agents, see the "Use agents to configure Domino applications" topic in the information center.

- g. Optionally, select to create a link for direct access to this application. Selecting this option creates a link to the Domino application on the IBM Smart Business User Programs Catalog site for the Smart Cube. Clicking the link opens the Domino application in the Lotus Notes client of the user.

Click **Next**.

6. Select the tasks and extension managers that you want enabled through the notes.ini file that will reside on the server. The tasks and extension managers that are listed are the ones that are detected in the notes.ini file that you specified when you connected to the Domino server. This list is a superset of all the task information, but the server that you want to configure on the deployment target might not require all of the tasks. Select the tasks and extension managers that are applicable to the Domino application that you want to add.

**Notes:**

- If you select a parent task, all of the subtasks are selected by default. You can deselect them by clearing the check boxes next to the tasks you do not want to include.
- Items that exist in the notes.ini file but are not selected on this page are not removed at deployment time.

Click **Next**.

7. Select additional files to install on the target computer in the Domino data directory. Select the files that are needed to support the applications that you are going to deploy. Typically, these files consist of files such as .so and .dll files, and other files that are shared object libraries that the Domino application require to function correctly. To add files to the data directory, click **Add** and complete the following steps:
  - a. Provide the location information for the computer on which the files are located and click **OK**.

- b. Select the folder containing the files you want to install in the left pane and highlight the specific files you want to install in the right pane. Click **OK**.
- c. If you want the files you selected to be stored in a specific subdirectory, enter it in the **Subdirectory (optional)** field, relative to the data directory. If the directory does not exist, it is created at deployment time.

Click **Next**.

8. Select native libraries or programs to install on the target computer. Select the files that are needed to support the applications that you are going to deploy. Typically, these files consist of files such as .so and .dll files, and other files that are shared object libraries that the Domino application require to function correctly. To add files, select the tab for the target operating system and click **Add**. Complete the following steps:
  - a. Provide the location information for the computer on which the files are located and click **OK**.
  - b. Select the folder containing the libraries or programs that you want to install in the left pane and highlight the specific items you want to install in the right pane. Click **OK**.

**Note:** A save file is created for each IBM i native object program, service program, or library that you add and these save files are included in the application package.

Click **Next**.

9. Add files that you do not want to add as part of the Domino environment on the target computer, but that you want to add as part of the application that you want to deploy. For example, a readme file. To add files to a location that you provide, click **Add** and complete the following steps:
  - a. Provide the location information for the computer on which the files are located and click **OK**.
  - b. Select the folder containing the files you want to install in the left pane and highlight the specific files you want to install in the right pane. Click **OK**. You are returned to the Add files to other directory window.
  - c. Type a destination for the files you want to install. If you type a destination, provide a default value, label, and help text. If you use a notes.ini variable, provide variable configuration information.

Click **Finish**.

10. The Domino application is displayed on the Domino Components page. You can choose to add another Domino component, or edit or remove any Domino components that are displayed. When you have finished specifying Domino components for this project, click **Next**.

For more information about specific fields and entries in the Lotus Domino Deployment Component wizard, see the help content for the wizard. This content is located in the **Reference** → **Server Components** section of the information center, under "Domino Components".

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## Add a PHP component to an application

Use the PHP Deployment Component wizard to add PHP components to an application.

## Before you begin

Before you use the PHP deployment component wizard, ensure that you either local or remote access to the PHP application that you want to add.

## About this task

To add a new PHP component, follow these steps:

1. Select **Add a new PHP component**.
2. Enter a display name for the new PHP component. This name is used to specify the component. It is also used in the IBM Smart Business Application Installer. Select the checkboxes that correspond to the target platforms that you want to deploy this application to. Click **OK**.
3. Specify the location of the PHP application files. Click **Next**.
4. Select whether the PHP application files reside on the local computer or a remote computer. To ensure that you can connect to the remote computer where the component resides, verify that both your local computer and the computer that you want to connect to meet the criteria specified in the before you begin topic.
5. Specify the path to the PHP application files on a local or remote computer, or click **Browse** to select the directory.
6. Click **Next**.
7. You can choose to modify the PHP application configuration file or specify that the end user can input configuration values during deployment. If you do not want to modify the configuration file, click **Next**. If you want to modify the configuration file, or specify that the values can be modified during deployment, follow these steps:
  - a. Click **Use a configuration file**.
  - b. Select the configuration file and click **Next**.
  - c. Modify the configuration file values.
  - d. When the modifications are complete, click **Next**.
8. Specify the name of the folder for the deployed PHP application files.

