Functional Tips for Print Envoy

This month's tip for getting more from your Print Envoy implementation!

Print Envoy: Service Connection Best Practice -By Harrison Brazelton <u>harrison.brazelton@cloudinventory.com</u>

This month we will go over the creation and implementation of an application 'Client Id' and 'Secret' value used for authentication between Print Courier and D365. If you are currently using this method of authentication, you are using our recommended

authentication setup and should not have to follow any of these steps. This authentication method is superior to using a 'Username' and 'Password' value to connect to D365, this is because accounts are created and inherently meant to be operated by a human. This can complicate matters when you need to reset passwords or adjust permissions and roles of users, potentially disrupting the service account from being able to connect properly and resulting in unexpected down-time and troubleshooting. There is also the security risk of using a user account, if the account information were to somehow be leaked or get into the wrong hands, the amount of areas that can be affected by a user account with advanced permissions or even strictly set permissions is likely to present a worse problem as opposed to having a 'Client Id' and 'Secret' linked to the service or automated task you associate it with. This 1:1 relation between the secret and the service ensures that you have an isolated method of connection that will not be interrupted and does not share the same limitations / security risks that a user account has.

Azure Setup & Information Gathering

Navigate to the following url: https://portal.azure.com/#home



Once you have logged in, click on the 'Microsoft Entra ID' icon highlighted above.



	۶ م	earch resources, services, and docs (G+/))			۶.	Φ	٢	0 k	Harri	son Brazelton	@ens 🙋
	NC Overview …											×
0	≪ + Add ∨ ⊗ Manage	tenants 👩 What's new 🛛 🔀 Pre	rview features	Got feedback? 🗸								
() Overview	 Azure Active Directory 	is now Microsoft Entra ID. Learn more	2									
💀 Preview features	Overview Monitoring	Properties Recommendation	s Tutorials									
🗙 Diagnose and solve problems												
∨ Manage	Search your tenant											
Users Groups	Basic information											
External Identities	Name	ET 101174 + 5 5 5 110785		Users	52							
Roles and administrators	Tenant ID	2015年8日日、西南市市市市市市市市市市市市市市市市市市市市	188907d 🌓	Groups	17							
Administrative units	Primary domain	anayroan 2*วรรณีเcom		Applications	82							
Delegated admin partners	License	Microsoft Entra ID Free		Devices	7							
Enterprise applications	Alerts											
Devices App registrations Application proxy Custom security Custom security	Azure AD is nov Microsoft Entra I Directory. No act Learn more	v Microsoft Entra ID D is the new name for Azure Active ion is required from you.	Upcon Please Multi-f avoid a Learn r	ning MFA Server deprecation migrate from MFA Server to Mic actor Authentication by Septemi my service impact.	rosoft Entra ber 2024 to							
	Global Adminis 11 Microsoft recom Administrators.	trators mends fewer than 5 Global	Migrat metho Please legacy avoid a	te to the converged Authentica ds policy migrate your authentication met MFA and SSPR policies by Septe my service impact	tion hods off the mber 2025 to							

You will then need to expand the 'Manage' tab on the lefthand side of the screen and click 'App registrations'.



Home > ENCLOSE GRANING APP registrations >	
Register an application	\times
* Name	
The user-facing display name for this application (this can be changed later).	
Harrison Test App 🗸	
Supported account types	
Who can use this application or access this API?	
Accounts in this organizational directory only (Example 1) Bonly - Single tenant)	
Accounts in any organizational directory (Any Microsoft Entra ID tenant - Multitenant)	
 Accounts in any organizational directory (Any Microsoft Entra ID tenant - Multitenant) and personal Microsoft accounts (e.g. Skype, Xbox) 	
Personal Microsoft accounts only	
Help me choose	
Redirect URI (optional)	
We'll return the authentication response to this URI after successfully authenticating the user. Providing this now is optional and it can be changed later, but a value is required for most authentication scenarios.	
Select a platform	
Register an app you're working on here. Integrate gallery apps and other apps from outside your organization by adding from Enterprise applications.	
By proceeding, you agree to the Microsoft Platform Policies 🗗	
Register	

- 1. Enter a name for the application. We suggest using the name "Print Envoy".
- Under 'Supported account types', select based on the needs and requirements of your company. In most
 cases the default value of 'Single tenant' is used, but if you would like to provide access to users across your
 Microsoft Entra ID tenant, select one of the two multitenant options.
- 3. 'Redirect URI' is completely optional and can be changed later, for now do not worry about this.
- 4. Click 'Register' at the bottom of the form.

