

RELATIVITY FEST

CHICAGO 2018
SEP 30 - OCT 3

Build Your First Integration
Point Provider



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Alex Bilson



Agenda

- Part 1: Introduction – How to Run a Job
- Part 2: Relativity Integration Points (RIP) Framework Overview
- Part 3: Hands-On Code Walkthrough
- Part 4: Conclusion – Run Your Job

What Are We Building?

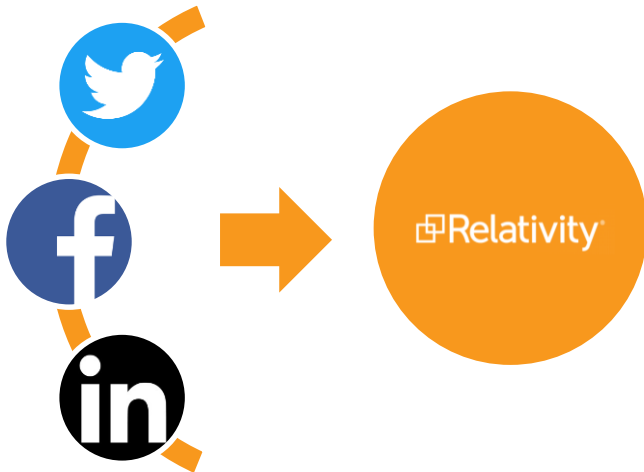
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**A RIP provider that imports Wikipedia abstracts
into Relativity**



The Data Sources Are Endless

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When to Create a RIP Provider

- As a web service connector (Twitter, Facebook, etc.)
- As a data source sync (local SharePoint site, database, etc.)

When NOT to Create a RIP Provider

- As a load file replacement to the RDC

Why Use the Integration Points Framework?

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- Built-In:
 - Job monitoring
 - Job statistics
 - Job scheduling
 - User notification
- Comes with standard Relativity deployment since Relativity 9.4
- Manages distributed work natively (especially good for RelativityOne)

Knowledge Pre-Requisites

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- Applications
- Relativity Custom Page (MVC) and Event Handler
- Visual Studio 2015
- Publish to Relativity Tool

How to Run a Job

Relativity Integration Points Framework

Installation and Job Configuration

Documents

Review Batches

Reporting ▾

Case Admin ▾

Job Admin ▾

Workspace Admin ▾

Indexing & Analytics ▾

Persistent Lists ▾

Production ▾

Dashboards

Integration Points

Integration PointsJob HistoryJob History ErrorsDestination WorkspacesIntegration Point Profile

Create Integration Point

Cancel

i

Setup

Complete the Setup

1

2

← Back

Next →

General

Name:

My First Job

Type:

☒ Import

☐ Export

Source:

WikiLoader Provider ▾

Destination:

Relativity ▾

Transferred Object:

Document ▾

Profile:

Select... ▾

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Relativity Integration Points Framework

User Configuration via Relativity Custom Page

Documents

Review Batches

Reporting ▾

Case Admin ▾

Job Admin ▾

Workspace Admin ▾

Indexing & Analytics ▾

Persistent Lists ▾

Production ▾

Dashboards

Integration Points

Integration Points

Job History

Job History Errors

Destination Workspaces

Integration Point Profile

Create Integration Point

Cancel

i

Setup

Connect to Source

Map Fields

← Back

Next →

WikiLoader

File Location: | C:\data.xml

Relativity Integration Points Framework

Map Fields to Selected Import Object

Documents

Review Batches

Reporting

Case Admin

Job Admin

Workspace Admin

Indexing & Analytics

Persistent Lists

Production

Dashboards

Integration Points

Integration PointsJob HistoryJob History ErrorsDestination WorkspacesIntegration Point Profile

Create Integration Point

Cancel

Setup

Connect to Source

Map Fields

3

← Back

Save

Field Mappings

Source

Destination

Map Fields

Title

URL

Abstract

Control Number [Object Identifier]

URL [Fixed-Length Text]

Extracted Text [Long Text]

Delivery Receipt [Yes/No]

Deponent / Witness Kit [Multiple Choice]

Document Extension [Fixed-Length Text]

Document Folder Path [Long Text]

