



InfoPath 2007, SSL and K2 Processes

STEP BY STEP GUIDE

April 13



CORPORATE HEADQUARTERS

2615 151st Place NE
Redmond
Washington
98052
USA
PH +1 (425) 883 4200
FAX +1 (425) 671 0411

EMEA HEADQUARTERS

26 Worples Road
Wimbledon
London
UK
PH +1 44 (0) 845 612 0912
FAX +1 44 (0) 845 612 0911

APAC HEADQUARTERS

9 Shenton Way #06-02
Singapore
068813
PH +1 65 6327 4110
FAX +1 65 6327 4120

[WWW.K2.COM]

The information provided relates to pre-release software products, may include features only available after installation of additional add-ins, and may be substantially modified before the commercial release. This information is provided for informational purposes only, and SourceCode Technology Holdings, Inc. makes no warranties, expressed or implied, with respect to this document or the information contained within it.

Copyright © 2011. SourceCode Technology Holdings Inc. All rights reserved. Patents pending. SourceCode and K2 are registered trademarks or trademarks of SourceCode Technology Holdings, Inc. in the United States and/or other countries. The names of actual companies and products mentioned herein may be the trademarks of their respective owners.



CONTENTS

CONTENTS3

INTRODUCTION4

ENABLE SSL ON THE SHAREPOINT WEB APPLICATION WEB SITE5

- > INTERNET INFORMATION SERVICES 6 (IIS6)5
- > INTERNET INFORMATION SERVICES 7 (IIS7)6

CHANGE ACCESS MAPPING FOR WEB APPLICATION8

- > SHAREPOINT 20078
- > SHAREPOINT 20109
- > CREATE INFOPATH FORMS LIBRARY 10
- > DESIGN THE INFOPATH FORM TEMPLATE 10
- > INFOPATH FORM LOCATIONS 11
- > BUILD AND DEPLOY THE K2 PROCESS 11

ADD SIGNED INFOPATH FORM TEMPLATE TO FORMS LIBRARY 11

- > STEP 1: RE-SIGN THE INFOPATH FORM TEMPLATE 11
- > STEP 2: PUBLISH THE INFOPATH FORM TEMPLATE 12
- > STEP 3: UPLOAD THE INFOPATH FORM TEMPLATE FROM CENTRAL ADMINISTRATION 12
- > STEP 4: ACTIVATE THE INFOPATH FORM TEMPLATE IN SITE COLLECTION 13
- > STEP 5: ADD INFOPATH FORM TEMPLATE AS CONTENT TYPE 14

UPDATE THE INFOPATH FORM TEMPLATE IN FORMS LIBRARY 16

WORKAROUND FOR API STARTED PROCESSES 16

- > STEP 1: GET THE SIGNED INFOPATH FORM XML 16
- > STEP 2: PUT INFOPATH FORM XML IN PROCESS DATA FIELD 17
- > STEP 3: REPLACE INFOPATH FORM XML AT RUNTIME 18

INTRODUCTION

K2 blackpearl provides the functionality to integrate a K2 process with an InfoPath Form and use the form as the User Interface for the client events in the process. K2 uses a SharePoint Forms Library as destination (common use) for the temporary InfoPath Form (XML), which is derived from the integrated InfoPath Form Template (XSN), when the user opens the InfoPath task from the worklist. This temporary InfoPath Form is then, upon completion of the client event, “loaded” back into the corresponding process instance, and removed from the Forms Library. This functionality works out-of-the-box with no additional setup required, other than the InfoPath Integration wizard that is run in K2 Designer for Visual Studio.



Note: The InfoPath Form (XML) and the InfoPath Form Template (XSN) should not be confused. The InfoPath Form is just an XML document used to contain the data captured by the user. The InfoPath Form is always based on an InfoPath Form Template. The InfoPath Form Template is an XSN-based cabinet file that contains additional XML files (other than the InfoPath Form) such as the definitions of the data connections.

In the scenario where the SharePoint web application lives in a SSL enabled website, the functionality as described does not function properly, for the following reasons:

- InfoPath requires the InfoPath Form Template to be fully trusted and digitally signed (Security and Trust in Forms Options) before it will be able to communicate with external data sources. This applies to both the InfoPath Client and the Web Browser. Signing the InfoPath Form Template also signs the embedded InfoPath Form.
- Once the InfoPath Form Template is set as fully trusted, digitally signed, and set as a Forms Library’s template for new documents, there is no programmatic way to get the corresponding signed InfoPath Form embedded in the InfoPath Form Template. (This InfoPath Form is used whenever a new document is created in the Forms Library.)
- Because the K2 Server cannot get a copy of the signed InfoPath Form, it saves an unsigned version of the InfoPath Form to the K2 databases.

In addition to the points mentioned above, it should also be noted that an InfoPath integrated process can be started using the following methods:

- From the SharePoint Forms Library by submitting a new InfoPath Form, and
- From the K2 API



Note: It is important to understand that the first method is the intended use of InfoPath integration

When a process is started using the first method, InfoPath provides the K2 Server with the signed InfoPath form, which is then loaded into the new process instance. This document describes the steps necessary to make this method work in a SSL environment.

Although the second method is available through the K2 API, this is not the recommended way to start an InfoPath integrated process, and both the InfoPath Client and the Web Browser will fail to open client events in this process instance. The reason for this is that the K2 Server obtains the InfoPath Form from the K2 databases,

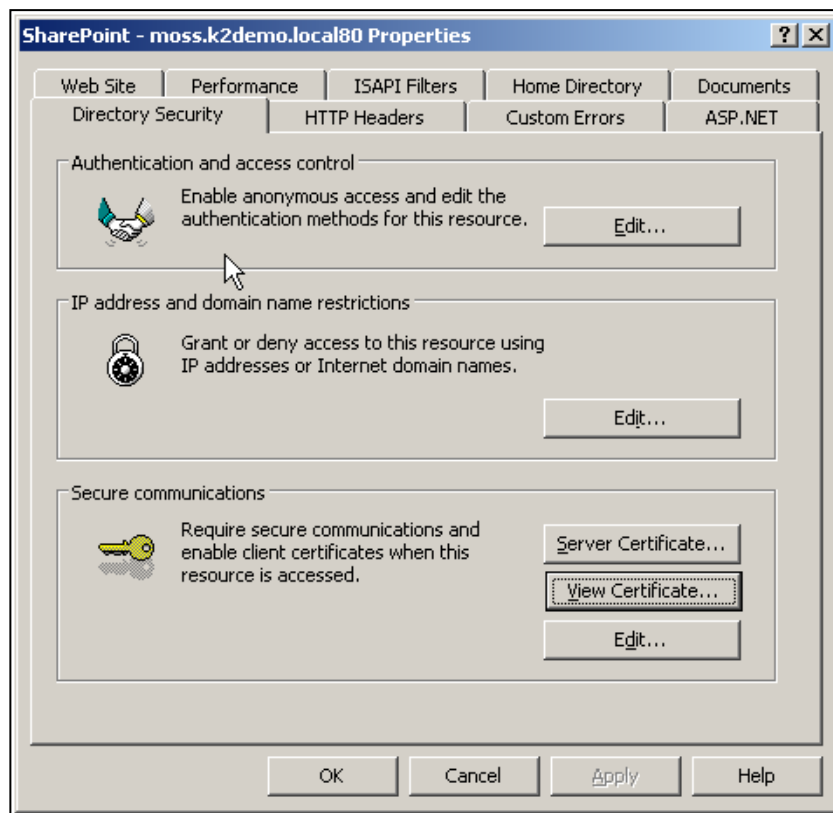
which is not digitally signed. Therefore, the form cannot be opened. The signature is lost even from InfoPath Client when trying to export the XML documents embedded in the InfoPath Form Template. This document provides the reader with a solution to get around this InfoPath limitation.

