

# Magic xpi 4.5 Release Notes



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# General Information

## Introducing Magic xpi 4.5

We are delighted to provide you with the new major release of Magic Software's Magic xpi Integration Platform. The new features and enhancements are designed to improve your user experience with the new look-and-feel as well as provide additional functionality for your integration projects.

Magic xpi 4.5 is based on Magic xpa 3.1.

## Migrating from Magic xpi 4.1 to Magic xpi 4.5

The Migration wizard automatically opens when you open an existing .ibs file.

**Note:** If the object names in your projects are in the language of your locale (such as flow names or variable names in German), the locale of the machine must match the locale used in the project when doing the migration. In addition, the **magic.ini** file's **[MAGIC\_ENV]ExternalCodePage** flag must also match the used locale.

## Steps Required After Migration

- uniPaaS steps and Component SDK steps that were created in uniPaaS need to be migrated manually to Magic xpa.
- Web Service servers need to be deployed manually after migration.
- External files need to be copied to the new project's location according to the old project's hierarchy.
- The migration process does not change any .ini files or its values. To use new values, after migration, delete or rename the old **ifs.ini** file and build the project. A new **ifs.ini** file will be created with new values.
- If you had logical names defined in your **Magic.ini** file (not in the **ifs.ini** file), when migrating a project add the logical names (environment variables) to the **Magic.ini** or **ifs.ini** file. If the environment variables are project specific, you can add them to the project's **ifs.ini** file. For non-project specific environment variables, copy them to the **Magic.ini** file. Note that Magic xpi 4.5 is project centric, meaning that the Studio loads the environment variables from the **ifs.ini** file.
- If the Invoke Flow utility uses an expression containing hard-code IDs, it might not point to the correct ID after the migration process, since these IDs may change during the migration. It is recommended to use the dedicated functions, such as **GetFlowID** and **GetBPID**, which calculate the ID at runtime based on the flow or business process name.

- If the **SpecialExpReturnNull** flag is not already present in the migrated project's **ifs.ini** file, you should add it to that file's **[MAGIC\_SPECIALS]** section and set it to **Y** to maintain backward compatibility with projects created in earlier versions of Magic xpi or iBOLT. This flag maintains backward compatibility when comparing a variable that has a Null value to an empty value.
- If your migrated project has any user-defined components, the folder containing them must be copied from its old location to the new location. Any changes to the **Resource\_types.xml** and **Service\_types.xml** files that are connected to user-defined components must be done manually.
- JD Edwards World resource definitions should be updated with a library if such definitions do not exist.
- The JD Edwards Enterprise One configuration has been simplified and now uses a dedicated class loader. It is no longer required to list all of the jar files in the **Magic.ini** classpath. If you are using the new class loader, make sure to exclude the **j2ee1\_3.jar** from the **jar** folder. Refer to the **Configuring the JD Edwards Enterprise One Connector** topic in the Help for specific instructions.
- Due to major changes in the Salesforce metadata API, you will have to reconfigure the Metadata CRUD method's **Update** and **Delete** operations.
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## Licensing

To use Magic xpi 4.5, you need to obtain version 4.x licenses. To obtain Magic xpi licenses, please contact your local Magic Software representative.

## Prerequisite Changes

### .NET Framework

The Studio module of Magic xpi is based on the .NET Framework. The following .NET Framework requirements apply:

- To develop an application using the Magic xpi Studio, you must have .NET Framework V4.0 (or above) installed on your machine.
- For Runtime, the Magic xpi In-Memory Data Grid requester requires .NET Framework V4.0 (or above).

### Studio Installation

The Magic xpi Studio is based on Microsoft Visual Studio, which cannot be started from a network folder. Therefore, it is not possible to start the Magic xpi Studio from a network folder.

## Internal Database Changes

Writing and reading from the internal database is done using JDBC and not by using the Magic xpa gateways. Magic xpi provides the JDBC driver (JAR file) for MSSQL databases. To work with any of the other databases:

1. Copy your JDBC drivers to the following folder: **<Magic xpi 4.5>\Runtime\java\DatabaseDrivers**.
2. Configure the database settings in the **Runtime\config\datasource.xml** file to match your DBMS. Make sure that the **driverClassName** defined in the **datasource.xml** is compatible with the JDBC driver.