Domains (Email BCC) [Multiple Object]

Domains (Email CC) [Multiple Object]

Domains (Email From) [Multiple Object]

Domains (Email To) [Multiple Object]

Duplicate Indicator [Yes/No]

Email BCC [Long Text]

Email CC [Long Text]

Email From [Fixed-Length Text]

Email Identifier [Yes/No]

Email Subject [Long Text]

Email To [Long Text]

Embedded Data Info [Long Text]

Exemptions [Fixed-Length Text]

Extracted Text Size [Decimal]

File Name [Fixed-Length Text]

File Size [Decimal]

File Type [Fixed-Length Text]

Group Identifier [Fixed-Length Text]

Imaging Set [Multiple Object]

Issue Designation [Multiple Choice]

Legal Team Admin [Multiple Choice]

Lists [Multiple Object]

Relativity Integration Points Framework

Start Job and Monitor Progress

DocumentsReview BatchesReportingCase AdminJob AdminWorkspace AdminIndexing & AnalyticsPersistent ListsProductionDashboardsIntegration Points

Integration PointsJob HistoryJob History ErrorsDestination WorkspacesIntegration Point Profile

Integration Point Details✎EditDeleteBackEdit PermissionsView Audit

Record 1 of 1⏪⏩⏴⏵

GeneralScheduling

Name: My First JobLog Errors: Yes

Has Errors: No

Overwrite: Append OnlyEmail Notification Recipients:

Source Provider: WikiLoader ProviderPromote Eligible: No

Destination Configuration: ["artifactTypeId":10,"destinationProviderType":"74A863B9-00EC-4BB7-9B3E-1E22323010C6","CaseArtifactId":1017294,"importOverwriteMode":"AppendOnly","importNativeFile":"false","importNativeFileCopyMode":"DoNotImportNativeFiles","useFolderPathInformation":"false","useDynamicFolderPath":"false","imageImport":"false","imagePrecedence":{},"ProductionPrecedence":{},"IncludeOriginalImages":"false","MoveExistingDocuments":"false","ExtractedTextFieldContainsFilePath":"false","ExtractedTextFieldEncoding":"utf-16","CustodianManagerFieldContainsLink":"true","FieldOverlayBehavior":"Use Field Settings","ArtifactTypeName":"Document"]

Source Configuration: C:\data.xml

TRANSFER OPTIONS

Stop

Save as a Profile

Status

↔🔍🔖📅Items 1 - 1 (of 1)⏪⏩⏴⏵

<input type="checkbox"/> Job ID	Start Time (U...	Artifact ID	Name	Integration P...	Job Type	Job Status	Destination ...	Destination L...	Items Transf...	Total Items	Items with Er...	Sy
(All)	(All)	(All) ▾	(All)	(All)	(All) ▾	(All) ▾	(All)	(All)	(All)	(All)	(All)	(A
<input checked="" type="checkbox"/> 11	8/24/2018 4:46 PM	1039688	My First Job	My First Job	Run	Pending	WikiLoader Case - 1017294	This Instance	0		0	Ad

Relativity Integration Points (RIP) Framework Overview

Relativity Integration Points Components

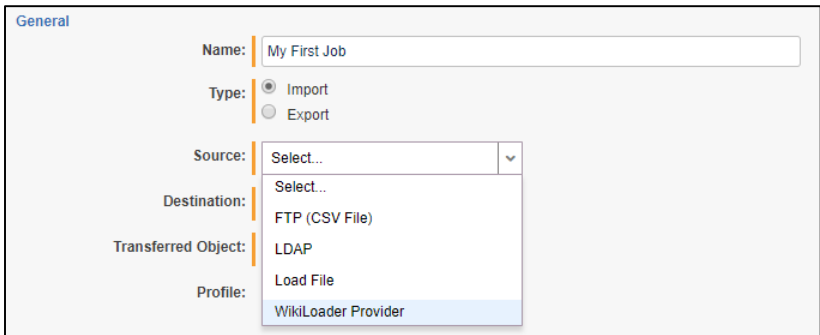
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- Install and Uninstall Event Handlers
- Custom Page
- Provider
 - GetFields()
 - GetBatchableIDs()
 - GetData()

