Magic xpi 4.9 Release Notes

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New Features, Feature Enhancements and Behavior Changes

REST Client

- The REST Client component is now available in Magic xpi. It enables the user to consume REST APIs.
- The REST Client component allows the user to add or remove the REST Path parameters and define the Query parameters, Header Parameters, and Request and Response Form parameters.
- It supports HTTP-Basic, HTTP-Digest, and OAuth2 authentication.
- The user can configure different Content Types and send and receive attachments as well.
- It also provides the ability to invoke the Get, Post, Put, Patch, Head and Delete operations on a given REST service.

Custom (EBCDIC) Encoding Support for Data Mapper Utility

The Source and Destination sides of the Data Mapper utility now have a provision for setting the Custom (EBCDIC) Encoding for the Flat File schemas. The Code page value has to be selected when the encoding is set to Custom.

Custom (EBCDIC) Encoding Support for File Management

The File Management component now supports Custom (EBCDIC) Encoding for Append Blob to File, Create File, and Write File methods. The Code page value has to be selected when the encoding is set to Custom.

EBCDIC Conversion Functions

UnicodeToCustomCodePage and **UnicodeFromCustomCodePage** functions are now added to the list of supported functions.

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Authentication Support for OData Connector

The OData connector now supports the Basic, Digest, and Windows (NTLM) authentication.

Deep Insert Support for OData Connector

The OData connector supports generating payload for creating an entity with its related entities. This enables the deep insert call to the OData service.

Deep Insert Payload Support in OData Provider

The OData provider now supports handling of deep insert payload contained in the request.

OData Provider Support for Importing Metadata

Now the OData provider can load an existing service metadata (OData V4) from a file and expose a similar OData interface as the one defined with the loaded metadata.

XML Position Forwarding

XML Position Forwarding should not be used to access the direct non-compound children of the Parent in the called flow. Instead, direct non-compound children should be made available in the called flow using the flow variable. The caller flow should map direct non-compound children to flow variable(s) of the called flow.
Refer the **XML Position Forwarding** topic in the *Magic xpi Help* for specific instructions.

Platform Support in Sugar Resource

The Sugar resource now allows the user to specify a Sugar approved platform value.

SugarCRM V11.x REST API Support

Magic xpi was tested and is compatible to work with SugarCRM V11.x REST API.

Separate Trigger's Database Support for SAP B1 Connector

The SAP B1 connector now supports hosting of the SAP B1 trigger table on a different database than the company database. If the database holding the trigger table is hosted on a different server than the company database, then that server should be a Linked Server.

Implementation Changes for the Stored Procedure in Company Database

The ibolt_notification stored procedure and the ibolt_trigger table are not used in the SAP B1 company database anymore. If they already exist, the users are required to delete them.

TimeSheet Service Support in SAP B1

A **TimeSheet** service is now added to the list of available services in the Service Object List for the SAP B1 connector.

ProfitCenter Service Support in SAP B1

A **ProfitCenter** service is now added to the list of available services in the Service Object List for the SAP B1 connector.

Custom Web Server Location for Magic Monitor

The Web Server location for the Magic Monitor Display Server can now be changed by using the **WEB_SERVER_LOCATION** system property.

Log4net Support for Logging in the Dynamic CRM Connector

The Dynamic CRM connector now offers a dedicated logging support at the design time as well as at the runtime.

Retry Support in Engine to Load the ServerData Object

Now the Magic xpi engine has configurable retry support to load the ServerData object from the Magic Space.
The retry count can be configured in the [MAGICXPI_GS] section of the Magic.ini file with the flag **CheckServerEntryInspaceRetrytimes**.

Proxy Support for Magic xpi Debugger

The Magic xpi Debugger can now be configured to connect through a Proxy Server. Both System proxy server (configured in the Internet Explorer) and Custom proxy server (configured in the Studio specifically for the Debugger) are supported.

Proxy Support in SharePoint Connector

Now the SharePoint connector supports integration with On-premise or On-demand SharePoint application through the proxy server.

Proxy Support in Exchange Connector

Now the Exchange connector supports integration with application through the proxy server.