ENABLE SSL ON THE SHAREPOINT WEB APPLICATION WEB SITE

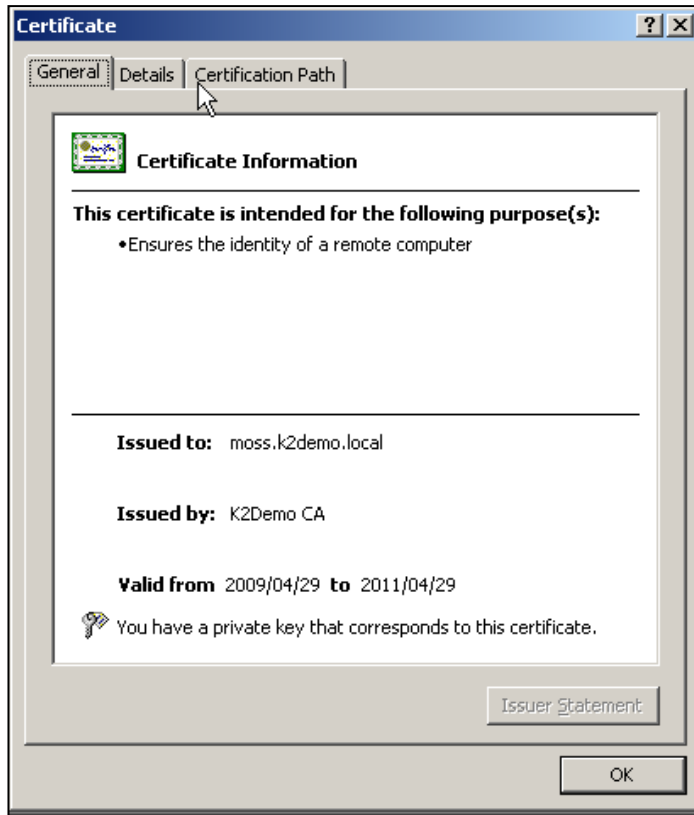
Perform the following steps on the server hosting the SharePoint web application:

INTERNET INFORMATION SERVICES 6 (IIS6)

- Open IIS6 Manager
- Navigate to the website of the SharePoint web application
- Right click on the website and select Properties.
- Click on the Directory Security tab in the new window as displayed below:

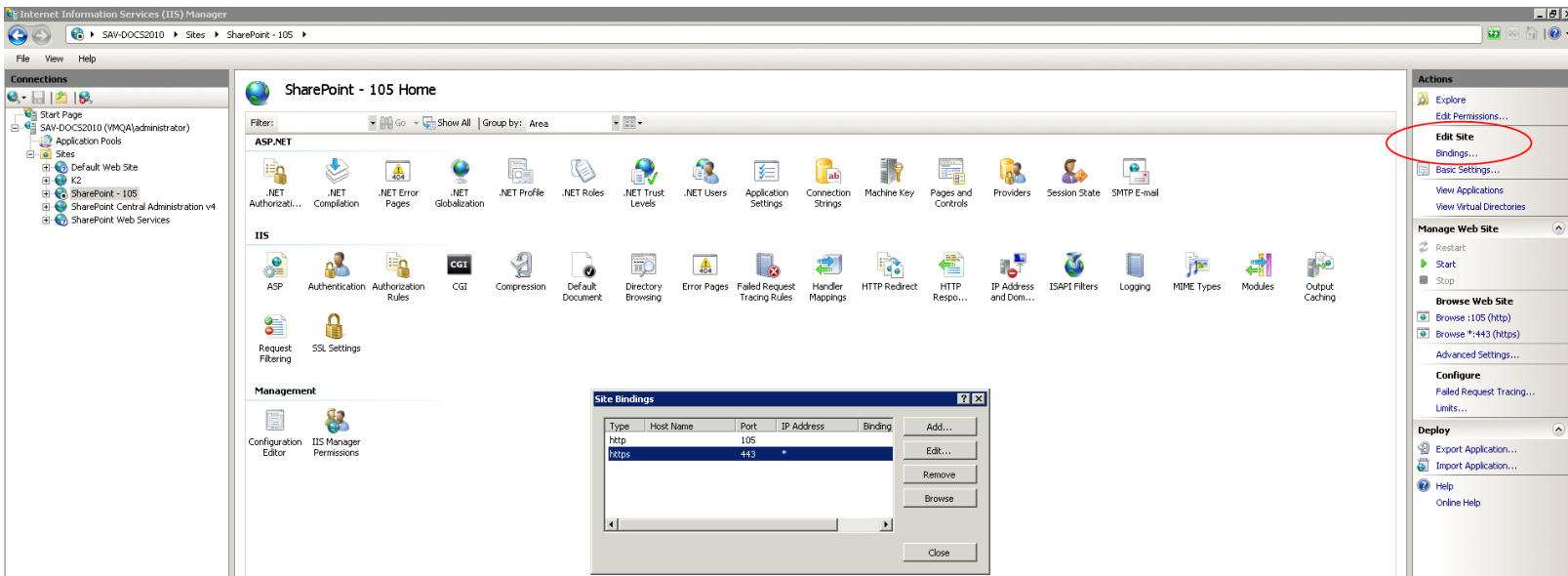


- Click on View Certificate...
- The certificate should be a **valid** certificate **issued to the website** and the certificate common name should be the same as the website host-header, as seen in the picture below.
- If the certificate is not valid, a valid certificate should be obtained for the website. This is not covered in this document.

