Magic xpi 4.9.1 Release Notes

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New Features, Feature Enhancements and Behavior Changes

Maximum number of Records for Sugar Query

The Sugar connector now supports defining the maximum number of records to be fetched while performing the Query operation using the **Max Number of Records** field which can be specified on the Step.

Maximum Records for SugarCRM Trigger

For the SugarCRM connector as a Trigger, the maximum number of records to be fetched from the server can now be configured by adding the flag **SUGARCRM_Max_Number** in the **Magic.ini** file or **ifs.ini** file.

e.g. for ifs.ini
[MAGIC_IBOLT]SUGARCRM_Max_Number=300

Default Value: 1000
   i.e.by default the flag does not exists and thus Max_number will be set to 1000 in case flag does not exists.

Maximum Value: 1000
   i.e. if any value larger than 1000 is specified the connector will fall back to 1000, as that being a SugarCRM server limit.

Picture Format Support in Data Mapper

- The Data Mapper now supports the custom picture formats of type N12.4ZC and N12.4CZ or any partial combination of these supported directives.
- The Checker will give a validation error for any other combination(s).
- For Schema types other than Flat file, these directives are only valid when the **Always use custom picture** property is set to **Yes**.
- For the Flat File schema, the directives should be defined inside the line definitions. These directives will be reflected at the node properties.

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Increased Size of URL Dynamic Addition Parameter

The length of the URL Dynamic Addition string parameter for the REST method of an HTTP component is now increased to 20000 characters.

SharePoint Connector Upgrade

Magic xpi SharePoint component now supports SharePoint 2019 on-premise.

IBM Domino Server Support

Notes DB and IBM Domino connector are now certified for IBM Domino server v9.x and v10.x.

Known Issues

- The Sugar connector will discontinue connection support using TLS v1.1 v1.0. This will make the Sugar connector non-functional.

  The current known solution is to use Java 8 Runtime [32 bit] for the Magic xpi Server. Just replacing the JRE folder in the <Magic xpi install>\Runtime with the Java 8 JRE folder will fix the problem. It should work fine with JRE from the OpenJDK version too.

  The above setup has been tested to be working fine with Oracle Java 8 version, and the Zulu - OpenJDK version.

- The Web Service Client resource fails to load the WSDL file when an entry for the IBNPSRV license is not present in the license file.

- Magic xpi has a limitation for the size of payload to be sent and received as a Web Services provider. The verified, maximum payload size which can be processed is approximately 8 MB.

- The Magic Monitor Web UI fails to work in the Chrome browser for the operations like Stop and Restart projects.

- While processing large files in the Data Conversion component, the Magic xpi project gets stuck at "uninitialized" state.

  To fix the issue, increase the Java Memory Heap space allocation by setting the following values (or higher) to the JVM_ARGS=-Xms256m -Xmx1024m in the [MAGIC_JAVA] section of the magic.ini file.

Fixed Issues

QCR #	Description
MXPI-26	The CPU usage; on stopping the projects; was very high and it failed to come down even after the projects were stopped.
MXPI-34	The RESTClient component failed to connect with web servers using advance algorithms not included in core Java 7 libs. This has been fixed by including the Java Cryptography Extension, Unlimited Strength Jurisdiction Policy Files in the installation.
MXPI-36	After a Windows 10 update, on some operating system, selection done from any combo-box within the Magic xpi Studio threw an error "System.InvalidOperationException: Can only change SelectedItems collection in multiple selection modes. Use SelectedItem in single select modes."
MXPI-37	The Update operation for setting "Team Name" in the Sugar CRM connector.
MXPI-39	With certain LDAP servers, doing an ADD Group operation threw an "Invalid Syntax" Error.
MXPI-44	The project with the JD Edwards Enterprise One component got restarted abnormally at runtime when the Keep Session Open property was not selected on the step.
MXPI-53	Due to poor performance, the Data Mapper took more than usual time to process the Flat file mapped to a Flat file with encoding as UTF-8.
MXPI-58	The Japanese tag name in the Data Mapper Output XML was displayed as garbled while running on the Japanese locale.
MXPI-59	The '[' and ']' (square bracket characters) were not allowed in the REST Client resource path parameter.
MXPI-63	When configured with dynamic inputs, the SAP R3 component failed to authenticate as it only used the username parameter and ignored the password parameter.
MXPI-68	Error Handling flow threw "Error 24: Error Code [error_code] does not exist for the selected component [0]" for some trigger components like Email, Directory Scanner, JMS and MSMQ.
MXPI-82	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.
MXPI-86	The SOAP Headers (<MAGIC_SOAP_HEADERS>) passed from WCF Client were lost. The issue was found to be only in case on Japanese Version of xpi Server."