Install Event Handler

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- Executes as your provider is being installed
- Adds your provider to Integration Points dropdown (see image)
- Tells Integration Points where to find your custom page



The screenshot shows a 'General' configuration window with the following fields and options:

- Name:** My First Job
- Type:** ☒ Import, ☐ Export
- Source:** Select... (dropdown menu)
- Destination:** Select... (dropdown menu)
- Transferred Object:** LDAP
- Profile:** Load File, WikiLoader Provider (highlighted)

Custom Page

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- Receives input from user
- Passes values to the next page via JavaScript
- Same look and feel as a Relativity page

The screenshot shows the 'Create Integration Point' wizard in Relativity. The top navigation bar includes tabs for Documents, Review Batches, Reporting, Case Admin, Job Admin, Workspace Admin, Indexing & Analytics, Persistent Lists, Production, Dashboards, and Integration Points. The 'Integration Points' tab is active, and the sub-tab 'Integration Point Profile' is selected. The main heading is 'Create Integration Point'. A progress bar at the top indicates three steps: 'Setup' (completed, marked with a checkmark), 'Connect to Source' (current step, marked with a '2' in a blue circle), and 'Map Fields' (marked with a '3' in a grey circle). Navigation buttons '← Back' and 'Next →' are on the right. Below the progress bar, a red rectangular box highlights the 'Custom Page' section. This section contains a 'WikiLoader' label, a 'File Location' input field with the value 'C:\data.xml', and the text 'Custom Page' in red.

Documents Review Batches Reporting Case Admin Job Admin Workspace Admin Indexing & Analytics Persistent Lists Production Dashboards Integration Points

Integration Points Job History Job History Errors Destination Workspaces Integration Point Profile

Create Integration Point Cancel ⓘ

Setup Connect to Source Map Fields

← Back Next →

WikiLoader

File Location: C:\data.xml

Custom Page

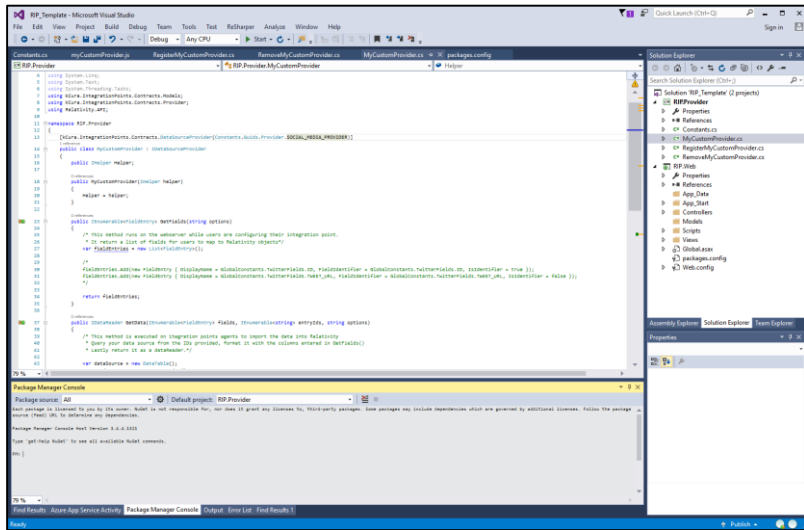
Implements IDataSourceProvider

- GetFields
 - Returns a list of fields available for mapping
 - Passes custom page values in DataSourceProviderConfiguration object
 - Executes on IIS
- GetBatchableIDs
 - Returns only unique identifiers in the data set
 - Uses identifiers to batch work among agents
 - Executes once per job on the agent server
- GetData
 - Returns a batch of fields from the user's mapped selections
 - Executes on the agent server

Hands-On Code Walkthrough

Create A New Solution

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1. Create a new Visual Studio Solution
2. Create Custom Page
3. Create Provider
4. Build the project

Custom Page MVC

- View Model
- Represents the information we will pass to our view
- None used for this demonstration