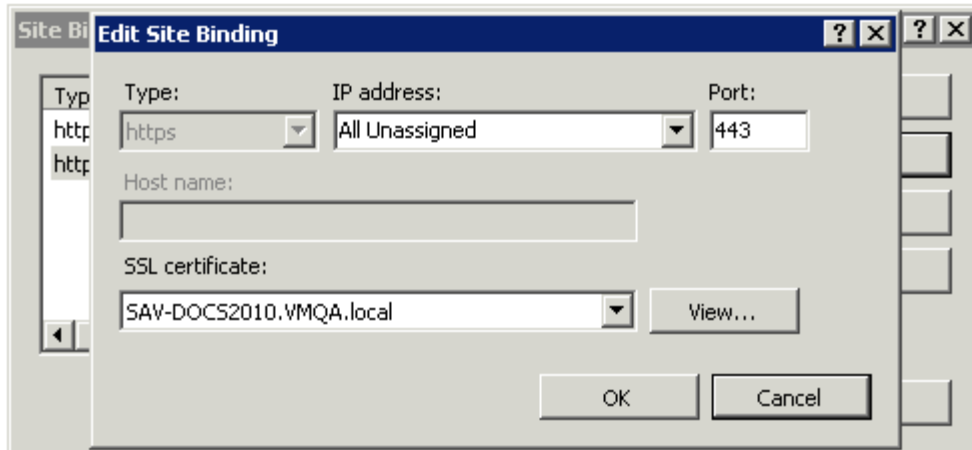


INTERNET INFORMATION SERVICES 7 (IIS7)

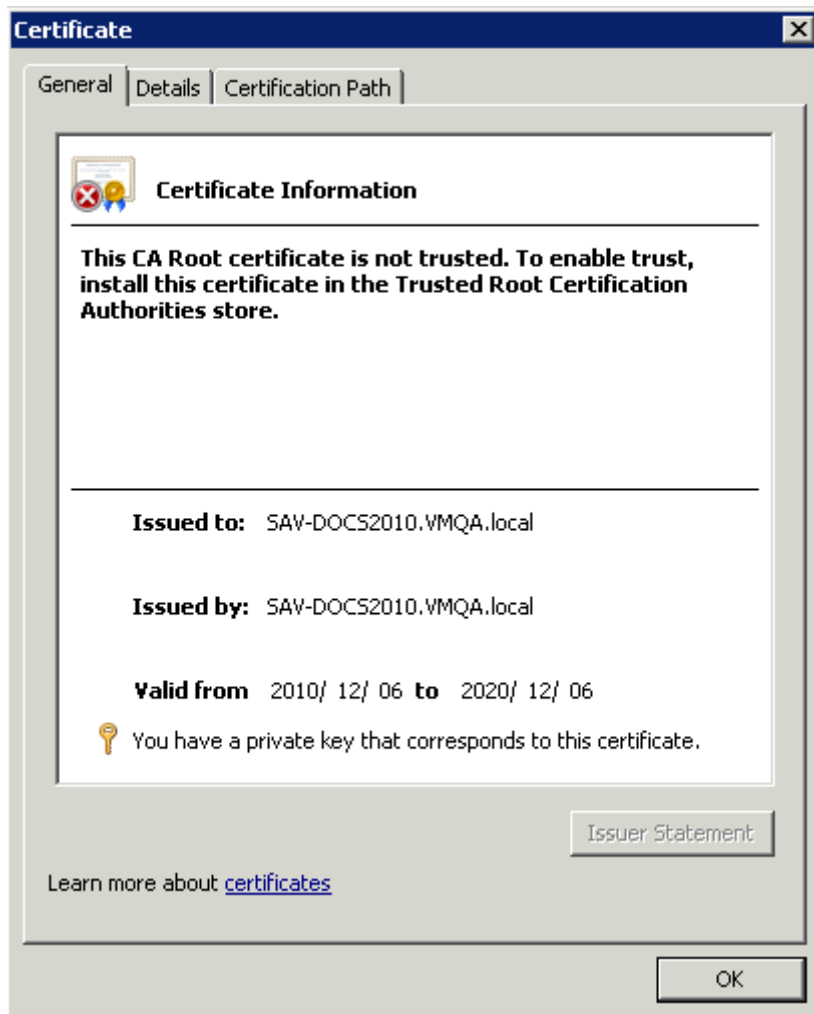
- Open IIS7 Manager
- Navigate to the website for the SharePoint web application
- Click on the website and select Bindings under Actions > Edit Site as displayed below:



- Select the secure binding and click Edit.



- Click on the View button next to the SSL certificate. The certificate will be displayed as shown below:



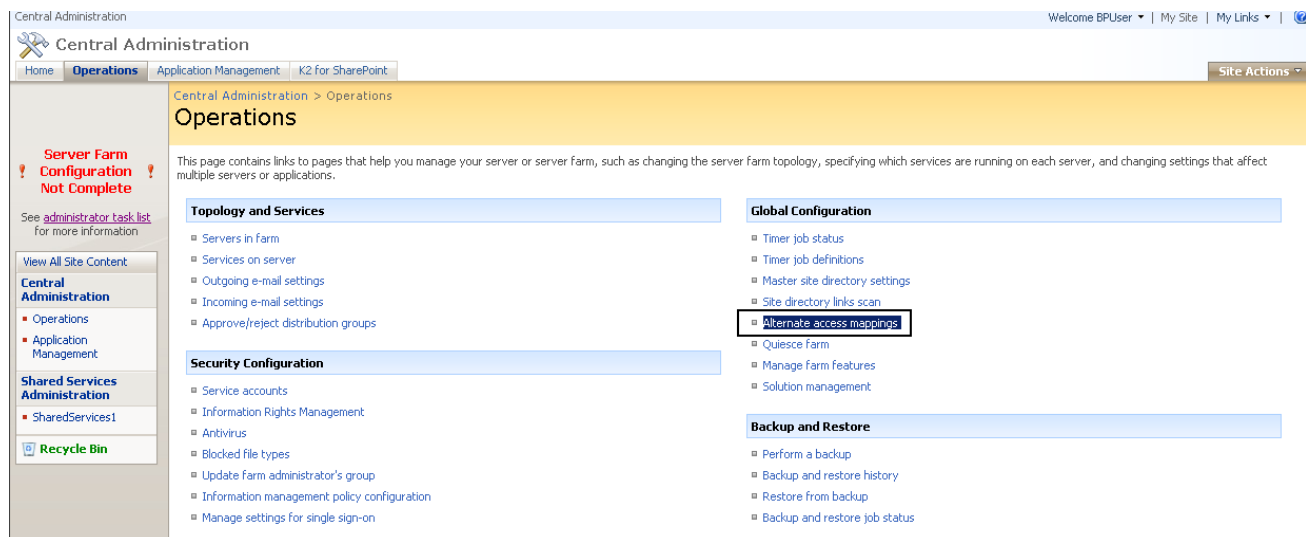
- The certificate should be a **valid** certificate **issued to the website** and the certificate common name should be the same as the website host-header, as seen in the picture above.
- If the certificate is not valid, a valid certificate should be obtained for the website. This is not covered in this document.