Custom Fault Schema Per Operation for WCF Client

The WCF Client step now generates a Custom Fault schema for each operation if the fault schema is defined for the operation.

Custom SOAP Headers Support

The WCF connector now supports defining and extracting the user defined custom SOAP Headers.

Additional Index for Log Table

An additional index is now added for the Activity Log table. This is added as a part of the SQL script file named **UpdateTable1.sql**, which is shipped along with the product. This SQL script is available for the supported databases and will be installed under the database type folder.

The index will be added automatically during the product installation only if the user had selected the **DB Creation** option as 'now' during the main product installation. In case the **DB Creation** option is selected as 'later' then the user has to run the scripts manually after the installation. The automatic index creation only applies if the internal database is selected as MSSQL or Oracle.

Optimization in MGMirror Processing Unit

The MGMirror processing unit service is optimized to replicate the data from Magic_INFO Space to Activity Log Table.

Debugger On-premise Installation

Magic xpi now provides an additional service named **Magic xpi 4.9 Debugger** for configuring the Debugger on-premise installation hosted on the Tomcat Server.

UPSERT Support in Data Mapper

The UPSERT operation is now supported in the Data Mapper when Database is used as the Destination. The UPSERT statement can be enabled by setting the value for UPSERT as Yes in the Properties pane of the Database Schema properties. As of now, this functionality is supported for Oracle and MS-SQL Database type.

Undo and Redo Support in Data Mapper

Now the Data Mapper supports Undo and Redo actions for modifications to the schemas, connections, and properties (for both schemas and nodes), as well as colors.

Return Code Support for Command Line

The Command Line method of the File Management component now provides the Return/Exit Code for the batch file execution. This functionality is only available for the Windows based platforms, and the Timeout parameter is set to 0.

Sorted Flow List for Invoke Flow Utility

Now in Invoke Flow Utility, the Flow List displaying the list of flows to be invoked will be displayed in an ascending order.

Cloud Support

- Magic xpi now allows its users to deploy the projects on the Cloud, hosted on AWS and configured as EC2 instance, with Magic xpi Linux server environment installed on top of it.
- The users can now create projects of type **Cloud** and also have an option to convert the project type from On-Premise to Cloud and vice versa.
- A new **Cloud** menu is added to the Studio. This enables the Studio users to save a project to the Cloud, download it from the Cloud and delete it from the Cloud. The user can deploy a successfully built project to the Cloud.
- The Debugger is now enhanced to debug a project deployed to the Cloud as well as on-premise projects with some additional configuration.
- Also, the Magic Monitor has been adjusted to work with projects on the Cloud.

Flow Timeout Behavior

Once the flow times out, the timeout being the total of Flow timeout and Flow Grace timeout values, the Worker Status changes to value as **STUCK** and the License status gets displayed as **CHECKED_IN**. Once the Flow delay step is completed, the flow will get aborted.

Non-supported Function

The function **RqHTTPHeader** is no longer supported in Maigc xpi. To retrieve the Request Header parameters, use the function getParam function. While using the HTTP trigger, setHTTPHeaders function should be used with FlowData to set the Response HTTP Headers while returning the HTTP response.

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Known Issues

- If the password for the Magic Monitor contains all numeric digits then the password length should be greater than 6 characters. The restrictions do not apply in case of alphanumeric passwords. This issue has been observed only with the underlying database is MySQL.
- The SharePoint Online component Query fails for some Lists or Libraries or folders when the record size (including documents and folders) exceeds the value of 5000.
- The OData service does not support defining the entity properties as a Complex type property containing another Complex type property.
- The OData Provider does not support sending multiple data types in one call for the Geography Collection types.
- Magic xpi fails to create the ODBC connection for PostgreSQL Database when incompatible versions of the Postgre ODBC Database Driver are installed on the system.
  To fix the issue, install the 09.03.0400 or 10.00 version of Postgre ODBC Database Driver which are compatible with Magic xpi.
- When using the Salesforce Lightning Experience interface, the Alerts Report returns no results and displays the "This developer name is invalid. Provide the developer name for the report that contains the chart" error.
- In case of upgrading to Magic xpi 4.9 from the older version, the installation will overwrite the **FunctionDescription.en.xml** and/or **FunctionDescription.ja-JP.xml** in the Studio directory in the Magic xpi installation. To avoid losing the data in files, the users should take a back-up of the files before installing the product and then merge the modifications, if any, post installation.
- Passing the Data Mapper source nodes as input values to the CallPublic function, arguments will result in an unexpected response.
- The Command Line operation for the File Management component fails to work, if the file selected for execution contains a space character in the file path.
- In XML Position Forwarding scenario, accessing the direct non-compound children in the called flow would lead to unintended behavior as the checker is unable to catch this mapping as wrong mapping.
- If Microsoft Visual C ++ 2010 Redistributable x64 is not installed, IIS/.Net Web requester (MgWebRequester) will not work. You can download the same from https://www.microsoft.com/en-in/download/details.aspx?id=14632

