SONY

AITRIOS

Cloud SDK
Console Access Library
TypeScript
Functional Specifications

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Version 0.2.0

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TOC

1. Change history

Date	What/Why
2022/11/16	Initial draft
2023/1/30	Changed for Cloud SDK 0.2.0 Unified the swinging of expressions Updated the PDF build environment

2. Introduction

- This book is functional specifications for the Console Access Library that provides access to the Console.
  Use TypeScript for feature development language.

3. Terms/Abbreviations

Terms/Abbreviations	Meaning
Console for AITRIOS	A cloud service that provides various functions (Deployment, Retraining, Edge AI Device Management etc.) to efficiently implement solutions from edge to cloud Hereafter referred to as Console in the text
Low Level SDK	Client generated automatically by OpenAPI Generator from the API specification (yaml) of the Console REST API
Cloud App	Applications that use the Console Access Library
SAS	Shared Access Signatures URI that grant limited access to Azure storage resources

4. Expected use case

- Use the Console Access Library to:

  - Get information about edge AI devices

  - Start inference (Start to upload inference results), stop inference (stop to upload inference results) of edge AI devices

  - Get edge AI device output results (images, inference results)

  - Upload AI models created by users to the Console

    - Review and delete uploaded AI models

  - Convert AI models to a format deployable to edge AI devices

  - Deploy AI models to edge AI devices

  - Upload DeviceApps created by users to the Console

    - Review and delete uploaded DeviceApps

  - Deploy DeviceApps to edge AI devices

5. Functional overview/Algorithm

Functional overview

- Generate a Client accessible to the Console

    - Set the information needed to access the Console in a Config, and set the Config to the Client

    The information needed to access the Console is as follows

Name	Description
Console endpoint	API server/base URL
Authorization endpoint	URL of an authentication server that issues an access token
Client ID	Client ID needed to issue an access token
Client Secret	Client secret needed to issue an access token

- Execute Console REST API classified by function from the Client

    The functional classification follows the API classification of the Low Level SDK provided by the Console.
    Get and update an access token needed to access the Console.（Wrap)

    API without a timeout parameter will not timeout

    - DeviceManagement

        - getDevices / Get edge AI device info list

        - startUploadInferenceResult / Start to upload inference results

        - stopUploadInferenceResult / Stop to upload inference results

        - getCommandParameterFile / Get list of command parameter files registered in the Console

- AI Model
  - importBaseModel / Import base model
  - getModels / Get model info list
  - getBaseModelStatus / Get base model status
  - deleteModel / Delete model
  - publishModel / Publish model
- Deployment
  - importDeviceApp / Import DeviceApp
  - getDeviceApps / Get DeviceApp info list
  - deleteDeviceApp / Delete DeviceApp
  - getDeployConfigurations / Get deployment configuration list
  - createDeployConfiguration / Create deployment configuration
  - deployByConfiguration / Deploy
  - getDeployHistory / Get deployment history
  - deleteDeployConfiguration / Delete deployment configuration
  - cancelDeployment / Force cancel deployment state
  - deployDeviceApp / Deploy DeviceApp
  - undeployDeviceApp / Undeploy DeviceApp
  - getDeviceAppDeploys / Get DeviceApp deployment history
- Insight
  - getImageDirectories / Get image save directory list
  - getImages / Get saved images
  - getInferenceResults / Get list of saved inference result metadata
  - exportImages / Export saved images

- High Level API that combine Low Level SDK API for each use case can be executed.

    - AI Model

        - publishModelWaitResponse / Publish model and wait for response

    - Deployment

        - deployByConfigurationWaitResponse / Deploy and wait for response

        - deployDeviceAppWaitResponse / Deploy DeviceApp and wait for response

    - Insight

        - getImageData / Get saved images

            - Because the getImages gets up to 256 images, this API calls the getImages multiple times to cover up the restriction

        - getLastInferenceData / Get the latest saved inference results

        - getLastInferenceAndImageData / Get the latest saved inference results and images

            - Get images with the most recent date, find and return inference results tied to images

- Log to the console when the Console Access Library is running

    - The log format is defined as follows

        - [Log time] [Log level] [Client name] : Message body

        - Log time uses the system time of user environment

        - Log time outputs date + time + time zone in ISO 8601 format

        - Sample log output:
          2022-06-21T11:31:42.612+0900 ERROR ConsoleAccessClient : Failed to log request

- The log level can be switched

  - Log levels are defined as follows

Level	Summary
ERROR	Use when the Console Access Library can't finish processing successfully
WARNING	Use when some unexpected problem occurs that is not necessarily an error but is also not normal
INFO	Use when the Console Access Library executes events
DEBUG	Use when outputting detailed debugging information, such as how the Console Access Library is working
OFF	Turn off all logging

  - Output logs at or above a specified log level
    Example: Output INFO/WARNING/ERROR, not DEBUG when the specified log level is INFO

  - Do not output all log levels when the specified log level is OFF

  - Set the default log level to OFF

  - Log levels are specified in the procedure specified for each language by the application using the library.