CHANGE ACCESS MAPPING FOR WEB APPLICATION

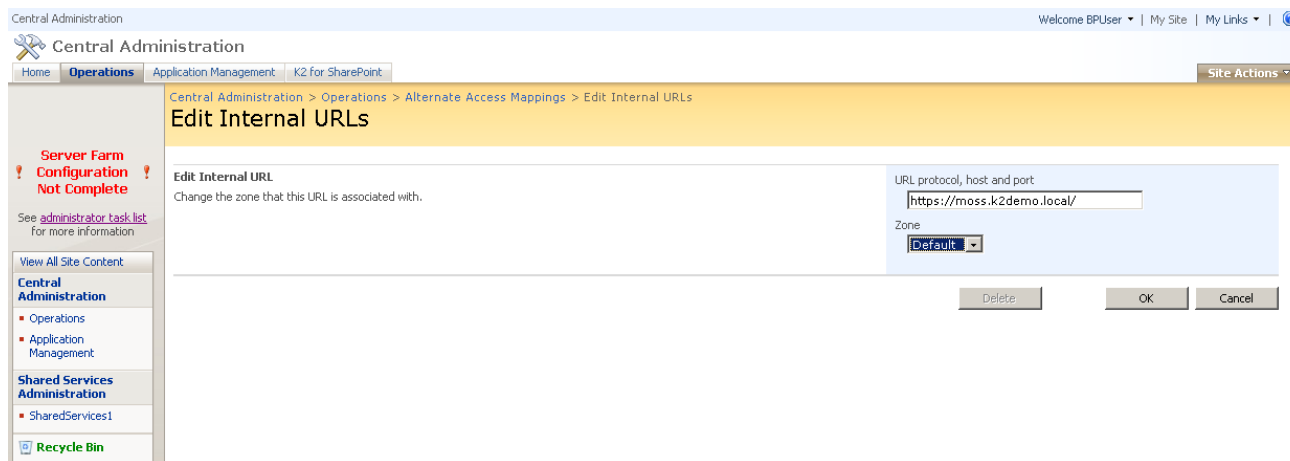
If SSL is enabled on a SharePoint web application that already existed (before SSL was enabled), the access mapping will have to be changed for the SharePoint web application. Perform the following steps:

SHAREPOINT 2007

- Open Central Administration and navigate to the Operations tab.
- Under the Global Configurations section, click on the Alternate access mappings link, as in the picture below:



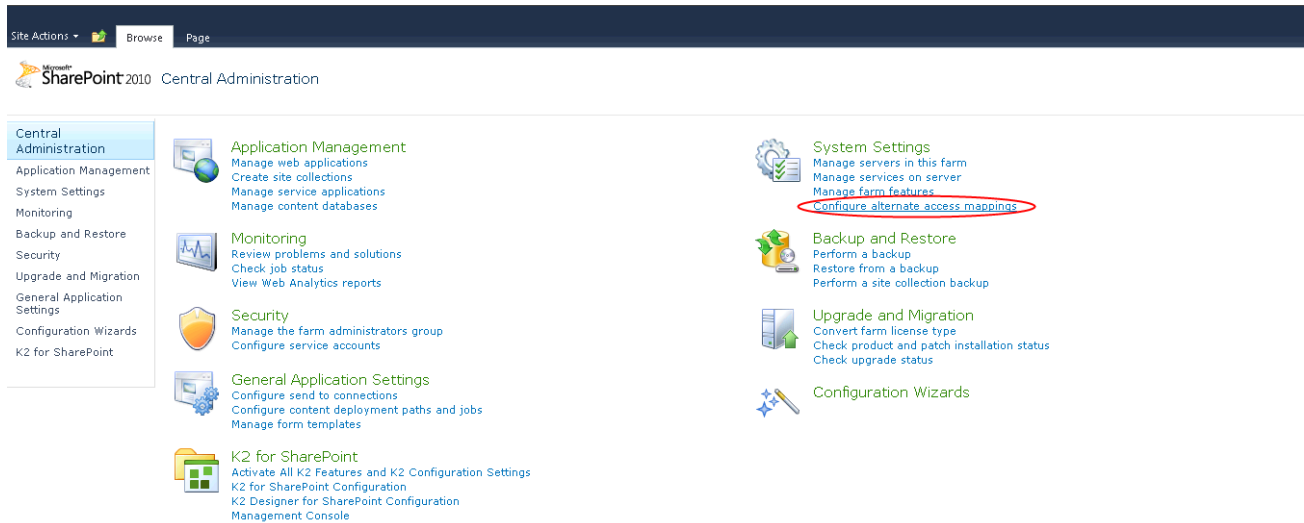
- Ensure that the web application has the HTTPS prefix, as in the picture below:



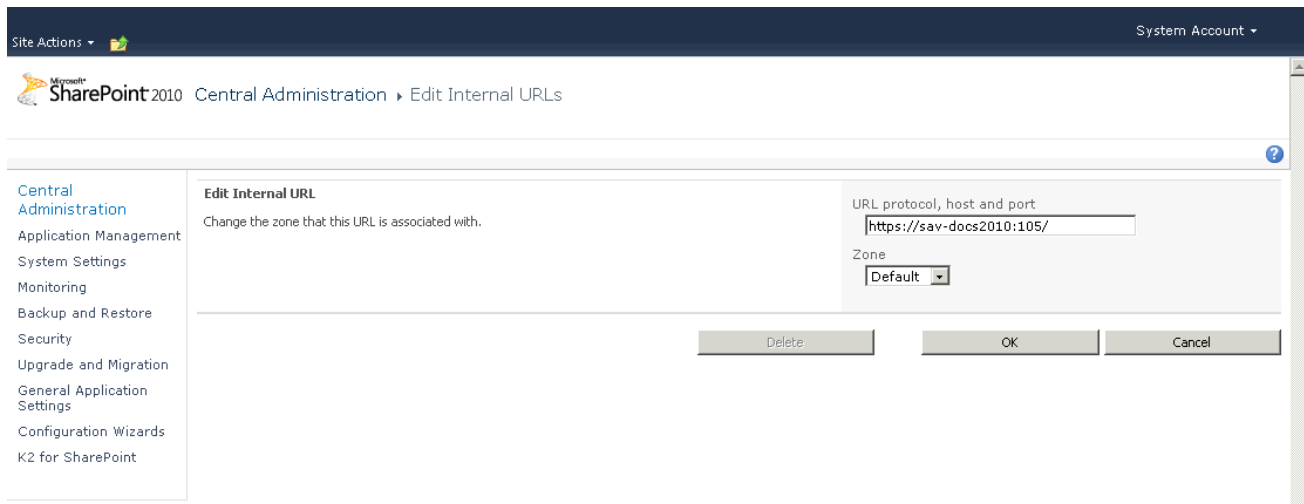


SHAREPOINT 2010

- Open Central Administration.
- Under the System Settings section, click on the Configure Alternate access mappings link, as in the picture below:



