



Cloud Foundry 12-Factor App Hands-On Instructions





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PREREQUISITES

1. Local Resources

1.1. Install Git client

<https://git-scm.com/downloads>

1.2. Install NodeJS runtime

<https://nodejs.org/en/download/>

1.3. Install PostgreSQL

<https://www.postgresql.org/download/>

1.4. Install Redis Cache

<https://redis.io/download>

1.5. Install Visual Studio Code IDE

<https://code.visualstudio.com/>

1.6. Install Cloud Foundry CLI

<https://github.com/cloudfoundry/cli#downloads>

2. Cloud Resources

2.1. Configure your SAP Cloud Platform CF Environment

<https://developers.sap.com/uk/tutorials/hcp-cf-getting-started.html>

2.2. Create a Microsoft Azure free account

There are at least two options to create a Microsoft Azure Account free of charge for learning purposes and a limited period of time:

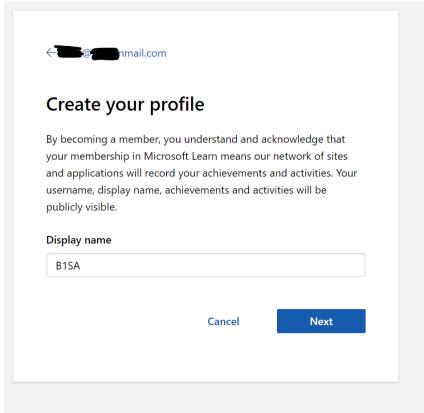
- You can use a Sandbox to test and learn Microsoft Azure services for a very short period of time (4 hours): <https://docs.microsoft.com/en-us/learn/azure/?tab=tab-learn-for-free> (see the step-by-step instructions in the next page); OR
- Using your credit card - follow this link <http://azure.microsoft.com/free>, create your account and use it free of charge for 30 days. Nevertheless, a credit card is required to validate identity and avoid dummy accounts.



2.2.1.Create an Azure sandbox account for learning purposes

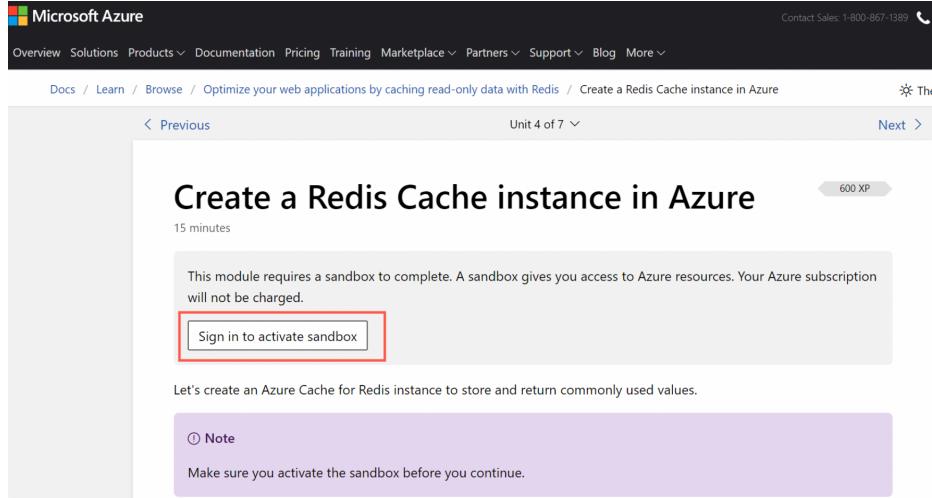
Please follow the steps below to create your **learn sandbox**.

@outlook... MICROSOFT LEARN SANDBOX

Explanation	Screenshot
<p>Create an account: https://docs.microsoft.com/en-us/learn/azure/?tab=tab-learn-for-free</p> <p>You can use the same email as of your Microsoft account.</p>	

2.3. Create Redis Cache instance

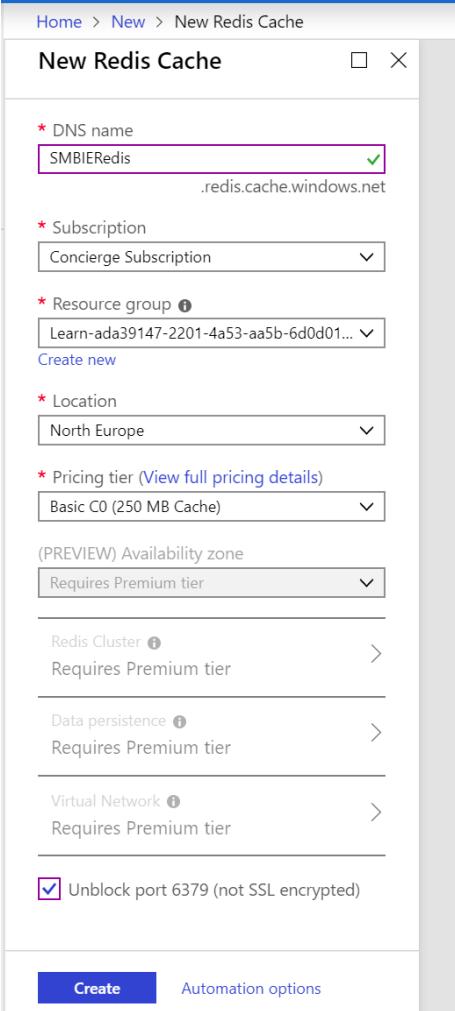
Please follow the steps below to get the learn sandbox running

