Demo 2 - F&O and Service Bus

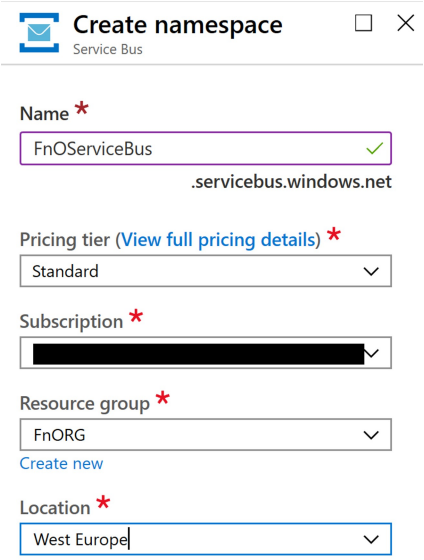
Wednesday, October 9, 2019 3:29 PM

Requirements:
- Azure subscription
- F&O subscription
- (optional) Visual Studio 2019 or Visual Studio Code

1. Create a Service Bus namespace:

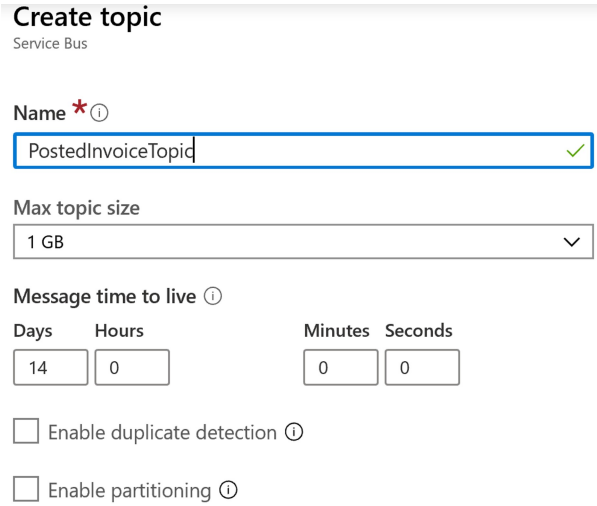
   a. From the Azure portal, click to **+ Create a Resource** > **Service Bus** namespace, set it up like this and then click **Create**:

   Name: give it any name
   Resource group: select an existing one or create a new one
   Region: West Europe
   Pricing tier: Standard
   Subscription: select the appropiate one



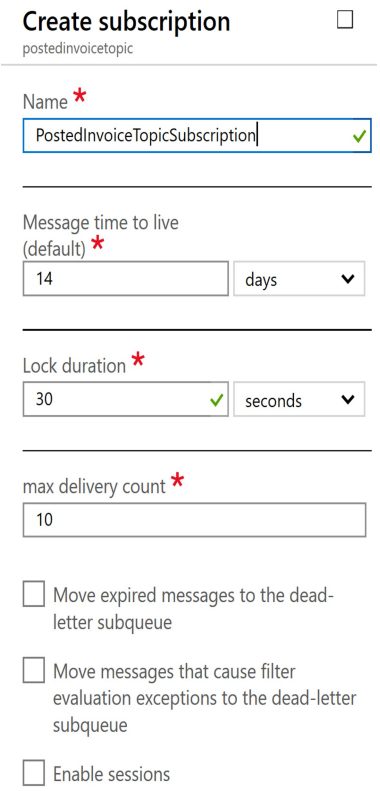
   b. Once created go to **Topics** > **+Topic,** set it up like this and click **Create**:

   Name: PostedInvoiceTopic
   Leave all other values by default.

