ITA_First Step Guide

—Version 1.3 —

Disclaimer

Trademark

- Linux is registered trademark or trademark of Linus Torvalds, registered in the United States and other countries.
- Red Hat is registered trademark or trademark of Red Hat, Inc., registered in the United States and other countries.
- Apache、Apache Tomcat、Tomcat are registered trademarks or trademarks of Apache Software Foundation.
- Ansible is registered trademark or trademark of Red Hat, Inc.

「Exastro IT Automation」is written as「ITA」in this document.

Table of contents

Introduction

Target reader and Purpose

This document describes the functions, features, and basic usage of ITA for the first time users.

Reference

For operation manual of Cobbler and Cobbler Web, please refer to Cobbler Project.

Cobbler Project ： http://cobbler.github.io/

Please refer to the Redhat Installation Guide for kickstart file references.

Redhat ： https://access.redhat.com/documentation/ja-jp/red_hat_enterprise_linux/

1 Overview of ITA

1.1 What is ITA

ITA is a management and automation tool for constructing environment and setting up configuration for devices such as server, storage, and network.

ITA provides a "Configuration management" function which enables users to manage device information, configuration, and execution history, etc. and an "Association execution" function that manages and executes construction and operation configurations of each device as a workflow.
ITA also provides drivers to associate with platform construction tool such as Ansible, etc. where device construction and operation configuration performed on.
ITA also provides a UI to operate functions via browser and functions that are required for operating and maintaining the system such as user management and permission management.

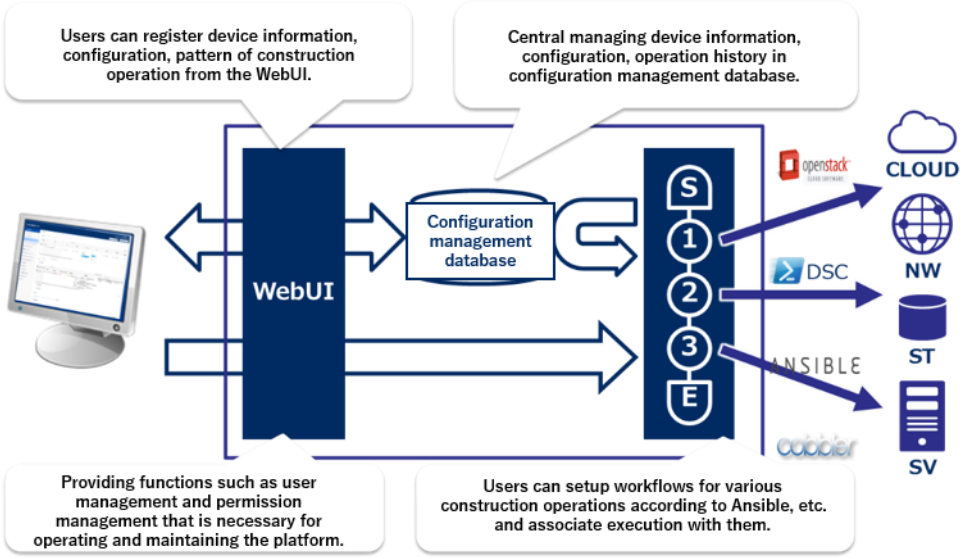

Figure 1.1-1 Overview of ITA

1.2 Functions of ITA

1.2.1 Configuration management function

- ITA manages construction/management target device information, network configuration, OS information and various information on configuration management database.
- Registered information can be searched and perform history management from the screen. Information list can be output in excel or original csv format and can be registered in the same format in summary.

1.2.2 **Association execution function**

- ITA can associate with various platform construction tools. ITA provides drivers to associate with various tools and a workflow function to control the executions.
- ITA 1.0 supports association with tools as below.

Table 1.2-1 Description of associated driver①

Tool name	Function	Description
Ansible	System construction	OSS platform construction tool provided by Red Hat,inc. Used to apply software installation, various configuration, file transfer, and patching to devices connected to the network based on a construction code called Playbook.
Cobbler	Operation system construction	OSS installation automation tool. Users can install operation system to devices that connects to internet based on pre-created template.
OpenStack	Virtual system construction	OSS cloud environment construction tool. Used to construct virtual machine, storage, network, etc. for cloud environment.
PowerShell DSC	System construction	A platform construction tool made by Microsoft. Used to create user, install software, etc. for server in Windows infrastructure environment.

1.2.3 **User, permission management**

Manage ITA users and their permission.