    Example specification in TypeScript

    ```
    import { Logger } from 'consoleaccesslibrary';

    # Set the desired logging level
    Logger.setLogLevel("warning")
    ```

- Check for error conditions when running the Console Access Library

  - Judge as an error under the following conditions

    - Bad API input parameters

    - The API input parameters are good, but the response from the Console Low Level SDK is not as expected (such as timeout/error)

    - Unable to connect to the Console successfully (authentication error, wrong URL, etc.)

Algorithm

- Start to use the Console Access Library

  1. Cloud App creates a Config

  2. Cloud App creates a Client

     Get an access token and generate the Low Level SDK during Client generation

  3. From the Client instance, use API wrapped around Low Level SDK API, and functional complex API (High Level API)

     Get and update an access token needed to access the Console using an API wrapped around Low Level SDK API

     - The access token expires in 1 hour and is renewed if it expires in less than 180 seconds.

- Start to get inference result metadata - Stop

  1. Find the device ID using the `getDevices` API

  2. Start to get inference result metadata using the `startUploadInferenceResult` API

  3. Use the `Insight` API to get inference results and images

  4. Stop to get inference result metadata using the `stopUploadInferenceResult` API

Under what condition

- Use the Low Level SDK to access the Console REST API

API

- Config

  - constructor(consoleEndpoint: string, portalAuthorizationEndpoint: string, clientId: string, clientSecret: string)

- Client

  - constructor(configuration: Config)

  - deviceManagement()

  - aiModel()

  - deployment()

  - insight()

- DeviceManagement

  - getDevices(deviceId?: string, deviceName?: string, connectionState?: string, deviceGroupId?: string)

  - startUploadInferenceResult(deviceId: string)

  - stopUploadInferenceResult(deviceId: string)

  - getCommandParameterFile()

- AI Model

  - importBaseModel(modelId: string, model: string, converted?: boolean, vendorName?: string, comment?: string, inputFormatParam?: string, networkConfig?: string, networkType?: string, labels?: Array<string>)

  - getModels(modelId?: string, comment?: string, projectName?: string, modelPlatform?: string, projectType?: string, deviceId?: string, latestType?: string)

  - getBaseModelStatus(modelId: string, latestType?: string)

  - deleteModel(modelId: string)

  - publishModel(modelId: string, deviceId?: string)

- AI Model High Level API

  - publishModelWaitResponse(modelId: string, deviceId?: string, callback?: publishModelWaitResponseCallback)

    - publishModelWaitResponseCallback(status: string)

- Deployment

  - importDeviceApp(compiledFlg: string, appName: string, versionNumber: string, fileName: string, fileContent: string, entryPoint?: string, comment?: string)

  - getDeviceApps()

  - deleteDeviceApp(appName: string, versionNumber: string)

  - getDeployConfigurations()

  - createDeployConfiguration(configId: string, comment?: string, sensorLoaderVersionNumber?: string, sensorVersionNumber?: string, modelId?: string, modelVersionNumber?: string, apFwVersionNumber?: string)

  - deployByConfiguration(configId: string, deviceIds: string, replaceModelId?: string, comment?: string)

  - getDeployHistory(deviceId: string)

  - deleteDeployConfiguration(configId: string)

  - cancelDeployment(deviceId: string, deployId: number)

  - deployDeviceApp(appName: string, versionNumber: string, deviceIds: string, deployParameter?: string, comment?: string)

  - undeployDeviceApp(deviceIds: string)

  - getDeviceAppDeploys(appName: string, versionNumber: string)

- Deployment High Level API

  - deployByConfigurationWaitResponse(configId: string, deviceIds: string, replaceModelId?: string, comment?: string, timeout?: number, callback?: deployByConfigurationWaitResponseCallback)

    - deployByConfigurationWaitResponseCallback(deviceStatusArray: object)

  - deployDeviceAppWaitResponse(appName: string, versionNumber: string, deviceIds: string, deployParameter?: string, comment?: string, callback?: deployDeviceAppWaitResponseCallback)

    - deployDeviceAppWaitResponseCallback(deviceStatusArray: object)

- Insight
  - getImageDirectories(deviceId?: string)
  - getImages(deviceId: string, subDirectoryName: string, numberOfImages?: number, skip?: number, orderBy?: string)
  - getInferenceResults(deviceId: string, filter?: string, numberOfInferenceResults?: number, raw?: number, time?: string)
  - exportImages(key: string, fromDatetime?: string, toDatetime?: string, deviceId?: string, fileFormat?: string)
- Insight High Level API
  - getImageData(deviceId: string, subDirectoryName: string, numberOfImages?: number, skip?: number, orderBy?: string)
  - getLastInferenceData(deviceId: string)
  - getLastInferenceAndImageData(deviceId: string, subDirectoryName: string)

Others exclusive conditions/Specifications

- Command parameter file has been applied to the edge AI device

6. User interface specifications

- None

7. API parameters in each block

Each error message has a different function name depending on the language (represented in this document by an error message in TypeScript).

