OpenText™ Exstream

Software Version: 9.5.302

Installing and Upgrading OpenText™ Exstream Products

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OPENTEXT™

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Installing and Upgrading the Design Environment

Exstream 8.0 and later combines the previously separate single-byte character set (SBCS) and double-byte character set (DBCS) versions of the design environment into a combined user interface (UI), which allows you to work with DBCS and SBCS databases from the same executable. Because of this change, all databases in Exstream now use the DBCS data structure. Therefore, you must upgrade each SBCS database in a one-time process that converts the database to the DBCS data structure. All data is preserved in the new database structure.

While the design environment has been combined into a single executable, the individual engines for SBCS and DBCS still exist. After your SBCS database is converted to the DBCS structure, you will still be able to run your SBCS applications using the SBCS engine.

For more information about upgrading databases for use in Exstream 8.0 and later, see *Converting SBCS Databases for Exstream 8.0 and Later*.

You can install multiple major versions (for example, versions 8.0 and 9.0) and minor versions (for example, versions 8.0.105 and 8.0.215) on a single Windows workstation. When you upgrade, you can choose to replace your current version or install a separate new version in addition to the existing version already on your workstation. However, when you install an earlier version, that version does not overwrite the newer existing version.

To install the production environment, which produces the output for your final output device, see "Installing the Production Environment" on page 17.

For more information about upgrading Exstream, see "Upgrading Exstream Design and Production" on page 63.

System Requirements

Before you begin, make sure you meet the following minimum requirements:

Workstation requirements

Area	Requirement
Monitor	1366x768 **Tip:** A resolution of 1920x1080 works best with the Chart Designer embedded browser that is used to design add-in charts.
Hardware	2GB RAM minimum (4GB recommended), 800MB free disk space minimum (10GB recommended) You must have enough disk space to handle all production files you use in design and test applications. The actual space needed depends on the size of the files used.
Software	Microsoft Windows Vista, Microsoft Windows 7, Microsoft Windows 8, Microsoft Windows 8.1, Microsoft Windows Server 2008, or Microsoft Windows Server 2012 Java Virtual Machine (JVM) Java 2 Runtime Environment. (JVM lets computers run software that uses Java technology, such as application reports in Design Manager.) Microsoft Visual C++ 2013 Redistributable Package. (The redistributable installs runtime components of Visual C++ Libraries that are required to run applications that are developed in Visual C++ on a computer that does not have Visual C++ 2013 installed.) Microsoft .NET Framework version 4.5.2. (The .NET Framework provides common functionality for applications that run on Windows.)

Installing the Design Environment

To install the Exstream design environment, use one of the following installation methods:

- **Standard installation method**—This installation method provides a traditional, wizard-like installation experience and offers you the opportunity to change defaults through a user interface. You might choose the standard installation method if you want to customize the installation path, or so you can easily administer the installation process for users.
- **Silent installation method**—The silent installation method is designed primarily for an enterprise environment. The silent installation method is initiated from the command line and gives you the ability to automate the installation process. This method provides a seamless installation experience and is most effective if you have multiple installations that use the same installation settings.

This section discusses the following topics:

- "Installing the Design Environment Using the Standard Installation Method" on the next page
- "Installing the Design Environment Using the Silent Installation Method" on the next page

- "Completing the Installation in Design Manager" on page 15

Installing the Design Environment Using the Standard Installation Method

Complete the following steps to install the design environment using the standard installer:

1. Exit all Windows applications.
2. Download the latest ZIP file.

   For information about downloading software, see "Downloading Exstream Software and Documentation" on page 7.
3. Extract the installer file from the ZIP file to a local directory.
4. Double-click the installation file.

   An installation wizard opens.

   Note: You must have administrative privileges to run the installer.
5. Follow the directions in the wizard.
6. Open Design Manager to complete the installation.

   For more information about completing Exstream Design and Production in Design Manager, see "Completing the Installation in Design Manager" on page 15.

Installing the Design Environment Using the Silent Installation Method

When you use the silent installation method to install the design environment, you use Microsoft and InstallShield standard command line switches to initiate the installation process. Additionally, Exstream includes the following optional command line switches that you can use to specify Exstream installation-specific options:

Exstream command line switches

Command line switch	Description
INSTALL_TYPE	The INSTALL_TYPE command line switch is an optional switch that lets you specify a value for the type of installation that you want to use. By default, if you do not specify the INSTALL_TYPE command line switch, then the installer replaces the current version of Exstream if one exists. You must specify one of the following values: • PRESERVE_VERSION—The PRESERVE_VERSION value preserves the current version of Exstream and installs the newer version of Exstream to a separate installation directory. • REPLACE_VERSION—The REPLACE_VERSION value replaces the current version of Exstream with the newer version. For example: INSTALL_TYPE=PRESERVE_VERSION
INSTALLDIR	The INSTALLDIR command line switch is an optional switch that lets you specify the installation directory that you want to use. The value for this switch is the file path of the directory. By default, if you do not specify the INSTALLDIR command line switch, then the installer uses the following installation folder: C:\Program Files (x86)\OpenText\Exstream\Exstream #.#.### For example: INSTALLDIR=\"C:\Program Files (x86)\OpenText\Exstream\Exstream 9.5.302\"
START_MENU	The START_MENU command line switch is an optional switch that lets you specify the name of the Start Menu folder that you want to use. The value for this switch is the name of the Start Menu folder. By default, if you do not specify the START_MENU command line switch, then the installer uses the following folder: OpenText Exstream #.#.### Start Menu folder names that contain spaces must be enclosed in quotation marks. For example: START_MENU=\"OpenText Exstream 9.5.302" If the Start Menu folder name that you specify does not contain spaces, then you do not have to enclose the folder name in quotation marks. For example: START_MENU=AStartMenuFolder\OpenTextExstream9.5.302\production\

Use the /v command line switch to pass the Exstream command line switches or arguments to the Microsoft Installer executable.

The following example uses command line switches and the silent install method to install the English language version of Exstream, to keep currently installed versions of the software, to place the new version of the software in a specific directory, and to write the installation log file to a specific directory.

```
OpenTextExstream_setup_#.#.###.exe /s /L1033 /v"/qn INSTALL_TYPE=PRESERVE_VERSION
INSTALLDIR=\"C:\Program Files (x86)\OpenText\Exstream\Exstream #.#.###\" /l
C:\install_log.txt"
```

The following example uses command line switches and the silent install method to install the English language version of Exstream, and to write the installation log file to a specific directory.

```
OpenTextExstream_setup_#.#.###.exe /s /L1033 /v"/qn \" /l C:\install_log.txt"
```

The following example uses command line switches and the silent install method to install the English language version of Exstream, to specify a Start Menu folder with a folder name that contains spaces, and to write the installation log file to a specific directory.

```
OpenTextExstream_setup_#.#.###.exe /L1033 /s /v"/qn START_MENU=\"OpenText Exstream
#.#.###" /l C:\install_log.txt"
```

The following example uses command line switches and the silent install method to install the English language version of Exstream, to specify a Start Menu folder with a folder name that does not contain spaces, and to write the installation log file to a specific directory.

```
OpenTextExstream_setup_#.#.###.exe /L1033 /s /v"/qn START_
MENU=AStartMenuFolder\OpenTextExstream#.#\production\ /l C:\install_log.txt"
```

If you use the silent installation method to repair an existing installation of Exstream, you must use the REINSTALL and REINSTALLMODE Microsoft command line switches and the appropriate arguments to define the actions that the installer performs.

For more information about the REINSTALL and REINSTALLMODE Microsoft command line switches, go to the Microsoft website.

For more information about InstallShield standard command line switches, go to the Flexera Software website.

For more information about Microsoft standard command line switches, go to the Microsoft website.

Using Silent Installation to Install on an EAM Server

If you have licensed Exstream Application Manager (EAM) to use in your organization, you can install Exstream Design and Production on a configured EAM server using the silent installation method.

You can initiate a silent installation on an EAM server using the same Microsoft and InstallShield standard command line switches that you use to initiate a silent installation of the design environment on a local machine. Exstream includes optional command line switches that you can use to specify whether you want to install the design environment on an EAM server, and to let you specify the EAM host name and the EAM server port number.

To use silent installation to install on an EAM server, you must specify values for the following command line switches.

Exstream command line switches

Command line switches	Description
EAM_SERVER_INSTALL	The EAM_SERVER_INSTALL command line switch is an optional switch that lets you specify whether you want to install the design environment on an EAM server. If you specify that you want to install the design environment on an EAM server, then the installer updates the EAM design service configuration file and installs the EAM design service. By default, if you do not specify the EAM_SERVER_INSTALL command line switch, then the installer does not install the EAM design service or update the EAM design service configuration file. You must specify one of the following values: • YES—The YES value specifies that you want to install the design environment on an EAM server. • NO—The NO value specifies that you do not want to install the design environment on an EAM server. This is the default value for the EAM_SERVER_INSTALL command line switch. For example: EAM_SERVER_INSTALL=YES If you specify the EAM_HOST_NAME or EAM_PORT_NUMBER command line switches, then you must specify the EAM_SERVER_INSTALL command line switch.
EAM_HOST_NAME	The EAM_HOST_NAME command line switch is an optional switch that lets you specify the host name of the computer on which you are installing the design environment. For example: EAM_HOST_NAME=localhost By default, if you do not specify a value for the EAM_HOST_NAME command line switch, then the installer specifies the host name of the computer on which you are installing the design environment.
EAM_PORT_NUMBER	The EAM_PORT_NUMBER command line switch is an optional switch that lets you specify the communication port number that EAM uses for the EAM services. For example: EAM_PORT_NUMBER=7050 By default, if you do not specify a value for the EAM_PORT_NUMBER command line switch, the installer sets a default value of 7050.

Use the /v command line switch to pass the Exstream command line switches or arguments to the Microsoft Installer executable.

The following example uses command line switches and the silent installation method to install the English language version of Exstream on an EAM server, to place the new version of the software in a specific directory, and to write the installation log file to a specific directory.

```
OpenTextExstream_setup_#.#.###.exe /s /L1033 /v"/qn EAM_SERVER_INSTALL=YES
INSTALLDIR=\"C:\Program Files (x86)\OpenText\Exstream\Exstream #.#.###\"
/l C:\install_log.txt"
```

If you include the EAM_SERVER_INSTALL command line switch but you do not include the EAM_HOST_NAME and EAM_PORT_NUMBER command line switches, then the installer specifies the default values for the EAM_HOST_NAME and EAM_PORT_NUMBER command line switches.

The following example uses command line switches and the silent installation method to install the English language version of Exstream on an EAM server, to specify the EAM host name and EAM server port number, and to write the installation log file to a specific directory.

```
OpenTextExstream_setup_#.#.###.exe /s /L1033 /v"/qn EAM_SERVER_INSTALL=YES EAM_
HOST_NAME=EAM-PC EAM_PORT_NUMBER=7050 /l C:\install_log.txt"
```

For more information about using InstallShield standard command line switches, go to the Flexera Software website.

For more information about using Microsoft standard command line switches, go to the Microsoft website.

Using Silent Installation to Install and Remove Sample and Tracking Databases

You can use the silent installation method to manage Exstream Sample and Tracking database installation using the same Microsoft and InstallShield command line switches that you use to initiate a silent installation of the design environment on a local machine. Exstream includes optional command line switches that you can use to specify whether you want to install the Exstream Sample and Tracking databases, remove previously installed Sample and Tracking databases, or overwrite previously installed Sample and Tracking databases.

When you install the Exstream Sample and Tracking databases, an installation utility performs tasks that the installer is unable to perform, such as registry updates and creating or removing Data Source Names (DSNs). If the utility encounters errors while performing these tasks, then a dialog box appears where you can view the errors. When you use the silent installation method to install the Exstream Sample and Tracking databases, this dialog box is unavailable.

If you use the silent installation method to install the Exstream Sample and Tracking databases and the utility encounters errors, the installer creates the `Installation Errors.log` log file and places the log file in the following location:

```
C:\Program Files (x86)\OpenText\Exstream\Exstream #.#.###\Installation Errors.log
```

From the `Installation Errors.log` log file, you can view the errors that the utility encounters during installation. The errors contained in the `Installation Errors.log` log file are applicable only to the tasks that the installation utility performs. If the installation utility does not encounter any errors, then the installer does not create the `Installation Errors.log` log file and place the log file in the default installation folder location.

To use silent installation to install and remove Sample and Tracking databases, you must specify values for the following command line switches.

Exstream command line switches

Command line switches	Description
INSTALL_DATABASES	The INSTALL_DATABASES command line switch is an optional switch that lets you specify whether you want to install or overwrite the Exstream Sample and Tracking databases. If you use the INSTALL_DATABASES command line switch during a command line database removal, then the installer ignores the INSTALL_DATABASES switch and any value that you specify for the switch. You must specify one of the following values: • YES—The YES value specifies that you want to install the Exstream Sample and Tracking databases. If you have previously installed the Exstream Sample and Tracking databases, then specifying the YES value leaves the previously installed databases intact. The YES value is the default value for this switch. • NO—The NO value specifies that you do not want to install the Exstream Sample and Tracking databases. If you have previously installed the Exstream Sample and Tracking databases, then specifying the NO value leaves the databases intact. • OVERWRITE—The OVERWRITE value specifies that you want to install the Exstream Sample and Tracking databases and that you want the installer to overwrite previously installed Exstream Sample and Tracking databases if they exist. For example: INSTALL_DATABASES=OVERWRITE
REMOVE_DATABASES	The REMOVE_DATABASES command line switch is an optional switch that specifies whether you want to remove previously installed Exstream Sample and Tracking databases. If you use the REMOVE_DATABASES command line switch during a command line database installation, then the installer ignores the REMOVE_DATABASES switch and any value that you specify for the switch. You must specify one of the following values: • YES—The YES value specifies that you want to remove previously installed Exstream Sample and Tracking databases if they exist. The YES value is the default value for this switch. • NO—The NO value specifies that you do not want to remove previously installed Exstream Sample and Tracking databases if they exist. For example: REMOVE_DATABASES=YES

Use the /v command line switch to pass the Exstream command line switches or arguments to the Microsoft Installer executable.

The following example uses the INSTALL_DATABASES command line switch and the silent install method to install the Exstream Sample and Tracking databases on the English language version of Exstream and to write the installation log file to a specified directory.

```
OpenTextExstream_setup_#.#.###.exe /s /L1033 /v"/qn INSTALL_DATABASES=YES /l
C:\install_log.txt"
```

If you do not specify the INSTALLDIR command line switch to specify an installation directory, then the installer uses the following default installation directory:

```
C:\Program Files (x86)\OpenText\Exstream\Exstream #.#.###
```

The following example uses the INSTALL_DATABASES command line switch and the silent install method to install the Exstream Sample and Tracking databases on the English language version of Exstream, to install the databases to a specified installation directory, and to write the installation log file to a specified directory.

```
OpenTextExstream_setup_#.#.###.exe /s /L1033 /v"/qn INSTALL_DATABASES=YES
INSTALLDIR=C:\Program Files (x86)\OpenText\Exstream\Exstream #.#.###\" /l
C:\install_log.txt"
```

The following example uses the REMOVE_DATABASES command line switch and the silent install method to remove the Exstream Sample and Tracking databases from the English language version of Exstream and to write the installation log file to a specified directory.

```
OpenTextExstream_setup_#.#.### /s /L1033 /v"/qn REMOVE_DATABASES=YES /l C:/install_
log.txt"
```

For more information about using InstallShield standard command line switches, go to the Flexera Software website.

For more information about using Microsoft standard command line switches, go to the Microsoft website.

Completing the Installation in Design Manager

1. To open Design Manager, double-click DesignManager.exe.
2. From the **Select a Database** dialog box, select a database.
3. Click **OK**.
4. On the User Login screen, enter your design user name in the **User** box and your password in the **Password** box.
5. Click **OK**.

   If it is the first time you have opened the database, or if the key has expired, you receive a message.
6. Click **OK**.
7. In the **Enter a New License Key** dialog box, browse to the EKF file provided to you.

The design environment is now installed on your machine. Make sure you download and install the engine for your particular production environment.

Upgrading the Design Environment

You can install multiple major versions (for example, versions 8.0 and 9.0) and minor versions (for example, versions 8.0.105 and 8.0.215) on a single Windows workstation. When you upgrade, you can choose to replace your current version or install a separate new version in addition to the existing version already on your workstation. However, when you install an earlier version, that version does not overwrite the newer, existing version. As with the installation process, follow the prompts in the wizard.

Note: Some version upgrades might require you to upgrade your design database as well as your design environment. After you run the Database Administrator utility, you have completed the upgrade process.

For information about how to upgrade a design database, see "Database Administration" on page 36.

For more information about best practices for and approaches to upgrading Exstream, see "Upgrading Exstream Design and Production" on page 63.

Installing the Interactive Document (Live) Capabilities of Exstream

When installing Live (LiveEditor and LiveViewer), keep in mind that Live is a separate program from the Exstream design and production environments.

System Requirements

Before you begin, make sure you meet the following minimum requirements:

Workstation requirements

Area	Requirement
Monitor	1366x768
Hardware	2GB of RAM (4GB recommended for complex or large documents), 800MB free disk space (10GB recommended)
Software	Microsoft Windows Vista, Microsoft Windows 7, Microsoft Windows 8, Microsoft Windows 8.1, Microsoft Windows Server 2008, or Microsoft Windows Server 2012 Microsoft Internet Explorer 7, 8, 9, 10, or 11 (for viewing or editing a DLF in the browser)

Installing LiveEditor and LiveViewer

Separate installers are provided for LiveEditor and LiveViewer. Each program has the following types of installers available to you:

- **Standard installer**—This installer provides a traditional, wizard-like installation experience and offers you the opportunity to change defaults. You might choose to use the standard installer if you must customize the installation path, or if you can easily administer the installation process for end users.
- **Silent installer**—This installer is designed for installations in an enterprise environment. It runs "silently" and does not offer you the opportunity to change defaults. This installer also overrides any existing installations and installs components in their default locations. You might choose to use the silent installer if you want to provide a seamless installation experience for remote end users, or if you want all installations of the program to use the same installation settings.

You can use the following switches and parameters when installing LiveEditor or LiveViewer in silent mode from the command line:

Switch	Parameters	Syntax	Notes
/V	INSTALLDIR—This parameter lets you specify the installation directory on the end user's computer. USERSTARTFOLDER—This parameter lets you specify the default start folder on the end user's computer.	/v"/qn INSTALLDIR=\"C:\Program Files (x86)\OpenText\Exstream\""	• If there are spaces in the path you enter, then you must surround the path name with quotation marks, and then use \ as an escape character. • In the syntax, /qn must be used in order for the installer to remain in silent mode.
/S	None	None	This switch prevents the startup progress bar and all other startup windows from being displayed during installation.
/L	1031—German 1033—English 1034—Spanish 1036—French 1041—Japanese 1046—Brazilian Portuguese 2052—Chinese	/L "1033"	This switch controls the language of the installed version.

Note: If you want end users to import EPS images, for best results, install Ghostscript. Ghostscript is available from www.ghostscript.com/download. If an end user imports an image in LiveEditor without first installing Ghostscript, the image might appear distorted in LiveEditor. However, EPS images are still stored correctly and appear correctly in output that is produced during fulfillment.

The installers for both programs install the Internet Explorer plug-in. By default, the plug-in capability is enabled. To disable the plug-in capability, go to **Tools > Manage Add-ons > Enable or Disable Add-ons** in Internet Explorer.

Note: LiveEditor or LiveViewer as an add-on is supported only in Internet Explorer versions 6, 7, 8, 9, 10, and 11.

Installing the Production Environment

The production environment is installed and upgraded separately from the design environment because the production environment has different requirements and installation procedures for each platform. Exstream offers a 32-bit version and a 64-bit version of the production engine.

You can install the 32-bit and 64-bit version of the production engine on the following platforms:

Environment	32-bit Supported Versions	64-bit Supported Versions
Windows	• Microsoft Windows Server 2008 • Microsoft Windows Server 2012	• Microsoft Windows Server 2008 • Microsoft Windows Server 2012
z/OS	z/OS 1.13 and later	z/OS 1.13 and later
UNIX	• IBM AIX (RISC) 6.0 and later • Oracle Solaris 10 and later (SPARC)	• IBM AIX (RISC) 6.0 and later • HP-UX Itanium 11i v2 and later
Linux	• SuSE: version 10.0 (Intel) and later • Red Hat: RHEL 5.0 (Intel) and later	• SuSE: version 10.0 (Intel) and later • Red Hat: RHEL 5.0 (Intel) and later
IBM i (AS/400)	IBM i 7.1 and later using AS/400 PASE run-time environment	IBM i 7.1 and later using AS/400 PASE run-time environment

For more information about the 32-bit and 64-bit versions of the production engines, see *Preparing Applications for Production*.

Windows Production Environment Installation

System Requirements

Before you begin, make sure that you meet the following minimum requirements:

Production environment requirements for Windows

Area	Requirement
Hardware	2GB of RAM (4GB recommended), 800MB of disk space (10GB recommended)
Software	Microsoft Windows Server 2008 or Microsoft Windows Server 2012

Installing the Production Environment on Windows

1. Download the NT engine ZIP file.
2. Extract the engine to the production folder on your hard disk on the Windows production machine. Do not move any file to another directory.

   Caution: For the DBCS engine only, make sure `icuuc42.dll` and `icudt42.dll` are in the same directory as the engine. The `icuuc42.dll` and `icudt42.dl`l files are included in the Windows DBCS engine download.

3. If you have licensed the Dynamic Content Import module or the Design PDF module and want to import PostScript and PDF content, complete the following steps:
   a. Go to www.ghostscript.com/download to download Ghostscript.
   b. Add the location of the Ghostscript executable to your system path.

z/OS Production Environment Installation

Before you begin, make sure you meet the following minimum requirements:

Production environment requirements for mainframe

Area	Requirement
Hardware	IBM Mainframe, 50MB of disk space, at least 80MB for DBCS applications
Software	z/OS 1.13 or later, IBM's terse utility

To install the production environment on z/OS:

1. Reserve sufficient DASD to install and run the engine.
2. Verify that you have disk space available that is three times the sum of all the data files in your largest application.

   (Allow at least 15,000 tracks on z/OS.)
3. Download the engine ZIP file for z/OS.

   For information on downloading software, see "Downloading Exstream Software and Documentation" on page 7.
4. Extract the zipped files.
5. Configure IBM's terse utility (if not already installed).

   Note: When you install the DBCS version of Exstream on z/OS, the ICU data file, called `icudata.trs`, must be called in the JCL you use to run the engine via DD Statement `ICUDT20E`.

   For example:

   `//ICUDT20E DD DSN=HLEV1.HLEV2.ICUDATA(NEWDATA),DISP=SHR` `HLEV1` and `HLEV2` are high-level qualifiers pointing to your Exstream install file naming convention on z/OS.

   If you do not include the DD statement in your JCL, the engine cannot run.
6. Edit the `sendtrs.txt` file, which is called by the `sendtrs.bat` file. The `sendtrs.bat` file uses the FTP program that comes with Windows to transfer the terse files and required files to the mainframe.