Explanation	Screenshot
<p>Open this exercise tutorial: https://docs.microsoft.com/en-us/learn/modules/optimize-your-web-apps-with-redis/4-exercise-create-redis-cache</p> <p>Press the button "Sign to activate sandbox"</p>	



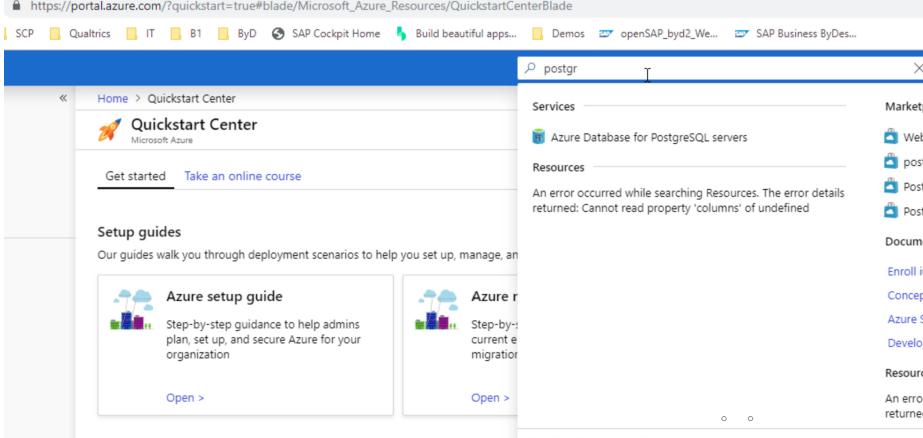
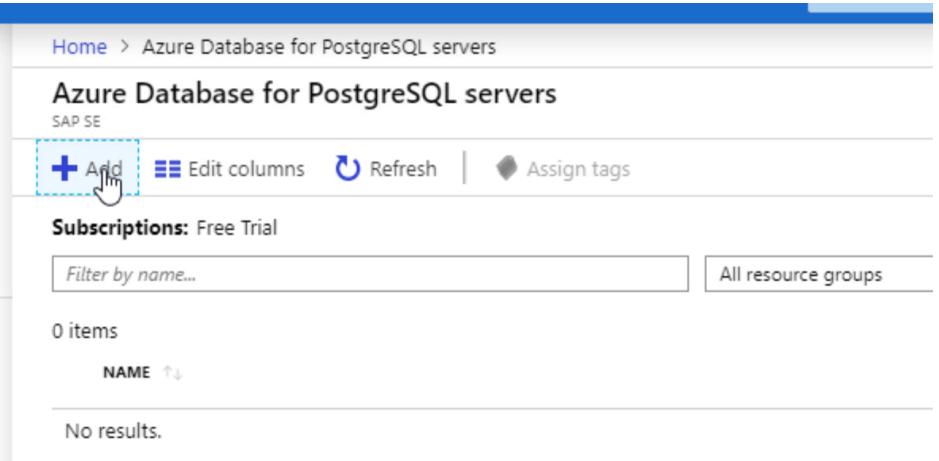
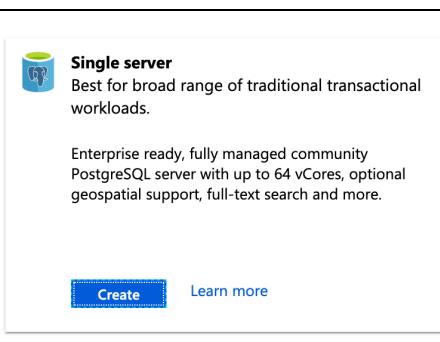
Explanation	Screenshot
<p>The page will show the progress:</p>	<p>Create a Redis Cache instance in Azure</p> <p>15 minutes</p> <p>17% Verifying permissions...</p> <p>Let's create an Azure Cache for Redis instance to store and return commonly used values.</p> <p>Note Make sure you activate the sandbox before you continue.</p>
<p>Wait until the sandbox is created.</p> <p>The page will show the sandbox remaining time (4 hours).</p> <p>Follow the steps shown in that page to Create a Redis cache in Azure.</p>	<h2>Create a Redis Cache instance in Azure</h2> <p>15 minutes</p> <p>Sandbox activated! Time remaining: 3 hr 59 min</p> <p>Let's create an Azure Cache for Redis instance to store and return commonly used values.</p> <p>Note All data is removed when time runs out. Afterward, you'll be able to create a fresh sandbox. Make sure you activate the sandbox before you continue.</p>
	<h3>Create a Redis cache in Azure</h3> <ol style="list-style-type: none">1. Sign into the Azure portal using the same account you activated the sandbox with.2. Click Create a resource, click Databases, and click Redis Cache.
<p>While trying to create the Redis cache IF you get an error asking you to switch directories just follow the screens and select the "Microsoft Learn Sandbox" directory.</p>	<p>Home > New ></p> <p>Switch directories</p> <p>You are currently signed into the 'Default Directory' directory which does not have any subscriptions. You have other directo... or you can sign up for a new subscription.</p> <p>Switch directories</p> <p>Start free</p> <p>Directory + subscription</p> <p>Global subscription filter</p> <p>No subscriptions in Default Directory directory - Switch to another directory.</p> <p>Current directory: b1sapronmail.onmicrosoft.com</p> <p>Learn about directories and subscriptions</p> <p>Switch directory</p> <p>Set your default directory</p> <p>Microsoft Learn Sandbox (learn.docs.microsoft.com)</p> <p>Favorites All Directories A to Z</p> <p>Search</p> <p>Default Directory b1sapronmail.onmicrosoft.com 9d820d8f-f951-48cf-8efa-94b1df297342</p> <p>Microsoft Learn Sandbox learn.docs.microsoft.com 604c1504-c6a3-4080-81aa-b33091104187</p>



