



Microsoft Dynamics CRM® 2011
Event Pipeline
White Paper

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Introduction

The Microsoft Dynamics CRM 2011 Event Pipeline provides a declarative approach of publishing events to external systems. These external systems are represented as endpoints. The possible ways of communication between Microsoft Dynamics CRM 2011 and an endpoint is the file system (by publishing an XML file), the Windows Communication Foundation and, especially for Microsoft Dynamics CRM 2011 Online, the Windows Azure Service Bus.

Event Pipeline vs. out of the box functionality

By default, Microsoft Dynamics CRM 2011 is not able to publish events to external systems, except for the Service Bus. However, in on-premise scenarios this approach is not the preferred way. Furthermore the whole configuration has to be done by using an administrative tool.

In contrast, the Event Pipeline allows configuring all endpoints and their associated events declaratively.

Key Benefits

First of all, there are no special tools to define endpoints and events, except the Windows Azure Service Bus. To use the Service Bus they have to be defined first via the Plugin Registration Tool. Afterwards it is very easy to work with.

Furthermore, the triggers can be defined. So the event message will only be sent when, for instance, an option set value is set to "2". In addition, the new value of the trigger can be defined. Therefore, simple business rules can be defined.

Considering one wants to track an order process. A sales person completes an order in CRM, updates the sales order and sets the option set "ERP status" to "Send to ERP". Since this value has been defined for the "ERP status" option-set as the event trigger, the event will be published. The new value of the option set as "Sending..." has been also defined. Now the message can be received by a middleware system, e.g. MS BizTalk Server. It sends the received information to an ERP system and updates the "ERP status" option set to inform users about success or error during transmission to ERP. Thus there is a possibility to track each step of the transmission right in the CRM system.

Regarding the upcoming AppFabric releases and the high demand of Microsoft CRM Online, an event pipeline like this will be highly valuable, since the next release will also support Queues and Topics. There will be a possibility to send the events to the Service Bus and a filter rule decides whether or not your system will receive this specific event, depending on CRM fields like organization id, entity name or message type.

Finally, it's an easy to use solution. Just install and start pushing events.

How it works

The Microsoft Dynamics CRM 2011 Event Pipeline is delivered as a solution package and can simply be installed via the web frontend of Microsoft CRM 2011.

After completing the installation, the creation of endpoints can be defined. An endpoint and the corresponding events will appear in one HTML5 application in CRM.

There are 3 possible configurations scenarios below.

File Configuration

A file endpoint looks similar to the screen below. The address, culture, encoding can be defined. The namespace field is very useful for BizTalk integrations, since the published XML message can directly be used by the BizTalk Server. In the namespace 2 simple patterns can be used for making the namespace more generic and dependent from the occurred event. "[entity]" will be replaced with the exported record entity name and "[message]" with the occurred CRM event. By choosing Full XML, the whole record will be exported as an XML file. When this option is not chosen, the MS CRM Event Pipeline will just publish a simple event message with the most important information (message name, entity name and entity id).

Below the endpoint configuration the Events configuration section appears. To define an event at least the target entity needs to be set up, the CRM event and the CRM event stage (before or after the core operation).

