

IBM Interact
Version 10 Release 0
February 2017

Upgrade Guide



Note

Before using this information and the product it supports, read the information in "Notices" on page 45.

This edition applies to version 10, release 0, modification 0 of IBM Interact and to all subsequent releases and modifications until otherwise indicated in new editions.

© **Copyright IBM Corporation 2001, 2017.**

US Government Users Restricted Rights – Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

Contents

Chapter 1. Upgrade overview 1

Upgrade roadmap	1
How the installers work	2
Modes of installation	2
Sample response files	3
Interact documentation and help.	3

Chapter 2. Planning the Interact upgrade 5

Prerequisites	6
JDK requirements.	8
Upgrade prerequisites for all IBM Marketing Software products	8
Interact upgrade tools	9
Interact upgrade worksheet	10
Information for creating JDBC connections	13
Correcting the registry file when upgrade installation fails	15

Chapter 3. Upgrading Interact 17

Backing up the Interact runtime environment	17
Undeploying the Interact runtime server	18
Running the installer	18
Reviewing and modifying the SQL upgrade script	19
Setting environment variables	21
Running the Interact upgrade tools	23
Running the upgrade tool for the design time environment	23
Running the upgrade tools for the runtime environment	24
Redeploying the Interact runtime server in the web application server	25

Upgrade log	25
Upgrading partitions	25
Creating and populating the Interact system tables	25

Chapter 4. Deploying Interact 29

Deploying Interact on WebSphere Application Server	29
Deploying Interact on WAS from a WAR file	29
Deploying Interact on WAS from an EAR file	30
Deploying Interact on WebLogic	31
JVM parameters for upgrading Interactive Channel strategies	32
Verifying the Interact installation	33
Additional configuration for enhanced security	33
Disabling the X-Powered-By flag	33
Configuring a restrictive cookie path	34

Chapter 5. Uninstalling Interact 35

Chapter 6. configTool 37

Before you contact IBM technical support 43

Notices 45

Trademarks	47
Privacy Policy and Terms of Use Considerations	47

Chapter 1. Upgrade overview

An upgrade of Interact is complete when you upgrade, configure, and deploy Interact. The Interact Upgrade Guide provides detailed information about upgrading, configuring, and deploying Interact.

Use the *Upgrade roadmap* section to obtain a broad understanding about using the Interact Upgrade Guide.

Upgrade roadmap

Use the upgrade roadmap to quickly find the information that you need for upgrading Interact.

You can use the following table to scan the tasks that must be completed for upgrading Interact:

Table 1. Interact upgrade roadmap

Topic	Information
Chapter 1, "Upgrade overview"	This chapter provides the following information: <ul style="list-style-type: none">• "How the installers work" on page 2• "Modes of installation" on page 2• "Interact documentation and help" on page 3
Chapter 2, "Planning the Interact upgrade," on page 5	This chapter provides the following information: <ul style="list-style-type: none">• "Prerequisites" on page 6• "Upgrade prerequisites for all IBM Marketing Software products" on page 8• "Interact upgrade tools" on page 9• "Interact upgrade worksheet" on page 10• "Information for creating JDBC connections" on page 13
Chapter 3, "Upgrading Interact," on page 17	This chapter provides the following information: <ul style="list-style-type: none">• "Backing up the Interact runtime environment" on page 17• "Undeploying the Interact runtime server" on page 18• "Running the installer" on page 18• "Reviewing and modifying the SQL upgrade script" on page 19• "Setting environment variables" on page 21• "Running the Interact upgrade tools" on page 23• "Redeploying the Interact runtime server in the web application server" on page 25• "Upgrade log" on page 25• "Upgrading partitions" on page 25• "Creating and populating the Interact system tables" on page 25

Table 1. Interact upgrade roadmap (continued)

Topic	Information
Chapter 4, "Deploying Interact," on page 29	This chapter provides the following information: <ul style="list-style-type: none">• "Deploying Interact on WebSphere Application Server" on page 29• "Deploying Interact on WebLogic" on page 31• "Verifying the Interact installation" on page 33
Chapter 5, "Uninstalling Interact," on page 35	This chapter provides information about how to uninstall Interact.
Chapter 6, "configTool," on page 37	This chapter provides information about how to use the configTool utility.

How the installers work

You must use the suite installer and the product installer when you install or upgrade any IBM® Marketing Software product. For example, for installing Interact, you must use the IBM Marketing Software suite installer and the IBM Interact installer.

Make sure that you use the following guidelines before you use the IBM Marketing Software suite installer and the product installer:

- The suite installer and the product installer must be in the same directory on the computer where you want to install the product. When multiple versions of a product installer are present in the directory with the master installer, the master installer always shows the latest version of the product on the IBM Marketing Software Products screen in the installation wizard.
- If you are planning to install a patch immediately after you install an IBM Marketing Software product, make sure that the patch installer is in the same directory as that of the suite and product installers.
- The default top-level directory for IBM Marketing Software installations is /IBM/IMS for UNIX or C:\IBM\IMS for Windows. However, you can change the directory during installation.

Modes of installation

The IBM Marketing Software suite installer can run in one of the following modes: GUI mode, console mode, or silent mode (also called the unattended mode). Select a mode that suits your requirements when you install Interact.

For upgrades, you use the installer to perform many of the same tasks that you perform during the initial installation.

GUI mode

Use the GUI mode for Windows or the X Window System mode for UNIX to install Interact by using the graphical user interface.

Console mode

Use the console mode to install Interact by using the command line window.

Note: To display the Installer screens correctly in console mode, configure your terminal software to support UTF-8 character encoding. Other character encoding, such as ANSI, will not render the text correctly, and some information will not be readable.

Silent mode

Use the silent or unattended mode to install Interact multiple times. The silent mode uses response files for installation, and does not require user input during the installation process.

Note: Silent mode is not supported for upgrade installations in clustered web application or clustered listener environments.

Sample response files

You must create response files to set up a silent installation of Interact. You can use sample response files to create your response files. The sample response files are included with the installers in the ResponseFiles compressed archive.

The following table provides information about sample response files:

Table 2. Description of sample response files

Sample response file	Description
installer.properties	The sample response file for the IBM Marketing Software master installer.
installer_product initials and product version number.properties	The sample response file for the Interact installer. For example, installer_ucn.n.n.n.properties is the response file of the Campaign installer, where n.n.n.n is the version number.
installer_report pack initials, product initials, and version number.properties	The sample response file for the reports pack installer. For example, installer_urpcn.n.n.n.properties is the response file of the Campaign reports pack installer, where n.n.n.n is the version number

Interact documentation and help

Interact provides documentation and help for users, administrators, and developers.

Use the following table to get information about how to get started with Interact:

Table 3. Get up and running

Task	Documentation
View a list of new features, known issues, and workarounds	<i>IBM Interact Release Notes</i>
Learn about the structure of the Interact database	<i>IBM Interact System Tables and Data Dictionary</i>
Install or upgrade Interact and deploy the Interact web application	One of the following guides: <ul style="list-style-type: none"> <i>IBM Interact Installation Guide</i> <i>IBM Interact Upgrade Guide</i>
Implement the IBM Cognos® reports provided with Interact	<i>IBM Marketing Software Reports Installation and Configuration Guide</i>

Use the following table to get information about how to configure and use Interact:

Table 4. Configure and use Interact

Task	Documentation
<ul style="list-style-type: none"> • Maintain users and roles • Maintain data sources • Configure Interact optional offer serving features • Monitor and maintain runtime environment performance 	<i>IBM Interact Administrator's Guide</i>
<ul style="list-style-type: none"> • Work with interactive channels, events, learning models, and offers • Create and deploy interactive flowcharts • View Interact reports 	<i>IBM Interact User's Guide</i>
Use Interact macros	<i>IBM Macros for IBM Marketing Software: User's Guide</i>
Adjust components to obtain optimal performance	<i>IBM Interact Tuning Guide</i>

Use the following table to get information about how to get help if you face issues when you use Interact:

Table 5. Get help

Task	Instructions
Open online help	<ol style="list-style-type: none"> 1. Choose Help > Help for this page to open a context-sensitive help topic. 2. Click the Show Navigation icon in the help window to display the full help. <p>You must have web access to view context-sensitive online help. Contact IBM Support for more information about accessing and installing IBM Knowledge Center locally for offline documentation.</p>
Obtain PDFs	<p>Use either of the following methods:</p> <ul style="list-style-type: none"> • Choose Help > Product Documentation to access Interact PDFs. • Choose Help > All IBM Marketing Software Documentation to access all available documentation.
Get support	Go to http://www.ibm.com/support to access the IBM Support Portal.

Chapter 2. Planning the Interact upgrade

Upgrade your installation of Interact after understanding the guidelines that are specific to your current version of Interact.