Custom Page MVC

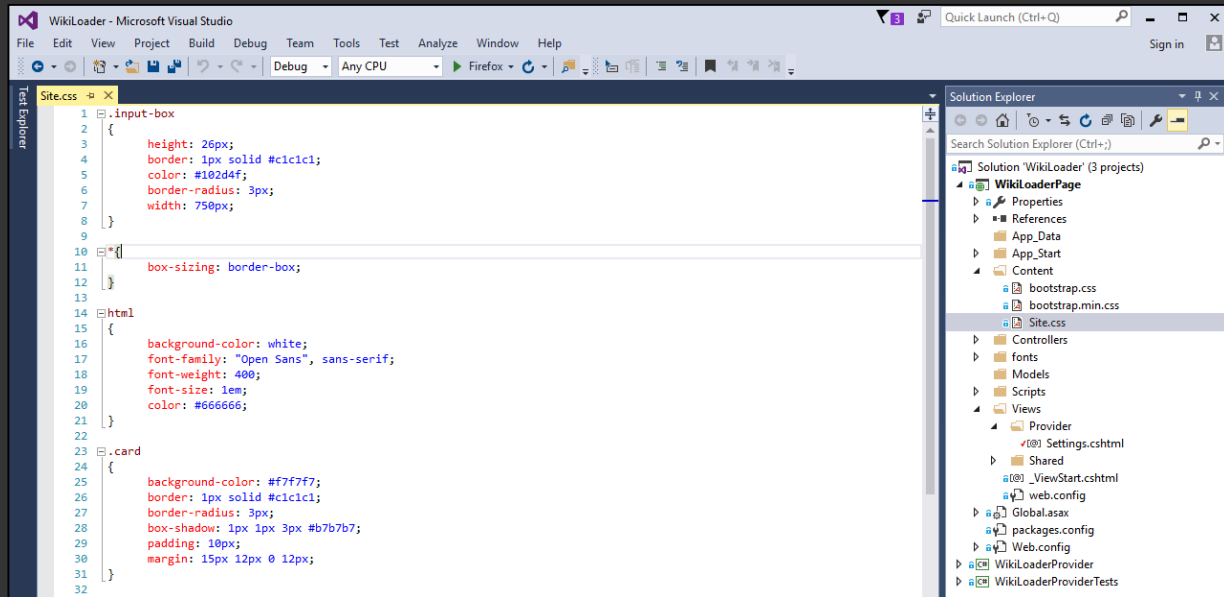
The screenshot displays the Microsoft Visual Studio IDE with the 'WikiLoader' project open. The main editor window shows the 'Settings.cshtml' file, which contains the following code:

```
1  @{
2      ViewBag.Title = "Settings";
3  }
4
5  <link href="~/Content/site.css" rel="stylesheet" />
6  <div class="card">
7
8      <label class="section label">WikiLoader</label>
9      <div class="field-row">
10         <div class="field-label required">
11             File Location:
12         </div>
13         <div class="field-value ">
14             <input type="text" name="field" id="fileLocation" class="input-box" placeholder="Please enter a file locati
15         </div>
16     </div>
17 </div>
18
19 <script src="~/Scripts/jquery-1.8.2.js"></script>
20 <script src="~/Scripts/jquery-postMessage.js"></script>
21 <script src="~/Scripts/frame-messaging.js"></script>
22 <script src="~/Scripts/wikiloader-provider.js"></script>
```

