



Charting new data spaces with Catena-X

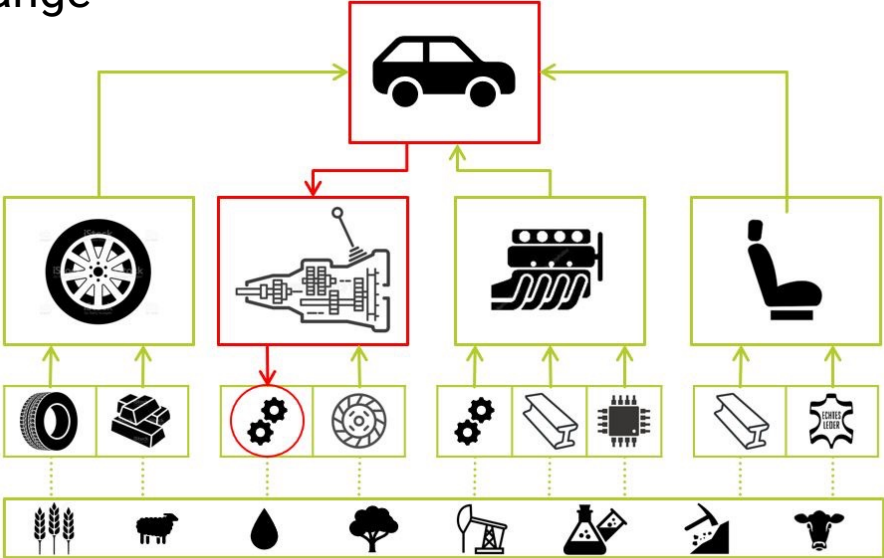
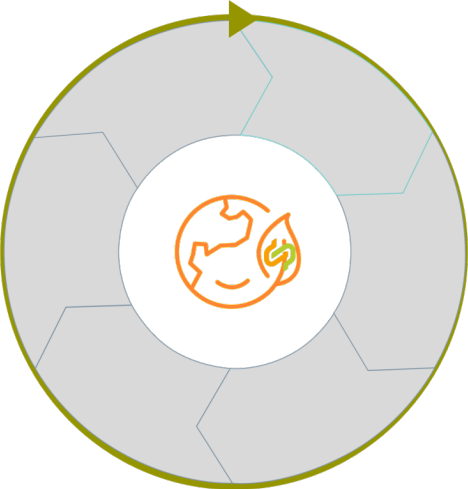
Evelyn Gurschler | BMW Group

Outline

- Catena-X and Eclipse Tractus-X
- Deploying a data space
 - Scope and challenges
 - Approach of Tractus-X
- Demo

Catena-X data space

- Connects companies along the supply chain
- Sovereign and decentralized data exchange



Eclipse Tractus-X

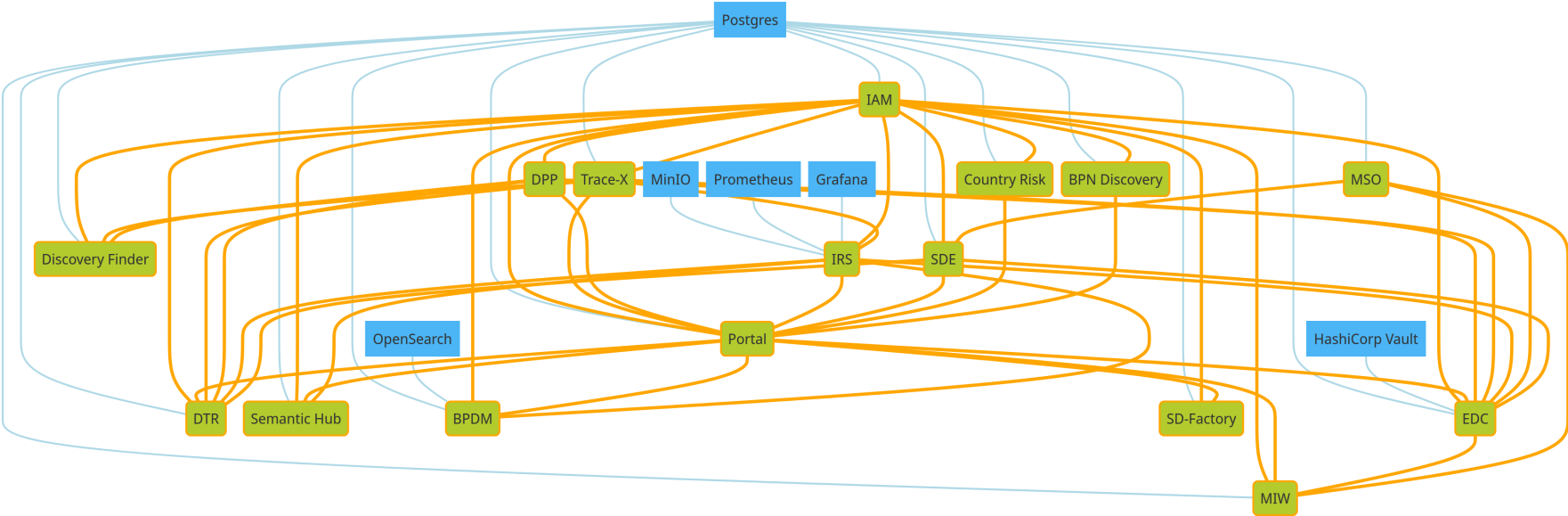
- Reference implementation of Catena-X
- Open source project