It is possible to set the menu and screens that users can access and control operation (view, update) according to their permission.

Please refer to user instruction manual (ITA management console) for the details.

1.3 Customize function

Users can add functions to ITA according to project requirement.

By using the menu creating tool in ITA, users can create their own configuration management screen of project and add it to ITA menu.

Please refer to the user instruction manual (ITA management console) for detailed information.

Table 1.3-1 Customize function

Function name	Function	Description
Menu creation tool, menu management function	Add custom configuration management screen	Users can create custom configuration management screen and add it to ITA menu.

2 Menu and screen configuration of ITA

2.1 Connect to main menu

The following is the procedure to connect to the main menu of ITA.

Preparation work

Set the IP address and host name of the ITA implementation server in the hosts file of operation terminal(Windows)

For Windows7, the hosts file is as below.

C:¥Windows¥System32¥drivers¥etc¥hosts

Please add the setting to the hosts file.

“IP address of the server ITA installed in”　exastro-it-automation Example: 127.0.0.1 exastro-it-automation

（1）Login screen of ITA

Connect to the URL of ITA. When the login screen is displayed, enter the following login ID and initial password, then click the "Login" button.

URL　：https://exastro-it-automation
Login ID　：administrator
Initial password　：password

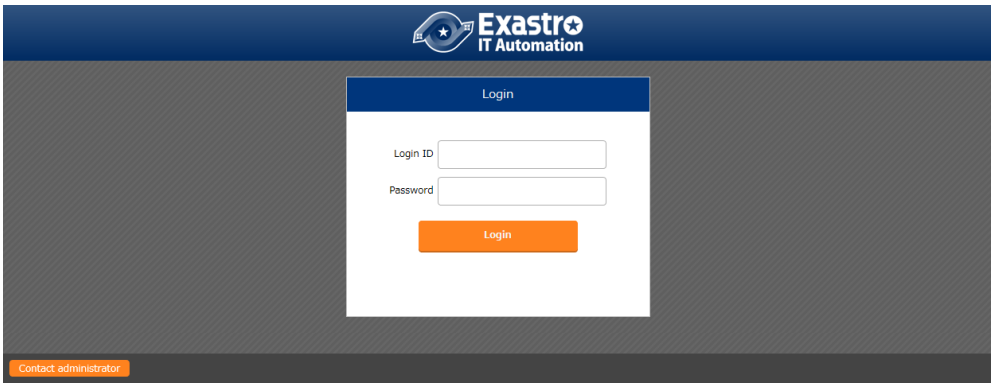

Figure 2.1-1　Login screen

When logging in for the first time after installation, the screen will be redirected to the "Password changing screen". Please change the initial password at the "Password changing screen".

（2）Main menu screen

The main menu screen after log into ITA.

Figure 2.1-2 Main menu screen

The main menu is displayed on the right of screen and submenu is displayed on the left side of the screen.

After selecting console menu from the main menu, submenu according to the selected console will display.

To return to the main menu, click “Main Menu” at the top of the submenu.

Table 2.1-1 List of Console in main menu

Console name	Description
Management console	A function that manages ITA system. User management, permission management and various ITA system setting is perform in this console.
Basic console	Common function used in ITA system. Registration of device information, creation and execution of workflow if performed in this console.
Ansible common console	Common configuration information of Ansible driver. Users can manage installation configuration of Ansible driver and Ansible in this console.
Ansible-Legacy console	A function to use Ansible from ITA. Legacy console is used when using a single YAML file as construction code.
Ansible-LegacyRole console	A function to use Ansible from ITA. Legacy role console is used when using Role package provided from product division, etc. as construction code.

Console name	Description
Ansible-Pioneer console	A function to use Ansible from ITA. Pioneer console is used to execute the operation while directly interacting with target machine in situations such as when not connected via SSH.
Cobbler console	A function to use Cobbler from ITA. Used when installing operating system to target device.

Please refer to the respective usage manual of each console menu for details.

2.2 Basic screen configuration

Each menu screen provided by ITA is basically in the same layout.