Fixed Issues

QCR #	Description
143184	In the Data Mapper, an XML destination's output variable contained incorrect names for replicated nodes.
146509	When the internal database was of type MSSQL or Oracle, the Magic monitor failed to retrieve records and threw an error, "No display name specified" for a specific project having more than millions of records in the Activity Log.
147282	The SQL insert statement constructed using the Data Mapper utility failed to parse when the columns had round bracket character in the name.
147350	The DB Disconnect property failed to close the connection and kept it open in inactive status when the database was used at the source side.
147450	The Email component failed to retain the CR/LF formatting of the body blob while receiving the e-mail.
147459	The IDOCs from the SAP R3 triggers, in some rare cases, were lost without processing and failed to return an acknowledgement, and thus resulted in an error message "Character reference '####' is an invalid XML character".
147521	The SAPB1 trigger failed to recover after the unexpected crash of the Database.
147541	When using MySQL as a Magic xpi internal database with huge records for activity logs, the Magic Monitor failed to open the blob, and threw an error.
147660	When working with a Magic xpi project, on a certain SharePoint resource an "Error 1350: SharePoint Call error : com.magicsoftware.ibolt.sharepointonline.IBSharePointException: getListItems (Exception): The server sent HTTP status code 429: null" was thrown.
147989	The SharePoint connector could not update the Null values when used with the SharePoint Update operation.
147993	After upgrading the Magic xpi installation to 4.7, the Magic.ini file got corrupted.
148018	The Cut menu item added to the standard toolbar, using the Add or Remove Buttons menu, was not restored after re-opening the Studio

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QCR #	Description
148111	The JMS trigger failed to retain Publish_and_Subscribe as a Message Model value and reverted the value to Point_to_Point, when the trigger was reopened.
148231	After migrating a project from 4.1 to 4.7, the mapping was lost when the INSERT statement on the destination pane of a Data Mapper was refreshed.
148235	After upgrading the Magic xpi installation to 4.7, the "NoClassDefFoundError" error was thrown by the Connector Builder on creating a new connector, which can be fixed by adding the helpers.jar to the Classpath section of the Magic.ini file.
148244	The WCF connector failed to set the String value for a complex type of element in case of a specific WSDL structure.
148252	The Systinet Server failed to start or stop through the BAT files due to the incorrect service name.
148257	If the data sent to the Update operation of the Sugar connector contained multiple consecutive TAB characters, then they were not escaped resulting in an error response from the Sugar server.
148278	After migrating a project from Magic xpi 4.1 to 4.7 the Data Mapper failed to recognize some of the data types in the XSD and displayed the fields as INVALID_S.
148305	After migrating a project from Magic xpi 4.6 to 4.7, the build failed without giving any warning message when the Data Mapper was referring to a certain schema file.
148327	In some cases, the checker returned an error "Illegal node definition", when the Data Mapper had calculated values through expressions.
148409	After upgrading a project from Magic xpi 4.6 to 4.7, the XML Position Forwarding functionality used in the Data Mapper step did not work.
148419	When Dynamic SQL was used in the Destination pane of the Data Mapper, the Calculated Value Expression was invalidated and Name node in the Source pane was replaced with the question marks, on reopening the Mapper screen.
148654	When a project was migrated from Magic xpi 4.6 to 4.7, the resource definition for an add-on connector was missing.
148655	The Dynamics CRM Resource failed to validate and returned an invalid SOAP fault when the password contained the "%" character.
148724	The database credentials were requested at the installation time even though the user skipped the installation of the internal database.