QCR #	Description
MXPI-87	The OData GET method failed in certain scenarios when the endpoint was on a secured channel.
MXPI-96	The Magic xpi server failed to handle the scheduler if the total count of entries were more than 28.
MXPI-98	The JD Edwards Enterprise One connector retained the login session even though the Keep session open checkbox was unchecked in the step configuration.
MXPI-99	It was not possible to select the UDS varible in the Data Mapper.
MXPI-102	An error; Schema name cannot begin with a digit or contain any of the following characters : - \\ / [ ] ( ) { } < > ; ' \ ? * ; : ; <SPACE> was thrown when the checker was run for the projects migrated from Magic xpi 3.4 or 4.1 version.
MXPI-104	For the JD Edwards component, the Len() function in the Data Mapper threw Nullpointer exception when the element contained Null value.
MXPI-107	When the field name of the Query operation of Notes DB component had 'katakana' half-width characters, no fields were shown in the destination of the Data Mapper.
MXPI-109	The Query operation for the Sharepoint on-premise connector failed to retrieve the sub-site and querying list data and threw error "Error 1350: SharePoint call error: com.magicsoftware.ibolt.sharepoint.IBSharePointException: getSites (AxisFault)".
MXPI-110	In case of Japanese version, the "Object type" combo on the SAP Business One connector configuration window did not reflect any change in value.
MXPI-101	The SQL Query failed to execute when the flow variable of type "Date" was inserted in the SQL Query. If the variable of type Date is used, then it is recommended to use Scandinavian date format with the line separator or avoid the direct use of the F.variable in the WHERE clause of the query.
MXPI-111	The schema generated for the child object was incorrect making it impossible to append the child object in the "XML position forwarded" for the Data Mapper steps.
MXPI-113	In the NotesDB connector, the Global Query operation could not be selected and an error "Enter a database view name" was thrown, in case of Japanese locale.
MXPI-114	The OData connector step became unresponsive when the server did not respond on consuming the request.
MXPI-116	On sending an email with specific Japanese characters through the Domino component; some of the characters in the email body were garbled when the project was migrated from Magic xpi 4.1 to 4.9 version.
MXPI-117	The Patch operation for the REST Client component failed to run successfully in case of secured HTTPS endpoints with Basic authentication type.

QCR #	Description
MXPI-118	When the Host Name property on the Notes DB resource was configured with a port number, the step configuration failed while selecting Notes DB resource and threw an error, 'The given path's format is not supported'.
MXPI-119	Specific customer WSDLs were not getting loaded.
MXPI-121	In certain scenarios; an error occurred when configuring the Scheduler trigger after the Magic xpi installation version was upgraded to a hot-fix or when the upgraded hot-fix was uninstalled.
MXPI-123	Even after the Flow Time out was reached, the workers were not released and remained in the STUCK mode [as seen] in the Magic Monitor.
MXPI-126	After modifying the Context Variable type from Alpha to Blob, when the Flow Data step was re-opened, this Context Variable which was used as a Dynamic Variable for ODS Name, showed wrong Data Type.
MXPI-127	In the Data Mapper, database wizard's table selection list was missing some tables from MS Access Database (ODBC) with all tables names in Japanese Characters.
MXPI-129	In the XSLT component; the XSL-FO Convert (Files) and XSL-FO Convert (BLOBs) methods failed to render tables.
MXPI-133	The On-Demand SharePoint Resource with ADFS value set as Yes and Server requiring TLS v1.2 failed to validate.
MXPI-134	When trying to query records from the Dynamics CRM On-Demand resource an error; Paging cookie is required when trying to retrieve a set of records on any high pages. was thrown.
MXPI-137	When querying the data from the SAP R/3 connector; in certain rare cases the main thread terminated abnormally causing the project to crash.
MXPI-144	When trying to split a JSON array into individual objects; and forwarding to called flow did not work; the resultant BLOB showed the mapped fields as empty.
MXPI-145	The Context View of the debugger was not shown when a specific Japanese character was used in the Variable.
MXPI-149	Slow replication of ActLog to MySQL server, caused an overflow of redo-logs to the disk and as a result, the system crashed with an error, "RedoLogCapacityExceededException".
MXPI-152	In some cases of an opened project from the older version, the Studio crashed on deleting the flow variables in one of the flows.
MXPI-153	After migrating some specific projects to Magic xpi 4.7; the BP Variables were missing and as a result; some mapping connections were lost in the Data Mapper.
MXPI-154	The Data Mapper step with XML Append operation functioned incorrectly.