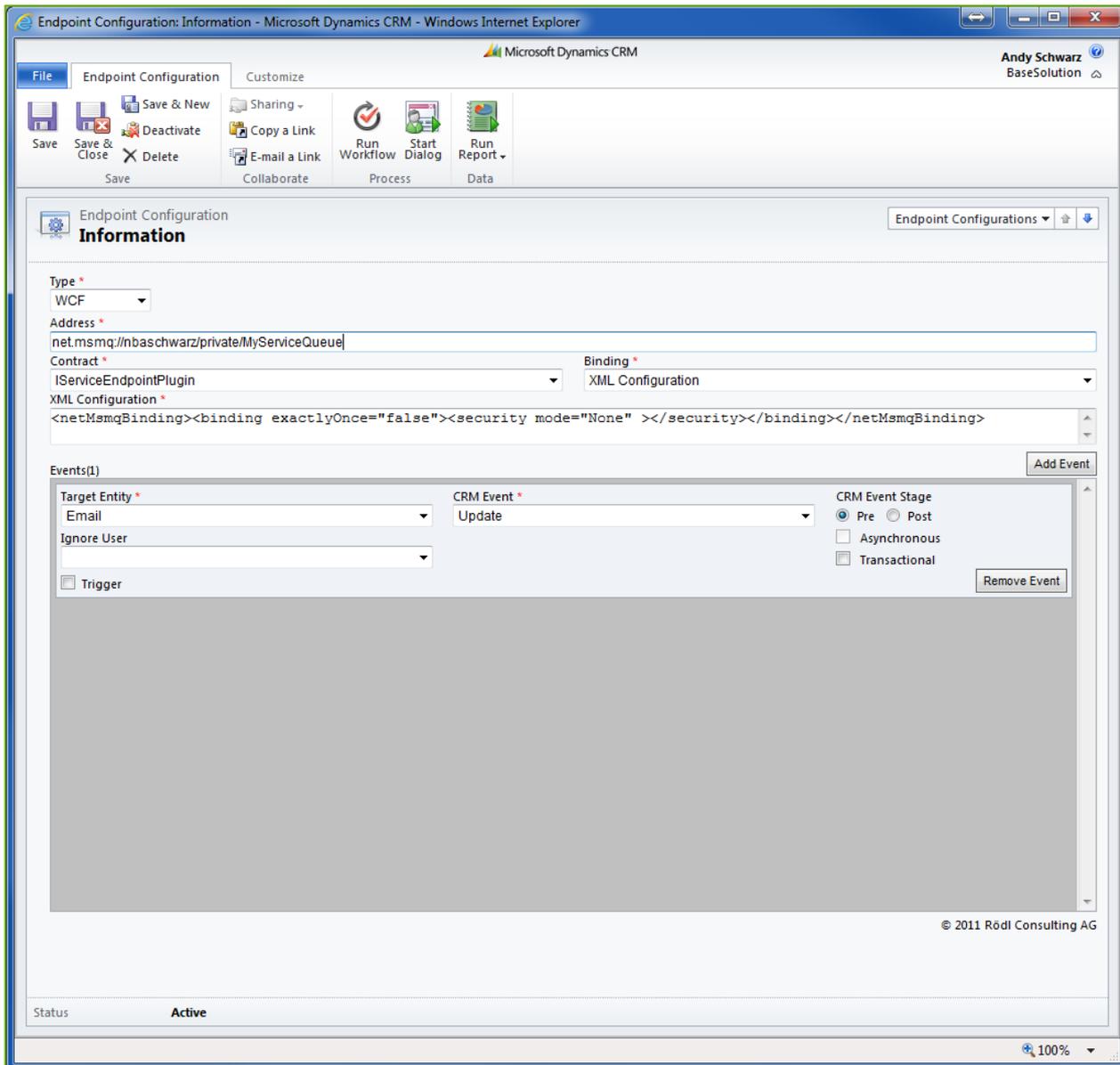
However, the further options can be defined.

Asynchronous allows the decision whether the event will be published synchronously or asynchronously (as a job).

Transactional gives you the opportunity to integrate this event into the CRM transaction. The main advantage of this (regardless the debugging opportunity) is, that one can prevent changes on records which are not correctly published as an event.

The ignore user drop down list is very important to avoid infinite loops. Considering, one defines an event for "Update Account". The published event will be processed by a middleware system such as MS BizTalk Server. Finally the middleware system writes back some information into the account record. By defining a user to ignore, the Event Pipeline will ignore this specific CRM event.

Then s trigger can be defined, as we already discussed.



WCF Configuration

The WCF configuration looks quite similar. The events are just the same, but the endpoint definition differs. In this case one can define the address (the uri to the WCF service) and a binding. At the moment BasicHttpBinding, NetTcpBinding and XML Configuration (for further binding configurations like netMsmqBinding) are supported. The contract (to complete the WCF abc) is defined by an interface from Microsoft XRM Sdk, so it's very common for .Net developers.

Service Bus Configuration

The Service Bus configuration is nearly the same. Again the endpoint definition differs. The appropriate Service bus endpoint (which has already been defined via the Plugin Registration Tool) just needs to be selected.

AppFabric Configuration

The AppFabric configuration provides the possibility to configure a connection to an AppFabric queue or topic. Of course you have to type in the appropriated information namespace, path, issuer name and issuer key. Those you get from your Azure management account.

Scenarios

A few common scenarios where the Microsoft Dynamics CRM Event Pipeline can be used, are enclosed below.