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QCR #	Description
148727	After migrating a project from Magic xpi 4.1 to Magic xpi 4.7, the logical names with a blank value were missing from the IFS.ini file.
148734	Inconsistent XML output was generated from the flow when two flows were running concurrently in different engines.
148847	If German Visual Studio 2010 Isolated Shell was installed on the machine, the Studio failed to configure the OData Service.
148853	The Sharepoint connector failed to check-in the uploaded document and displayed an error "'ERROR: addLibraryItems (Exception): Exception of type 'Microsoft.SharePoint.SoapServer.SoapServerException".
148878	The Create Calendar Event method of the Google Calendar component failed to run when Extended Properties were added to the calendar event.
148963	The OData connector did not have provision to set the credentials while using HTTP over SSL (HTTPS) and failed to get authenticated using the NTLM authentication as well.
149048	In the Data Mapper, the name of the node was displayed incorrectly for a particular Schema XSD file.
149068	An XML attribute for a specific XSD file, was not listed in the Data Mapper when using the Magic xpi 4.6 studio with a new project.
149080	In the Data Mapper, the data types for few elements were displayed as INVALID for a particular Schema XSD file.
149088	After migrating a project from Magic xpi 4.1 to 4.7, the end tag of the blob output of the xml message was shown incorrectly for a particular XML file.
149215	An error was thrown when a particular schema in the Data Mapper's Source or Destination pane had an element with a numeric type field containing a precise part.
149304	The SharePoint resource failed to validate giving an error, "Connection to the requested Sharepoint could not be established.createSessiononline" when the password had a special character in it.
149430	In the Magic xpi 4.6 Monitor, when a flow in a given project Flow List was disabled or enabled, the Flows List for other projects was displayed as empty.
149579	After migrating a project from Magic xpi 4.1 to 4.7, the checker gave new warning messages.
149710	The FTP component failed to authenticate at runtime when the resource had username greater than 30 characters.

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QCR #	Description
149828	When the internal database was of type MSSQL or Oracle, and the Activity Logs had more than a million entries, then the Magic Monitor displayed older records instead of the latest records.
149829	The context variable C.sys.InvokingBPName displayed a wrong value in a specific scenario involving a Logic Flow call.
150390	The Magic xpi server randomly crashed and restarted creating the dump files in the runtime folder.
150599	For the negative values, the prefix "N" was missing from the picture mappings for the XML file generated by the Bulk Operation of the Salesforce component.
150686	The Modify and Delete Event Operations of the Google Calendar component displayed an error when the event ID size exceeded the given limit.
150720	In some cases, the project threw "Memory shortage error" due to Magic info local cache.
150733	When working with the XML interface of the File Management component, an error was thrown on giving the XSD file present in the project directory.
150738	The Patch or Put methods in the OData update operation returned "org.apache.olingo.client.api.communication.ODataClientErrorException: (404) Not Found [HTTP/1.1 404 Not Found]" error on setting the data GUID.
150752	The project failed to generate the documentation and threw an error in the studio logs for a specific project in Magic xpi.
150833	The Magic xpi engine triggered a recovery process on the first time it failed to connect to the space giving an error, "[Gigaspaces] remote space not found/EntryNotInSpace, server is terminated".
150879	"[Gigaspaces] remote space not found/EntryNotInSpace, server is terminated" error was thrown randomly at runtime, for a certain project.
150919	In a Destination node of the Data Mapper, a condition expression could not be validated and threw 'Illegal node definition' error.
150970	When a flow was configured with multiple parallel steps, the Checker gave a warning message, "Parallel threads with no Wait for Completion step may cause integrity problems during recovery".
150977	For some Web Service calls, the execution of the WCF Client connector step exhibited slow performance.