# New Features, Feature Enhancements and Behavior Changes

## New and Improved Studio

The new Visual Studio-based Studio offers an intuitive and user-friendly experience. The new Studio offers a variety of enhancements, including:

- Docking capabilities.
- A MiniMap to enable you to navigate quickly within long or wide flows.
- A Toolbox pane that replaces the **Components** pane. All the Magic xpi components and utilities appear in this pane, grouped together under specific categories.
- A Solution Explorer that replaces the **Navigation** pane.
- A dedicated **Properties** pane that displays the properties of whichever part of the project that you are parked on.
- A **Settings** dialog box that includes the Resource Repository, Service Repository, and **IFS Settings** dialog box from Magic xpi 4.1. This also includes the **Magic.ini** file settings. This can also be accessed as a stand-alone editor, allowing you to configure your project without opening the Magic xpi Studio.
- A combined search functionality. The **Find Name** and **Text Search** of Magic xpi 4.1 were combined into the **Find Text** dialog box.
- The copy and paste mechanism has been enhanced, including the support of multiple pasting of steps and branches.
- Non-English characters can be used in the names of business processes, flows, and steps, as well as in descriptions. The names of projects, resources, services and variables can only be written in English characters or the language of your machine.

## Behavior Changes

- In Magic xpi 4.1, since the **Magic.ini** file took precedence in the Studio and the **ifs.ini** file took precedence in Runtime, you had to maintain your environment variables in both files. Now, in Magic xpi 4.5, the **ifs.ini** file always takes precedence over the **Magic.ini** file, both in the Studio and in Runtime.
- The keyboard combination for opening an existing project is now **Ctrl+SHIFT+O** instead of **Ctrl+O**. The keyboard combination for creating a new project is now **Ctrl+SHIFT+N** instead of **Ctrl+N**.
- Inserting a flow or business process is now done using the **Project > Add** menu.
- The default project location is now under your **My Documents** directory, in the **Magic** folder.

- Setting how the Studio opens is done using the **At Startup** drop-down list. This is accessed by going to the **Tools** menu, clicking **Options**, and selecting **Startup** in the **Environment** section. This is similar to the **Startup As** property that was available in Magic xpi 4.1's **Customize** dialog box.
- The disabling, enabling, and deactivating of individual flows is now done through that flow's **Properties** pane.
- Flow IDs in Magic xpi 4.5 are unique to a specific project, whereas in Magic xpi 4.1 flow IDs were unique to a business process.
- The **Clear Mode** property has been moved to the **Project Properties** window, and can now be used to clear ODS information only.
- Defining a flat file structure is done using the **List** property.
- The following functions were added to the Expression Editor:
  - ClientCertificateAdd
  - ClientCertificateDiscard
  - RqHTTPHeader
  - UTCDate
  - UTCmTime
  - UTCTime
- If the Magic xpi Server does not succeed in executing a step before reaching the retry limit, the last error received is now automatically held in the **C.sys.ErrorCode** context variable. If you want to clear the error instead of holding it, you should set the **ifs.ini** file's **StepRetryClearError** flag to **Y**. In addition, you can control the delay between retries with the **ifs.ini** file's **StepRetryDelayTnSec** flag.

## Magic Monitor

- The Magic Monitor now offers all of the monitor capabilities for Magic xpi, including the new support for the Activity Log, ODS, and BAM.
- In addition, Activity Log messages can now be filtered when working offline.
- You can click the new **Messages History Export** button to generate and download a zip file containing a CSV file that holds all the messages related to the selected project.
- The Magic Monitor lets you force the immediate invocation of a Scheduler on a specific flow, without changing the next trigger invocation time, once the project is running again. You do this by selecting **Invoke** from the Scheduler's context menu.
- The Magic Monitor allows new drill-down capabilities based on the FSID, Root FSID and Flow Request ID.

## Behavior Changes

- In the Monitor, during runtime, the server deletes all ODS records belonging to a completed FSID. In Magic xpi 4.1, these records appeared even when they were no longer active.

- BLOB variables in Save Message steps can now be saved to the file system instead of the database. The **FILELOCATION** column in the **ifs\_actlog** table stores the value from the **[MAGIC\_IBOLT]ActivityBlobFileLocation** flag concatenated with the file name when the project loads. The BLOB will be shown in the Magic Monitor whether it is saved in the BLOB variable or in the file system. If the BLOB is saved in the file system, the Magic Monitor will search the BLOB according to the **FILELOCATION** column. When clearing the Activity Log from the Magic Monitor, these BLOBs will be deleted whether they are saved to the database or on the disk.

