Exastro

IT Automation
CI/CD for IaC
【Classroom】

※In this Document “Exastro IT Automation” will be written as “ITA”.

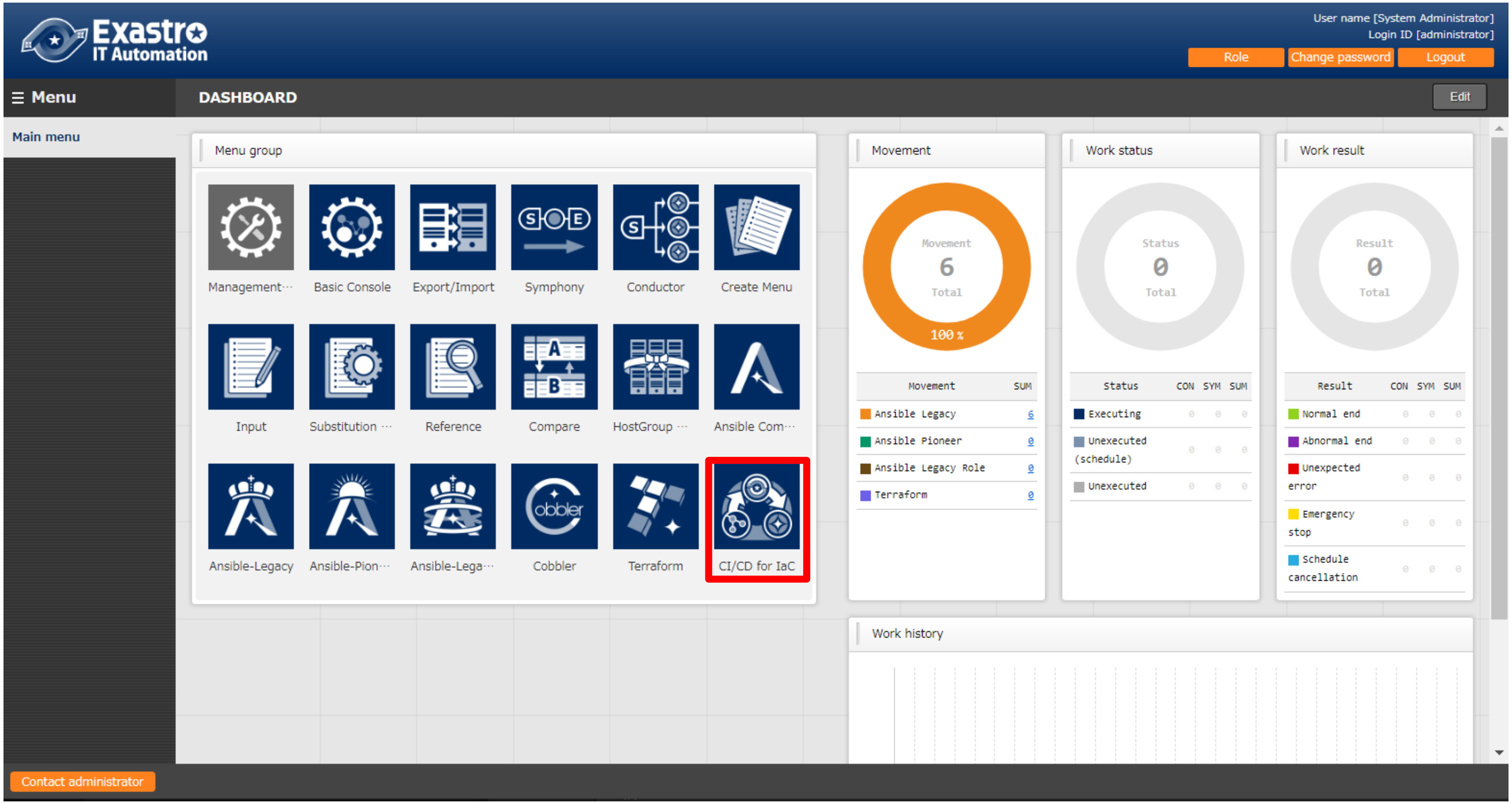
Exastro IT Automation Version 1.9
Exastro developer

Table of contents

1. Introduction

Main Menu

- This document aims to explain the CI/CD for IaC Menu group.
- The Practice document provides scenarios where users can learn about the CI/CD for IaC function by having first-hand experience.