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QCR #	Description
151056	The flow level DB transaction failed to work with the ODBC data source and threw an “ODBC Gateway: a driver is not supported by a gateway” error.
151071	The WCF Client failed to consume a particular web service and threw Error 1251: WCFClient call error: Type 'System.Xml.XmlElement' with data contract name 'XmlElement:http://schemas.datacontract.org/2004/07/System.Xml'
151073	A project went in an infinite loop when the Data Mapper was using the call flow which internally used the XML Position Forwarding.
151105	The Data Mapper skipped data when the file used in the source was generated from the Salesforce connector by using the Bulk Retrieve Query Results.
151132	An 'Out of memory' error was thrown when a huge amount of data was retrieved using the Bulk Retrieve Query Results method of the Salesforce Connector.
151281	The SFTP Resource failed to validate when configured with the public key and private key files.
151373	After starting the project, the result from the Salesforce Trigger was duplicated when the SFDC_Trigger.xml was configured with the same date in the <latestDateCovered> tag.
151653	In some cases Project failed to build when inserting a condition on one of the parent nodes.
151658	For a particular case, when Enumeration data type was used in the Post Operation, the OData Consumer failed with an error, “Incompatible type kinds were found”.
151669	When the Create operation in the Salesforce connector was used, the returned XML was invalid.
151707	The Data Mapper skipped data when the file used in the source was generated from the Salesforce connector by using the Bulk Retrieve Query Results.
151721	In the Data Mapper component, when an empty result from SQL is mapped to the XML in the destination pane, an incomplete UserXML is generated. To fix the defect, the user needs to add the User Environment Variable named as IncludeEmptyRootElement and set the value as Y. In case of the existing projects, the projects need to be rebuilt.
151831	The Magic xpi Runtime failed to establish the database connection after the database connection was lost and the database was restarted.

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QCR #	Description
151878	The Magic xpi studio abruptly terminated when any Flow Variable was deleted from the project.
151994	The SAP R3 component failed to commit the data while creating the sales order on the SAP server.
152192	For the particular XML and XSD Schema files, XML forwarding failed causing the flow to crash.
152248	The checker returned wrong information when the value in the resource field contained data along with the environment variable.
152299	The SharePoint resource in Magic xpi projects failed to connect to the SharePoint Online.
152316	The Delete method of the OData resource failed to populate the required header information for the request.
152319	The studio displayed an error message "Exception has been thrown by the target of an invocation" and crashed when the value of a Numeric Type of parameter was set to space and the resource for few connectors like SAP R3, SAP A1, JD Edwards EnterpriseOne, were validated twice.
152350	The Data Mapper failed to parse a Template File when the "MGREPEAT" tag was nested inside another "MGREPEAT" tag.
152373	In certain cases, the Data Mapper returned an error while loading a Template File containing tags having a name of 25 or more characters.
152638	The resultant IDoc for the SAP R3 component returned incomplete data.
152652	The OData connector returned "Null Pointer Exception" error, when the OData site had fields with Null value.
152681	When the DeleteFromSource property in the SharePoint connector was set to True, the file was displayed in both the panes even after moving it from the Source pane to the Destination pane using the Move operation.
152697	When a new argument was inserted between the two existing arguments, the project with an HTTP trigger failed to run and threw "Abnormal termination with exit code [128]" error.
152708	When the Data Mapper destination was defined as the Positional Flat File and the last field in the source had no value, then the field was not created in the resultant Flat File.
152715	The C.sys.LastErrorCode and C.sys.LastErrorDescription variables were not updated correctly when the Error Flow was executed at runtime for the Data Mapper component having the DataBase schema in its destination pane.