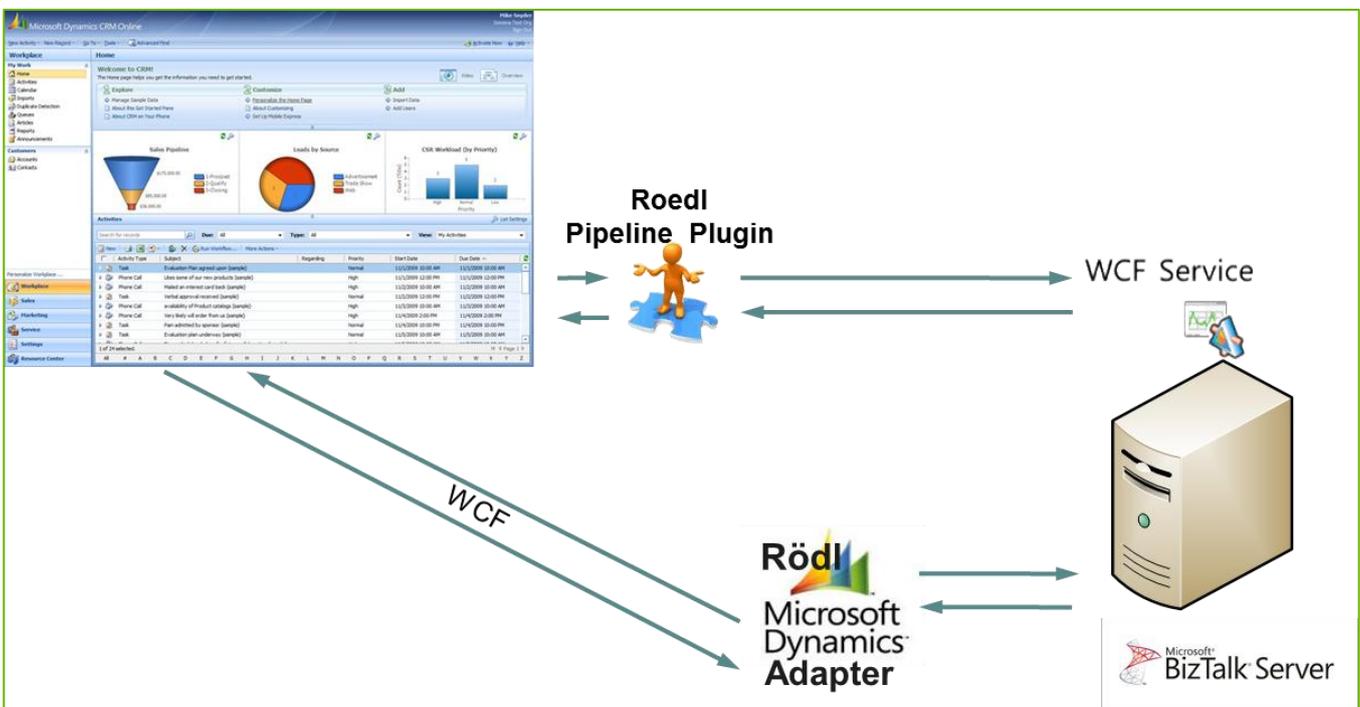
On Premise Custom Integration

Imagine you're running an on premise CRM 2011 system. You want to synchronize your contacts from your CRM system with a custom .Net application.

Assuming the custom application can be extended, you just need to create a new WCF service which implements the event interface, create a WCF endpoint and attach the necessary events (create, update, delete).