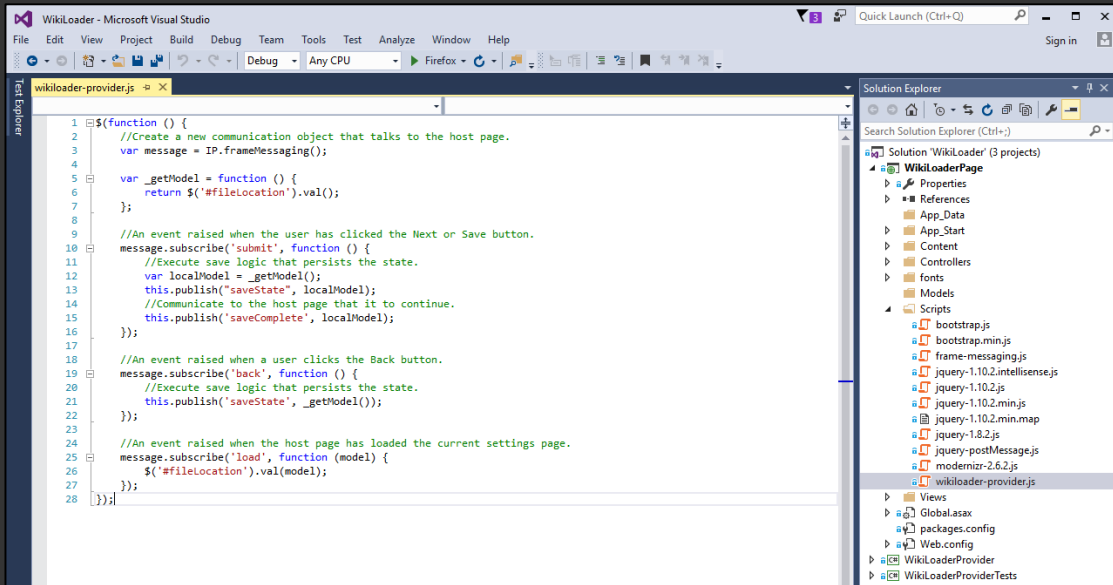
The Solution Explorer on the right shows the project structure for 'WikiLoader' (3 projects):

- WikiLoaderPage
 - Properties
 - References
 - App_Data
 - App_Start
 - Content
 - Controllers
 - fonts
 - Models
 - Scripts
 - Views
 - Provider
 - Settings.cshtml (selected)
- Shared
 - _ViewStart.cshtml
 - web.config
- Global.asax
- packages.config
- Web.config
- WikiLoaderProvider
- WikiLoaderProviderTests

Custom Page MVC - css



Custom Page MVC - JavaScript



Custom Page MVC

WikiLoader - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Debug Any CPU Firefox

ProviderApiController.cs WikiLoaderPage Web.Controllers.API.ProviderApiController GetViewFields(object data)

```
1 using System.Collections.Generic;
2 using System.Net;
3 using System.Net.Http;
4 using System.Web.Http;
5
6 namespace Web.Controllers.API
7 {
8     0 references | Alex Bilson, 1 day ago | 1 author, 2 changes
9     public class ProviderApiController : ApiController
10     {
11         0 references | Alex Bilson, 1 day ago | 1 author, 2 changes
12         [HttpPost]
13         public HttpResponseMessage GetViewFields([FromBody] object data)
14         {
15             string fileLocation = data.ToString();
16             var model = new List<KeyValuePair<string, string>>()
17             {
18                 new KeyValuePair<string, string>("File Location", fileLocation)
19             };
20             return Request.CreateResponse(HttpStatusCode.OK, model);
21         }
22     }
```

Solution Explorer

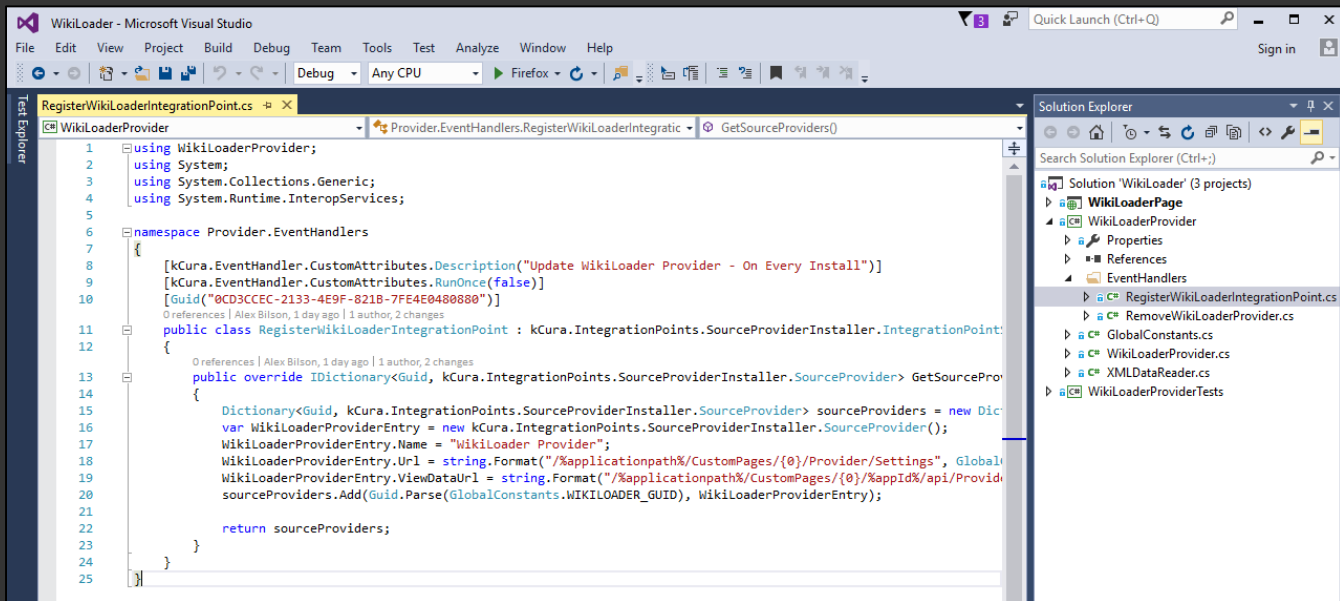
Search Solution Explorer (Ctrl+;)

