INTERNATIONAL DATA SPACES ASSOCIATION

INTERNATIONAL DATA SPACES
PLUGFEST HANDS-ON-SESSION

JULIA PAMPUS & RONJA QUENSEL

DORTMUND, OCTOBER 20TH, 2021

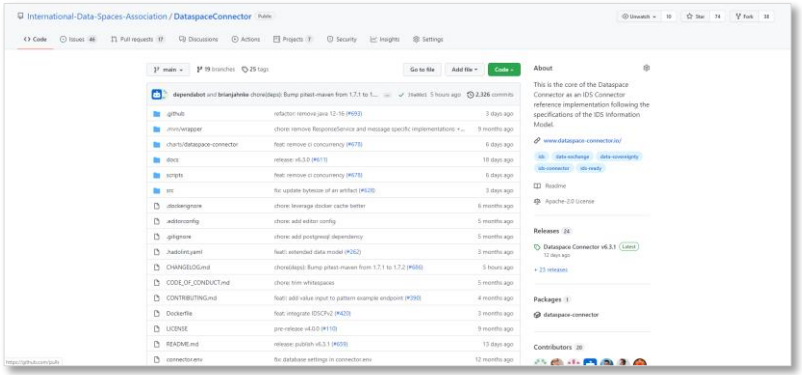
INTERNATIONAL DATA SPACES ASSOCIATION

DATASPACE CONNECTOR
OVERVIEW

PROJECT
OPEN SOURCE SOFTWARE

- IDS Connector implementation of the Data Business department of the Fraunhofer ISST
- Open Source software project (under organization and supervision by IDSA)

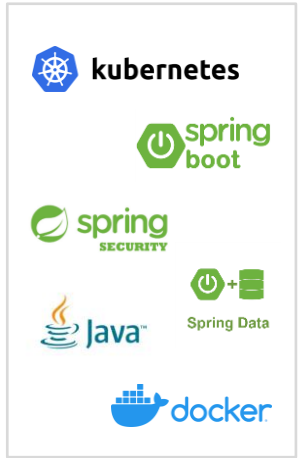
www.dataspace-connector.io



www.github.com/International-Data-Spaces-Association/DataspaceConnector

OVERVIEW
USED TECHNOLOGIES

- Metadata and data transfer, policy enforcement, and identity management according to IDS RAM 4.0
- Integration of other IDS projects, e.g. IDS InfoModel Library, IDS Messaging Services
- Use of modern technologies, standards, and best practices
  - REST API follows standards such as RFC 7231 (HTTP1.1), partly support of HATEOAS
- Code quality due to code style guides, implementation of best practices, and high test coverage
- Logging and http tracing for transparent data and information flow
- Deployment in e.g. Kubernetes, Docker
- "IDS_ready" approved since 03.12.2020
  - Certification level: Base (+ Usage Control)



Maintenance-friendly, easily expandable, encapsulation of the IDS Information Model

INTERNATIONAL DATA SPACES ASSOCIATION

DATASPACE CONNECTOR
HANDS-ON TASK

INTRODUCTION
WHAT IS THIS WORKSHOP ALL ABOUT?

- Getting familiar with the current implementation of the Dataspace Connector
- Step-by-step guide to connect to a running IDS Broker and IDS Connector

- Tasks
  - Download and setup of the Dataspace Connector v6.3.1
  - Communication with the IDS Broker
  - Communication with another Dataspace Connector

Important links
- Documentation: https://international-data-spaces-association.github.io/DataspaceConnector/
- Repository: https://github.com/International-Data-Spaces-Association/DataspaceConnector

INTERNATIONAL DATA SPACES ASSOCIATION

DATASPACE CONNECTOR
CONFIGURATION AND DEPLOYMENT

DEPLOYMENT
STEP-BY-STEP GUIDE FOR A LOCAL SETUP

1. Open https://international-data-spaces-association.github.io/DataspaceConnector/GettingStarted#quick-start.
2. Follow step 1.
3. Change your configurations.
    - Add the **plugfest-keystore.p12** to your DataspaceConnector/src/main/resources/conf/ directory.
    - Change the **config.json**.
        - Change the keystore: **"ids:keyStore" : { "@id" : ".../plugfest-keystore.p12“ }**
        - Change the **ids:connectorDeployMode** to **idsc:PRODUCTIVE_DEPLOYMENT**
        - Change the connector id from https://w3id.org/idsa/autogen/baseConnector/7b934432-a85e-41c5-9f65-669219dde4ea to a unique one of your choice (must be of type URI/URL)
        - (Optional) Change the title, description, curator and maintainer
4. Follow steps 2-4.

Full guide: https://international-data-spaces-association.github.io/DataspaceConnector/Deployment

For further workshop instructions, continue to slide 8.

DEPLOYMENT (ADVANCED)
STEP-BY-STEP GUIDE FOR A DOCKER SETUP

1. Open https://github.com/International-Data-Spaces-Association/IDS-Deployment-Examples/tree/main/dataspace-connector/slim/docker.
2. Follow the installation Steps 1 and 2.
3. Change your configurations.
    - Add the **plugfest-keystore.p12** to your dataspace-connector/slim/docker/dataspaceconnector/config/ directory.
    - Change the **config.json**.
        - Change the keystore: **"ids:keyStore" : { "@id" : ".../plugfest-keystore.p12“ }**
        - Change the **ids:connectorDeployMode** to **idsc:PRODUCTIVE_DEPLOYMENT**
        - Change the connector id from https://w3id.org/idsa/autogen/baseConnector/7b934432-a85e-41c5-9f65-669219dde4ea to a unique one of your choice (must be of type URI/URL)
        - (Optional) Change the title, description, curator and maintainer
    - Make sure that the SERVER_SSL_KEY-STORE in the dataspaceconnector-values.env uses a SSL cert with a matching DNS entry for TLS encrypted communication.
4. Follow steps 3 and 4.