- Config
  - constructor

    【Error: consoleEndpoint is empty】 E001 : consoleEndpoint is required.

    【Error: portalAuthorizationEndpoint is empty】 E001 : portalAuthorizationEndpoint is required.

    【Error: clientId is empty】 E001 : clientId is required.

    【Error: clientSecret is empty】 E001 : clientSecret is required.

Parameter's name	Meaning	Range of parameter
consoleEndpoint	URL to access the Console	None If not specified, read from environment variable
portalAuthorizationEndpoint	URL to issue an access token needed to access the Console	None If not specified, read from environment variable
clientId	Client ID needed to issue an access token	None If not specified, read from environment variable
clientSecret	Client secret needed to issue an access token	None If not specified, read from environment variable

Return value	Meaning
Config instance	Config instance with information needed to access the Console

- Client

- constructor

Parameter's name	Meaning	Range of parameter
configuration	Config instance with information needed to access the Console	None

Return value	Meaning
Client instance	Client that can execute API wrapped around Low Level SDK API, and functional complex API (High Level API) instance

- deviceManagement: Get the instance that provides DeviceManagement API

Parameter's name	Meaning	Range of parameter
-	-	-

Return value	Meaning
DeviceManagement instance	Instance that provides DeviceManagement API

- aiModel: Get the instance that provides AI Model API

Parameter's name	Meaning	Range of parameter
-	-	-

Return value	Meaning
AI Model instance	Instance that provides AI Model API

- deployment: Get the instance that provides Deployment API

Parameter's name	Meaning	Range of parameter
-	-	-

Return value	Meaning
Deployment instance	Instance that provides Deployment API

- insight: Get the instance that provides Insight API

Parameter's name	Meaning	Range of parameter
-	-	-

Return value	Meaning
Insight instance	Instance that provides Insight API

- DeviceManagement

- getDevices: Get edge AI device info list

  【Error: When an error occurs in the Low Level SDK】 Raise an error defined in the Console Access Library

  【Error: When http_status returned from Low Level SDK API is not 200】 Raise an error defined in the Console Access Library

Parameter's name	Meaning	Range of parameter
deviceId	Edge AI device ID	Partial search, case insensitive If not specified, search all deviceId
deviceName	Name of the edge AI device	Partial search, case insensitive If not specified, search all deviceName
connectionState	Connection state	Connected Disconnected Exact match search, case insensitive If not specified, search all connectionState
deviceGroupId	Affiliation group of the edge AI device	Exact match search, case insensitive If not specified, search all deviceGroupId

Return value	Meaning
Device information	Edge AI device information

- startUploadInferenceResult: Start to upload inference results

  【Error: deviceId is empty】 E001 : deviceId is required.

  【Error: When an error occurs in the Low Level SDK】 Raise an error defined in the Console Access Library

  【Error: When http_status returned from Low Level SDK API is not 200】 Raise an error defined in the Console Access Library

Parameter's name	Meaning	Range of parameter
deviceId	Edge AI device ID	Case sensitive

Return value	Meaning
result	Execution result
outputSubDirectory	Input image save path、 UploadMethod:Blob Storage only

- stopUploadInferenceResult: Stop to upload inference results

  【Error: deviceId is empty】 E001 : deviceId is required.

  【Error: When an error occurs in the Low Level SDK】 Raise an error defined in the Console Access Library

  【Error: When http_status returned from Low Level SDK API is not 200】 Raise an error defined in the Console Access Library

Parameter's name	Meaning	Range of parameter
deviceId	Edge AI device ID	Case sensitive

Return value	Meaning
result	Execution result

- getCommandParameterFile: Get list of command parameter files registered in the Console

  【Error: When an error occurs in the Low Level SDK】 Raise an error defined in the Console Access Library

  【Error: When http_status returned from Low Level SDK API is not 200】 Raise an error defined in the Console Access Library

Parameter's name	Meaning	Range of parameter
-	-	-

Return value	Meaning
result	List of command parameter files registered in the Console

- AI Model

  - importBaseModel: Import base model

    【Error: modelId is empty】 E001 : modelId is required.