github.com/eclipse-tractusx



Deploying Catena-X

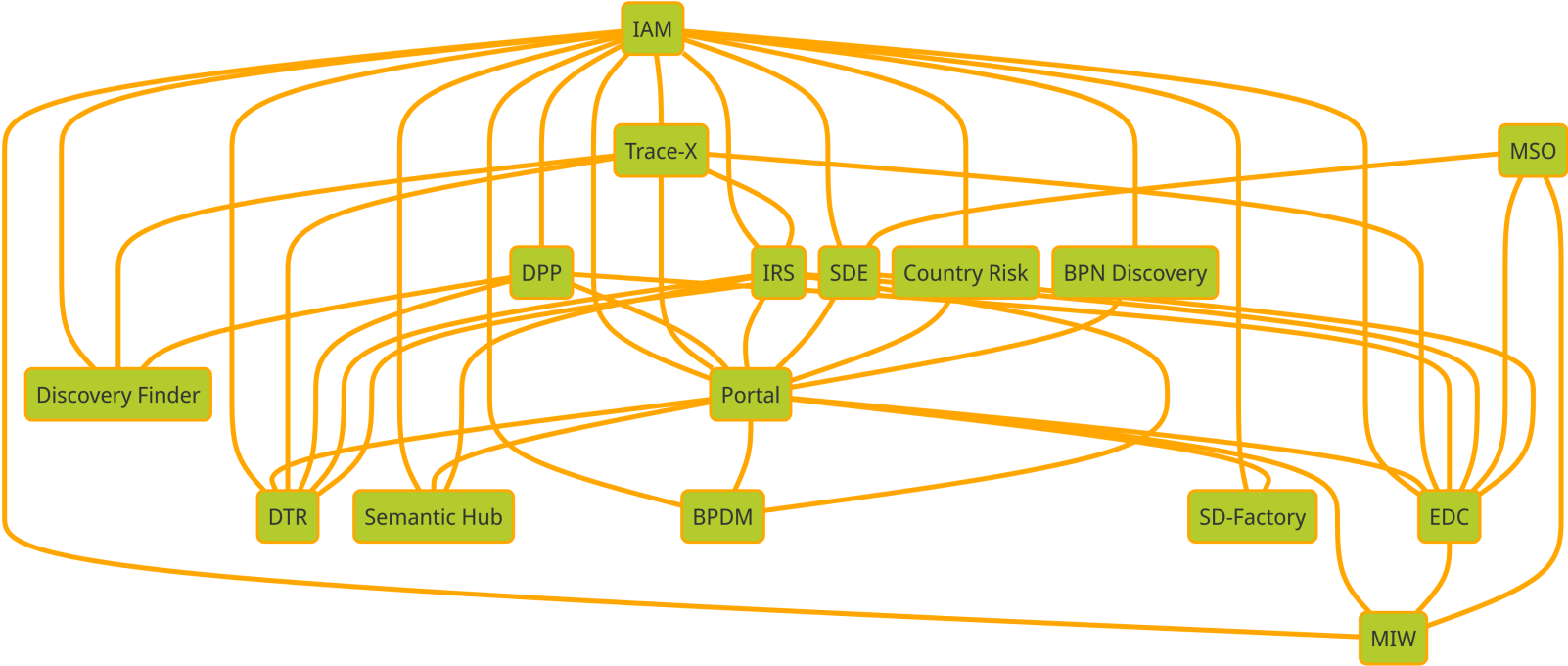
Deployment scope



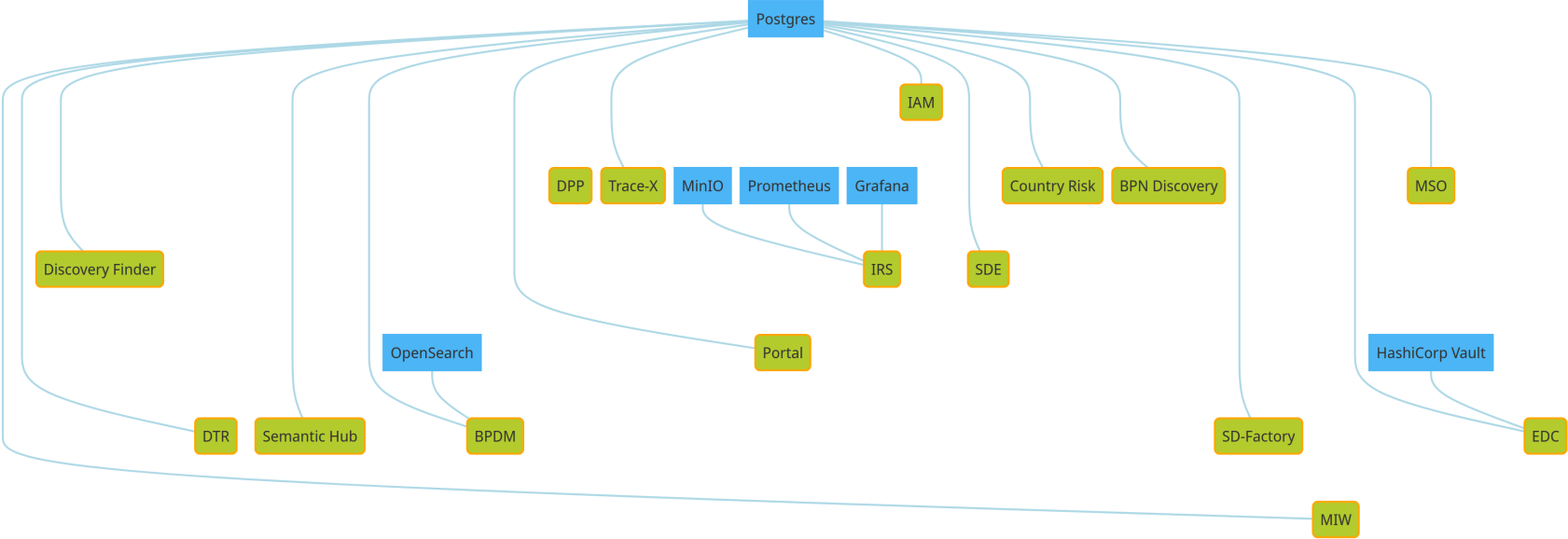
Applications



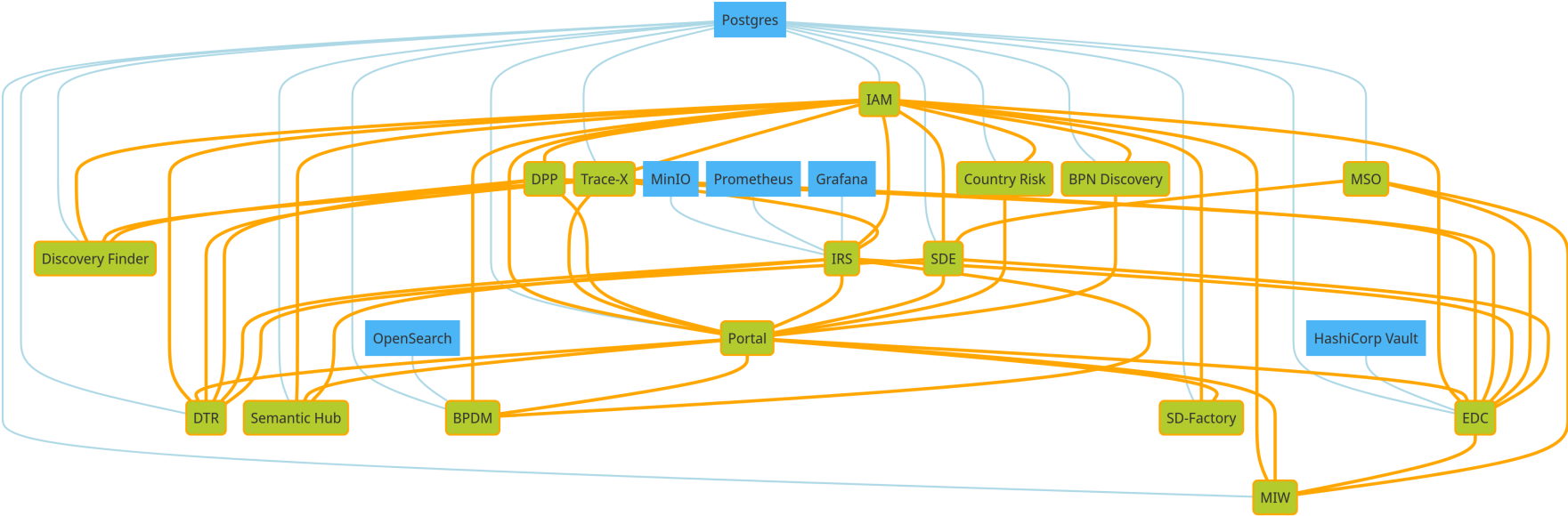
Interface dependencies