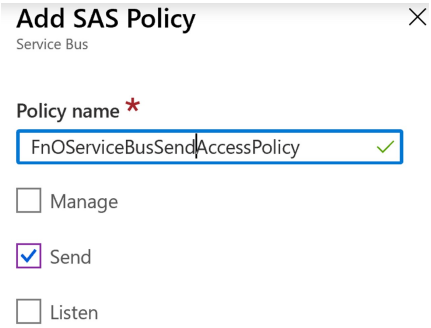


c. Now click on the topic you just created and click on **Subscription** > **+Subscription,** set it up like this and click **Create**:

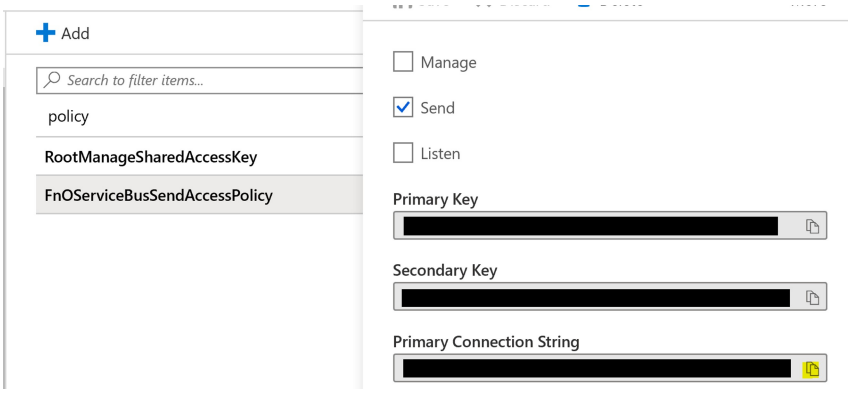
Name: PostedInvoiceTopicSubscription
Leave all other values by default.



d. Go back to your service bus namespace overview and click on **Shared Access Policies** > **+Add** > give it a name and select only **Send**, then click **Create**:



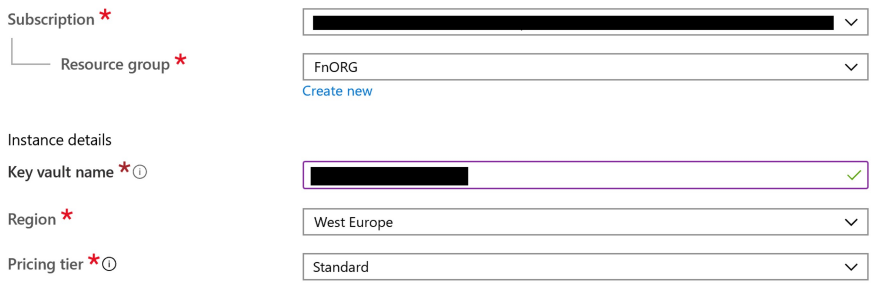
e. Click on the policy you just created and copy the Primary Connection String:



2. Create a new Key Vault:

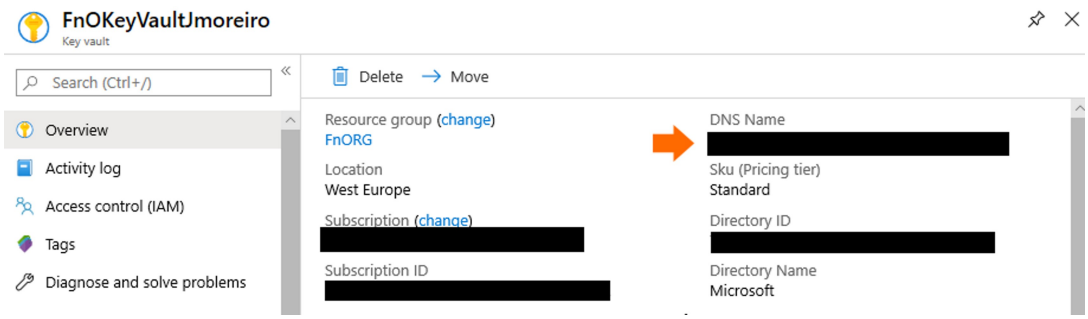
   a. Create a new **Key Vault** resource, select the appropriate subscription and set it up like this:

      Resource group: select an existing one or create a new one
      Key vault name: give it any name
      Region: West Europe
      Pricing tier: Standard

