Cognite Functions Template for Time Series Analytics - Deployment Plan

**Center of Excellence - Analytics**

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| --- | --- | --- | --- | --- |
| Version Control | | | | |
| Version | Date | Change | Responsible | Approver |
| 1.0 | 07.09.23 | Project scoping | Vetle Nevland |  |
| 2.0 | 06.10.23 | First Cognite Function deployed | Vetle Nevland |  |
| 2.1 | 21.11.23 | Generalization to multiple time series inputs/outputs | Vetle Nevland |  |
| 2.2 | 05.01.24 | Support for date-specific aggregates | Vetle Nevland |  |

***Roles and Responsabilites***

|  |  |
| --- | --- |
| Tech Lead 1 | Vetle Nevland |
| Tech Lead 2 | Stéphanie Raoul |

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# Deployment Scope

*Describe briefly the scope of the installation*

The scope of the project is to make the Cognite Function Template a flexible and versatile framework to perform semi-advanced time series analysis. It is a cross-functional initiative primarily aimed for data scientists and SMEs with Python programming knowledge. A separate dataset will be dedicated for time series produced through this project’s template.

# Premisses

*Describe premisses for the deployment*

Prerequisites for deployment of a new time series to a designated dataset Center of Excellence – Analytics in the CDF project *akerbp*:

* Create an account at Cognite Hub to connect with Azure AD tenant
* Authenticate with Python SDK to connect to a Cognite Client
* Approval of access request for read/write access to the Center of Excellence - Analytics dataset and Cognite resources: Time Series, Functions and Files (see procedure in 2 – DataIntegrationArchitecture)

# Relationship/Dependencies to Other Existing or New Integrations

These time series are linked to the same asset as their associated input time series. Hence, the contextualization for these assets are thus expanded. Apart from this, no existing relationships or dependencies are impacted by the transformed time series.

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| --- | --- | --- | --- |
| **Integration** | **Impact** | **Date** | **Contact** |
|  |  |  |  |

# Depolyment Timeline

| **#** | **Activity/ Requirements** | **System** | **Executer** | | | | **Participant** | **Dependency** | | **Objects** | | **Obs** | **Date/TIme Begin** | | | **Date/TIme End** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Pre-Deployment** | | | | | | | | | | | | | | | | |
| 0 | Install Python SDK | Terminal | |  | |  | |  | |  | |  | | 04.09.23 | 04.09.23 | |
| 1 | Create user account at Cognite Hub to get an Azure AD tenant | CDF/ | | - | | - | |  | |  | | Aker BP employees already signed in through their work account | | 04.09.23 | 04.09.23 | |
| 2 | Request read/write access to Center of Excellence – Analytics dataset | CDF form ([Data Platforms and Pipelines (office.com)](https://forms.office.com/Pages/ResponsePage.aspx?id=cEF-O0iDpEq_rgaj4YZ0aUVYsXTN0c9Dil0iHGZgj0lUOTBXVFlSWDlMUFk1WUNBS1lKWjZKWko2TyQlQCN0PWcu)) | |  | |  | |  | |  | |  | | 06.09.23 | 06.09.23 | |
| 3 | Request read/write access to following Cognite resources: Time Series, Functions and Files | CDF form | |  | |  | |  | |  | | Requested in same form instance as 2 | | 06.09.23 | 06.09.23 | |
| 4 | Create new dataset | CDF | | CDF Operations Team | |  | |  | |  | |  | | 10.10.23 | 10.10.23 | |
| 5 | Assert authentication with Cognite Client | Cognite Python SDK | |  | |  | | |  | |  |  | | 08.09.23 | 08.09.23 | |
| 6 | Define folder structure of source code to represent template for Cognite Functions |  | |  | |  | | |  | |  |  | | 15.11.23 | 21.11.23 | |
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| **Deployment** | | | | | | | | | | | | | | | | |
| 6 | Implement script “generate\_cf.py” that generates instances of Cognite Functions following standard template | Python / Cognite Python SDK |  | | | |  |  | |  | |  | 20.11.23 | | | 15.01.24 |
| 7 | Implement script deploy\_cognite\_function.py” for creating, deploying and scheduling Cognite Functions | Python / Cognite Python SDK |  | | | |  |  | |  | |  | 20.11.23 | | | 20.01.24 |
| 8 | Define required, optional and calculation-specific parameters to be used as input for Cognite Functions | Python |  | | | |  |  | |  | |  | 16.11.23 | | | 23.01.24 |
| 9 | Implement script “run\_functions.ipynb” to provide interactive deployment of Cognite Functions |  |  | | | |  |  | |  | |  | 25.09.23 | | | 23.01.24 |
| 10 | Setup test folder structure |  |  | | | |  |  | |  | |  | 30.11.23 | | | 01.12.23 |
| 11 | Write unit tests | Python / Cognite Python SDK |  | | | |  |  | |  | | Testing deployment of schedules is not possible since ID cannot be set a priori | 30.11.23 | | | 23.01.24 |

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| **Post-Deployment** | | | | | | | | |
| 12 | Assert unit tests |  |  |  |  |  |  |  |
| 13 | Finalize README and documentation in docs/dev folder of repo |  |  |  |  |  |  |  |
| 14 | Peer-review of Template |  |  |  |  |  |  |  |
| 15 | Commence with UaT in CDF Test environment |  |  |  |  |  |  |  |

# Contingency Plan

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| **Risk** | **Impacted Area** | **Contingency** |
| Low | None |  |
|  |  |  |

# Rollback Plan

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| --- | --- | --- |
| **Risk** | **Action** | **Impacted Areas** |
| Low | *Remove Center of Excellence – Analytics dataset. Remove Cognite Functions.* | CDF Data Catalogue or Python SDK. Cognite Functions. |
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# Contact List

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| --- | --- | --- | --- |
| **Name** | **Team** | **Phone** | **E-mail** |
| Vetle Nevland | DataOps – Data Science, Analytics & Improvements – Enabling Team |  | vetle.nevland@akerbp.com |
| Stéphanie Raoul | OpsHUB – Defect Elimination & Optimization Support |  | stephanie.raoul@akerbp.com |
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# Guidelines for Configuration

# Configurations

# Other info