7. In the `sendtrs.txt` file, change the following settings:
   - Change IBM6000 to the URL or IP address of your mainframe.
   - Change P390A (USERID) to your FTP user name.
   - Change P390A6 (PASSWORD) to your FTP password.
8. Double-click the `sendtrs.bat` file.
9. Edit the `VERUNP` file.
   - Add or edit your job card as appropriate.
   - Replace SYS1.MIGLIB with the DSN of the library containing the terse utility.
   - Replace P390A with your high-level qualifier where you loaded your terse files.
10. Submit `VERUNP` and verify installation.

Setting Up to Run XML Transformations on z/OS

Exstream uses built-in XSLTs to validate XML data, transform XML data, and to create Multi-Channel XML output.

In order to run these XSLTs on the z/OS platform, you must complete the following steps:

1. Make sure you have licensed one or both the following modules:
   - License the XML Input module if you want to validate XML data or transform XML data.
   - License the XML (Multi-Channel) module if you want to create Multi-Channel XML output.
2. Download and install the "XML Toolkit for z/OS" from the IBM website.
3. Point your engine to run Job Control Language (JCL) to the installed Partitioned Data Set Extended (PDSE).

For more information about validating and transforming XML data, see *Using Data to Drive an Application*.

For more information about creating Multi-Channel XML output, see *Delivering Documents to Multiple Channels*.

z/OS Terse Files List

Unpacking the terse files creates PDSs by the same name. The following table lists each set and its intended content (members).

Note: To use the MSGLANGUAGE engine switch, you must have the language-specific version of Exstream.

z/OS terse files

File	Content
`icudata.trs` (DBCS)	Lets you access the ICU data file, which is used in DBCS applications to enable conversion between native encodings and Unicode
`jcl.trs`	All the jobs needed to verify the engine installation
`jsl.trs`	Several JSLs to assist with loading jobs on Metacode printers
`load.trs)`	The z/OS engine (ENGEXE), a program called EXHOSTID that identifies the host ID of your mainframe, and a program called HYPHDLL that handles hyphenation
`DMSG <language>.trs`	The message resource file for the z/OS engine. You can specify English (DMSGENUS).

Tracking, z/OS, and DB2

If you use `UPTRACK` to update a DB2 database on z/OS (tracking databases only) from the text files created by the engine, perform the following edits.

Note: This information assumes that you have already created a tracking database.

1. EXSTREAM.JCL(VERTRACK) - JCL to run program:
   a. Edit the job card as appropriate.
   b. In the definition of the RUNTRK proc:

      Change the HLQ symbolic parameter default from `p390a` to your desired high-level qualifier.
   c. Change `P390LOC(PARM='-DSN=P390LOC')` to the name in the SYSIBM.LOCATION location field that refers to the DB2 database to which you want to connect.

      ```
      C P390LOC < name in SYSIBM.LOCATION Location field > all
      ```
   d. Change DSN510 to your high-level qualifier of your DB2 System.

      ```
      DSN510 <new high level qualifier> all
      ```
   e. Change SYS1 to your high-level qualifier of your System Directory.

      ```
      SYS <new high level qualifier> all
      ```
   f. Change CBC to your high-level qualifier of the location of SCLBDLL.

      ```
      CBC <new high level qualifier> all
      ```
2. EXSTREAM.JCL(ODBCINI)
   a. Change `MVSDEFAULTSSID= DSN1` to the SSID of your DB2 system.

      ```
      C DSN1 < SSID> all
      ```

b. Change `PLANNAME= EXSTREAM` to the Plan Name of your DB2 system where the tracking tables were created.
`C Exstream <Plan Name>`

3. The EXSTREAM.JCL(MVSENGTB) script that creates tables in DB2 must be run from the DB2 ISPF Panel.
4. Submit `EXSTREAM.JCL (VERTRACK)` if you are using DB2 on z/OS as the tracking database.

License Key in a Control File in z/OS

The z/OS operating system uses uppercase characters; however, the license key must consist of the original mixed case characters (uppercase and lowercase as required). On z/OS, if you edit a control file that contained only uppercase characters, the ISPF editor automatically sets itself to CAPS ON. The characters you enter for the key are then converted to uppercase.

Enter the ISPF editing command `CAPS OFF` before entering the mixed case key. If you have issues, you can edit the file on your PC:

1. Using FTP, copy your control file to your PC.
2. Open the control file in a text-editing program, such as Notepad.
3. Edit or copy the KEY switch and key characters to the control file exactly as they appear in your original control file.
4. Using FTP, return the control file to the mainframe in ASCII mode.

UNIX/Linux Production Environment Installation

System Requirements

Before you begin, make sure you meet the following minimum requirements:

Production environment requirements for UNIX/Linux

Environment	32-bit Supported Versions	64-bit Supported Versions	Hardware
UNIX	• IBM AIX (RISC) 6.0 and later • Oracle Solaris 10 and later (SPARC)	• IBM AIX (RISC) 6.0 and later • HP-UX Itanium 11i v2 and later	• 2GB of RAM (4GB rceommended) • 800MB hard drive space (10GB recommended) • 515MB of free disk space (SBCS) • 600MB of free disk space (DBCS)
Linux	• SuSE version 10.0 (Intel) and later • Red Hat RHEL 5.0 (Intel) and later	• SuSE version 10.0 (Intel) and later • Red Hat RHEL 5.0 (Intel) and later	• 512MB of RAM • 515MB of free disk space (SBCS) • 600MB of free disk space (DBCS)

Note: When you are running the DBCS engine, the current locale must include a Unicode codepage. An example of an AIX locale containing a Unicode codepage is EN_US.UTF-8.

Installing the Production Environment on UNIX/Linux

1. Download the appropriate UNIX-based engine ZIP file.

   For information on downloading software, see "Downloading Exstream Software and Documentation" on page 7.

2. Extract the downloaded file.

   You produce a file with the `tar.Z` extension.

3. Transfer the file to your UNIX/Linux system.

4. On the UNIX/Linux system, verify there is sufficient disk space to install the software.

   The requirements are as follows:

   - 515MB of free disk space (SBCS)
   - 600MB of free disk space (DBCS)

5. Make sure that the directory you choose is included in your PATH environment variable.

6. Decompress the `tar.Z` file into the directory where you want the engine to reside. You can use a UNIX command such as:

   ```
   uncompress [filename].tar.Z
   ```

7. At the command prompt, extract the engine files.

   For example:

   ```
   tar -xvf[filename].tar
   ```

   Various executable, verification, and test files appear in the directory.

   Note: When using the DBCS engine with AIX installations, delete existing `libicudata.so` and `libicuuc.so` files before extracting `engine.tar.Z`. When you extract `engine.tar.Z`, the SO files are not overwritten on AIX. The AIX operating system caches all shared libraries after they are invoked for faster execution.

8. Test the engine using the files provided.

   The following table lists the files and their contents:

   Content of compressed file

File	Contents
`Engine`	Executable engine file

Content of compressed file, continued

File	Contents
`MsgResource_<language>.dat`	Text file containing messages that are shown to the user by the engine For more information on specifying the message resource, see the MSGLANGUAGE and MSGRESOURCE switches in *Preparing Applications for Production*.

Additional Instructions for Dynamic Content Import and Design PDF on UNIX/Linux

If you have licensed the Dynamic Content Import module or the PDF Import as Image module, you must install Ghostscript and configure the environment so that the engine can use the dynamic content import functionality or the PDF import as image functionality.

To install Ghostscript on UNIX/Linux:

1. Go to www.ghostscript.com/download to download Ghostscript.
2. Extract the file.

   The file contains `ghostscript-X.XX.tar`.
3. Transfer `ghostscript-X.XX.tar` to UNIX Server in Binary mode.
4. Untar file (`tar –xvf ghostscript-X.XX.tar`) into the directory where Ghostscript is to reside. (This directory can be anywhere.)
5. Add the directory where Ghostscript resides to your PATH.

   For example, export `PATH=$PATH:/ghostscript_dir`.
6. Set the GS_LIB environment variable to `<gsdir>/gsfonts:<gsdir>/gslib` where `<gsdir>` is your Ghostscript directory.

Note: To use Ghostscript to rasterize PDFs, users must have write permission to the directory where the package file resides when they run the engine.

Using the IBM DB2 CLI Driver on AIX and Linux

To obtain the required driver libraries, install the DB2 Application Development Client. If you are setting it up on a DB2 Server, you might already have the necessary software installed. To use the IBM CLI driver as an ODBC driver, install an ODBC Manager called UNIXODBC. When installing, choose default options when possible.

The UNIXODBC application is an Open Source ODBC Manager. Exstream has been tested with UNIXODBC version 2.2.11. You can download this program from the following website: http://www.unixodbc.org/.

To install UNIXODBC, refer to IBM's installation instructions at: http://publib.boulder.ibm.com/infocenter/db2help/index.jsp?topic=/com.ibm.db2.udb.doc/ad/t0010406.htm.

UNIXODBC Configuration

Initialization files are used to configure the UNIXODBC.

odbcinst.ini

You must set up an `odbcinst.ini` file. The path depends on your installation directory. Assuming you used the default (`/usr/local`), create this file in `/usr/local/etc`.

Note: The driver path depends upon your installation location of DB2. The [ODBC] trace section is optional, but might be useful while setting it up.

```
[DEFAULT]
Description = Default Driver
Driver = /home/db2inst1/sqllib/lib/db2.o
fileusage=1
dontdlclose=1
[DB2]
Description= DB2 Driver
Driver= /home/db2inst1/sqllib/lib/db2.o
FileUsage= 1
DontDLClose= 1
[ODBC]
trace = yes
tracefile = /usr/local/etc/trace.log
```

odbc.ini

To set up a DSN for the SAMPLE database installed when you install DB2, configure the `odbc.ini` file as follows: `/usr/local/etc/odbc.ini`. This file path contains DSNs visible to all users. You can also set up a . `odbc.ini` file visible to individual users.

```
[DEFAULT]
Driver=DB2
[SAMPLE]
Description= Connection to DB2
Driver= DB2
```

Verifying Installation

To confirm that UNIXODBC is installed and configured correctly, you can execute a simple query using the `isql` utility installed as part of UNIXODBC:

```
isql –v SAMPLE db2inst1 password
SQL> select * from STAFF
SQLRowCount returns -1
35 rows fetched
SQL> quit
```

Return table

ID	Name	Dept	Job	Years	Salary	Comm
10	Sanders	20	Mgr	17	18357.50	1
20	Pernal	20	Sales	18	18171.25	612.45
30	Marenghi	38	Mgr	15	17506.75	

Note: If you see the following error, set your DB2INSTANCE: `[IM004][unixODBC][Driver Manager]Driver's SQLAllocHandle on SQL_HANDLE_HENV failed [ISQL]ERROR: Could not SQLConnect`

To set your DB2INSTANCE, enter the following: `export DB2INSTANCE=DB2INST1`

IBM i (AS/400) Production Environment Installation

System Requirements

Before you begin, make sure that you meet the following minimum requirements:

Production environment requirements for AS/400

Area	Requirements
Hardware	Portable Application Solutions Environment (PASE), at least 475MB of free disk space
Software	IBM i 7.1 and later

Installing the Production Environment on IBM i (AS/400)

1. Create an Exstream directory.
2. Download the AIX engine ZIP file.

   For information on downloading software, see "Downloading Exstream Software and Documentation" on page 7.
3. Extract the downloaded file.

   An `engine.tar.Z` file is produced.
4. Using FTP or your usual method of binary file transfer, transfer this file to the Exstream directory you created on your AS/400 system. For example:
   a. Start up FTP in a command window.
   b. At the FTP prompt, enter `quote site namefmt 1`.

      The system replies that it is now using naming format "1."

c. At the FTP prompt, enter `bin`.

   The system replies that the restoration type is a binary image.

   At the FTP prompt, change the directory to Exstream (for example, `cd /exstream`).

   The system confirms the change to the Exstream directory.

d. At the FTP prompt, send the `engine.tar.Z` file to this directory. For example, `put engine.tar.Z`. When complete, you receive a message.

5. Return to the PASE window (in your 5250 Emulator program).
6. Decompress the tar executable file to the Exstream directory by entering the `uncompress engine.tar.Z` command.

   The command prompt returns when the decompression finishes. The Z extension drops from the name of the `engine.tar` file.

7. Extract the executable and test files to a tar folder underneath the Exstream directory with the `tar –xvf engine.tar` command.

   When the extraction finishes, the command prompt appears.

8. Remove the `engine.tar file`: `rm engine.tar`.

   For more information on specifying the message resource file, see the MSGLANGUAGE switch in *Preparing Applications for Production*.

Creating an Exstream Directory

Although you can use any location for the installation, the default is an Exstream directory that you create off the root. These procedures use a Windows machine to complete the entire installation. Adjust the steps accordingly if you have a 5250 terminal operating off the AS/400 machine.

1. On a Windows machine, load a 5250 Emulator of your choice. (The default is to use IBM Personal Communications, workstation version.)
2. Start the terminal Emulator and log in to the AS/400 machine.
3. Access the PASE environment from the Main menu (for example: `call qp2term`).

   In PASE, you emulate a UNIX environment.

4. Create a directory called `Exstream` under the root directory.
5. Leave the PASE window open as you complete the next procedure.

Control/Batch Files

Point to the directory containing the engine and `MsgResource-xx-xx.dat` files when you identify the location of the engine in your control/batch files. A batch script must change directory `(cd)` to this location before the batch file runs the engine. Also, upload the package files for applications into this same directory.

Chapter 2: Keys and Licensing for Exstream Products

After your Exstream software purchase is complete, you will receive an email that contains a Software Delivery Receipt. The Software Delivery Receipt email contains a URL that will take you to the electronic download page where you can redeem your licenses for the software you have purchased. After you have completed the license redemption process, you will receive a key file and license file(s) that will allow you to start using Exstream products.

This chapter discusses the following topics:

Key Files

A key file is a text file that contains a key that is a company-specific, alphanumeric string. This key file lets you activate the modules your company has purchased. Keys are case-sensitive, so you must enter them correctly or you receive an error.

> **Note:** In z/OS, characters are converted to uppercase; however, the license key must consist of the original, mixed-case characters. To prevent the key from being converted to uppercase, you can set the z/OS command to CAPS OFF.

You must use your key at the following times:

- The first time you log in to Design Manager, Designer, or Logic Designer
- The first time you open a database
- When you license new modules
- When you upgrade your software
- When your previous key expires
- When you validate your license key in a control file for packaging or for a production run

For more information about logging in to Exstream for the first time, see *Exstream System Administration*.

For more information about selecting a key when you open a database, see "Setting Keys in Databases" on page 57.

For more information about keys in control files, see *Preparing Applications for Production*.

Note: Exstream emails a new key to the technical contact listed in the software agreement (or to people authorized by the contact) 15 to 30 days before an old key expires. If you do not receive a new key, send an email to the following address: software.keys@opentext.com.

Licensing

To provide the flexibility your organization needs, Exstream offers two types of licenses:

- **Node-locked**—This license type allows the software to run on a specific workstation.
- **Floating**—This license type allows the software license to be issued on an on-demand basis.

Node-locked Licensing

Node-locked licenses are dedicated licenses for running the software on a specific workstation. They cannot be used on other workstations unless you unlicense the workstation to which it is currently dedicated. The license is locked to the workstation's MAC ID (unique network adapter ID).

You must perform a one-time process to download licenses managed by the external license server. The server licenses the features using the MAC address of your workstation.

The first time you connect to a design database that requires a node-locked workstation license, the **License option** dialog box opens after you select the key. In the **License option** dialog box, you can license your workstation over the Internet or using a license request file. In Exstream 7.0 and later, if you request licenses for multiple features and some of the licenses are unavailable, then your license request for the available licenses will succeed, but your request(s) for the unavailable license(s) will fail. When the unavailable licenses become available, you can successfully request those licenses.

This section discusses the following topics:

Licensing a Feature

If the key in the Exstream database you opened requires you to license your workstation, the **License option** dialog box opens and you must request a license file.

You can request a license in the following ways:

- **Using the Internet**—If an Internet connection is available, you can request a license file directly from the Exstream licensing server to avoid potential delays in receiving your license. Online requests are handled immediately.
- **Using a request file**—If an Internet connection is not available, you can request a license by creating a request file that you can email from another workstation to the following address: software.keys@opentext.com. Requests are addressed within one business day. After you receive

the authorization file, select **Load a license authorization file from OpenText** from the **License option** dialog box to load the license.

Tip: If you lose a license because you reinstalled Windows or restored from a backup, you can request a replacement of your original license. When you place your request from that same computer, you will receive the license that you previously lost. Additional licenses are not deducted from the license server.

This section discusses the following topics:

Requesting a License File Using the Internet

1. To license features, go to **Tools > Licensing > License node-locked features**.

   The **License option** dialog box opens.
2. In the **License option** dialog box, enter your customer password in the **Customer password** box.
3. Select the **Process via Internet** radio button.
4. Click **OK**.

   The **Request licenses** dialog box opens.
5. In the **License status** area, review the status of each feature to make sure that there are enough licenses available for you to license. You can also view the following information for each feature:
   - Whether you previously licensed the feature
   - Maximum number of users
   - Number of licenses used
   - Number of licenses remaining
   - License expiration date (if applicable)
6. In the **Features to license** area, select which features to license on your workstation.
7. If you are running Exstream from a central server using Windows Terminal Services or you are running on a Citrix server, complete the following steps:
   a. In the **Request license** dialog box, select the **Will be used with Terminal Services or Citrix** check box.

      The **Number of license** box becomes available.

   b. If multiple users will be using licensed features at the same time, specify a license quantity equal to the highest number of simultaneous users in the **Number of license** box.
8. If you have multiple MAC addresses, select the MAC address of a permanently connected network adapter from the **PC network card MAC address** drop-down list.

Your license is linked to this MAC address.

9. Click **OK**.

   The **User Information** dialog box opens.

10. In the **User Information** dialog box, enter or review your user information to make sure it is accurate.
11. Click **OK**.

    Your license file is downloaded from the license server and installed.

Requesting a License File Using a Request File

1. To license features, go to **Tools > Licensing > License node-locked features**.

   The **License option** dialog box opens.

2. In the **License option** dialog box, enter your customer password in the **Customer password** box.
3. Select the **Create a license request file** radio button.
4. In the **License status** area, verify the license status of each feature that you have checked out.
5. In the **Features to license** area, select the features you want to license on your workstation. The options vary based on which features you have available.
6. If you are running Exstream from a central server using Windows Terminal Services or you are running on a Citrix server, complete the following steps:
   a. In the **Request license** dialog box, select the **Will be used with Terminal Services or Citrix** check box.

      The **Number of license** box becomes available.

   b. If multiple users will be using licensed features at the same time, specify a license quantity equal to the highest number of simultaneous users in the **Number of license** box.
7. If you have multiple MAC addresses, select the MAC address of a permanently connected network adapter from the **PC network card MAC address** drop-down list.

   Your license is linked to this MAC address.

8. Click **OK**.

   The **User Information** dialog box opens.

9. In the **User Information** dialog box, enter or review your user information to make sure it is accurate.
10. Click **OK**.

    The **Create Exstream license transaction file**dialog box opens.

11. In the **Create Exstream license transaction file**dialog box, enter a file name and select the folder in which to save the file.
12. Click **Save**.

You receive a message indicating that the transaction file was successfully created.

13. Email the transaction file to software.keys@opentext.com for processing.

    After OpenText receives and processes the transaction file, you receive an email containing a license authorization response file.

14. In the **License option** dialog box, select **Load a license authorization file from OpenText**.

    The **Open Exstream license transaction file** dialog box opens.

15. In the **Open Exstream license transaction file** dialog box, select **admin_response file** and click **Open**.

    Exstream loads the licenses into the system and you receive a confirmation message.

> **Caution:** When you send a request file, make sure you enter the correct password, which is not verified until OpenText receives the file. If you entered an incorrect password, you must repeat the request file creation process.

Unlicensing a Feature

Sometimes it is necessary to unlicense a workstation. The process to unlicense a feature is similar to the process to license a feature. You might want to unlicense a workstation under the following circumstances:

- The computer will no longer be used.
- You want to change your network card.
- You no longer need a feature.

To unlicense a feature:

1. Select **Tools > Licensing > Unlicense node-locked features**.

   The **License option** dialog box opens.

2. Select how you want to unlicense a feature. The method you choose depends on the availability of an Internet connection:

   - **Process via Internet**
   - **Create a license request file**

   For information about the **Process via Internet** or **Create a license request file** options, see "Licensing a Feature" on page 29.

Viewing License Status

You can view your license status to review your licensing information. For example, you can view which features you have licensed, how many licenses are available, and when your license expires. If you want to view the license status, your workstation must be able to connect to the OpenText Licensing server.

To view the license status:

1. Go to **Tools > Licensing > View License node-locked status**.

   The **License option** dialog box opens.

2. To open the **License status** dialog box, enter your customer password.

   The **License status** dialog box lets you view the following information:

   - Whether you previously licensed the feature
   - Maximum number of users
   - Number of licenses used
   - Number of licenses remaining
   - License expiration date (if applicable)

Floating Licensing

Floating licensing allows the software license to be issued and returned automatically and only when needed. A license file that is installed on each workstation points to a license server machine on the local network. The license server that hosts the licenses is node-locked by the MAC ID and controls all licenses available for your Exstream products. If you use floating licensing, you can choose from two license server setups: a one-server setup or a three-server setup. If the primary license server fails in the three-server setup, a backup server will take over for it. In this arrangement, at least two servers must be functional at the same time in order to serve licenses.

Keep in mind that if you are using the three-server setup, borrowing is not supported.

For more information about borrowing, see "Borrowing a Floating License" on the next page.

Exstream supports floating licensing on the following platforms:

- Windows x86 (32-bit SBCS and DBCS)
- Windows x64 (64-bit SBCS and DBCS)
- Linux x86 (32-bit SBCS and DBCS)
- Linux x86-64 (64-bit SBCS and DBCS)
- HP-UX ia64 (64-bit SBCS and DBCS)
- AIX (32-bit SBCS and DBCS)
- AIX (64-bit SBCS and DBCS)
- Solaris (SPARC) (32-bit SBCS and DBCS)

When you log in to Design Manager, Designer, or Logic Designer, you must have an Exstream workstation floating license file installed in the default license path. This license file identifies the floating license server on your local network. If Exstream does not detect a workstation floating license file, you will be prompted at login to select a workstation license file to copy to the default license path. If you do not have a workstation floating license file, contact your system administrator.

Floating licenses for design tools are checked out automatically. If one of the design tools attempts to check out a floating license and all licenses are in use, the **Waiting for a License** dialog box opens, showing the current users who hold licenses. Exstream checks for a free license every 15 seconds. You can manually check for a free license at any time by clicking **Refresh** on the **Waiting for a License** dialog box.

If you are using a three-server setup and the primary server is unavailable, license requests for the engine, design tools, and PDF converter licenses are not queued automatically if all licenses are in use. If this situation occurs, you must exit the program and restart it when a license becomes available.

Floating licenses for engines are also checked out automatically. To manage licensing settings from the command line, you can use the following engine switches:

- LICENSE_PATH
- LICENSE_WAIT
- REALTIME_LICENSE_MODE

When a license cannot be checked out because all licenses are in use, all users currently holding licenses will be displayed to the console and the engine will attempt to check out a license every 15 seconds until one becomes available or until the process times out (depending on the argument you are using with the LICENSE_WAIT switch).