Infrastructure dependencies



Deployment scope

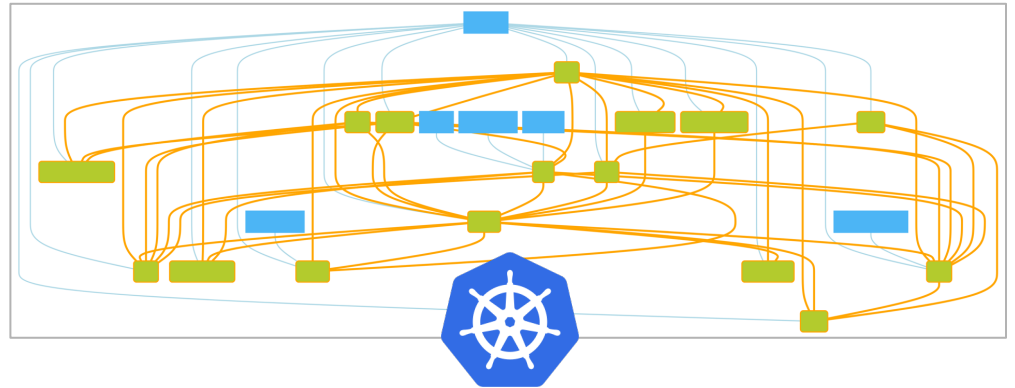


Challenges

- Keeping track of applications and its dependencies
- Version alignment
- Management of configuration values

How to manage those challenges?