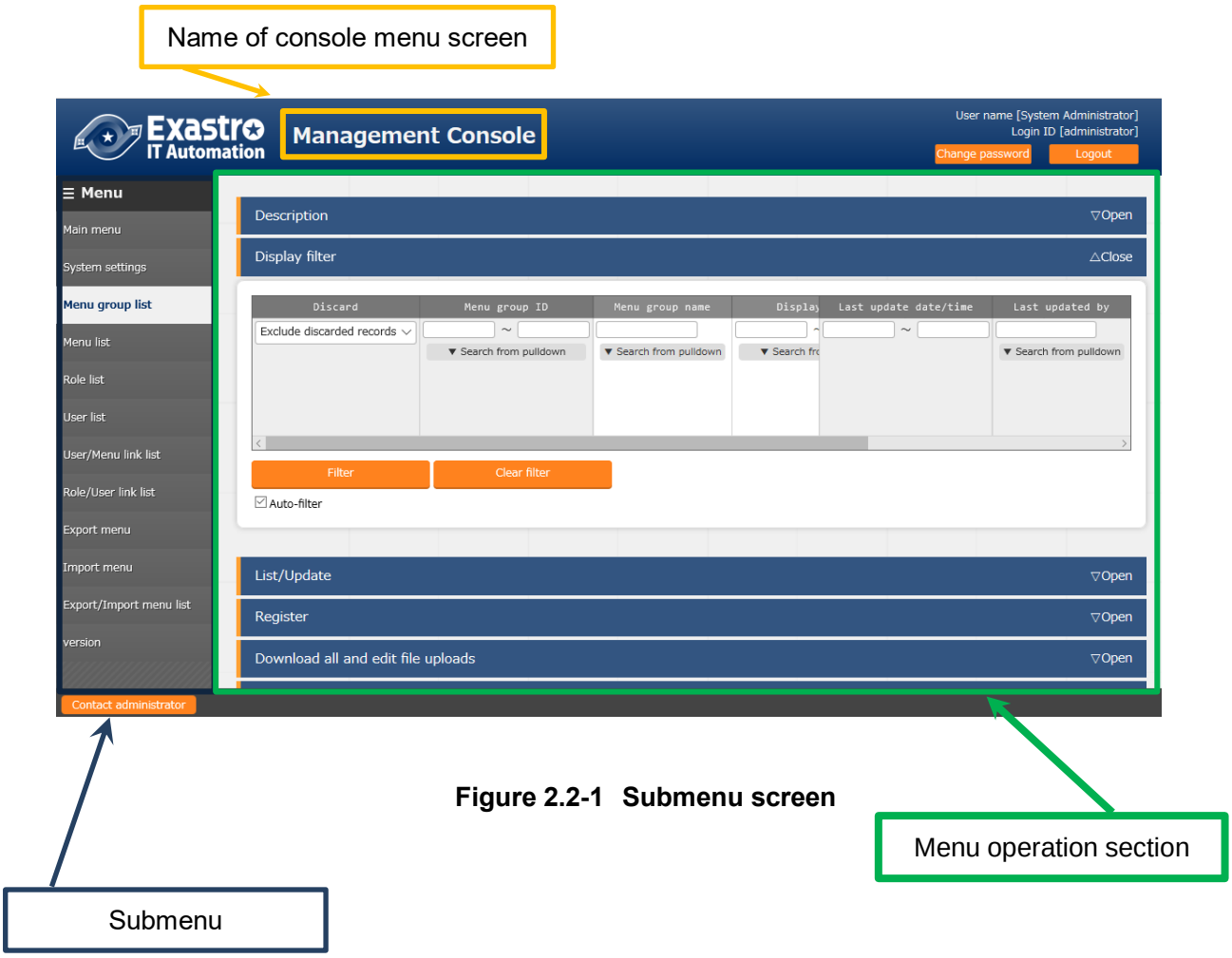

Figure 2.2-1 Submenu screen

The screen to perform configuration and registration is called "Menu operation section". The configuration of operation section is as below.

Please refer to "User Instruction Manual - Basic Console" for detailed operation of items in each screen.

Table 2.2-1 Description of menu operation section

No	Screen item	Description
1	Description	Description of each menu
2	Display filter	Assigning searching filter of items registered in each menu. ※Nothing is displayed when entering the menu screen. All items will be displayed when clicking "filter" with blank search criteria. Please assign the search criteria to narrow down the search result.
3	List /update	Listing the items that meet the search criteria specified in the filter. Users can update or discard displayed item.
4	Register	Register new item to each menu. The content of registration is different for each menu, so please refer to each manual.
5	Download all and edit file uploads [some screens only]	Information registered in each menu screen can be downloaded in excel format and can register multiple information with the same format in one file at once.
6	Trace history	It is possible to display the modification history of registered item in each menu screen.