For more information about the LICENSE_PATH, LICENSE_WAIT, and REALTIME_LICENSE_MODE engine switches, see *Preparing Applications for Production*.

Borrowing a Floating License

If you want to use Exstream when you do not have access to your local network, you can check out a license for a specific time period. For that time period, the license that you have checked out is unavailable to other users. Checking out a license in this way is called "borrowing." Borrowing allows you to check out a licensed feature for a fixed period of time without the need to access your local network to contact the license server after the initial check. At the end of the time period that you have specified when you borrowed the license, the license is automatically checked in. You can also choose to return borrowed licenses before the borrow time period is over.

To borrow a floating license:

1. In Design Manager, from the **Tools** menu, select **Licensing > Borrow floating licenses**.

   The **Borrow a Floating License** dialog box opens and the licenses that are available appear in the **Licenses to borrow area**.

2. In the **Licenses to borrow** area, select which licensed features you want to borrow, or click **Select All** to borrow all licensed features.
3. In the **Return date** box, enter or select the date that you want to return the borrowed licensed features.
4. In the **Return time** box, enter or select the time that you want to return the borrowed licensed features.
5. Click **Borrow**.

You receive a message that states which licensed features you have successfully borrowed and which features (if any) that were not available to be borrowed.

Returning a Borrowed Floating License Prior to the Borrow Expiration Date

1. In Design Manager, from the **Tools** menu, select **Licensing > Return floating licenses**.

   The **Return a Borrowed Floating License** dialog box opens and the licenses that you have borrowed appear in the **Licenses to return** area.

2. In the **Licenses to return** area, select which of the borrowed license features that you want to return, or click **Select All** to select to return all borrowed licensed features.

3. Click **Return license**.

   You receive a message that states which licensed features you have successfully returned and which features (if any) that could not be returned.

Chapter 3: Database Administration

Databases in Exstream store information about objects that have been created, modified, or deleted. They also store system settings and configuration information, such as which modules are available or which users have access to specific folders.

This chapter discusses the following topics:

Supported Databases

The following table lists the database versions supported in Exstream.

Database versions supported

Database	Version
DB2	Linux, UNIX, and Windows • DB2 9 • DB2 10 z/OS • DB2 10 **Note:** If you are using a DB2 database as your DBCS database, and it resides on the mainframe (z/OS), you must install special ODBC drivers on the Windows workstation of each Exstream Design and Production user who will access the DBCS database. The ODBC drivers allow the Windows workstations to communicate with the DBCS database. Exstream supports the DataDirect Connect for ODBC DB2 Wire Protocol driver (version 6.1 SP1 or later) for DB2 9, and the DataDirect Connect for ODBC DB2 Wire Protocol driver (version 7.0.1 SP1 or later) for DB2 10.

Database versions supported, continued

Database	Version
Microsoft Access	• Microsoft Access 2010 **Note:** To use Microsoft Access 2010 with Exstream, you must install Office 2010 Service Pack 1. • Microsoft Access 2013
Oracle	• Oracle 11g • Oracle 12c
Microsoft SQL Server	• Microsoft SQL Server 2008 (32-bit and 64-bit) • Microsoft SQL Server 2012 (32-bit and 64-bit) • Microsoft SQL Server 2014 (32-bit and 64-bit)

Sample Design Database

Exstream provides an Access database that is a single-user database not intended for production environments with multiple users. The `Exstream Sample.mdb` is intended for training, testing, and troubleshooting purposes. It contains the following sample applications:

- **Bank Statement - Japanese**—This application contains only DBCS objects and represents a DBCS-only financial application in Exstream.
- **Communications**—This application contains SBCS and DBCS objects and represents an SBCS/DBCS communications application in Exstream.
- **Correspondence**—This application contains SBCS and DBCS objects and represents an SBCS/DBCS correspondence application in Exstream.

Before Creating a Database

Before you can create the structure necessary to store information, you must first create the initial database instance. This process varies by database type. Keep in mind that you must use the Database Administrator utility (DBAdmin_dbcs.exe) to create an empty database.

To create a database instance, you must complete the following steps:

1. "Configuring User Permissions for Databases" on the next page
2. "Creating a DSN" on the next page

Configuring User Permissions for Databases

Users must have correct permissions in the database based on how they use it. Databases typically have two types of users:

- **Design user**—Creates and updates objects in Exstream, but does not access the database directly. Design users must have permission to insert, update, and delete data in tables.
- **Database administrator**—Directly accesses the database to create, drop, and update the database structure. Database administrators must have design user permissions, plus permission to create, alter, and drop tables, foreign keys, and indexes. They must also have permission to access storage groups (DB2 on z/OS) and create bufferpools (DB2 on Linux, UNIX, and Windows) and tablespaces (DB2 and Oracle).

Creating a DSN

To let users connect to databases from Exstream, you must create Data Source Names (DSNs) for each database on each workstation. Based on your database type, you use different ODBC drivers to create the DSNs.

To create a DSN on a workstation:

1. Make sure you have a database instance.
2. For DB2, create a connection to the database using the native DB2 utilities.
3. Open the ODBC Data Source Administrator utility.
4. Follow the steps in the utility to create a DSN.

Creating the Database Structure

After you have created and configured the initial database instance and created a DSN for the database, you use the Database Administrator utility (`DBAdmin_dbcs.exe`) to create the structure required for the particular database role. By default, the executable is located in the same directory as Exstream.

To create the database structure, you must open the Database Administrator utility and then complete the following steps:

1. "Connecting to a Database" on the next page
2. "Defining the Database Role" on page 40
3. "Creating Tablespaces" on page 40
4. "Selecting Logging Options" on page 41
5. "Finishing the Database Structure Creation" on page 42

You can also create a batch file to create the structure for multiple databases from the command line. For a list of the available switches, see "Command Line Switches for Database Administration and Maintenance" on page 100.

Connecting to a Database

1. Click **Connect**.

   The **Select Database** dialog box opens.

2. Highlight the DSN or location of the database. If you are creating an Access database and do not have an existing empty database, select **MS Access Database (create)**. If you do have an empty Access database, select **MS Access Database (open)** and go to the database. The Database Administrator utility opens to the directory of the most recently used Access database.

3. Select the database login method. If you are unsure about which option to select, contact your system administrator.

To	Do this
Use the default user name and password to connect to the database	From the **Database authentication method** drop-down list, select **Default Exstream user and password** For more information about the Exstream default user name and password, see "Setting Default User Names and Passwords" on page 56. The database server uses your login information for the design environment to authorize you.
Use the security built into the Windows network to connect to the database	From the **Database authentication method** drop-down list, select **Windows authentication**. The database server uses your Windows ID to authorize you. The **Windows authentication** option is the default.
Use a separate user name and password to connect to the database	a. From the **Database authentication method** drop-down list, select **Specify user and password**. The **User** and **Password** boxes become active. b. In the **User** box, enter a user name. c. In the **Password** box, enter a password. You receive a prompt for the Exstream user name and password to authorize you to use the design environment.

4. If you want to save database password credentials, select the **Remember passwords** check box.

   By default, the **Remember passwords** check box is not selected. If you save database password credentials and then clear the check box, the Database Administration utility clears all previously saved passwords. Keep in mind that passwords are weakly encrypted when they are saved to the registry.

5. If you select an Oracle, DB2, or SQL Server database, you have the option to either select a schema from the **Database schema** drop-down list, or enter a schema name. Make sure your

schema names do not include spaces. If schema names have spaces, errors occur when you attempt to use the Database Administrator utility. The Database Administrator utility stores the 30 most recent database schemas.

6. Click **OK**.

   You return to the **Create** tab on the Database Administrator utility. The **Database properties** area is automatically updated based on the database you selected.

   Note: The Database Administrator utility creates the database structure under the schema you enter when connecting to a database. You can have only one Exstream database per schema. For SQL Server and DB2 databases, the schema you enter will be created if it does not exist and if you have permission on the database server. For Oracle databases, the schema name you enter must match an existing user on the database server. If you do not enter a schema name, your database user name will be the schema name.

Defining the Database Role

Exstream uses different database roles depending on the information you want to store. A query file contains the database structure requirements for a particular language, version, and database role. The Database Administrator utility uses the requirements as instructions to create the appropriate tables, variables, and variable values based on the role of the database.

To define the database role:

1. Select one of the following **Database role** radio buttons:
   - **Design**—The database is used to store information about objects, created and used in Exstream. It includes system settings and other environmental objects, such as design users and groups, message and paper types, and output queues.
   - **Tracking**—The database is used to store information about the distribution of, and response to, campaigns. The results are used to target future campaigns.
2. From the **Database language** drop-down list, select a language to match the geography in which the database will be used.
3. In the **Query properties** area, in the **Path** box, enter the location of the query file (.qry), if necessary. By default, the query files are located in the `Query Files` folder in `C:\Program Files\OpenText\Exstream\Exstream #.#.###\Query Files`. The Database Administrator utility selects the appropriate query file based on the database role and language.

Creating Tablespaces

Using multiple tablespaces lets you do load balancing and spread data over multiple locations on one or more hard drives. What you can place in a separate tablespace varies based on the type of database you are using.

Caution: If you are using a DB2 database on z/OS, you must use one tablespace per table.

To create tablespaces:

1. From the **Tablespaces** drop-down list in the **Options** area, select one of the following options to specify where data is written on the hard drive:
   - **Automatically use Exstream defaults**—Lets you use the default Exstream tablespace names in the query file. If the tablespaces do not exist, you are prompted for the tablespace container file name when necessary. Before selecting this option, you can open the `DesignUpdate.qry` file to review the new tables and the requirements for the tablespace. Do a search for `Create Table` or `Create Table From` statements following the version number from which you are attempting to upgrade.
   - **Manually choose existing tablespaces**—Lets you select the tablespaces from a list of existing tablespaces. To use tablespace names other than the default names, select this option.
2. If you selected the **Manually choose existing tablespaces** option, a dialog box opens. To individually assign tablespaces to tables, select a row from the list of tables at the top of the dialog box and then select or enter the tablespace name.
3. Do one of the following:
   - Click **Update Selected** to update that row or click **Update All** to set all tablespaces to the value(s) you have selected or entered.
   - Click **View CREATE Statements For Selected** to generate the SQL code for the currently selected table or click **View All CREATE Statements** to generate the SQL code for every new table created. Review the SQL code if you want to know which tablespaces you must create or to verify that the database structure is generated as expected with the tablespace information you entered.

Selecting Logging Options

The log file contains a list of the executed statements and encountered errors.

To select logging options:

1. In the **File name** box, enter the name and location of the log file. The default log file name is `DBAdmin.log`.
2. If you want to add information to the end of the log file each time you use the Database Administrator utility, select the **Append to log file** check box. If you clear the check box and do not change the log file name, you overwrite the file each time you use the Database Administrator utility.

Finishing the Database Structure Creation

1. Click one of following buttons:
   - **Create**—Creates the database structure
   - **Generate SQL script**—Creates an SQL script to create the database structure
2. If you are creating a database for use with Exstream version 9.5.301 or later, or Enterprise Application Manager (EAM) version 3.5.301 or later, you receive a message that notifies you of the data collection and privacy policy. To continue with the database creation process, you must accept the anonymous data collection and usage statement by clicking **OK** on the message dialog box.

   Note: To learn more about OpenText data collection and view the OpenText privacy policy, visit http://www.opentext.com/who-we-are/copyright-information/site-privacy. If you have additional questions about Exstream usage analytics, contact OpenText Customer Support at http://www.opentext.com/support.
3. If you are creating a SQL Server, Oracle, or DB2 database, the **Grant database permissions** dialog box opens. You can enter a user name and grant permissions using this dialog box, or you can create a SQL script and run the script at a later time.

   If the **Grant database permissions** dialog box does not open, or if you do not want to set permissions, skip to step 4.
4. Open Exstream and log in to the database using your super user ID and password.

   The **Authorize Version Upgrade** dialog box opens to ensure that no unauthorized upgrades have occurred.

   Note: The Database Administrator utility creates the database structure under the schema you enter when connecting to a database. You can have only one Exstream database per schema. For SQL Server and DB2 databases, the schema you enter will be created if it does not exist and if you have permission on the database server. For Oracle databases, the schema name you enter must match an existing user on the database server. If you do not enter a schema name, your database user name will be the schema name.

Updating the Database Structure

When you upgrade to a new version of Exstream, sometimes new features are introduced that require you to update the structure of a database. For convenience, the required database structure is tracked and you are notified if you must perform an update. The Database Administrator utility (`DBAdmin_dbcs.exe`) lets you perform the actions necessary to update the database structure. By default, the executable is located in the same directory as Exstream.

To update the structure of a database, you must first open the Database Administrator, click the **Update** tab, and connect to a database.

You must then complete the following steps:

1. "Selecting the Type of Update" below
2. "Confirming the Query File Location" below
3. "Selecting Logging Options" on the next page
4. "Finishing the Database Structure Update" on the next page

You can also complete the following optional task as needed:

- "Dropping the Database Structure" on page 45

Note: You can also create a batch file to update the structure for multiple databases from the command line. For a list of the available switches, see "Command Line Switches for Database Administration and Maintenance" on page 100.

Selecting the Type of Update

If you are updating the database structure, select the type of update you want to complete from the **Update processing** drop-down list in the **Options** section of the Database Administrator utility. The following table lists the options.

Update processing options

Option	Action
Normal (recommended)	Updates the database structure from the current version to the latest version specified in the update query file. This is the default option.
Redo actions for the current version	Updates the database structure redoing update actions for the current version of the database and then continues updating through the latest version specified in the query file. The update actions for the current version will be repeated.
Redo actions after a specific version	Updates the database structure using the update actions after the specified version through the latest version specified in the query file.

Confirming the Query File Location

A query file contains the database structure requirements for a particular language, version, and database role. The Database Administrator utility uses the requirements as instructions to update the appropriate tables, variables, and variable values based on the role of the database.

To select the correct query file:

1. Make sure the correct **Database role** radio button is selected. You must make a selection only when you have multiple database roles in a single database. If you have a single database role in

the database, only the applicable database role is active and you cannot make a selection.

2. From the **Database language** drop-down list, select a language to match the geography in which the database will be used.
3. In the **Query properties** area, in the **Path** box, enter the location of the query file (`.qry`), if necessary. By default, the query files are located in the `Query Files` folder in `C:\Program Files\OpenText\Exstream\Exstream #.#.###\Query Files`. The Database Administrator utility selects the appropriate query file based on the database role and language.

Selecting Logging Options

The log file contains a list of the executed statements and encountered errors.

To select logging options:

1. In the **File name** box, enter the name and location of the log file. The default log file name is `DBAdmin.log`.
2. If you want to add information to the end of the log file each time you use the Database Administrator utility, select the **Append to log file** check box. If you clear the check box and do not change the log file name, you overwrite the file each time you use the Database Administrator utility.

Finishing the Database Structure Update

1. Click one of following buttons:
   - **Update**—Updates the database structure
   - **Generate SQL script**—Creates an SQL script to update the database structure
2. If you are updating a database for use with Exstream version 9.5.301 or later, or Enterprise Application Manager (EAM) version 3.5.301 or later, you receive a message that notifies you of the OpenText data collection and privacy policy. To continue with the database update process, you must accept the anonymous data collection and usage statement by clicking **OK** on the message dialog box.

   Note: To learn more about OpenText data collection and view the OpenText privacy policy, visit http://www.opentext.com/who-we-are/copyright-information/site-privacy. If you have additional questions about Exstream usage analytics, contact OpenText Customer Support at http://www.opentext.com/support.
3. If you are updating an SQL Server, Oracle, or DB2 database, the **Grant database permissions** dialog box opens. You can enter a user name and grant permissions using this dialog box, or you can create an SQL script and run the script at a later time.

   If the **Grant database permissions** dialog box does not open or if you do not want to set permissions, skip to step 4.

4. Open Exstream and log in to the database using your super user ID and password. The **Authorize Version Upgrade** dialog box opens to ensure that no unauthorized upgrades have occurred.

Dropping the Database Structure

As your enterprise database environment evolves, some database structures might no longer be needed. The Database Administrator utility lets you drop the Exstream database structure, including tables, tablespaces, bufferpools, foreign keys, and indexes. By default, the executable for the Database Administrator utility is located in the same directory as Exstream.

You can also create a batch file to drop the structure for multiple databases from the command line. For a list of the available switches, see "Command Line Switches for Database Administration and Maintenance" on page 100.

To drop the structure of the database:

1. Open the Database Administrator utility.
2. Click the **Drop** tab.
3. In the **Database properties** area, click **Connect** to connect to the source database.
4. If you use DB2 or Oracle, select the **Drop default Exstream tablespaces** check box to drop all of the Exstream tablespaces. Select this option only if no other databases are using the tablespaces in the database.
5. If you use DB2 on Linux, UNIX, and Windows, select the **Drop default Exstream bufferpool** check box to drop all of the Exstream bufferpools. Select this option only if no other tablespaces are using the bufferpools the database.
6. Confirm all of the following settings:
   - Database role
   - Query file path
   - Log file name
7. To complete the structure drop, do one of the following:

To	Do this
Drop the database structure	a. Click **Drop**. The **Grant database permissions** dialog box opens. b. Enter a user name and select how to grant permissions.
Create an SQL script to drop the database structure	Click **Generate SQL script**.

Copying Database Content

If you are changing database platforms, creating new databases, or sending a database to Exstream Support, you can copy the content, but not the structure, from one database and use it in another. Both databases must be on supported platforms and the versions must match. If the destination database is missing a structure, the content in the source database structure is not copied.

Caution: Existing data in the destination database is deleted before the copying process.

To copy the contents of a database to another database:

1. Open the Database Administrator utility.
2. In the **Database properties** area, click **Connect** to connect to the source database.
3. Click the **Copy** tab, and then click **Connect** to connect to the destination database.
4. In the **Query properties** area, in the **Path** box, enter the location of the query file (`.qry`) for the database role, if necessary. By default, the query files are located in the `Query Files` folder in `C:\Program Files\OpenText\Exstream\Exstream #.#.###\Query Files`. The Database Administrator utility selects the appropriate query file based on the database role and language.
5. In the **File name** box, enter the name and location of the log file.
6. At the bottom of the **Copy** tab, click one of the following buttons:
   - **Copy database**—Copies the entire database
   - **Copy specific tables**—Copies the selected table(s)

   You see the transfer progress by table and record number.

Moving Content Between Design Databases in Design Manager

If your company uses multiple design databases, you can move items from one database to another. To move items between databases, you must export (unload) an object from the source database, and then import (load) it into the destination database. Using these features can save design time by allowing you to copy objects and settings to multiple design databases—even those of different types. You can move content between database types, such as SQL and Oracle, but not between SBCS and DBCS databases. If both databases are version 8.0 or later, you can move an object between databases in SBCS mode and databases in DBCS mode, unless the object references a mode-dependent object. The following objects are mode-dependent: data files, outputs, output queues, languages, and font name tables (defined as part of font properties).

For information about determining application mode, see *Converting SBCS Databases for Exstream 8.0 and Later*.

When you unload objects, they are saved to an external file with a `.xob` extension (known as an XOB file). You can then use the XOB file to load the objects into another database.

The versions of Exstream Design and Production you have installed are very important during the unload and load process. The XOB file created during unloading can be loaded into databases either in the same or later versions of Exstream Design and Production. For example, if you are working in version 8.0.031, you can load an XOB file that was created from any version 8.0.031 or earlier, but not from an XOB file created from versions 8.0.032 or later.

To move content between databases, you must complete the following tasks:

1. "Unloading an Object from a Source Database" below
2. "Loading an Object into a Destination Database" on page 49

You can also complete the following optional task as needed:

- "Resolving Conflicts Encountered During Loading" on page 52

Unloading an Object from a Source Database

You unload objects from a database so that you can load them into another database. Unloaded objects are placed in an XOB file, which can then be loaded to another database. You do not need any special privileges to create a new XOB file; however, to add unloaded objects to an existing XOB file, you must meet the following requirements:

- You are a super user or you created the original XOB file.
- You are unloading contents from the same database as the original database used to create the XOB file.
- You are unloading contents from the same version of Exstream Design and Production used to create the XOB file.
- If the XOB file is password protected, you have the password required to open the XOB file.

When you unload objects that contain or reference other objects, such as documents that reference pages, the lower-level objects are also included in the XOB file. When you load the objects into the destination database, you can choose whether to load specific objects from the XOB file or all of the objects in the XOB file.

During unloading, you can also choose which versions or status of the objects you want to move to another database. The selections you make during unloading affect the options you have for object versioning and status during load. You can choose one of the following options during unloading:

- **Unload the latest version only**—The XOB file contains the version of each object that has the highest version number, regardless of the status. During loading, you can preserve the status of approved objects.
- **Unload approved objects only**—The XOB file contains the version of each object that was approved or archived on or before a specific date. If there are no approved objects that meet the criteria, the XOB file contains objects approved after the designated date. If there are no approved objects, the XOB contains the version of each object that has the highest version number. During load, you can preserve the status of approved objects.

- **Unload all object versions**—The XOB file contains all versions of each object, regardless of status. During load, you can load all versions and retain the original status, preserve the status of approved objects, or load only the latest version and disregard the status.

During unloading, you have the option to add a password to the XOB file. Users must enter the password before they can load the content into a database.

To unload an object from a design database:

1. In the Library, highlight the object you want to unload.
2. Select **File > Unload an Item**.

   The **Unload** dialog box opens.
3. Click the **Options** tab.
4. In the **Source** area, select one of the following versioning options for the object to be unloaded:

To	Do this
Unload only the current version of the selected object	a. Clear the **Unload all versions** check box. b. Clear the **Approved only** check box.
Unload all versions of the object	Select the **Unload all versions** check box.
Unload only the most recent approved version of objects during unload	a. Select the **Approved only** check box. b. In the **Approval date** boxes, select a date.

   Note: When you unload system variables, only the most recent version is unloaded.
5. In the **Destination** area, click the **XOB file** box.

   The **Exstream XOB file to Unload** dialog box opens.
6. In the **File name** box, enter a file name for the XOB file or select the name of an existing XOB file.
7. Click **Save**.

   The **Exstream XOB file to Unload** dialog box closes.
8. If you selected an existing XOB file and want to add the new content to the file, select the **Append to XOB file** check box. If you clear the check box, the content in the XOB file is overwritten.
9. If you want to reduce the file size of the XOB file, select the **Compress** check box.
10. If you want to require users to supply a password when loading the XOB file, select the **Require a password** to open file check box and enter a password in the **Password** box.
11. Click **Unload**.

    Design Manager unloads the selected object to the XOB file, which can then be loaded to another database.

After unloading, you can view the following tabs on the **Unload** dialog box for more information:

- **XOB file contents**—View a list of all the objects contained in the XOB file, and information such as database version, application version, creator, and creation date.
- **Dependencies**—View a list of objects that were included in the XOB file, such as fonts, because the object unloaded has required references to them.
- **Log**—View the log file for the unload process.

Loading an Object into a Destination Database

To load an object into a database, you must have unloaded the object from another database to create an XOB file. If the XOB file is password protected, you must enter a password before loading the content into a database.