    【Error: model is empty】 E001 : model is required.

    【Error: When an error occurs in the Low Level SDK】 Raise an error defined in the Console Access Library

    【Error: When http_status returned from Low Level SDK API is not 200】 Raise an error defined in the Console Access Library

Parameter's name	Meaning	Range of parameter
modelId	Model ID(specify by new save or upgrade)	100 characters or less Forbidden characters except for the following Half-width alphanumeric characters - Hyphen _ Underbar () Parenthesis . Dot
model	Model file SAS URI	None

Parameter's name	Meaning	Range of parameter
converted	Option to indicate converted	True: Post-conversion model False: Pre-conversion model If not specified, False
vendorName	Vendor name（Specify by new save）	100 characters or less Not specified in case of version upgrade If not specified, no vendor name
comment	Description of the model to enter when registering a new model Set as description of the model and version on new save Set as description of the version when upgrading	100 characters or less If not specified, no description of the model to enter when registering a new model
inputFormatParam	URI of input format param file (json format) Evaluate the following Azure: SAS URI AWS: Presigned URI Usage: Packager conversion information (image format information)	Forbidden characters except SAS URI format Json format is an object array (each object contains the following values) Example: ordinal: Order of DNN input to converter (value range: 0 ~ 2) format: "RGB" or "BGR" If not specified, do not evaluate
networkConfig	URI of network config file in json format Evaluate the following Azure: SAS URI AWS: Presigned URI Specify for a pre-conversion model(Ignore for a post-conversion model) Application: Conversion parameter information for the model converter	Forbidden characters except SAS URI format If not specified, do not evaluate

Parameter's name	Meaning	Range of parameter
networkType	Network type (specify only for new model registration)	0: Custom Vision 1: Non Custom Vision If not specified, 1
labels	Label name	Example: ["label01","label02","label03"]

Return value	Meaning
result	Execution result

- getModels: Get model info list

   【Error: When an error occurs in the Low Level SDK】 Raise an error defined in the Console Access Library

   【Error: When http_status returned from Low Level SDK API is not 200】 Raise an error defined in the Console Access Library

Parameter's name	Meaning	Range of parameter
modelId	Model ID	Partial search If not specified, search all modelId
comment	Model description	Partial search If not specified, search all comment
projectName	Project name	Partial search If not specified, search all projectName
modelPlatform	Model platform	0 : Custom Vision 1 : Non Custom Vision 2 : Model Retrainer Exact match search If not specified, search all modelPlatform

Parameter's name	Meaning	Range of parameter
projectType	Project type	0 : Base project 1 : Device project Exact match search If not specified, search all projectType
deviceId	Edge AI device ID (specify if you want to search for a device model)	Exact match search Case sensitive If not specified, search all deviceId
latestType	Type of the latest version	0 : Latest published version 1 : Latest version, including during conversion/publishing Exact match search If not specified, 1

Return value	Meaning
Model information	Same as return value name

- getBaseModelStatus: Get base model status

  【Error: modelId is empty】 E001 : modelId is required.

  【Error: When an error occurs in the Low Level SDK】 Raise an error defined in the Console Access Library

  【Error: When http_status returned from Low Level SDK API is not 200】 Raise an error defined in the Console Access Library

Parameter's name	Meaning	Range of parameter
modelId	Model ID	None
latestType	Type of the latest version	0 : Latest published version 1 : Latest version, including during conversion/publishing Exact match search If not specified, 1

Return value	Meaning
Base model information	Same as return value name

- deleteModel: Delete model

  【Error: modelId is empty】 E001 : modelId is required.

  【Error: When an error occurs in the Low Level SDK】 Raise an error defined in the Console Access Library

  【Error: When http_status returned from Low Level SDK API is not 200】 Raise an error defined in the Console Access Library

Parameter's name	Meaning	Range of parameter
modelId	Model ID	None

Return value	Meaning
result	Execution result

- publishModel: Publish model

    【Error: modelId is empty】E001 : modelId is required.

    【Error: When an error occurs in the Low Level SDK】Raise an error defined in the Console Access Library

    【Error: When http_status returned from Low Level SDK API is not 200】Raise an error defined in the Console Access Library

Parameter's name	Meaning	Range of parameter
modelId	Model ID	None
deviceId	Edge AI device ID	Case sensitive Specify for device models If the base model is the target, do not specify

Return value	Meaning
result	Execution result
importId	Import ID

- publishModelWaitResponse: Publish model and wait for response

  【Error: modelId is empty】E001 : modelId is required.