## Enhanced Connector Builder

The SDK from previous versions has been enhanced. The new Connector Builder lets 3GL programmers build, distribute and sell professional looking connectors. The Connector Builder offers:

- The ability to combine steps and triggers in a single connector
- Out-of-the-box support for the Magic xpi Studio utilities
- Customizable UI configuration for both steps and triggers
- Data Mapper support for a dynamic step
- Java and .NET runtime technology
- Runtime isolation via a class loader
- Licensing
- Encryption

## Data Mapper Enhancements

### JSON Support

The Data Mapper can now work with JSON schemas.

### Default Database Schemas

- You can now determine which database schema will be loaded by default from the cache (offline) and which will attempt to connect to the database in order to refresh its structure (online).
- You can refresh multiple database schemas by clicking the  button on the toolbar or by clicking the **Edit** menu and selecting **Refresh Database Schemas**.

## WCF Client Connector

The WCF Client connector generates C# code to access .dll files and schemas for later use during runtime. This new connector provides easy and secure access and consumption to a large library of services based on this worldwide standard.

## Dynamics AX 2012 Connector

The Dynamics AX 2012 connector is now offered as a built-in connector in Magic xpi 4.5.

## MQTT Connector

The MQTT connector lets you work with MQ Telemetry Transport (MQTT), a lightweight network protocol used for publish-subscribe messaging between devices.

## Dynamics CRM Connector Enhancement

The Dynamics CRM supports additional authentication types. It is now a .NET connector for on-premise Dynamics CRM servers and not a Java connector as in previous versions. For online servers, it is still a Java connector.

**Note:** When you set the Dynamics CRM resource's **Secured Connection** property to **Yes** and the **Deployment Type** to **On Premise**, set the **DCRMAD** flag in the **Magic.ini** file's **[MAGIC\_IBOLT]** section to **Y**.

## SAP R/3 Connector Enhancement

The SAP R/3 connector enables communication over Secure Network Connections (SNC).

## JD Edwards Enterprise One Jar Files

Magic xpi is now using a dedicated class loader for loading all of the JD Edwards Enterprise One jar files. It is no longer necessary to specify these jar files in the classpath (either the machine classpath or the **Magic.ini** classpath) and no longer necessary to copy them to the Magic xpi folder. The JDE connector now has a dedicated folder for all of its jar files. If you are using the new class loader, make sure to exclude the **j2ee1\_3.jar** from the **jar** folder.

## Additional External Services

- A Flow Enablement service. Now the flow enablement can be defined as an external service and can be modified and affect a project without the need to rebuild the project.
- A Scheduler service. Now the scheduler can be defined as an external service and can be modified and affect a project without the need to rebuild the project.

## SFTP Support

Magic xpi 4.5 offers support for the SFTP protocol in addition to the FTP protocol.

## Salesforce TLS 1.2 Support

Magic xpi now supports the TLS 1.2 encryption protocol for the Salesforce connector.

## Windows® 10 Support

Magic xpi was tested and is compatible to work with Windows® 10.

## An Additional Space and Processing Unit

In addition to the existing MAGIC\_SPACE, Magic xpi now includes

- A MAGIC\_INFO space that holds the Activity Log as well as statistics for the monitor and ODS data.
- An MGMirror processing unit, which is responsible for managing the write operation of the Activity Log and ODS data to the database.

## Magic xpa User-Defined Functions

You can now use Magic xpa user-defined functions in Magic xpi.

## Debugger Enhancements

The Breakpoints and Suspends pane is now accessible during development.

## Behavior Changes

- Reconnecting the Debugger in the Studio: In Magic xpi 4.5, the Studio will try to reconnect when there are connectivity problems between the Debugger and the runtime project, according to a number of rules, such as several retries and timeouts. In Magic xpi 4.1, for these types of problems, the Studio terminated the debugging session.
- Starting the Debugger is done by pressing **F5** instead of **SHIFT+F7**.
- When a project is running in Debug mode and the Studio is terminated, after the Studio stops publishing that it is alive, the running project will terminate internally. This prevents projects in debug mode running without having a studio controlling them. In addition, when attaching to a running project and moving it into Debug mode, if the Studio stops publishing that it is alive, the project will move back to production mode.