When you load higher-level objects that contain other objects, such as applications or documents, you can choose whether to load the lower-level objects. Based on the options selected during unloading, you can also choose which versions or status of the objects you want to load:

- **Load all versions of the object**—All versions of all objects are loaded, and the object status from the original database is preserved. This option is available only if the XOB file contains all versions of the object.
- **Preserve approved status for objects during load**—One version is loaded for objects with a status of Approved, Archived, or Quick Fix, and all other objects receive a Work in Progress status.
- **Load only the latest version of the object**—The latest version of the object is loaded, and assigned a Work in Progress status.

If there are conflicts during the load, such as existing objects with the same name as an object being loaded, Exstream attempts to resolve the conflict using load policies that you define. If you do not define load policies, you must resolve conflicts manually.

For information about handling conflicts during load, see "Resolving Conflicts Encountered During Loading" on page 52.

Caution: When importing a root folder in Exstream, there will always be conflicts between the source root folder in the XOB file and the existing root folder in the destination database, regardless of the folder names.

When loading an XOB file, Exstream also loads design users to the destination database in the following circumstances:

- You have selected to load a design user.
- You have selected to load a design group that contains a design user.
- You have selected to load an object that references a design user.

When Exstream loads a pre-8.0.201 XOB file and encounters a design user name, it searches the XOB file for a matching design user. If Exstream finds a match, it marks the design user to be loaded (if it is not already marked to be loaded). If Exstream does not find a match in the XOB file, it creates an extra

user record that represents the design user. The extra design user's password is `Reset-Password`, and the login is disabled. This extra user record is treated exactly like a design user that was found in the XOB file, except that it will always be skipped if it conflicts with a design user that already exists in the target database. Exstream disables the login for any design user that it loads from the XOB file that was not explicitly selected for loading. For example, if you mark a design group to be loaded and you do not select a design user, then any design user loaded as part of the design group will have its login disabled. A super user can enable the login of the loaded design user if needed.

To load an object into a database:

1. In the Library, select the folder into which you want to load the original database contents.
2. Select **File > Load an Item**.

   The **Load** dialog box opens.
3. In the **Source** area, click the **XOB file** box.

   The **Exstream XOB file to load** dialog box opens.
4. Go to the XOB file you want to load.
5. Click **Open**.

   The **Exstream XOB file to load** dialog box closes.
6. If the XOB file is password-protected, enter the password in the **Password** box.
7. In the **Destination** area, select a location in the Library to place the loaded object:

To	Do this
Load all objects into the same folder in the Library and ignore the folder hierarchy from the original database	a. In the **Folder** area, select the **Single folder** radio button. b. Click ... . The **Folders** dialog box opens. c. Select the folder into which you want to load database contents. d. Click **OK**. The **Folders** dialog box closes.
Maintain the folder hierarchy from the original database during load	In the **Folder** area, select the **Original folders** radio button. **Note:** If you select the **Original folders** radio button, any folder restrictions in place from the original database are ignored.

8. If you want to use a database transaction to process the load, select the **Use transaction** check box.

   Caution: Using a database transaction commits all changes to the database at one time, instead of allowing partial updates. Loading an amount of data that exceeds the amount allowed in a single transaction can cause loading failures.
9. Select one of the following versioning options for the object to be loaded:

To	Do this
Load all versions of the object	Select the **Load all versions** check box. Loading multiple versions of objects can increase the amount of space your database uses.
Preserve the approval status of the object during load	Select the **Preserve "approved" version status** check box.
Load only the current version of the object	a. Clear the **Preserve "approved" version status** check box. b. Clear the **Load all versions** check box.

Note: When you load system variables, only the most recent version is loaded.

10. Specify the objects you want to load:

To	Do this
Load all objects that are stored in the Library under the **Environment** heading, such as paper types or fonts	On the **Options** tab, clear the **Exclude any non-dependent environmental objects** check box.
Load system settings (if they are included in the XOB file)	On the **Options** tab, select the **Include System Settings** check box. **Note:** Loading system settings does not load the key file.
Load design objects	On the **XOB file contents** tab, select the object you want to load from the **Contents** area. To select more than one object, hold down `CTRL` and click the objects you want to select. To select all objects, select the **Load all objects** check box.

11. Optionally, you can check for and resolve conflicts between the object being loaded and existing objects in the destination database.

    For information about handling conflicts during load, see "Resolving Conflicts Encountered During Loading" on the next page.

12. Click **Load**.

    Design Manager loads the selected objects from the XOB file.

After loading, you can view the following tabs on the **Load** dialog box for more information:

- **XOB file contents**—View a list of all the objects contained in the XOB file, and information such as database version, application version, creator, and creation date.
- **Conflicts**—View a list of conflicts encountered during the load process and determine how to resolve them.
- **Log**—View the log file for the load process.

Resolving Conflicts Encountered During Loading

During loading, it is possible to encounter conflicts between the objects being loaded and the objects that already exist in the destination database, such as objects with the same name. You can resolve conflicts by selecting one of the following methods for each option on the **Load polices** tab of the **Load** dialog box:

- **Auto rename**—Assign a new name to the object during load. The naming convention is as follows:

  ```
  <original name>_<time stamp>_<object identifier in the XOB file>_<version of the object in the XOB file>
  ```

- **Error**—Stop the load and issue an error message.
- **Load to overflow folder**—Place objects in an overflow folder that you specify. If an object with the same name exists in the overflow folder, Exstream attempts to automatically rename the object. Environmental objects are placed in the appropriate heading in the Environment, so if an object with the same name exists in the destination database, you receive an error message.
- **Replace**—Replace objects in the destination database with the objects in the XOB file. This option is the default.
- **Skip**—Do not load the objects and update references to the skipped object with references to the existing object in the destination database. You cannot skip required references.

These methods for handling conflicts can be applied using one or both of the following methods:

- **Setting up load policies to automatically resolve conflicts**—You can define load policies that control how Exstream attempts to resolve conflicts automatically during load. If you do not define load policies, you must resolve all conflicts manually.
- **Manually resolve conflicts**—You can review a list of conflicts prior to or after load, and manually select a resolution for conflicts one or more at a time.

Setting Up Load Policies to Automatically Resolve Conflicts During Load

You can define load policies that control how Design Manager attempts to resolve conflicts automatically during loading. Though load policies might not be able to automatically resolve all conflicts, it can save you time by resolving most conflicts during the loading process. If you do not define load policies, you must resolve all conflicts manually. Objects that are read-only, such as those that are checked out, locked, or submitted for approval, cannot be automatically replaced.

For information on the load policy options, see "Resolving Conflicts Encountered During Loading" above.

To set up load policies to automatically resolve conflicts during loading:

1. With the **Load** dialog box open, click the **Load Policies** tab.
2. From the **Replacement policy** drop-down list, select the default conflict handling method for all

load conflicts.

3. If you select **Replace from the Replacement** policy drop-down list, select an alternative conflict handling method for the following types of objects:
   - **Checked out objects**
   - **Locked objects**
   - **Submitted for approval**
   - **Repository objects**
4. If you have selected **Load to overflow folder** as a load policy, specify an overflow folder:
   a. Click the **Overflow folder** box.

      The **Folders** dialog box opens.

   b. Select a folder from the list.

   c. Click **OK**.

      The **Folders** dialog box closes.
5. If you want to use these load policies during other loads, click the **Save these as the default policies** check box.

During load, conflicts that cannot be resolved automatically are listed on the **Conflicts** tab, and must be resolved manually.

Manually Resolving Conflicts Encountered During a Load

You can manually resolve conflicts encountered during a load either prior to loading the object or after you have loaded the object.

For information on the load policy options, see "Resolving Conflicts Encountered During Loading" on the previous page.

To manually resolve conflicts encountered during a load:

1. On the **Load** dialog box, click **Check conflicts and dependencies**.

   Exstream checks for conflicts and lists the conflicts on the **Conflicts** tab.
2. Click the **Conflicts** tab.
3. In the **Conflicts** area, select one or more conflicts to resolve. To select more than one object, hold down `CTRL` and click the objects you want to select or click **Select All** or **Select Same**.
4. From the **Action** drop-down list, select the method to use to resolve the conflict.
5. Click **Apply**.

   The conflicts are resolved using the action that you selected.

Moving Content Between Design Databases from the Command Prompt

You can also unload or load XOB files from the command line. If Exstream successfully performs the load process, then the next time you launch Design Manager, the database that you have loaded becomes the default database. Design Manager opens during the load or unload process, but unless there are errors, you cannot interact with Exstream during this time. After the process is complete, Exstream closes and you are returned to the command prompt.

Tip: You can bypass the Design Manager login prompt using the EXSTREAMUSER and EXSTREAMPASSWORD command line options.

For example: `DesignManager.exe -EXSTREAMUSER=test -EXSTREAMPASSWORD=password`

To move content between databases from the command prompt, you must complete the following tasks:

1. "Unloading an XOB File from the Command Prompt" below
2. "Loading an XOB File from the Command Prompt" on the next page

Unloading an XOB File from the Command Prompt

When you specify target object names to unload, you must use the same capitalization that is used in Design Manager in order for Exstream to find the objects. For example, to unload an object named "Credit Card Statement," you cannot enter `Credit card statement.`

To unload an XOB file from the command prompt:

1. At the Windows command prompt, make sure that you are in the directory where Exstream is installed (for example, `C:\Program Files (x86)\OpenText\Exstream\Exstream #.#.###`).
2. At the command prompt, enter `DesignManager`, followed by a space.
3. After the space, enter the first switch, followed by a space.
4. Add additional switches as necessary, with a space between each switch.
5. To begin the unload process, press ENTER.

   When the unload process is complete, you are returned to the command prompt.

Note: If the XOB file should be stored in the current directory, enter a relative file name when you specify the file name for the XOBLOAD command. If you want the file to be placed in a different directory, then you must enter the entire path. If the path contains spaces, enclose the path in double quotation marks (" ").

If you specify an argument with spaces, you must enclose it in quotation marks or it will become truncated. (For example: `-XOBFOLDER="Exstream Samples"`).

The following switches are required with the unload function:

- EXSTREAMUSER
- EXSTREAMPASSWORD
- XOBUNLOAD
- XOBUNLOADTARGET

The following optional switches can be used in addition to the required switches:

- DBAUTHENTICATION
- DBPASSWORD
- DBUSER
- DSN
- XOBFOLDER
- XOBPASSWORD
- XOBUNLOADAPPEND
- XOBUNLOADAPPROVEDONLY
- XOBLOG
- XOBALLVERSIONS

For information about command line switches for database administration, see "Command Line Switches for Database Administration and Maintenance" on page 100.

Loading an XOB File from the Command Prompt

To load an XOB file from the command prompt:

1. At the Windows command prompt, make sure that you are in the directory where Exstream is installed (for example, `C:\Program Files (x86)\OpenText\Exstream\Exstream #.#.###`).
2. At the command prompt, enter `DesignManager`, followed by a space.
3. Enter the first switch followed by a space.
4. Add any additional switches necessary to perform the function, with a space between each switch.
5. To begin the load process, press ENTER.

   When the load process is complete, you are returned to the command prompt.

Note: If the XOB file should be stored in the current directory, enter a relative file name when you specify the file name for the XOBLOAD command. If you want it placed in a different directory, you must enter the entire path. If the path contains spaces, enclose the path in double quotation marks (" ").

If you specify an argument with spaces, you must enclose it in quotation marks or it will become truncated. (For example: `-XOBFOLDER="Exstream Samples"`).

The following switches are required with the load function:

- EXSTREAMPASSWORD
- EXSTREAMUSER
- XOBLOAD

The following optional switches can be used in addition to the required switches:

- DBAUTHENTICATION
- DBPASSWORD
- DBUSER
- DSN
- XOBFOLDER
- XOBPASSWORD
- XOBLOADENVIRONMENTAL
- XOBLOADSYSTEMSETTINGS
- XOBKEEPAPPROVEDSTATUS
- XOBLOG
- XOBALLVERSIONS

For information about command line switches for database administration, see "Command Line Switches for Database Administration and Maintenance" on page 100.

Setting Default User Names and Passwords

Default user names and passwords make it easier to allow multiple people to access a database with a single login. For example, you can let users connect to a design database using the default user name, `EXSTREAM`, and the default password, `EXSTREAM01`. If security is a concern, you can set up the `EXSTREAM` user name to have read-only access and let reviewers connect to the database without making changes.

To set a default user name and password:

1. Open the Database Administrator utility.
2. Click the **Set default login** tab.
3. Select one of the following **Database role** radio buttons:
   - **Design**—The database is used to store information about objects created and used in Exstream. It includes system settings and other environmental objects such as design users and groups, message and paper types, and output queues.
   - **Tracking**—The database is used to store information about the distribution of, and response to, campaigns. The results are used to target future campaigns.
4. If you want to change the default user name and password, enter the default user name and password in the **New default database user and password** area.
5. In the **Action** area, click one of the following buttons to select the method you want to use to set the new user name and password:
   - **Use application default (remove settings)**—Deletes the registry entries that override the default user name and password. The default user is `EXSTREAM` and the default password is `EXSTREAM01`.
   - **Set user and password on this workstation**—Uses the values you entered to create a new default login for the current workstation only. This login is encrypted and stored in the Windows registry.
   - **Choose existing defaults file**—Lets you pick a previously created default file that contains the default user name and password. For security reasons, the file location does not appear. You must go to the correct location.
   - **Create and use new defaults file**—Uses the values you entered to create a new default file. This file is encrypted.

Setting Keys in Databases

A key is a company-specific alphanumeric string that lets you activate modules and control the total number of workstations. Keys are case-sensitive, so they must consist of the original mixed-case characters. Otherwise, you receive an error.

To set a new key:

1. Open the Database Administrator utility.
2. In the **Database properties** area, click **Connect** to connect to the source database.
3. Click the **Set key** tab.
4. In the **Key** area, click **Import** to browse to the location of your .ekf file.
5. Click **Save key** to save the key in the database, or click **Restore key** to restore the previous key.

Chapter 4: Running Database Maintenance

The Database Maintenance tool in Design Manager lets you check the design database for data integrity and corrects error conditions. It allows you to complete a routine database analysis and fix common errors. You can perform database maintenance in the Design Manager interface, or from the Windows command prompt.

When you run database maintenance, you can choose to only check for errors, or to check for and also fix errors. If you want to fix errors, you must lock the database during database maintenance. If you are only checking for errors, you do not have to lock the database. During database maintenance, maintenance information is stored in a temporary log file. The temporary log file is deleted after maintenance is complete and content from the temporary log file is stored in the Exstream event log. If you are running database maintenance from the Windows command prompt and you do not want the log file to be deleted, you can use the DBMAINT_LOG switch.

For information about viewing the Exstream event log, see "Reviewing Logged Events" on page 60.

For more information about the DBMAINT_LOG switch, see "Command Line Switches for Database Administration and Maintenance" on page 100.

Caution: Before running database maintenance, create a backup in case you experience unexpected errors.

Running Database Maintenance in Design Manager

Using the Design Manager interface, you can perform all of the tasks necessary to run database maintenance. Performing database maintenance from Design Manager lets you monitor the process step-by-step and allows you to see immediate results.

To run database maintenance in Design Manager, complete the following steps:

1. From the **Tools** menu, select **Database Maintenance**.

   The **Database Maintenance** dialog box opens.

2. To lock the database during database maintenance, select the **Lock the database** check box in the **Basic options** area.

   When the database is locked, users can still log in, but they cannot create, edit, or delete objects. If you are only checking for errors, you do not have to lock the database.

3. If you want to see summarized results in the **Database maintenance results** area, select the **Abbreviated results display** check box in the **Basic options** area.

4. To specify the actions that the Database Maintenance tool performs during database

maintenance, select the following options as needed:

- **Check for unreferenced embedded objects**—Finds unreferenced objects and, if possible, repairs the reference. If the reference cannot be repaired, the tool removes the unreferenced object from the database.
- **Check database referential integrity**—Checks the references between tables, including relationships that might not be enforced through database referential integrity
- **Check serialized LOB integrity**—Checks rules and variables in components and removes orphaned records. For design objects containing text, the tool checks hyperlinks, editable areas, checksums, and styles.

  When you select this check box, the **Check for unsynchronized variable references** and **Check for unsynchronized rule references** check boxes become active.

5. If you selected the **Check serialized LOB integrity** check box, select one or both of the following check boxes to check for unsynchronized variable references or unsynchronized rule references.
   - **Check for unsynchronized variable references**—Checks variable references with references inside design objects
   - **Check for unsynchronized rule references**—Checks rule references with references inside design objects. When you select this check box, the **Check for orphaned rules** check box becomes active.
6. To check for unnamed rules that are not used by any objects, select the **Check for orphaned rules** check box.
7. If you selected the **Check for orphaned rules** check box to check for unnamed rules not used by any objects, then you must select one of the following check box options from the adjacent drop-down list:
   - **Convert orphaned rules to named rules**—Changes orphaned rules into Library rules
   - **Delete orphaned rules**—Deletes unnamed rules not used by any objects
8. Click one of the following buttons:
   - **Check for Errors**—Checks for errors but does not fix them
   - **Fix Errors**—Checks for errors and fixes them

   Exstream analyzes your database. Database maintenance results are displayed in the **Database maintenance results** area on the **Database Maintenance** dialog box.

Running Database Maintenance from the Command Prompt

Running database maintenance from the command prompt allows you to save time by constructing scripts for automated database maintenance. For example, suppose an enterprise using Exstream has numerous application design databases, and the administrator who maintains the databases runs preventative maintenance on each database monthly. If this process is done manually in the Design

Manager interface, the administrator must be present to interact with the interface. However, if the administrator runs database maintenance from the command prompt, it can be a scheduled, automated process that can run overnight. The administrator can create a single batch script that consecutively logs into each application database, executes database maintenance according to the selected database maintenance options, and writes the temporary log file (describing the checking or fixing of a database).

Using the Windows command prompt, you can perform all of the necessary database maintenance tasks using switches. These switches correspond with the database maintenance options available in Design Manager.

To run database maintenance from the command prompt, on the command line, you must first call executable file, `DesignManager.exe`. You must also include the following required switches:

- DBMAINT=<FIX | CHECK>|
- EXSTREAMUSER=<user name>
- EXSTREAMPASSWORD=<password>
- Either ACCESSDB=<Access database path and filename> or DSN=<database DSN>

In the following command, database maintenance is set to check and fix errors in the Sample Access database while running as the admin user.

```
DesignManager.exe -DBMAINT=FIX -EXSTREAMUSER=admin -EXSTREAMPASSWORD=xxx -
ACCESSDB=C:\Temp\Sample.accdb
```

Because the DBMAINT_OPTIONS switch was not specified in the previous command, database maintenance defaults to running with the following options from the **Database Maintenance** dialog box enabled:

- **Check for unreferenced embedded objects**
- **Check serialized LOB integrity**
- **Check for unsynchronized variable references**
- **Check for unsynchronized rule references**
- **Check for orphaned rules > Convert orphaned rules to named rules**
- **Check database referential integrity**

When you use the DBMAINT_OPTIONS switch, only the options specified in the argument are enabled during database maintenance. Any option that is not specified in the switch is disabled during database maintenance.

For more information about database maintenance switches, see "Command Line Switches for Database Administration and Maintenance" on page 100.

Reviewing Logged Events

An event log is a record of the events that occur during normal use of the software. For example, you can see who authorized an upgrade and when it was authorized, or the last time and date that database

maintenance was performed. To improve accountability and auditing, events are automatically recorded and stored in a single event log. You cannot delete any of the content in the Exstream event log. You can view the Exstream event log either from Design Manager or from the Database Administrator utility.

The Exstream event log also contains the log information from database maintenance. During database maintenance, maintenance information is stored in a temporary log file. The temporary log file is deleted after maintenance is complete, and content from the temporary log file is stored in the Exstream event log. Database maintenance creates the temporary log file whether you are only checking for errors, or checking for and also fixing errors. If you are running database maintenance from the Windows command prompt and you do not want the log file to be deleted, you can use the DBMAINT_LOG switch.

For more information about the DBMAINT_LOG switch, see "Command Line Switches for Database Administration and Maintenance" on page 100.

Viewing the Exstream Event Log

To view the Exstream event log from Design Manager, select **Tools > View event log**.

To view the event log from the Database Administrator utility, click  in the upper left corner and select **View event log for Exstream database**. You receive a prompt asking for your user name and password to verify that you are a super user

Tip: To sort the column contents in ascending or descending order, click the column title.

Description of event log information

Column title	Information recorded
Start Time	The time the event started
Product User	The user logged in at the time of the event
Details	The contents of the log file for the event. Some events do not have log files. If you see **Double-click to view**, you can double-click in the column to open the log file in a text editor. The default text editor is `NotePad.exe`. To change the default text editor, you can either click **Browse** and select a text editor, or enter the text editor name in the **View details with** box.
Description	A description of an event. For example, "Updated Design database 'Sample.mdb' from version 600001 to version 602001. Error(s) during the update: 2." or "Database maintenance check performed. Repairs needed: 3."
Event Type	The events recorded: database maintenance check, database maintenance fix, authorization of database serialization upgrade, automatic database update, SBCS to DBCS conversion, database update, database copy, or database SBCS to DBCS copy
End Time	The time the event ended. Some events have the same start and end times.
Product	The product being used

Description of event log information, continued

Column title	Information recorded
Program	The program being used: the Database Administrator utility, Design Manager, Designer, or Logic Designer
Program Version	The version of the program that recorded the event
Windows User	The Windows user logged in at the time of the event
Event ID	The flag value for an automatic database update
Event ID Status	The status of an automatic database update

The following table lists the programs that record events and the events they record.

Events recorded

Program	Events recorded
Design Manager	• Database maintenance check • Database maintenance fix • Authorization of database serialization upgrade • Automatic database update • SBCS to DBCS conversion
Database Administrator utility	• Database update • Database copy • Database SBCS to DBCS copy
Designer	• Authorization of database serialization upgrade • Automatic database update
Logic Designer	• Authorization of database serialization upgrade • Automatic database update

Chapter 5: Upgrading Exstream Design and Production

This chapter contains various topics to assist you in upgrading Exstream Design and Production and in understanding the differences you might encounter in existing applications upgraded to the 9.5.302 version of Exstream. You can use this chapter to help you understand how you can best prepare for the upgrade process. The topics in this chapter will also help you anticipate issues you might encounter, as well as understand how specific enhancements and improvements to the software will affect your applications.

This chapter discusses the following topics:

Preparing for an Upgrade

This section will help you plan for and perform an upgrade of Exstream Design and Production that best suits your systems and processes.

For additional help with upgrades and to learn about the upgrade services available, contact your Exstream account manager. You can also submit "how-to" questions and open cases for technical problems in OpenText Customer Support site at http://www.opentext.com/support.

Note: The information in this section does not include specific upgrade approaches and considerations for Exstream Interactive applications. For additional help in upgrading Exstream Interactive applications, contact your Exstream account manager.

This section discusses the following topics:

Eight Best Practices for Upgrading Exstream Design and Production

For best results when performing an upgrade, consider the following best practices.

1. Back Up Your Database

Before you begin an upgrade, make sure that you create a backup of your database, using the appropriate backup method for the type of database you are using. The backup might be valuable during the upgrade process if you need to use the previous version to get any problematic applications quickly back into production, or for creating baseline output for comparison purposes.