Use the following guidelines for upgrading Interact:

Table 6. Upgrade scenarios for Interact

Source version	Upgrade path
Any 7.x or pre-8.6.x version	<p>Complete the following steps to upgrade Interact:</p> <ol style="list-style-type: none">1. Upgrade your earlier version to version 8.6.x.<ol style="list-style-type: none">a. Perform an in-place installation of version 8.6.x over your old version. Use the Interact installer for both the design time environment and the runtime environment. Important: You must upgrade Campaign before you upgrade the Interact design time environment.b. Run the upgrade tools to upgrade configuration settings, files, and data from your source Interact version.c. Upgrade the reports package as explained in the <i>IBM Marketing Software Reports Installation and Configuration Guide</i>.2. Upgrade your 8.6.x version to version 10.0.<ol style="list-style-type: none">a. Perform an in-place installation of version 10.0 over your old version. Use the Interact installer for both the design time environment and the runtime environment. Important: You must upgrade Campaign before you upgrade the Interact design time environment.b. Run the upgrade tools to upgrade configuration settings, files, and data from your source Interact version.c. Upgrade the reports package as explained in the <i>IBM Marketing Software Reports Installation and Configuration Guide</i>.
Any 8.6.x version	<p>Complete the following steps to upgrade Interact:</p> <ol style="list-style-type: none">1. Upgrade your 8.6.x version to 10.0.<ol style="list-style-type: none">a. Perform an in-place installation of version 10.0 over your old version. Use the Interact installer for both the design time environment and the runtime environment. Important: You must upgrade Campaign before you upgrade the Interact design time environment.b. Run the upgrade tools to upgrade configuration settings, files, and data from your source Interact version.c. Upgrade the reports package as explained in the <i>IBM Marketing Software Reports Installation and Configuration Guide</i>.

Table 6. Upgrade scenarios for Interact (continued)

Source version	Upgrade path
Any 9.x.x version	<p>Complete the following steps to upgrade Interact:</p> <ol style="list-style-type: none"> 1. Upgrade your 9.x.x version to 10.0. <ol style="list-style-type: none"> a. Perform an in-place installation of version 10.0 over your old version. Use the Interact installer for both the design time environment and the runtime environment. Important: You must upgrade Campaign before you upgrade the Interact design time environment. b. Run the upgrade tools to upgrade configuration settings, files, and data from your source Interact version. c. Upgrade the reports package as explained in the <i>IBM Marketing Software Reports Installation and Configuration Guide</i>.

Prerequisites

Before you install or upgrade any IBM Marketing Software product, you must ensure that your computer complies with all of the prerequisite software and hardware.

System requirements

For information about system requirements, see the *Recommended Software Environments and Minimum System Requirements* guide.

In order for Opportunity Detect to connect to the DB2 database, the DB2 installation must include the install header files in the /home/db2inst1/include directory on client machine. To include the header files in the installation, select the **Custom Install** option when you install DB2 and select the **Base Application Development Tools** feature.

DB2 requirements

In order for Opportunity Detect to connect to the DB2 database, the DB2 installation must include the install header files in the home/db2inst1/include directory on client machine. To include the header files in the installation, select the **Custom Install** option when you install DB2 and select the **Base Application Development Tools** feature.

Network domain requirements

The IBM Marketing Software products that are installed as a suite must be installed on the same network domain to comply with the browser restrictions that are designed to limit the security risks that can occur with cross-site scripting.

JVM requirements

IBM Marketing Software applications within a suite must be deployed on a dedicated Java™ virtual machine (JVM). IBM Marketing Software products customize the JVM that is used by the web application server. If you encounter errors that are related to the JVM, you must create an Oracle WebLogic or WebSphere® domain that is dedicated to the IBM Marketing Software products.

Knowledge requirements

To install IBM Marketing Software products, you must have a thorough knowledge of the environment in which the products are installed. This knowledge includes knowledge about operating systems, databases, and web application servers.

Internet browser settings

Make sure that your internet browser complies with the following settings:

- The browser must not cache web pages.
- The browser must not block pop-up windows.

Access permissions

Verify that you have the following network permissions to complete the installation tasks:

- Administration access for all necessary databases
- Read and write access to the relevant directory and subdirectories for the operating system account that you use to run the web application server and IBM Marketing Software components
- Write permission for all files that you must edit
- Write permission for all directories where you must save a file, such as the installation directory and backup directory if you are upgrading
- Appropriate read, write, and execute permissions to run the installer

Verify that you have the administrative password for your web application server.

For UNIX, all installer files for IBM products must have full permissions, for example, `rwxr-xr-x`.

JAVA_HOME environment variable

If a **JAVA_HOME** environment variable is defined on the computer where you install an IBM Marketing Software product, verify that the variable points to a supported version of JRE. For information about system requirements, see the *IBM Marketing Software Recommended Software Environments and Minimum System Requirements* guide.

If the **JAVA_HOME** environment variable points to an incorrect JRE, you must clear the **JAVA_HOME** variable before you run the IBM Marketing Software installers.

You can clear the **JAVA_HOME** environment variable by using one of the following methods:

- Windows: In a command window, enter **set JAVA_HOME=** (leave empty) and press **Enter**.
- UNIX: In the terminal, enter **export JAVA_HOME=(leave empty)** and press **Enter**.

The IBM Marketing Software installer installs a JRE in the top-level directory for the IBM Marketing Software installation. Individual IBM Marketing Software application installers do not install a JRE. Instead, they point to the location of the JRE that is installed by the IBM Marketing Software installer. You can reset the environment variable after all installations are complete.

For more information about the supported JRE, see the *IBM Marketing Software Recommended Software Environments and Minimum System Requirements* guide.

Marketing Platform requirement

You must install or upgrade Marketing Platform before you install or upgrade any IBM Marketing Software products. For each group of products that work together, you must install or upgrade Marketing Platform only once. Each product installer checks whether the required products are installed. If your product or version is not registered with Marketing Platform, a message prompts you to install or upgrade Marketing Platform before you proceed with your installation. Marketing Platform must be deployed and running before you can set any properties on the **Settings > Configuration** page.

Campaign requirement

You must install or upgrade and configure Campaign before you install or upgrade the Interact design time environment.

JDK requirements

To integrate Interact with IBM MQ, Interact runtime must be on appserver with JDK 1.7. For WebSphere and WebLogic, it is recommended to use the latest supplied JDK fix pack version.

Upgrade prerequisites for all IBM Marketing Software products

Meet all requirements for permissions, operating system, and knowledge correctly before you upgrade Interact to ensure a seamless upgrade experience.

Removing response files generated by previous installations

If you are upgrading from a version before 8.6.0, you must delete the response files that are generated by previous Interact installations. Old response files are not compatible with the 8.6.0 and later installers.

Failure to remove old response files can result in having incorrect data pre-filled in installer fields when the installer is run, or in the installer failing to install some files or skipping configuration steps.

The IBM response file is named `installer.properties`.

The response files for each product are named `installer_productversion.properties`.

The installer creates response files in the directory that you specify during installation. The default location is the home directory of the user.

User account requirement for UNIX

On UNIX, the user account that installed the product must complete the upgrade, otherwise the installer fails to detect a previous installation.

32-bit to 64-bit version upgrades

If you are moving from a 32-bit to a 64-bit version of Interact, ensure that you complete the following tasks:

- Ensure that the database client libraries for your product data sources are 64-bit.
- Ensure that all relevant library paths, for example startup or environment scripts, correctly reference the 64-bit versions of your database drivers.

Unloading unused files from memory on AIX®

For installations on AIX, run the **slibclean** command that is included with your AIX installation to unload unused libraries from the memory before you run the installer in the upgrade mode.

Note: You must run the **slibclean** command as a root user.

Starting the web application server

When the JDBC drivers in WebLogic are used for migration, the web application server on which the new version of the Interact runtime server is deployed must always run to provide access to the database drivers.

Interact upgrade tools

You must upgrade the runtime environment and the design time environment when you upgrade Interact. Run the Interact upgrade tools to upgrade system tables, contact and response history tables, and Interact user profile tables.

Interact provides five upgrade tools, one for upgrading the design time environment (**aciUpgradeTool**) and four for upgrading the runtime environment (**aciUpgradeTool_crhtab**, **aciUpgradeTool_lrntab**, **aciUpgradeTool_runtab**, and **aciUpgradeTool_usrtab**). The upgrade scripts are delivered with the new version of Interact, and are available after you run the IBM Marketing Software suite installer in clean or upgrade mode for both the runtime environment and the design time environment.

You can upgrade the Interact design time environment configuration properties when you upgrade the Campaign configuration properties.

Use the following table to understand the purpose of the Interact upgrade tools:

Table 7. Interact upgrade tools

Tool	Location	Purpose
aciUpgradeTool	<i>Interact_Design_Install_Directory</i> <i>/interactDT/tools/upgrade</i>	Upgrades the Interact design time environment tables in the Campaign system tables.
aciUpgradeTool_runtab	<i>Interact_Runtime_Install_Directory</i> <i>/tools/upgrade</i>	Upgrades the Interact runtime environment tables and the Interact runtime environment configuration properties.
aciUpgradeTool_lrntab	<i>Interact_Runtime_Install_Directory</i> <i>/tools/upgrade</i>	Upgrades the Interact learning tables.

Table 7. Interact upgrade tools (continued)

Tool	Location	Purpose
aciUpgradeTool_crhtab	<i>Interact_Runtime_Install_Directory/tools/upgrade</i>	Upgrades the contact and response history tables that are used with cross-session response tracking.
aciUpgradeTool_usrtab	<i>Interact_Runtime_Install_Directory/tools/upgrade</i>	Upgrades the Interact tables that are required in your profile user tables.

Interact upgrade worksheet

Use the Interact upgrade worksheet to gather information about the database that contains your Interact upgrade system tables and about other IBM Marketing Software products that are required for upgrading Interact.