Solution 'WikiLoader' (3 projects)

- WikiLoaderPage
 - Properties
 - References
 - App_Data
 - App_Start
 - Content
 - Controllers
 - API
 - ProviderApiController.cs
 - fonts
 - Models
 - Scripts
 - Views
 - Global.asax
 - packages.config
 - Web.config
- WikiLoaderProvider
- WikiLoaderProviderTests

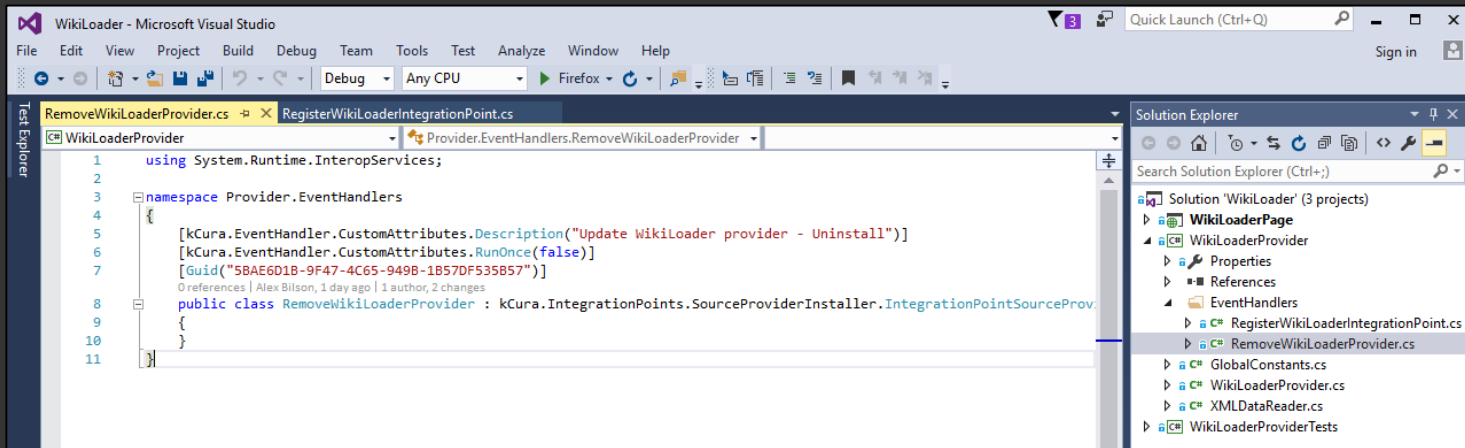
Integration Points Provider

Install Event Handler



Integration Points Provider

Uninstall Event Handler



Integration Points Provider

Provider Code

```
WebAPIConfig.cs XMLDataReader.cs WikiLoaderProvider.cs RemoveWikiLoaderProvider.cs Settings.cshtml RegisterWikiLoaderIntegrationPoint.cs ProviderApiController.cs
WikiLoaderProvider
- Provider.WikiLoaderProvider

10  /// <summary>
11  /// This code is a sample fully operational Integration Point Provider
12  /// for demonstration purposes only
13  /// </summary>
14  [kCura.IntegrationPoints.Contracts.DataSourceProvider(GlobalConstants.WIKILOADER_GUID)]
15  public class WikiLoaderProvider : kCura.IntegrationPoints.Contracts.Provider.IDataSourceProvider
16  {
17      1 reference | Alex Bilson, 20 days ago | 1 author, 2 changes
18      public IEnumerable<FieldEntry> GetFields(DataSourceProviderConfiguration providerConfiguration)
19      {
20          string fileLocation = providerConfiguration.Configuration;
21
22          // Because the wikipedia XML doesn't have a column key, I've hard-coded the field names here.
23          var fieldEntries = new List<FieldEntry>()
24          {
25              new FieldEntry { DisplayName = "Title", FieldIdentifier = "title", IsIdentifier = true },
26              new FieldEntry { DisplayName = "URL", FieldIdentifier = "url", IsIdentifier = false },
27              new FieldEntry { DisplayName = "Abstract", FieldIdentifier = "abstract", IsIdentifier = false }
28          };
29          return fieldEntries;
30      }
31
32      1 reference | Alex Bilson, 20 days ago | 1 author, 1 change
33      public IDataReader GetBatchableIds(FieldEntry identifier, DataSourceProviderConfiguration providerConfiguration)
34      {
35          string fileLocation = providerConfiguration.Configuration;
36
37          DataTable dt = new DataTable();
38          dt.Columns.Add(identifier.FieldIdentifier);
39
40          XmlDocument doc = new XmlDocument();
41          doc.Load(fileLocation);
42          XmlNodeList nodes = doc.DocumentElement.SelectNodes(string.Format("/feed/doc/{0}", identifier.FieldIdentifier));
43
44          foreach (XmlNode node in nodes)