Explanation	Screenshot								
<p>Fill in the creation form as per this screen shot.</p> <p>Change the Location to match the nearest to you.</p> <p>Do not forget to unblock the port 6379.</p>									
<p>Go to the notifications icon on the top right and check the progress</p>	<p>■■■ Your deployment is underway</p> <p> Deployment name: redis.cache Subscription: Concierge Subscription Resource group: Learn-0fd72597-7bb8-4b78-97ff-4bac53243488</p> <p>Start time: 8/7/2019, 5:11:29 PM Correlation ID: 50b97c2f-33f4-4add-b019-b2887c4248ed</p> <p>^ Deployment details (Download)</p> <table border="1"><thead><tr><th>RESOURCE</th><th>TYPE</th><th>STATUS</th><th>OPERATION DETAILS</th></tr></thead><tbody><tr><td> SMBIEWSRedis</td><td>Microsoft.Cache/Redis</td><td>OK</td><td>Operation details</td></tr></tbody></table>	RESOURCE	TYPE	STATUS	OPERATION DETAILS	 SMBIEWSRedis	Microsoft.Cache/Redis	OK	Operation details
RESOURCE	TYPE	STATUS	OPERATION DETAILS						
 SMBIEWSRedis	Microsoft.Cache/Redis	OK	Operation details						



2.4. Create a Microsoft Azure PostgreSQL DB on a learn sandbox

Explanation	Screenshot
Search for postgresql services in your account (directory sandbox).	 <p>The screenshot shows the Azure Quickstart Center blade. A search bar at the top right contains the text "postgr". Below the search bar, there are sections for "Services" and "Resources". Under "Services", there is a card for "Azure Database for PostgreSQL servers". A message indicates an error occurred while searching Resources. The URL in the browser is https://portal.azure.com/?quickstart=true#blade/Microsoft_Azure_Resources/QuickstartCenterBlade.</p>
Select “ Azure Database for PostgreSQL servers ” and hit Add	 <p>The screenshot shows the "Azure Database for PostgreSQL servers" list page. At the top, there is a "Subscriptions" section with "Free Trial". Below it is a search bar with "Filter by name..." and a "All resource groups" button. A message states "0 items". The table has columns for "NAME" and "Status". A note below says "No results." The "Add" button is highlighted with a blue box and a cursor icon.</p>
Go for the “ Single Server ” setup.	 <p>The screenshot shows the "Single server" setup details page. It features a summary box with a "Single server" icon, the text "Best for broad range of traditional transactional workloads.", and a description of the PostgreSQL server. Below this is a "Create" button and a "Learn more" link.</p>



Explanation	Screenshot
<p>Enter all required details.</p> <p>Choose your own Server name.</p> <p>Select Configure server link.</p>	<p>The screenshot shows the 'Single server' configuration page. It includes fields for Subscription (Concierge Subscription), Resource group (Learn-ada39147-2201-4a53-aa5b-6d0d0144fbf5), and Server details (Server name: smbiepostg, Data source: None, Admin username: smbiepg, Password and Confirm password: masked, Location: (Europe) North Europe, Version: 10). A 'General purpose' configuration section is shown with 2 vCores and 5 GB storage. Buttons at the bottom include 'Review + create' and 'Next : Tags >'.</p>
Reduce the Compute and Storage to the minimum basic level.	<p>The screenshot shows the 'Configure' page for a PostgreSQL deployment. It includes sections for Basic (Gen 5 selected), General purpose (Up to 64 vCores), Memory optimized (up to 32 memory optimized vCores), Compute generation (Gen 5 selected), vCore (1 vCore), Storage (5 GB), Auto-growth (Yes selected), Backup retention period (7 Days), and Backup redundancy options (Locally redundant selected). A 'Price summary' sidebar shows costs for Gen 5 Compute generation, Basic storage, and Est. monthly cost (27.12 EUR).</p>