**Note:** This field contains the name of the folder specified as the location for the PHP application files.

This folder is created under the Web root on the target computer.

9. You can select **Specify URL for post configuration** and provide an installation script to add to the URL. This installation script will then continue the PHP application configuration when the deployment is complete. The link containing the URL for the installation script is displayed at the end of deployment.
10. When you have finished, click **Finish** to have the PHP application generated as part of your solution.
11. The PHP application is displayed in the PHP Applications page. You can choose to add another PHP component or edit or remove any PHP applications that are displayed. When you have finished specifying PHP applications for this project, click **Next**.

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## Add a WebSphere component to an application

Use the WebSphere Deployment Component wizard to add WebSphere components to an application.

## Before you begin

Before you use the wizard, ensure that you have either local or remote access to the server that has the WebSphere component that you want to add installed on it.

## About this task

To add a new WebSphere component, follow these steps:

1. Select **Add a new Web application**.
2. Enter a display name for the new WebSphere component. This name is used in the IBM Smart Business Developers' Kit to specify the component. It is also used in the IBM Smart Business Application Installer. Select the checkboxes that correspond to the target platforms that you want to deploy this application to. Click **OK**.
3. On the Locate Source Profile page, specify the path to the config directory of the WebSphere Application Server profile or the path to a configuration archive containing a profile configuration. A configuration archive is an archive file produced by running the AdminTask exportWasProfile command in the wasadmin console. To specify a WebSphere Application Server profile, follow these steps:
  - a. Select whether the WebSphere Application Server profile resides on the local computer, a remote computer, or in a configuration archive.
  - b. Specify the path to the config directory on a local or remote computer, or the path to a valid configuration archive file or click **Browse** to select the directory. To ensure that you can connect to the remote computer where the component resides, verify that both your local computer and the computer that you want to connect to meet the criteria specified in the before you begin topic.
  - c. Click **Next**.
4. A list of Web applications from the configuration that you provided are displayed on the Select Web Applications page. Select the applications that you want to deploy as part of the WebSphere component. Click **Next**.
5. Review the configuration summary for the applications that you have selected.
  - a. If you correct errors and want to reload the information, click **Reload configuration from profile**.

**Note:** The configuration can be reloaded only if the profile is located on the local computer.
  - b. When you have reviewed the configuration summary, click **Next**.
6. On the Configure Application Server page, you can select **Override default application server settings** and change any of the default application server settings. When you are finished, click **Next**.
7. On the Provide Custom Scripts page, you can specify custom scripts to run during deployment of this application. Click **Next**.
8. On the Deployment Options page, you can configure optional steps to be performed during deployment.
  - a. Select **Stop deployment if applications already exist** if you want to ensure that applications that exist on the target computer are not overwritten.
  - b. Select **Run a custom script** if you want to run custom scripts you specified at various steps during the deployment. If you select this option, specify the script, the language for the script, and any parameters you want used

when running the script. You can also specify whether to restart the application server after running the script.

- c. Select **Restart application server** to restart WebSphere Application Server after the deployment. By restarting WebSphere Application Server, the applications that you deploy are available for use after the restart.
  - d. Click **Next**.
9. You can specify deployment options for each application that you selected. These deployment options are selected by default to enable more validation before deployment.
- a. Select **Precompile JavaServer Pages files** to increase performance for newly accessed pages.
  - b. Select **Deploy enterprise beans** to include enterprise beans.
  - c. Select **Deploy Web services** to deploy the application as a Web service.

**Note:** If the application does not contain Web services or enterprise Java beans, these will not be deployed even if checked.

If the application has security roles, you can specify user names for these roles.

- a. Assign a user name for each available security role.
  - b. If you want the deployment wizard to prompt for a user name for a security role, select **Enable modifying this value during deployment**, then modify the associated **Label text** and **Help text**, as needed.
  - c. When you have finished, click **Next**.
10. Specify the JAR files and native library files required by the JDBC provider.
- a. Click **Locate files automatically** or click **Add** for the **Classpath files** and **Native libraries** and then specify if the files are on your local computer or a remote computer. If they are on a remote computer, provide the required information to access that computer.
  - b. After specifying all the files, click **Next**.

**Note:** When the configuration contains data sources that use DB2 as a database, you may get a warning indicating that JAR file `db2jcc_license_cisuzz.jar` is used but has not been provided. You can ignore this warning. The JAR file is not used when running WebSphere Application Server and DB2 on the Smart Cube.