3 Operation procedure of ITA

3.1 Concept of workflow in ITA

Execution of work in ITA is linked with operation name called "Operation" and a workflow called "Symphony" and performed in the unit of "Operation".
Work pattern called "Movement" is created according to the construction and configuration work for devices. Then workflow instructs the execution in combination of the work patterns.

Operation

・Work execution unit in ITA. Users can schedule Operation execution and manage execution history.

Symphony

・Unit of a series of work in ITA. Execute by associating with Operation.

・Create workflow by combining work patterns called "Movement" and perform a series of works such as construction and configuration to multiple devices.

Movement

・Unit of work such as construction and configuration to each devices using construction tools.

・Movements are created in the console of each driver. The way to create Movement differs from each driver so please refer to the manual of each driver.

・Movements are recommended to be created in function unit in order to reuse them in other operations.

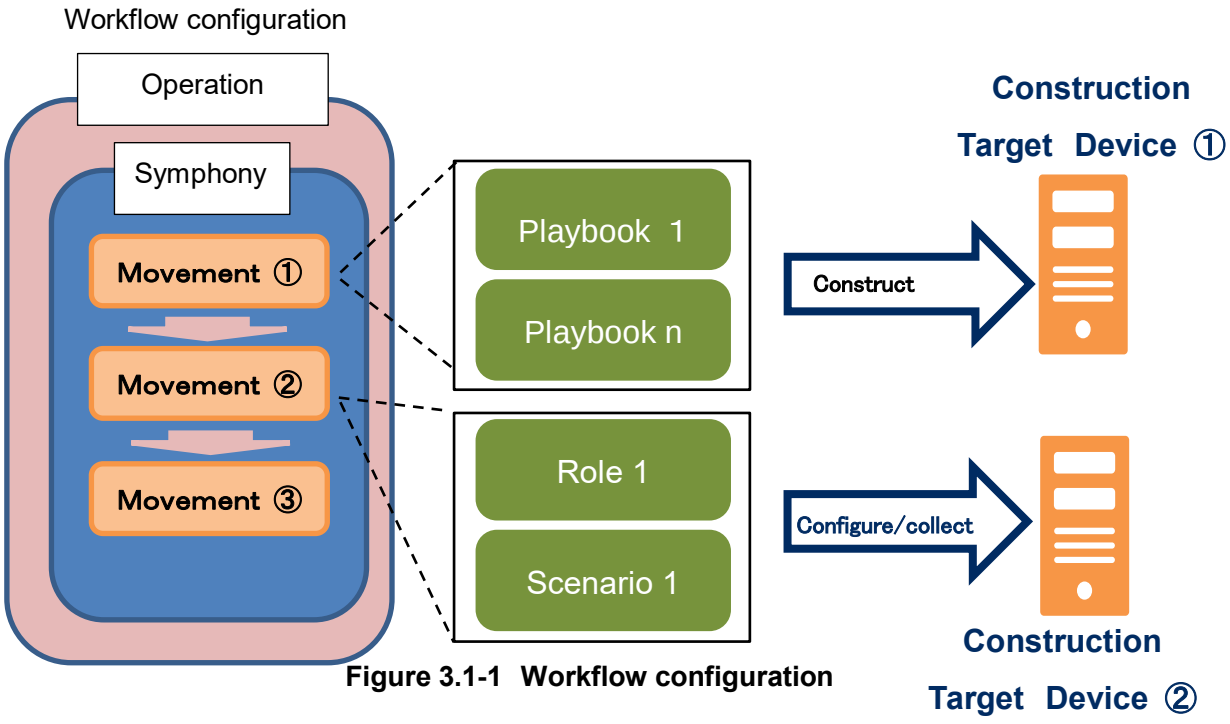

Figure 3.1-1 Workflow configuration

3.2 Procedure of environment construction using ITA

The standard procedure of environment construction using ITA is as below.

The procedure from registering target server, configuring workflow, to execution is introduced here.
The purpose here is to let readers understand the overall procedure of operations.
Please refer to the user instruction manual of each console for the details of each procedure.

