



# Course Syllabus: Getting Started with Magic xpi 4.x

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## Course Objectives and Goals

Magic xpi\* Integration Platform delivers enterprise-grade integration, business process automation, and data synchronization solutions.

During this course, the student will learn the development principles and fundamental techniques of creating an integration project using Magic xpi, including testing, deploying, and maintaining the project in runtime.

Upon successful completion of the course, the student will have written an integration project developed specifically for the course, and will have carried out several exercises.

\*Our Integration Platform, formerly called iBOLT, was rebranded as Magic xpi Integration Platform from the 3.x release in June 2012.

## General Details

<b>Course ID</b>	UCOGSXPI4
<b>Level</b>	Entry level
<b>Format</b>	Classroom instructor-led training (ILT) Private on-site training or public course
<b>Target Audience</b>	IT architects/analysts, technical integrators, programmers
<b>Duration</b>	A total of 25 learning hours over 4 days**
<b>Course based on</b>	Magic xpi version 4.0a

**Please note:**

\*\*Magic University may change the course's content/duration with no prior notification.

The stated course duration does not include individual PC setup time.

If required, additional time should be allocated for this.

## Lesson Outline

The course comprises the following lessons:

### 1. Magic xpi Overview

The student will become familiar with the Magic xpi concept, development environment, and components.

### 2. Magic xpi Methodology

The student will learn how to approach the development of a Magic xpi project, and about the importance of following this method to optimize the development process.

### 3. Magic xpi Project

The student will implement the development methodology by creating a simple project. In addition, the classroom challenge project will be introduced.

### 4. Magic xpi Modeling View

The student will learn how to document the design of the project according to two main aspects:

- The various **business processes' logic** that leads to a specific workflow in the organizational structure.
- The top-level overall view of the integration project, which is the **System Topology**.

### 5. Resources

One of the first parts of creating an integration flow is to identify and define the different applications (resources) that Magic xpi will be communicating with. Magic xpi provides a single central location to define all the external resources that are referenced in the project. This is called the Resource Repository.

In this lesson, the student will learn how to create resources in this repository.

### 6. Scan for New Requests

Once the project analysis has been completed, and the business processes in the project are known, it is time to start writing the integration flows. The student will take the business process model and turn the logical flows into actual flows. The student will become familiar with the Directory Scanner component and the Email component. In this lesson, the student will also gain a basic understanding of the Magic xpi Debugger, which is used to test flows.

### 7. Flow Orchestration

The building blocks of the integration project – flows and components – have already been taught. Now the student will discover how Magic xpi determines which step in the flow to run first, based on dynamic conditions. This lesson covers variables, flow logic, and the Expression Editor.

## 8. Checking Customer Existence

This service enables data transformation by creating associations between records and fields in different formats and from different sources by using visual mapping.

In this lesson, the student will learn how to add the Data Mapper to a flow, how to extract information from an XML, and how to fetch information from a database table.

## 9. The Runtime Environment

The student will learn how to execute the project in runtime using the Magic xpi Server.

Since the Magic xpi Server has no user interface, the student will also learn how to track the execution in the Magic xpi Monitor.

## 10. Testing Your Project

Just before moving your project to production, it is necessary to test the project and ensure it works correctly. Magic xpi provides several tools to test and debug the project, and to deliver it error-free. In a previous lesson, the student was given an overview of the Magic xpi Debugger. In this lesson, the student will learn more about testing the project using the Magic xpi Debugger and the Checker tool.

## 11. Item Validity Check

The student will learn an additional functionality of the Data Mapper, and will be introduced to the Flow Data service. This entails:

- Using the Data Mapper to call a flow that checks multiple items.
- Using the Flow Data service to update variables and store the requested data in an Operational Data Storage (ODS) system.

## 12. Services

Services enable other external applications to invoke Magic xpi. Magic xpi maintains a central repository for defining these external methods.

In this lesson, the student will learn how to create new services and maintain them using the Service Repository, and will also learn about the HTTP service.

## 13. Checking Request Status

The student will learn how to invoke a flow by using an external triggering mechanism, such as a human intervention using an Internet browser.