## Terminology Changes

The following terms were changed:

- Services to utilities: This is referring to the Services that were in the Components pane in Magic xpi 4.1.
- The uniPaaS component has been renamed to the Magic xpa component.
- The System i connector has been renamed to the IBM i connector.
- The SugarCRM connector has been renamed to the Sugar connector.
- The **Always use the new Picture** node property was renamed to **Always Use Custom Picture**.
- The **Exception Handling Flow** property in database destinations was renamed to **Error Handling Flow**.
- The project's executable extension was changed from **.ibs** to **.mgxpiproj**.
- Compound Level Computation is now called Multi Update.
- Cross Reference has been renamed to Find Reference.

## Removed Functionality

The following features are no longer supported in Magic xpi:

- Rights Repository
- Security Groups Repository
- Users Repository
- Project Packager
- COM component: In migrated projects, during runtime, the COM triggers will be removed.
- EJB component: In migrated projects, during runtime, the EJB steps will be treated as NOP steps and triggers will be removed.
- Domino component as a trigger: In migrated projects, during runtime, the Domino triggers will be removed.
- W4 component: In migrated projects, during runtime, the W4 steps will be treated as NOP steps and triggers will be removed.
- ItemField component: In migrated projects, during runtime, ItemField components will be removed.
- Legacy monitor including the **ifm.ini** file
- Text Area tool
- The Find Reference feature is not available for resources and services. To find where a resource or service is used, use the **Find Text** option on the current project.
- WS bridge
- SharedValGet and SharedValSet functions
- Magic xpi 4.5 is no longer compatible with the Windows® 2003 operating system. This is because, by default, Microsoft does not support .NET Framework 4.5.2 (required by Magic xpi 4.5) with the Windows® 2003 operating system.
- The **Project Rename** option has been removed. To rename a project, you can use the **Save Copy As** option instead.
- Object names cannot contain any of the following characters: [space] ~ ` ! @ # , % ^ & \* - = + ( ) { } [ ] | " ? / \ < > ; or more than one dot (.).



## Currently Not Supported Features

The following features are currently not supported in Magic xpi:

- Import/Export
- Printing a project
- The **Customize** dialog box
- UDDI Server
- JSON schema elements that contain the word: **not**.
- Topology and Business Process editors



## Fixed Customer Issues

QCR #	Description
110227	In some cases, the JVM_ARGS= flag in the Magic.ini file did not work properly if the Magic xpi installation path contained 18 characters.
114701	The XML Validation component failed to validate XMLs that were known to be valid.
114722	When defining a Web service with an XML Document as the Argument Type, elements were not shown when changing to a different schema.
114764	The Magic xpi Studio froze when a calculated value was entered in the Data Mapper.
114773	In the Data Mapper, a Select query returned blank values from a table if a WHERE clause in the query had a value in Hebrew and the code page was set to 1252.
114803	The Debugger sometimes failed when a project contained only one thread.
114818	When using a certain Argument XML document file as an XML schema, the elements were not shown.
115855	The Google Docs connector's Upload Item method could not locate parent folders by key.
117591	An error was generated when a variable in a WHERE clause was set to null.
117872	When calling a Magic xpi program from Magic xpa, an error occurred.
117877	.NET components did not connect to the internal database upon startup, causing the flow to crash.
118219	It was not possible to disable the Always Create Nodes parameter if the Max Occurrences node property was set to 1 under certain conditions.
119409	When using the Directory Scanner component as a trigger, the wrong trigger line number was given in the "Source directory does not exist" error message.
119900	When using the ODBC DBMS, an error was generated under certain circumstances when trying to insert data into the database.
120127	The BlobRemoveBOM function did not work with UTF8 BLOB flow variables that resulted from a Data Mapper step.
120219	The UDSGetField function did not work with UDS BLOBs that were received as arguments from a parent flow Data Mapper step via a call flow.
120451	When the Data Mapper converted Numeric data to Alpha data, leading blanks were generated.