Marketing Platform database information

The installation wizards for each IBM Marketing Software product must be able to communicate with the Marketing Platform system table database to register the product. Each time that you run the installer, you must enter the following database connection information for the Marketing Platform system table database:

- Database type
- Database host name
- Database port
- Database name or schema ID
- User name and password for the database account
- JDBC connection URL to the Marketing Platform database

Information required to upgrade the Interact runtime environment

Gather information about your Interact runtime installation before you run the Interact runtime environment upgrade tools.

aciUpgradeTool_runtab

Collect the following information about the configuration of the target system:

- The directory where Marketing Platform is installed.
- Full path of the Interact configuration file (*interact_configuration.xml*). The file is in the *conf* directory under the Interact installation.

If you connect to the runtime environment system tables by using the web application server, collect the following information:

- Host name
- Port
- User name
- Password
- For WebLogic: Full path and file name of the WebLogic JAR file

If you connect to the runtime environment system tables by using JDBC, collect the following information:

- Java class name for the JDBC driver
- JDBC URL
- Additional properties that are required by the JDBC driver
- Database user name and password

Collect the following information about the target runtime environment database:

- Catalog (or database) containing the target runtime environment system tables
- Schema
- Whether the tables are configured for Unicode

Collect the following information about the Interact installation on the source system:

- Version of Interact you are upgrading from

aciUpgradeTool_Irntab

Collect the following information about the configuration of the target system:

- The directory where Marketing Platform is installed

If you connect to the learning tables by using the web application server, collect the following information:

- Host name
- Port
- User name
- Password
- For WebLogic: Full path and file name of the WebLogic JAR file

If you connect to the learning tables by using JDBC, collect the following information:

- Java class name for the JDBC driver
- JDBC URL
- Additional properties that are required by the JDBC driver
- Database user name and password

Collect the following information about the target learning database:

- Catalog (or database) containing the target learning tables
- Schema
- Whether the tables are configured for Unicode

Collect the following information about the Interact installation on the source system:

- Version of Interact you are upgrading from

aciUpgradeTool_crhtab

Collect the following information about the configuration of the target system:

- The directory where Marketing Platform is installed

If you connect to the contact history tables for cross-session response by using the web application server, collect the following information:

- Host name
- Port
- User name
- Password
- For WebLogic: Full path and file name of the WebLogic JAR file

If you connect to the contact history tables for cross-session response by using JDBC, collect the following information:

- Java class name for the JDBC driver
- JDBC URL
- Additional properties that are required by the JDBC driver
- Database user name and password

Collect the following information about the target contact history tables for cross-session response database:

- Catalog (or database) containing the target contact history tables for cross-session response
- Schema
- Whether the tables are configured for Unicode

Collect the following information about the Interact installation on the source system:

- Version of Interact you are upgrading from

aciUpgradeTool_usrtab

Collect the following information about the configuration of the target system:

- The directory where Marketing Platform is installed

If you connect to the user profile tables by using the web application server, collect the following information:

- Host name
- Port
- User name
- Password
- For WebLogic: Full path and file name of the WebLogic JAR file

If you connect to the user profile tables by using JDBC, collect the following information:

- Java class name for the JDBC driver
- JDBC URL
- Additional properties that are required by the JDBC driver
- Database user name and password

Collect the following information about the target user profile database:

- Catalog (or database) containing the target user profile tables
- Schema

- Whether the tables are configured for Unicode

Collect the following information about the Interact installation on the source system:

- Version of Interact you are upgrading from

Information required to upgrade the Interact design time environment

Gather information about your Interact design time installation before you run the Interact design time environment upgrade tool.

aciUpgradeTool

Collect the following information about the configuration of the target system:

- The name of the partition you are upgrading.
- The directory where Marketing Platform is installed.
- Full path to the Campaign configuration file (`campaign_configuration.xml`). The Campaign configuration file is in the `conf` directory under your Campaign installation.

If you connect to the design time environment system tables by using the web application server, collect the following information:

- Host name
- Port
- User name
- Password
- For WebLogic: Full path and file name of the WebLogic JAR file

If you connect to the design time environment system tables by using JDBC, collect the following information:

- Java class name for the JDBC driver
- JDBC URL
- Additional properties that are required by the JDBC driver
- Database user name and password

Collect the following information about the target design time environment database:

- Catalog (or database) containing the target design time environment system tables
- Schema
- Whether the tables are configured for Unicode

Collect the following information about the Interact installation on the source system:

- Version of Interact that you are upgrading from

Information for creating JDBC connections

Use default values when you create JDBC connections if specific values are not provided. For more information, see the application server documentation.

Note: If you are not using the default port setting for your database, make sure that you change it to the correct value.

WebLogic

Use the following values if your application server is WebLogic:

SQLServer

- Database Driver: Microsoft MS SQL Server Driver (Type 4) Versions: 2012, 2012 SP1 and SP3, 2014, 2014 SP1
- Default port: 1433
- Driver class: `com.microsoft.sqlserver.jdbc.SQLServerDriver`
- Driver URL: `jdbc:sqlserver://<your_db_host>[\\<named_instance>]:<your_db_port>;databaseName=<your_db_name>`
- Properties: Add `user=<your_db_user_name>`

Oracle

- Driver: Other
- Default port: 1521
- Driver class: `oracle.jdbc.OracleDriver`
- Driver URL:
`jdbc:oracle:thin:@<your_db_host>:<your_db_port>:<your_db_service_name>`
Enter the driver URL by using the format that is shown. IBM Marketing Software applications do not allow the use of Oracle's RAC (Real Application Cluster) format for JDBC connections.
- Properties: Add `user=<your_db_user_name>`

DB2®

- Driver: Other
- Default port: 50000
- Driver class: `com.ibm.db2.jcc.DB2Driver`
- Driver URL: `jdbc:db2://<your_db_host>:<your_db_port>/<your_db_name>`
- Properties: Add `user=<your_db_user_name>`

WebSphere

Use the following values if your application server is WebSphere:

SQLServer

- Driver: N/A
- Default port: 1433
- Driver class:
`com.microsoft.sqlserver.jdbc.SQLServerConnectionPoolDataSource`
- Driver URL: N/A

In the **Database Type** field, select **User-defined**.

After you create the JDBC Provider and data source, go to the **Custom Properties** for the data source, and add, modify properties as follows.

- `serverName=<your_SQL_server_name>`

- portNumber =<SQL_Server_Port_Number>
- databaseName=<your_database_name>

Add the following custom property:

Name: webSphereDefaultIsolationLevel

Value: 1

Datatype: Integer

Oracle

- Driver: Oracle JDBC Driver
 - Default port: 1521
 - Driver class: oracle.jdbc.OracleDriver
 - Driver URL:
jdbc:oracle:thin:@<your_db_host>:<your_db_port>:<your_db_service_name>
- Enter the driver URL by using the format that is shown. IBM Marketing Software applications do not allow the use of Oracle's RAC (Real Application Cluster) format for JDBC connections.

DB2

- Driver: JCC Driver Provider
- Default port: 50000
- Driver class: com.ibm.db2.jcc.DB2Driver
- Driver URL: jdbc:db2://<your_db_host>:<your_db_port>/<your_db_name>

Add the following custom property:

Name: webSphereDefaultIsolationLevel

Value: 2

Datatype: Integer

Correcting the registry file when upgrade installation fails

If installation fails because the installer could not detect the base version of your installed product, you can correct the registry file as described here.

About this task

The InstallAnywhere Global registry file, named `.com.zerog.registry.xml`, is created when a IBM Marketing Software product is installed. The registry file tracks all installed IBM Marketing Software products, including their features and components, on that server.

Procedure

1. Locate the `.com.zerog.registry.xml` file.

Depending on the server on which you are installing, the `.com.zerog.registry.xml` file is in one of the following locations.

- On Windows servers, the file is in the Program Files/Zero G Registry folder.

Zero G Registry is a hidden directory. You must enable the setting to view hidden files and folders.

- On UNIX systems, the file is in one of the following directories.
 - Root user - /var/
 - Non-root user - \$HOME/
 - On Mac OSX servers, the file is in the /library/preferences/ folder.
2. Make a backup copy of the file.
 3. Edit the file to change all entries that refer to the version of your installed product.

For example, this is a section of the file that corresponds to IBM Campaign version 8.6.0.3.

```
<product name="Campaign" id="dd6f88e0-1ef1-11b2-accf-c518be47c366"  
version=" 8.6.0.3 " copyright="2013" info_url="" support_url=""  
location="<IBM_Unica_Home>\Campaign" last_modified="2013-07-25 15:34:01">
```

In this case, you would change all entries that refer to version=" 8.6.0.3 " to the base version, which is 8.6.0.0 in this case.

Chapter 3. Upgrading Interact

You can upgrade Interact by overwriting your existing Interact installation. If you cannot upgrade your current version of Interact directly, you must install Interact in a new location.

About this task

An in-place upgrade is one where you overwrite your existing installation. You can complete in-place upgrades for Interact version 8.5.0 and later.

To ensure that the installer automatically upgrades your existing Interact design time and runtime environment, select the same location as your old Interact design time and runtime location.

When in-place upgrades are not possible, you must install Interact in a new location. Because of the architectural changes between Interact version 8.5.0 and previous versions of Interact, there is no upgrade path from earlier versions of Interact.

Complete the following steps to upgrade Interact:

Procedure

1. Back up the Interact runtime environment
2. Undeploy the Interact runtime server
3. Run the IBM Marketing Software installer
4. Review and modify the SQL upgrade script
5. Set environment variables
6. Run the upgrade tool for the Interact design time environment
7. Run the upgrade tools for the Interact runtime environment
8. Redeploy the Interact runtime server in the web application server
9. Check the upgrade log

Backing up the Interact runtime environment

Before you upgrade Interact, back up all the files, system table database, and configuration settings that are used by the Interact runtime environment to prevent loss of data and configuration settings.