  【Error: When an error occurs in the Low Level SDK】Raise an error defined in the Console Access Library

  【Error: When http_status returned from Low Level SDK API is not 200】Raise an error defined in the Console Access Library

Parameter's name	Meaning	Range of parameter
modelId	Model ID	None
deviceId	Edge AI device ID	Case sensitive Specify for device models If the base model is the target, do not specify
callback	Callback function	Check the processing result with the getBaseModelStatus and call the callback function to notify the processing status If not specified, no notification by the callback function

Return value	Meaning
result	Execution result
process time	Processing time

- publishModelWaitResponseCallback: Status notification callback function for the publishModelWaitResponse

Parameter's name	Meaning	Range of parameter
status	Publish status	'01': 'Before conversion' '02': 'Converting' '03': 'Conversion failed' '04': 'Conversion complete' '05': 'Adding to configuration' '06': 'Add to configuration failed' '07': 'Add to configuration complete' '11': 'Saving'(Model saving status for Model Retainer)

Return value	Meaning
-	-

- Deployment

  - importDeviceApp: Import DeviceApp

    【Error: compiledFlg is empty】E001 : compiledFlg is required.

    【Error: appName is empty】E001 : appName is required.

    【Error: versionNumber is empty】E001 : versionNumber is required.

    【Error: fileName is empty】E001 : fileName is required.

    【Error: fileContent is empty】E001 : fileContent is required.

    【Error: When an error occurs in the Low Level SDK】Raise an error defined in the Console Access Library

    【Error: When http_status returned from Low Level SDK API is not 200】Raise an error defined in the Console Access Library

Parameter's name	Meaning	Range of parameter
compiledFlg	Option to indicate compiled	0:Not compiled(will be compiled) 1:Compiled(will not be compiled)

Parameter's name	Meaning	Range of parameter
appName	Name of the DeviceApp	The maximum character limit is "appName versionNumber ⇐31" Forbidden characters except for the following ・Alphanumeric characters ・Underbar ・Dot
versionNumber	DeviceApp version	The maximum character limit is "appName versionNumber ⇐31" Forbidden characters except for the following ・Alphanumeric characters ・Underbar ・Dot
fileName	Name of the DeviceApp file	None
fileContent	File contents of the DeviceApp	Base64 encoded string
entryPoint	EVP module entry point	None If not specified, "ppl"
comment	Description of the DeviceApp	100 characters or less If not specified, no comment

Return value	Meaning
result	Execution result

- getDeviceApps: Get DeviceApp info list

  【Error: When an error occurs in the Low Level SDK】 Raise an error defined in the Console Access Library

  【Error: When http_status returned from Low Level SDK API is not 200】 Raise an error defined in the Console Access Library

Parameter's name	Meaning	Range of parameter
-	-	-

Return value	Meaning
DeviceApp information	Same as return value name

- deleteDeviceApp: Delete DeviceApp

  【Error: appName is empty】 E001 : appName is required.

  【Error: versionNumber is empty】 E001 : versionNumber is required.

  【Error: When an error occurs in the Low Level SDK】 Raise an error defined in the Console Access Library

  【Error: When http_status returned from Low Level SDK API is not 200】 Raise an error defined in the Console Access Library

Parameter's name	Meaning	Range of parameter
appName	Name of the DeviceApp	None
versionNumber	DeviceApp version	None

Return value	Meaning
result	Execution result

- getDeployConfigurations: Get deployment configuration list

  【Error: When an error occurs in the Low Level SDK】Raise an error defined in the Console Access Library

  【Error: When http_status returned from Low Level SDK API is not 200】Raise an error defined in the Console Access Library

Parameter's name	Meaning	Range of parameter
-	-	-

Return value	Meaning
Deployment configuration	Same as return value name

- createDeployConfiguration: Create deployment configuration

  【Error: configId is empty】E001 : configId is required.

  【Error: When an error occurs in the Low Level SDK】Raise an error defined in the Console Access Library

  【Error: When http_status returned from Low Level SDK API is not 200】Raise an error defined in the Console Access Library

Parameter's name	Meaning	Range of parameter
configId	Config ID	20 characters or less Forbidden characters except for the following Half-width alphanumeric characters - Hyphen _ Underbar () Parenthesis . Dot
comment	Config description	100 characters or less If not specified, no comment
sensorLoaderVersionNumber	SensorLoader version number	If -1 is specified, the default version (system setting "DVC0017") is applied If not specified, no SensorLoader deployment

Parameter's name	Meaning	Range of parameter
sensorVersionNumber	Sensor version number	If -1 is specified, the default version (system setting "DVC0018") is applied If not specified, no Sensor deployment
modelId	Model ID	If not specified, no model deployment
modelVersionNumber	Model version number	If not specified, the latest version applies
apFwVersionNumber	ApFw version number	If not specified, no firmware deployment

Return value	Meaning
result	Execution result

- deployByConfiguration: Deploy

  【Error: configId is empty】E001 : configId is required.