- Container deployment managed by Kubernetes



- Portability across infrastructure providers

Helm

- Package manager for Kubernetes
- Templating Engine



Helm charts

- Packages managed by Helm
- Bundles of YAML and templates files



Helm Charts and Tractus-X

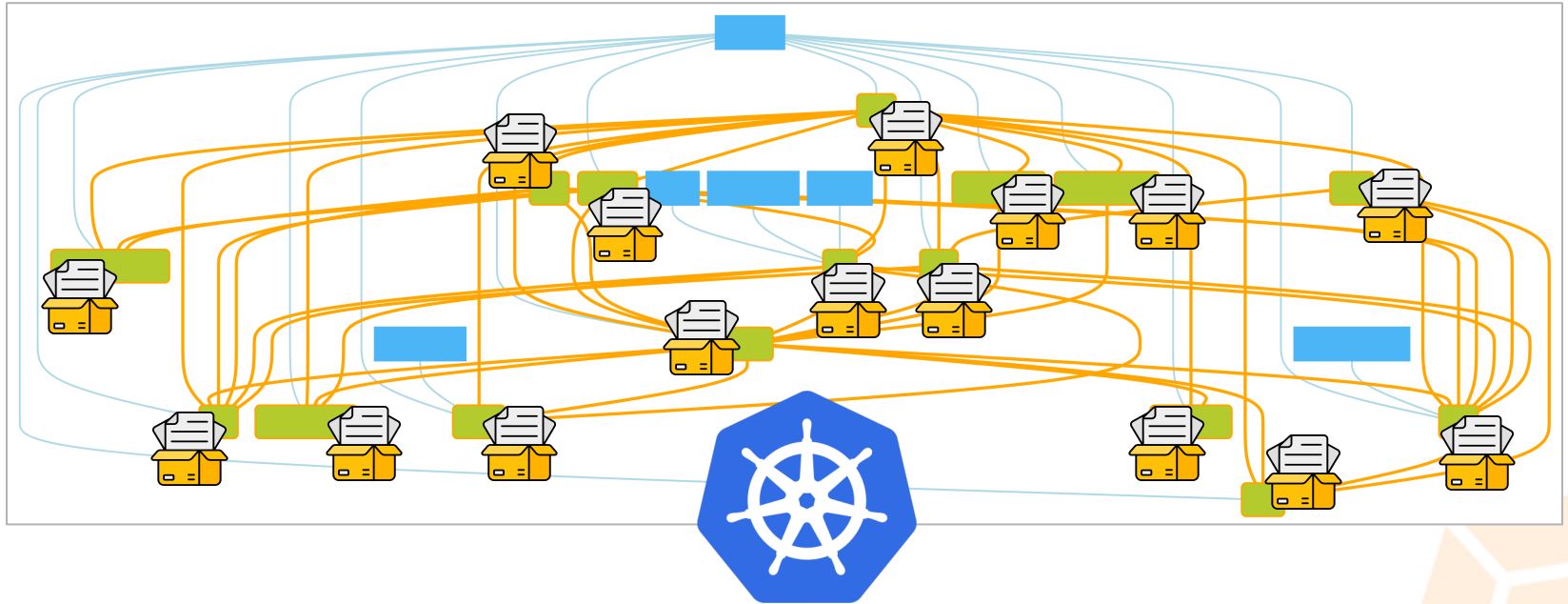


Chart repository

eclipse-tractusx/charts

helm search repo tractusx-dev

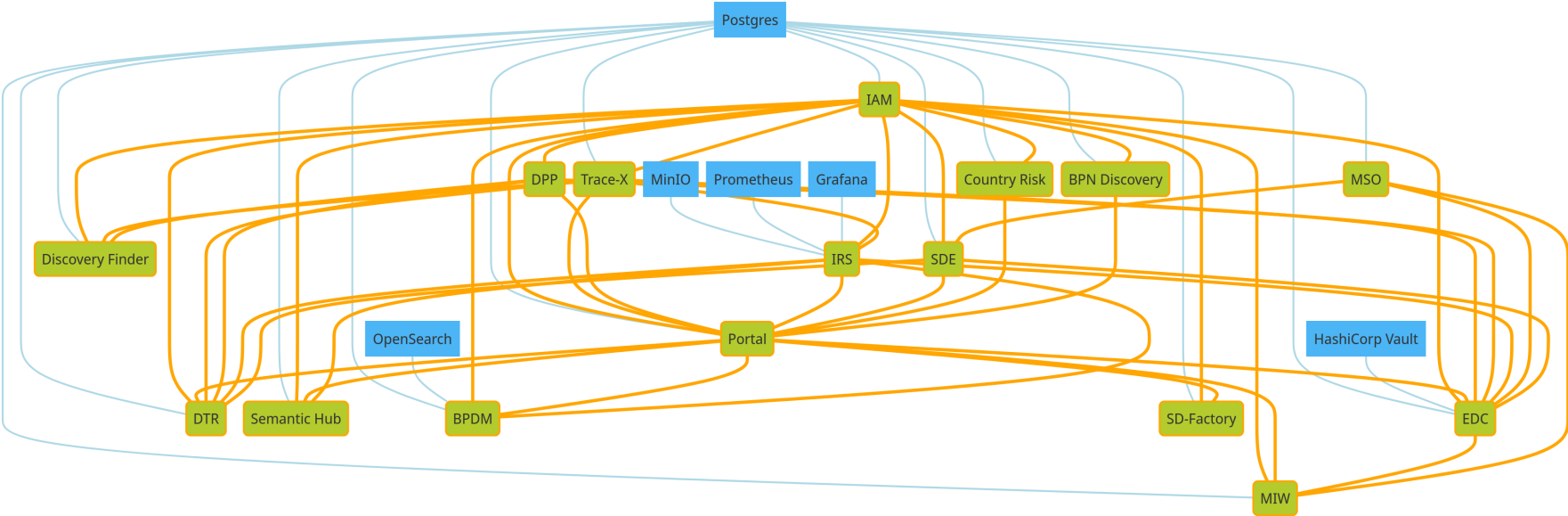
NAME	CHART VERSION	APP VERSION	DESCRIPTION
tractusx-dev/agent-connector	1.9.8	1.9.8	A Helm chart for an Agent-Enabled Tractus-X Ecl...
tractusx-dev/agent-connector-azure-vault	1.9.8	1.9.8	A Helm chart for an Agent-Enabled Tractus-X Ecl...
tractusx-dev/agent-connector-memory	1.9.8	1.9.8	A Helm chart for an Agent-Enabled Tractus-X Ecl...
tractusx-dev/app-dashboard	1.0.5	1.0.4	A Helm chart for Kubernetes
tractusx-dev/autosetup	1.4.2	1.4.2	This service will help service provider to set ...
tractusx-dev/bpdm	3.0.4	4.0.1	A Helm chart for Kubernetes that deploys the ga...
tractusx-dev/bpdm-gate	3.3.2	3.2.2	A Helm chart for deploying the BPDM gate service
tractusx-dev/bpdm-pool	4.3.2	3.2.2	A Helm chart for deploying the BPDM pool service
tractusx-dev/bpndiscovery	0.1.11	0.2.5-M1	Tractus-X BPN Discovery Helm Chart
tractusx-dev/centralidp	1.2.0	1.2.0	Helm chart for Catena-X Central Keycloak Instance
tractusx-dev/charts-cart	0.1.0		An empty Helm chart for this folder