About this task

Note: You must back up only one Interact runtime server per server group.

If your Interact runtime environment installation requires any of the configuration settings from your old Interact version in addition to the new (default) settings in the new version, use the **configTool** utility to export the old Interact configuration parameters. Specify a different file name for the exported.xml file and note the location where you save it.

Undeploying the Interact runtime server

Before you upgrade Interact, you must undeploy the Interact runtime server so that the Interact installer can complete a clean and error-free upgrade.

About this task

You must undeploy the Interact runtime server so that the web application server releases the lock on the `InteractRT.war` file, which is updated during the Interact upgrade. Releasing the lock on the `interactRT.war` file allows the Interact installer to cleanly update the `interactRT.war` file and register the new version of Interact in the IBM Marketing Software console.

Complete the following steps to undeploy the Interact runtime server:

Procedure

1. Follow the instructions in your web application server to undeploy the `interactRT.war` file, and save or activate all changes.
2. Shut down and restart the web application server after you undeploy the Interact runtime server to ensure that the lock on the `InteractRT.war` file is released.

Running the installer

You must run the IBM Marketing Software installer to upgrade Interact. The IBM Marketing Software installer starts the Interact installer during the process.

About this task

After you undeploy the Interact runtime environment, run the IBM Marketing Software installer. When the installer prompts you to select the IBM Marketing Software product that you want to install, select Interact. The Interact installer starts. The Interact installer detects that you have an earlier version installed and runs in upgrade mode.

You can install or upgrade the following Interact components:

- Interact Runtime Environment
- Interact Design Time Environment
- Interact Extreme Scale Server
- Interact Pattern State ETL

Install the Interact Extreme Scale Server component, if you want to improve the performance of the Interact runtime environment. The Interact runtime environment uses IBM WebSphere eXtreme Scale caching to enhance performance. For more information, see the *IBM Interact Tuning Guide*.

After you finish upgrading Interact, you must deploy the Interact runtime environment on WebSphere Application Server, or on WebLogic. You do not need to deploy the Interact design time environment. The design time environment is automatically deployed with the Campaign WAR or EAR file.

Reviewing and modifying the SQL upgrade script

If your Interact runtime environment includes customizations to the runtime system tables that modified the default Data Definition Language (DDL) included with Interact, you must modify the default SQL upgrade script for your database to match your customizations.

About this task

Common customizations include changes to support multiple audience levels or using views of tables. You can review the data dictionaries for the new versions of IBM products to confirm that column sizes map correctly and that foreign key constraints from additional products do not conflict.

The **aci_runtab_upgrd** and the **aci_usrtab_upgrd** are the SQL upgrade scripts that most likely require revisions.

Important: You must complete the changes before you run the Interact upgrade tool.

Complete the following steps to review and modify the SQL upgrade script:

Procedure

1. Locate the upgrade script for your database type. The scripts are installed in the `/ddl/Upgrades` or `/ddl/Upgrades/Unicode` directory under your Interact installation after you run the IBM Marketing Software installer in upgrade mode.
2. Ensure that your database schema matches the Data Definition Language (DDL) included with Interact. If your database schema does not match the DDL in the upgrade script, edit the script for your database type to match your environment.

The following example shows the required modifications to the **aci_runtab_upgrd** SQL upgrade script to support the Household audience level: Your existing Interact design time environment contains an additional audience level called Household. To support the Household audience level, your Interact runtime environment database contains tables named `HH_CHStaging` and `HH_RHStaging`.

Required changes to the upgrade script:

- a. Locate the code in the SQL upgrade script that updates the response history and treatment sizes for the Customer audience level and replicate it for your Household audience level. Change the table names in the SQL statements to the appropriate names for your Household audience level.
- b. You must also revise the SQL script to support the data type change for the `SeqNum` column in the `UACI_RHStaging` table. The value of the `SeqNum` is a sequential number across all response history staging tables. The next value that is used is tracked by the `NextID` column in the `UACI_IdsByType` table, where `TypeID` is 2. For example, you have three audience levels, customer, household, and account. In the customer response history staging table, the highest `SeqNum` is 50. In the household response history staging table, the highest `SeqNum` is 75. In the account response history staging table, the highest `SeqNum` is 100. Therefore, you must alter the SQL to set the `NextID` for `TypeID = 2` in the `UACI_IdsByType` to 101.

The following example SQL statements show the required additions to the **aci_runtab_upgrd_sqlsvr.sql** script for a SQL Server database that contains the Household audience level. The text that is added to support the Household audience level is in bold:

```
ALTER TABLE UACI_CHStaging ADD RTSelectionMethod int NULL
go

ALTER TABLE UACI_RHStaging ADD RTSelectionMethod int NULL
go

ALTER TABLE HH_CHStaging ADD RTSelectionMethod int NULL
go

ALTER TABLE HH_RHStaging ADD RTSelectionMethod int NULL
go

insert into UACI_IdsByType (TypeID, NextID) (select 2,
IDENT_CURRENT('UACI_RHStaging') + IDENT_CURRENT('HH_RHStaging')
+ IDENT_INCR( 'UACI_RHStaging' ))
go

select * into UACI_RHStaging_COPY from UACI_RHStaging
go

select * into HH_RHStaging_COPY from HH_RHStaging
go

DROP TABLE UACI_RHStaging
go

CREATE TABLE UACI_RHStaging (
    SeqNum          bigint NOT NULL,
    TreatmentCode   varchar(512) NULL,
    CustomerID      bigint NULL,
    ResponseDate    datetime NULL,
    ResponseType    int NULL,
    ResponseTypeCode varchar(64) NULL,
    Mark            bigint NOT NULL
                                DEFAULT 0,
    UserDefinedFields char(18) NULL,
    RTSelectionMethod int NULL,
    CONSTRAINT irHStaging_PK
        PRIMARY KEY (SeqNum ASC)
)
go

insert into UACI_RHStaging (SeqNum, TreatmentCode, CustomerID, ResponseDate,
ResponseDate, ResponseType, ResponseTypeCode, Mark, UserDefinedFields, RTSelectionMethod)
(select SeqNum, TreatmentCode, CustomerID, ResponseDate, ResponseType,
ResponseDate, ResponseTypeCode, Mark, UserDefinedFields, RTSelectionMethod from
UACI_RHStaging_COPY)
go

DROP TABLE UACI_RHStaging_COPY
go

DROP TABLE HH_RHStaging
go

CREATE TABLE HH_RHStaging (
    SeqNum          bigint NOT NULL,
    TreatmentCode   varchar(512) NULL,
    HouseholdID     bigint NULL,
    ResponseDate    datetime NULL,
    ResponseType    int NULL,
    ResponseTypeCode varchar(64) NULL,
```



```

        Mark                bigint NOT NULL
                                DEFAULT 0,
        UserDefinedFields    char(18) NULL,
        RTSelectionMethod    int NULL,
        CONSTRAINT iRHStaging_PK
            PRIMARY KEY (SeqNum ASC)
    )
go

insert into HH_RHStaging (SeqNum, TreatmentCode, HouseHoldID, ResponseDate,
ResponseDate, ResponseType, ResponseTypeCode, Mark, UserDefinedFields, RTSelectionMethod)
(select SeqNum, TreatmentCode, HouseHoldID, ResponseDate, ResponseType,
ResponseDate, ResponseTypeCode, Mark, UserDefinedFields, RTSelectionMethod from
HH_RHStaging_COPY)
go

DROP TABLE HH_RHStaging_COPY
go

```

For DB2 and Oracle databases, the following statement is used for inserting values into the UACI_IdsByType table:

```

INSERT into UACI_IdsByType (TypeID, NextID)
(select 2, COALESCE(max(a.seqnum)+1,1)
+ COALESCE(max(b.seqnum)+1,1)
from UACI_RHSTAGING a, ACCT_UACI_RHSTAGING b );

```

If you have multiple audiences, you must add the following sections to the **aci_usrtab_upgrd** SQL script for each audience level:

```

ALTER TABLE HH_ScoreOverride ADD
    OverrideTypeID    int NULL,
    CellCode          varchar(64) NULL,
    Zone              varchar(64) NULL
go

ALTER TABLE HH_ScoreOverride ADD
    Predicate          varchar(4000) NULL,
    FinalScore         float NULL,
    EnableStateID      int NULL
go

CREATE INDEX iScoreOverride_IX1 ON HH_ScoreOverride
(
    HouseHoldID        ASC
)
go

```

Setting environment variables

Set environment variables in the setenv file to upgrade the Interact design time and runtime environment.

About this task

Edit the setenv file to set the environment variables that are required by the Interact upgrade tools.

For the Interact design time environment, the file is in the *Interact_Design_Environment_Install_Directory/interactDT/tools/upgrade* directory under the Interact design time environment installation. For the Interact runtime environment, the file is in the *Interact_Runtime_Environment_Install_Directory/tools/upgrade* directory under the Interact runtime environment installation.

For more information, read the comments in the setenv file.

