



# IT Automation Conductor 【Practice】

※In this document, “Exastro IT Automation” is described as “ITA”.

# Table of contents

## 1. Introduction

1. About this document

## 2. Conductor

1. Scenario
2. Preparation

## 3. Operation

1. Register Target host
2. Register operation
3. Register IaC
4. Register Movement
5. Register Movement-Playbook link
6. Register Host and Movement connected to the operation
7. Substitution value list
8. Register Conductor
9. Conductor execution
10. Conductor confirmation

# 1. Introduction

# 1.1 About this document

- The "**Conductor**" menu group is explained in this document.

The screenshot displays the Exastro IT Automation dashboard. The top navigation bar includes the Exastro logo, user information (System Administrator), and links for 'Change password' and 'Logout'. The main menu on the left lists various categories, with 'Conductor' highlighted in the 'Menu group' section. The dashboard features several widgets: 'Movement' (a donut chart showing 4 total movements), 'Work status' (a gauge showing 0 total status), and 'Work result' (a gauge showing 0 total result). Below these are tables for 'Movement', 'Status', and 'Result' with columns for CON, SYM, and SUM. The 'Movement' table lists Ansible Legacy, Ansible Pioneer, Ansible Legacy Role, and Terraform. The 'Status' table lists Executing, Unexecuted (schedule), and Unexecuted. The 'Result' table lists Normal end, Abnormal end, Unexpected error, Emergency stop, and Schedule cancellation.

**Menu group**

- Management...
- Basic Console
- Export/Import
- Symphony
- Conductor**
- File control ...

**Menu set**

- File control c...
- Input
- Substitution ...
- Reference
- Contrast
- HostGroup ...

**Ansible-Leg...**

- Ansible-Leg...
- Ansible-Pion...
- Ansible-Leg...
- Cobbler
- Terraform

**Movement**

Movement	SUM
Ansible Legacy	1
Ansible Pioneer	1
Ansible Legacy Role	1
Terraform	1

**Work status**

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

**Work result**

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

**Work history**

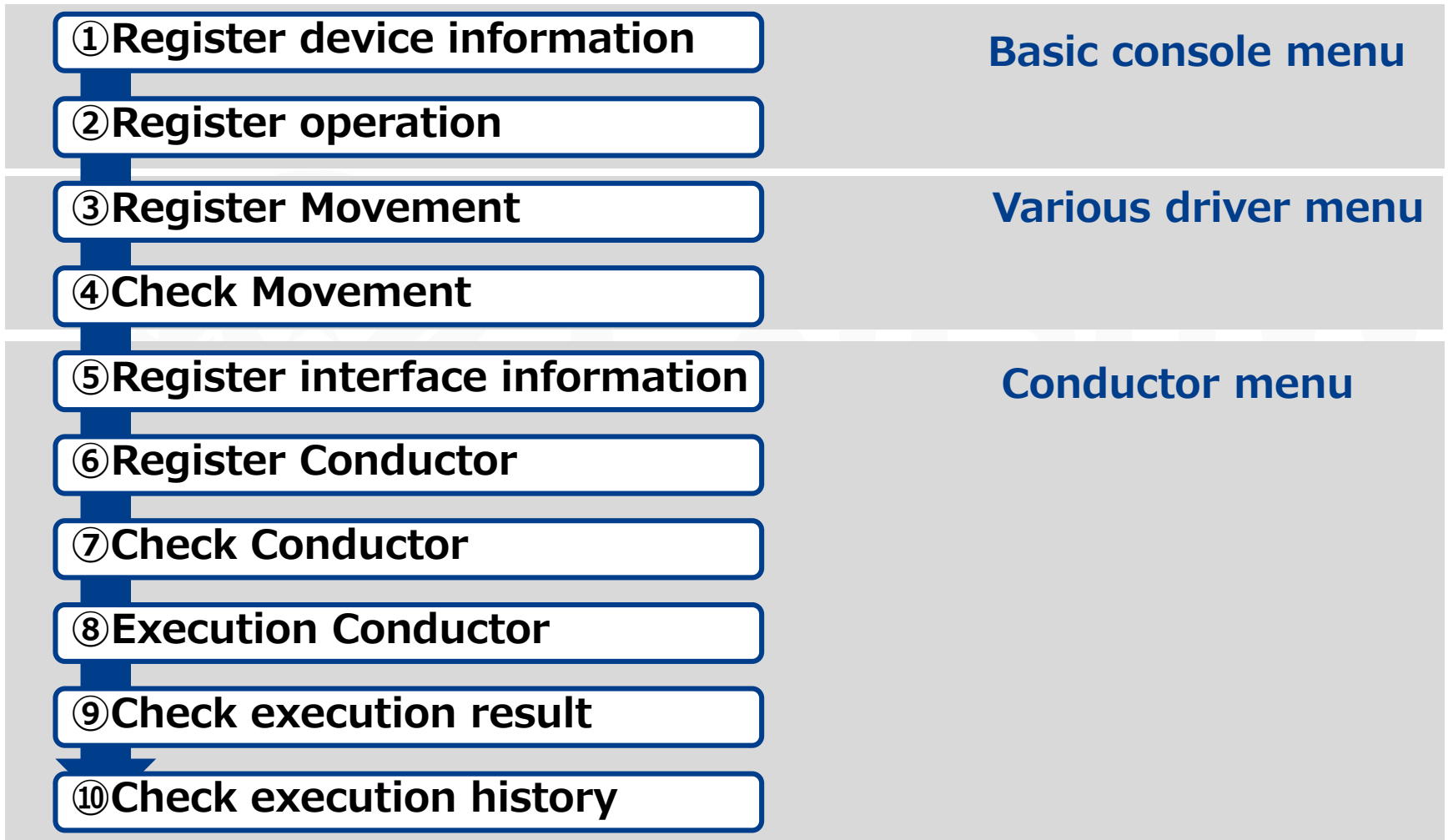
Contact administrator

## 2. About Conductor



## 2.1 Scenario (1/2)

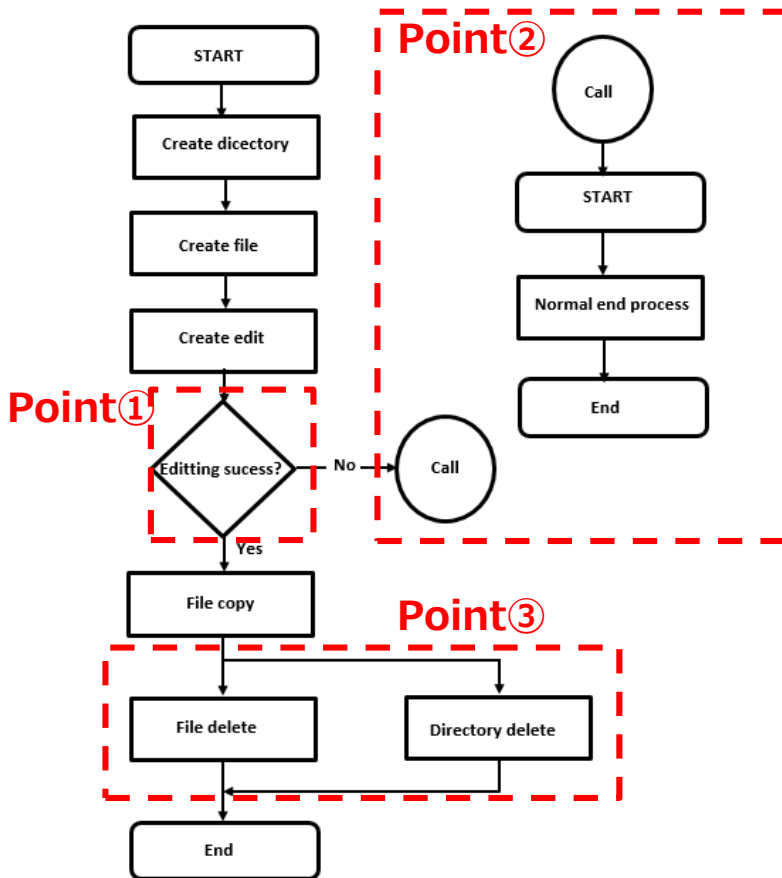
- The Scenario used in this document is as following.
- In this scenario, we will use Ansible-Legacy for the Ansible driver.



## 2.1 Scenario (2/2)

- In order to experience the Conductor functions in this document, we will create a Conductor similar to the following flowchart.

### ● Flowchart



### □ Conductor function features

#### □ Point ①

Conditional branch function according to the success/end judgment of pre-processing.

#### □ Point ②

Registered Operation/Conductor Call function.

#### □ Point ③

Movement parallel processing function.

## 2.2 Preparation

### ●Create IaC(1/2)

In this scenario, Ansible-Legacy is explained with the use of an example.  
Save the following **IaC as an yml file for each module.**

※Character code is "UTF-8", Newline code is "LF", file name extension is "yaml"format.  
Please be careful about indents.

```
- name: create directory
  file:
    path: /tmp/{{ item.dir }}
    state: directory
    mode: 0755
  with_items:
    - { dir: "{{ VAR_dir_name_1 }}" }
    - { dir: "{{ VAR_dir_name_2 }}" }

- name: remove directory
  file:
    path=/tmp/{{ VAR_dir_name_1 }}
    state=absent

- name: create file
  file:
    path=/tmp/{{ VAR_dir_name_1 }}/{{ VAR_file_name }}
    state=touch
    mode=0755
```

## 2.2 Preparation








### ● Create IaC(2/2)

Similarly, save the following **IaC as yaml files** for each module.

- name: remove file  
file:  
  path=/tmp/{{VAR\_dir\_name\_1 }}/{{VAR\_file\_name }}  
  state=absent
- name: copy file  
copy:  
  src=/tmp/{{VAR\_dir\_name\_1 }}/{{VAR\_file\_name }}  
  dest=/tmp/{{VAR\_dir\_name\_2 }}/{{VAR\_file\_name }}  
  owner=root  
  group=root  
  mode=0644
- name: edit file  
copy:  
  dest=/tmp/{{VAR\_dir\_name\_1 }}/{{VAR\_file\_name }}  
  content= {{VAR\_edit\_param\_1 }}
- name: forced termination  
fail: msg={{VAR\_message\_text }}



### ● Created image

Name	Update date/time	Type	Size
 copy_file.yml	2020/10/30 9:55	YML file	1 KB
 create_directory.yml	2020/10/30 9:55	YML file	1 KB
 create_file.yml	2020/10/30 9:55	YML file	1 KB
 edit_file.yml	2020/10/30 9:55	YML file	1 KB
 forced_termination.yml	2020/10/30 9:55	YML file	1 KB
 remove_directory.yml	2020/10/30 9:55	YML file	1 KB
 remove_file.yml	2020/10/30 9:55	YML file	1 KB

### 3. Operation

## 3.1 Register Target host

### ●Register Target host

"Basic Console" menu group >> "Device list" menu >> "Register" submenu >> "Start register" button.

- ① Enter the following "Host name", "IP address", "Login ID", "Management", "Login password" and "Authentication method".
- ② Click the "Register" button.

Register

Managed system item number	Host name *	IP address *	EtherWakeOnLan	
			MAC address	Network device name
Auto-input				

※\* is a required item.

Back Register

**1** Enter value for the item

Item	Value
Host name	testserver
IP address	(Free value)
Login ID	(Free value)
Management	●
Login password	(Free value)
Authentication method	Password authentication

**POINT**

This scenario assumes that you want to have a ssh password connection to the Target host. Please enter "IP Address", "Login ID", "Login password" appropriate to the settings set in the users environment.

## 3.2 Register operation

### ●Register operation

"Basic Console" menu group >> "Input list" menu >> "Register" submenu >> "Start register" button.

- ① Enter "Operation name", "Schedule date for execution".
- ② Click "Registration" button.

Register

No.	Operation ID	Operation name*	Scheduled date for execution*	Remarks
Auto-input	Auto-input	<input type="text"/>	<input type="text"/>	

※\*is a required item.

Back

Register

1

Enter value for item

Item	Value
Operation name	operation1
Schedule date for execution	(Free date/time)

2

POINT

The process will not be executed at the date and time specified here.

## 3.3 Register IaC (1/2)

### ●Register IaC

"Ansible-Legacy" menu group >> "Playbook files" menu >> "Register" submenu  
>> "Start register" button.

- ① Input "Playbook file name".  
Click the "Reference" button in the "Playbook files" column.  
**Upload all previously created yml files.**  
(Click "upload in Advance" button)
- ② Click "Registration" button.

Exastro IT Automation Ansible-Legacy

User name [System Administrator]  
Login ID [administrator]  
Change password Logout

Menu

- Main menu
- Movement list
- Playbook files
- Movement details
- Substitution value auto-registration setting
- Target host
- Substitution value list
- Execution
- Check operation status
- Execution list

Description	▽Open
Display filter	▽Open
List/Update	▽Open
Register	△Close

Playbook ID

Auto-Input

Playbook name

Playbook files

Chosse File No file chosen

Upload in advance

Upload status:

\* is a required item.

Back Register

Enter value for item

Item	Value
Playbook file name	<free>
Playbook file	<free> .yaml

POINT

Please refer to "2.2 Pre-preparation".  
For more information on how to  
create IaC.

## 3.3 Register IaC (2/2)

### ●Register IaC

- When you're done registering, the list should be something like this:

List/Update											
History	Duplicate	Update	Discard	Playbook ID	Playbook name	Playbook files	Movement playbook link	Access permission	Remarks	Last update date/time	Last updated by
								Role to allow access			
History	Duplicate	Update	Discard	9	copy_file	<a href="#">copy_file.yml</a>	<a href="#">Movement playbook link</a>			2022/02/01 11:16:19	System Administrator
History	Duplicate	Update	Discard	10	create_directory	<a href="#">create_directory.yml</a>	<a href="#">Movement playbook link</a>			2022/02/01 11:16:43	System Administrator
History	Duplicate	Update	Discard	11	create_file	<a href="#">create_file.yml</a>	<a href="#">Movement playbook link</a>			2022/02/01 11:17:08	System Administrator
History	Duplicate	Update	Discard	12	edit_file	<a href="#">edit_file.yml</a>	<a href="#">Movement playbook link</a>			2022/02/01 11:17:51	System Administrator
History	Duplicate	Update	Discard	13	forced_termination	<a href="#">forced_termination.yml</a>	<a href="#">Movement playbook link</a>			2022/02/01 11:18:21	System Administrator
History	Duplicate	Update	Discard	14	remove_directory	<a href="#">remove_directory.yml</a>	<a href="#">Movement playbook link</a>			2022/02/01 11:18:46	System Administrator
History	Duplicate	Update	Discard	15	remove_file	<a href="#">remove_file.yml</a>	<a href="#">Movement playbook link</a>			2022/02/01 11:19:05	System Administrator

Filter result count: 7

Output Excel

## 3.4 Register Movement (1/2)

### ●Register Movement

"Ansible-Legacy" menu group >> "Movement list" menu >> "Register" submenu  
>> "Start register" button.

- ① Input "Movement name" and select "Host specific format".
- ② Click the "Register" button.

The screenshot shows the 'Register' form in the Exastro Ansible-Legacy web interface. The form is titled 'Register' and is part of the 'Movement list' submenu. It contains several fields and a table for configuration.

**Form Fields:**

- Movement Name:** A text input field, highlighted with a red box and labeled with a red circle '1'.
- Host specific format:** A dropdown menu, highlighted with a red box and labeled with a red circle '1'.
- Register button:** An orange button, highlighted with a red box and labeled with a red circle '2'.

**Table: Dedicated information for ansible**

Item	Value
Movement name	<Free>
Host specific format	IP

**POINT:** Please create one Movement for each yml file.

## 3.4 Register Movement (2/2)

### ● Register Movement

- When you're done registering, the list should be something like this:

#### List/Update

History	Duplicate	Update	Discard	Playbook ID	Playbook name	Playbook files	Movement playbook link	Access permission	Remarks	Last update date/time	Last updated by
								Role to allow access			
History	Duplicate	Update	Discard	9	copy_file	<a href="#">copy_file.yml</a>	Movement playbook link			2022/02/01 11:16:19	System Administrator
History	Duplicate	Update	Discard	10	create_directory	<a href="#">create_directory.yml</a>	Movement playbook link			2022/02/01 11:16:43	System Administrator
History	Duplicate	Update	Discard	11	create_file	<a href="#">create_file.yml</a>	Movement playbook link			2022/02/01 11:17:08	System Administrator
History	Duplicate	Update	Discard	12	edit_file	<a href="#">edit_file.yml</a>	Movement playbook link			2022/02/01 11:17:51	System Administrator
History	Duplicate	Update	Discard	13	forced_termination	<a href="#">forced_termination.yml</a>	Movement playbook link			2022/02/01 11:18:21	System Administrator
History	Duplicate	Update	Discard	14	remove_directory	<a href="#">remove_directory.yml</a>	Movement playbook link			2022/02/01 11:18:46	System Administrator
History	Duplicate	Update	Discard	15	remove_file	<a href="#">remove_file.yml</a>	Movement playbook link			2022/02/01 11:19:05	System Administrator

Filter result count: 7

Output Excel

## 3.5 Register Movement-Playbook link (1/2)

### Register Movement-Playbook link

"Ansible-Legacy" menu group >> "Movement playbook link" menu >> "Register" submenu >> "Start register" button.

- ① Input "Movement", "Playbook files" and "Include order"
- ② Click the "Register" button.

**Exastro IT Automation Ansible-Legacy**

Menu

- Main menu
- Movement list
- Playbook files
- Movement details
- Substitution value auto-registration setting
- Target host
- Substitution value list
- Execution
- Check operation status
- Execution list

Description

Display filter

List/Update

Register

Set the value for item

Item	Value
Movement	Select the create Movement
Playbook file	Select the register playbook
Include order	1

Associated item No. Movement\* Playbook files\* Include order\* Remarks Last update date/time Last updated by

Auto-input

※\* is a required item.

Back Register

#### POINT

Please create the same number of yml files as registered movement information.

## 3.5 Register Movement details (2/2)

### ● Register Movement details

When you're done registering, the list should be something like this:

List/Update														△Close
History	Duplicate	Update	Discard	Movement ID ↕	Movement Name ↕	Orchestrator ↕	Delay timer ↕	Dedicated information for ansible					Last update date/time ↕	Last updated by ↕
								Host specific format ↕	WinRM connection ↕	virtualenv ↕	Header section ↕	Optional pa		
History	Duplicate	Update	Discard	8	copy_file	Ansible Legacy		IP					2022/02/01 12:11:39	System Administrator
History	Duplicate	Update	Discard	9	create_directory	Ansible Legacy		IP					2022/02/01 12:11:57	System Administrator
History	Duplicate	Update	Discard	10	create_file	Ansible Legacy		IP					2022/02/01 12:12:10	System Administrator
History	Duplicate	Update	Discard	11	edit_file	Ansible Legacy		IP					2022/02/01 12:12:24	System Administrator
History	Duplicate	Update	Discard	12	forced_termination	Ansible Legacy		IP					2022/02/01 12:14:22	System Administrator
History	Duplicate	Update	Discard	13	remove_directory	Ansible Legacy		IP					2022/02/01 12:14:47	System Administrator

Filter result count: 6

Output Excel

## 3.6 Register Movement and Host connected to the operation

### ●Register Movement and Host connected to the operation

"Ansible-Legacy" menu group >> "Target host" menu >> "Register" submenu >> "Start register" button.