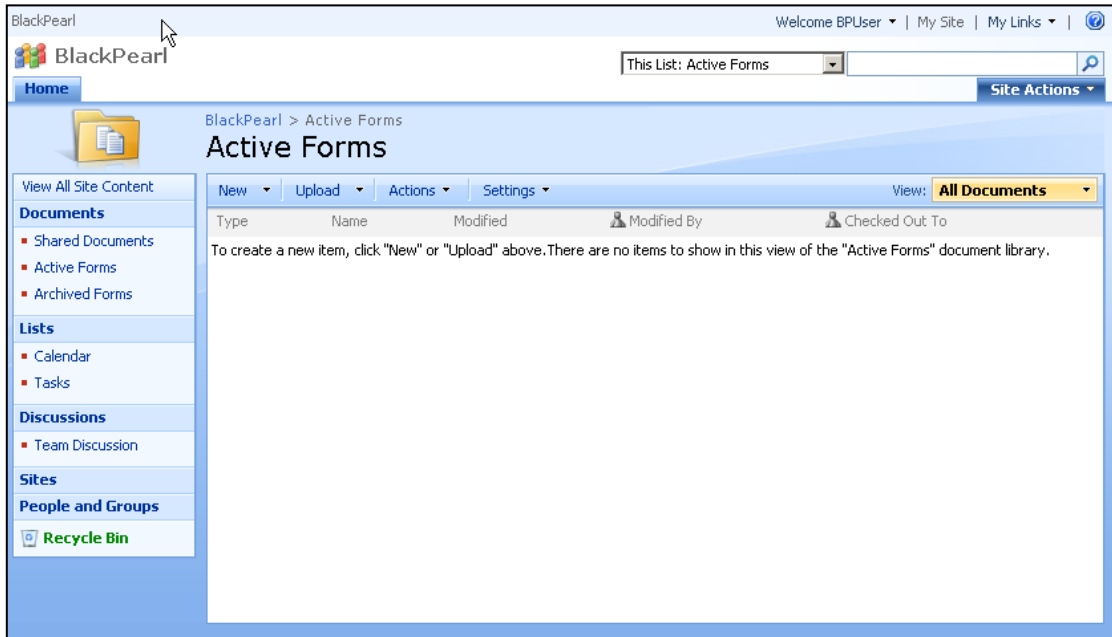
- Ensure that the web application has the HTTPS prefix, as in the picture below:





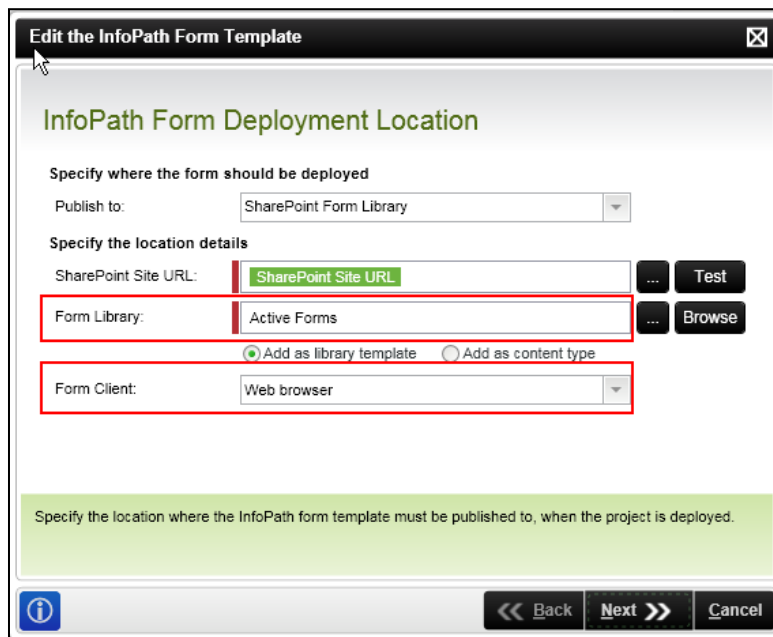
CREATE INFOPATH FORMS LIBRARY

Create a new InfoPath Forms Library in the applicable site to where the InfoPath form will be published to. Use the default settings for the site, it will be changed later. In this example, the Forms Library is called **Active Forms** as can be seen in the picture below:



DESIGN THE INFOPATH FORM TEMPLATE

Create your InfoPath forms document and integrate the form with a K2 process. Ensure that the **Form Library** and **Form Client** settings have been correctly specified in the InfoPath Integration wizard in K2 Designer for Visual Studio, as in the picture below:





INFOPATH FORM LOCATIONS

In addition to the InfoPath Form Templates folder that gets created in the K2 Designer for Visual Studio project, the InfoPath form should be kept in at least 1 more location. This will be the location where the InfoPath form will be manually published from. In this example, the “publish from” folder is C:\SSL Example\emj_IP_Form and the “publish to” folder will be the InfoPath Form Templates folder inside the K2 Designer for Visual Studio project (in this case, C:\SSL Example\K2_Project_SSL\K2_Project_SSL\InfoPath Form Templates).

BUILD AND DEPLOY THE K2 PROCESS

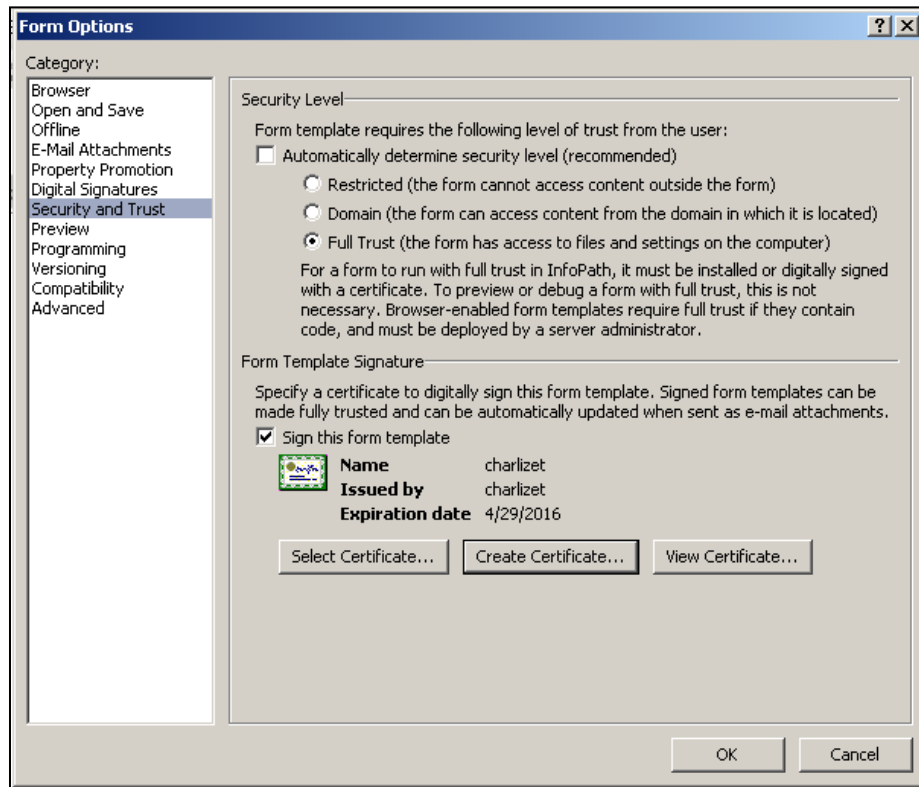
Deploy the K2 process (with the InfoPath form) from K2 Designer for Visual Studio and ensure it is successful. Close Visual Studio.