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QCR #	Description
152735	The CallPublic function failed to return numeric value with Magic xpa.ecf file.
152769	While creating a cross reference on any variable, for the given project, an error "A resource name was not selected. If you are using a dynamic resource, a default resource should be defined" was thrown.
152771	An error was thrown when the relative path to the JSON schema in the destination pane of the Data Mapper was given.
152813	When the DeleteFromSource property in the SharePoint connector was set to True, the file was displayed in both the panes even after moving it from the Source pane to the Destination pane using the Move operation.
152908	On using the XML Position Forwarding functionality of the Data Mapper, the project threw the ERR-THREAD-ABORTED (-139), Program: "Main Program" error.
152965	The POST method of the OData connector did not receive the response body sent by the OData service.
153047	For Japanese locale, the list of the libraries that exists in the user's DB2/400 Database resource was not displayed and manual entry was not possible.
153092	For a particular Web Service call, the execution of the WCF Client connector step exhibited slow performance.
153178	For the SQL Query with join subquery in the Data Mapper, if arguments were specified as variable, then "Error 9805: No value given for one or more required parameters" error was thrown.
153264	When trying to retrieve the Module List for the Sugar CRM step configuration, an error was thrown when the Logical Name was identical to the User Name.
153406	While working with Magic xpi studio, the Visual Studio threw a random error and required a Studio restart.
153421	When working with the Dynamic CRM resource on Japanese URL, the Organizations List could not be retrieved.
153666	The email message, of type HTML, did not retain the UTF-8 encoding when it was sent through the Email component.
153703	When working with AS400 on Japanese locale, the Data Mapper Wizard did not display the columns of the tables which were not selected at the resource level, for the database connection.
153896	When the Database Resource was configured with the CData ODBC Driver, the data source failed to validate.

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QCR #	Description
153897	When the Database Resource was configured with the CData ODBC Driver, the data source failed to validate.
154022	The "mgxpi-sapr3.jar not found" error was seen in the "MagicXpi.Log" file, though the SAP R3 step or trigger was successfully executed.
154946	While loading the SharePoint Web Service through the WCF Client resource, the service went into an infinite loop.
155142	When using one of the operations of the WCF Client connector, the service failed to load successfully and threw an error, "Collection type 'System.Xml.XmlNode' cannot be deserialized since it does not have a valid Add method with parameter of type 'System.Object'."
155317	When the OData connector was configured with Dynamics 365 Finance and Resource Operations, the "failed to loadODataResources. org.apache.olingo.client.api.http.HttpClientException: java.net.SocketException: Connection reset" error was thrown at the runtime.
155351	When RFCs contained the backslash ('\') character, the SAP R/3 connector threw an error, "Error 1103: SAP R/3 connector error return: com.magicsoftware.ibolt.sapr3.IBSapR3Exception: TABLE_NOT_AVAILABLE at com.magicsoftware.ibolt.sapr3.IBSapR3.executeFunction(IBSapR3.java:567)".
155763	The Command Line method of the File Management component always gave Error 207 "Failed to execute the command line" even after successful execution of the script file.
156369	The Magic xpi project with an HTTP trigger was getting restarted if the Timeout policy was set to Abort and a Timeout value was set for the flow.
156370	The same single file was incorrectly processed twice or multiple times which resulted in the insertion of duplicate records in the database.
156372	After the sleeping Java threads were killed by the managing thread, the whole server crashed.
156608	When an Alpha variable used in the expression, was initialized to an empty string, it was treated as null.

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Past Release Notes

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Magic xpi 4.7: New Features, Feature Enhancements and Behavior Changes

OData Provider

The OData Provider is now available as a service in Magic xpi. The OData service also provides an Entity Helper for the user to define the OData Service structure.

Encoding Parameter

The Encoding parameter is now added to the HTTP component. With this, it is now possible to control the encoding of the request body for the POST and REST methods of the HTTP step.

The Encoding parameter is also added to the File Management component. With this, it is now possible to control the encoding of the file written using the Append BLOB To File, Create File, and Write File methods.

Undo and Redo Commands

Magic xpi now enables you to undo one or more operations in the Flow Editor and redo the undone changes.

Required Licensing

The Required Licensing menu is now available under the Help menu of the Magic xpi Studio. It shows the license features required for the project which is open.

Flow Editor Enhancement

The following features are now available in the studio:

- Copying and pasting multiple steps
- Inserting a step between a parent of a branch and the branch
- The Project path link (BP and Flow) in a Data Mapper which allows to navigate back to the Flow Editor pointing to the corresponding Data Mapper step

Magic xpa Runtime Support

The Connector Builder utility now supports Magic xpa as a runtime technology. This option is available for the step as well as the trigger in the Flow Editor.

Installation Upgrade

It is now possible to upgrade the existing installation of Magic xpi 4.5 and higher to the Magic xpi 4.7 version.

Solution Explorer Icon Indication

The Solution Explorer now displays new icons to indicate the state of the flow.