The following table describes the environment variables that you must set for the Interact design time upgrade tools in the setenv file:

Table 8. Environment variables for the Interact design time environment

Variable	Description
JAVA_HOME	The root directory of the JDK used by your new Campaign installation. For example, <CAMPAIGN_HOME>/jre
JDBCDRIVER_CP	The path to the directory that contains the JDBC driver. JDBCDRIVER_CP is the default path to the JDBC driver; you can override the path when you run the upgrade tool. Specify the same JDBC driver that was used while installing Marketing Platform.
JDBCDRIVER_CLASS	The class for the JDBC driver. JDBCDRIVER_CLASS is the default class to the JDBC driver; you can override the class when you run the upgrade tool.
JDBCDRIVER_URL	The URL for the JDBC driver. JDBCDRIVER_URL is the default URL for the JDBC driver; you can override the URL when you run the upgrade tool.
ERROR_MSG_LEVEL	The desired logging level that has the following valid values, which are listed from most to least verbose: <ul style="list-style-type: none"> • DEBUG • INFO • ERROR • FATAL
LOG_TEMP_DIR	The directory where you want the migration tool to create the log files.
LOG_FILE_NAME	The name of the log file for the upgrade tool.

The following table describes the environment variables that you must set for the Interact runtime upgrade tools in the setenv file:

Table 9. Environment variables for the Interact runtime environment

Variable	Description
JAVA_HOME	The root directory of the JDK used by your new Interact installation.
JDBCDRIVER_CP	The path to the directory that contains the JDBC driver. JDBCDRIVER_CP is the default path to the JDBC driver; you can override the path when you run the upgrade tool.
JDBCDRIVER_CLASS	The class for the JDBC driver. JDBCDRIVER_CLASS is the default class to the JDBC driver; you can override the class when you run the upgrade tool.
JDBCDRIVER_URL	The URL for the JDBC driver. JDBCDRIVER_URL is the default URL for the JDBC driver; you can override the URL when you run the upgrade tool.
ERROR_MSG_LEVEL	The desired logging level that has the following valid values, which are listed from most to least verbose: <ul style="list-style-type: none"> • DEBUG • INFO • ERROR • FATAL
LOG_TEMP_DIR	The directory where you want the migration tool to create the log files.
LOG_FILE_NAME	The name of the log file for the upgrade tool.

The environment variables for SSL upgrade are required for both the Interact design time and runtime environments.

The following table describes the environment variables that you must set to support SSL upgrade for the design time and runtime environment:

Table 10. Environment variables to support SSL upgrade (runtime and design time environments)

Variable	Description
IS_WEBLOGIC_SSL	Should the connection to the server of the target system be through SSL? The valid values are YES and NO. If the value is set to NO, you do not need to set the remaining SSL properties.
BEA_HOME_PATH	The path to the location where the WebLogic server of the target system is installed. You must point to the <code>license.bea</code> file in this path. If you install Interact in a distributed environment where the WebLogic server of the target system is not available locally to the script, copy the <code>license.bea</code> file locally to some folder, and specify the path to that folder by using this environment variable.
SSL_TRUST_KEYSTORE_FILE_PATH	The path of the trust store that is used to configure SSL in the WebLogic server of the target system. The trusted certificates are saved at this location. The SSL_TRUST_KEYSTORE_FILE_PATH variable is used for SSL handshake.
SSL_TRUST_KEYSTORE_PASSWORD	The password of the trust store that is used to configure SSL in the WebLogic server of the target system. If there is no password, set it to "" or nothing. The SSL_TRUST_KEYSTORE_PASSWORD variable is used for SSL handshake.

Running the Interact upgrade tools

Run the upgrade tool for the design time environment to update the Interact tables in the Campaign system tables. Run the upgrade tools for the runtime environment to update the Interact run time, learning, contact history, response history, and user profile tables.

Running the upgrade tool for the design time environment Before you begin

Before you run the upgrade tool, start the web application server on the target system.

About this task

The Interact design time environment uses the Campaign system tables as the database.

When running the upgrade tool for the design time environment, you can stop the upgrade at any prompt by typing `abort`.

The user who runs the upgrade tool must have access to the appropriate database client executable files (`sqlplus`, `db2`, or `osql`) for the Campaign system tables data source.

The latest version of the upgrade tool (**aciUpgradeTool1**) is in the `/interactDT/tools/upgrade` directory under your Interact design time environment

installation. Enter the requested information at the prompts to upgrade your system tables for the new version of Interact. When the tool completes successfully, your upgrade process is complete.

If you have multiple partitions, configure and run the upgrade tool once for each partition.

Running the upgrade tools for the runtime environment

Before you begin

Before you run the upgrade tools, start the web application server on the target system.

About this task

The Interact runtime environment uses the Interact system tables as the database.

When running the upgrade tools for the runtime environment, you can stop the upgrade at any prompt by typing abort.

The latest versions of the upgrade tools are in the `/tools/upgrade` directory under your Interact runtime environment installation. Enter the requested information at the prompts to upgrade your tables for the new version of Interact. When the tool completes successfully, your upgrade process is complete.

Important: Run the SQL scripts once for each server group.

Run the tools in the following order to upgrade the Interact runtime environment:

Procedure

1. Run **aciUpgradeTool_runstab** to update the `systemTablesDataSource` and the Interact runtime configuration properties.
2. If you are using built-in learning, run **aciUpgradeTool_lrntab** to update the `learningTablesDataSource`.
3. If you are using cross-session response tracking, modify the `/tools/upgrade/conf/ACIUpgradeTaskList_crhtab.properties` file if necessary, and then run **aciUpgradeTool_crhtab** to update the `contactAndResponseHistoryDataSource`.

You must modify the `ACIUpgradeTaskList_crhtab.properties` file if you are upgrading from Interact version 8.x and if the Interact runtime data source (as specified in the **contactAndResponseHistoryDataSource** configuration property under the **Interact | general** category) is not the same as the Campaign system tables data source.

4. If you are using the `scoreOverride` or `defaultOffers` tables, run **aciUpgradeTool_usrtab** to update the `prodUserDataSource`.

What to do next

After you finish upgrading the Interact design time and runtime environment, redeploy the newly installed version of the Interact runtime environment in your web application server.

Redeploying the Interact runtime server in the web application server

After you finish upgrading Interact, redeploy the newly installed version of the Interact runtime server in the WebSphere Application Server, or on WebLogic.

Upgrade log

When you upgrade Interact, the Interact upgrade tools write processing details, warnings, and errors to the `aci_upgrade.log` file. Check the log file to verify that you have an error-free and clean upgrade.

By default, the name of the log file is `aci_upgrade.log` and the log file is in the `logs` directory, which is in the same directory as the Interact upgrade tools. The location of the log file and level of verbosity are specified in the `setenv` file. You can modify the `setenv` file before you run the Interact upgrade tools.

Upgrading partitions

For the design time environment, if you have multiple partitions, you must run the upgrade tool once for each partition. For the runtime environment, if you have multiple partitions, run the upgrade tool once on each runtime server.

Partitions must have the same names in the source and target versions of Interact.

Creating and populating the Interact system tables

If you have not created and populated the system tables during the installation process, use your database client to run the Interact SQL scripts against the appropriate database or to create and populate the Interact runtime environment, design time environment, learning, user profile, and contact and response tracking data sources.

Design time environment tables

Before you can enable the Interact design time environment in Campaign, you must add some tables to your Campaign system table database.

The SQL scripts are in the `Interact_HOME/interactDT/ddl` directory under your Interact design time environment installation.

If your Campaign system tables are configured for Unicode, use the appropriate script that is in the `Interact_HOME/interactDT/ddl` directory in your Interact design time environment. There are no Unicode equivalent scripts for the **aci_populate_systab** scripts that are used to populate the design time environment tables.

Use the scripts in the following table to create the Interact design time environment tables:

Table 11. Scripts for creating design time environment tables

Data source type	Script name
IBM DB2	aci_systab_db2.sql The user table space and system temporary table space where the Campaign system tables exist must each have a page size of 32K or greater.

Table 11. Scripts for creating design time environment tables (continued)

Data source type	Script name
Microsoft SQL Server	aci_systab_sqlsvr.sql
Oracle	aci_systab_ora.sql

Use the scripts in the following table to populate the Interact design time environment tables:

Table 12. Scripts for populating design time environment tables

Data source type	Script name
IBM DB2	aci_populate_systab_db2.sql
Microsoft SQL Server	aci_populate_systab_sqlsvr.sql
Oracle	aci_populate_systab_ora.sql

Runtime environment tables

The SQL scripts are in the <Interact_HOME>/ddl directory under your Interact installation.

If your Interact runtime tables are configured for Unicode, use the appropriate script that is in the <Interact_HOME>/ddl/Unicode directory to create the runtime tables. There are no Unicode equivalent scripts for the **aci_populate_runtab** scripts that are used to populate the runtime tables.

You must run the SQL scripts once for each server group data source.

Use the scripts in the following table to create the Interact runtime tables:

Table 13. Scripts for creating runtime environment tables

Data source type	Script name
IBM DB2	aci_runtab_db2.sql The user table space and system temporary table space where the Interact runtime environment tables exist must each have a page size of 32K or greater.
Microsoft SQL Server	aci_runtab_sqlsvr.sql
Oracle	aci_runtab_ora.sql

Use the scripts in the following table to populate the Interact runtime tables:

Table 14. Scripts for populating runtime environment tables

Data source type	Script name
IBM DB2	aci_populate_runtab_db2.sql You must use the following command when you run the script: db2 +c -td@ -vf aci_populate_runtab_db2.sql
Microsoft SQL Server	aci_populate_runtab_sqlsvr.sql
Oracle	aci_populate_runtab_ora.sql

Note: You should alter the size of the UACI_EligStat.offerName column from 64 to 130 (or 390 for Unicode tables) to preserve compatibility with Campaign. Use the following sample SQL statements for this modification.

