

Running a POC with Karlsgate Identity Exchange v2024.1

Estimated Total Time Required: 30 minutes

Goals of the POC (what you will learn)

How a Privacy Enhancing Technology can truly reinvent your data operations and open opportunities for your data.

How the Karlsgate Identity Exchange works and how links you to the world of Protected Data.

How easy it is to connect your data assets without changing formats or modifying your tech stack.

How the performance and flexibility of the technology unlocks connectivity at scale.

Step 1: Creating your Membership

Signing up is the very first step and it only requires your email address to register at the Portal.

Go to <https://portal.karlsgate.com/Help> to jump to the Getting Started page.

Click the **Join now** button and fill out the registration form.

 Join now

You will need to confirm your registration by checking your email account for an activation message.

Step 2: Setting up a Node on your desktop or laptop

This will be a temporary node used just for this proof of concept, so there is no need to make any integration decisions at this stage.

On Windows:

1. Open a command prompt.
2. Paste the following command (as one long line) and hit enter.

```
curl -LO https://portal.karlsgate.com/scripts/quickstart-windows.cmd  
&& .\quickstart-windows.cmd
```

On MacOS:

1. Open a terminal window.
2. Paste the following command (as one long line) and hit return.

```
/bin/bash -c "$(curl -fsSL  
https://portal.karlsgate.com/scripts/quickstart-osx.sh)"
```

When you are asked to connect your node to the exchange, here are some hints:

- For the node nickname, pick a single word (for example: test).
- For your username, type the email address you used during registration.
- For the password, type the password you chose during registration.
- Keep the default storage settings.

Now your node should be up and running. **Leave this window open during the remainder of the exercise.** If you close or stop this window prematurely, you can restart this step from the beginning.

You should be able to see your new node connected to your membership at the portal by navigating to **Membership > Nodes** or via the link:

<https://portal.karlsgate.com/Nodes>

The next step is to attach data to your node. You will use some fake data to simulate this.

Step 3: Creating a Listing

For this proof of concept, you can download fake data that will help demonstrate some of the features of the Karlsgate Identity Exchange.

You will be downloading 1 raw data file and 1 listing specifications file and placing them in a special staging folder. The combination of these 2 files will trigger the node to import the data and create a listing on the exchange.

Step 3a

First the data file: open a browser window and navigate to

<https://downloads.karlsgate.com/data/poc-sample.txt>

This should automatically trigger a download to your browser's download folder, if not, save the file to your downloads area.

Now, you are going to drag the file that was just downloaded, named **poc-sample.txt**, to a special staging folder noted below.

SOURCE	TARGET
Downloads folder	On Windows, open: %LOCALAPPDATA%\Karlsgate\kie\Staging
	On MacOS, secondary click, go to folder: ~/kie/staging

Typically, you can open your local File Explorer or Finder window and navigate to both the folders specified above to drag the file from the source to the target or copy & paste between locations.

Next, repeat that process for the listing specifications file.

Step 3b

To download, navigate to <https://downloads.karlsgate.com/data/poc-sample.txt.spec.yml>

Again, this should automatically trigger a download to your browser's download folder, if not, save the file to your downloads area.

Drag the new file, named **poc-sample.txt.spec.yml**, to the same target folder as before.

Step 3c

After 30 seconds, the staging files should disappear, and the listings should be added to your membership. **It is important to note that data is never uploaded to any other location when creating a listing.** Only a high-level description of the structure of the data is shared with the exchange.

You should be able to see your new listing at the portal by navigating to **Listings > My Listings** or via the link: <https://portal.karlsgate.com/Listings>

The next step is to perform some trades using your test node and the fake data you attached.

Step 4: Performing Trades

You will perform several trading exercises with SampleBot, an automating robot trading partner. SampleBot will be likewise armed with several fake data sets for this purpose.

Trades start with choosing one of the listings linked from your nodes. The available operations that can be performed are Match (collaborate between 2 listings) and Push/Pull (integrate data to/from 1 listing). This step will focus on Match (the more complex of the option). For these tests, you will be using the **poc-sample** listing you created earlier which you can find at the portal by navigating to **Listings > My Listings**.

Step 4a

1. Click the **Match with partner** link on the **poc-sample** listing.
2. On the Pairing page, type “poc” in the Listing filter box at the top and click **Search**.
3. Click the **Propose trade** link on the **poc-base** listing.
4. From the **Offering to partner** drop-down (third box down from the top), select **Metrics Only** for both partners (x2).
5. Within the **Common identifiers to match on** section, click on **email ↔ email** tile to select the match criteria.
6. Scroll to the bottom of the page and click the **Create trade proposal** button.
7. Confirm by clicking the **Yes, create trade proposal** button.

