Here's a step-by-step guide to connect your external adapter to a local Chainlink node:

1. \*\*Build and Start the External Adapter\*\*

```bash

# Build and start your adapter (default port 8080)

npm install

npm start

```

2. \*\*Test the Adapter is Running\*\*

```bash

# Test with curl

curl -X POST -H "Content-Type: application/json" \

-d '{"id": "1", "data": {"cid": "QmcMjSr4pL8dpNzjhGWaZ6vRmvv7fN3xsLJCDpqVsH7gv7"}}' \

http://localhost:8080/evaluate

```

3. \*\*Set Up the Chainlink Node\*\*

```bash

# Create a directory for Chainlink

mkdir ~/.chainlink-sepolia

cd ~/.chainlink-sepolia

# Create an .env file for Chainlink configuration

touch .env

# Create a password file

echo "my\_chainlink\_password" > .password

```

4. \*\*Configure Chainlink Node Environment\*\*

```bash

# Edit .env file with required configuration

ETH\_CHAIN\_ID=11155111

CHAINLINK\_TLS\_PORT=0

LOG\_LEVEL=debug

ETH\_URL=wss://sepolia.infura.io/ws/v3/YOUR-PROJECT-ID

DATABASE\_URL=postgresql://postgres:chainlink@localhost:5432/chainlink\_sepolia?sslmode=disable

CHAINLINK\_DEV=true

```

5. \*\*Start PostgreSQL Database\*\*

```bash

# Start PostgreSQL if not running

brew services start postgresql

# Or for Linux:

sudo service postgresql start

# Create database

createdb chainlink\_sepolia

```

6. \*\*Start Chainlink Node\*\*

```bash

# Run the node

docker run -p 6688:6688 \

-v ~/.chainlink-sepolia:/chainlink \

-it --env-file=.env smartcontract/chainlink:2.7.0 local n

```

7. \*\*Access Chainlink GUI\*\*

- Open browser to `http://localhost:6688`

- Login with credentials:

- Email: `admin@node.local`

- Password: (from .password file)

8. \*\*Add External Adapter to Chainlink Node\*\*

- In Chainlink GUI:

1. Go to 'Configuration' -> 'Bridges'

2. Click 'New Bridge'

3. Fill in the form:

```

Name: verdikta-ai

URL: http://host.docker.internal:8080/evaluate

Minimum Contract Payment: 0

```

4. Click 'Create Bridge'

9. \*\*Create a Job Specification\*\*

- In Chainlink GUI:

1. Go to 'Jobs' -> 'New Job'

2. Create a job spec like this:

```toml

type = "directrequest"

schemaVersion = 1

name = "Verdikta AI Evaluation"

contractAddress = "YOUR\_ORACLE\_CONTRACT\_ADDRESS"

maxTaskDuration = "0s"

observationSource = """

decode\_log [type="ethabidecodelog"

abi="OracleRequest(bytes32 indexed specId, address requester, bytes32 requestId, uint256 payment, address callbackAddr, bytes4 callbackFunctionId, uint256 cancelExpiration, uint256 dataVersion, bytes data)"

data="$(jobRun.logData)"

topics="$(jobRun.logTopics)"]

decode\_cbor [type="cborparse" data="$(decode\_log.data)"]

fetch [type="bridge" name="verdikta-ai" requestData="{\\"id\\": $(jobSpec.externalJobID), \\"data\\": {\\"cid\\": $(decode\_cbor.cid)}}"]

parse [type="jsonparse" path="data,aggregatedScore" data="$(fetch)"]

encode\_data [type="ethabiencode" abi="(uint256 value)" data="{ \\"value\\": $(parse) }"]

encode\_tx [type="ethabiencode"

abi="fulfillOracleRequest(bytes32 requestId, uint256 payment, address callbackAddress, bytes4 callbackFunctionId, uint256 expiration, bytes32 data)"

data="{\\"requestId\\": $(decode\_log.requestId), \\"payment\\": $(decode\_log.payment), \\"callbackAddress\\": $(decode\_log.callbackAddr), \\"callbackFunctionId\\": $(decode\_log.callbackFunctionId), \\"expiration\\": $(decode\_log.cancelExpiration), \\"data\\": $(encode\_data)}"

]

submit\_tx [type="ethtx" to="YOUR\_ORACLE\_CONTRACT\_ADDRESS" data="$(encode\_tx)"]

decode\_log -> decode\_cbor -> fetch -> parse -> encode\_data -> encode\_tx -> submit\_tx

"""

```

10. \*\*Test the Integration\*\*

- Deploy a client contract that implements `ChainlinkClient`

- Fund the contract with LINK

- Make a request to your Oracle contract

Important Notes:

- Replace `YOUR\_ORACLE\_CONTRACT\_ADDRESS` with your deployed Oracle contract address

- Use `host.docker.internal` instead of `localhost` in the bridge URL when running Chainlink in Docker

- Ensure your external adapter is accessible from the Chainlink node

- Make sure you have enough LINK tokens and ETH for gas in your node's wallet

Would you like me to provide more details about any of these steps or help with troubleshooting specific issues?