2. Conduct a Proof of Concept

First, create a copy of your database, and run local tests. You can run all your applications if you have time, or otherwise run a representative subset. Thorough testing in parallel with normal business activities at this stage will help you to anticipate issues that might arise during the process and will thus minimize downtime during the actual upgrade.

3. Use an Appropriate Set of Test Data

When testing, avoid using a large data set such as you might use in production, but still try to include a variety of data that exercises all the rules in each application. Large amounts of data will slow your testing because of the increased number of pages that must be compared. Using a smaller but still comprehensive set of data allows you to perform effective tests more quickly.

To help capture an appropriate set of data, you can use the Test Data Capture module, which lets you collect a minimal amount of test data to fully exercise all named and unnamed rules in an application. You can also use the Test Data Capture module to generate a new customer driver file and a test data capture report.

For more information about using the Test Data Capture module to capture appropriate testing data, see *Preparing Applications for Production*.

Alternatively, if you already have a set of data that you prefer to use for testing, you can verify that the data exercises all rules in your applications by using the Rule Analyzer module. You can use the Rule Analyzer module to generate a rule analysis report that lists which rules are executed and how many times they are executed when an application is run.

For more information about using the Rule Analyzer module to generate a rule analysis report, see *Preparing Applications for Production*.

4. Run Database Maintenance

Before you begin an upgrade, use the Database Maintenance tool in Design Manager to check the design database for data integrity and correct error conditions.

Note: The Database Maintenance tool does make changes to the design database. Make sure you have created a backup of the database before using the Database Maintenance tool.

For more information about running database maintenance, see"Running Database Maintenance" on page 58.

5. Run Multiple Versions of the Engine

You can maintain stability in production by keeping the previous version of the Exstream engine installed when you install the new version. Maintaining the previous version of the engine lets you upgrade the design database and start new development in the latest version, but you can continue to run existing applications with the previous version of the engine until the need arises to update those applications.

You can also increase flexibility in production by using multiple versions of the engine. If you encounter an issue with one of your applications, you can perform an engine-only upgrade for that particular application, leaving the design database intact and the rest of your applications running in the previous version of the engine.

For more information about engine-only upgrades, see "Approaches to Upgrading" on the next page.

6. Use Batch Scripts for Testing

By using batch scripts to perform multiple packaging operations and engine runs from the command prompt, you can reduce manual testing time. Scripts that automate the tests let you run multiple tests faster, as well as easily re-execute the same tests when necessary.

For more information about packaging applications from the command prompt and using the command prompt to execute a production engine run, see *Preparing Applications for Production*.

7. Use Multiple Design Databases When Appropriate

Using multiple design databases allows you to upgrade individual databases as necessary and leave others at a previous version. However, a disadvantage of using multiple databases is that maintaining common objects across those databases might require additional administration. Be sure to consider the advantages and disadvantages of using multiple design databases as they apply to your specific needs.

For more information about moving content between design databases in Design Manager, see "Moving Content Between Design Databases in Design Manager" on page 46.

8. Use a Comparison Tool

You can use Output Compare, Exstream Compare, Exstream Batch Compare, or another comparison tool to compare output during testing. Using a comparison tool allows you to quickly locate any changes that occur when upgrading the database or the engine.

For more information about Exstream Compare or Exstream Batch Compare, see *Preparing Applications for Production*.

For more information about Output Compare, contact your Exstream account manager.

Approaches to Upgrading

There are several basic approaches that you can take to upgrading. You can choose to upgrade fully, upgrade on an as-needed basis, upgrade only the engine, or upgrade incrementally. This section explains each method so that you can understand the range of options that you have for upgrading. Keep in mind that you can tailor these approaches to suit your business needs.

For more information about how to choose the best approach for your organization, see "Which Upgrade Approach Is Best for You?" on page 68.

Full Upgrade

In a full upgrade, you upgrade all parts of Exstream Design and Production at the same time, including the desktop design software, the design database, package files, and the production engine. This type of upgrade completely removes the previous version of the software. Because all components are changing, a robust backup and testing plan is a necessity.

The main benefit of this approach is that you do not have to manage multiple versions of the desktop design software, the engine, or package files.

For an example of a situation where you might choose to upgrade fully, see "Scenario 2: Moving to a Supported Version" on page 69.

As-Needed Upgrade

You might be able to minimize downtime in production by performing an as-needed upgrade. In an as-needed upgrade, you upgrade the desktop design software and the design database. You also install the new version of the production engine, but you keep the previous version of the engine installed. You can continue to run existing package files with the previous version of the engine. Then, as changes are required in each application, or as time permits, you can repackage each application individually.

The benefits of this approach are as follows:

- You can start developing new applications in the new version of Exstream Design and Production immediately.
- You have more time to test and upgrade existing applications, and there is less downtime because you can continue to run existing applications during the upgrade.
- You might not have to repackage applications that never change.

For an example of a situation where you might choose to upgrade on an as-needed basis, see "Scenario 1: Taking Advantage of New Features" on page 68.

Engine-Only Upgrade

If you need to take advantage of a software fix, but you are not yet ready to upgrade databases and develop applications in a new version of Exstream Design and Production, you might want to perform

an engine-only upgrade. Under this approach you keep your databases, the desktop design software, and all package files in a previous version, but you install the new version of the engine in your production environment.

Though you might choose to run all applications with the new version of the engine, consider transitioning only the specific applications that require the software fix. This approach allows you to maintain consistency in other applications. After the engine-only upgrade, you might begin testing for an as-needed upgrade, during which you would eventually transition the rest of your applications to the newer version of the engine.

Some fixes that affect your applications might also occur in other parts of Exstream Design and Production, rather than in just the engine. If you are not sure whether an engine-only upgrade will resolve your specific issue, contact your Exstream account manager for more information.

Keep in mind that with this approach, the engine installed with your existing design environment will still be the previous version, while the production engine has been upgraded to a different version. Therefore, when testing applications locally in your design environment, your output might be different from production output.

The benefits of this approach are that you can take advantage of software fixes provided in newer versions of the engine, but you do not have to upgrade your applications or manage multiple versions of the desktop design software or package files.

Incremental Upgrade by Means of Loading/Unloading (XOB)

An incremental upgrade by means of loading and unloading databases (sometimes known as an XOB upgrade), is similar to an as-needed upgrade in that you continue to run existing applications on a previous version of the engine. However, whereas in an as-needed upgrade you upgrade the database but wait to repackage each application, in an incremental upgrade, you keep the database at the previous version and upgrade each application individually by using an interim database. This approach lets you continue development of existing applications in the previous version of Exstream at the same time that you start development of new applications in the new version.

In an incremental upgrade, you install the new version of the desktop design software and the production engine, but you keep the previous version of both installed, and you do not upgrade the database. You can continue to run existing package files with the previous version of the engine, and you can continue to make changes to existing applications in the previous version of the desktop design software.

When you want to upgrade each application, you can unload the application from the old database and load it into an interim database that you upgrade and test. (You can use an Access database for simplicity.) Then, you unload the upgraded application from the interim database, load it into the new database you created in the new version of the software, and test again.

When using this approach, make sure that you load applications in the new database carefully, so that you do not overwrite existing objects in the new database.

The benefits of this approach are as follows:

- You can start developing new applications in the new version of Exstream Design and Production immediately.
- You can continue to make changes to existing applications without first upgrading them.

- You have more time to test and upgrade existing applications, and there is less downtime because you can continue to run existing applications during the upgrade.
- You might not have to upgrade applications that never change.

Note: This approach should only be used for upgrades from version 8.0 or later.

For more information about moving applications between databases (unloading and loading), see "Moving Content Between Design Databases in Design Manager" on page 46.

Which Upgrade Approach Is Best for You?

No single upgrade solution fits all business processes universally. The way in which you upgrade should be based on your business requirements, restrictions, and deadlines.

To help select the best upgrade approach for your business needs, consider the following questions:

- **Why are you upgrading?**

  If you are upgrading to take advantage of new features in version 9.5.302 in new applications, you might select any of the upgrade approaches except for an engine-only upgrade. Narrowing the selection further depends on your other requirements. On the other hand, if you need to upgrade to take advantage of fixes that affect specific applications, you might select an engine-only upgrade.

- **Do you need to upgrade all applications at once, or can some applications stay in a previous version for now?**

  If you make frequent changes to most of your applications, and you want to manage them all in a single version of Exstream Design and Production, you might choose a full upgrade. On the other hand, if you have several applications that seldom require changes, you might choose an as-needed upgrade or an incremental upgrade.

- **If you have multiple databases, can you upgrade one at a time?**

  Just as you can upgrade applications on an as-needed basis, you can choose to run multiple versions of Exstream Design and Production and upgrade individual databases as required or as time permits.

- **Do you have the ability to run multiple versions of the engine in production?**

  If so, you can take advantage of an as-needed upgrade or an incremental upgrade. If you do not have the ability to run multiple versions of the engine, you might need to perform a full upgrade.

The following scenarios offer real-life examples of how you might choose an upgrade approach:

Scenario 1: Taking Advantage of New Features

After evaluating your business needs, you determine that the driving factor for an upgrade is to take advantage of an enhancement in version 9.5.302 that adds features that you want to use in a new marketing campaign that your company plans to initiate. You are currently running multiple versions of the engine in production to support existing applications, and most of your applications change infrequently.

Because you want to start development of new applications in the latest version, but you can run multiple versions of the engine and do not need to update existing applications immediately, it makes sense to perform an as-needed upgrade.

Scenario 2: Moving to a Supported Version

After evaluating your business needs, you determine that the driving factor for an upgrade is to remain on a supported version of Exstream Design and Production. You have only five applications in a single database, and each application is updated every quarter.

Because you need to upgrade for support reasons, and because you have few applications but they are updated regularly, it makes sense to perform a full upgrade.

Understanding Why Differences in Applications and Outputs Might Occur

When testing applications during an upgrade, you might encounter differences in your applications or output, sometimes caused by enhancements and fixes within Exstream Design and Production. This section includes some examples of why differences might occur and how you might address them.

Example 1: A Difference in Output Results from a Software Fix in a New Version

Suppose you developed an application in a previous version. Upon upgrading to version 9.5.302, you notice that a different value is now being written to a post-sort report file.

Consider these solutions:

If	Then
You are confident that the new output is correct	Accept the difference in output, and take no further action.
You prefer the output from the previous version	Contact Exstream to explore whether a solution might be available for backward compatibility.

Example 2: A Packaging Error Results from a Software Fix in a New Version

Suppose you developed an application in a previous version, and you are upgrading to version 9.5.302. When repackaging, you encounter an error indicating that a message frame cannot be empty.

Consider these solutions:

If	Then
You have an easily manageable number of affected design pages	For each affected design page: 1. Open the page. 2. For each empty frame, select the appropriate message template. 3. Save and close the page.
You have a very large number of affected design pages	Contact Exstream to explore whether a more automated solution might be available.

Example 3: A Difference in Output Results from a Workaround to a Problem in a Previous Version

Suppose you developed an application in a previous version. During development, you encountered an issue wherein a formula produced an incorrect result. You implemented a workaround to the issue by adding "1" to the result of the formula.

After upgrading to version 9.5.302 you notice that there is a difference in output. After investigating the issue, you find that the workaround in the formula now produces an incorrect result due to the issue being fixed in version 9.5.302.

To resolve this difference, you should remove the workaround that you implemented in the previous version.

Tip: To help minimize unexpected differences, make sure that you keep a list of workarounds that you implement so that you can easily locate and remove them during an upgrade.

Example 4: A Difference in Output Results from an Enhancement in the Software

Suppose you developed an application in a previous version. Upon upgrading to version 9.5.302, you notice an image has moved slightly in customer output.

Consider these solutions:

If	Then
The difference is acceptable	Accept the difference in output, and take no further action.
The difference is unacceptable	Open each affected design page, make the necessary adjustments. If you cannot resolve the differences manually, contact Exstream to explore whether a solution might be available for backward compatibility.

For more information about known differences that you might encounter when upgrading, see "Visual and Non-Visual Differences" on page 88.

For more information about design changes that might be necessary during or after the upgrade, see "Upgrade Considerations for New and Enhanced Features" on page 74.

Upgrade Considerations When Installing Exstream on Windows 7

Due to changes made to the core fonts in the Microsoft Windows 7 operating system, some fonts might appear slightly different than fonts packaged on an earlier version of Windows. For example, when using Arial bold, the lowercase "w" appears slightly different on Windows 7 than on Window XP Professional. This difference might not be visibly discernible for smaller font sizes, but if you are using tools (such as Exstream Output Compare) to electronically compare outputs, pixel-level changes might be detected. However, font metrics (that is, character widths, character heights, and kerning values) are not affected.

Overriding the Windows 7 Version of a Font

You can retain the original appearance of fonts by overriding the Windows 7 version of a font in the Windows settings.

To override the Windows 7 version of a font:

1. From the source of your choice (for example, an earlier version of Windows), retrieve a copy of the Windows font that you want.
2. Add the font to a folder on the Windows 7 computer.

   Do not add the font to the main Windows font folder.
3. Open the registry on your Windows 7 computer.
4. Navigate to the following key:

   ```
   HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Fonts\
   ```
5. Locate the font subkey that you want to override and modify its value to the path and filename that you added in step 2.
6. Close the registry and restart your computer.

   After you restart your computer, Windows uses the added font rather than the font that was pre-loaded on Windows 7.

Functionality Differences Between SBCS and DBCS Applications

Exstream 8.0 and later combines the previously separate single-byte character set (SBCS) and double-byte character set (DBCS) versions of the software into a combined user interface. This change means that you can work with both DBCS and SBCS databases using the same version of Exstream.

However, functionality will differ based on the type of database with which you are working. These differences in functionality are covered throughout the documentation for Exstream Design and Production version 9.5.302. The following table provides an overview and brief description of the differences:

Functionality differences between SBCS and DBCS applications in Exstream Design and Production version 9.5.302

Related feature	Description of differences
3211 Line Data Output module	Not supported for DBCS applications
Arabic/Hebrew language support limitations	On automated table columns or copying table columns in Hebrew and Arabic languages, flow will not occur from right to left
Case conversion	Not supported for certain double-byte languages
Data file with packed binary data	All input bytes in these files are converted to Unicode characters prior to the engine processing the data. They are not supported for DBCS applications because the DBCS engine cannot work with pre-conversion bytes.
Data points that are DBCS values	Not currently supported for DBCS applications
Data series that are DBCS values	Not currently supported for DBCS applications
Data variables that are DBCS values	Not currently supported for DBCS applications
DBCS database support	When designers create a DSN for a DBCS DB2 database on z/OS, they must use the DataDirect Connect for ODBC DB2 Wire Protocol driver available from DataDirect.
Email	• ExstreamSMTPU.dll—This DLL supports DBCS characters in the body of the email. • ExstreamMAPIU.dll—This DLL supports DBCS characters in email addresses, but not in the body of the email.
Encoding capabilities	DBCS applications provide users the ability to specify hundreds of different encodings, while SBCS applications contain only a few.
Grammar checking	Not currently supported for DBCS languages
Hyphenation	Not supported for certain double-byte languages
Image resource name override	Only ASCII names are supported in DBCS applications.
Incremental packaging	Not supported for DBCS applications if pre-packaging is required
Kerning	Not supported for certain double-byte languages
Masking	Text, on-page images, and overlays cannot be masked in DBCS applications. Top-of-file images can be masked, however, for MIBF output.
Metacode Output module	Not supported for DBCS applications

Functionality differences between SBCS and DBCS applications in Exstream Design and Production version 9.5.302, continued

Related feature	Description of differences
Non-ASCII characters	Non-ASCII characters cannot be used in Exstream for the following: • AFP resource names • Email addresses • Local, production, and other file names • Mapped font names • Printer resource names or control commands • Search key names The following output objects do not support DBCS characters for search keys: ■ AFP ■ DOCX ■ Metacode ■ PCL ■ PostScript ■ PowerPoint ■ PPML ■ TIFF ■ TOP ■ VIPP ■ VPS
PCL Output module	Not currently supported for DBCS applications
PDF font referencing capabilities	DBCS font referencing is limited to MS-Mincho, MS-Gothic, Chinese Simplified, Chinese Traditional, and Korean fonts.
Print Miner module	Not currently supported for DBCS applications
Variables for Y axis range	Not currently supported for DBCS applications

If you are upgrading from a version of Exstream earlier than 8.0, you must upgrade each SBCS database (tracking and design) in a one-time process that converts the database to the DBCS data structure.

For complete step-by-step instructions for upgrading and/or converting databases for use in Exstream 8.0 and later, see *Converting SBCS Databases for Exstream 8.0 and Later*.

Upgrade Considerations for New and Enhanced Features

Due to changes in each version of Exstream, there are upgrade considerations for existing designs that contain the following features when you upgrade to Exstream version 9.5.302:

When you are upgrading from a version of Exstream earlier than this version	Upgrade considerations apply for this feature
9.5.301	"Collection of Anonymous Usage Data" on the next page
9.5.201	"Bar Charts, Stacked Bar Charts, and Floating Bar Charts " on the next page
9.5	"Complex Text Support" on page 76
9.5	"Container Designs" on page 79
9.5	"Data Sections and Recipients in XML Data" on page 79
9.5	"HTML (Web) Output" on page 81
9.5	"Multiplicity for Arrays" on page 82
9.5	"System Requirements for the .NET Framework and the Visual C++ Redistributable Package" on page 83
9.0	"Hyperlinks and Live Documents" on page 83
9.0.112 or 9.5.201	"PDF Accessibility" on page 84
8.5	"Superscripted and Subscripted Text" on page 84
8.0.3	"Keys and Licensing" on page 85
8.0.3	"Local User Dictionaries" on page 85
8.0.3	"Spelling Dictionaries" on page 86
8.0.2	"Database Changes Due to Design User Name Conversion" on page 86
8.0	"RGB Images and AFP Output" on page 87
8.0	"Tables" on page 87

Bar Charts, Stacked Bar Charts, and Floating Bar Charts

Exstream versions 9.5.201 and later provide the capability of adding a line chart overlay to the bar chart and stacked bar chart types. This new functionality is also available in version 8.6.117 and later maintenance releases, and in version 9.0.112 and later maintenance releases. Previously, you could add an overlay only to the floating bar chart or scattergram chart types.

As part of the change in overlay functionality, the floating bar chart type was removed from Designer because its functionality has been merged with that of the stacked bar chart. Although the floating bar chart is no longer available for new designs, any floating bar charts used in existing designs will still work as designed when you upgrade to Exstream version 9.5.201. Existing floating bar charts will be automatically converted to stacked bar charts with overlays if they are edited and saved in Designer.

For information about adding overlays to bar charts, see *Designing in Exstream*S.

Additionally, the floating bar chart type is still supported for the import of legacy DXF files, and for exporting to DXF from a legacy design containing floating bar charts. If you edit and save an existing floating bar chart in Designer, it will be automatically converted to a stacked bar chart with overlay, and any new export to DXF from that point forward will contain the stacked bar chart type.

For information about using DXF files, see *DXF Reference Guide*.

Collection of Anonymous Usage Data

Beginning with Exstream version 9.5.301, OpenText collects and analyzes anonymous data about how Designer and Design Manager are being used. This data is used to continually improve the performance and functionality of Exstream. To learn more about OpenText data collection and view the OpenText privacy policy, visit http://www.opentext.com/who-we-are/copyright-information/site-privacy.

When you use the Database Administrator utility to update or create a database for use with Exstream version 9.5.301 or later, or Enterprise Application Manager (EAM) version 3.5.301 or later, you receive a message that notifies you of the OpenText data collection and privacy policy. To continue with the database update or creation process, you must accept the anonymous data collection and usage statement by clicking **OK** on the message dialog box.

Note: If you run the Database Administrator utility from the command line to update or create a database for use with the software versions specified above, then you must use the ACCEPT_PRIVACY_STATEMENT switch when initiating the database update or creation process. This switch acknowledges that you have read and accept the anonymous data collection and usage statement provided at https://analytics.exstream.com/privacy/en-US/index.html.

For more information about using this switch, see "ACCEPT_PRIVACY_STATEMENT" on page 101.

For more information about updating or creating databases from the command line, see "AUTOCREATE" on page 103 and "AUTOUPDATE" on page 104.

You can write a sample of the usage data being collected by OpenText to a local file, so that you can review the kinds of data being collected and verify that no sensitive information is included. For more information about compiling a sample of the usage data collected by OpenText, see *Exstream System Administration*.

If you have additional questions about Exstream usage analytics, contact OpenText Customer Support at http://www.opentext.com/support.

Complex Text Support

Exstream provides settings to properly render complex text in designs that use non-Latin DBCS character sets (such as Arabic, Cambodian (Khmer), Farsi, and Hebrew). These settings enhance the appearance of complex text both on the screen in Designer, as well as in output produced by the engine. Complex text layout functionality is available for the following output types:

Output type	Specific formats
AFP	
DLF	
DOCX	
HTML	EDGAR HTML, HTML, and HTML (email)
PDF	
PostScript	
RTF	
XML	XML (composed), XML (content), XML (data), and XML (multi-channel)

What do we mean by complex text? For the purposes of Exstream, text is considered complex if it exhibits one or more of the following characteristics:

- Is written right to left
- Can be written bidirectionally (can contain a mixture of right-to-left and left-to-right text)
- Uses context-sensitive shaping (characters that are shaped differently depending upon the characters that surround them), combined characters, and/or ligatures
- Uses fonts that contain multiple representations of a particular non-Latin DBCS character

The complex text functionality introduced in Exstream version 9.5 consists of three main controls in Design Manager:

- The **Enable complex text layout** check box—This system-wide setting is located in the **System Settings** (**Environment > System > System Settings > Text and Fonts** tab) and applies to all

applications in your database. When you select this check box, Exstream includes extra font information in your package files so that complex text characters are rendered properly in output produced by the engine. Selecting this check box also ensures that complex text characters appear correctly in Designer. For best results, you should always use this setting if your design contains languages that use context-sensitive shaping, combined characters, and/or ligatures (such as Arabic, Cambodian (Khmer), Farsi, and Hebrew).

Depending on the number of fonts that your application contains, when you enable complex text layout, you will likely see an increase in the time needed to package your applications, the size of the package file, and the time it takes to run the engine. If your database contains a large number of fonts, you should expect to see more of an increase in those three areas. Additionally, because of the extra positioning information necessary to properly render complex text characters, enabling complex text layout functionality in your database will likely result in larger output files produced by the engine.

Keep in mind that the **Enable complex text layout** setting affects non-Latin DBCS languages, including those that do not use context-sensitive shaping, combined characters, and/or ligatures. For such languages, enabling complex text layout will cause minor pixel differences in the position of characters in output when you compare it to output produced in earlier versions of Exstream. You should keep this pixel shift in mind as you test engine output.

Important: If your database uses only SBCS character sets and/or Latin-based DBCS character sets, then you should *not* select the **Enable complex text layout** check box.