## 14. Error Handling

With any integration application, the monitoring, processing, and handling of errors are an integral part of maintaining a project during runtime. These errors are usually caused by source systems, input formats, and the availability of external systems. In this lesson, the student will learn how to handle various types of errors by using Magic xpi's error management tool to detect, identify, and report them.

## 15. Adding a Customer

A Web service is software that is designed to support system-to-system interaction over the Web. Magic xpi can work with Web services as a consumer and as a provider. In this lesson, the student will learn how to expose Magic xpi as a Web service, add a Web service trigger to a flow, retrieve information from the Operational Data Storage (ODS) system, and insert an entry into the database.

## 16. Handling Approved Requests

Publish and Subscribe (PSS) services are a way of distributing information to your network. The benefit of using the Magic xpi PSS method is that the systems are not required to constantly check for new information. When an event is published in the Magic xpi project, flows that are subscribed to that event are invoked. This saves system resources, and therefore improves performance.

In this lesson, the student will learn how to publish a topic and subscribe a flow to a topic.

## 17. Automatic Item Check

The Magic xpi Scheduler service is an integral part of triggering a flow.

During deployment, the Magic xpi Server uses the information in the Scheduler system to invoke flows at the required time periods. The Flow Enabler defines when the flow will be activated. In this lesson, the student will check requests by using the Scheduler and the Flow Enabler.

## 18. More About Magic xpi

This lesson combines several Magic xpi topics regarding advanced Data Mapper concepts and usage:

**Mapping Rules** – In previous lessons, the student learned how to transfer and handle data using the Data Mapper. In this lesson, the student will practice the mapping rules and techniques, such as simple and complex element mapping.

**XML Interface** – In addition to the Direct Access Method of configuring a step, there are occasions when it is necessary to configure the component using an XML interface. In this lesson, the student will practice using the XML interface.

**The User Defined Storage (UDS)** – This is very similar to ODS, but it addresses several "limitations" by enabling the definition of a memory table's structure. In this lesson, the student will learn how to define the UDS.

## 19. From Development to Deployment

Once a project has been built, it is time to move the project from the development environment to the test or production environment. In this lesson, the student will learn about the best practices for project deployment, preparing the server for deployment, and possible database issues. The student will also learn how to use the Project Packager to bundle together the project files and the additional files used by the project in preparation for deployment.

## Knowledge Prerequisites

Language	English reading/writing
Development Knowledge	Familiarity with the following subjects: <ul style="list-style-type: none"><li>• Databases: Tables, rows, fields, and indexes</li><li>• XML</li></ul>
Recommended	<ul style="list-style-type: none"><li>• SQL statements</li><li>• HTML technology and tags</li><li>• Web services:<ul style="list-style-type: none"><li>○ Knowledge of UDDI</li><li>○ Knowledge of WSDL</li></ul></li></ul>

## Magic Software University Course Prerequisites

There are no Magic Software University prerequisite courses prior to attending this course.

## Setting Up Your PC for this Course

<b>Required License</b>	The course uses the standard license. Please obtain a Magic xpi 4.0 IBNPSRV evaluation license from your local Magic Software Enterprises representative.
<b>Hardware minimum requirements</b>	<ul style="list-style-type: none"> <li>• Windows XP and later. The course was tested on Windows XP.</li> <li>• Pentium processor 1.8GHz and upwards.</li> <li>• 4Gb RAM or greater.</li> <li>• At least 1Gb of free space.</li> <li>• Screen resolution of at least 1024x768 pixels.</li> </ul>
<b>Microsoft® SQL Server</b>	Access to MS SQL version 2005 and above. You will need the supervisor password for the installation.
<b>Web Server</b>	A personal IIS Web server must be installed on your computer. Some exercises that you will develop use the Web server.
<b>Email Server</b>	You will need to have access to an email server to send emails. You can use your Gmail, Yahoo or Hotmail accounts as well. Check the internet for instructions on how to configure those mail servers for POP3, IMAP and SMTP. If you do not have access to an email server for sending and receiving emails, a freeware program named <b>Mail Enable Standard Edition V7.5</b> is provided on the CD.
<b>Email Client</b>	You will need an email client to view emails that were sent by the system. You can use an email client such as Mozilla Thunderbird. If you are using a web-based email such as Gmail, you can use the internet browser to check the mail.