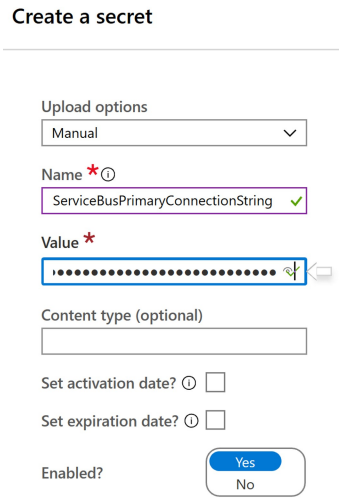


   b. Click **Review and Create** > **Create.**

   c. Once created, go to the Key Vault and under **Overview** copy the **DNS Name** value:



   d. Under **Secrets** click on **+Generate/Import**, give this secret a name and paste the value of the Primary Connection String you copied in the previous step for the Service Bus shared access policy, leaving the rest of field values by default, then click **Create**:

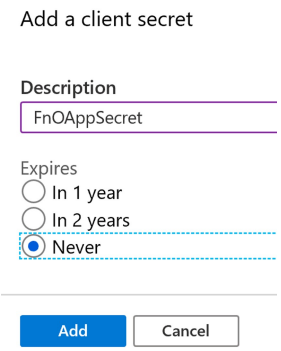


   e. Copy the name of the secret you just created.

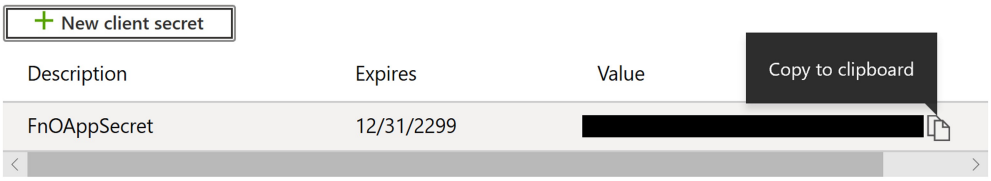
3. Register a new app:

   a. Go to **All Services > Security** > **Azure Active Directory** > **App Registrations** > **New Registration**, give it a name and click **Register.**

   b. Once created, go to **Certificates & Secrets** > +**New Client Secret**, give the secret a name and set it to never expire:



c. Copy the secret (make sure you copy it now, otherwise you will need to create a new one if you don't):

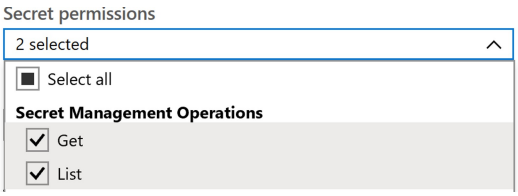


d. Go to **Overview** and copy the **Application (client) ID**.

4. Add an access policy to your Key Vault:

a. Go to the Key Vault you created earlier then go to **Access Policies** > **+Add Access Policy**, set it up like this:

Select Principal: select the App you registered earlier > **Select**
Secret permissions: select Get and list:



b. Click **Add**.

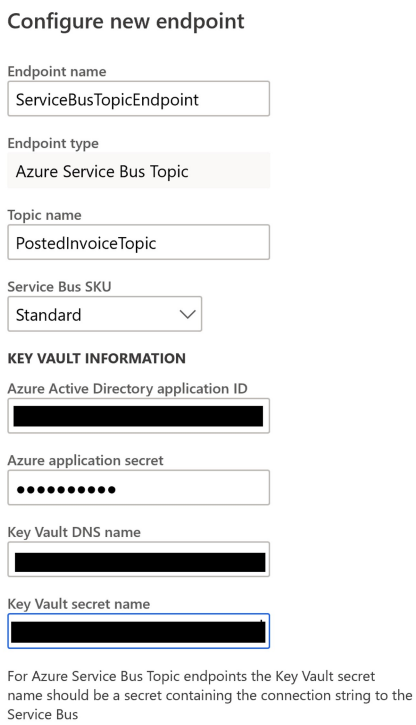
c. Click **Save**.