  【Error: deviceIds is empty】E001 : deviceIds is required.

  【Error: When an error occurs in the Low Level SDK】Raise an error defined in the Console Access Library

  【Error: When http_status returned from Low Level SDK API is not 200】Raise an error defined in the Console Access Library

Parameter's name	Meaning	Range of parameter
configId	Config ID	None
deviceIds	Edge AI device IDs	Specify multiple edge AI device IDs separated by commas Case sensitive
replaceModelId	ID of the model being replaced	Specify the modelId or networkId If the specified model ID is not in the DB, treat the input value as networkId (Console internal management ID) If not specified, do not replace.
comment	Deployment comment	100 characters or less If not specified, no comment

Return value	Meaning
result	Execution result

- getDeployHistory: Get deployment history

  【Error: deviceId is empty】E001 : deviceId is required.

  【Error: When an error occurs in the Low Level SDK】Raise an error defined in the Console Access Library

  【Error: When http_status returned from Low Level SDK API is not 200】Raise an error defined in the Console Access Library

Parameter's name	Meaning	Range of parameter
deviceId	Edge AI device ID	Case sensitive

Return value	Meaning
Deployment history	Same as return value name

- deleteDeployConfiguration: Delete deployment configuration

  【Error: configId is empty】E001 : configId is required.

  【Error: When an error occurs in the Low Level SDK】Raise an error defined in the Console Access Library

  【Error: When http_status returned from Low Level SDK API is not 200】Raise an error defined in the Console Access Library

Parameter's name	Meaning	Range of parameter
configId	Config ID	None

Return value	Meaning
result	Execution result

- cancelDeployment: Force cancel deployment state

  【Error: deviceId is empty】E001 : deviceId is required.

  【Error: deployId is empty】E001 : deployId is required.

  【Error: When an error occurs in the Low Level SDK】Raise an error defined in the Console Access Library

  【Error: When http_status returned from Low Level SDK API is not 200】Raise an error defined in the Console Access Library

Parameter's name	Meaning	Range of parameter
deviceId	Edge AI device ID	Case sensitive
deployId	Deploy ID	ID that can be gotten using the getDeployHistory

Return value	Meaning
result	Execution result

- deployDeviceApp: Deploy DeviceApp

  【Error: appName is empty】E001 : appName is required.

  【Error: versionNumber is empty】E001 : versionNumber is required.

  【Error: deviceIds is empty】E001 : deviceIds is required.

  【Error: When an error occurs in the Low Level SDK】Raise an error defined in the Console Access Library

  【Error: When http_status returned from Low Level SDK API is not 200】Raise an error defined in the Console Access Library

Parameter's name	Meaning	Range of parameter
appName	App name	None
versionNumber	App version	None
deviceIds	Edge AI device IDs	Specify multiple edge AI device IDs separated by commas Case sensitive
deployParameter	Deploy parameters	A Base64 encoded string in Json format If not specified, no parameter
comment	Deployment comment	100 characters or less If not specified, no comment

Return value	Meaning
result	Execution result

- undeployDeviceApp: Undeploy DeviceApp

    【Error: deviceIds is empty】E001 : deviceIds is required.

    【Error: When an error occurs in the Low Level SDK】Raise an error defined in the Console Access Library

    【Error: When http_status returned from Low Level SDK API is not 200】Raise an error defined in the Console Access Library

Parameter's name	Meaning	Range of parameter
deviceIds	Edge AI device ID	Specify multiple edge AI device IDs separated by commas Case sensitive

Return value	Meaning
result	Execution result

- getDeviceAppDeploys: Get DeviceApp deployment history

    【Error: appName is empty】E001 : appName is required.

    【Error: versionNumber is empty】E001 : versionNumber is required.

    【Error: When an error occurs in the Low Level SDK】Raise an error defined in the Console Access Library

    【Error: When http_status returned from Low Level SDK API is not 200】Raise an error defined in the Console Access Library

Parameter's name	Meaning	Range of parameter
appName	App name	None
versionNumber	App version	None

Return value	Meaning
DeviceApp deployment history	Same as return value name

- deployByConfigurationWaitResponse: Deploy and wait for response

    【Error: configId is empty】E001 : configId is required.

    【Error: deviceIds is empty】E001 : deviceIds is required.