- When you select the **Enable complex text layout** check box, a drop-down list becomes available that allows you to limit complex text functionality to certain scripts, which can be helpful if you have existing applications that contain non-Latin DBCS languages that do not require complex language support. For example, if your application contains Chinese, Greek, and Farsi, and you do not want to have to retest your Chinese and Greek output because of the minor pixel differences created by complex text functionality, you can apply this setting to only the Arabic script so that you receive the benefit from complex text layout in Farsi but your Chinese and Greek output remain unchanged.
- The **Language system tag** field—This field is available on DBCS language objects (in the **DBCS settings** section of the language object properties) only when the **Enable complex text layout** check box is selected in the **System Settings**. This setting lets you specify an optional language code so that Exstream can properly display the specific font characters used by the language object. Although this setting is optional, specifying a language system tag is especially useful when there are multiple options within a font for how a particular glyph or ligature can appear. The **Language system tag** setting does not affect packaging time or size.

Note: After you have upgraded to Exstream version 9.5 or later, you should first validate that your applications work properly before enabling the complex text layout functionality.

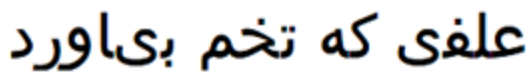
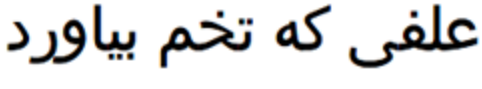
Keep in mind that complex text functionality is not necessary for all languages. Use the following table to determine whether you should enable complex text layout for your database:

Which languages should use complex text layout functionality

Language	Script	Complex text layout	Language system tag*
Any SBCS language	Multiple	Do not use	N/A
Any Latin-based DBCS language	Multiple	Do not use	N/A
Arabic	Arabic	Recommended	ARA
Cambodian	Khmer	Required	KMH
Chinese	Han	Recommended	ZHS
Dari	Arabic	Required	DRI
Farsi	Arabic	Required	FAR
Hebrew	Hebrew	Recommended	IWR
Japanese	Han, Kana	Recommended	JAN
Korean	Han, Hangul	Recommended	KOR
Lao	Lao, Thai	Recommended	LAO
Thai	Thai	Recommended	THA
Urdu	Arabic	Required	URD

*You can use language system tags not specified by Exstream, but your results might vary. If you use an unrecognized language system tag, characters in the affected language might not appear as expected in Designer or in output produced by the engine. It is important that you test language system tags thoroughly before using them in a production environment.

Notice that, for a handful of the languages in the table, complex text layout is required; for the remainder, complex text layout is simply recommended. For the languages that require it, if you do not enable complex text layout, the text for those languages will not be correct in Designer or in the output produced by the engine. For example, when you compare snippets of Farsi text with complex text layout on against the same snippets with complex text layout off, you significant differences in context-sensitive shaping, combined characters, and ligatures:

Farsi text with complex text layout OFF	
Farsi text with complex text layout ON	

For the languages in the table listed as recommended but not required, you can weigh the pros and cons of enabling complex text layout on a case-by-case basis. For example, if you have used a

complex text language prior to Exstream version 9.5 and you are happy with its appearance in Designer and in output produced by the engine, you can exclude the script associated with that language so that complex text layout is not applied. However, with complex text layout enabled, you will likely see improvements in overall appearance for each recommended language. You should individually test each recommended language that you use in order to determine whether the overall improved appearance is worth the extra resources necessary to process complex text during packaging and engine runs. (See *Exstream System Administration* for more information about how complex text layout affects packaging and engine performance.)

For more information about using complex text layout functionality in Exstream, see the "Languages" section of "Chapter 4: Working with Languages and Locations" in *Exstream System Administration*.

Container Designs

Exstream version 9.5 provides an improved method for handling drawing objects that you want to use in one or more container designs but not the standard design for a particular page object. In previous versions, you had to manually move any such objects out of the standard design and into the pasteboard area. In version 9.5 and later, objects that you create while working with a container design are no longer placed directly into the standard design by default, but instead are added to the new **Available Objects** section in the Outline Viewer.

Keep in mind that when you upgrade a design to Exstream version 9.5 or later, any drawing objects that you previously placed in the pasteboard area of the standard design stay in place and are not automatically moved to the **Available Objects** section. Objects in the standard design that appear in the pasteboard area (outside of the printable area) still do not appear in output that you produce from the standard design, but they remain in the **In Use Objects** section of the Outline Viewer. If you want to use the new Available Objects functionality with existing objects in the pasteboard area of the standard design, you can manually remove them from the standard design (by right-clicking and selecting **Remove from standard design**).

For more information about creating container designs, see *Designing in Exstream*.

Data Sections and Recipients in XML Data

Exstream version 9.5 provides an improved method for identifying the end of data sections and recipients in XML data. In previous versions, data sections and recipients automatically ended when the next data section or recipient start tag occurred in the data, or ended when the next customer tag occurred in the data. However, in version 9.5 and later, by default any data sections or recipients in the new XML data files that you create end at the end tag for that data section or recipient. The following table illustrates how the different methods for identifying the end of data sections and recipients can impact the way in which the engine reads the data:

Ending method	Example in XML data

End data sections and recipients at the next starting tag	In the following data example, the content in bold represents Section A:
	`<customer>`
	`<name>Fred</name>`
	`<sectionA>`
	`<transaction>200.00</transaction>`
	`</sectionA>`
	`<address>Lexington</address>`
	`<sectionB>`
	`<date>October</date>`
	`</sectionB>`
	`</customer>`
	Notice that if you choose to end data sections and recipients at the next starting tag, then any additional data that exists between the data section or recipient end tag and the next data section or recipient start tag is included as a part of the previous data section or recipient, regardless of where the data section or recipient end tag is in the data source. For example, in the above XML data sample, the `<address>` tag is a part of `<sectionA>`.
	NOTE: Ending data sections and recipients at the next starting tag is recommended only for backward compatibility with Exstream version 9.0 and earlier. Ending data sections and recipients at the next starting tag can limit your access to some XML data resources, depending on your XML data source.

End data sections and recipients at the end tag of the data section or recipient	In the following data example, the content in bold represents Section A:
	`<customer>`
	`<name>Fred</name>`
	`<sectionA>`
	`<transaction>200.00</transaction>`
	`</sectionA>`
	`<address>Lexington</address>`
	`<sectionB>`
	`<date>October</date>`
	`</sectionB>`
	`</customer>`
	Notice that if you choose to end data sections and recipients at the end tag of the data section or recipient, then any additional data that exists between the data section or recipient end tag and the next data section or recipient start tag belongs to the next level up in the data hierarchy. For example, in the XML data sample above, the `<address>` tag is customer level data.

Keep in mind that your preferences for ending data section and recipient mappings are applied to all data sections and recipients within a data file. This means that you cannot mix preferences for ending data sections and recipients within the same data file. For example, you cannot have one data section that ends at the corresponding end tag and have a separate data section that ends at the next starting tag. However, you can choose different ending preferences for different data files, based on the needs of your data source setup.

You can change the ending preferences for data sections and recipients as needed for backward compatibility using the **End section(s) or recipient(s) at closing tag** check box on the **Advanced** tab of the XML data file properties. When you upgrade, the **End section(s) or recipient(s) at closing tag** check box is cleared by default on all existing XML data files to maintain the original functionality, and data sections and recipients end at the next instance of the starting tag, or end at the next customer. However, if you create a new XML data file, the **End section(s) or recipient(s) at closing tag** check box is selected by default, and data sections and recipients end at the end tag of the data section or recipient.

To change the end tag preferences for data sections and recipients in XML data for backward compatibility:

1. Drag the XML data file to the Property Panel.
2. Click the **Advanced** tab.
3. Clear the **End section(s) or recipient(s) at closing tag** check box.

   NOTE: Ending data sections and recipients at the next starting tag is recommended only for backward compatibility with Exstream version 9.0 and earlier. Ending data sections and recipients at the next starting tag can limit your access to some XML data resources depending on your XML data source.

4. From the Menu bar, select **Edit > Save**.

HTML (Web) Output

Exstream version 9.5 provides the capability to produce HTML5 output using an HTML output object, and some of the properties of the HTML output object have changed.

This section discusses the following topics:

Selecting an HTML Version and Producing MIME HTML

In previous versions, the HTML output object produced either HTML 4.01 Transitional output, or, if you selected the **Create web archive with all files** check box, MIME HTML (MHTML) output. A new **Version** drop-down list has been added to the HTML output object, which allows you to select HTML5 output, HTML 4.01 Transitional output, or MIME HTML output. Note that the new drop-down list also replaces the old **Create web archive with all files** check box.

To avoid unexpected changes in your existing HTML (web) output, when you upgrade an existing database that includes an HTML output object (or when you use an XOB file to load an HTML output object that was unloaded from a database in a version earlier than 9.5), one of the following selections will automatically be made in the new **Version** drop-down list:

If, prior to the upgrade	Then, after the upgrade
The **Create web archive with all files** check box was cleared	The **4.01 Transitional** option is automatically selected from the **Version** drop-down list.
The **Create web archive with all files** check box was selected	The **MIME** option is automatically selected from the **Version** drop-down list.

Keep in mind that when you create a new HTML output object in Exstream version 9.5 or later, the default selection from the **Version** drop-down list is **5**.

For more information about selecting the version of HTML output, see *Delivering Documents to Multiple Channels*.

Specifying Where Styles are Included in HTML (Web) Output

In version 9.5, the **Include styles at top of each file** check box has been replaced by the new **Create external cascading style sheet** check box, which specifies whether the styles used in the HTML (web) output are defined in an external Cascading Style Sheets (CSS) file, or are included at the top of each HTML file. When you upgrade an existing database that includes an HTML (web) output object (or when you use an XOB file to load an HTML (web) output object that was unloaded from a database in a version earlier than 9.5), the appropriate selection is automatically made for the new check box, and the location of styles in your output is not changed. The following table correlates the selection on the previous check box to the selection you'll see on the new check box, and the resulting location of styles in the output:

If, prior to the upgrade	Then, after the upgrade	Location of styles in the output, both before and after the upgrade
The **Include styles at top of each file** check box was cleared	The **Create external cascading style sheet** check box is selected.	An external CSS file produced with the HTML output (or a separate file part in MHTML output)
The **Include styles at top of each file** check box was selected	The **Create external cascading style sheet** check box is cleared.	At the top of each HTML file

Keep in mind that HTML 4.01 Transitional output and MIME HTML output can also include inline styles that are specified within individual elements.

For more information about specifying where styles are included in HTML (web) output, see *Delivering Documents to Multiple Channels*.

Producing HTML (Web) Output with Included Styles on a z/OS Platform

Beginning in version 9.5, when you include style information at the top of the HTML file, the engine uses a temporary file to generate HTML 4.01 Transitional or HTML5 output. If you are producing HTML 4.01 Transitional or HTML5 output on a z/OS platform, you must now allocate a temporary file (`DD:TEMP`) before running the engine. The space allocated for the temporary file must be at least as large as the entire HTML file, including style information.

Multiplicity for Arrays

To make sure that **Multiplicity for arrays** options are applied accurately and to only the appropriate data files, the behaviors of the options in the **Multiplicity for Arrays** area of the **Tag Mapping Properties** dialog box changed in version 9.5. If you use **Multiplicity for Arrays** options in your database, review the following table to see how changes to these options in 9.5 can affect the settings in your database when you upgrade:

Version	Behavior
9.5 or later	As of version 9.5 and later, the **Multiplicity for arrays** options are available only for Report files, Post-sort report files, and Auxiliary layout files. The **Multiplicity for arrays** area no longer appears on the UI for Customer driver files, Reference files, Initialization files, and Post-sort Initialization files. The **Multiplicity for arrays** options are not applicable to these data file types.
8.0	If you upgrade from version 8.0 to version 9.5 or later, you encounter the following behaviors: • For Customer driver files, Reference files, Initialization files, and Post-sort Initialization files, the **Multiplicity for arrays** area no longer appears on the UI. The **Multiplicity for arrays** options are not applicable to these data file types. This change should not impact your output. **Note:** If you used any non-default settings in the **Multiplicity for arrays** options, and also selected the **Use previous value if missing** check box, then the **Use previous value if missing** check box is cleared upon upgrade. Otherwise, the check box settings persist based on your original settings. • For Report files, Post-sort report files, and Auxiliary layout files, you encounter one of the following behaviors depending on the I/O timing of the data file that you upgrade: ▪ If the **I/O timing** of the data file is set to **As determined by record properties**, the **Multiplicity for arrays** options are not applicable to data files with this **I/O timing** setting. As of version 9.5 and later, the **Multiplicity for arrays** area no longer appears on the UI for data files with this **I/O timing** setting. These changes should not impact your output. ▪ For all other **I/O timing** settings the **Multiplicity for arrays** options persist based on your original settings.
7.0	The **Multiplicity for arrays** options persist based on your original settings.

System Requirements for the .NET Framework and the Visual C++ Redistributable Package

Exstream version 9.5 and later requires updated versions of the following software:

- Microsoft Visual C++ 2013 Redistributable Package
- Microsoft .NET Framework version 4.5.2

When you upgrade from a previous version of Exstream, you must make sure that you have installed the correct version of the Microsoft .NET Framework. When you install the design environment, the Microsoft Visual C++ 2013 Redistributable Package is automatically installed. However, when you install only the production environment, you must install the Microsoft Visual C++ 2013 Redistributable Package separately. This package is included in the engine ZIP file.

Previous versions of Exstream required the Microsoft Visual C++ 2008 Redistributable Package and the Microsoft .NET Framework version 3.5 SP1.

For more information about the system requirements for Exstream, see "System Requirements" on page 8.

Hyperlinks and Live Documents

Exstream version 9.0 provides updates to features that you use when you apply hyperlinks to text.

For applications that produce Live documents, if you previously included hyperlinks on text, such as www.opentext.com, you must now select the action that an end user will perform to follow the hyperlink address. You can choose whether an end user will use a single click or use `CTRL + Click` to follow a hyperlink on text. The previous default action was a single click. The new default action is `CTRL + Click`.

For more information about applying hyperlinks to text that is included in Live documents, see *Designing in Exstream Interactive*.

PDF Accessibility

In Exstream version 9.5.201, and in version 9.0.112 and later maintenance releases, the **Use accessibility tags** check box has been replaced by the new **Accessibility tagging** drop-down list, which specifies the accessibility standard to apply to the PDF output for use with screen readers and text-to-speech converters. When you upgrade an existing database that includes a PDF output object (or when you use an XOB file to load a PDF output object that was unloaded from a database in a version earlier than 9.0), the appropriate selection is automatically made from the new drop-down list, and the accessibility settings in your output are not affected.

The following table shows the correlation between the original check box setting and the corresponding option on the new drop-down list:

If, prior to the upgrade	Then, after the upgrade
The **Use accessibility tags** check box was cleared	The **Accessibility tagging** drop-down list is set to **None**.
The **Use accessibility tags** check box was selected	The **Accessibility tagging** drop-down list is set to **WCAG 2.0**.

For more information about optimizing a design for PDF accessibility tools, see *Designing in Exstream*.

Superscripted and Subscripted Text

Exstream version 8.5 and later provides updates to features used to apply superscript and subscript formatting to text.

If you use tag sets in your design, you can use the **Superscript** and **Subscript** features on the **Text** tab of the tag set object properties in Design Manager to define tags that apply superscript and subscript formatting to the tagged text at run time.

For all other text, you can use the following formatting features in Designer:

- The **Adjust Baseline** feature on the **Format** menu—This feature lets you adjust the point size by which to adjust text above or below the baseline without changing the font size of the text.

  Note: The **Nudge Superscript** and **Nudge Subscript** features on the **Format** menu have been renamed to **Nudge Baseline Up** and **Nudge Baseline Down**. The functionality has not changed.

- The **Superscript** and **Subscript** buttons on the Formatting toolbar—These features adjust the text

above or below the baseline and change the font size proportionally to the surrounding text. For best results in existing designs, update all superscripted or subscripted text (for example, trademark or copyright symbols) using these features.

Keys and Licensing

Exstream 8.0.301 and later now supports floating licensing, as well as node-locked licensing. Due to expanded licensing support, all customers upgrading to Exstream 8.0.301 and later must obtain and install a new key.

For information about installing a license key, see "Keys and Licensing for Exstream Products" on page 28.

When you upgrade to Exstream 8.0.301 or later, you can decide which licensing method you will use going forward. You can continue with your current licensing method (node-locked), or you can upgrade to the floating license method. You can switch to floating licensing any time after you have upgraded to Exstream 8.0.301 or later.

For more information about node-locked and floating licensing, see "Keys and Licensing for Exstream Products" on page 28.

Local User Dictionaries

Exstream creates the local user dictionary the first time you right-click a word in Designer and select **Spell Check > Add Word**.

Exstream versions 7.0.613 and earlier create the local user dictionary (`ExstreamPersonal.tlx`) as a `.tlx` file in the install directory.

For example:

```
C:\Program Files\Hewlett-Packard\HP Exstream\HP Exstream 7.0.601\
ExstreamPersonal.tlx
```

Exstream versions 8.0.3 and later create the local user dictionary (`ExstreamPersonal.txt`) as a `.txt` file in the user's document directory.

For example:

```
C:\Users\<username>\Documents\OpenText\Exstream\ExstreamPersonal.txt
```

When you upgrade from Exstream version 7.0.613 or earlier to Exstream version 8.0.3 or later, the `ExstreamPersonal.tlx` file is converted to a `.txt` format (`ExstreamPersonal.txt`).

However, if you want to retain your local user dictionary when you upgrade to Exstream version 7.0.613 and later, you must copy your existing `ExstreamPersonal.tlx` file from the install directory of the previous version of Exstream to the corresponding location.

Operating System	Location
Windows XP	`C:\Documents and Settings\<username>\My Documents\OpenText\Exstream\`
Windows Vista and Windows 7	`C:\Users\<username>\Documents\OpenText\Exstream\`

Note: When you upgrade to Exstream version 8.0.3 or later, you receive a message asking if you want to convert the local user dictionary from a `.tlx` file to a `.txt` file. You cannot use the local user dictionary file until it has been converted to the `.txt` format.

Spelling Dictionaries

Due to the changes related to the expanded support of dictionary languages in Exstream 8.0.301 and later, you will notice slight differences in spell check functionality after upgrading. Examples of these differences include the following:

- You no longer must select a check box to check for lowercase words for improper case because the engine now handles it automatically.
- You can no longer select to ignore all words that are fully capitalized (for example, acronyms or abbreviations). Unless it is a well-known acronym or abbreviation, or you have added it to the local user dictionary or the Exstream dictionary, words that are fully capitalized will be marked as misspelled.

For information about setting up spelling dictionaries, see *Exstream System Administration*.

Database Changes Due to Design User Name Conversion

Exstream 8.0.201 and later versions uses Object Identifier (OI) integer values instead of strings to associate users with database objects. Therefore, when you upgrade to 8.0.201 or later, Exstream must convert all user name strings to OI integer values during the first login to Design Manager, Designer, or Logic Designer. Exstream automatically runs the conversion during your first login after upgrading. The conversion occurs in design databases. Design user names do not change and appear the same in your Library. External users (previously known as "system users") that are included in a design group are converted to design users and will appear in the Library. During conversion, the **User Management Conversion** dialog box appears. This dialog box is for informational purposes only and does not require a response.

Before conversion, some user fields, such as the **Created** field on the **Administration** dialog box, might be populated with strings that do not represent actual design users. The conversion process creates design users for these strings. By default, these design user logins are disabled.

After the conversion is complete, Exstream adds an event log record to the Exstream event log. To view the Exstream event log, select **Tools > View event log**.

RGB Images and AFP Output

Exstream version 8.0 and later no longer supports the utility that previously allowed you to apply image optimization settings to AFP output and create CMYK FS45 resources from RGB images. In Designer, the utility was previously controlled using the **Image Optimization** drop-down list on the **Advanced** tab of an AFP output object.

If you previously used this utility to prepare print resources for post-processing tools, such as InfoPrint, you must now apply image optimization to images externally from Exstream before you import the images into your design. For more information about image processing utilities, refer to the IBM documentation.

For more information about image optimization in AFP output, see "Visual Differences and Resolution" on page 89

Tables

In the 8.0 release, the **Table Properties** dialog box was updated to provide a more consistent design experience for interactive documents. These changes are visible in both interactive and non-interactive design environments.

If you have not licensed the Live Design module, you will notice the following change: the **Enable expand/collapse** check box (previously located on the **Table** tab of the **Table Properties** dialog box) has been disabled for non-interactive environments. This features is intended for use in interactive documents only, and has therefore been moved to the **Interactive** tab of the **Row Properties** dialog box to provide a more intuitive design experience. If you used this features in traditional Design and Production applications, you should check your output after the upgrade is complete.

If you have licensed the Live Design module, in addition to the previously described change, other differences will be apparent in the **Table Properties** dialog box. Since it is intended for use only in Live documents, the **Enable show/hide rows** check box has been removed from the **Table Properties** dialog box and moved to the **Interactive** tab of the **Row Properties** dialog box. In addition, several other properties related to editing tables in Live documents have been moved from the **Interactive** tab on the table properties to the **Interactive** tab on row properties to provide you with more granular control over the types of changes that can be made to tables. Any properties previously set in applications will be transferred to the new location after the applications are upgraded, and the previous table behavior will remain the same.

The following table describes all the table property differences affecting Live users in Design and Production 8.0 and later:

Changes in table properties

Pre-8.0 Features	Changes in 8.0 version
Enable expand/collapse check box and **Enable show/hide rows** check box	Previously, the **Enable expand/collapse** check box and the **Enable show/hide rows** check box were located on the **Table** tab of the **Table Properties** dialog box. These check boxes have been moved from the **Table** tab to the **Interactive** tab on row properties and are therefore now supported only in Live applications. The accompanying **Expand/collapse variable** box (previously on the **Automated Row Properties** tab) has been moved to the **Interactive** tab of row properties that start the section header.
Text edit check box on the **Interactive** tab	This check box is now disabled for all table types except for simple. Editing table contents is controlled using Interactive areas and/or variables in table cells.
Text format check box on the **Interactive** tab	This check box is disabled for all table types except for simple.
Properties check box on the **Interactive** tab	This check box has been removed.
Duplicate rows check box on the **Interactive** tab	This check box has been moved to the **Interactive** tab of individual automated row properties.
Remove rows check box on the **Interactive** tab	This check box has been moved to the **Interactive** tab of individual automated row properties.
Size rows check box on the **Interactive** tab	This check box has been moved to the **Interactive** tab of individual non-automated row properties and renamed to **User can adjust height**.
Insert rows check box on the **Interactive** tab	This check box has been moved to the **Interactive** tab of individual automated row properties.
Content change drop-down list on the **Interactive** tab	The **Required** option has been removed, since in previous versions, **Required** behaved the same as **Optional**. Upon upgrade, any tables with the **Content change** property set to **Required** will be changed to **Optional**.

Visual and Non-Visual Differences

Due to the many feature enhancements and defect fixes available in Exstream version 9.5.302, upgrading from a previous version can cause differences—some visual, some not—in your output. The following sections identify which features used in an application might be affected during the upgrade process, and provide instructions on how to revert to your application's previous behavior or output appearance when applicable.

This section discusses the following topics:

Non-Visual Differences

Based on your application design, you might experience the following non-visual differences in your output after upgrading to Exstream Design and Production version 9.5.302.