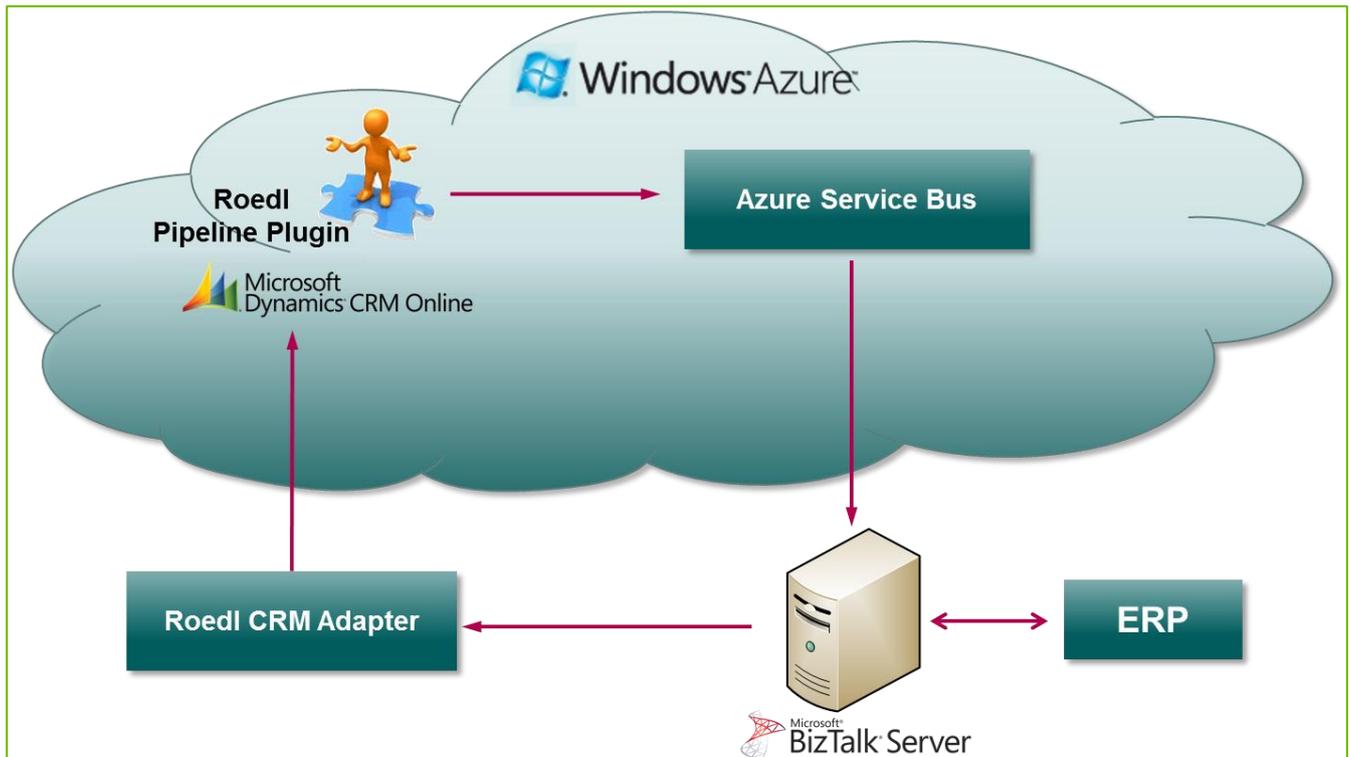
On Premise BizTalk Integration

Imagine you're running an on premise CRM 2011 system. You want to synchronize your accounts from your CRM system with your ERP system. In this case, you can also use the WCF service. However, usually the BizTalk Server is not a domain computer, so you may run in some security or communication problems. For this scenario, you can publish the events as an XML file to a file share. The BizTalk can listen on this folder and grab the files this way.