Obtaining Application ID & Secret Value

=	Microsoft Azure	, P Search resources, services, and docs (G+/)	E C	- -		© R	Harrison.Brazelton@ens	6
Но	me > 100000000000000000000000000000000000							
	EMOHIMMU DEUDI 6/43	5 App registrations 🛷 …					;	\times
	¢ «	+ New registration 🜐 Endpoints 🧷 Troubleshooting 🖒 Refresh 🞍	Download 💀 Preview features 🖗 Got feedback?					
0	Overview							
**	Preview features	Starting June 30th, 2020 we will no longer add any new features to Azure Active I security updates but we will no longer provide feature updates. Applications will	Directory Authentication Library (ADAL) and Azure Active Director need to be upgraded to Microsoft Authentication Library (MSAL)	y Graph. V and Micro	Ne will co soft Gra	ontinue to prov	de technical support and	×
×	Diagnose and solve problems							
\sim	Manage	All applications Owned applications Deleted applications						
	Lusers		+					
	A Groups	C Hamson X	· Add filters					
	External Identities	1 applications found						
	A Roles and administrators	Display name 14	Application (client) ID			Created on	↑↓ Certificates & secrets	
	Administrative units	HT Harrison Test App	0062038 + #4887 + 8+	1b0		6/13/2024	💙 Current	
	Delegated admin partners							
	Enterprise applications							
-	Devices							
	👯 App registrations							
	Identity Governance							
	Application proxy							
	 Custom security attributes 							
	🔓 Licenses							
	Cross-tenant synchronization							
	Microsoft Entra Connect							
https:/	//portal.azure.com/# n names							

- 1. Navigate to 'App registrations'.
 - 2. Select 'All applications'.
- 3. Search or select the relevant application.
 - 4. Click your application.



Once you have registered the application you will immediately be able to see the application (client) ID. You will need to write this value down exactly or remember where to find it, as it will need to be copied into your configuration file for Print Courier.



Click the highlighted link next to 'Client credentials'.

≡	Microsoft Azure	,P Search resources, services, and docs (G+/)	📃 🗵 🖉	
Ho	Harrison Test App	strations > Harrison Test App Certificates & secrets & …	Add a client secret	×
			Description	Print Courier app secret
2	Search o «	R ⁴ Got feedback?	Expires	730 days (24 months) V
8	Overview			Recommended: 180 days (6 months)
4	Quickstart	Credentials enable confidential applications to identify themselves to the authentication service when receivir scheme). For a higher level of assurance, we recommend using a certificate (instead of a client secret) as a cre	ng di	90 days (3 months)
×	Integration assistant			365 days (12 months)
\sim	Manage	Application analyticities contributes constrained for the television of tel		545 days (18 months)
	📰 Branding & properties	Application registration certificates, secrets and recerated crecentials can be found in the tabs below.		730 days (24 months)
	Authentication	Castificates (0) Client secrets (0) Enderstad conductives (0)		Custom
	📍 Certificates & secrets	Certificates (o) Cheric secrets (o) Pederated Credentials (o)		
	Token configuration	A secret string that the application uses to prove its identity when requesting a token. Also can be referred t	0	
	 API permissions 	+ New client secret		
	🙆 Expose an API	Description Expires Value ①		
	🔣 App roles	Manufacture to the second of the data and the second of the		
	🎎 Owners	No client secrets have been created for this application.		
	& Roles and administrators			
	11 Manifest			
>	Support + Troubleshooting			
			Add Cancel	

- 1. Click 'New client secret'.
- 2. Give your application secret a description.
- 3. For the 'Expires' value, it is recommended to select the highest value shown here which is 24 months, but any value listed here is fine to select. Keep in mind that when this time runs out a new secret will have to be generated for Print Courier to run properly.
- 4. Click 'Add'.