ADD SIGNED INFOPATH FORM TEMPLATE TO FORMS LIBRARY

STEP 1: RE-SIGN THE INFOPATH FORM TEMPLATE

During the deployment of the process, the K2 Server extracts the InfoPath Form from the InfoPath Form Template using a cabinet-extraction utility. This utility, however, removes the digital signature from the InfoPath Form Template. To put the digital signature back into the InfoPath Form Template, and InfoPath Form, perform the following steps:

1. Copy the InfoPath Form from the InfoPath Form Templates folder to the “publish from” folder.
2. Right click on the Form Template and select Design.
3. Navigate to Tools > Form Options... > Security and Trust.
4. Set the security level to Full Trust.
5. Check the Sign this form template box, as below.
6. For web enabled browsing, click on Compatibility and check the box Design a form template that can be opened in a browser or InfoPath.
7. Click on OK.
8. Do not close the InfoPath Client.



STEP 2: PUBLISH THE INFOPATH FORM TEMPLATE

Once the InfoPath Form Template has been re-signed, publish the Form Template to the “**publish to**” folder (InfoPath Form Templates) by performing the following steps:

1. With the InfoPath Client still open, click on File and then on Publish...
2. When asked to save the form, save it to the “**publish from**” folder and **not** the “**publish to**” folder (InfoPath Form Templates).
3. Choose to publish the Form Template to a SharePoint server and click Next.
4. Specify the URL to the SharePoint site that contains the newly created Forms Library and click Next.
5. Click Next again.
6. A location and file name for the Form Template will have to be specified. Click on Browse and navigate to the “**publish to**” folder (InfoPath Form Templates), select the Form Template and choose to overwrite the existing file. Click Next.
7. The form will now be published to the Forms Library in SharePoint.
8. Close the Publishing wizard and then the InfoPath form.

STEP 3: UPLOAD THE INFOPATH FORM TEMPLATE FROM CENTRAL ADMINISTRATION

The InfoPath Form Template that was published to the “**publish to**” folder (InfoPath Form Templates), needs to be uploaded from SharePoint Central Administration.

1. Open SharePoint Central Administration as a SharePoint Administrator
2. Navigate to Application Management and find the InfoPath Forms Services section



3. Click on Manage Form Templates
4. Click on Upload form template
5. Click on Browse and navigate to the “**publish to**” folder (InfoPath Form Templates), select the Form Template that was published.
6. Click on Upload, and when the upload is finished, click on OK
7. The new Form Template is listed in the list of templates

Central Administration > Application Management > Manage Form Templates

Manage Form Templates

Upload form template

Type	Name	Version	Modified	Category	Status	Workflow Enabled
	DefaultBasicAssociationForm.xsn	1.0.1.5	4/28/2009		Ready	Yes
	DefaultBasicInstantiationForm.xsn	1.0.0.140	4/28/2009		Ready	Yes
	DefaultBasicTaskForm.xsn	1.0.1.109	4/28/2009		Ready	Yes
	K2_Template_SSL.xsn	1.0.0.35	4/29/2009		Ready	No
	CollectSignatures_Sign_1033.xsn	12.0.0.1	2/28/2007	Workflow	Ready	Yes
	Expiration_Complete_1033.xsn	12.0.0.1	2/28/2007	Workflow	Ready	Yes
	RR_OOB_WrapItUp_1033.xsn	12.0.0.1	2/28/2007	Workflow	Ready	Yes
	ReviewRouting_Assoc_1033.xsn	12.0.0.1	2/28/2007	Workflow	Ready	Yes
	ReviewRouting_Init_1033.xsn	12.0.0.1	2/28/2007	Workflow	Ready	Yes
	ReviewRouting_Modify_1033.xsn	12.0.0.1	2/28/2007	Workflow	Ready	Yes
	ReviewRouting_Review_1033.xsn	12.0.0.1	2/28/2007	Workflow	Ready	Yes
	ReviewRouting_UpdateTasks_1033.xsn	12.0.0.1	2/28/2007	Workflow	Ready	Yes
	Xlate_Complete_1033.xsn	12.0.0.1	2/28/2007	Workflow	Ready	Yes










STEP 4: ACTIVATE THE INFOPATH FORM TEMPLATE IN SITE COLLECTION

The next step is to activate the newly uploaded InfoPath Form Template as a site collection feature in the site collection that hosts the Forms Library.

1. Open Internet Explorer (logged in as a Site Collection Administrator) and navigate to the Site Collection hosting the Forms Library
2. In the Site, click on Site Actions and then on Site Settings
3. Under Site Collection Administration, click on Site collection features
4. Click on the Activate button next to the Form Template