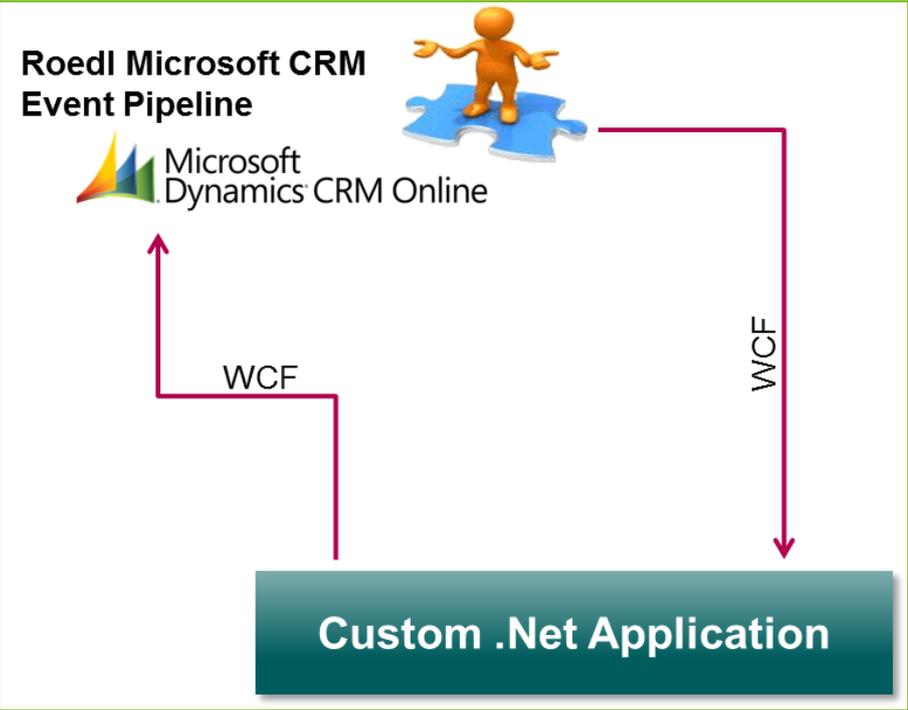
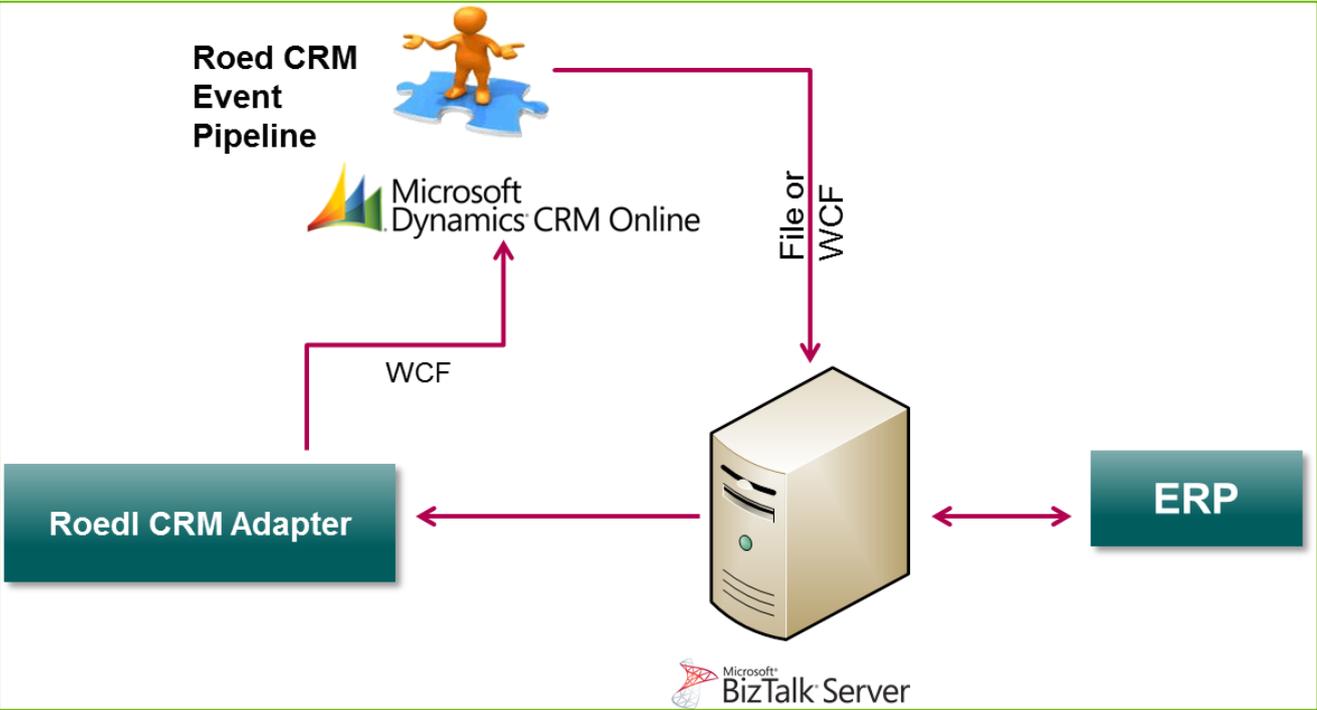
Online BizTalk Integration

Imagine you're running a CRM 2011 Online system and you want to transmit newly created accounts to your ERP system. For this scenario you can use the Service Bus endpoint. You can configure an on premise BizTalk Server to catch the events from the Service Bus and send it to the ERP system.



More Scenarios

There are many more possible scenarios, especially regarding CRM Online, the new AppFabric Service Bus and Cloud solutions at all.



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