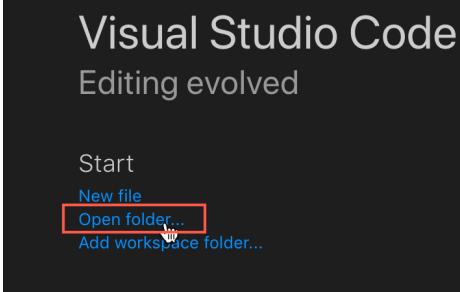
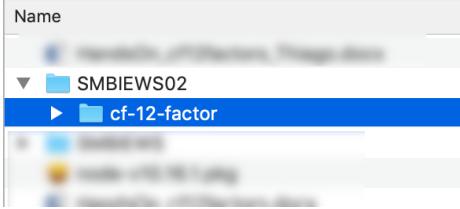
Explanation	Screenshot								
<p>Click Review + Create.</p> <p>Click Create.</p> <p>The PostgreSQLServer deployment starts.</p>	<p>Home > Microsoft.PostgreSQLServer.createPostgreSQLServer_14607c79aca34f - Overview</p> <p>Microsoft.PostgreSQLServer.createPostgreSQLServer_14607c79aca34f - Overview</p> <p>Deployment</p> <p>Search (Ctrl+)</p> <p>Delete Cancel Redeploy Refresh</p> <p>Overview Inputs Outputs Template</p> <p>■■■ Your deployment is underway</p> <p>Deployment name: Microsoft.PostgreSQLServer.createPostgreSQLS... Start time: 7/30/2019, 4:24:28 PM</p> <p>Subscription: Concierge Subscription Correlation ID: 1e1dbd1b-a54d-4e53-808a-706a19d1cc</p> <p>Resource group: Learn-ada39147-2201-4a53-aa5b-6d0d0144fbf</p> <p>Deployment details (Download)</p> <table border="1"><thead><tr><th>RESOURCE</th><th>TYPE</th><th>STATUS</th><th>OPERATION DETAILS</th></tr></thead><tbody><tr><td>No results.</td><td></td><td></td><td></td></tr></tbody></table> <p>Next steps</p>	RESOURCE	TYPE	STATUS	OPERATION DETAILS	No results.			
RESOURCE	TYPE	STATUS	OPERATION DETAILS						
No results.									
Wait until the deployment is finished to start using PostgreSQL and Redis .	<p>Notifications</p> <p>More events in the activity log → Dismiss all</p> <p>■■■ Deployment in progress... Running a few seconds ago</p> <p>Deployment to resource group 'Learn-00df7c34-0891-4c80-bd96-cb7149eef2b6' is in progress.</p> <p>■■■ Deployment in progress... Running 2 minutes ago</p> <p>Deployment to resource group 'Learn-00df7c34-0891-4c80-bd96-cb7149eef2b6' is in progress.</p>								

STEP 1: PREPARE THE APP ON YOUR COMPUTER

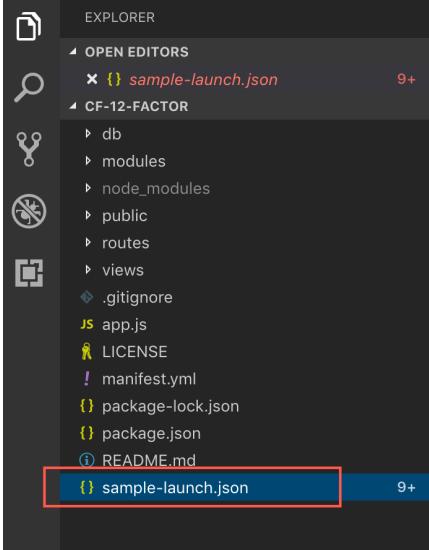
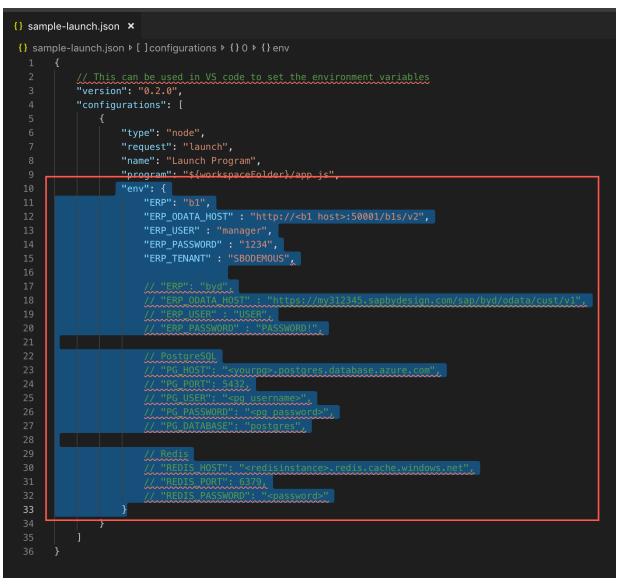
Explanation	Screenshot
Clone the repository \$ git clone https://github.com/Ralphive/cf-12-factor.git	<pre>:Desktop I844173\$ mkdir SMBIEWS02 :Desktop I844173\$ cd SMBIEWS SMBIEWS/ SMBIEWS02/ :Desktop I844173\$ cd SMBIEWS SMBIEWS/ SMBIEWS02/ :Desktop I844173\$ cd SMBIEWS02/ :Desktop I844173\$ git clone https://github.com/Ralphive/cf-12-factor.git Cloning into 'cf-12-factor'... remote: Enumerating objects: 34, done. remote: Counting objects: 100% (34/34), done. remote: Compressing objects: 100% (22/22), done. remote: Total 349 (delta 14), reused 26 (delta 11), pack-reused 315 Receiving objects: 100% (349/349), 92.03 KiB 532.00 KiB/s, done. Resolving deltas: 100% (159/159), done.</pre>
Install the dependencies \$ cd cf-12-factor/ \$ npm install	<pre>:SMBIEWS02 I844173\$ ls cf-12-factor : :SMBIEWS02 I844173\$ cd cf-12-factor/ :cf-12-factor I844173\$ ls LICENSE app.js manifest.yml package-lock.json public sample-launch.json README.md db modules package.json routes views :cf-12-factor I844173\$ npm install added 127 packages from 105 contributors and audited 238 packages in 1.4 62s Found 0 vulnerabilities :cf-12-factor I844173\$</pre>