5. Configure the business event endpoint:

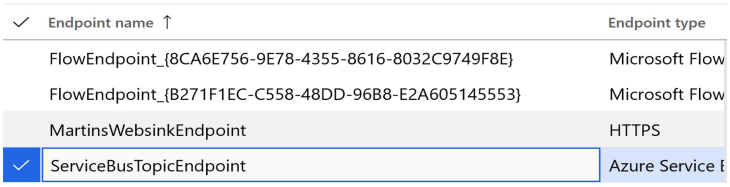
a. Go to **System Administration** > **Setup** > **Business Events** > **Business Events Catalog** > **Endpoints** > **+New**

b. Select **Azure Service Bus Topic**, click **Next.**

c. Give the endpoint a name and fill out all fields with the values from the previous steps, then click **Ok**:

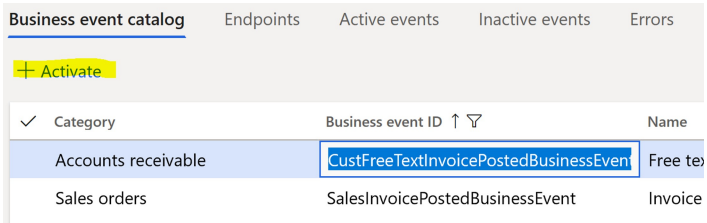


d. If successful, you should now see your new Service Bus Topic endpoint listed:

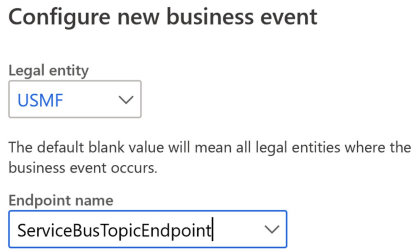


6. Activate the business event:

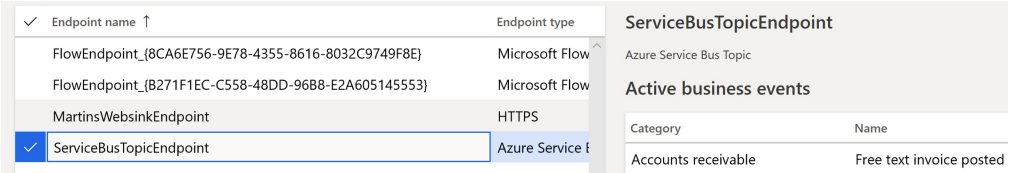
a. Go to **System Administration** > **Setup** > **Business Events** > **Business Events Catalog** > select the **CustFreeTextInvoicePostedBusinessEvent** event from the list (filter by Business event ID) > click on **+Activate:**



b. Select USMF for the legal entity and for the endpoint select the one you created in the previous step, then click **Ok**:



c. If you want you can go to Endpoints and confirm that the business event is now active for your endpoint:



7. Test your new endpoint:

   a. Create a free text invoice in F&O (**Accounts Receivable** > **Invoices** > **All Text Invoices** > **New**) and **Post** It.

   b. Go to the Service Bus you created in your Azure subscription and go to the **postedinvoicetopic** topic.

   c. If everything worked well, in the **Overview** on the lower part you should see 2 messages were received: the first one corresponds to a request that F&O sent out when you created the new endpoint, the other one corresponds to the actual business event (in this case, free text invoice posted):

Name	Status	message count	max delivery count	Sessions Enabled
PostedInvoiceTopi...	Active	2	10	false

8. Create an app to consume the messages (optional):

   a. Open Visual Studio and **Create a New Project** of type **Console App (.Net Core),** call it **FnOServiceBusExplorer**.

   b. Right click on the project > **Manage NuGet packages** > under **Browse** find **Microsoft.Azure.ServiceBus** and click **Install, Ok**, and accept the license.