tractusx-dev/conforming-agent	1.9.8	1.9.8	A Helm chart for the Tractus-X Conforming Agent...
tractusx-dev/consumer-backend	0.3.0	0.6.0	Consumer Backend Helm Deployment for the Produc...
tractusx-dev/consumer-ui	0.3.0	0.6.0	Consumer Application Helm Deployment for the Pr...
tractusx-dev/country-risk	1.0.0		A Helm chart for deploying the Country Risk ser...
tractusx-dev/country-risk-backend	2.1.3	1.1.0	A Helm chart for deploying the Country Risk ser...
tractusx-dev/country-risk-frontend	2.0.9	1.1.1	A Helm chart for deploying the Country Risk ser...
tractusx-dev/daps	0.0.1	0.0.1	A Helm chart for Kubernetes
tractusx-dev/daps-reg-service	2.1.0	2.1.0	Daps regisgter service is used to register the ...
tractusx-dev/daps-server	1.8.1	1.7.1	DAPS server helm-chart
tractusx-dev/data-exchange	1.0.9	1.0.9	Data exchange service is used to exchange the d...
tractusx-dev/dft-backend	1.9.0	1.9.0	A Helm chart for Kubernetes
tractusx-dev/dft-frontend	1.8.1	1.8.1	A Helm chart for Kubernetes
tractusx-dev/dftbackend	2.0.2	2.0.2	A Helm chart for Kubernetes
tractusx-dev/dftfrontend	2.0.2	2.0.2	A Helm chart for Kubernetes
tractusx-dev/digital-product-pass	1.0.1	1.0.1	A Helm chart for Tractus-X Digital Product Pass...
tractusx-dev/discoveryfinder	0.1.11	0.2.4-M1	Tractus-X Discovery Finder Helm Chart
tractusx-dev/edc-controlplane	0.1.7	0.1.6	EDC Control-Plane - The Eclipse DataSpaceConne...
tractusx-dev/edc-dataplane	0.1.7	0.1.6	EDC Data-Plane - The Eclipse DataSpaceConnector...