【Error: When an error occurs in the Low Level SDK】 Raise an error defined in the Console Access Library

【Error: When http_status returned from Low Level SDK API is not 200】 Raise an error defined in the Console Access Library

Parameter's name	Meaning	Range of parameter
configId	Config ID	None
deviceIds	Edge AI device IDs	Specify multiple edge AI device IDs separated by commas Case sensitive
replaceModelId	ID of the model being replaced	Specify the modelId or networkId If the specified model ID is not in the DB, treat the input value as networkId (Console internal management ID) If not specified, do not replace.
comment	Deployment comment	100 characters or less If not specified, do not replace
timeout	timeout waiting for completion Set the timeout to exit the deployment process because it may remain in progress, such as when edge AI device hangs.	None If not specified, 3600 seconds
callback	Callback function Check the processing result with the getDeployHistory and call the callback function to notify the processing status	If not specified, no notification by the callback function

Return value	Meaning
result	Execution result
process time	Processing time

- deployByConfigurationWaitResponseCallback: Status notification callback function for the deployByConfigurationWaitResponse

Parameter's name	Meaning	Range of parameter

deviceStatusArray	List of deployment state of edge AI devices	The format is as follows:
		[
		  {
		    \<deviceId\>: {
		      "status":\<status\>
		    }
		  },
		]
		
		Fill in data for deviceId specified by deviceIds in devloyByConfigurationWaitResponse
		
		\<deviceId\>: Edge AI device ID
		\<status\>: Fill in the following deployment states
		  0: Deploying
		  1: Success
		  2: Failure
		  3: Cancel
		  9: DeviceApp is undeployed

Return value	Meaning
-	-

- deployDeviceAppWaitResponse: Deploy DeviceApp and wait for response

  【Error: appName is empty】E001 : appName is required.

  【Error: versionNumber is empty】E001 : versionNumber is required.

  【Error: deviceIds is empty】E001 : deviceIds is required.

  【Error: When an error occurs in the Low Level SDK】Raise an error defined in the Console Access Library

  【Error: When http_status returned from Low Level SDK API is not 200】Raise an error defined in the Console Access Library

Parameter's name	Meaning	Range of parameter
appName	App name	None
versionNumber	App version	None
deviceIds	Edge AI device IDs	Specify multiple edge AI device IDs separated by commas Case sensitive
deployParameter	Deploy parameters	A Base64 encoded string in Json format If not specified, no parameter
comment	Deployment comment	100 characters or less If not specified, no comment
callback	Callback function Check the processing result with the getDeviceAppDeploys and call the callback function to notify the processing status	If not specified, no notification by the callback function

Return value	Meaning
result	Execution result
process time	Processing time

- deployDeviceAppWaitResponseCallback: Status notification callback function for the deployDeviceAppWaitResponse

Parameter's name	Meaning	Range of parameter

deviceStatusArray	List of deployment state of edge AI devices	The format is as follows:
		[
		  {
		    <deviceId>: {
		      "status":<status>,
		      "found_position":<found_position>,
		      "skip":<skip>
		    }
		  },
		]
		
		Fill in data for deviceId specified by deviceIds in deployDeviceAppWaitResponse
		
		<deviceId>: Edge AI device ID
		<found_position>: Index of the deviceId stored in the getDeviceAppDeploys response
		<skip>: Fill in the following values
		  0: For the most recent status stored in the getDeviceAppDeploys response
		  1: For the non-most recent status stored in the getDeviceAppDeploys response
		<status>: Fill in the following deployment states
		  0: Deploying
		  1: Success
		  2: Failure
		  3: Cancel

Return value	Meaning
-	-

- Insight

- getImageDirectories: Get image save directory list

  【Error: When an error occurs in the Low Level SDK】 Raise an error defined in the Console Access Library

  【Error: When http_status returned from Low Level SDK API is not 200】 Raise an error defined in the Console Access Library

Parameter's name	Meaning	Range of parameter
deviceId	Edge AI device ID	Case sensitive If not specified, return information for all deviceIds

Return value	Meaning
Image save directory information	Same as return value name

- getImages: Get saved images

  【Error: deviceId is empty】E001 : deviceId is required.

  【Error: subDirectoryName is empty】E001 : subDirectoryName is required.

  【Error: When an error occurs in the Low Level SDK】Raise an error defined in the Console Access Library

  【Error: When http_status returned from Low Level SDK API is not 200】Raise an error defined in the Console Access Library

Parameter's name	Meaning	Range of parameter
deviceId	Edge AI device ID	Case sensitive
subDirectoryName	Image save subdirectory	None The subdirectory is either the directory notified in the response to the startUploadInferenceResult or the directory gotten by the getImageDirectories
numberOfImages	Number of images to get	0-256 If not specified:50
skip	Number of images to skip getting	None If not specified:0
orderBy	Sort order: Sort order by date and time the image was created	DESC、ASC、desc、asc If not specified:ASC

Return value	Meaning
Total image count	Same as return value name
Image file name and image file data	Same as return value name, image data is Base64 encoded

- getInferenceResults: Get list of saved inference result metadata

  【Error: deviceId is empty】E001 : deviceId is required.

