

# Professional Developer

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## Agenda

## Course Information

The Professional Developer course covers customizing and extending the process model behavior. While the vast majority of AgilePoint process development will be accomplished via existing composable activities and existing AgilePoint AI capabilities, there will always be a need for some customization to meet demanding business requirements. AgilePoint's unique architecture and solid development capabilities allow professional developers to meet those needs in a way that takes advantage of the composable nature of the AgilePoint Platform and the powerful dynamic runtime adaptability built into AgilePoint's unique Process Engine. This course is designed in a modular way so that the course can focus precisely on the types of customizations required by the immediate business needs.

### Course Details:

- Course Prerequisites: Advanced Application Development
- Course Content: Platform Extension and Customization (C# .Net, JavaScript, CSS)
- Course Format: **Professional Services Engagement** - Instructor-led (lectures, labs, and discussions)
- Lecture: Live-online via Zoom
- Lab Environment: AgilePoint provided Training Tenant
- Materials Provided: Recording of course and course notes
- Course Length: 2 days (6 hours per day) - can be extended to cover additional topics
- **For the best Course experience** we recommend the use of 2 screens:
  - Screen 1: Watch the Lecture and Lab Demos (instructor's screen)
  - Screen 2: Follow along with the instructor step-by-step in the lab environment

### Audience

- Professional Developers

## Course Objectives

Provide Professional Developers with customized training provided by the Professional Services Team to extend the AgilePoint Platform.

**Custom development of custom AI Components is also available. Please contact the Professional Services team for details.**

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## Course Outline

## Potential Course Topics

The following course topics provide a list of potential topics that might be of interest to a customer depending on their specific needs. It is intended as a starting point and a quick reference of some of the most common custom training requests. The specific training topics and content of the course will be determined via discussions between the customer and a member of the Professional Services team.

### Form Level Extension

Extend the functionality of AgilePoint eForms

- Forms are purely HTML5 and jQuery based
- No proprietary scripting language
- A JavaScript and CSS injector is provided for advanced developers
- JavaScript (including the eForm Helper Library and the built-in JQuery library)
- CSS3

The default form configuration settings are designed to handle the vast majority of the use cases. Both JavaScript and CSS3 can be implemented at the global, application, form, and control level. An important feature of the jQuery library is that it is built into the AgilePoint Server, so it is not necessary to reference this library from a 3rd party source to leverage its capabilities which is an advantage from a security perspective.

### Process Level Extension

Extend the functionality of AgilePoint by adding Custom Activities by using the AgilePoint SDK

- Create custom activities
- Expose custom activities at the business layer to make them reusable across multiple applications

AgilePoint already provides multiple activity libraries with over 1200 manual and automated workflow activities that provide integrations with over 120 – 3rd party platforms and systems. There is also a Web Services Activity Library which provides access to a various types of web services.

## Data Layer Extension

AgilePoint provides a Data Entity model which allows business users to create an enterprise grade, highly secure data model. In essence, AgilePoint provides the power and security of a database with a simplified user interface for business users.

## Portal Extension

Page Builder provides clients with a way to create custom pages for their organization or individual departments.

## Custom Branded Mobile Apps

The AgilePoint NX Mobile App Accelerator includes a low-code app development platform that enables people to create native enterprise mobile applications for iOS and Android devices without writing code.

## API Level Extension

Customers can leverage existing ASP.Net, JSP, Legacy Winform, WPF, etc. apps by incorporating AgilePoint's APIs to enable workflow capabilities within their existing apps. Various types of Web Services are available form within the Web Services Activity Library.

## Work Center Extension

The AgilePoint NX dashboard can be used to create a custom dashboard for the Work Center module. It is possible to:

- Create custom columns and tabs
- Alter the behavior of existing tabs including the ability to hide tabs
- Include contextual data
- Create custom action menus

## Server Level Extension

The AgilePoint metadata process engine uses a publisher-subscriber mechanism.

An event is raised for every action that takes place on the engine, and these events can be subscribed to using a component called an AgileConnector. This mechanism can be used to override the AgilePoint Engine's OOTB behavior for things like exception handling, task routing, etc. The AgileConnector is a very powerful component which enables developers to precisely define and control how the AgilePoint server works in their environments. Many of the OOTB connectors are written using this module.

## Bring your own Portal

Incorporate AgilePoint into your own home grown or 3rd party web portals.

- Reduce training costs and make it easy for business users to access their AgilePoint tasks from within platforms they are already using
- Available for all web portals which can host custom JS and HTML pages

## NX Developer

AgilePoint NX Developer is an AgilePoint NX software component that lets you create custom assets, such as activities, AgileConnectors and AgilePoint NX web applications.

AgilePoint NX Developer is an extension for Microsoft Visual Studio.

## AgilePart

The AgilePart Project Template is used to create a custom system activity.

## AgileWork

The AgileWork Project Template is used to create a custom human task activity.

## AgileExtender

AgileExtender is a type of activity that lets you overlay the AgilePoint process model with custom behavior. You can create custom AgileExtenders using AgilePoint NX Developer

which provides a module that captures both process-level and activity-level events. It can also use APIs to interact with the AgilePoint Server engine.

- The AgileExtender Project Template is used to create an AgileExtender
- The AgilePointAIExtender is used to create components that allows AI to affect the runtime behavior of process instances

## AgileConnector

An AgileConnector is a configurable connector for the AgilePoint Server that lets AgilePoint NX connect with other software and systems for specific types of tasks.

There are 2 types of AgileConnectors

- **Event Listener AgileConnector** - An Event Listener AgileConnector is a type of AgileConnector that monitors the AgilePoint Server for changes, and runs when a specific action occurs. You can use Event Listener AgileConnectors for exception handling, custom user management, or to monitor file systems and databases.
- **Polling Service AgileConnector** - The Polling Service AgileConnector is a type of AgileConnector that maintains an interface between AgilePoint Server and an external system. The built-in AgileConnectors for SAP and SharePoint are examples of Polling Service AgileConnectors.

## AgilePoint Project Item

In a Microsoft Visual Studio project, each item such as a file or folder is called a project item. The AgilePoint project has its own project items. These project items come with basic code which allows the developer to focus on their business logic and handles the required interactions with the AgilePoint NX system. These templates can also be used as a code reference enabling reuse. The AgilePoint NX Developer provides the following templates to use for creating project items:

- **Activity Group** - used to configure an activity's group properties
- **AgilePoint html** - The AgilePoint HTML template is an HTML page used to design the configuration screen for custom activities. This template comes with a default body structure and styles that match AgilePoint NX. The file created provides a place holder for the design of the configuration screen. Also, an external JavaScript file such as AgilePoint.js can be referenced in this HTML page to implement the client side functionality.

- **AgilePoint js** - The AgilePoint JavaScript template comes with default functions and lets you give logic such as validation, on load, or submission in the AgilePoint NX environment. In a configuration page all the client side validation and client side manipulation are done through JavaScript. The AgilePoint HTML page supports external JavaScript. You can create an external JavaScript with AgilePoint JS file.
- **AgilePoint json** - used to set the locale and label text for the fields of an activity.

## Conclusion

This document provides a quick overview of some of the potential topics that may be covered as topics within an AgilePoint Professional Developer training session. Remember there are often multiple options for extending the AgilePoint Platform each with their own pros and cons. Therefore, it is recommended to discuss your unique needs with our Professional Services team to determine the best course of action.