Monitor Enhancements

For the Activity Log table in Magic Monitor, a **Step** column was added.

For the Filtered Activity Log table, **Step**, **FSID**, **Root FSID** and **Flow Request ID** columns were added along with an **Attached Blob** button.

SAPB1 – SLD Server Support

Magic xpi now offers SAPB1 support for SLD Server. A new property added to the resource allows the user to select between the License Server and the SLD Server.

SharePoint ADFS Support

The SharePoint Online connector now supports Active Directory Federation Services (ADFS).

Dynamics 365 Support

Magic xpi was tested and is now compatible to work with Dynamics 365.

Salesforce Connector Upgrade

Magic xpi now works with Salesforce API 39.

WebSphere MQ Resource

The WebSphere MQ Resource now supports the User ID and Password based authentication.

InventoryTransferRequest

The InventoryTransferRequest object is now available as a part of the Magic xpi Objects support.

SAPB1 9.3 support

Magic xpi now supports SAP B1 9.3 with the MSSQL 2016 database.

Non-supported Feature

The SNMP component is no longer supported in Magic xpi.

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Known Issues

- If a project is referring to files outside the project folder using the relative path, then after migration the references are not restored in the newly created projects. To restore the references, open and save all Data Mappers that use the external references. To find such Data Mappers, run Checker on the project.
- When sending an HTTP request with Body (POST/PUT), the content type and encoding header should be specified and should match the body content. For example, in case we send a POST request with UTF-8 encoded JSON body, we should specify the following header:
  Content-type: application/json; charset=utf-8
- Since Magic xpi 4.7, if the default value of a variable is used, then the spaces will be trimmed from the variable value.
- Since Magic xpi 4.7, at runtime, the default value of a variable will be trimmed as per the length defined for it.

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Magic xpi 4.6: New Features, Feature Enhancements and Behavior Changes

OData Connector

The OData connector enables you to consume OData V4 services. The OData connector offers the following:

- Use of the OData service metadata to automatically generate structures for Magic xpi.
- Support of all CRUD operations including patch.
- A query builder to build complex queries while still allowing you to manually enter and modify queries.
- The ability to add any HTTP headers to the requests.

ServiceMax Connector

The ServiceMax connector provides you with connectivity to the ServiceMax field service application.

Import/Export

Magic xpi now has Import/Export functionality, providing a convenient way to easily save or load project objects.
You can also import resources and services that you previously created and saved in other projects.

Dynamics CRM Enhancements

The Dynamics CRM connector now supports the **Upsert** operation. The connector also has a new method interface that supports Querying by FetchXML.
Since 4.6, by default, both the on-premise and on-demand implementations are .NET-based. This means that any new functionality, such as the Upsert operation, which was added since 4.6, will only work during Runtime on Windows operating systems.
Before 4.6, the on-premise implementation was .NET-based and the on-demand implementation was Java-based. If you want the previous behavior, where the online implementation was Java-based, change the value of the new **DCRMOnlineSDK** flag to **N**.

SAP R/3 Connector Enhancement

The SAP R/3 connector now uses JCO 3.0.15.

SAPB1 HANA support

Magic xpi now supports SAP B1 based on the SAP HANA database.

SAPB1 Services Support

Magic xpi now supports selected the SAP Business One **Messages** service.

HTTP Framework Setting

The **Magic.ini** file's **[MAGIC_ENV]** section now contains the HTTP Framework global environment setting, which specifies the underlying HTTP library to be used for the HTTP component. This change was done to support TLS1.2 for the HTTP functionality

Connector Builder Enhancement

The Connector Builder now has an **Endpoint** trigger invocation type, which runs outside of the Magic xpi engine.

Project Documentation

Magic xpi can now generate detailed printable reports of your projects.

IBM WebSphere® MQ 8.0 Support

Magic xpi was tested and is compatible to work with the IBM WebSphere® 8.0 client/server.

Microsoft® Windows Server 2016 Support

Magic xpi was tested and is compatible to work with Microsoft® Windows Server 2016.