BlackPoint > Site Settings > Site Features

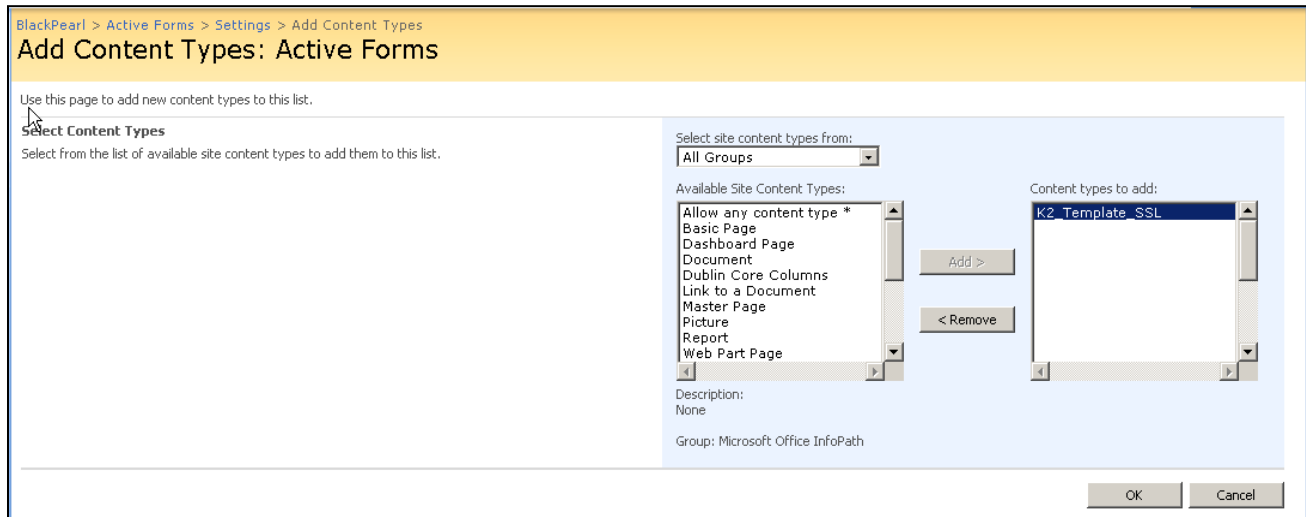
Site Collection Features

Name	Status
 Collect Signatures Workflow Gathers signatures needed to complete a Microsoft Office document.	<input type="button" value="Deactivate"/> <input type="button" value="Active"/>
 Disposition Approval Workflow Manages document expiration and retention by allowing participants to decide whether to retain or delete expired documents.	<input type="button" value="Deactivate"/> <input type="button" value="Active"/>
 K2 Administration Links Adds links to a Site Collection's Site Settings section to enable the administration of K2 Features for that Site Collection.	<input type="button" value="Activate"/>
 K2 Default Task Form (Advanced) This content type is used by the K2 Workflow Integration Default task page (Advanced). It inherits from the out of the box workflow task.	<input type="button" value="Activate"/>
 K2 Default Task Form (Basic) This content type is used by the K2 Workflow Integration Default task page (Basic). It inherits from the out of the box workflow task.	<input type="button" value="Activate"/>
 K2 Web Designer Menu Item Adds a menu item to every list in a site collection in order to add or edit K2 workflow processes.	<input type="button" value="Activate"/>
 K2 Web Workflow Task Form This content type is used by the K2 Web Designer Workflow task page. It inherits from the out of the box workflow task.	<input type="button" value="Activate"/>
 K2_Template_SSL Microsoft Office InfoPath Form template.	<input type="button" value="Deactivate"/> <input type="button" value="Active"/>
 Office SharePoint Server Enterprise Site Collection features Features such as the business data catalog, forms services, and Excel Services, included in the Office SharePoint Server Enterprise License.	<input type="button" value="Deactivate"/> <input type="button" value="Active"/>

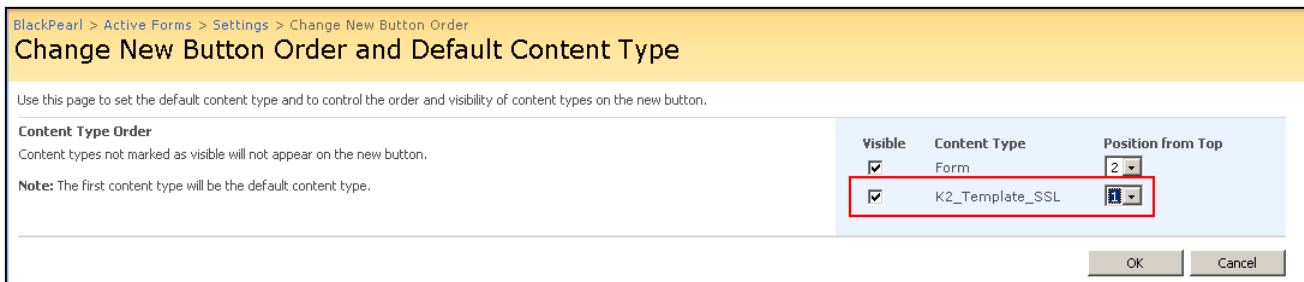
STEP 5: ADD INFOPATH FORM TEMPLATE AS CONTENT TYPE

The final step is to add the Form Template as a Content Type in the SharePoint Forms Library.

1. Open Internet Explorer (logged in as a Site Collection Administrator) and navigate to the Forms Library
2. In the Forms Library, click on Settings and then on Form Library Settings
3. Under General Settings, click on Advanced Settings
4. Set Allow management of content types to Yes
5. For web enabled browsing, set Opening browser-enabled documents to Open as a Web page
6. Click on OK
7. Scroll down to the section Content Types
8. Click on Add from existing site content types
9. Under Available Site Content Types, select the Form Template and click Add
10. Click OK



11. Click on Change new button order and default content type and change the Form Template's position from top to 1



12. The Form Template with the digital signature is now set as the template of the Forms Library and will be used to create new InfoPath Forms

Content Type	Visible on New Button	Default Content Type
K2_Template_SSL	✓	✓
Form	✓	

Add from existing site content types
 Change new button order and default content type

UPDATE THE INFOPATH FORM TEMPLATE IN FORMS LIBRARY

To update the Form Template in a SharePoint Forms Library requires the following steps:

1. Open Internet Explorer (logged in as a Site Collection Administrator) and navigate to the Forms Library
2. In the Forms Library, click on Settings and then on Form Library Settings
3. Scroll down to the section Content Types
4. Click on the name of the Form Template
5. In the new screen under settings, click on Delete this content type and then on OK
6. Navigate back to the Forms Library
7. In the Forms Library, click on Site Actions and then on Site Settings
8. Under Site Collection Administration, click on Site collection features
9. Click on the Deactivate button next to the Form Template
10. Open SharePoint Central Administration as a SharePoint Administrator
11. Navigate to Application Management and find the InfoPath Forms Services section
12. Click on Manage Form Templates
13. Hover the mouse cursor over the Form Template name. A dropdown will appear
14. In the dropdown select Remove Form
15. In the new screen click on the Remove button
16. The Form Template is now completely removed from SharePoint
17. Do the updates to the Form Template
18. When finished, repeat steps 1 to 5 in previous section

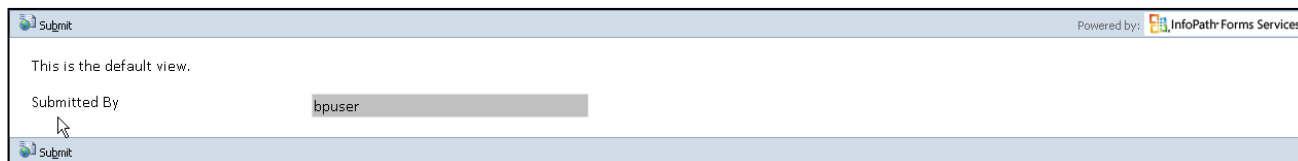
WORKAROUND FOR API STARTED PROCESSES

This section describes the workaround for InfoPath integrated processes that was started using the K2 API or IPC Event Wizard. Please note that, before starting these steps, the digital signed Form Template must be added as a content type in the SharePoint Forms Library, as described in a previous section.

STEP 1: GET THE SIGNED INFOPATH FORM XML

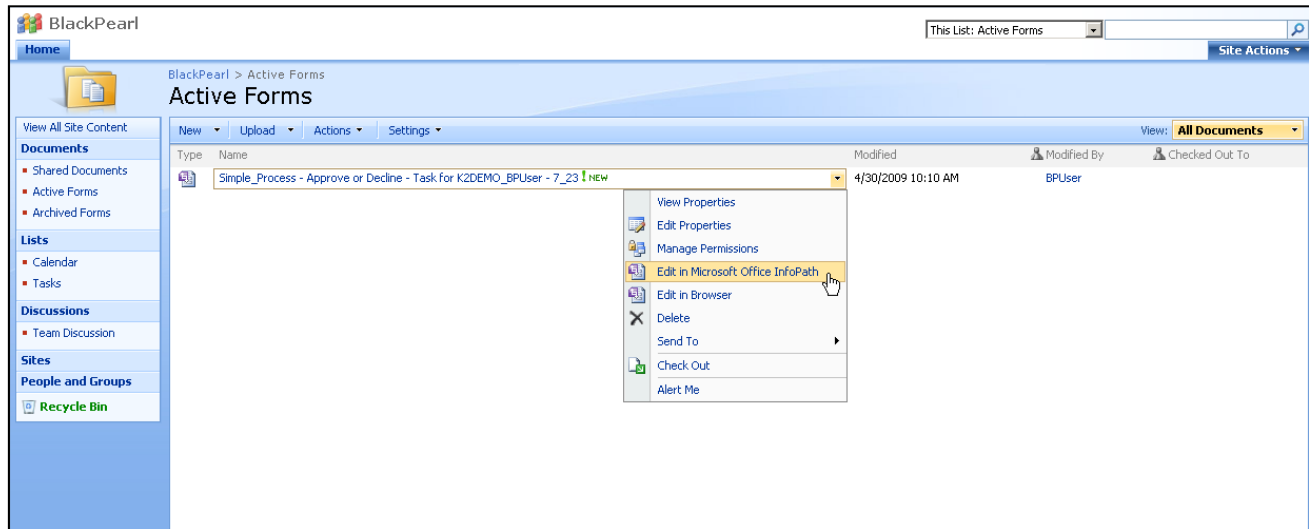
As explained earlier, K2 saves the InfoPath Form as an XML field in the process definition, which is then used when the process is started through the K2 API. The workaround is to get the signed InfoPath Form from the Forms Library, and then save it to a string process data field. This data field value will then be used to overwrite the unsigned value of the XML field with the signed string value in the data field.