0 R Microsoft Azure P Search resources, services, and docs (G+/) Home > Enservery uncountered | App registrations > Harrison Test App Harrison Test App | Certificates & secrets \$ × D Search 39 G Got feedback? III Overview d Quickstart Got a second to give us some feedback? → 🚀 Integration assistant Credentials enable confidential applications to identify themselves to the authentication service when receiving tokens at a web addressable location (using an HITPS ✓ Manage scheme). For a higher level of assurance, we recommend using a certificate (instead of a client secret) as a credential 🔚 Branding & properties Authentication Application registration certificates, secrets and federated credentials can be found in the tabs below Certificates & secrets Token configuration Certificates (0) Client secrets (1) Federated credentials (0) API permissions A secret string that the application uses to prove its identity when requesting a token. Also can be referred to as application password Expose an API HApp roles + New client secret A Owners Description ecret ID Expires Value 🛈 🚨 Roles and administrators Print Courier app secret 6/17/2026 Axg. 0.14 ----t6h8u - www. Manifest > Support + Troubleshooting

IMPORTANT

Once you have generated your new secret, you will need to copy and save the value (**NOT** the secret ID) and keep it somewhere you will be able to find it as you will need to reference it later. This must be done now as this value will disappear forever once you navigate off this screen and you will not be able to copy it again. This value is also used alongside the application ID to set up Print Courier.

Create Permissions

For Print Envoy to work correctly, permissions must be setup for the registered application in Azure. Follow the instructions provided below to make sure that the required permissions are set up correctly and active.

	,0 Search resources, services, and docs (G+/)	(
Home > Harrison Test App		
	p API permissions 🛷 …	×
	« 🕐 Refresh 🛱 Got feedback?	
Overview	A You are editing permission(s) to your application, users will have to consent even if they've already done so previously.	
Quickstart		
🚀 Integration assistant		
🗙 Diagnose and solve problems	Granting tenant-wide consent may revoke permissions that have already been granted tenant wide for that application. Permissions that users have already granted on their own behalf aren't affected. Learn more	×
∨ Manage		
🧮 Branding & properties	1 The "Admin consent required" column shows the default value for an organization. However, user consent can be customized per permission, user, or app. This column may not reflect the value in your	×
Authentication	organization, or in organizations where this app will be used. Learn more	
📍 Certificates & secrets	Configured permissions	
Token configuration	Applications are authorized to call APIs when they are granted permissions by users/admins as part of the consent process. The list of configured permissions should include	
 API permissions 	all the permissions the application needs. Learn more about permissions and consent	
🙆 Expose an API	+ Add a permission V Grant admin consent for	
App roles	Add a permission API / Permission sname type Description Admin consent requ Status	
A Owners	No permissions added	
Roles and administrators		
10 Manifest	To view and manage consented permissions for individual apps, as well as your tenant's consent settings, try Enterprise applications.	
> Support + Troubleshooting		

Once you have registered your application and created the secret value, you will need to set up permissions. On the left-hand side, select the drop-down list 'Manage', and then click 'API permissions' as highlighted above. Then you will see the 'Add a permission' button, click this to continue.



Select 'Microsoft Graph' under the 'Microsoft APIs' tab.

Request API permissions

request in permissions	
All APIs Microsoft Graph https://graph.microsoft.com/ Docs C ³	
What type of permissions does your application require?	-
Delegated permissions Your application needs to access the API as the signed-in user.	Application permissions Your application runs as a background service or daemon without a signed-in user.
	ated permissions Your application needs to access the API as the signed-in us
Select permissions	expand all
Q Start typing a permission to filter these results	
p start typing a permission to inter these results	
The "Admin consent required" column shows the default value for permission, user, or app. This column may not reflect the value in more	x an organization. However, user consent can be customized per $$\times$$ your organization, or in organizations where this app will be used. Learn
Permission	Admin consent required
> OpenId permissions	
> AccessReview	
> Acronym	
> AdministrativeUnit	
> AgreementAcceptance	
Add permissions Discard	

Click 'Delegated permissions'.