Non-Unicode

```
DB2: ALTER table UACI_EligStat ALTER COLUMN OfferName SET DATA TYPE varchar(130);
ORACLE: ALTER TABLE UACI_EligStat MODIFY OfferName varchar2(130);
SQLSVR: ALTER TABLE UACI_EligStat alter column OfferName varchar(130) not null;
```

Unicode

```
DB2: ALTER table UACI_EligStat ALTER COLUMN OfferName SET DATA TYPE varchar(390);
ORACLE: ALTER TABLE UACI_EligStat MODIFY OfferName varchar2(390);
SQLSVR: ALTER TABLE UACI_EligStat alter column OfferName nvarchar(390) not null;
```

Learning tables

You can use SQL scripts to create and populate tables for optional features such as learning, global offers, score override, and contact and response history tracking.

All the SQL scripts are in the `<Interact_HOME>/ddl` directory.

Note: The built-in learning module requires a separate data source from the Interact runtime environment tables. For the built-in learning module, you must create a data source to hold all the learning data. The separate data source can communicate with all server groups, which means you can learn from your different touchpoints at the same time.

If your Interact runtime tables are configured for Unicode, use the appropriate script that is in the `<Interact_HOME>/ddl/Unicode` directory to create the learning tables.

Use the scripts in the following table to create the Interact learning tables:

Table 15. Scripts for creating learning tables

Data source type	Script name
IBM DB2	<code>aci_lrntab_db2.sql</code>
Microsoft SQL Server	<code>aci_lrntab_sqlsvr.sql</code>
Oracle	<code>aci_lrntab_ora.sql</code>

Contact and response history tables

You must run SQL scripts against the contact history tables if you want to use cross-session response tracking or the advanced learning feature.

All the SQL scripts are in the Interact installation directory.

Note: Using contact and response history features requires a separate data source from the Interact runtime environment tables. To use the contact and response history features, you must create a data source to reference contact and response data. The separate data source can communicate with all server groups.

If your contact history tables are configured for Unicode, use the appropriate script that is in the Unicode directory under the same location as the standard script to create the learning tables.

Use the scripts in the following table to create the Interact contact and response history tables:

Table 16. Scripts for creating contact history tables

Data source type	Script name
IBM DB2	<ul style="list-style-type: none"> • aci_crhtab_db2.sql in the <Interact_HOME>/ddl/ directory. The script impacts the Interact runtime tables. • aci_lrnfeature_db2.sql in the <Interact_HOME>/interactDT/ddl/acifeatures/ directory. The script impacts the design time tables.
Microsoft SQL Server	<ul style="list-style-type: none"> • aci_crhtab_sqlsvr.sql in the <Interact_HOME>/ddl/ directory. • aci_lrnfeature_sqlsvr.sql in the <Interact_HOME>/interactDT/ddl/ directory.
Oracle	<ul style="list-style-type: none"> • aci_crhtab_ora.sql in the <Interact_HOME>/ddl/ directory. • aci_lrnfeature_ora.sql in the <Interact_HOME>/interactDT/ddl/ directory.

Chapter 4. Deploying Interact

You must deploy the Interact runtime environment for every instance of the runtime server that you install. The Interact design time environment is deployed automatically with the Campaign EAR or WAR file.

You must know how to work with your web application server. Consult your web application server documentation for details.

Deploying the design time environment

After you install Interact, the design time environment is deployed automatically when you deploy Campaign. After you deploy the Campaign.war file, configuration procedures automatically enable the Interact design time environment in Campaign. The Campaign.war file is in the Campaign installation directory.

Deploying the runtime environment

You must deploy the Interact runtime environment by deploying the InteractRT.war file for every instance of the runtime server that you install or upgrade. For example, if six instances of a runtime server exist, you must install and deploy the Interact runtime environment six times. You can deploy the runtime environment on the same server as the design time environment, or you can deploy the Interact runtime environment on a separate server. The InteractRT.war is in the Interact installation directory.

Note: When you deploy the Interact runtime environment, the context root must be set to /interact. Do not use any other value for the context root, or navigation to the runtime environment, and within Interact runtime links and pages, do not operate correctly.

Deploying Interact on WebSphere Application Server

You can deploy Interact runtime environment on supported versions of WebSphere Application Server (WAS) from a WAR file or EAR file. The Interact design time environment is deployed automatically with the Campaign EAR or WAR file.

About this task

Note:

- Make sure that multiple language encoding is enabled in WAS.
- Set the JSP Compilation level in the WebSphere application server to 17.

Deploying Interact on WAS from a WAR file

You can deploy the Interact application from a WAR file on WAS.

Before you begin

Complete the following tasks before you deploy Interact:

- Confirm that your version of WebSphere meets the requirements in the *Recommended Software Environments and Minimum System Requirements* document, including any necessary fix packs or upgrades.
- Confirm that you created the data sources and database provider in WebSphere.

Procedure

1. Go to the WebSphere Integrated Solutions Console.
2. Complete the following steps if your system tables are in DB2:
 - a. Click the data source that you created. Go to the Custom Properties for the data source.
 - b. Select the Custom properties link.
 - c. Set the value for the **resultSetHoldability** property to 1.
If you do not see the **resultSetHoldability** property, create the **resultSetHoldability** property and set its value to 1.
3. Go to **Applications > Application Types > WebSphere enterprise applications** and click **Install**.
4. In the Preparing for the application installation window, select the **Detailed - Show all options and parameters** check box and click **Next**.
5. Click **Continue** to see the Install New Application wizard.
6. Accept the default settings on the windows of the Install New Application wizard except the following windows:
 - In step 1 of the Install New Application wizard, select the **Precompile JavaServer Pages files** check box.
 - In step 3 of the installation wizard, set the **JDK Source Level** to 17.
 - In step 8 of the installation wizard, set the **Context Root** to `/interact`.
7. In the left navigation panel of WebSphere Integrated Solutions Console, navigate to **Applications > Application Types > WebSphere enterprise applications**.
8. In the Enterprise Applications window, click the `InteractRT.war` file.
9. In the **Web Module Properties** section, click **Session Management** and select the following check boxes:
 - **Override session management**
 - **Enable Cookies**
10. Click **Enable Cookies**, and in the **Cookie name** field, enter a unique cookie name.
11. In the **Applications > Enterprise Applications** section of the server, select the WAR file that you deployed.
12. In the **Detail Properties** section, select **Class loading and update detection**.
13. In the **Class loader order** section, select the **Classes loaded with local class loader first (parent last)** option.
14. For **WAR class loader policy**, select **Single class loader for application**.
15. Start your deployment.

Deploying Interact on WAS from an EAR file

You can deploy Interact by using an EAR file if you included Interact in an EAR file when you ran the IBM Marketing Software installer.

Before you begin

- Confirm that your version of WebSphere meets the requirements in the *Recommended Software Environments and Minimum System Requirements* document, including any necessary fix packs or upgrades.
- Confirm that you created the data sources and database provider in WebSphere.

Procedure

1. Go to the WebSphere Integrated Solutions Console.
2. Complete the following steps, if your system tables are in DB2:
 - a. Click the data source that you created. Go to the **Custom Properties** for the data source.
 - b. Select the Custom properties link.
 - c. Set the value for the **resultSetHoldability** property to 1.
If you do not see the **resultSetHoldability** property, create the **resultSetHoldability** property and set its value to 1.
3. Go to **Applications > Application Types > WebSphere enterprise applications** and click **Install**.
4. In the Preparing for the application installation window, select the **Detailed - Show all options and parameters** check box and click **Next**.
5. Click **Continue** to see the Install New Application wizard.
6. Accept the default settings on the windows of the Install New Application wizard except the following windows:
 - In step 1 of the Install New Application wizard, select the **Precompile JavaServer Pages files** check box.
 - In step 3 of the installation wizard, set the **JDK Source Level** to 17.
7. In the left navigation panel of WebSphere Integrated Solutions Console, navigate to **Applications > Application Types > WebSphere enterprise applications**.
8. In the Enterprise Applications window, select the EAR file that you want to deploy.
9. In the **Web Module Properties** section, click **Session Management** and select the following check boxes:
 - **Override session management**
 - **Enable Cookies**
10. Click **Enable Cookies**, and in the **Cookie name** field, enter a unique cookie name.
11. In the **Detail Properties** section, select **Class loading and update detection**.
12. In the **Class loader order** section, select the **Classes loaded with local class loader first (parent last)** option.
13. Start your deployment.
For more information about WebSphere Application Server version 8.5, see Welcome to the WebSphere Application Server information center.

Deploying Interact on WebLogic

You can deploy IBM Marketing Software products on WebLogic.

About this task

Use the following guidelines when you deploy Interact on WebLogic:

- IBM Marketing Software products customize the JVM used by WebLogic. You might need to create a WebLogic instance that is dedicated to IBM Marketing Software products if you encounter JVM-related errors.
- Verify that the SDK selected for the WebLogic domain you are using is the Sun SDK by looking in the startup script (`startWebLogic.cmd`) for the `JAVA_VENDOR` variable. It should be set to: `JAVA_VENDOR=Sun`. If it is set to `JAVA_VENDOR=BEA`, JRockit has been selected. JRockit is not supported. To change the selected SDK, refer to the WebLogic documentation.
- Deploy the IBM Marketing Software products as web application modules.
- On UNIX systems, you must start WebLogic from the console to allow correct rendering of graphical charts. The console is usually the machine on which the server is running. However, in some cases the web application server is set up differently.