Known Issues

- In an upgraded Magic xpi 4.5 or 4.5a project, you cannot modify an existing SAPB1 resource to use a SAP HANA database. You need to create a new SAPB1 resource instead.
- To use the native Microsoft® ODBC Driver for SQL Server® with the Magic xpi Studio, you need to replace the information in the **data_types.xml** file with the information from the **data_types_MSSQLODBC.xml** file. Both of these files are located at: **<Magic xpi installation>\Studio**.

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Magic xpi 4.5a: New Features, Feature Enhancements and Behavior Changes

Salesforce Licensing Prerequisites

To be able to use a Magic xpi license for Salesforce, you have to install the Magic xpi monitoring app that is on the Salesforce AppExchange. For information about how to do this, see the **How Do I Install the Magic xpi Salesforce App?** topic in the *Magic xpi Help*.

Salesforce Monitoring Utility

You can monitor your Magic xpi environments, view running projects, receive alerts, and get chatter notification about various events using the Magic xpi Force.com monitoring utility. For information about how to do this, see the **How Can I Monitor My Project Using Salesforce?** topic in the *Magic xpi Help*.

Java 8.0 Support

Magic xpi was tested and is compatible to work with JRE 8.0.
Note: JRE 8.0 is not supported for Systinet-based Web services (both consumer and provider). For the Windows operating system, to use a Web service consumer, you can use the WCF client.

SAP S/4 HANA Support

Magic xpi was tested and is compatible to work with the SAP S/4 HANA platform.

Field Type Behavior Change

Magic xpi does not have a default picture to handle **xs:union** field types. If your schema contains an **xs:union** field type, you need to add this type to the **Default Data Format** repository.
During migration, if you had an **xs:union** field type and it was mapped, after the migration process you will get a Checker error letting you know that you need to define your **xs:union** field type.

Known Issues

- Before migrating a project to Magic xpi 4.5a, make sure that all XSD files used by the Data Mapper are available in their declared location.
- The percent sign (%) cannot be used in a database resource password.

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Magic xpi 4.5 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 *Magic xpi 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.

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.

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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.

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- 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 IFC Model is now available as an option in the **XML Properties**. It is available for components with a static XML interface.
- 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 **Lines** property.
- The following functions were added to the Expression Editor:
    - ClientCertificateAdd
    - ClientCertificateDiscard
    - RqHTTPHeader
    - UTCDate
    - UTCmTime
    - UTCTime

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

For an in-depth explanation of how to use the Connector Builder, see the *Magic xpi Connector Builder* PDF in the Magic xpi installation.

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.

Java Class Connector Jar Files

When using the Java Class connector, the Studio no longer loads the **Magic.ini** file's **classpath**. Instead, you need to list the jar files in the machine's **classpath** or copy the jar files to the **runtime\java\lib** 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.

Error Retry Enhancement

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. This gives you the ability to check, in the next step's condition, if an error has occurred. You can clear the error from the variable by using the **ifs.ini** file's new **StepRetryClearError** flag. Setting the **StepRetryClearError** flag to **Y** will give you the same behavior as Magic xpi 4.1 In addition, you can control the delay between retries with the ifs.ini file's new **StepRetryDelayTnSec** flag.

Version Control Usage

Magic xpi supports version control for versioning. If there is a change to the project tree you need to get the entire project using the Version Control provider's Explorer.

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

Known Issues

The following are known issues in the current version of Magic xpi:

- When using the Java Class connector, the Studio no longer loads the **Magic.ini** file's **classpath**. Instead, you need to list the jar files in the machine's **classpath** or copy the jar files to th **runtime\java\lib** folder.
- Currently, Magic xpi supports source control for versioning. When there is a change to the project tree you need to get the entire project using the Source Control provider's Explorer.
- Setting the flow to suspended does not automatically check out the flow.
- The **Open with Editor** context menu option is not supported for mapper files.
- Environment variables are not currently supported for the Notes DB resource's **Host Name** property.
- The stand-alone editor can only edit resources and services if the **resources.xml** and **services.xml** files are located in the project's folder.
- For Numeric pictures, the **Picture** property in the Node Properties (for Data Mappers) can only contain numbers, decimal points and the letter N for negatives, such as N12.4.
- The Validation component's **Empty Field** method returns a False value when the **Input Value** parameter contains a string with spaces.

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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