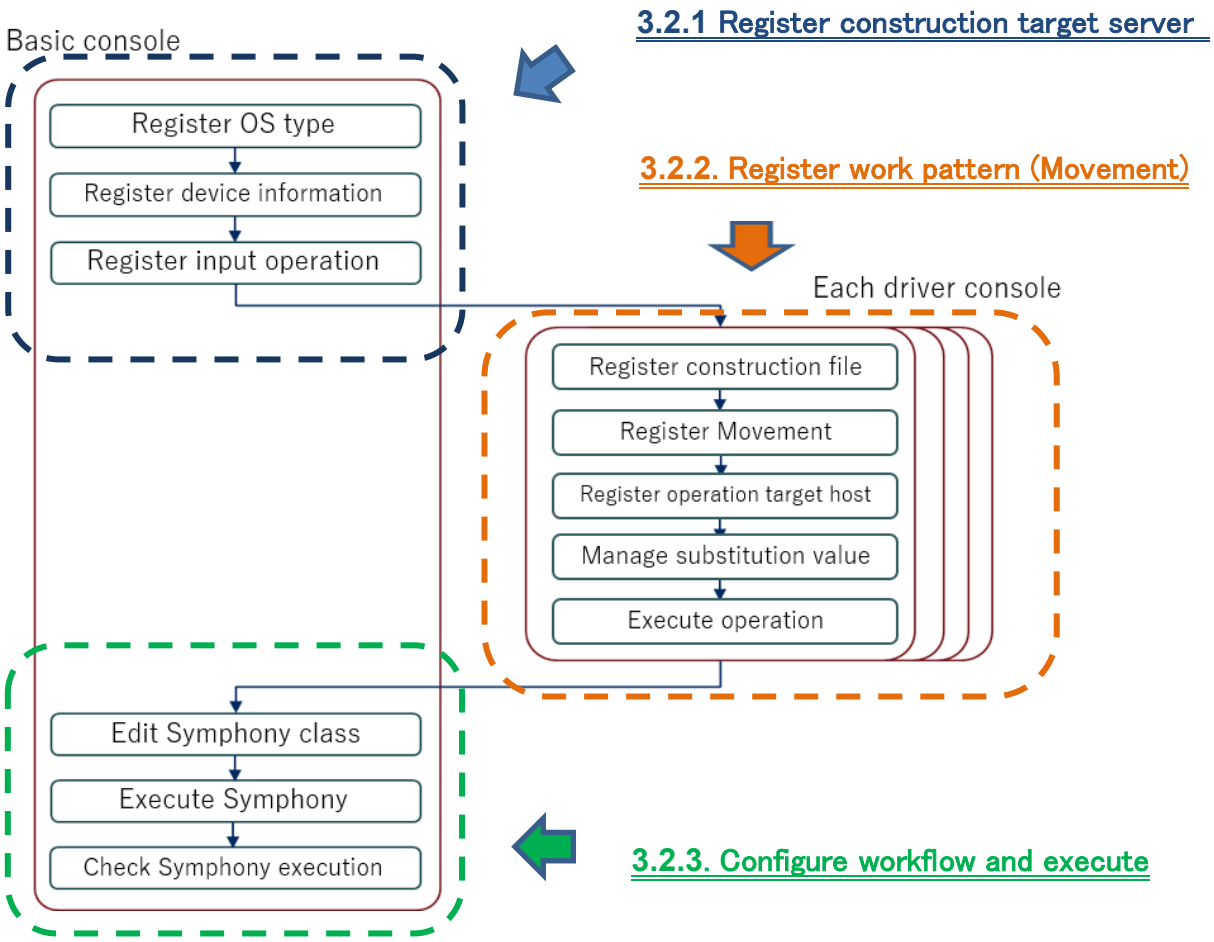

Figure 3.2-1 Procedure of environment construction work(Operation)

3.2.1 **Register construction target server**

Register the information of the target device to be constructed and managed from basic console menu and also register the operation name when executing workflow (Symphony).

① Register OS type

Register operation and device type from "OS type master" menu.

Please refer to "User Instruction Manual - Basic Console - 4.1.1 OS type master" for details.

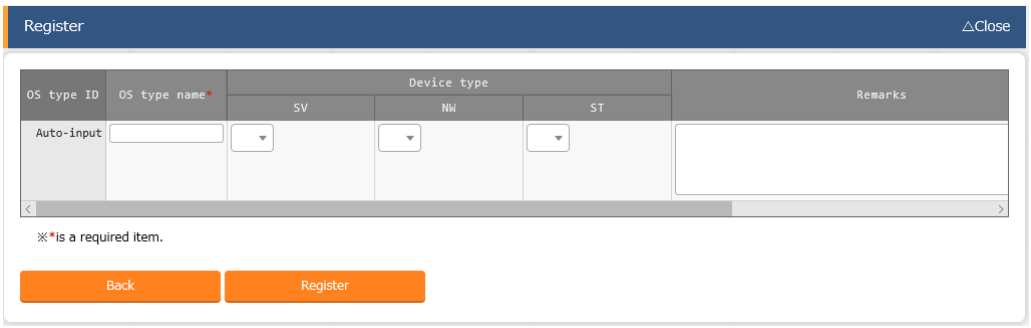

Figure 3.2-2 Registration screen（OS type master)

② Register device information

Register the information (host name, IP address) of the target device to be constructed and managed and the account information for connection from the "Device list" menu. Also configure the usage information of platform construction tool according to each device.