The actual matching process will launch and clear out once completed. Matching 30,000 records to 100,000 records should take around 30 seconds.

Once completed, the trade results can be viewed by navigating to **Trades > History**. Click on the **Results** link to review the trade’s match statistics. Here you can see the number of matches that were found in the intersection of the two listings. Definitions of each column are available directly below the statistics table. Remember, neither party revealed the underlying identities stored within the listings to achieve these results, since cryptoidentities were blindly compared instead of raw data.

Next, you will perform a trade that exchanges attribute information, if and only if a match is detected between identities. In addition, this next trade will leverage multiple identifiers to boost match performance.

Step 4b

1. Returning to the **Listings > My Listings** page, again click the **Match with partner** link on the **poc-sample** listing.
2. On the Pairing page, type “poc” in the Listing filter box at the top and click **Search**.
3. Click the **Propose trade** link on the **poc-base** listing.
4. From the **Offering to partner** drop-down (third box down from the top), select **Nothing** for the left column (represents your offer) and **Appended Indicators** for the right column (represents the SampleBot’s offer to you).

5. Select the **Attributes to share** list from the right column by clicking next to **gender**, **income**, and **risk_factor**.
6. Within the **Common identifiers to match on** section, choose a cascading sequence of match criteria by:
 - a. clicking first on the **nat-us-ssn ↔ nat-us-ssn** tile (US Social Security Number),
 - b. clicking second on the **comp+gn+sn+pc ↔ comp+gn+sn+pc** tile (composite of first/given name, last/surname, and postal code),
 - c. clicking third on **comp+sn+pc+dob ↔ comp+sn+pc+dob** tile (composite of last/surname, postal code, and data of birth).
7. Scroll to the bottom of the page and click the **Create trade proposal** button.
8. Confirm by clicking the **Yes, create trade proposal** button.

Like before, the trade results can be viewed upon completion by navigating to **Trades > History**. Click on the **Results** link on the top trade to review this trade's match statistics. With this trade, additional details show the number of matches with a breakdown by the match logic, plus the number of records receiving appended information.

A key feature of the Appended Indicators is that the local node has received and appended the offered attributes directly to the matching records that are stored in your controlled environment.

Step 4c

The output is automatically downloaded and stored in a folder named after the listing. You can open the output folder to inspect the results of trade with Appended Indicators.

On Windows: %LOCALAPPDATA%\Karlsgate\kie\Output\poc-sample\

On MacOS: ~/kie/output/poc-sample

The original input data is copied along with the appended indicators wherever a match is found. Double-clicking on the file ending with ".txt" will give you a peek of the enriched dataset. The raw data file may not format very well on screen, but the appended columns will be present in an updated layout.

Next, the entire footprint of software and data will be cleaned up.

Cleanup

Now it's time to remove all the downloaded code and data used in this proof of concept.

On Windows:

Go to the node's running command prompt, and press Ctrl+C.

Next paste in the following and hit enter:

```
%LocalAppData%\Karlsgate\kie\kie-uninstall.cmd
```

On MacOS:

Go to the node's running terminal window, and press ⌘. (command key and the period key)

Next type the following and hit return:

```
~/kie/bin/kie-uninstall.sh
```

Congratulations! You have fully completed the proof of concept. The next step is to review what was proven by this exercise.

Takeaways

Seeing this privacy-enhancing technology first-hand is a great way to understand and observe the wide range of benefits of the Karlsgate Identity Exchange.

- Privacy benefits (**no loss of data custody of identified elements**, triple-blind matching protocol, **automatic de-identification**, zero re-identification risks)
- Data security benefits (fully managed cryptography, data protection in-transit, at-rest, and in-use, **zero trust multi-party transactions**, least privilege hosting, no inbound ports)
- Performance benefits (instant execution, **high-performance processing and transmission**, no waiting on other parties to extract data)
- Compliance benefits (**verifiable blocking of personally identifying information**, auditing of all data movement, best-in-class de-identification practices)
- Efficiency benefits (rapid onboarding, **no IT involvement after initial setup**, no-code usage patterns, accelerated data partnerships and collaboration)

Possible next steps

- Follow the onboarding guide to bring your own data to the Exchange.
- Evaluate the multitude of options for both cloud and on-premises deployments.
- Explore a Charter Membership Subscription to enjoy unlimited trade activity.