QCR #	Description
120853	When running a Salesforce Query operation on a child object, there was an error during runtime.
121263	Leading spaces were trimmed when selecting the Append Data check box in the Data Mapper's XML Destination Properties dialog box.
121447	Too many acknowledge messages per IDoc were sent when using SAP R/3.
121465	The Magic xpi Monitor showed either corrupted information or no information at all on a machine working with the Portuguese language.
121656	When working with the Email component as a trigger, emails could not be retrieved from the mail box under certain circumstances.
121818	The SAP R/3 connector missed some segments when sending IDocs.
122039	The % character could not be used in a database password.
122055	The log4j.xml failed to work with the magicxpi.activity.flow.started and magicxpi.activity.flow.stopped loggers.
122414	The config folder's projectsStartup.xml.example file did not contain the alternateHosts attribute.
122759	The SugarCRM V10 trigger retrieved information in an incorrect XML format.
122767	The Salesforce setRefbyExternalId function did not work with numeric values.
123162	The varchar(MAX) database field could not be updated with a specific XML file under certain circumstances.
123171	When working with large projects, the build process sometimes took a long time to finish.
123782	The STRFormat function removed commas from source strings erroneously.
123991	When the Data Mapper's Destination database was not available, connections were lost in specific scenarios.
124207	Spaces in Web service endpoints called by the OverrideSoapSpyForIntegratedAuthentication flag were replaced by percent signs (%), causing the call to fail due to missing text.
124284	When working with the SugarCRM trigger, an error was sometimes generated when the trigger's values contained an ampersand (&).
124567	When using the Data Mapper with an MSSQL database, NULL values were not set correctly.
124736	An error log file (strerr.log) was created in the root folder when working with the SugarCRM connector.

QCR #	Description
124905	The SugarCRM connector failed under certain circumstances.
125088	When using MSSQL 2012 as a database resource, Magic xpi sent the wrong SQL statement after getting the list of tables.
125547	The Magic xpi 4.1 server crashed sporadically under certain conditions.
125662	When a Directory Scanner trigger contained several lines, one of the lines would sometimes crash during production.
126490	After migrating a project from Magic xpi 3.4, the uniPaaS component's trigger argument values were wrong after several remote calls were made.
127013	It took several seconds to send an IDoc from Magic xpi to the SAP R/3 system in a specific project.
127814	When working with the Salesforce API version 32, geolocation types were returned as objects instead of as strings.
128274	When working with Sugar 7.6, the Sugar connector generated an unexpected error message under certain circumstances.
128591	Images embedded in the body of a mail could not be downloaded.
129470	Project migration from Magic xpi 4.1 to Magic xpi 4.5 failed under certain circumstances.
129581	The filtered information in the Magic Monitor's Activity Log was not displayed according to the colors that were defined for it.
130395	When working with SugarCRM v7.6, an error was generated when refreshing an XSD or when performing operations on Calls and Meetings modules.
131001	There were many thread crashes in some projects.
131456	Magic xpi did not create valid XMLs in certain cases.
131485	Chinese characters were not shown when using data conversion tables.
131778	The Monitor's Activity Log tab displayed information in the wrong order when sorted according to ascending or descending values.
131950	When working with the SetHTTPHeader function, it was not possible to use a colon in the value.
132014	When working with the BAM utility, modifications to file extensions were not saved.
132205	The SharePoint connector's Query operation did not work with the TLS protocol.
132791	The Exchange connector's task query operation did not work when applying the daylight saving fix on a Japanese machine.

QCR #	Description
133008	A Directory Scanner trigger with an FTP source did not work when the FTP's AS/400 attributes were configured in UNIX list format.
133768	The HTTP trigger generated a FIPS error message in the IIS requester.
134026	When the value of the <latestDateCovered> parameter in the trigger.xml file was less than the current date, the Sugar connector trigger did not work properly.
134029	When working with the V10 API, the Sugar connector could not query Contact objects.
135190	When migrating a Magic xpi 4.1 project, the Condition property value of a Call Flow complex node was removed.



# About Magic Software Enterprises

Magic Software Enterprises (NASDAQ: MGIC) empowers customers and partners around the globe with smarter technology that provides a multi-channel user experience of enterprise logic and data.

We draw on 30 years of experience, millions of installations worldwide, and strategic alliances with global IT leaders, including IBM, Microsoft, Oracle, Salesforce.com, and SAP, to enable our customers to seamlessly adopt new technologies and maximize business opportunities.

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