Please refer to "User Instruction Manual - Basic Console - 4.1.2 Device list" for details.

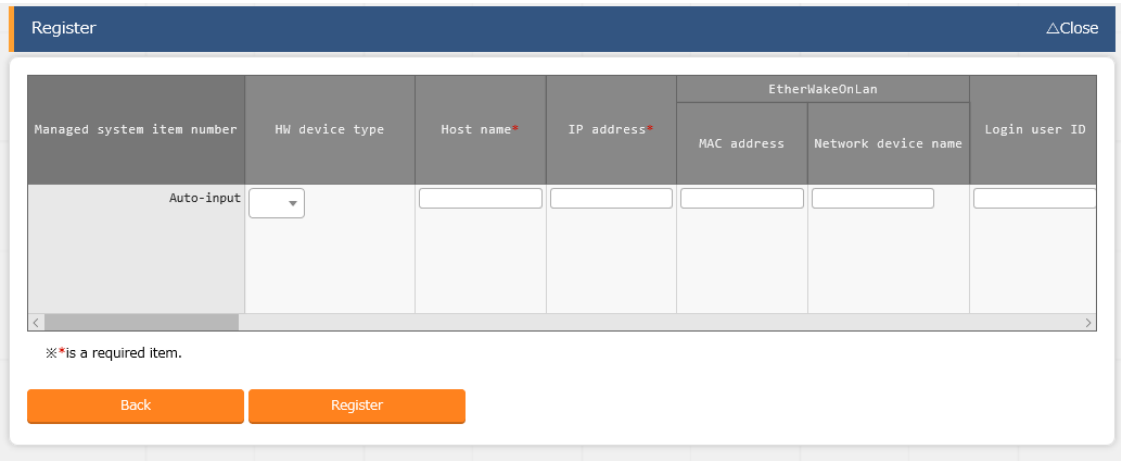

Figure 3.2-3 Registration screen (Device list)

③ Register input operation

Register the name of operation to execute as workflow and the scheduled execution date from the "Input operation list" menu.

Please refer to "User Instruction Manual - Basic Console - 4.1.4 Input operation list" for details.

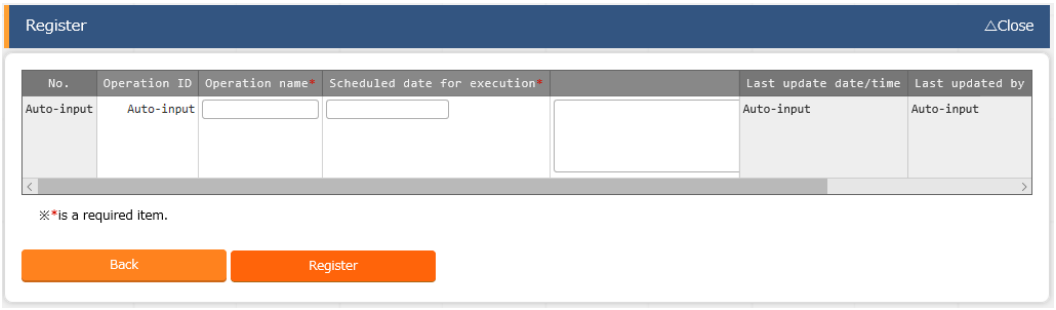

Figure 3.2-4 Registration screen (Input operation list)

3.2.2 **Register Movement (work pattern)**

Create construction and configuration to each devices as Movements (work pattern) from the console of each driver.
The method to create Movement (work pattern) varies depending on each driver and console menu. Please refer to workflow in the manual of each driver.

Take the way to create the Movement (work pattern) for platform construction by using Ansible Legacy driver for an example here. Please refer to the user instruction manual (Ansible driver) for detailed procedure.

① Register construction file

Register the construction code of Ansible – Playbook (YAML file) from the "Playbook files" menu.