STEP 2: RUN THE APP LOCALLY

Explanation	Screenshot
<p>Go to the terminal and run the psql command.</p> <p>Then create the table to store items in Postgres:</p> <pre>CREATE TABLE IF NOT EXISTS fact12_bps (code varchar(256) NOT NULL primary key, name varchar(256) NOT NULL, type varchar(1) NOT NULL default 'C', integrated boolean NOT NULL default false);</pre>	<pre>:~ I844173\$ /Applications/Postgres.app/Contents/Versions/11/bin/psql -p5432 "postgres" psql (11.4) Type "help" for help. postgres=# CREATE TABLE IF NOT EXISTS fact12_bps postgres-# (code varchar(256) NOT NULL primary key, postgres(# name varchar(256) NOT NULL, postgres(# type varchar(1) NOT NULL default 'C', postgres(# integrated boolean NOT NULL default false);</pre>
<p>Open Visual Studio Code;</p> <p>Click “Open folder...”;</p> <p>And choose the folder with the repository you cloned;</p>	 

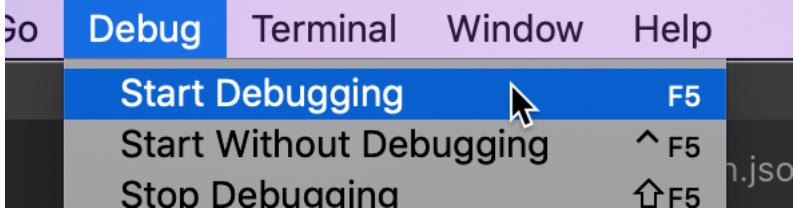
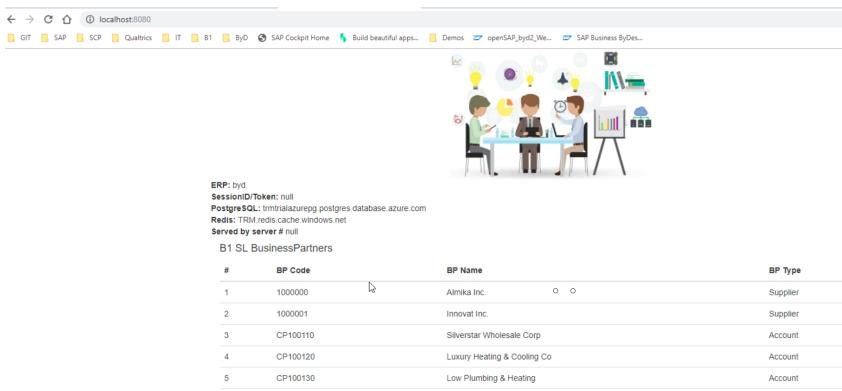


Explanation	Screenshot
<p>Open sample-launch.json file; Copy the environment lines;</p>  	<p>EXPLORER</p> <p>OPEN EDITORS</p> <p>sample-launch.json 9+</p> <p>CF-12-FACTOR</p> <p>db</p> <p>modules</p> <p>node_modules</p> <p>public</p> <p>routes</p> <p>views</p> <p>.gitignore</p> <p>app.js</p> <p>LICENSE</p> <p>manifest.yml</p> <p>package-lock.json</p> <p>package.json</p> <p>README.md</p> <p>sample-launch.json 9+</p> <p>sample-launch.json</p> <pre>// This can be used in VS code to set the environment variables { "version": "0.2.0", "configurations": [{ "type": "node", "request": "launch", "name": "Launch Program", "program": "\${workspaceFolder}/app.js", "env": { "ERP": "b1", "ERP_ODATA_HOST": "http://cb1 host>:50001/b1s/v2", "ERP_USER": "manager", "ERP_PASSWORD": "1234", "ERP_TENANT": "SBODEMUS" } }] }</pre>