45          {
46              var row = dt.NewRow();
47              row[identifier.FieldIdentifier] = node.InnerText;
48              dt.Rows.Add(row);
49          }
50          return dt.CreateDataReader();
51
52      1 reference | Alex Bilson, 20 days ago | 1 author, 1 change
53      public IDataReader GetData(IEnumerable<FieldEntry> fields, IEnumerable<string> entryIds, DataSourceProviderConfiguration providerConfiguration)
54      {
55          string fileLocation = providerConfiguration.Configuration;
56          List<string> fieldList = fields.Select(f => f.FieldIdentifier).ToList();
57          string keyFieldName = fields.FirstOrDefault(f => f.IsIdentifier).FieldIdentifier;
58          return new XmlDataReader(entryIds, fieldList, keyFieldName, fileLocation);
59      }
60  }
```

Run Your Job

Pulling It Together

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- Update Your Relativity Application
- Build your Visual Studio Solution
- Publish your Custom Page
- Make sure the Publish to Relativity tool references the following DLLs and custom pages from the following projects:
 - WikiLoaderProvider.dll
 - WikiLoaderPage
- Publish your updated resource files

The screenshot shows the 'Publish to Relativity' application window. At the top, there is a 'Publish' button and three buttons: 'Import Config File', 'Export Config File', and 'Clear All'. Below these are several expandable sections with configuration details:

- Application Settings**
 - Configuration Name: WikiLoaderConfig
 - Application GUID: BA2B6B81-534D-48BF-B1B5-AF81DD611883
- Relativity Credentials**
 - Relativity URL: http://192.168.137.64/Relativity.Services
 - Relativity Username: relativity.admin@relativity.com
 - Relativity Password: *****
 - Workspace ID: 1017294
- Database Credentials**
 - Database URL: 192.168.137.64
 - Database Username: eddsdbo
 - Database Password: *****
- Resource Files**
 - C:\SourceCode\RIPFestApp\WikiLoader\WikiLoaderProvider\bin\Debug\WikiLoaderProvider.dll
- Custom Pages**
 - C:\SourceCode\Publish

Using Your Provider

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- Create a new workspace
- Install the Integration Points core application into your new workspace
- Install your WikiLoader Provider application
- Ensure there are at least one of each Integration Points agents enabled
- Create and run a new job

How'd We Do?

Remember to rate this session in the survey widget of the mobile app.

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