② Register Movement

Register the Movement name in "Movement list" menu and associate the Movement with the Playbook file that is going to be executed, in the "Movement details" menu.

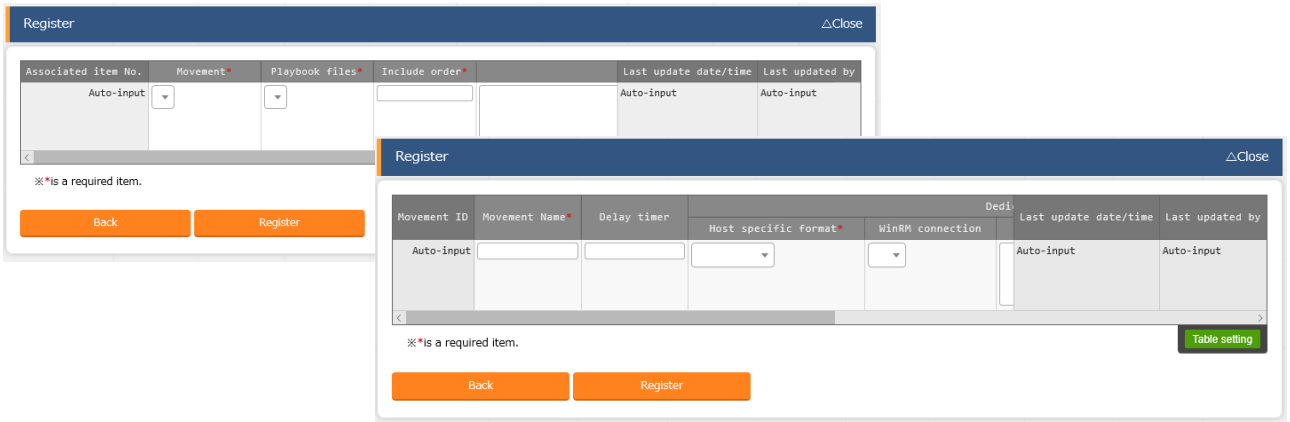

Figure 3.2-5 Registration screen（Movement list）

③ Register operation target host
Set the execution target host from the "Target host" menu.

④ Manage substitution value
Users can assign value of variables defined in Playbook from ITA screen.

※ Variables have to follow the original naming rule of ITA.
Configuration that varies for each devices can be configured and managed in ITA without modifying Playbook.
Set variable values in the “Substitute Value list” menu if necessary.

⑤ Execute operation
Standalone execution of Movement (work pattern) is possible.
There is also a dry run function that only checks the content of Playbook without affecting the target host.

3.2.3 **Configure and execute workflow**

Combine the Movements (work pattern) created in section 3.2.2 and register them into workflow (Symphony) then assign the execution to target device in the basic console menu.

① Edit Symphony class

Combine the created Movements (operation pattern) and create workflow (Symphony) in the "Symphony class editor" of basic console menu.

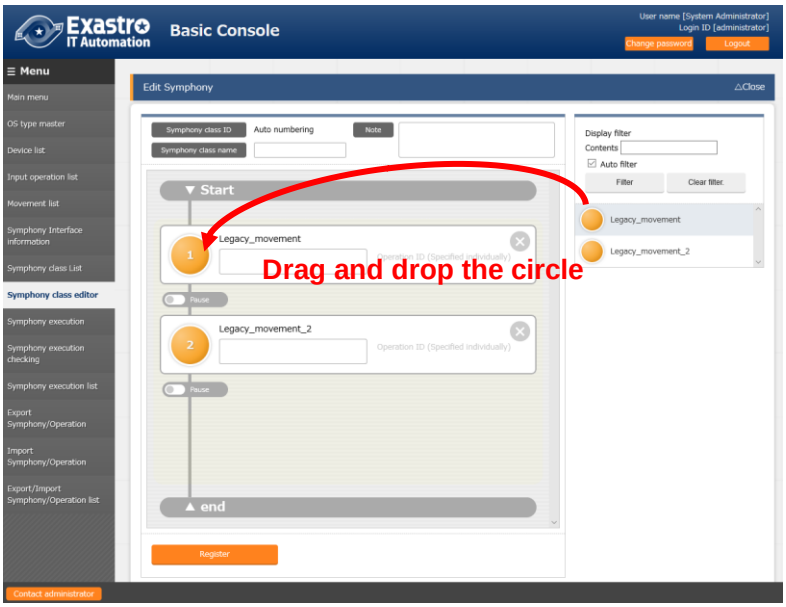

Figure 3.2-6 Symphony class editor screen

② Execute symphony

Using the "Symphony execution" submenu in the basic console to select the Symphony and Operation to be executed then indicate execution to platform construction tools such as Ansible.