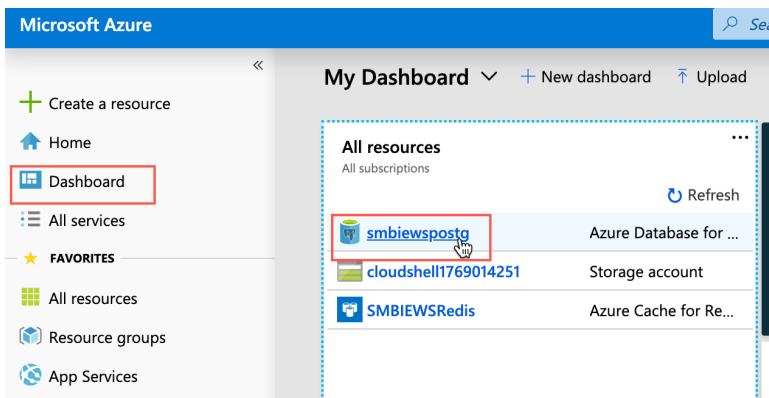
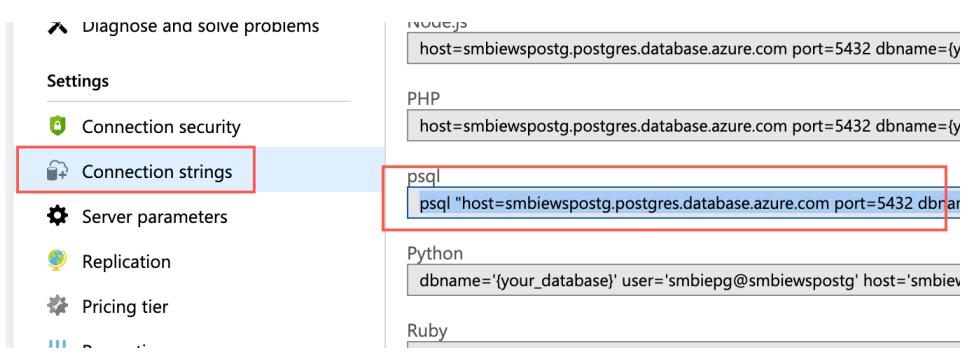
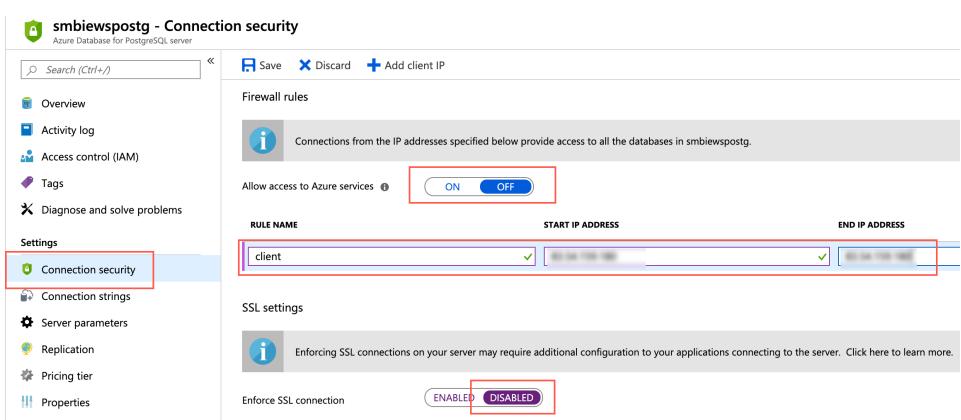


Explanation	Screenshot
<p>Go to the main menu and select Debug > Open Configurations;</p> <p>Then select Node.js;</p> <p>And paste the environment content after the program value.</p> <p>Setup the environment variable with actual values and save the file.</p> <p>Note: this app runs either with B1 OR ByD, not both at same time.</p>	 <pre>1 { 2 // Use IntelliSense to learn about possible attributes. 3 // Hover to view descriptions of existing attributes. 4 // For more information, visit: https://go.microsoft.com/fwlink/?LinkId=830387 5 "version": "0.2.0", 6 "configurations": [7 { 8 "type": "node", 9 "request": "launch", 10 "name": "Launch Program", 11 "program": "\${workspaceFolder}/app.js" 12 "env": { 13 "ERP": "b1", 14 "ERP_ODATA_HOST": "http://<b1 host>:50001/b1s/v2", 15 "ERP_USER": "manager", 16 "ERP_PASSWORD": "1234", 17 "ERP_TENANT": "SBODENOUS", 18 19 // "ERP": "byd", 20 // "ERP_ODATA_HOST": "https://my312345.sachydesign.com/sap/byd/odata/cust/v1", 21 // "ERP_USER": "USER", 22 // "ERP_PASSWORD": "PASSWORD", 23 24 // PostgreSQL 25 // "PG_HOST": "yourpgs.postgres.database.azure.com", 26 // "PG_PORT": 5432, 27 // "PG_USER": "pgsql username", 28 // "PG_PASSWORD": "pgsql password", 29 // "PG_DATABASE": "postgres", 30 31 // Redis 32 // "REDIS_HOST": "<redisinstance>.redis.cache.windows.net", 33 // "REDIS_PORT": 6379, 34 // "REDIS_PASSWORD": "<password>" 35 } 36 } 37] 38 } 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 }</pre>
<p>Open file db/persist.js</p> <p>and set the ssl to false.</p> <p>Save it.</p>	<pre>39 if(!credentials){ 40 //Maybe PostgreSQL on a remote enviroment 41 console.log("Looking for remote PostgreSQL connection details") 42 if(process.env.PG_HOST){ 43 44 console.log("trying to connect to PostgreSQL on " + process.env.PG_HOST) 45 credentials = { 46 user: process.env.PG_USER, 47 host: process.env.PG_HOST, 48 port: process.env.PG_PORT, 49 database: process.env.PG_DATABASE, 50 password: process.env.PG_PASSWORD, 51 ssl: false 52 } 53 }else{ 54 console.log("No remote PostgreSQL details found, will try to connect locally") 55 } 56 } 57 }</pre>