tractusx-dev/irs	1.1.1	1.1.0	IRS Helm chart for Kubernetes for Catena-X
tractusx-dev/irs-edc-consumer	2.0.0	0.4.1	IRS Helm chart for the EDC consumer
tractusx-dev/irs-helm	6.8.0	3.5.3	IRS Helm chart for Kubernetes
tractusx-dev/localdev-portal-iam	0.1.0		Setup of CX Portal & IAM for local development
tractusx-dev/managed-identity-wallet	1.1.0	0.0.1	Managed Identity Wallet is supposed to supply a...
tractusx-dev/managed-identity-wallets	0.7.7	3.3.3	Managed Identity Wallets Service
tractusx-dev/managed-service-orchestrator	1.5.0	1.5.0	This service will help service provider to set ...
tractusx-dev/portal	1.6.0	1.6.0	Helm chart for Catena-X Portal
tractusx-dev/product-traceability-foss-backend	1.1.1	1.1.0	A Helm chart for Traceability backend application
tractusx-dev/provisioning-agent	1.9.8	1.9.8	A Helm chart for the Tractus-X Provisioning Age...
tractusx-dev/registry	0.3.24	0.3.16-M1	Tractus-X Digital Twin Registry Helm Chart
tractusx-dev/remoting-agent	1.9.8	1.9.8	A Helm chart for the Tractus-X Remoting Agent w...
tractusx-dev/sde	0.0.9	2.1.1	A Helm chart for Kubernetes
tractusx-dev/sdebackend	2.0.9	2.0.9	SDE Backend
tractusx-dev/sdfactory	2.1.7	2.1.6	Helm Charts for SD Factory application. Self-De...
tractusx-dev/semantic-hub	0.1.29	0.2.11-M1	Helm Chart for the Catena-X Semantic Hub Applic...
tractusx-dev/sharedidp	1.2.0	1.2.0	Helm chart for Catena-X Shared Keycloak Instance