> DeviceManagementConfiguration		
> DeviceManagementManagedDevices		
> DeviceManagementRBAC		
> DeviceManagementServiceConfig		
V Directory (1)		
Directory AccessAsUser.All ③ Access directory as the signed in user	Yes	
Directory.Read.All ① Read directory data	Yes	
Directory.ReadWrite.All ③ Read and write directory data	Yes	
Directory.Write.Restricted ① Manage restricted resources in the directory	Yes	
> DirectoryRecommendations		
> Domain		
> EAS		
> eDiscovery		

Scroll down to the 'Directory' list, expand it and make sure the 'Directory.AccessAsUser.All' is enabled.

	ine Time I and the		
> 0	ser imelineActivity		
∨ U	(2)		
	User.EnableDisableAccount.All ① Enable and disable user accounts	Yes	
	User.Export.All ① Export user's data	Yes	
	User.Invite.All ① Invite guest users to the organization	Yes	
	User.Manageldentities.All ① Manage user identities	Yes	
~	User.Read ① Sign in and read user profile	No	
	User.Read.All ① Read all users' full profiles	Yes	
~	User.ReadBasic.All ③ Read all users' basic profiles	No	
	User.ReadWrite ① Read and write access to user profile	No	
	User.ReadWrite.All ① Read and write all users' full profiles	Yes	
	User.RevokeSessions.All ① Revoke all sign in sessions for a user	Yes	

Scroll down to the 'User' list, expand it and make sure 'User.Read' and 'User.ReadBasic.All' are both enabled. Once confirmed, click 'Add permissions' at the bottom.

equest API permission	15		×
keys, secrets, and certificates within your Key Vaults	protected content	functionality available through the Azure portal	
Azure Storage Secure, massively scalable object and data lake storage for unstructured and semi-structured data	Data Export Service for Microsoft Dynamics 365 Export data from Microsoft Dynamics CRM organization to an external destination	Central Programmatic access to data and functionality in Dynamics 365 Business Central	
Dynamics CRM Access the capabilities of CRM business software and ERP systems	Dynamics ERP Programmatic access to Dynamics ERP data	Programmatic access to Intune data	
Microsoft Purview Unified data governance service that highs you manage and govern your on- premises, multi-cloud, and software-as- a-service (SaaS) data	Office 365 Management APIs Retrieve information about user admin system, and policy actions and events from Office 365 and Microsoft Fratra ID activity logs	Create and manage notes, lists, pictures, files, and more in OneNote notebooks	
Power Automate Embed flow templates and manage flows	Proyer BI Service Programmatic access to Dischboard resources such as Datasets, Tables, and Rows in Power BI	PowerApps Runtime Service Powerful data storage: modeling, security and integration capabilities	
SharePoint	Skype for Business	Windows Push Notification Services (WNS)	

Follow the same process as last time on the 'API permissions' screen and click 'Add a permission', this time we want to scroll down and find the 'Dynamics ERP' API and click into it.

Delegated permissions Your application needs to access the API as the signed-in user.	Application permissions Your application runs as a background service or daemon without a signed-in user.
elect permissions	Delegated permissions Your application needs to access the API as the signed-in u
Start typing a permission to filter these results	
The "Admin consent required" column shows the default permission, user, or app. This column may not reflect the more	value for an organization. However, user consent can be customized per $$\times$$ value in your organization, or in organizations where this app will be used. Learn
Permission	Admin consent required
AX (1)	
AX.FullAccess ① Access Dynamics AX online as organization users	No
 CustomService (1) 	
CustomService.FullAccess ① Access Dynamics AX Custom Service	No
✓ Odata (1)	
Odata.FullAccess ① Access Dynamics AX data	No

Select 'Delegated permissions', then make sure the following permissions are enabled before finally clicking 'Add permissions'.

Home > Harrison Test App Harrison Test App	API permissions 🛛 🖈						×
	🕐 Refresh 🛛 🔗 Got feedbac	:k?					
 Overview Quickstart Integration assistant Diagnose and solve problems 	Grant admin consent co Do you want to grant consent fo any existing admin consent reco Yes No	nfirmation. or the requested rds this applica	d permissions for all accounts in ENSYNC SOLUTIONS? 1 tion already has to match what is listed below.	ihis will update	vat users have already granted on their o	wn behalf aren't affected. <u>Learn</u>	×
 Manage Branding & properties 	 The "Admin consent required" organization, or in organizatio 	column shows th ns where this app	e default value for an organization. However, user consent can b will be used. <u>Learn more</u>	e customized per pe	rmission, user, or app. This column may no	ot reflect the value in your	×
Authentication Certificates & secrets Token configuration API permissions Evence an API	Configured permissions Applications are authorized to call. all the permissions the application + Add a permission 🗸 Gran	APIs when they needs. Learn mo t admin consent	are granted permissions by users/admins as part of the cons re about permissions and consent	ient process. The lis	st of configured permissions should inc	lude	
App roles	API / Permissions name	Туре	Description	consent	t requ Status		
24 Owners	V Dynamics ERP (3)	Delegated	Access Dimension AV and the second state second	Ne			
Roles and administrators	CustomService.FullAccess	Delegated	Access Dynamics AX Custom Service	No			
Manifest	Odata.FullAccess	Delegated	Access Dynamics AX data	No			
Support + Troubleshooting	Microsoft Graph (3)						
	Directory.AccessAsUser.All	Delegated	Access directory as the signed in user	Yes	▲ Not granted for EST-4		
	User.Read	Delegated	Sign in and read user profile	No			
	User.ReadBasic.All	Delegated	Read all users' basic profiles	No			

To view and manage consented permissions for individual apps, as well as your tenant's consent settings, try Enterprise applications.

You should be redirected back to the 'API permissions' screen in Azure, if not please navigate to this location now. You will then need to click the 'Grant admin consent for <YourTenantName>' button and click the 'yes' on the confirmation pop-up. This is the last step required to enable permissions.

Update Configuration File & Entra ID Record

To finish the process, you will need to make a record in D365 that will allow the connection to be made, and you will also need to update your Print Courier configuration file. First, we will go over creating the necessary record in D365.

Finance and Operations P	review	
-ta Inventory management	Expand all Collapse all	
Landed cost	> Workspaces	Certificate profiles
Leave and absence	> Users	Throttling priority mapping
Master planning	> Security	B2B Invitation Configuration
Organization administration	> Workflow	Custom fields
	> Inquiries	Alert rules
Payroll	✓ Setup	High-volume notification rules
Procurement and sourcing	License configuration	Refresh elements
Product information management	Server configuration	Demand planning app parameters
Production control	Batch group	> Business events
Project management and	Active periods for batch jobs	
accounting	Batch class configuration overrides	> Database log
Questionnaire	System job parameters	> Data cache
Rebate management	Entity Store	> Email
Retail and Commerce	PowerBl.com configuration	> Row version change tracking
Sales and marketing	Deploy Power BI files	> Export data to Azure data lake
Service management	System parameters	Initialize process automations
Service management	Client performance options	Process automations
-	Personalization	Operational Insights
lax	Office app parameters	> Periodic tasks
Time and attendance	Configure cross-company data sharing	> Message processor
Transportation management	Microsoft Entra ID applications 📩	
Vendor collaboration	Key Vault parameters	
Warehouse management		

Log-on to the D365 environment and navigate to System Administration – Setup – Microsoft Entra ID applications.



Click 'New' to create a new record. Copy the 'Client Id' value over and name the record 'Print Envoy' or something that you will remember and relate to the registered application for Print Envoy. Assign a user to the record, this user will need to have administrator privileges in D365.

* To complete the process and start utilizing your newly created 'Client ID' and 'Secret', first navigate and log-on to the server hosting Print Courier. You will want to stop the 'Print Courier' service while you perform these steps. *

If you have an up-to-date version of Print Courier installed, you will want to follow the steps outlined below. If you are on an outdated version of Print Courier, I will attach further instructions below on how to edit the configuration file via Notepad instead of our configuration tool. You can reach out to me if you would like to take the new version, I will provide you with the MSI installer and instructions on the installation process. The new version comes with the configuration editor tool, as well as a built-in analytics webpage that displays useful information, see Print Envoy Newsletter issue 11 for more details.