③ Check execution of Symphony

Using the "Symphony execution checking" submenu in the basic console to check the result of execution.

Figure 3.2-7 Symphony execution checking screen

3.3 Operation execution on the second or later device / from the second time

For constructing similar environment, it is possible to reuse created Movement (work pattern) and workflow for operation execution on second or later device/from the second time.

The procedure introduced in section "3.2 Procedure of environment construction using ITA" is required to be perform on the first construction. However the workflow of operation on the second or later device/from the second time is as below (Server construction on the second or later device). Constructing the environment of the second and later device / from the second time is possible by only modifying "Register device information", "Register input operation", "Register operation target host", and "Manage substitution value" that are surrounded by green frame according to the construction specification and indicating execution to workflow (Symphony).

【Server construction on the first device】

- Perform whole procedure

【Server construction on the second or later device】

- Only operations surrounded by green frame needs to be performed

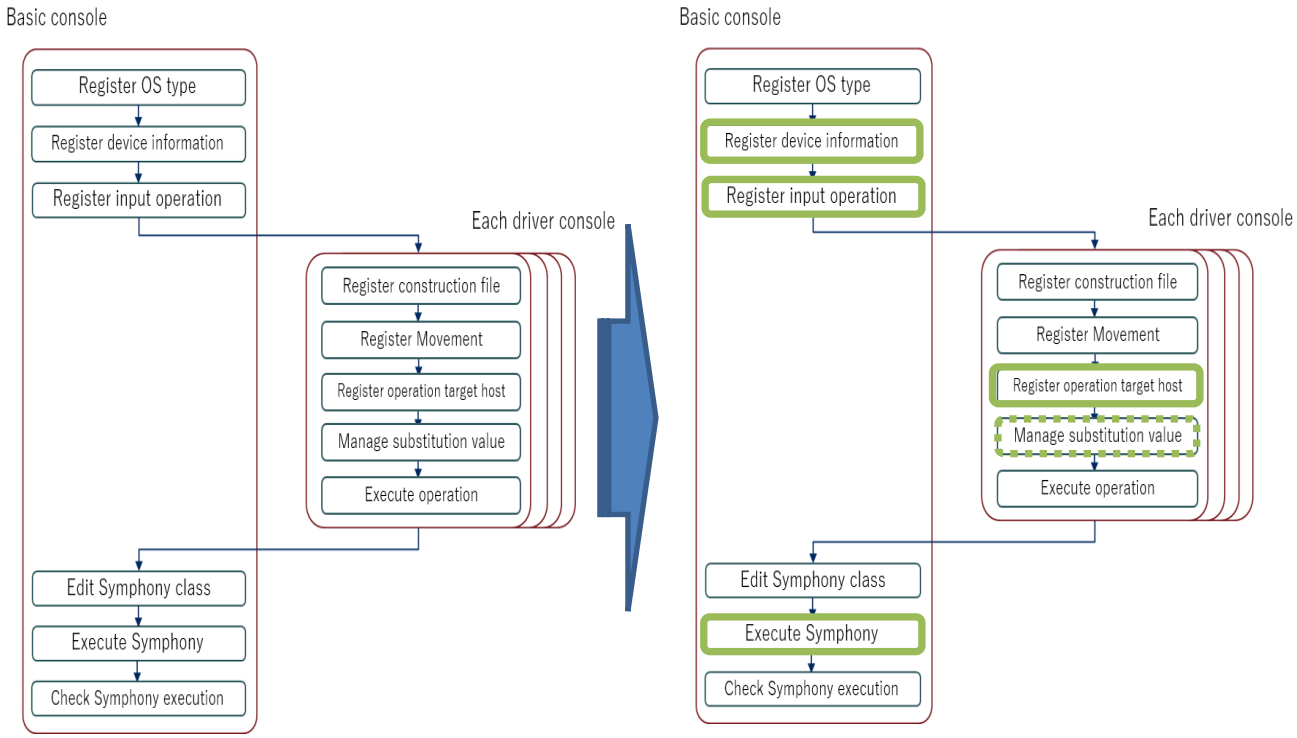

Figure 3.3-1 Workflow from the second time in similar environments