  【Error: When an error occurs in the Low Level SDK】Raise an error defined in the Console Access Library

  【Error: When http_status returned from Low Level SDK API is not 200】Raise an error defined in the Console Access Library

Parameter's name	Meaning	Range of parameter
deviceId	Edge AI device ID	Case sensitive
filter	Search filter (same specifications as Cosmos DB UI in Azure portal except for the following)) - The where string need not be prepended - No need to attach deviceId	None
numberOfInferenceResults	Number of inference results gotten	None If not specified:20
raw	Data format of inference results	1:Append records as they are saved in Cosmos DB 0:Do not append If not specified:1
time	Timestamp of the inference results saved in Cosmos DB	yyyyMMddHHmmssfff - yyyy: 4-digit string of the year - MM: 2-digit string of the month - dd: 2-digit string of the day - HH: 2-digit string of the time - mm: 2-digit string of the minute - ss: 2-digit string of the second - fff: 3-digit string of the millisecond

Return value	Meaning
Inference results	Same as return value name

- exportImages: Export saved images

  【Error: key is empty】E001 : key is required.

  【Error: When an error occurs in the Low Level SDK】Raise an error defined in the Console Access Library

  【Error: When http_status returned from Low Level SDK API is not 200】Raise an error defined in the Console Access Library

Parameter's name	Meaning	Range of parameter
key	RSA public key	Base64 encoded string
fromDatetime	Date and time(From)	yyyyMMddhhmm format If not specified, no start date and time is set
toDatetime	Date and time(To)	yyyyMMddhhmm format If not specified, no end date and time is set
deviceId	Edge AI device ID	Case sensitive If not specified, specify all deviceId
fileFormat	Image file format	JPG, BMP, RAW If not specified, specify all file format

Return value	Meaning
key	Common key A common key for decrypting images encrypted with a public key
url	SUS URI for download

- getImageData: Get saved images

  【Error: deviceId is empty】 E001 : deviceId is required.

  【Error: subDirectoryName is empty】 E001 : subDirectoryName is required.

  【Error: When an error occurs in the Low Level SDK】 Raise an error defined in the Console Access Library

  【Error: When http_status returned from Low Level SDK API is not 200】 Raise an error defined in the Console Access Library

Parameter's name	Meaning	Range of parameter
deviceId	Edge AI device ID	Case sensitive
subDirectoryName	Image save subdirectory	None The subdirectory is either the directory notified in the response to the startUploadInferenceResult or the directory gotten by the getImageDirectories
numberOfImages	Number of images to get	None If not specified:50
skip	Number of images to skip getting	None If not specified:0
orderBy	Sort order: Sort order by date and time the image was created	DESC、ASC、desc、asc If not specified:ASC

Return value	Meaning
Total image count	Same as return value name
Image file name and image file data	Same as return value name, image data is Base64 encoded

- getLastInferenceData: Get the latest saved inference results

  【Error: deviceId is empty】 E001 : deviceId is required.

  【Error: When an error occurs in the Low Level SDK】 Raise an error defined in the Console Access Library

  【Error: When http_status returned from Low Level SDK API is not 200】 Raise an error defined in the Console Access Library

Parameter's name	Meaning	Range of parameter
deviceId	Edge AI device ID	Case sensitive

Return value	Meaning
Inference results	Same as return value name

- getLastInferenceAndImageData(): Get the latest saved inference results and images

  【Error: deviceId is empty】 E001 : deviceId is required.

  【Error: subDirectoryName is empty】 E001 : subDirectoryName is required.

  【Error: When an error occurs in the Low Level SDK】 Raise an error defined in the Console Access Library

  【Error: When http_status returned from Low Level SDK API is not 200】 Raise an error defined in the Console Access Library

Parameter's name	Meaning	Range of parameter
deviceId	Edge AI device ID	Case sensitive
subDirectoryName	Image save subdirectory	None The subdirectory is either the directory notified in the response to the startUploadInferenceResult or the directory gotten by the getImageDirectories

Return value	Meaning
Inference results and image data	Same as return value name, image data is Base64 encoded

8. Log output messages

The messages to be displayed for each level are defined as follows

ERROR level

MessageID	Conditions	Message	Parameter
E001	Output when a required parameter is not passed	{0} is required.	{0}:Parameter name not passed

WARNING level

MessageID	Conditions	Message	Parameter
W001	Output when calling a deprecated class or function	{0} has been deprecated.	{0}:Name of the called class or function

INFO level

T.B.D.

DEBUG level

T.B.D.

9. Target performances/Impact on performances

- None

10. Assumption/Restriction

- None

11. Remarks

- None

12. Unconfirmed items

- None