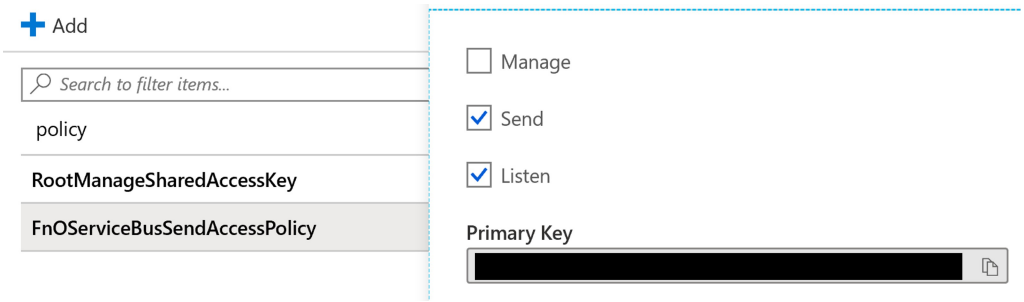
   c. In the Program class add code to show the messages received by the Service Bus subscription for the topic, for example you can add the following code:

```
using System;
using System.Text;
using System.Threading;
using System.Threading.Tasks;
using Microsoft.Azure.ServiceBus;

namespace FnOServiceBusExplorer
{
        class Program
        {
                const string ServiceBusConnectionString = "your service bus connection string";
                const string TopicName = "postedinvoicetopic";
                const string SubscriptionName = "PostedInvoiceTopicSubscription";
                static ISubscriptionClient subscriptionClient;

                static void Main(string[] args)
                {
                        MainAsync().GetAwaiter().GetResult();
                }

                static async Task MainAsync()
                {
                        subscriptionClient = new SubscriptionClient(ServiceBusConnectionString, TopicName,
SubscriptionName);

                        Console.WriteLine("=====================================================");
                        Console.WriteLine("Press ENTER key to exit after receiving all the messages.");
                        Console.WriteLine("=====================================================");

                        RegisterOnMessageHandlerAndReceiveMessages();
                        Console.ReadKey();
```

```
                        await subscriptionClient.CloseAsync();
                }

                static void RegisterOnMessageHandlerAndReceiveMessages()
                {
                        var messageHandlerOptions = new MessageHandlerOptions(ExceptionReceivedHandler)
                        {
                                MaxConcurrentCalls = 1,
                                AutoComplete = false
                        };

                        subscriptionClient.RegisterMessageHandler(ProcessMessagesAsync,
messageHandlerOptions);
                }

                static async Task ProcessMessagesAsync(Message message, CancellationToken token)
                {
                        Console.WriteLine($"Received message:
SequenceNumber:{message.SystemProperties.SequenceNumber} Body:{Encoding.UTF8.GetString(message.Body)}");
                        await subscriptionClient.CompleteAsync(message.SystemProperties.LockToken);
                }

                static Task ExceptionReceivedHandler(ExceptionReceivedEventArgs exceptionReceivedEventArgs)
                {
                        Console.WriteLine($"Message handler encountered an exception
{exceptionReceivedEventArgs.Exception}.");
                        var context = exceptionReceivedEventArgs.ExceptionReceivedContext;
                        Console.WriteLine("Exception context for troubleshooting:");
                        Console.WriteLine($"- Endpoint: {context.Endpoint}");
                        Console.WriteLine($"- Entity Path: {context.EntityPath}");
                        Console.WriteLine($"- Executing Action: {context.Action}");
                        return Task.CompletedTask;
                }
        }
}
```

Note: to keep things simple we added the connection string directly, however ideally you would code it to only access the connection string via the secret you created in the key vault or through environment variables / app settings.

d. If you received an exception stating that it requires Listen claims, go to the Service Bus Shared Access Policy you created in step 1 and add the Listen:



e. Run your app, and create a free text invoice in F&O (**Accounts Receivable** > **Invoices** > **All Text Invoices** > **New**) and **Post** It. In your app you should see the messages coming from the business event for the newly posted invoice: