

# Apigee Edge integration with Pivotal Cloud Foundry

With Apigee Edge integration with Pivotal Cloud Foundry (PCF), you can have access to full API management functionality between clients and your Cloud Foundry application. Through commands in the cf CLI, you can create a new Apigee Edge API proxy that is immediately ready to handle requests sent to an existing Cloud Foundry application. The presence of the proxy is seamless to your Cloud Foundry application.

Once the API proxy is created, you can enhance it with more functionality and services, including:

- Data transformation, mediation, orchestration, policies for rate limits, and so on.
- Security, such as authentication and RBAC.
- Onboarding, including a developer portal to enable self-service.
- Analytics for monitoring and business metrics analysis.
- Monetization for rate plans, internationalization, and usage tracking.

## How it works

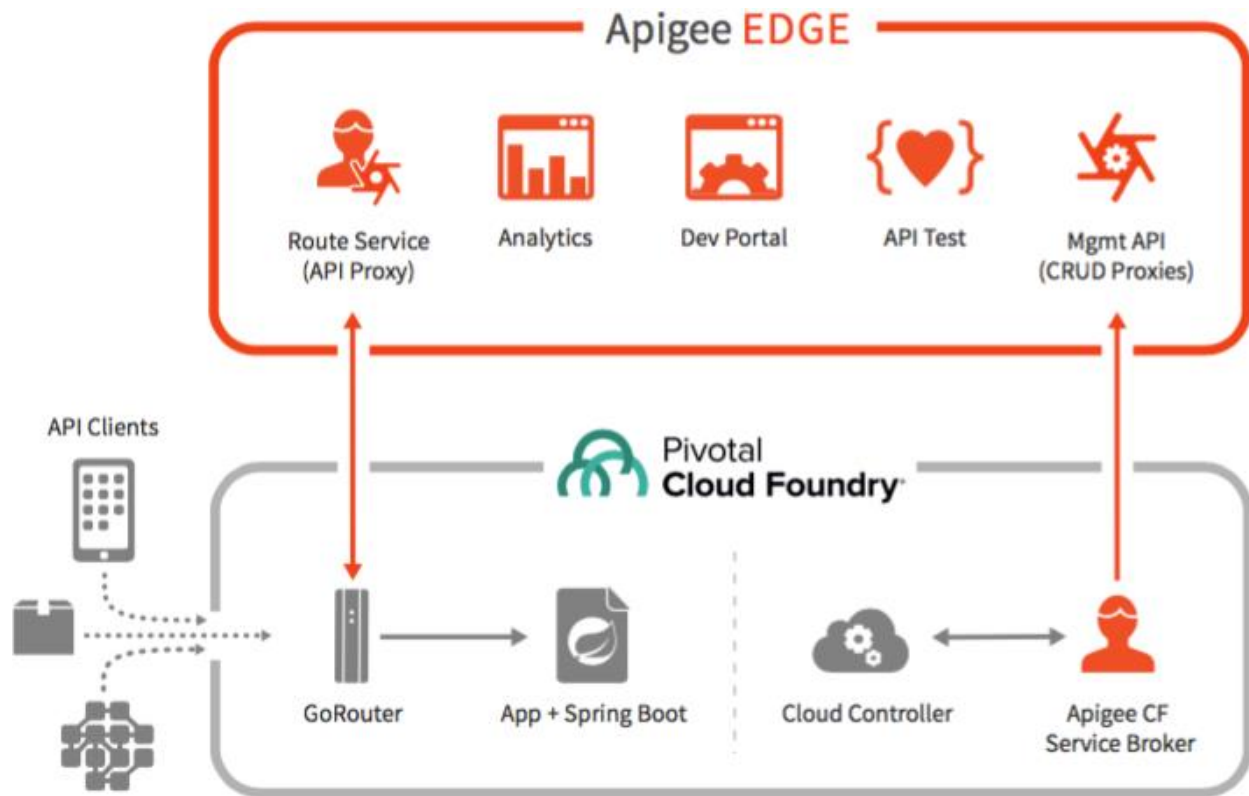
PCF and other versions of Cloud Foundry use service brokers to connect hosted apps to services that run externally, such as load balancers and databases. The Apigee Edge service broker lets app developers create proxies that insert Apigee Edge API management features in front of their PCF-hosted apps.

You install the service broker by installing the Apigee Edge product tile in the Ops Manager Installation Dashboard (see [Install and configure the Apigee service broker](#) for more). Once the Apigee Edge service broker is installed, the service appears in the Cloud Foundry services marketplace, along with other services. This makes using Apigee on your Cloud Foundry apps straightforward and simple.

Developers can then use the Cloud Foundry CLI or PCF Apps Manager to create an instance of the Apigee Edge service and bind it to their apps. Creating a service instance creates an Apigee Edge proxy running in their development space, and binding it to an app sets up the proxy to handle API requests sent from clients.

The Cloud Foundry Gorouter forwards requests intended for your app to the proxy for management. After the request passes through the proxy, it proceeds to the Gorouter, which sends it on to your app.

The following diagram illustrates how request data flows between your Apigee Edge proxies and Cloud Foundry apps at run time.



## Install and configure the Apigee service broker

This topic describes how to install and configure the Apigee Edge Service Broker for Pivotal Cloud Foundry (PCF).

### Install and Configure the Apigee Edge Service Broker for PCF

1. Download the product file from [Pivotal Network](#).
2. Navigate to the Ops Manager Installation Dashboard and click Import a Product to upload the product file.
3. Click Add next to the uploaded Apigee Edge Service Broker for PCF tile in the Ops Manager Available Products view to add it to your staging area.
4. Click the newly-added Apigee Edge Service Broker for PCF tile.

5. Under Settings, click Apigee Edge Tile.

The screenshot shows the PCF Ops Manager interface. At the top, there's a dark blue header with the 'P' logo and 'PCF Ops Manager'. Below it, a light gray bar contains the 'Apigee' logo and navigation tabs: 'Settings' (active), 'Status', 'Credentials', and 'Logs'. A breadcrumb trail shows 'Installation Dashboard' and 'Apigee'. On the left, a sidebar lists settings: 'Assign AZs and Networks', 'Apigee Edge Tile' (highlighted), 'HTTP(S) Proxy', 'NPM Configuration', 'Buildpack Settings', 'Service Access', 'Errands', and 'Resource Config'. The main area is titled 'Custom Properties for Apigee Edge' and contains a description: 'Configurations for your Apigee organizations and environments.' Below this, a section titled 'Default Configuration' lists several fields with their default values: 'Name for this configuration' (Default Configuration), 'Apigee Organization' (empty), 'Apigee Environment' (empty), 'Dashboard URL' (https://enterprise.apigee.com/platform/#/), 'Apigee Management API URL' (https://api.enterprise.apigee.com/v1), 'Apigee Proxy Domain' (apigee.net), 'Apigee Proxy Host Template' (\${org}-\${env}.\${domain}), and 'Apigee Proxy Name Template' (cf-\${route}). A 'Save' button is at the bottom.

PCF Ops Manager

Installation Dashboard

Apigee

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Assign AZs and Networks

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### Custom Properties for Apigee Edge

Configurations for your Apigee organizations and environments.  
Configurations for your Apigee organizations and environments.

▼ Default Configuration

Name for this configuration \*

Default Configuration

Apigee Organization \*

This configuration's Apigee organization

Apigee Environment \*

Dashboard URL \*

https://enterprise.apigee.com/platform/#/

Apigee Management API URL \*

https://api.enterprise.apigee.com/v1

Apigee Proxy Domain \*

apigee.net

Apigee Proxy Host Template \*

\${org}-\${env}.\${domain}

Apigee Proxy Name Template \*

cf-\${route}

Save

6. Under Custom Properties for Apigee Edge, enter the appropriate values. See the following table for a description of each setting and the default values for users of Apigee Edge for Public Cloud.

Setting	Description	Default for Public Cloud
Name for this configuration	Choose a name that describes the configuration.	Default configuration
Apigee Organization	The Apigee Edge organization with proxies that will handle calls to your app.	
Apigee Environment	The Apigee Edge environment that with proxies that will handle calls to your app.	
Dashboard URL	The URL to the Apigee Edge management console, the UI where you develop and manage API proxies.	<a href="https://enterprise.apigee.com/platform/#/">https://enterprise.apigee.com/platform/#/</a>
Apigee Management API URL	The endpoint URL to the Apigee Edge management API. The Apigee Edge Service Broker uses this URL when making requests to create new Apigee Edge API proxies for managing requests to PCF apps.	<a href="https://api.enterprise.apigee.com/v1">https://api.enterprise.apigee.com/v1</a>
Apigee Proxy Domain	The domain name that PCF apps use when making calls to your API proxy.	apigee.net
Apigee Proxy Host Template	<p>ES6 template literal for generated proxy host. The template that describes how the Apigee Edge host name should be generated. This represents the hostname that clients use to make calls to your APIs. Change this value if your hostname is not created in the default way -- from your Apigee org an environment names. For example, if your APIs use a custom virtual host, you might have just a domain name: <code>\${domain}</code></p> <p>Pivotal Cloud Foundry apps use this host when making calls to your API proxy. The template generates the host name from values specified when binding the PCF app to</p>	<code>\${org}-\${env}.\${domain}</code>

Setting	Description	Default for Public Cloud
	the service. (Note that without any placeholders, will be used as-is.)	
Apigee Proxy Name Template	The template that describes how to generate the name of your proxy when you create it from the cf CLI.	cf-\${route}

- Click Save.
- If you have your own npm registry that the service broker should use to install, click NPM Configuration in the Settings tab.

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Used to set optional npm configuration properties that will be used for installing service broker dependencies

npm registry url

Tells npm to use a custom uri value for the registry property. If left blank, the property defaults to 'https://registry.npmjs.org/'

npm registry client certificate

npm registry client key

☒ Use strict-ssl

CA Certificate(s)

Sets any needed CA certificates ('ca[]' property) used for accessing the npm registry. If left blank, the property defaults to the npm CA certificate.

Add

Save

- On the NPM Configuration page, enter the following values:

Setting	Description	Default for Public Cloud
npm registry URL	The base URL of the npm package registry.	

Setting	Description	Default for Public Cloud
npm registry client certificate	<p>A client certificate to pass when accessing the registry. Values should be in PEM format (or on Windows, "Base-64 encoded X.509 (.CER)"). Replace newlines with the string "\n". For example:</p> <pre>cert="-----BEGIN CERTIFICATE-----\nXXXX\nXXXX\n-----END CERTIFICATE-----"</pre> <p>This is not the path to a certificate file.</p>	
npm registry client key	<p>A client key to pass when accessing the registry. Values should be in PEM format with newlines replaced by the string "\n". For example:</p> <pre>key="-----BEGIN PRIVATE KEY-----\nXXXX\nXXXX\n-----END PRIVATE KEY-----"</pre> <p>It is not the path to a key file (and there is no "keyfile" option).</p>	
Use strict-ssl	true to do SSL key validation when making requests to the registry via HTTPS.	Selected (true).

10. Click Save.
11. If you have a proxy server or firewall for calls from the service broker, click HTTP(S) Proxy in the Settings tab.

[< Installation Dashboard](#)  
 Apigee

[Settings](#)
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- Assign AZs and Networks
- Apigee Edge Tile
- HTTP(S) Proxy**
- NPM Configuration
- Buildpack Settings
- Service Access
- Errands
- Resource Config

Used to configure an http/https proxy in environments with restricted internet access.

HTTPS proxy url  The url value to be set in the "HTTPS\_PROXY" environment variable. (e.g httpsproxyurl.com:8081)

HTTPS proxy username

HTTPS proxy password

HTTP proxy url

HTTP proxy username

HTTP proxy password

[Save](#)

12. On the HTTP(S) Proxy page, enter the following values:

Setting	Description	Default for Public Cloud
HTTPS proxy URL	The URL required by the https_proxy environment variable.	
HTTPS proxy username	The username required by the https_proxy environment variable.	
HTTPS proxy password	The password required by the https_proxy environment variable.	
HTTP proxy URL	The URL required by the http_proxy environment variable.	
HTTP proxy username	The username required by the http_proxy environment variable.	
HTTP proxy password	The password required by the http_proxy environment variable.	

13. Click Save.

14. Return to the Ops Manager Installation Dashboard and click Apply Changes to install the Apigee Edge Service Broker for PCF tile.

The Apigee Edge service broker is now installed in your PCF deployment. To use the service broker, continue to one of the following topics:

- [Proxying a PCF App with Apigee Edge \("org" plan\)](#) to learn how to proxy a Cloud Foundry app with Apigee Edge.
- [Proxying a PCF App with Apigee Edge Microgateway \("microgateway" plan\)](#) to learn how to proxy a Cloud Foundry app with Apigee Edge Microgateway, where Microgateway and the app are in separate Cloud Foundry containers.
- [Proxying a PCF App with Apigee Edge Microgateway \("microgateway-coresident" plan\)](#) to learn how to proxy a Cloud Foundry app with Apigee Edge Microgateway, where Microgateway and the app are in the same Cloud Foundry container.