QCR #	Description
MXPI-156	When a project was migrated from Magic xpi 4.1; it went into an endless loop in a specific scenario.
MXPI-157	The Salesforce connector was doing a high number of API calls in certain scenarios.
MXPI-158	The Magic xpi server crashed at random intervals and then restarted resulting in the creation of dumps in the runtime folder.
MXPI-159	The Data Mapper failed to query tables from an Access database located on a different host within the network.
MXPI-161	When the REST Client Query parameter contained a colon character; the value of the colon character was not encoded.
MXPI-163	When reading from the Flat File in the Data Mapper; with the Source Type set as Variable; only the first line was read and the rest of the lines were skipped.
MXPI-165	After migration, there was a difference in behavior when a template was used to connect to the Repeat node in the Data Mapper. The user should re-build the project for the fix to take effect.
MXPI-170	The mappings in the Data Mapper were lost while converting the Insert statement to Update or Vice versa using the wizard if the field names had spaces in them.
MXPI-171	The Data Mapper failed to generate an output file from a template when the Destination File Path was generated dynamically using a variable. Rebuild project for this fix to take effect.
MXPI-172	The setRefbyExternalId function in the Salesforce connector did not return an ID when there was a comma in the ExternalIdFieldValue argument.
MXPI-173	In case of Japanese OS; the Table List was not shown in the Database Resource as well as in the Data Mapper wizard for the ODBC protocol.
MXPI-174	When trying to change the Numeric type of nonNegativeInteger to Alpha type for the XSD file on the destination pane of the Data Mapper; the changes were not getting saved and hence not reflecting on reopening the Mapper.
MXPI-176	Data Mapper wizard for Oracle Databases; showed incorrect column list for Tables with Name containing Lower-Case characters; issue occurred only when another Table with similar name but in Upper-Case existed.
MXPI-177	The Magic xpi studio was slow in loading mapping view as compared to Magic xpi 4.1 and this problem was visible while loading very large mapping data.
MXPI-183	When a column name or a table name in the Database Wizard contained lower case characters; an error; "Invalid SQL Statement was thrown on completing the wizard for the query".
MXPI-184	The message text in the BAM Utility was truncated to 260 characters.

QCR #	Description
MXPI-185	The Magic Monitor showed Pending counts for the entry, even though there were no messages present in In-process, Pending or similar state.
MXPI-186	The SugarCRM resource failed to validate; if the value for HTTPProxyAddress was not set in the magic.ini file.
MXPI-187	The SFTP connector failed to connect with servers requesting newer SHA-256 chiphers. The connector is now is upgraded to support the same.
MXPI-189	When performing the multiple Update operation in the Dynamics CRM connector; if the operation failed due to some error; the Store Result in blob was empty; leaving no way to check which entries succeeded or failed.
MXPI-191	The Where clause was missing from the SOQL statement that was sent as a part of the Salesforce connector when large number of requests were made parallelly from the Magic xpi server.
MXPI-192	When using the Post operation of the REST Client component, the result blob of the response body was empty after running the step.
MXPI-193	An illegal Variable error was seen in the ifs.log file on update operations of the Environment Variable even though the values of the Environment Variables were updated properly.
MXPI-194	When the XSD Sub Type property of type XML Position Forwarding was selected for the XML file which had Source Type as Variable in the calling flow; the main thread got aborted.
MXPI-195	The Magic xpi Studio crashed when configuring the connector created through the Connector Builder.
MXPI-200	In the Magic xpi studio; in some scenario; the Checker and Build took more than expected time.
MXPI-201	When the Platform name was not specified in the SugarCRM resource; the Platform name changed dynamically causing the Sugar log to increase in size and the log files contained the [WARNING] Platform name violation: unknown platform message.
MXPI-202	In a particular scenario, the OData step configuration displayed High CPU and memory usage and the Studio went into a "not responding" state.
MXPI-203	Deployment of the stored procedure 'SBO_SP_PostTransactionNotice' for any SAP B1 resource failed; when the DB server name contained some special characters like the -.
MXPI-211	When trying to configure the REST Client resource and the REST Client step on the Windows machine with German locale with the isolated shell of the Visual Studio pre-installed on the machine; errors were thrown.

QCR #	Description
MXPI-212	The Query Parameters configured on the REST Client Resource, were not passed at runtime for all HTTP operations except the GET operation.
MXPI-222	The UDS variables; in the context view; were not editable while running the debugger.
MXPI-269	Gigaspaces Service stop/restarts caused MAGIC.INI to get corrupted/empty when many instances of the Magic xpi server were running. Note: this fix is not effective if the user has used INPUT function with 'True' Log as a parameter with the running projects.

Past Release Notes

Magic xpi 4.9: 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.

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.

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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.

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.

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

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.

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.

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**.

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.

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.

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 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.

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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.

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- 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.

For more information, visit www.magicsoftware.com.