Striving for THE umbrella helm chart 🌂⭐

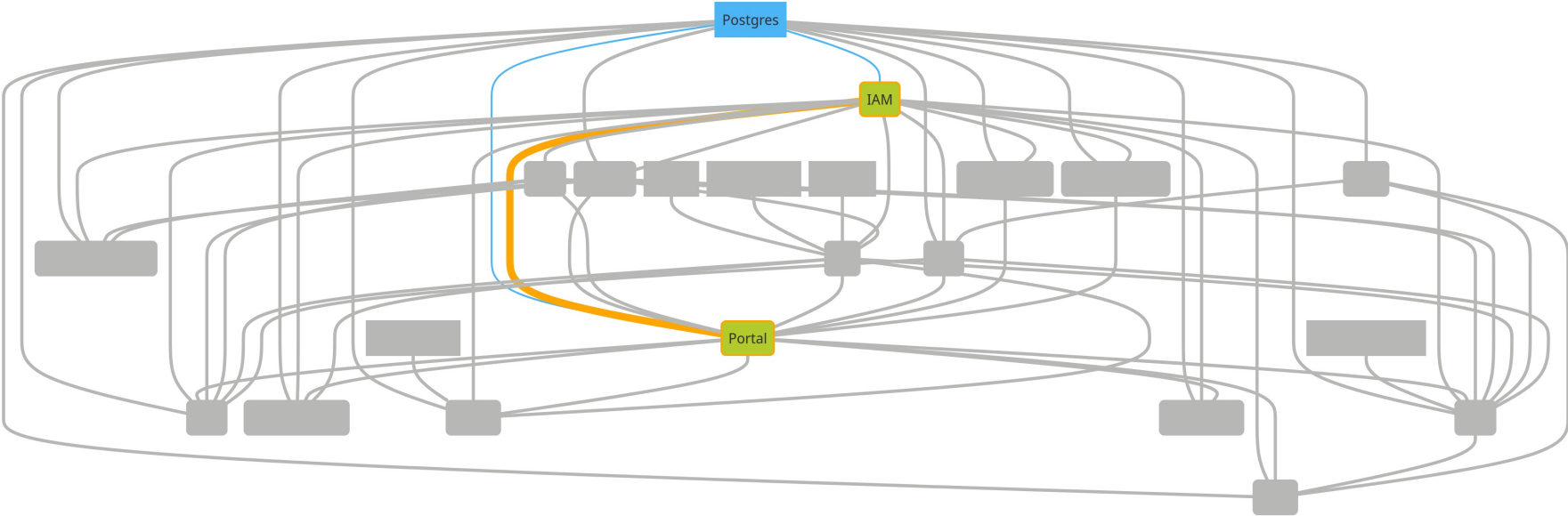
```
helm install catena-x tractusx-dev/umbrella
```