1. Open Internet Explorer and navigate to the Forms Library.
2. Click on New and select the Forms Template. (A default view can be created for this step. The default view **MUST** contain some text (at the minimum) or it is discarded by InfoPath.



3. When the InfoPath Client or Web Browser opens the empty document, submit it immediately
4. Open K2 Workspace as one of the destination users of the first client event in the process

5. Open the InfoPath task in the user's worklist and close it immediately after it has finished loading.
6. This will force the K2 Server to upload the signed InfoPath Form (obtained from step 2) to the Forms Library.
7. Open Internet Explorer and navigate to the Forms Library again.
8. There should be a new InfoPath Form.
9. Hover the mouse cursor over the InfoPath Form until a dropdown appears.
10. In the dropdown, select Edit in Microsoft InfoPath to open the InfoPath Form in InfoPath Client

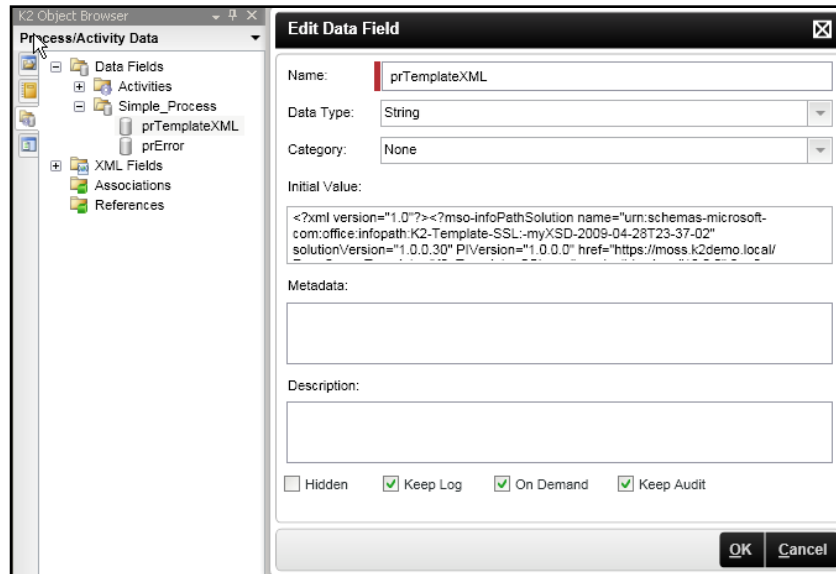


11. Once it is open, click on File and then Save As... and save the InfoPath Form as a XML file.

STEP 2: PUT INFOPATH FORM XML IN PROCESS DATA FIELD

The next step is to put the InfoPath Form XML obtained in the previous step, into a process data field.

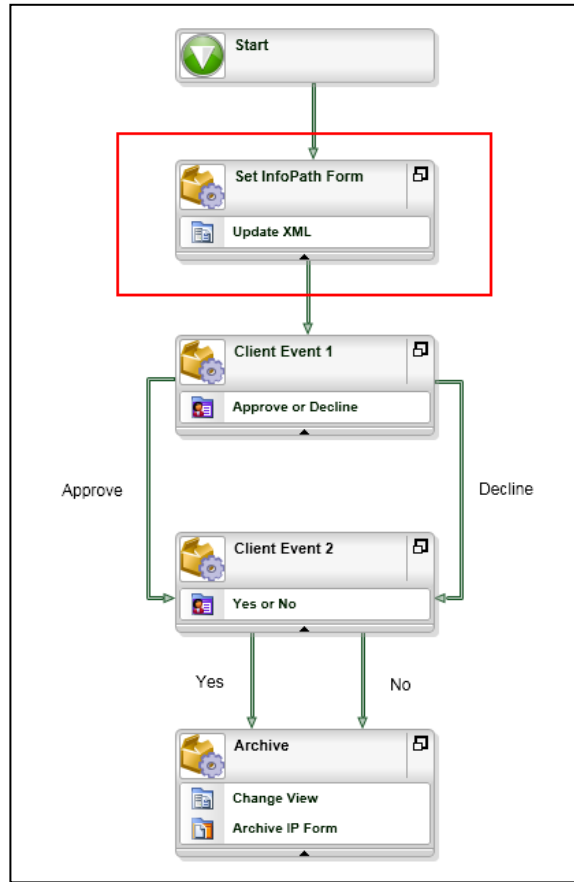
1. Open your process definition in K2 Designer for Visual Studio.
2. Create a process data field of type string (in this example, it's called prTemplateXML).
3. Open the XML file saved in the previous section in Notepad and copy the XML text.
4. Paste the XML text in the string process data field as the initial value.



STEP 3: REPLACE INFOPATH FORM XML AT RUNTIME

The final step is to replace the InfoPath Form XML obtained from the K2 database with the XML in the process data field. This can only be done at runtime, so a Server Code event need to be created to overwrite the value of the K2 generated XML field **before** the first client event.

1. Open your process definition in K2 Designer for Visual Studio
2. Place a Server Code event just before the first InfoPath Client event.



3. Right click on the Server Code event and select View Code > Event Item from the context menu
4. Add the code below to the event to overwrite the InfoPath Form XML

```

try
{
    K2.ProcessInstance.XmlFields["K2TemplateSSL"].Value =
    K2.ProcessInstance.DataFields["prTemplateXML"].Value.ToString();
}
catch (Exception ex)
{
    K2.ProcessInstance.DataFields["prError"].Value =
    (object)("Exception in Update XML: " + ex.Message);
}
  
```

In the code sample above:

- a. There is a process data field of type string called prError to contain exception messages
 - b. K2TemplateSSL is the XML field created by the InfoPath Integration wizard
 - c. prTemplateXML is the process data field of type string created in the previous section
5. Now compile and deploy the process definition and it should function properly if it was started from the K2 API