Explanation	Screenshot																								
Go to the main menu and select Debug - Start Debugging																									
Open the page http://localhost:8080 on your browser.	 <table border="1"><thead><tr><th>#</th><th>BP Code</th><th>BP Name</th><th>BP Type</th></tr></thead><tbody><tr><td>1</td><td>1000000</td><td>Almika Inc.</td><td>Supplier</td></tr><tr><td>2</td><td>1000001</td><td>Innovat Inc.</td><td>Supplier</td></tr><tr><td>3</td><td>CP100110</td><td>Silverstar Wholesale Corp</td><td>Account</td></tr><tr><td>4</td><td>CP100120</td><td>Luxury Heating & Cooling Co</td><td>Account</td></tr><tr><td>5</td><td>CP100130</td><td>Low Plumbing & Heating</td><td>Account</td></tr></tbody></table>	#	BP Code	BP Name	BP Type	1	1000000	Almika Inc.	Supplier	2	1000001	Innovat Inc.	Supplier	3	CP100110	Silverstar Wholesale Corp	Account	4	CP100120	Luxury Heating & Cooling Co	Account	5	CP100130	Low Plumbing & Heating	Account
#	BP Code	BP Name	BP Type																						
1	1000000	Almika Inc.	Supplier																						
2	1000001	Innovat Inc.	Supplier																						
3	CP100110	Silverstar Wholesale Corp	Account																						
4	CP100120	Luxury Heating & Cooling Co	Account																						
5	CP100130	Low Plumbing & Heating	Account																						

STEP 3: PREPARE AZURE POSTGRESQL DATABASE AND TABLES

Explanation	Screenshot
Go to the Azure dashboard and select the postgres database	
Under settings , select Connection strings . Copy the string.	
Paste the command into the terminal and run it. The request will fail with an error indicating that your local IP is not authorized. Copy the IP from the error message.	<pre>[C02YN2AVJGH6:bin I844173\$./psql "host=smbiewspostg.postgres.database.azure.com port=5432 dbname=(your_database)" user=smbiepg@smbiewspostg password=V sslmode=require" psql: FATAL: no pg_hba.conf entry for host "192.168.1.11", user "smbiepg", database "smbiepostg", SSL on C02YN2AVJGH6:bin I844173\$]</pre>
Go to the Microsoft Azure PostgreSQL Connection security menu on the Settings. Select ON to Allow access to Azure services. Add your local IP to the Firewall Rules. And disable SSL connections. Click SAVE	

Explanation	Screenshot
Run the psql command to connect again.	[C02YN2AVJGH6:bin I844173\$./psql "host=_____.postgres.database.azure.com] port=5432 dbname=postgres user=smbiepg@smbiewspostg password=_____ sslmode=require" psql (11.4, server 10.9) SSL connection (protocol: TLSv1.2, cipher: ECDHE-RSA-AES256-GCM-SHA384, bits: 256, compression: off) Type "help" for help. postgres=> █
Create a DB create database smbsadb; Exit and connect again, but now to the new DB.	[postgres=> create database smbsadb;] CREATE DATABASE [postgres=> exit] [C02YN2AVJGH6:bin I844173\$./psql "host=smbiewspostg.postgres.database.azure.com] port=5432 dbname=smbsadb user=smbiepg@smbiewspostg password=_____ sslmode=require" psql (11.4, server 10.9) SSL connection (protocol: TLSv1.2, cipher: ECDHE-RSA-AES256-GCM-SHA384, bits: 256, compression: off) Type "help" for help. smbsadb=> █
Create a Table Check Initialize.sql file inside the nodejs app code. CREATE TABLE IF NOT EXISTS fact12_bps smbsadb-> (code varchar(256) NOT NULL primary key, smbsadb(> name varchar(256) NOT NULL, smbsadb(> type varchar(1) NOT NULL default 'C', smbsadb(> integrated boolean NOT NULL default false); CREATE TABLE smbsadb=> █	smbsadb=> CREATE TABLE IF NOT EXISTS fact12_bps smbsadb-> (code varchar(256) NOT NULL primary key, smbsadb(> name varchar(256) NOT NULL, smbsadb(> type varchar(1) NOT NULL default 'C', smbsadb(> integrated boolean NOT NULL default false); CREATE TABLE smbsadb=> █
Exit	smbsadb=> exit