Non-visual differences after upgrading to Exstream Design and Production version 9.5.302

Related feature	Previous version(s)	Description of differences/resolution
Bar charts	6.2	The BAR_ZERO_AXIS_ON_TOP switch is no longer used. The behavior the switch enforced in previous versions is now the default behavior in version 8.0. Though no action is required, for best results, remove the BAR_ZERO_AXIS_ON_TOP switch from the control file.
On Demand Delivery (formerly Real-time)	5.0, 6.0, or 6.1	There are two major changes to version 9.0 that affect your application: • **Switch Name Change**—The ONDEMAND switch is not supported in version 9.0. Update the control file by removing the ONDEMAND switch and inserting the REALTIME switch. • **Default Shutdown Behavior Change**—In prior versions, the engine shut down if severe errors were encountered on input data. In version 9.0, the engine continues to process data if it encounters severe errors on input data. To revert to the previous default behavior, add the FORCE_ONDEMAND_SHUTDOWN_ON_INPUT_ERROR switch to the control file. For information about the ONDEMAND and FORCE_ONDEMAND_SHUTDOWN_ON_INPUT_ERROR switches, see *Preparing Applications for Production*.
Output (all types)	5.0, 6.0, or 6.1	When performing a compare between your output files, you will notice binary changes due to changing instances of "Exstream Dialogue" and "Dialogue" to "OpenText Exstream."
PDF output	As noted in the descriptions	• **128–Bit Encryption**—If you use 128–bit encryption in your PDF output, you might see binary differences in the PDF print stream. However, the PDF output will be visually identical to previous versions. This issue affects version 7.0. • **PDF Bookmarks**—If you use bookmarks in your PDF output, you might see binary differences in the PDF print stream. However, the PDF output will be visually identical to previous versions. This issue affects versions 6.1 and 7.0. • **PDF Compression**—If you have the **Compression** check box selected on a PDF output object in a previous version, and then repackage the application in version 7.0, you might see a net file size change. However, the PDF output will be visually identical to the previous versions. This issue affects versions 5.0, 6.0, or 6.1. • **PDF Preflight**—If you use a third-party PDF preflight tool in your workflow, you might see binary differences in the print stream. However, the PDF output will be visually identical to previous versions. This issue affects versions 5.0, 6.0, or 6.1.

Visual Differences and Resolution

Based on your application design, you might experience the following visual differences in your output after upgrading to Exstream Design and Production version 9.5.302.

Visual differences after upgrading to Exstream Design and Production version 9.5.302

Related feature	Previous version(s)	Description of differences/resolution
Charts (all types)	5.0	**Description:** Fonts appear differently in the output—particularly on data labels—because the behavior related to editing fonts for axes and labels was changed in version 7.0. **Resolution:** To resolve this issue without repackaging, add the BAR_USE_FONT_AXES_FOR_LABEL switch to the control file for backward compatibility and then run the engine. To resolve this issue manually: 1. Open the page in Designer. 2. Accept the prompt to update font information. 3. Verify you have the correct font set for both the x-axis and the y-axis. 4. Save the page. 5. Repackage the application.
Charts (all types)	5.0	**Description:** The x-axis does not appear in the output. **Resolution:** To resolve this issue without repackaging, add the BAR_DRAW_XAXIS_AFTER_UPGRADE switch to the control file for backward compatibility. 1. Open the page in Designer. 2. Right-click the chart and select **Chart Properties**. The **Chart Properties** dialog box opens. 3. Beneath the **Chart Type** box, click the icon that represents the chart type. The **Chart Format** dialog box opens. 4. Click the **X-Axis** tab. 5. Select the **Show axis** check box. 6. Click **OK** to close the **Chart Format** dialog box. 7. Click **OK** to close the **Chart Properties** dialog box. 8. Save the page and exit Designer. 9. Repackage the application.

Visual differences after upgrading to Exstream Design and Production version 9.5.302, continued

Related feature	Previous version(s)	Description of differences/resolution
Charts (all types)	6.1, 6.2	**Description:** The chart frame does not appear in the output. **Resolution:** To resolve this issue without repackaging, add the CHART_DRAW_FRAME_AFTER_UPGRADE switch to the control file for backward compatibility and run the engine. To resolve this issue manually: 1. Open the page in Designer. 2. Right-click the chart and select **Chart Properties**. The **Chart Properties** dialog box opens. 3. Beneath the **Chart Type** box, click the icon that represents the chart type to open the **Chart Format** dialog box. 4. Click the **Plot Area** tab. 5. In the **Border** area, change the line style to a solid line and the size to **0.01**. 6. In the **Grid line and axis** area, select **None** from the **Y-axis zero value line** drop-down list. 7. Click **OK** to close the **Chart Format** dialog box. 8. Click **OK** to close the **Chart Properties** dialog box. 9. Save the page and exit Designer. 10. Repackage the application.
Chinese character placement in AFP output	All	**Description:** When upgrading to version 8.0, you might notice a shift in the placement of Chinese characters in AFP output. This shift is the result of a change that fixed incorrect font metrics in previous versions. **Resolution:** This is expected behavior and requires no action on your part. However, if you use a publication file (.pub) file from an older version, then the height and width of all periods in the output will grow by one pixel.

Visual differences after upgrading to Exstream Design and Production version 9.5.302, continued

Related feature	Previous version(s)	Description of differences/resolution
DLF output	7.0	**Description:** For a mapped data area, if you have the **Specific array element** check box selected on the **Data Area Properties** dialog box, and then repackage the application in version 7.0.6 or later, you might see only one array element in the DLF output as opposed to multiple array elements. **Resolution:** To resolve this issue without repackaging, add the IGNORE_SPEC_ARRAY_ELEM_ON_XML_DATA_AREAS switch to the control file for backward compatibility and run the engine. To resolve this issue manually: 1. In Design Manager, from the Library, drag a data file to the Edit Panel. 2. Right-click a mapped data area and select **Data Area> Data Area Properties**. The **Data Area Properties** dialog box opens. 3. Clear the **Specific array element** check box. 4. Click **OK** to close the **Data Area Properties** dialog box. 5. Save the data mapping. 6. Repackage the application.
Error messages	6.0	**Description:** When upgrading to version 8.0, you may see the following image error: `EX003663E (12) An EPS image has been ignored. It either doesn't have any new line characters or it contains a string of length > 32767.` **Resolution:** Repackage the application.
Flow	5.0	**Description:** In rare cases, line ends can be different, which can result in changes to line or row breaks. **Resolution:** Repackage the application.
Flow frames	5.0	**Description:** In some instances where the flow frame is not wide enough to accommodate the design, objects appear differently in the output. **Resolution:** 1. Open the page in Designer. 2. Change the width of the frame so that it accommodates the size of the design objects. 3. Save the page and exit Designer. 4. Repackage the application.

Visual differences after upgrading to Exstream Design and Production version 9.5.302, continued

Related feature	Previous version(s)	Description of differences/resolution
Graphic messages	6.0	**Description:** Graphic messages appear closer together in the output than they were designed to appear. **Resolution:** Repackage the application.
Image optimization in AFP output	5.0, 6.0, 6.1, or 7.0	**Description:** When upgrading to version 8.0, you might notice that some FS45 image resources in AFP output are now RGB instead of CMYK. Version 8.0 no longer supports the utility that previously allowed you to convert RGB images to CMYK. **Resolution:** 1. Open the page in Designer. 2. Identify the dimensions and coordinates of RGB images. 3. Use an image processing utility to convert RGB images to CMYK. 4. Delete the RGB images. 5. Import the CMYK images. 6. Save the page and exit Designer. 7. Repackage the application.
Label charts	6.1	**Description:** If the chart has different settings for the legend and label symbol fonts, the fonts appear differently in the output. **Resolution:** To resolve this issue without repackaging, add the USE_OLD_FONT_LABEL_CHART_SYMBOLS switch to the control file for backward compatibility and run the engine. To resolve this issue manually: 1. Open the page in Designer. 2. Change the fonts used on the labels to meet the design requirements. 3. Save the page and exit Designer. 4. Repackage the application.
Paragraphs	All	**Description:** Because of enhancements to improve paragraph flow, you may notice that some paragraphs have shifted slightly compared to applications built using versions of Exstream prior to version 8.0. **Resolution:** This is expected behavior and requires no action on your part.

Visual differences after upgrading to Exstream Design and Production version 9.5.302, continued

Related feature	Previous version(s)	Description of differences/resolution
RTF import	5.0, 6.0, or 6.1	**Description:** The following design features might appear differently in the output: • Bullet symbols • Bullet formatting, such as font, bold, or italic • Numbered paragraphs • Tabbed first lines on hanging indents • Text characters positioning • Paragraph styles on tagged text • Numbered lists with parentheses, such as (1) **Resolution:** 1. In Designer, import the RTF data. 2. Repackage the application.
Table formatting	6.0	**Description:** When upgrading to version 8.0, you might notice the following table-related issues in your output: • Unexpected split and flow of table rows • Unexpected text wrapping and shifting in table rows • Lost table data in output **Resolution:** Add the TABLE_COMPAT_MODE_6_0 switch to the control file and run the engine.
Table placement	6.1	**Description:** When upgrading to version 8.0, you might notice a slight shift in the placement of tables embedded in RTF imports. This shift is the result of a change that fixed previously incorrect calculations for the upper-left placement of tables embedded in RTF imports. **Resolution:** This is expected behavior and requires no action on your part.
Text formatting	5.0	**Description:** Trailing spaces in right-justified text are ignored. **Resolution:** Add the HONOR_TRAILING_SPACES_RIGHT_JUSTIFY switch to the control file for backward compatibility and run the engine.

Visual differences after upgrading to Exstream Design and Production version 9.5.302, continued

Related feature	Previous version(s)	Description of differences/resolution
Variable timing	5.0	**Description:** When upgrading to version 8.0, you might notice that the value of the SYS_SubDocInDocument variable is incorrect when computing the filename for certain queue breaks. This issue resulted from a timing fix that was implemented beginning in version 6.0. It can cause your output to vary between versions 5.0 and 8.0. **Resolution:** To resolve this issue, add the REVERT_SYS_SUBDOCINDOC_TIMING switch to the control file and run the engine. This switch reverts to the version 5.0 timing when calculating the value of the SYS_SubDocInDocument variable.
XML (content)	6.1	**Description:** Because of enhancements that changed how XML (content) behaves in a Multiple Virtual Storage (MVS) environment, you must use an engine switch to produce XML (content) in EBCDIC format. **Resolution:** To resolve this issue, add the FORCE_OLD_CONTENT_XML_NATIVE_FORMAT switch to the control file for backward compatibility and run the engine.

Using Backward Compatibility Switches to Manage Differences

If you notice differences in output after an upgrade, and you want the output to appear the same as it did in a previous version of Exstream, you can use backward compatibility switches as a temporary measure to suppress changes in the output that were caused by enhancements and fixes in the newer version of Exstream. For information about specific backward compatibility switches, contact your Exstream account manager.

To collectively apply all of the backward compatibility switches that have been implemented since a specific previous version of Exstream, you can use the ENABLE_BACKWARD_COMPAT engine switch. When you use the ENABLE_BACKWARD_COMPAT switch, the output that you produce approximates the output that would be produced if you were using the version of the engine that you specify for the switch.

For example, suppose that you are using Exstream version 9.0.102, but you are producing output using an application that was designed in Exstream version 7.0.601. If you notice differences in the output and you want the output to appear the same as the output that you produced using Exstream 7.0.601, you can specify `-ENABLE_BACKWARD_COMPAT=7.0.601` so that the engine applies the specific backward compatibility switches that were implemented in versions and maintenance releases later than Exstream version 7.0.601.

Furthermore, you can specify a second version number in order to exclude backward compatibility switches that were implemented in versions or maintenance releases that are later than that version. That is, the engine applies only the backward compatibility switches that were implemented between the two versions that you specify.

The engine also produces a list of all of the specific backward compatibility switches that apply to the version or versions that you specify, as well as a list of a subset of those switches that actually apply to your application. The lists appear either in the engine message file or in the output file that you specify as an argument.

Note: Using the ENABLE_BACKWARD_COMPAT switch or specific backward compatibility switches might roll back software fixes that were applied later than the version that you specify. Use this switch only for testing output and for temporary use when you want to maintain the appearance of output from existing applications after an upgrade. For best results, make the updates to your application that are necessary to discontinue using backward compatibility switches as your time and business requirements permit.

This switch has no default value. Use one of the following syntaxes with the ENABLE_BACKWARD_COMPAT switch:

Argument syntax	Description
`-ENABLE_BACKWARD_COMPAT=`*`version`*	Specify an earlier version of Exstream with which you want your output to be backward compatible. When you produce output, the engine applies all of the backward compatibility switches that were implemented since the version that you specify. The engine adds the lists of applicable switches to the engine message file. **Note:** You cannot specify a version earlier than 3.0.000.
`-ENABLE_BACKWARD_COMPAT=`*`version1,version2`*	Specify two earlier versions of Exstream, between which you want to apply relevant backward compatibility switches. When you produce output, the engine applies all of the backward compatibility switches that were implemented since the first version that you specify, but excludes switches that were implemented after the second version that you specify. The engine adds the lists of applicable switches to the engine message file.
`-ENABLE_BACKWARD_COMPAT=`*`version1,filepath`*	Specify an earlier version of Exstream with which you want your output to be backward compatible, and the path of an output file in which you want to record the applicable backward compatibility switches. When you produce output, the engine applies all of the backward compatibility switches that were implemented since the version that you specify. The engine adds the lists of applicable switches to the output file that you specify.
`-ENABLE_BACKWARD_COMPAT=`*`version1,version2,filepath`*	Specify two earlier versions of Exstream, between which you want to apply relevant backward compatibility switches, and the path of an output file in which you want to record the applicable backward compatibility switches. When you produce output, the engine applies all of the backward compatibility switches that were implemented since the first version that you specify, but excludes switches that were implemented after the second version that you specify. The engine adds the lists of applicable switches to the engine message file and to the output file that you specify.

Note: For the first version, you can specify any existing version of Exstream between version 3.0.000 and the version that you are using. However, if you specify a second version, you can specify only one of the following:

- 95101
- 90102
- 90101
- 86107
- 86106
- 86105
- 86103
- 86101
- 86999
- 80333
- 80331
- 80330
- 80325
- 80324
- 80323
- 80322
- 80317
- 80316
- 80312
- 80311
- 80309
- 80304
- 80301
- 80300
- 82999
- 80200
- 80100
- 79999
- 70638
- 70629
- 70619
- 70617
- 70612
- 70608
- 70606
- 70604
- 70601
- 70600
- 70599
- 70408
- 70406
- 70403
- 70402
- 70400
- 70300
- 70004
- 62003
- 62001
- 61999
- 61032
- 61029
- 61028
- 61025
- 61015
- 61014
- 61010
- 61008
- 61006
- 61005
- 61004
- 60999
- 60017
- 60016
- 60015
- 60014
- 60013
- 60012
- 60009
- 60008
- 60000
- 55408
- 55406
- 55305
- 55303
- 55302
- 55207
- 54999
- 50075
- 50074
- 50064
- 50054
- 50048
- 50045
- 50022
- 50020
- 45400
- 45102
- 40120
- 40086
- 40075
- 40039
- 40009

Tip: You can specify version numbers with or without periods. For example, `8.6.102` is equivalent to `86102`.

For example:

```
-ENABLE_BACKWARD_COMPAT=8.6.102
```

```
-ENABLE_BACKWARD_COMPAT=8.6.102,9.0.102
```

```
-ENABLE_BACKWARD_COMPAT=8.6.102,C:\logs\switchoutput.txt
```

```
-ENABLE_BACKWARD_COMPAT=8.6.102,9.0.102,C:\logs\switchoutput.txt
```

Chapter 6: Troubleshooting

This chapter contains recommended solutions to some common issues you might experience. If these recommendations do not solve your problem, try running a debug file for your application. If the issue persists, create a case in OpenText Customer Support website at http://www.opentext.com/support.

For more information about the trace/watch/debug feature, *Preparing Applications for Production*.

My license key has expired

Exstream validates the license key right after you log in or change databases in Design Manager and Designer. If the key is expired or invalid, the **Enter a New License Key** dialog box opens, indicating the reason the key cannot be used. Click **Clear** to remove the old key and import a new one. Click  to browse to the file where the last license key was imported. In all places where you can import a key, the software remembers the last path used and defaults to that folder for the file selection.

When opening a database in Design Manager, I receive a message stating that I am using the wrong type of tracking database and that it will be disabled.

You might receive one of the following two messages:

- "You are attempting to use a DBCS tracking database with an Exstream database being used in SBCS mode. The Tracking Database will be disabled."
- "You are attempting to use an SBCS tracking database with an Exstream database being used in DBCS mode. The Tracking Database will be disabled."

Switch to a tracking database that matches the application mode of your design database.

For information about determining application mode, see *Converting SBCS Databases for Exstream 8.0 and Later*.

For information about setting up and using tracking databases, see *Managing Marketing Messaging*.

When I try to connect to a design database over a Wide Area Network (WAN) environment, performance is much slower than expected.

The fundamental Exstream architecture acts as a thick client to the design database and WAN connections usually do not provide the required bandwidth for an efficient working environment. A low-latency Local Area Network (LAN) typically provides the most responsive user experience. To enable efficient connections for remote users, use one of the following solutions:

- Use Remote Desktop to connect to a dedicated PC on the same LAN as a design database and then run Exstream in the remote environment.
- Use a Citrix or Terminal Server environment to enable remote user connections to a design database.

When using the Database Administrator utility, I receive the following message: "The schema you are trying to connect to the database is not a valid schema. Try one of the following schemas; dbo."

Log in as System Administrator with the correct ID and password.

For more information about using the Database Administrator utility, see "Database Administration" on page 36.

When using the Database Administrator utility, I receive a message that I do not have the correct permissions to perform a task.

Log in as System Administrator with the correct ID and password.

Appendix A: Command Line Switches for Database Administration and Maintenance

You can complete many database administration tasks from the command line or from a batch file. You can also run database maintenance from the command line or from a batch file.

The following switches are available:

Caution: Do not use spaces between options, values, and successive file names in a command line, as this can cause errors at run time.

For example, use `-ACCESSDB=C:\Temp\Sample.accdb` instead of `-ACCESSDB = C:\Temp \Sample.accdb`

ACCEPT_PRIVACY_STATEMENT

The ACCEPT_PRIVACY_STATEMENT switch acknowledges that you have read and accept the anonymous data collection and usage statement provided at https://analytics.exstream.com/privacy/en-US/index.html. This switch is required to update or create a database from the command line for use with Exstream version 9.5.301 or later, or Enterprise Application Manager (EAM) version 3.5.301 or later.

Syntax:

```
-ACCEPT_PRIVACY_STATEMENT
```

No argument is required for this switch.

Note: If you have additional questions about Exstream usage analytics, contact OpenText Customer Support at http://www.opentext.com/support.

ACCESSDB

The ACCESSDB switch opens an existing Microsoft Access database without requiring you to create a DSN. The file name can use either the `.mdb` or `.accdb` extension. Microsoft Access versions earlier than 2007 support only the `.mdb` extension. Either the ACCESSDB switch or the DSN switch is required to run database maintenance from the command line.

Syntax:

```
-ACCESSDB=Access database path and file name
```

Use the following argument with the ACCESSDB switch:

ACCESSDB argument

Argument	Use
Access database path and file name	Required
DBAUTHENICATION	Optional

For example:

```
-ACCESSDB=C:\Temp\Sample.accdb
```

APPLICATION_MODE

The APPLICATION_MODE switch sets the application mode of Exstream 8.0 or later databases. If APPLICATION_MODE is not specified, the database defaults to DBCS mode.

Syntax:

```
-APPLICATION_MODE=argument
```

You must use one of the following arguments:

APPLICATION_MODE arguments

Argument	Notes
SBCS	Use the SBCS argument to specify the SBCS application mode.
DBCS	Use the DBCS argument to specify the DBCS application mode.
ALL	Use the SBCS/DBCS argument to specify the SBCS/DBCS application mode.

For example:

```
-APPLICATION_MODE=DBCS
```

For more information about application modes, see *Converting SBCS Databases for Exstream 8.0 and Later*.

AUTOCREATE

The AUTOCREATE switch automatically creates the structure for a database with no interaction. It uses the default Exstream tablespace names, unless you use the TABLESPACE switch.

Syntax:

```
-AUTOCREATE=DESIGN or TRACKING,Database language,Primary tablespace file name,
Index tablespace file name,LOB tablespace file name,Temporary tablespace file
name,DB2 z/OS database name
```

You use the following arguments:

AUTOCREATE arguments

Argument	Use	Notes
DESIGN or TRACKING	Required	
Database language	Required	The only valid language code is `en-us` (English).
Primary tablespace file name	Optional	Unless you specify alternate tablespace file names, the default Exstream tablespace file names are used. For DB2 and Oracle on Linux, UNIX, and Windows, you use this argument plus the other tablespace arguments.
Index tablespace file name	Required	Unless you specify alternate tablespace file names, the default Exstream tablespace file names are used. For DB2 and Oracle on Linux, UNIX, and Windows, you use this argument plus the other tablespace arguments.
LOB tablespace file name	Required	Unless you specify alternate tablespace file names, the default Exstream tablespace file names are used. For DB2 and Oracle on Linux, UNIX, and Windows, you use this argument plus the other tablespace arguments.
Temporary tablespace file name	Optional	Unless you specify alternate tablespace file names, the default Exstream tablespace file names are used. For DB2 on Linux, UNIX, and Windows, you use this argument plus the other tablespace arguments.
DB2 z/OS database name	Optional	The structure is created in the Exstream default database unless you use this argument to specify another database name.

If you use the AUTOCREATE switch, you must also use the following switches:

- QUERYPATH
- One of the following: ACCESSDB or EMPTYACCESSDB or DSN
- ACCEPT_PRIVACY_STATEMENT (Required only if you are creating a database for use with Exstream version 9.5.301 or later, or Enterprise Application Manager (EAM) version 3.5.301 or later.)

For example:

```
-AUTOCREATE=DESIGN,en-us –QUERYPATH=C:\Temp –DSN=MyDSN, , MyUserName, MyPassword
-ACCEPT_PRIVACY_STATEMENT
```

AUTODROP

The AUTODROP switch automatically drops all tables and associated objects for the specified role (design or tracking) with no interaction, but does not drop the database instance.

Syntax:

```
-AUTODROP=DESIGN or TRACKING,DB2 z/OS database name,DROPTABLESPACES, DROPBUFFERPOOL
```

You use the following arguments:

AUTODROP arguments

Argument	Use	Notes
DESIGN or TRACKING	Required	
DB2 z/OS database name	Optional	Unless you specify alternate tablespace file names, the default Exstream tablespace file names are used.
DROPTABLESPACES	Optional	Use this argument to drop the default Exstream tablespaces. For DB2 on z/OS, the structure is dropped in the Exstream default database unless you specify another database name.
DROPBUFFERPOOL	Optional	For DB2 on Linux, UNIX, and Windows databases, use this argument to drop the default Exstream bufferpool.

If you use the AUTODROP switch, you must also use the following switches:

- QUERYPATH
- One of the following: ACCESSDB or DSN

For example:

```
-AUTODROP=TRACKING -QUERYPATH=C:\Temp -ACCESSDB=C:\Temp\Sample.accdb
```

AUTOUPDATE

The AUTOUPDATE switch automatically updates the structure of a database with no interaction. If required, the default Exstream tablespaces are used. If the default Exstream tablespaces do not exist, they will be created.