User name [System Administrator]
Login ID [administrator]

Movement: Movement 6 Total, 100 %

Status: Status 0 Total

Result: Result 0 Total

Movement	SUM
🟧 Ansible Legacy	6
🟩 Ansible Pioneer	0
🟫 Ansible Legacy Role	0
🟪 Terraform	0

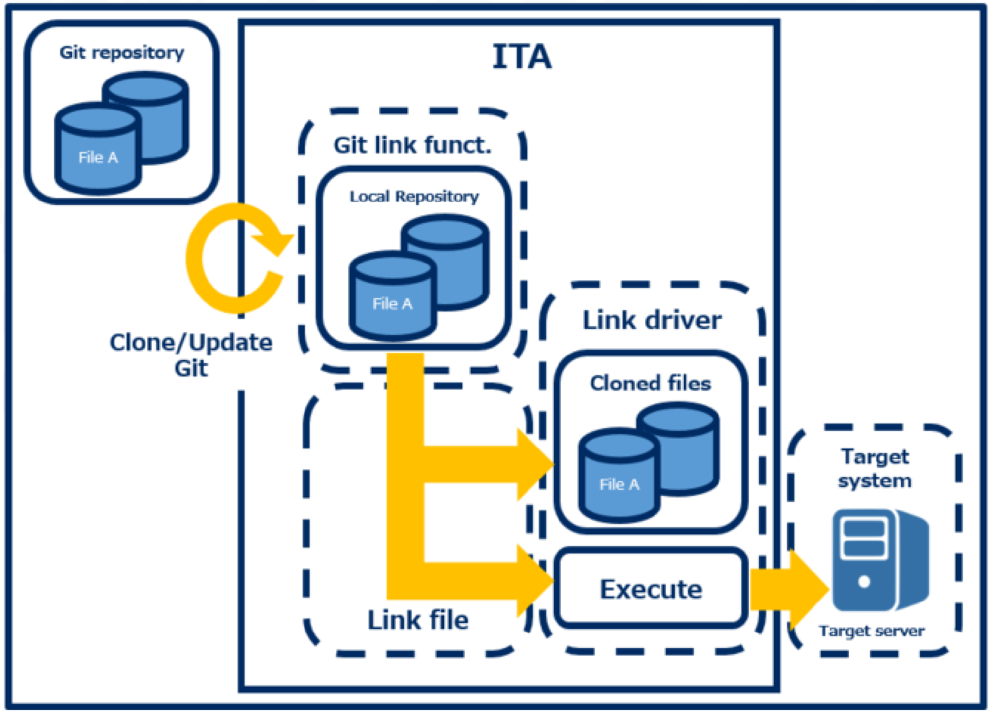
Status	CON	SYM	SUM
■ Executing	0	0	0
■ Unexecuted (schedule)	0	0	0
■ Unexecuted	0	0	0

Result	CON	SYM	SUM
🟩 Normal end	0	0	0
🟪 Abnormal end	0	0	0
🟥 Unexpected error	0	0	0
🟨 Emergency stop	0	0	0
🟦 Schedule cancellation	0	0	0

2. CI/CD for IaC

2.1 CI/CD for IaC

- What is CI/CD for IaC?
  - When using IaC (Infrastructure as Code) files, such as Ansible's Playbook files or Terraform's IaC files, for development, we can use CI (Continuous Integration) to automatically test and build, and CD (Continuous Delivery) to automatically construct environments.
    Connecting to Git allows users to manage files by versions and to see when what user committed what files and so on. By uploading files to Git, users can automatically create environments by configuring some files., meaning that users can now use GitOps with ITA.



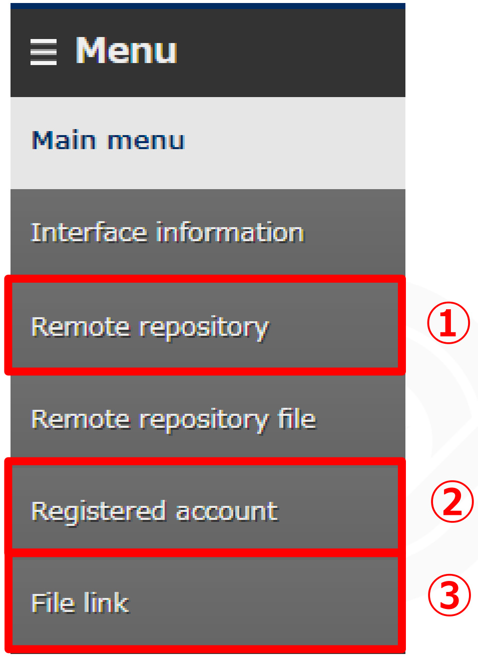
2.2 CI/CD for IaC Function

The Ci/CD for IaC menu contains 2 functions.