Click the Windows icon in the bottom left-hand corner. Find the 'Cloud Inventory' folder underneath the 'C' category. Open the folder and run the 'Print Courier Configuration'. Optional path is as follows: C:/Program Files/DSI/Print Courier Service/Configuration/PrintCourierConfigurationForm.

Use this form to configure Print Co	urier's Server configuration.			
If these values are unknown or yo complete. You can then run this o	u do not want to enter the values now, click 'Cancel' and configuration program from the Windows Start menu	this insta	allation will	
Dynamics 365 Endpoint:	https://usnconeboxax1aos.cloud.onebox.dynamics.com	1/		
Active Directory Resource:	https://usnconeboxax1aos.cloud.onebox.dynamics.com	/		
Active Directory Tenant:	https:///oginamicroacitemine.com/iensyrrammiareasiteco	m		
Active Directory Client App ID:	1041/10156/4e-46.331.107/0077180L100			
Client App ID Secret:	••••••	••	Show	1
Companies:	USMF Comma separated list of D365 (companie	55	
Maximum Polled Labels:	30 1 - 100 labels		_	
Polling Delay Period:	15 5 - 120 seconds Cancel Acc	ept and	Close	
	Test Connection			

Once the form is open, copy the corresponding values into the 'Client App ID' and 'Secret' fields. Once you have made the changes, click 'Test Connection', this will ensure that the service can be started and connect properly. Once you have finished here, click 'Accept and Close'.

Editing Configuration File via Notepad



Once you are on the server, open the file explorer and navigate to C:/Program Files/DSI/Print Courier, and locate the 'PrintCourier.exe.config' file. You will want to open this in Notepad as an Administrator to complete the next step.

```
File Edit Format View Help
<?xml version="1.0"?>
<configuration>
        <configSections>
                <sectionGroup name="applicationSettings" type="System.Configuration.ApplicationSettingsGroup, System,</pre>
                        <section name="EPP_Courier_Service.Settings" type="System.Configuration.ClientSettingsSection,</pre>
                </sectionGroup>
                <sectionGroup name="userSettings" type="System.Configuration.UserSettingsGroup, System, Version=4.0.0.</pre>
                         <section name="EPP_Courier_Service.Settings" type="System.Configuration.ClientSettingsSection,</pre>
                </sectionGroup>
        </configSections>
        <appSettings>
  <add key="Companies" value="USMF" />
  <add key="Maximum Polled Labels" value="30" />
  <add key="Poll ScanWorkX" value="Yes" />
  <add key="Poll Print Envoy" value="Yes" />
  <add key="Port" value="20010" />
  <add key="Dynamics 365 URL" value="https://usnconeboxax1aos.cloud.onebox.dynamics.com/" />
<add key="Username" value="" />
<add key="Password" value="" />
 <add key="Azure Active Directory Resource" value="https://usnconeboxax1aos.cloud.onebox.dynamics.com/" />
  <add key="Azure Active Directory Tenant" value="https://login.microsoftonline.com/ensync.onmicrosoft.com" />
 <add key="Azure Active Directory Client App ID" value="11-11-11-11-1- P/2 4001 +101 00017df@hd33" />
  <add key="Polling Delay Period" value="15" />
 </appSettings>
        <applicationSettings>
                <EPP_Courier_Service.Settings>
                        <setting name="UserNull" serializeAs="String">
                                 <value>'userName' parameter is empty</value>
                        </setting>
                </EPP_Courier_Service.Settings>
        </applicationSettings>
</configuration>
```

When you have the configuration file open, find the currently used 'Username' and 'Password' values, delete them as you will no longer be using them. Now enter the values for 'Client App ID' and 'Secret', once these values have been inserted you are free to save the configuration file.

Now that you have performed all the steps, you are good to go ahead and restart the Print Courier service on your server. If you encounter any issues, check that the values copied over into the configuration file and Entra Id record are accurate.

Thanks for making it this far, and I hope that you will be able to find value in this authentication method! We are constantly striving to make user-friendly improvements and increase the value of Print Envoy as a whole. Please reach out to me at <u>harrison.brazelton@cloudinventory.com</u> if you have any questions or concerns regarding the described processes, or if you have any ideas of your own that you believe would be beneficial to the functionality or value.