Syntax:

```
-AUTOUPDATE=DESIGN or TRACKING,Database language,DB2 z/OS database name
```

You use the following arguments:

AUTODATE arguments

Argument	Use	Notes
DESIGN or TRACKING	Required	
Database language	Optional	The only valid language code is `en-us` (English).
DB2 z/OS database name	Optional	The structure is updated in the Exstream default database unless you use this argument to specify another database name.

If you use the AUTOUPDATE switch, you must also use the following switches:

- QUERYPATH
- One of the following: ACCESSDB or DSN
- ACCEPT_PRIVACY_STATEMENT (Required only if you are updating a database for use with Exstream version 9.5.301 or later, or Enterprise Application Manager (EAM) version 3.5.301 or later.)

For example:

```
-AUTOUPDATE=DESIGN,en-us -QUERYPATH=C:\Temp -ACCESSDB=C:\Temp\Sample.accdb -ACCEPT_
PRIVACY_STATEMENT
```

COPYDB

The COPYDB switch copies database content from one database to another.

Syntax:

```
-COPYDB=Design query file path,Tracking query file path,COPYONLYSYSTEMTBL
```

You use the following arguments:

COPYDB arguments

Argument	Use	Notes
Design query file path	Required	This argument is required only if the database has the design role. Otherwise, leave the argument blank.
Tracking query file path	Required	This argument is required only if the database has the tracking role. Otherwise, leave the argument blank.
COPYONLYSYSTEMTBL	Optional	Use this argument to specify that you want to copy only the system information.

If you use the COPYDB switch, you must also use the following switches:

- To specify the source database: DSN or ACCESSDB
- To specify the destination database: COPYTODSN or COPYTOACCESSDB

For example:

```
-COPYDB=C:\Temp,C:\Temp,COPYONLYSYSTEMTBL -DSN=MyDSN,,MyUserName,MyPassword -
COPYTODSN=TheDSN,,TheUserName,ThePassword
```

COPYTODBAUTHENTICATION

The COPYTODBAUTHENTICATION switch lets you specify the database authentication method for the copy target. This switch is optional. If this switch is not specified, the Windows authentication method is the default.

For more information about database authentication methods, see "Connecting to a Database" on page 39.

Syntax:

```
-COPYTODBAUTHENTICATION=<authentication method>
```

You must use one of the following arguments:

- `WINDOWS`
- `PROMPT`
- `DEFAULT`

For example:

```
-COPYTODBAUTHENTICATION=WINDOWS
```

COPYTODSN

The COPYTODSN switch specifies the destination database DSN when using the COPYDB switch to copy database content.

Syntax:

```
-COPYTODSN=Destination DSN,Schema,Database username,Database password
```

You use the following arguments:

COPYTODSN arguments

Argument	Use
Destination DSN	Required
Schema	Optional
Database username	Optional
Database password	Optional

COPYTODSN arguments, continued

Argument	Use
DBAUTHENTICATION	Optional (If you use this argument, then the Database username and Database password arguments are ignored.)

For example:

```
COPYDB=C:\Temp,C:\Temp,COPYONLYSYSTEMTBL -DSN=MyDSN,,MyUserName,MyPassword -
COPYTODSN=SampleDSN,,SampleUserName,SamplePassword
```

COPYTOACCESSDB

The COPYTOACCESSDB switch specifies the destination Access database file name when using the COPYDB switch to copy database content. The file name can use either the `.mdb` or `.accdb` extension. Keep in mind that Access versions earlier than 2007 support only the `.mdb` extension.

Syntax:

```
-COPYTOACCESSDB=Destination Access path and file name
```

You use the following arguments:

COPYTOACCESSDB argument

Argument	Use
Destination Access database path and file name	Required
DBAUTHENTICATION	Optional

For example:

```
-COPYDB=C:\Temp,C:\Temp,COPYONLYSYSTEMTBL -ACCESSDB=C:\Temp\Sample.mdb
```

```
–COPYTOACCESSDB=C:\Temp\Example.accdb
```

DBAUTHENTICATION

The DBAUTHENTICATION switch lets you specify the database authentication method. This switch is optional. If this switch is not specified, the last used database authentication method is the default.

For more information about database authentication methods, see "Connecting to a Database" on page 39.

Syntax:

```
-DBAUTHENTICATION=<authentication method>
```

You must use one of the following arguments:

- WINDOWS
- PROMPT
- EXSTREAM
- DEFAULT

For example:

```
-DBAUTHENTICATION=WINDOWS
```

DBMAINT

The DBMAINT switch instructs Design Manager to run database maintenance. This switch is required in order to run database maintenance from the command line. If you use this switch without using the DBMAINT_OPTIONS switch, database maintenance runs using the default behavior.

The default behavior for database maintenance is to run with the following options from the **Database Maintenance** dialog box enabled:

- **Check for unreferenced embedded objects**
- **Check serialized LOB integrity**
- **Check for unsynchronized variable references**
- **Check for unsynchronized rule references**
- **Check for orphaned rules > Convert orphaned rules to named rules**
- **Check database referential integrity**

Syntax:

```
-DBMAINT=<FIX | CHECK>
```

You must select one of the following arguments:

- CHECK—Run database maintenance to check for errors.
- FIX—Run database maintenance to locate and fix errors.

For example:

```
-DBMAINT=FIX
```

DBMAINT_LOCK

The DBMAINT_LOCK switch lets you specify whether a database is locked during database maintenance. This switch is optional. The default option, if the DBMAINT_LOCK switch is not specified, is locked. This switch corresponds to the **Lock the database** check box on the **Database Maintenance** dialog box.

Syntax:

```
-DBMAINT_LOCK=<NO_LOCK | LOCK | FORCE_LOCK>
```

You must use one of the following arguments:

DBMAINT_LOCK arguments

Argument	Notes
NO_LOCK	Use this argument to check for errors without locking the database. When you use the NO_LOCK argument, the system status is not changed. The NO_LOCK argument does not set the system status to normal if the system is already locked. This argument is not valid with DBMAINT=FIX; it is only valid with DBMAINT=CHECK.
LOCK	This argument sets the system status to locked if there are no active users in the database, and if the database is not already locked. Users who log in during database maintenance receive the following message: *This database has been locked for database maintenance. You may not edit, delete, or create any objects.*
FORCE_LOCK	This argument sets the system status to locked even if there are active users in the database. Users who log in during database maintenance receive the following message: *This database has been locked for database maintenance. You may not edit, delete, or create any objects.*

For example:

```
-DBMAINT_LOCK=LOCK
```

DBMAINT_LOG

The DBMAINT_LOG switch lets you specify a log file path and name. If a specific log file is supplied, a log file will be created for both checking for errors and fixing errors. This switch is optional.

If the specified file already exists, it will be overwritten. If you do not want the original file to be overwritten, you can specify a unique name in a batch script file. If no log file path is specified, the log file is placed in the versioned Exstream folder under the user's personal documents folder.

For example:

In Windows 7:

```
C:\Users\Public\Documents\OpenText\Exstream\Exstream #.#.###
```

In Windows XP Professional:

```
C:\Documents and Settings\All Users\Documents\OpenText\Exstream\Exstream #.#.###
```

If this switch is not provided, a temporary log file is still created for fixing errors and checking for errors; however, the log file is deleted after database maintenance is complete and content from the temporary log file is stored in the Exstream event log.

For information about viewing the Exstream event log, see "Reviewing Logged Events" on page 60.

The argument for the DBMAINT_LOG switch is the log file name.

Syntax:

```
-DBMAINT_LOG=<log file name>
```

For example:

```
-DBMAINT_LOG=Design_Update.log
```

DBMAINT_OPTIONS

The DBMAINT_OPTIONS switch lets you specify which options from the **Database Maintenance** dialog box are selected. This switch is optional. When you use the DBMAINT_OPTIONS switch, only the options specified in the argument(s) are enabled during database maintenance. Any option that is not specified in the switch is disabled during database maintenance. If you do not use the DBMAINT_OPTIONS switch, database maintenance uses the same default behavior as the default behavior when running from the Design Manager interface.

The default behavior for running from the command line and for running in the Design Manager interface is to run with the following options enabled:

- **Check for unreferenced embedded objects**
- **Check serialized LOB integrity**
- **Check for unsynchronized variable references**
- **Check for unsynchronized rule references**
- **Check for orphaned rules > Convert orphaned rules to named rules**
- **Check database referential integrity**

Syntax:

```
-DBMAINT_OPTIONS=<CHECK_UNREF_EMBEDDED_OBJS | CHECK_SERIALIZED_LOB | CHECK_UNSYNC_
RULE_REFS | CHECK_UNSYNC_VAR_REFS | CONVERT_ORPHANED_RULES | DELETE_ORPHANED_RULES
| CHECK_REF_INTEGRITY>
```

You must use one or more of the following arguments:

DBMAINT_OPTIONS arguments

Argument	Notes
`CHECK_REF_INTEGRITY`	This argument corresponds to the **Check database referential integrity** check box.
`CHECK_SERIALIZED_LOB`	This argument corresponds to the **Check serialized LOB integrity** check box.
`CHECK_UNREF_EMBEDDED_OBJS`	This argument corresponds to the **Check for unreferenced embedded objects** check box.
`CHECK_UNSYNC_RULE_REFS`	This argument corresponds to the **Check for unsynchronized rule references** check box.
`CHECK_UNSYNC_VAR_REFS`	This argument corresponds to the **Check for unsynchronized variable references** check box. If you specify the CHECK_UNSYNC_VAR_REFS argument, you must also specify the CHECK_SERIALIZED_LOB argument.

DBMAINT_OPTIONS arguments, continued

Argument	Notes
CONVERT_ORPHANED_RULES	This argument corresponds to the **Check for orphaned rules** check box and the **Convert orphaned rules to named rules** option. If you specify the CONVERT_ORPHANED_RULES argument, you must also specify the CHECK_SERIALIZED_LOB argument. This argument cannot be used with the DELETE_ORPHANED_RULES argument.
DELETE_ORPHANED_RULES	This argument corresponds to the **Check for orphaned rules** check box and the **Delete orphaned rules** option. If you specify the DELETE_ORPHANED_RULES argument, you must also specify the CHECK_SERIALIZED_LOB argument.This argument cannot be used with the CONVERT_ ORPHANED_RULES argument.

For information about the database maintenance options, see "Running Database Maintenance in Design Manager" on page 58.

For example:

```
-DBMAINT_OPTIONS=CHECK_UNREF_EMBEDDED_OBJS,CHECK_SERIALIZED_LOB,
CHECK_UNSYNC_RULE_REFS,CHECK_UNSYNC_VAR_REFS, CONVERT_ORPHANED_RULES,CHECK_REF_
INTEGRITY
```

DBPASSWORD

The DBPASSWORD switch lets you specify a password for password-protected databases. This switch is optional. The argument for this switch is the database password.

Syntax:

```
-DBPASSWORD=<database password>
```

For example:

```
-DBPASSWORD=xxx
```

DBSCHEMA

The DBSCHEMA switch lets you specify a database schema. This switch is optional. You might need to specify a database schema for SQL Server, DB2, or Oracle databases. The argument for this switch is the name of the database schema that you want to specify.

Syntax:

```
-DBSCHEMA=<database schema>
```

For example:

```
-DBSCHEMA=Customer_list
```

DBUSER

The DBUSER switch lets you specify a user name. This switch is optional. You might need to specify a user name for SQL Server, DB2, or Oracle databases. The argument for this switch is the user name.

Syntax:

```
-DBUSER=<database user name>
```

For example:

```
-DBUSER=DB_admin
```

DESIGNKEY

The DESIGNKEY switch automatically sets a new key in a design database.

Syntax:

```
-DESIGNKEY=Key
```

You use the following argument:

DESIGNKEY argument

Argument	Use
Key	Required

For example:

```
-AUTOCREATE=DESIGN,en-us -QUERYPATH=C:\Temp -DSN=MyDSN,,MyUserName,MyPassword
-DESIGNKEY=KeyExample1
```

DSN

The DSN switch opens the Database Administrator utility and selects the specified database DSN. The DSN switch is also used to specify the database on which to run database maintenance. Either the DSN switch or the ACCESSDB switch is required to run database maintenance from the command line.

Syntax:

```
-DSN=Database DSN,Schema,Database username,Database password
```

You use the following arguments:

DSN arguments

Argument	Use
Database DSN	Required
Schema	Optional
Database user name	Optional
Database password	Optional
DBAUTHENTICATION	Optional (If you use this argument, then the database user name and database password arguments are ignored.)

For example:

```
-DSN=MyDSN,,MyUserName,MyPassword
```

EMPTYACCESSDB

The EMPTYACCESSDB switch creates and opens an Access database using the specified file name. No tables are created. The file name can use either the `.mdb` or `.accdb` extension. Keep in mind that Access versions earlier than 2007 support only the `.mdb` extension.

Syntax:

```
-EMPTYACCESSDB=Access database path and name
```

You use the following argument:

EMPTYACCESSDB argument

Argument	Use
Access database path and name	Required
DBAUTHENTICATION	Optional

For example:

```
-EMPTYACCESSDB=C:\Temp\Sample.mdb
```

ERRORLOG

The ERRORLOG switch creates a log that contains all of the errors and the messages that normally appear in interactive mode. If you enter an existing file name, then the file is overwritten. If you use the ERRORLOG switch, then you must specify it before all other switches.

Syntax:

```
-ERRORLOG=ERROR log file name
```

You use the following argument:

ERRORLOG argument

Argument	Use
Error log file name	Required

For example:

```
-ERRORLOG=SAMPLE –AUTODATE=DESIGN, en-us –QUERYPATH=C:\Temp
–ACCESSDB=C:\Temp\Sample.accdb
```

EXSTREAMUSER

This switch lets you specify an Exstream super user name. This switch is required to run database maintenance from the command line. The argument for this switch is the Exstream user name.

Syntax:

```
-EXSTREAMUSER=<user name>
```

For example:

```
-EXSTREAMUSER=admin
```

EXSTREAMPASSWORD

This switch lets you specify an Exstream password. This switch is required to run database maintenance from the command line. The argument for this switch is the password for the Exstream user name specified in the EXSTREAMUSER switch.

Syntax:

```
-EXSTREAMPASSWORD=<user password>
```

For example:

```
-EXSTREAMPASSWORD=xxx
```

LANGUAGE

The LANGUAGE switch sets the language on the interface.

Syntax:

```
-LANGUAGE=Language code
```

You use the following arguments:

LOGFILE arguments

Argument	Use	Notes
Language code	Required	The following are the valid language codes: • `de-de` (German) • `en-us` (English) • `fr-fr`(French) • `ja-jp` (Japanese) • `nl-nl` (Dutch) The default is `en-us`.

For example:

```
-LANGUAGE=en-us
```

LOGFILE

The LOGFILE switch specifies the file used to log the create, update, copy, and drop processes.

Syntax:

```
-LOGFILE=Log file path and name,OVERWRITE
```

You use the following arguments:

LOGFILE arguments

Argument	Use	Notes
Log file path and name	Required	
OVERWRITE	Optional	Unless you specify the OVERWRITE argument, the LOGFILE switch appends to the file, if it already exists. This argument is not valid with copies. When you copy a database, the log file is always overwritten.

For example:

```
-LOGFILE=C:\temp\DBAdmin.log,OVERWRITE
```

NOPROMPTS

The NOPROMPTS switch suppresses interactive user prompts.

QUERYPATH

The QUERYPATH switch specifies the query path to use for the create, update, and drop processes.

Syntax:

```
-QUERYPATH=Query file path
```

You use the following argument:

QUERYPATH argument

Argument	Use	Notes
Query file path	Required	When entering the path, do not include a backlash (\) at the end.

For example:

```
-QUERYPATH=C:\Temp
```

REDOUPDATE

The REDOUPDATE switch lets you specify the type of update to perform on a database.

Syntax:

`-REDOUPDATE=CURRENT` or `<version number>`

You use the following argument:
REDOUPDATE argument

Argument	Use	Notes
CURRENT or <version number>	Required	• CURRENT will redo the update actions for the current version, in addition to any newer updates. • Specifying a database version number will redo the update actions from that database version forward. This is only used for the `-AUTOUPDATE` switch.

For example:

```
-REDOUPDATE=CURRENT or –REDOUPDATE=601001
```

TABLESPACE

The TABLESPACE switch lets you specify the tablespace you want the Database Administrator utility to use when it creates a new Oracle or DB2 database. The tablespace you specify in the switch is used for all of the Exstream tables created in the new database.

Syntax:

```
-TABLESPACE=Primary,Index,LOB
```

You use the following arguments:

TABLESPACE arguments

Argument	Use	Notes
Primary	Required	This argument is required only for Oracle databases. If you leave this argument empty when creating a new DB2 database, the Database Administrator utility uses the default tablespace specified in the query file.
Index	Optional	This argument is applicable for DB2 and Oracle databases only. If you leave this argument empty, the Database Administrator utility uses the default tablespace specified in the query file.
LOB	Optional	This argument is applicable for DB2 and Oracle databases only. If you leave this argument empty, the Database Administrator utility uses the default tablespace specified in the query file.

If you use the TABLESPACE switch, you must also use the following switch:

- AUTOCREATE

For example:

```
-AUTOCREATE=DESIGN,en-us -QUERYPATH=C:\Temp -DSN=MyDSN,,MyUserName,MyPassword -
TABLESPACE=
```

TABLESPACELIST

The TABLESPACELIST switch lists all of the available tablespaces for a DSN in a log file. If you want to specify the location of the log file, use the LOGFILE switch; otherwise, the Database Administrator utility uses the last log file defined. The log file lists one tablespace per line.

For example:

```
Begin Tablespaces
TABLESPACE:PRIMARY,USERSPACE1
TABLESPACE:PRIMARY,EXSTREAM_TS
TABLESPACE:PRIMARY,EXSTREAM_INDEX_TS
TABLESPACE:INDEX,USERSPACE1
TABLESPACE:INDEX,EXSTREAM_TS
TABLESPACE:INDEX,EXSTREAM_INDEX_TS
TABLESPACE:LOB,EXSTREAM_LOB_TS
End Tablespaces
```

Syntax:

```
-TABLESPACELIST
```

If you use the TABLESPACELIST switch, you must also use the following switch:

- DSN

For example:

```
-DSN=MyDSN,,MyUserName,MyPassword -LOGFILE=C:\temp\DBAdmin.log,OVERWRITE -
TABLESPACELIST
```

XOBALLVERSIONS

During the unloading process, the XOBALLVERSIONS switch unloads all of the versions of a versioned object. If you do not include this switch, Design Manager unloads the latest version of the object. If you use this switch, you cannot use the XOBKEEPAPPROVEDSTATUS switch.

Syntax:

```
-XOBALLVERSIONS
```

XOBFOLDER

The XOBFOLDER switch specifies the folder where the target object resides. Folders are specified by a forward slash ("/"). If this switch is not specified, it defaults to the root folder. The argument for this switch is the folder name of the folder where the target object resides.

Syntax:

```
-XOBFOLDER=<folder name>
```

For example:

```
-XOBFOLDER=/XOB_FOLDER_2011
```

XOBKEEPAPPROVEDSTATUS

The XOBKEEPAPPROVEDSTATUS switch specifies that any approved objects retain their approved status when loaded.

Syntax:

```
–XOBKEEPAPPROVEDSTATUS
```

XOBLOAD

The XOBLOAD switch specifies the name of the XOB file to load into the database. The argument for this switch is the XOB file name.

Syntax:

```
-XOBLOAD=<XOB file name>
```

For example:

```
-XOBLOAD=JanEndorsementApp.xob
```

XOBLOADENVIRONMENTAL

The XOBLOADENVIRONMENTAL switch loads environmental objects (objects that cannot be placed into folders). If this switch is not specified, environmental objects are excluded from the load unless they are required as a dependency for another object that is being loaded.

Syntax:

```
-XOBLOADENVIRONMENTAL
```

XOBLOADSYSTEMSETTINGS

The XOBLOADSYSTEMSETTINGS switch loads system settings if they are present in the XOB file. If the system settings are not present in the XOB file, then this switch is ignored. This switch is optional.

Syntax:

```
-XOBLOADSYSTEMSETTINGS
```

XOBLOG

The XOBLOG switch specifies the file that is generated to report either unload activity and errors or load activity and errors. The argument for this switch is the log file name.

Syntax:

```
–XOBLOG=<log file name>
```

For example:

```
–XOBLOG=June2Log.txt
```

XOBPASSWORD

The XOBPASSWORD switch lets you specify a password to protect the XOB file that is created. You must also use this switch to specify the password for loading a password-protected XOB file. This switch is optional. The argument for this switch is the database password.

Syntax:

```
-XOBPASSWORD=<XOB password>
```

For example:

```
-XOBPASSWORD=xxx
```

XOBUNLOAD

The XOBUNLOAD switch specifies the name of the XOB file to which the object will be loaded. You can unload any object type that is available in the Design Manager Library. The argument for this switch is the XOB file name.

Syntax:

```
-XOBUNLOAD=<XOB file name>
```

For example:

```
-XOBUNLOAD=JanEndorsementApp.xob
```

XOBUNLOADAPPEND

The XOBUNLOADAPPEND switch specifies that unloaded files are appended to an existing XOB file.

Syntax:

```
-XOBUNLOADAPPEND
```

XOBUNLOADAPPROVEDONLY

The XOBUNLOADAPPROVEDONLY switch specifies that only approved versions that were approved on or before the specified date are unloaded.

Syntax:

```
-XOBUNLOADAPPROVEDONLY=<approval date in the format of YYYYMMDD>
```

For example:

```
-XOBUNLOADAPPROVEDONLY=20110927
```

XOBUNLOADTARGET

The XOBUNLOADTARGET switch specifies the target object to unload from the database. If the object name is omitted, then all of the objects of that type are unloaded from the specified folder.

You can specify the following object types as arguments:

- APPLICATION
- APPROVALPROCESS
- APPROVALSTATE
- BANNER
- BARCODE
- BIN
- CAMPAIGN
- COLORFAMILY
- COLORTABLE
- CONNECTOR
- DATAFILE
- DESIGNLAYER
- DICTIONARY
- DOCUMENT
- DLFKEY
- ENCODING
- FOLDER
- FONT
- FLOWTARGET
- FORMFIELD
- FUNCTION
- GROUP
- INSERTER
- JURISDICTION
- LANGUAGE
- LIBRARYCOMPONENT
- LIBRARYRULE
- LIBRARYSEARCHKEY
- LIST
- LIVEACTION
- LIVESETTINGS
- LIVETHEME
- LIVETOOLBAR
- LIVEVIEW
- LOCALE
- MESSAGE
- MESSAGETYPE
- METADATA
- MULTIPLEUP
- NAMEDCOLOR
- OUTPUT
- OUTPUTQUEUE
- PAGE
- PAGETEMPLATE
- PAPERTYPE
- PARAGRAPH
- RECIPIENTPROFILE
- SECTION
- STYLE
- STYLESHEET
- SYSTEMSETTINGS
- TAGSET
- TEMPLATE
- USER
- VARIABLE

Syntax:

```
-XOBUNLOADTARGET=<object_type/object_name
```

For example:

```
-XOBUNLOADTARGET=PAPERTYPE
```