If a console is not accessible or does not exist, you can emulate a console using Exceed. You must configure Exceed so that your local Xserver process connects to the UNIX machine in root window or single window mode. If you start the web application server using Exceed, you must keep Exceed running in the background to allow the web application server to continue running. Contact IBM Technical Support for detailed instructions if you encounter problems with chart rendering.

Connecting to the UNIX machine via telnet or SSH always causes problems rendering charts.

- If you are configuring WebLogic to use the IIS plug-in, review the WebLogic documentation.
- If you are deploying in a production environment, set the JVM memory heap size parameters to at least 1024 by adding the following line to the `setDomainEnv` script:

```
Set MEM_ARGS=-Xms1024m -Xmx1024m -XX:MaxPermSize=256m
```

- Under certain circumstances, deploying older legacy interactive channels or interactive channels with large deployment histories can stress the system and require 2048mb or greater of Campaign designtime and/or Interact runtime Java heap space.

System administrators can adjust the amount of memory available to the deployment systems via the following JVM parameters:

```
-Xms####m -Xmx####m -XX:MaxPermSize=256m
```

Where the characters `####` should be 2048 or higher (depending on their system load.) Note that a 64-bit application server and JVM are usually necessary for values greater than 2048.

These are the suggested minimum values. Analyze your sizing requirements to determine correct values for your needs.

JVM parameters for upgrading Interactive Channel strategies

Certain strategies can fail validation after an upgrade. This occurs because a redeployment of the strategy is necessary to counteract issues with previous attribute parametrization.

You can add the following parameter to your design time JVM properties if you face failed validation for many strategies in your Interactive Channels.

```
-DInteract.SilentlyMarkCorruptedStrategiesForRedeploymentDuring  
DeploymentValidation=true
```

Verifying the Interact installation

You must verify whether Interact is correctly installed by confirming that you can access the interactive channels and the Interact runtime URL.

Procedure

1. To verify that the Interact design time environment is installed, log in to the IBM Marketing Software console and confirm that you can access **Campaign > Interactive Channels**.
2. Complete the following steps to verify that the Interact runtime environment is correctly installed:

- a. Access the Interact runtime URL by using a supported web browser.

The runtime URL is:

```
http://host.domain.com:port/interact/jsp/admin.jsp
```

where *host.domain.com* is the computer where Interact is installed and *port* is the port number on which the Interact application server is listening.

- b. Click **Interact Initialization Status**.

If the Interact server is running correctly, Interact responds with the following message:

```
System initialized with no errors!
```

If the initialization fails, review the installation procedure and confirm that you followed all the instructions.

Additional configuration for enhanced security

The procedures in this section describe some additional configurations in the web application server. They are optional, but you might want to perform them for enhanced security.

Disabling the X-Powered-By flag

If your organization is concerned that the X-Powered-By flag in the header variable is a security risk, you can disable it using this procedure.

Procedure

1. If you are using WebLogic, in the administration console, under *domainName* > **Configuration > Web Application**, set **X-Powered-By Header** to **X-Powered-By Header will not be sent**.
2. If you are using WebSphere, perform the following steps.
 - a. In the WebSphere administration console, navigate to **Servers > Server Types > WebSphere application servers > server_name > Web Container Settings > Web container**.
 - b. Under **Additional Properties** select **Custom Properties**.
 - c. On the Custom Properties page, click **New**.
 - d. On the Settings page, create a custom property named `com.ibm.ws.webcontainer.disableXPoweredBy` and set the value to `false`.
 - e. Click **Apply** or **OK**.
 - f. Click **Save** on the console task bar to save your configuration changes.
 - g. Restart the server.

Configuring a restrictive cookie path

In your web application server, you can restrict cookie access to a specific application for enhanced security. If not restricted, cookies are valid across all the deployed applications.

Procedure

1. If you are using WebLogic, perform the following steps.
 - a. Extract the `weblogic.xml` file from the WAR or EAR package where you want to add the restrictive cookie path.
 - b. Add the following to the `weblogic.xml` file, where *context-path* is the context path for the deployed application. For IBM Marketing Software applications the context path is typically `/unica`.

```
<session-descriptor>
  <session-param>
    <param-name>CookiePath</param-name>
    <param-value>/context-path</param-value>
  </session-param>
</session-descriptor>
```
 - c. Rebuild the WAR or EAR file.
2. If you are using WebSphere, perform the following steps.
 - a. In the WebSphere administration console, navigate to the **Session Manager > Cookie** tab.
 - b. Set the **Cookie Path** to the context path of your application.
For IBM Marketing Software applications the context path is typically `/unica`.

Chapter 5. Uninstalling Interact

Run the Interact uninstaller to uninstall Interact. When you run the Interact uninstaller, the files that were created during the installation process are removed. For example, files such as configuration files, installer registry information, and user data are removed from the computer.

About this task

When you install IBM Marketing Software products, an uninstaller is included in the `Uninstall_Product` directory, where *Product* is the name of your IBM product. On Windows, an entry is also added to the **Add or Remove Programs** list in the Control Panel.

If you manually remove the files in your installation directory instead of running the uninstaller, the result might be an incomplete installation if you later reinstall an IBM product in the same location. After uninstalling a product, its database is not removed. The uninstaller only removes default files that are created during installation. Any file that is created or generated after installation is not removed.

In addition to the general instructions for uninstalling IBM Marketing Software products, follow the guidelines when you uninstall Interact:

- If you have multiple Interact runtime installations using the same Marketing Platform installation, you must remove network connectivity for the Interact runtime workstation before you run the uninstaller. Failure to do so uninstalls the configuration data for all the other Interact runtime installations from Marketing Platform.
- You can safely ignore any warnings about failure to unregister with Marketing Platform.
- You can export a copy of your configuration as a precaution before uninstalling Interact.
- If you uninstall the Interact design time environment, after you run the uninstaller, you may need to manually unregister Interact. Use the **configtool** utility to unregister `full_path_to_Interact_DT_installation_directory\interactDT\conf\interact_navigation.xml`.

Note: On UNIX, the same user account that installed Interact must run the uninstaller.

Procedure

1. If you have deployed the Interact web application, undeploy the web application from WebSphere or WebLogic.
2. Shut down WebSphere or WebLogic.
3. Stop the processes that are related to Interact.
4. If the `ddl` directory exists in the product installation directory, run the scripts that are provided in the `ddl` directory to drop tables from the system table database.
5. Complete one of the following steps to uninstall Interact:
 - Click the Interact uninstaller that exists in the `Uninstall_Product` directory. The uninstaller runs in the mode in which you installed Interact.

- In a command-line window, navigate to the directory where the uninstaller exists, and run the following command to uninstall Interact by using the console mode:

`Uninstall_Product -i console`

- In a command-line window, navigate to the directory where the uninstaller exists, and run the following command to uninstall Interact by using the silent mode:

`Uninstall_Product -i silent`

When you uninstall Interact by using the silent mode, the uninstallation process does not present any dialogs for user interaction.

Note: If you do not specify an option for uninstalling Interact, the Interact uninstaller runs in the mode in which Interact is installed.

Chapter 6. configTool

The properties and values on the Configuration page are stored in the Marketing Platform system tables. You can use the configTool utility to import and export configuration settings to and from the system tables.

When to use configTool

You might want to use configTool for the following reasons.

- To import partition and data source templates that are supplied with Campaign, which you can then modify and duplicate by using the Configuration page.
- To register (import configuration properties for) IBM Marketing Software products, if the product installer is unable to add the properties to the database automatically.
- To export an XML version of configuration settings for backup or to import into a different installation of IBM Marketing Software.
- To delete categories that do not have the **Delete Category** link. You do this by using configTool to export your configuration, then manually deleting the XML that creates the category, and by using configTool to import the edited XML.

Important: This utility modifies the usm_configuration and usm_configuration_values tables in the Marketing Platform system table database, which contains the configuration properties and their values. For best results, either create backup copies of these tables, or export your existing configurations by using configTool and back up the resulting file so you have a way to restore your configuration if you make an error when you use configTool to import.

Syntax

```
configTool -d -p "elementPath" [-o]
```

```
configTool -i -p "parent ElementPath" -f importFile [-o]
```

```
configTool -x -p "elementPath" -f exportFile
```

```
configTool -vp -p "elementPath" -f importFile [-d]
```

```
configTool -r productName -f registrationFile [-o] configTool -u  
productName
```

Commands

```
-d -p "elementPath" [o]
```

Delete configuration properties and their settings, specifying a path in the configuration property hierarchy.

The element path must use the internal names of categories and properties. You can obtain them by going to the Configuration page, selecting the wanted category or property, and looking at the path that is displayed in parentheses in the right pane. Delimit a path in the configuration property hierarchy by using the | character, and surround the path with double quotation marks.

Note the following.

- Only categories and properties within an application can be deleted by using this command, not whole applications. Use the `-u` command to unregister a whole application.
- To delete categories that do not have the **Delete Category** link on the Configuration page, use the `-o` option.

When you use `-d` with the `-vp` command, the `configTool` deletes any child nodes in the path you specify if those nodes are not included in the XML file you specify.

`-i -p "parentElementPath" -f importFile [o]`

Import configuration properties and their settings from a specified XML file.

To import, you specify a path to the parent element under which you want to import your categories. The `configTool` utility imports properties under the category you specify in the path.

You can add categories at any level below the top level, but you cannot add a category at same level as the top category.

The parent element path must use the internal names of categories and properties. You can obtain them by going to the Configuration page, selecting the required category or property, and looking at the path that is displayed in parentheses in the right pane. Delimit a path in the configuration property hierarchy by using the `|` character, and surround the path with double quotation marks.