- Git link
  - This functions allows users to clone a Git repository to ITA. ITA can then use the clone to check for any updates from the file source on a regular basis, and creates a list of the files in ITA’s “Remote Repository files” menu.
- File link
  - This function allows users to link the source file and the files from the Git clone. It will then register an Operation and a Movement that will check the validity of the copied files. If the source files are updates, the cloned files will then be automatically updated and have their validity checked.

2.3 CI/CD for IaC Menus (1/5)

- The main menus for the Ci/CD for IaC function are as following.



①Remote Repository

This menu manages the Git repository information.

②Registered account

This menu manages the account information needed to access the cloned files with ITA’s RestAPI.

③File link

This menu manages the link information between the source files and the cloned files.

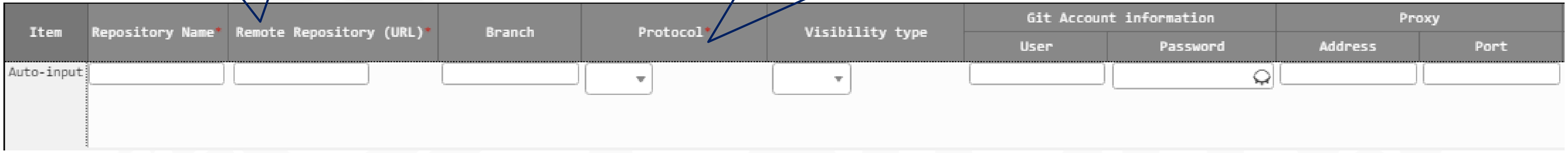
2.3 CI/CD for IaC Menus (2/5)

●Remote Repository

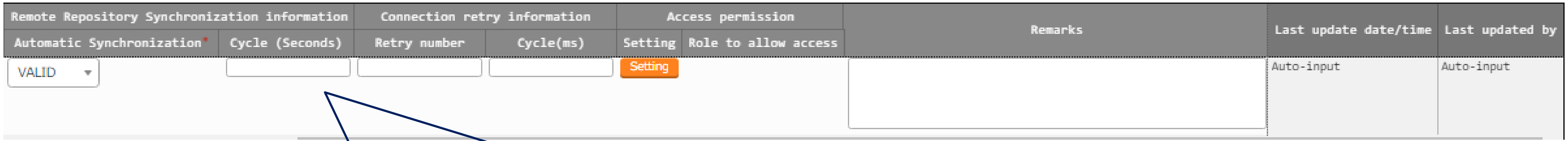
- In the Remote Repository menu, users can register the information of the Git repository they want to link.

URL of the Git Repository used when running Git clone command.

If you are connecting to a remote Git repository with https, select https
If you are connecting to a local Git, select Local



Item	Repository Name*	Remote Repository (URL)*	Branch	Protocol*	Visibility type	Git Account information		Proxy	
						User	Password	Address	Port
Auto-input									



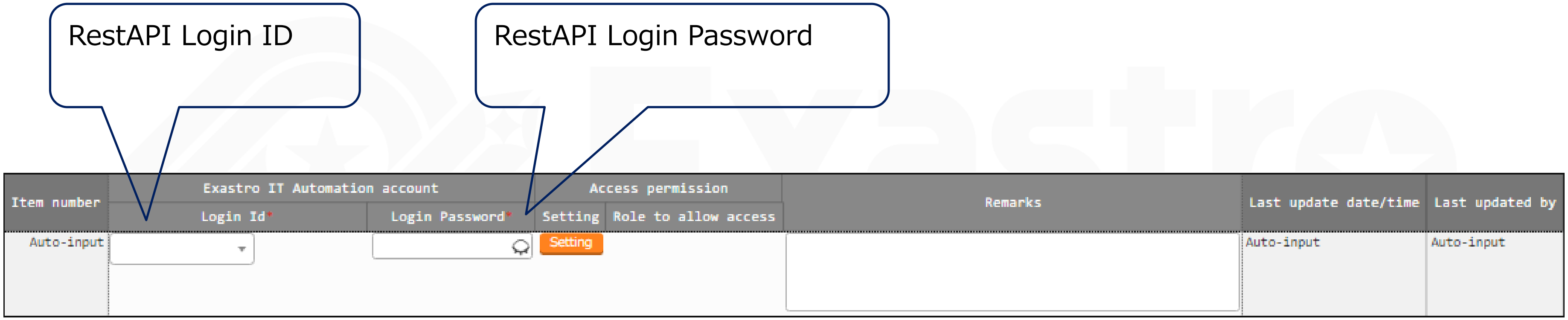
Remote Repository Synchronization information		Connection retry information		Access permission		Remarks	Last update date/time	Last updated by
Automatic Synchronization*	Cycle (Seconds)	Retry number	Cycle(ms)	Setting	Role to allow access			
VALID				Setting			Auto-input	Auto-input