Demo

Data space



Demo scope

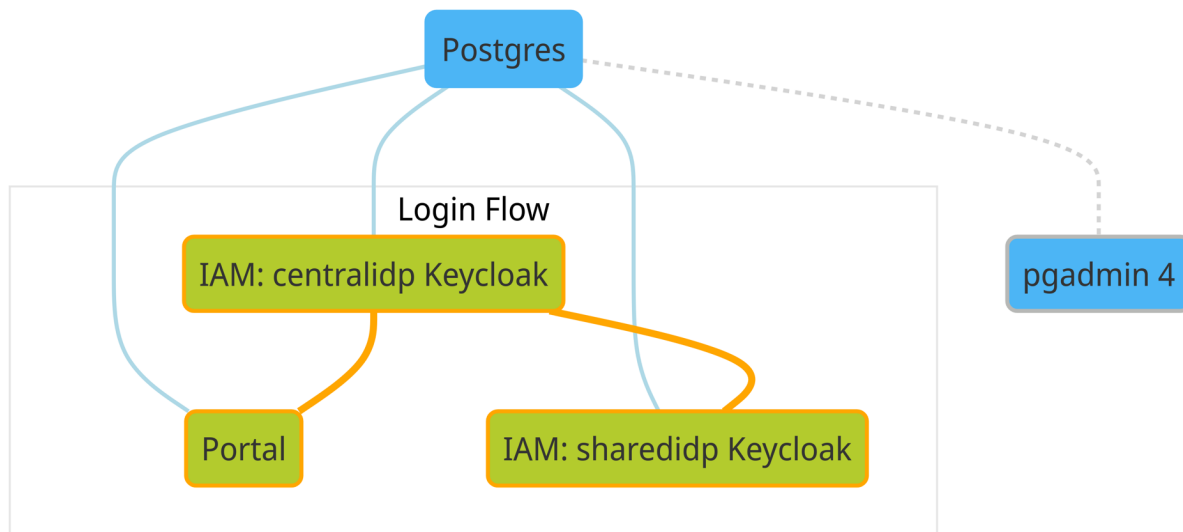


Local deployment



minikube

[eclipse-tractusx/portal-cd/tree/main/charts/localdev](https://github.com/eclipse-tractusx/portal-cd/tree/main/charts/localdev)



Demo video

The screenshot shows a GitHub repository page for the chart 'Setup of CX Portal & IAM for local development'. The page is viewed in a browser with the URL `github.com/eclipse-tractusx/portal-cd/blob/main/charts/localdev/README.md#3-install-from-rel...`. The repository name is 'portal-cd/charts/localdev/RE...' and the current branch is 'main'. The file 'README.md' is selected in the left sidebar. The main content area shows the title 'Setup of CX Portal & IAM for local development' with a version of '0.1.0' and a type of 'application'. The text describes the chart's purpose: it installs Helm charts for CX Portal and CX IAM Keycloak instances, and sets up a PostgreSQL instance for development. It also provides a link to the 'Usage' section.

Files

- main
- .github
- charts
 - localdev
 - templates
 - Chart.yaml
 - LICENSE
 - README.md
 - README.md.gotmpl
 - values.yaml
 - portal
 - chart-testing-config.ya...
 - consortia
 - .gitignore
 - .tractusx
 - CHANGELOG.md
 - CODE_OF_CONDUCT.md
 - CONTRIBUTING.md
 - LICENSE
 - NOTICE.md
 - README.md
 - SECURITY.md

Documentation • Share feedback

The screenshot shows a terminal window with a shell prompt. The prompt is `Q458168@LPTP2018417 ~ %`. The terminal title bar indicates the shell is `-zsh` and the current directory is `#1`. The terminal is open in a window with standard macOS window controls (red, yellow, green buttons).

Takeaways

Takeaways

- Helm helps us to manage deployment complexity
- Deploying a data space is still challenging

Check out the LocalDev umbrella helm chart

https://t.ly/Y-g_z



Q&A

Thank you!

Evaluate the session
and join the conversation

 [@EclipseCon](https://twitter.com/EclipseCon) | [#EclipseCon](https://twitter.com/EclipseCon)



Sources

<https://catena-x.net>

<https://eclipse-tractusx.github.io>

Kubernetes

<https://kubernetes.io/docs/concepts/overview>

Logo: <https://github.com/kubernetes/kubernetes/blob/master/logo/logo.svg>

Minikube logo: https://github.com/kubernetes/minikube/blob/master/images/logo/logo_with_name.svg

Helm and Helm Charts inspired by: <https://youtu.be/-ykwb1d0DXU?si=KPFboiEYVlt8oKmW>

Helm logo: <https://github.com/helm/community/blob/main/art/images/Logo-Tweak-Light.png>

Helm package: <https://github.com/devopsjourney1/devops-course/blob/master/Cheatsheets/images/icons/package.png>