You can specify an import file location relative to the `tools/bin` directory or you can specify a full directory path. If you specify a relative path or no path, `configTool` first looks for the file relative to the `tools/bin` directory.

By default, this command does not overwrite an existing category, but you can use the `-o` option to force an overwrite.

`-x -p "elementPath" -f exportFile`

Export configuration properties and their settings to an XML file with a specified name.

You can export all configuration properties or limit the export to a specific category by specifying a path in the configuration property hierarchy.

The element path must use the internal names of categories and properties, which you can obtain by going to the Configuration page, selecting the wanted category or property, and looking at the path that is displayed in parentheses in the right pane. Delimit a path in the configuration property hierarchy by using the `|` character, and surround the path with double quotation marks.

You can specify an export file location relative to the current directory or you can specify a full directory path. If the file specification does not contain a separator (`/` on UNIX, `/` or `\` on Windows), `configTool` writes the file to the `tools/bin` directory under your Marketing Platform installation. If you do not provide the `xml` extension, `configTool` adds it.

`-vp -p "elementPath" -f importFile [-d]`

This command is used mainly in manual upgrades, to import configuration properties. If you applied a fix pack that contains a new configuration property, and you then upgrade, importing a configuration file as part of a manual upgrade process can override values that were set when the fix pack was applied. The `-vp` command ensures that the import does not override previously set configuration values.

Important: After you use the `configTool` utility with the `-vp` option, you must restart the web application server on which Marketing Platform is deployed so the changes are applied.

When you use `-d` with the `-vp` command, the `configTool` deletes any child nodes in the path you specify if those nodes are not included in the XML file you specify.

`-r productName -f registrationFile`

Register the application. The registration file location can be relative to the `tools/bin` directory or can be a full path. By default, this command does not overwrite an existing configuration, but you can use the `-o` option to force an overwrite. The `productName` parameter must be one of those names that are listed above.

Note the following.

- When you use the `-r` command, the registration file must have `<application>` as the first tag in the XML.
Other files can be provided with your product that you can use to insert configuration properties into the Marketing Platform database. For these files, use the `-i` command. Only the file that has the `<application>` tag as the first tag can be used with the `-r` command.
- The registration file for the Marketing Platform is named `Manager_config.xml`, and the first tag is `<Suite>`. To register this file on a new installation, use the `populateDb` utility, or rerun the Marketing Platform installer as described in the *IBM Marketing Platform Installation Guide*.
- After the initial installation, to re-register products other than the Marketing Platform, use `configTool` with the `-r` command and `-o` to overwrite the existing properties.

The `configTool` utility uses product names as parameters with the commands that register and unregister products. With the 8.5.0 release of IBM Marketing Software, many product names changed. However, the names that are recognized by `configTool` did not change. The valid product names for use with `configTool` are listed below, along with the current names of the products.

Table 17. Product names for configTool registration and unregistration

Product name	Name used in configTool
Marketing Platform	Manager
Campaign	Campaign
Distributed Marketing	Collaborate
eMessage	emessage
Interact	interact
Contact Optimization	Optimize
Marketing Operations	Plan

Table 17. Product names for configTool registration and unregistration (continued)

Product name	Name used in configTool
CustomerInsight	Insight
Digital Analytics for On Premises	NetInsight
Opportunity Detect	Detect
Leads	Leads
IBM SPSS® Modeler Advantage Enterprise Marketing Management Edition	SPSS
Digital Analytics	Coremetrics

-u *productName*

Unregister an application that is specified by *productName*. You do not have to include a path to the product category; the product name is sufficient, and it is required. The process removes all properties and configuration settings for the product.

Options

-o

When used with *-i* or *-r*, it overwrites an existing category or product registration (node).

When used with *-d*, you can delete a category (node) that does not have the **Delete Category** link on the Configuration page.

Examples

- Import configuration settings from a file named `Product_config.xml` in the `conf` directory under the Marketing Platform installation.

```
configTool -i -p "Affinium" -f Product_config.xml
```
- Import one of the supplied Campaign data source templates into the default Campaign partition, `partition1`. The example assumes that you placed the Oracle data source template, `OracleTemplate.xml`, in the `tools/bin` directory under the Marketing Platform installation.

```
configTool -i -p "Affinium|Campaign|partitions|partition1|dataSources" -f OracleTemplate.xml
```
- Export all configuration settings to a file named `myConfig.xml` in the `D:\backups` directory.

```
configTool -x -f D:\backups\myConfig.xml
```
- Export an existing Campaign partition (complete with data source entries), save it to a file named `partitionTemplate.xml`, and store it in the default `tools/bin` directory under the Marketing Platform installation.

```
configTool -x -p "Affinium|Campaign|partitions|partition1" -f partitionTemplate.xml
```
- Manually register an application named `productName`, by using a file named `app_config.xml` in the default `tools/bin` directory under the Marketing Platform installation, and force it to overwrite an existing registration of this application.

```
configTool -r product Name -f app_config.xml -o
```
- Unregister an application named `productName`.

```
configTool -u productName
```

Before you contact IBM technical support

If you encounter a problem that you cannot resolve by consulting the documentation, your company's designated support contact can log a call with IBM technical support. Use these guidelines to ensure that your problem is resolved efficiently and successfully.

If you are not a designated support contact at your company, contact your IBM administrator for information.

Note: Technical Support does not write or create API scripts. For assistance in implementing our API offerings, contact IBM Professional Services.

Information to gather

Before you contact IBM technical support, gather the following information:

- A brief description of the nature of your issue.
- Detailed error messages that you see when the issue occurs.
- Detailed steps to reproduce the issue.
- Related log files, session files, configuration files, and data files.
- Information about your product and system environment, which you can obtain as described in "System information."

System information

When you call IBM technical support, you might be asked to provide information about your environment.

If your problem does not prevent you from logging in, much of this information is available on the About page, which provides information about your installed IBM applications.

You can access the About page by selecting **Help > About**. If the About page is not accessible, check for a `version.txt` file that is located under the installation directory for your application.

Contact information for IBM technical support

For ways to contact IBM technical support, see the IBM Product Technical Support website: (http://www.ibm.com/support/entry/portal/open_service_request).

Note: To enter a support request, you must log in with an IBM account. This account must be linked to your IBM customer number. To learn more about associating your account with your IBM customer number, see **Support Resources > Entitled Software Support** on the Support Portal.

Notices

This information was developed for products and services offered in the U.S.A.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not grant you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785
U.S.A.

For license inquiries regarding double-byte (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:

Intellectual Property Licensing
Legal and Intellectual Property Law
IBM Japan, Ltd.
19-21, Nihonbashi-Hakozakicho, Chuo-ku
Tokyo 103-8510, Japan

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law: INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:

IBM Corporation
B1WA LKG1
550 King Street
Littleton, MA 01460-1250
U.S.A.

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The licensed program described in this document and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Program License Agreement or any equivalent agreement between us.

Any performance data contained herein was determined in a controlled environment. Therefore, the results obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

All statements regarding IBM's future direction or intent are subject to change or withdrawal without notice, and represent goals and objectives only.

All IBM prices shown are IBM's suggested retail prices, are current and are subject to change without notice. Dealer prices may vary.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

COPYRIGHT LICENSE:

This information contains sample application programs in source language, which illustrate programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating

platform for which the sample programs are written. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs. The sample programs are provided "AS IS", without warranty of any kind. IBM shall not be liable for any damages arising out of your use of the sample programs.

If you are viewing this information softcopy, the photographs and color illustrations may not appear.

Trademarks

IBM, the IBM logo, and [ibm.com](http://www.ibm.com) are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at "Copyright and trademark information" at www.ibm.com/legal/copytrade.shtml.

Privacy Policy and Terms of Use Considerations

IBM Software products, including software as a service solutions, ("Software Offerings") may use cookies or other technologies to collect product usage information, to help improve the end user experience, to tailor interactions with the end user or for other purposes. A cookie is a piece of data that a web site can send to your browser, which may then be stored on your computer as a tag that identifies your computer. In many cases, no personal information is collected by these cookies. If a Software Offering you are using enables you to collect personal information through cookies and similar technologies, we inform you about the specifics below.

Depending upon the configurations deployed, this Software Offering may use session and persistent cookies that collect each user's user name, and other personal information for purposes of session management, enhanced user usability, or other usage tracking or functional purposes. These cookies can be disabled, but disabling them will also eliminate the functionality they enable.

Various jurisdictions regulate the collection of personal information through cookies and similar technologies. If the configurations deployed for this Software Offering provide you as customer the ability to collect personal information from end users via cookies and other technologies, you should seek your own legal advice about any laws applicable to such data collection, including any requirements for providing notice and consent where appropriate.

IBM requires that Clients (1) provide a clear and conspicuous link to Customer's website terms of use (e.g. privacy policy) which includes a link to IBM's and Client's data collection and use practices, (2) notify that cookies and clear gifs/web beacons are being placed on the visitor's computer by IBM on the Client's behalf along with an explanation of the purpose of such technology, and (3) to the extent required by law, obtain consent from website visitors prior to the placement of cookies and clear gifs/web beacons placed by Client or IBM on Client's behalf on website visitor's devices

For more information about the use of various technologies, including cookies, for these purposes, See IBM's Online Privacy Statement at: <http://www.ibm.com/privacy/details/us/en> section entitled "Cookies, Web Beacons and Other Technologies."



Printed in USA