INTERNATIONAL DATA SPACES ASSOCIATION

DATASPACE CONNECTOR
IDS COMMUNICATION

POSTMAN
EXAMPLE REQUESTS & SCRIPTS

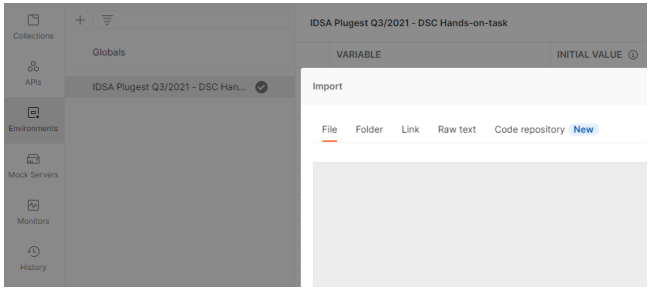
- Download Postman: https://www.postman.com/downloads/
- Import the provided environment and set it to active
- Import the provided collection

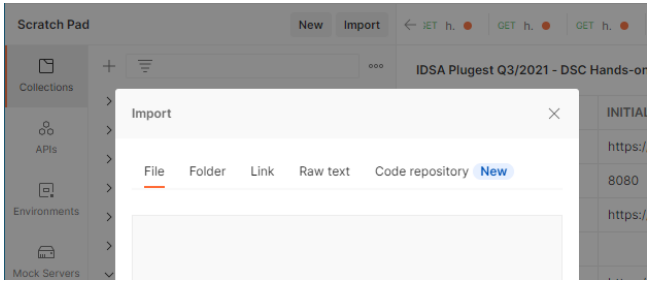
- If you are not running on localhost, using another port, or you have changed the credentials for basic auth, please have a look at the collection‘s and environment‘s variables and change them if necessary.

IDSA Plugest Q3/2021 - DSC Hands-on-task

	VARIABLE	INITIAL VALUE	CURRENT VALUE
☑	connectorUrl	https://localhost	https://localhost
☑	port	8080	8080

The collection provides automated scripts that are executed before/after requests to set needed parameters, so you do not have to copy & paste anything. Just take a look at what variables are used for the single requests.





DEPLOYMENT CHECK
SELF-TESTS

Open the Postman collection: Deployment tests

1. To check if everthing is running, run „Step 1“
    - Expected response: 200 OK and the connector ‘s self-description
2. To check if the communication works, run „Step 2“
    - Expected response: 200 OK and the connector ‘s self-description

Some rejection reasons are documented here: https://international-data-spaces-association.github.io/DataspaceConnector/CommunicationGuide

Hint: If a „Message handling or processing failed.“ is displayed, just execute the request again.

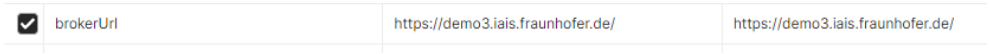
If you encounter any problems, please don‘t hesitate to ask questions.

COMMUNICATION
IDS BROKER

Task: Find the connector's access url.

Have a look at the Postman collection: Broker communication

1. To check if you have access to the IDS Broker, run „Step 1“
    - Expected response: 200 OK and the broker‘s self-description



1. To query the Broker, run “Step 2”
    - Expected response: 200 OK and the connector id
2. To find the connector’s access url, run “Step 3”
    - Expected response: 200 OK and the connector‘s self-description

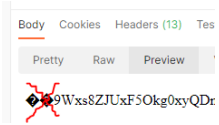
Full guide: https://international-data-spaces-association.github.io/DataspaceConnector/CommunicationGuide/v6/IdsEcosystem

COMMUNICATION
DATASPACE CONNECTOR

Task: Successfully negotiate a contract and request data from another Dataspace Connector.

Have a look at the Postman collection: Connector communication

1. Run the examples of each step from 1 to 4.
    - Hint: You don't have to modify the given parameters. The full guide (see below) explains every step in detail.
    - The string can be accessed by selecting „Preview". Just remove the first two characters.



Get familiar to what information is necessary for each request. If you manage to exchange data successfully, you may take a look at the next slide. We prepared a little search game.

Full guide: https://international-data-spaces-association.github.io/DataspaceConnector/CommunicationGuide/v6/Consumer

COMMUNICATION
SEARCH GAME

Task: Successfully encrypt the previously requested data.

Within the data request on slide 11, you received an encrypted data string. It can be decrypted on this website: https://www.gillmeister-software.com/online-tools/text/encrypt-decrypt-text.aspx

To decrypt the text again, you need a password. The connector provides some catalogs with multiple resources and artifacts that have different contract offers attached. Find the right password and see what message is hidden behind the data string. Maybe you will find some hidden Easter Eggs.

Feel free to modify set parameters in the Postman collection at “Connector communication” to send customized HTTP/S requests.

Have fun! ☺

INTERNATIONAL DATA SPACES ASSOCIATION

Fraunhofer

RONJA QUENSEL

TECHNICAL EMPLOYEE
DEPARTMENT DATA BUSINESS

FRAUNHOFER ISST
EMIL-FIGGE-STR. 91
44227 DORTMUND | GERMANY

+49 231-97677-404

JULIA PAMPUS

RESEARCH ASSISTANT
DEPARTMENT DATA BUSINESS

FRAUNHOFER ISST
EMIL-FIGGE-STR. 91
44227 DORTMUND | GERMANY

+49 231-97677-429

JOIN US !

@ids_association
 # internationaldataspaces

www.internationaldataspaces.org
Ressource Hub – Press Area – Blog