Decides if synchronization with the Git repository is done automatically or not.
If the “cycle(seconds)” field is blank, it will be set to the default value (60 seconds)

2.3 CI/CD for IaC Menus (3/5)

Registered account

- In this menu, users can register the account information needed to access the clones files from ITA's RestAPI. Keep in mind that the account must also be registered in the "Management console > User list" menu.



RestAPI Login ID

RestAPI Login Password

Item number	Exastro IT Automation account		Access permission		Remarks	Last update date/time	Last updated by
	Login Id*	Login Password*	Setting	Role to allow access			
Auto-input			Setting			Auto-input	Auto-input

2.3 CI/CD for IaC Menus (4/5)

File link

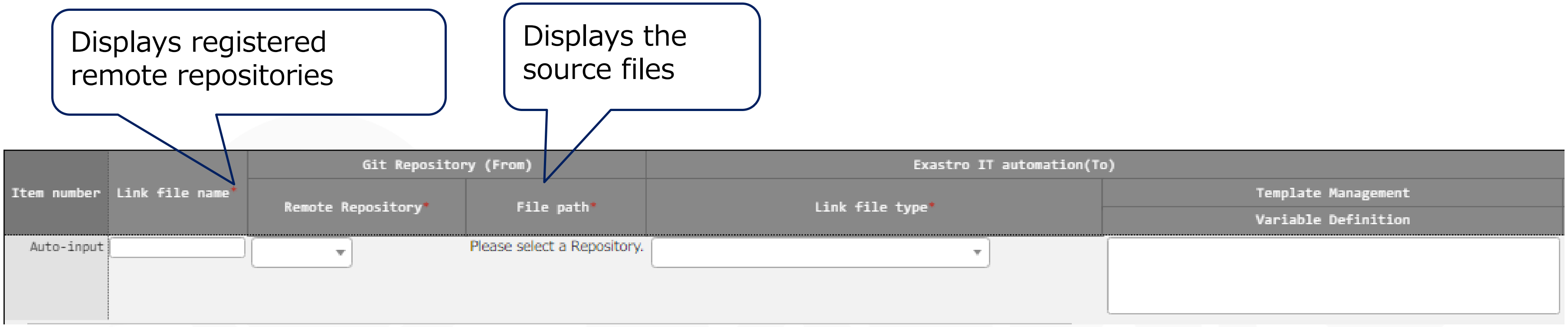
- In this menu, users can link the source files and the destination files (cloned files).Doing so will automatically register an operation and Movement that will automatically check the validity of the cloned files. If the source files are updated, the Backyard function will automatically update the cloned files to match the update, and will run the Operation/Movement to check the validity of the newly updated cloned files.
- The "Link destination file names" are linked by the Link destination file type (See the table below). Keep in mind that there are different restrictions that needs to be followed for the different menu items.

Link destination file type	Item name
Ansible-Legacy/Playbook file list	Playbook files name
Ansible-Pioneer/Dialogue file list	No item
Ansible-LegacyRole/Role package list	Role package name
Ansible common/File list	File embedded variable name
Ansible common/Template list	Template embedded variable name
Terraform/Module files	Module file name
Terraform/Policy list	Policy name