STEP 4: RUN ON SCP CF ENVIRONMENT

Explanation	Screenshot
Go to the terminal and push the app to Cloud Foundry: cf push --random-route	<p>Explanation Screenshot</p>  <pre>70 } 71 72 function Select(callback) { --</pre> <p>PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL :cf-12-factor I844173\$</p> <pre>:cf-12-factor I844173\$ cf push --random-route Pushing from manifest to org [REDACTED] / space dev as thiago.de.castro@sap.com... Using manifest file /Users/I844173/Desktop/SMBIEWS02/cf-12-factor/manifest.yml Deprecation warning: Use of 'buildpack' attribute in manifest is deprecated in favor of 'buildpacks'. buildpacks.html#deprecated for alternatives and other app manifest deprecations. This feature will be removed.</pre> <p>Getting app info... Updating app with these attributes... name: cf-12-factor path: /Users/I844173/Desktop/SMBIEWS02/cf-12-factor buildpacks: https://github.com/cloudfoundry/nodejs-buildpack.git command: npm start disk quota: 1G health check type: port instances: 1 <p>Waiting for app to start... name: cf-12-factor requested state: started routes: cf-12-factor-surprised-cassowary.cfapps.eu10.hana.ondemand.com last uploaded: wed 07 aug 21:53:29 cest 2019 stack: cflinuxfs3 buildpacks: nodejs type: web instances: 1/1 memory usage: 128M start command: npm start state since cpu memory disk details #0 running 2019-08-07T19:53:49Z 0.0% 43.5M of 128M 91.6M of 1G</p> </p>
Set the environment variables for the core ERP (B1 OR ByD) and for PostgreSQL and Redis .	<pre>[cf-12-factor \$ cf set-env cf-12-factor ERP b1 Setting env variable 'ERP' to 'b1' for app cf-12-factor in org I844173trial_trial / space dev as thiago.de.castro.mendes@sap.com... OK TIP: Use 'cf restage cf-12-factor' to ensure your env variable changes take effect :cf-12-factor \$]</pre>
You can also set them into the Manifest.yml file but attention to mixing up environment variables defined directly via Cloud Foundry CLI and in the Manifest.yml. In a productive environment, variables must be defined via Cloud Foundry CLI.	<pre>// PostgreSQL "PG_HOST": "smbsa-pg-db.postgres.database.azure.com", "PG_PORT": 5432, "PG_USER": "pgadmin@smbsa-pg-db", "PG_PASSWORD": "REDACTED", "PG_DATABASE": "smbsadb", // Redis "REDIS_HOST": "smbsa.redis.cache.windows.net", "REDIS_PORT": 6379, "REDIS_PASSWORD": "REDACTED"</pre>
Restart the app after setting the environment variables.	<pre>\$ cf restart <appName></pre>
Look at the logs to find out the error message providing the IP of the app running on CF.	<pre>C02YN2AVJGH6:cf-12-factor I844173\$ cf logs cf-12-factor --recent Retrieving logs for app cf-12-factor in org I844173trial_trial / space dev as thiago.de.castro.mendes@sap.com... 2019-08-07T15:59:38.40+0200 [APP/PROC/WEB/0] OUT Connected to Redis 2019-08-07T16:09:39.41+0200 [APP/PROC/WEB/0] OUT Connected to Redis 2019-08-07T16:19:40.38+0200 [APP/PROC/WEB/0] OUT Connected to Redis 2019-08-07T16:29:41.47+0200 [APP/PROC/WEB/0] OUT Connected to Redis 2019-08-07T16:29:42.36+0200 [APP/PROC/WEB/0] OUT Connected to Redis</pre>
After checking the logs, you might need	



Explanation	Screenshot															
to add the CF IP to the PostgreSQL server Connection Security as you did with your local IP.																
Restart the app	<pre>\$ cf restart <appName></pre>															
Check the app is running on CF	<pre>C:\Users\i029162\GitHub\cf-12-factor>cf apps Getting apps in org I029162trial_i029162 / space dev as maria.trinidad.martinez.gea@sap.com... OK name requested state instances memory disk urls leoiimg stopped 0/1 256M 1G leoiimg-courteous-possum.cfapps.eu10.hana.ondemand.com freightcalctrm stopped 0/1 64M 1G freightcalctrm.cfapps.eu10.hana.ondemand.com smbiotdemocfapptrm stopped 0/1 64M 1G smbiotdemocfapptrm.cfapps.eu10.hana.ondemand.com cf-12-factor started 1/1 128M 1G cf-12-factor-excellent-okapi.cfapps.eu10.hana.ondemand.com C:\Users\i029162\GitHub\cf-12-factor></pre>															
Open the app page by using the corresponding generated url.	<p>← → C 🔒 https://cf-12-factor-excellent-okapi.cfapps.eu10.hana.ondemand.com</p> <p>GIT SAP SCP Qualtrics IT B1 ByD SAP Cockpit Home Build beautiful apps... Demos openSAP_byd2_We...</p>  <p>ERP: byd SessionID/Token: null PostgreSQL: trmtrialazurepg.postgres.database.azure.com Redis: TRM.redis.cache.windows.net Served by server # 1</p> <p>B1 SL BusinessPartners</p> <table border="1"> <thead> <tr> <th>#</th> <th>BP Code</th> <th>BP Name</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>1000000</td> <td>Almika Inc.</td> </tr> <tr> <td>2</td> <td>1000001</td> <td>Innovat Inc.</td> </tr> <tr> <td>3</td> <td>CP100110</td> <td>Silverstar Wholesale Corp</td> </tr> <tr> <td>.</td> <td>...</td> <td>...</td> </tr> </tbody> </table>	#	BP Code	BP Name	1	1000000	Almika Inc.	2	1000001	Innovat Inc.	3	CP100110	Silverstar Wholesale Corp
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