11. If the application uses a data source you can configure that data source.
- a. If there are existing data sources that match the type that this Web application uses, you can select **Use information from an existing database component** and then select the database you want to use.
  - b. Specify the **Database name**, **Server name**, and **Port number** to access the database.
  - c. If you want any of these values to be configurable during deployment, click **Enable modifying this value during deployment**, then change the associated **Label text** and **Help text**, as needed.

Different data sources might require additional configuration information. When you are finished configuring the data source, click **Next**.

12. Provide any additional resource-specific information. When you have finished completing each page, click **Next**.
13. You can choose to add another WebSphere component, or edit or remove any displayed Web application. When you have finished specifying Web applications for this project, click **Next**.

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## Add a custom server component to an application

Use the Custom Deployment Component wizard to add custom server components to an application. While there are other Deployment Component wizards that are targeted at applications that run in middleware containers such as DB2, Websphere Application Server, Lotus Domino, and PHP servers, this wizard is designed to facilitate the deployment of all other applications types, programs, scripts and system commands. The only requirement is that the application can be installed silently.

### Before you begin

Before you use the Custom Deployment Component wizard, ensure that you have local access to the custom program that you want to add.

### About this task

To add a custom server component, complete the following steps:

1. Select **Add a new custom component**.
2. Provide a display name for the custom deployment component. This name is used in the IBM Smart Business Developers' Kit to specify the component. It is also used in the IBM Smart Business Application Installer. Click **OK**.
3. Select the type of program the custom component is. You can select from ANT, ISMP, Java, Other, or System Command. If you selected **IBM Smart Business for i** as the target platform when you created the project, you can also select IBM i Command or IBM i Program. For more information about the different file types, see the "General Program Information" topic in the **Reference** → **Server Components** → **Custom Components** section of the information center.
4. Browse to the location of the files that are to be included as part of this custom deployment component.
5. Select **Program requires a response file** if the program uses a response file to run silently. If the program requires a response file, browse to the location where the file resides, and select what type of response file it is. You can select from CID, ISMP, ISS, XML, or Properties files. Click **Next**. For more information about response files, see the "General Program Information" topic in the **Reference** → **Server Components** → **Custom Components** section of the information center.
6. Use the Program Input page to add, edit, remove, or reorder variables for which you want input collected during deployment of the application. To create variables, click **Add**.
  - a. If your program uses a response file, select the variables for which the input should be stored in the response file on the Specify Variable Association page. Click **Next** and provide information about the variable on the Create Variable page.
  - b. If your program does not use a response file, provide information about the variable on the Create Variable page.

Click **Next**.

For more information about saving variable values to a response file, see the "Specify Variable Associations" topic in the information center. For more information about creating or editing variables, see the "Create Variable" topic in the information center.

7. Identify ports that are bound by this component. Provide information about both configurable and non-configurable ports that this component binds.

**Note:** For information about the ports that are configured on the Smart Cube and the IBM Smart Business Administration, see the "Understand how ports are managed" topic in the information center.

8. Provide information about bound ports you add or edit using the Specify Port Attributes panel. Click **Next**.
9. Specify how to determine the installation location of your program, if necessary. If you choose to enter a location, it must be entered as a fully qualified UNIX® or IBM i path. Click **Next**. For more information, see the "General Program Information" topic in the **Reference** → **Server Components** → **Custom Components** section of the information center.
10. Provide information that is specific to the type of program that you selected in step 3. For specific information regarding the types of information to provide, see the "Main program information" topics in the **Reference** → **Server Components** → **Custom Components** section of the information center. If you do not want to take any specific actions at preconfiguration or postconfiguration time, click **Finish**. Otherwise, select the type of preconfiguration or postconfiguration program to run. You can select from no preconfiguration or postconfiguration required, or to run a Java, Ant, system command, or other type of program at that time. If you selected **IBM Smart Business for i** as the target platform when you created the project, you can select from no preconfiguration or postconfiguration required, or to run an IBM i command, an IBM i program, a Java program, or a system command at that time. For more information about preconfiguration and postconfiguration programs, see the "Preconfiguration program information" topics in the **Reference** → **Server Components** → **Custom Components** section of the information center or the "Postconfiguration program information" topics in the **Reference** → **Server Components** → **Custom Components** section of the information center. Click **Next**.
11. If you selected to run a preconfiguration or postconfiguration program, provide information about each of your those programs and click **Next**.
12. Click **Finish**.
13. The custom program is displayed on the Custom Components page. You can choose to add another program, or edit or remove any programs that are displayed. When you have finished specifying custom components for this project, click **Next**.