2.3 CI/CD for IaC Menus (5/5)

●File link

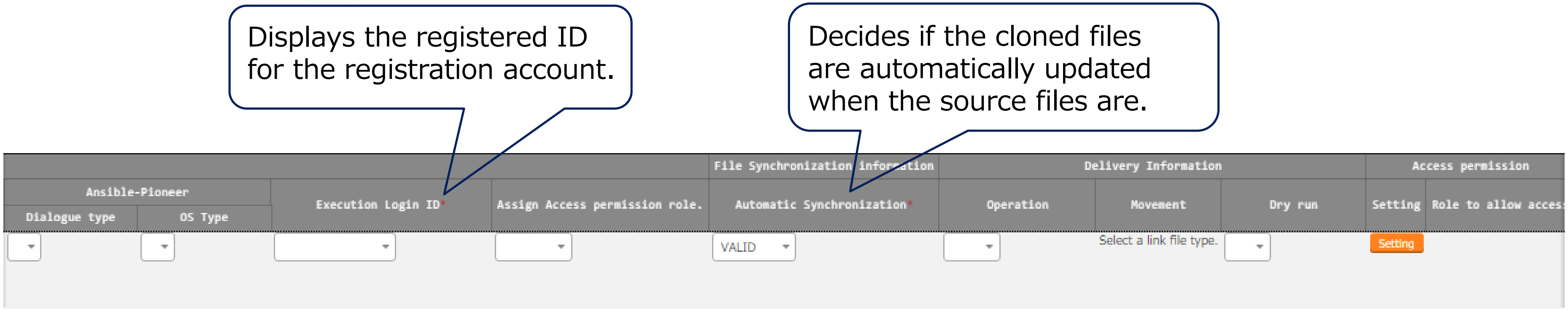
- If the Link destination type is from the Ansible-LegacyRole/RolePackage list menu, refer to "Exastro-ITA_User_Instruction_Manual_CICD_For_IaC" for more information.



Displays registered remote repositories

Displays the source files

Item number	Link file name*	Git Repository (From)		Exastro IT automation(To)	
		Remote Repository*	File path*	Link file type*	Template Management Variable Definition
Auto-input		▾	Please select a Repository.	▾	



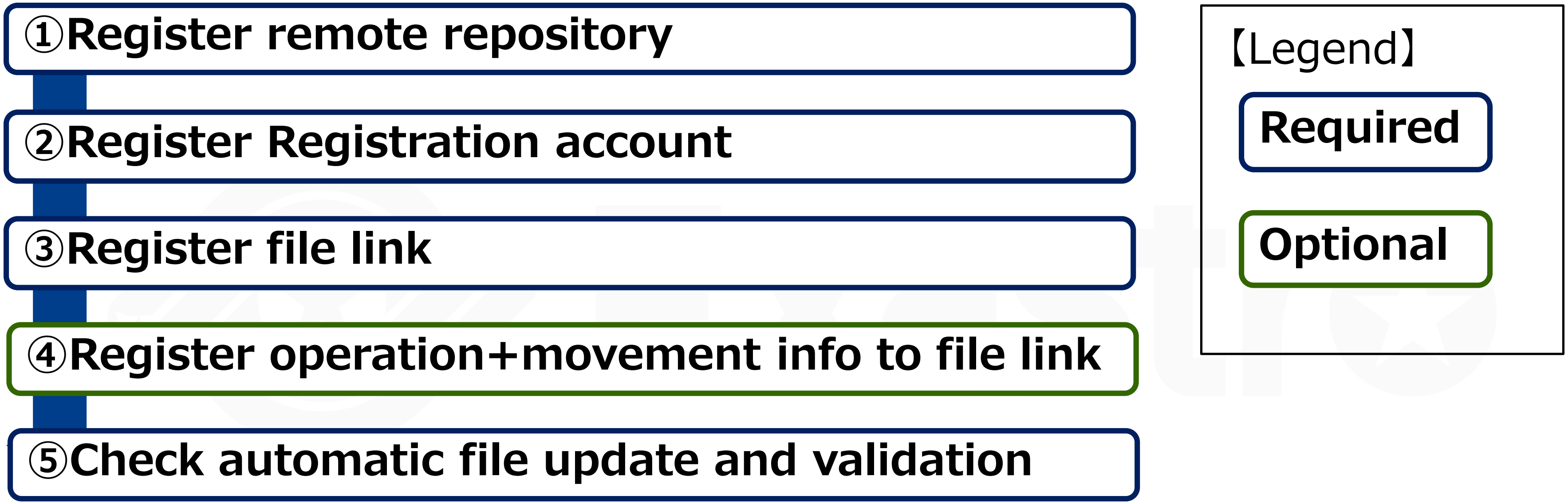
Displays the registered ID for the registration account.

Decides if the cloned files are automatically updated when the source files are.

Ansible-Pioneer		Execution Login ID*	Assign Access permission role.	File Synchronization information	Delivery Information			Access permission	
Dialogue type	OS Type			Automatic Synchronization*	Operation	Movement	Dry run	Setting	Role to allow acces
▾	▾	▾	▾	VALID ▾	▾	Select a link file type.	▾	Setting	

2.4　CI/CD for IaC workflow

- The figure below illustrates a standard workflow for the CI/CD for IaC function. Please refer to the Practice document for information regarding operating it.



①Register remote repository

②Register Registration account

③Register file link

④Register operation+movement info to file link

⑤Check automatic file update and validation

【Legend】

Required

Optional

Exastro