- ① Input "Operation" , "Movement" and "Host".
- ② Click the "Register" button.

**Exastro IT Automation Ansible-Legacy**

**Menu**

- Main menu
- Movement list
- Playbook files
- Movement details
- Substitution value auto-registration setting
- Target host
  - Substitution value list
  - Execution
  - Check operation status
  - Execution list

**Description**

**Display filter**

**List/Update**

**Register**

**Set value to item**

Item	Value
Operation	operation1
Movement	Created Movement
Host	testserver

**Item No.** Auto-input

**Operation\***

**Movement\***

**Host\***

※\* is a required item.

**Back** **Register**

**POINT** Please register all the created Movements.

## 3.7 Substitution value list(1/2)

### ●Substitution value list

"Ansible-Legacy" menu group >> "Substitution value list" menu >> "Register" submenu >> "Start register" button.

- ① Input "Operation" , "Movement" , "Host" , "Variable name" and "Specific value".
- ② Click the "Register" button.

Exastro IT Automation Ansible-Legacy

User name [System Administrator]  
Login ID [administrator]  
Role Change password Logout

Menu

- Main menu
- Movement list
- Playbook files
- Movement playbook link
- Substitution value auto-registration setting
- Target host
- Substitution value list
- Execution
- Check operation status
- Execution list

Description ▾Open

Display filter ▾Open

List/Update ▾Open

Register ▴Close

Item No.	Operation *	Movement *	Host *	Variable name *	Sensitivity
Auto-input	<input type="text"/>	Select operation	Select operation	Select Movement	OFF ▾

※ \* is a required item.

Back Register

### Set value to item

Item	Value
Operation	operation1
Movement	See next page
Host	testserver
Variable name	See next page

## 3.7 Substitution value list (2/2)

### ●Substitution value list

Please use the list below for registering substitute values.

Operation	Host	Movement: Variable	Specific value	Substitute order
1:operation1	1:Testserver	1:copy_file:1:VAR_dir_name_1	dir1	
1:operation1	1:Testserver	1:copy_file:2:VAR_file_name	testfile	
1:operation1	1:Testserver	1:copy_file:3:VAR_dir_name_2	dir2	
1:operation1	1:Testserver	2:create_directory:4:VAR_dir_name_1	dir1	
1:operation1	1:Testserver	2:create_directory:5:VAR_dir_name_2	dir2	
1:operation1	1:Testserver	3:create_file:6:VAR_dir_name_1	dir1	
1:operation1	1:Testserver	3:create_file:7:VAR_file_name	testfile	
1:operation1	1:Testserver	4:edit_file:8:VAR_dir_name_1	dir1	
1:operation1	1:Testserver	4:edit_file:9:VAR_file_name	testfile	
1:operation1	1:Testserver	4:edit_file:10:VAR_edit_param_1	param1	
1:operation1	1:Testserver	5:forced_termination:11:VAR_message_text	testmsg_fail	
1:operation1	1:Testserver	6:remove_directory:12:VAR_dir_name_1	dir1	
1:operation1	1:Testserver	7:remove_file:13:VAR_dir_name_1	dir1	
1:operation1	1:Testserver	7:remove_file:14:VAR_file_name_1	testfile	

## 3.8 Register Conductor (1/7)

### ●Register Conductor

Input “Conductor name” in the Conductor menu group.

- ① Input Conductor Class edit
- ② Drag and drop “Movements” and “Functions” displayed from the right side of the screen to center of the screen.
- ③ Click “Registration” button.

Enter value for item

Item	Value
Name	Conductor_1

Drag and drop

※ Please see the next section for information regarding registering the conductor used in this guide.

## 3.8 Register Conductor(2/7)

### ●Register Conductor

Please create the Conductor as shown in the figure below.

Input value to item

Item	Value
Name	Conductor_2

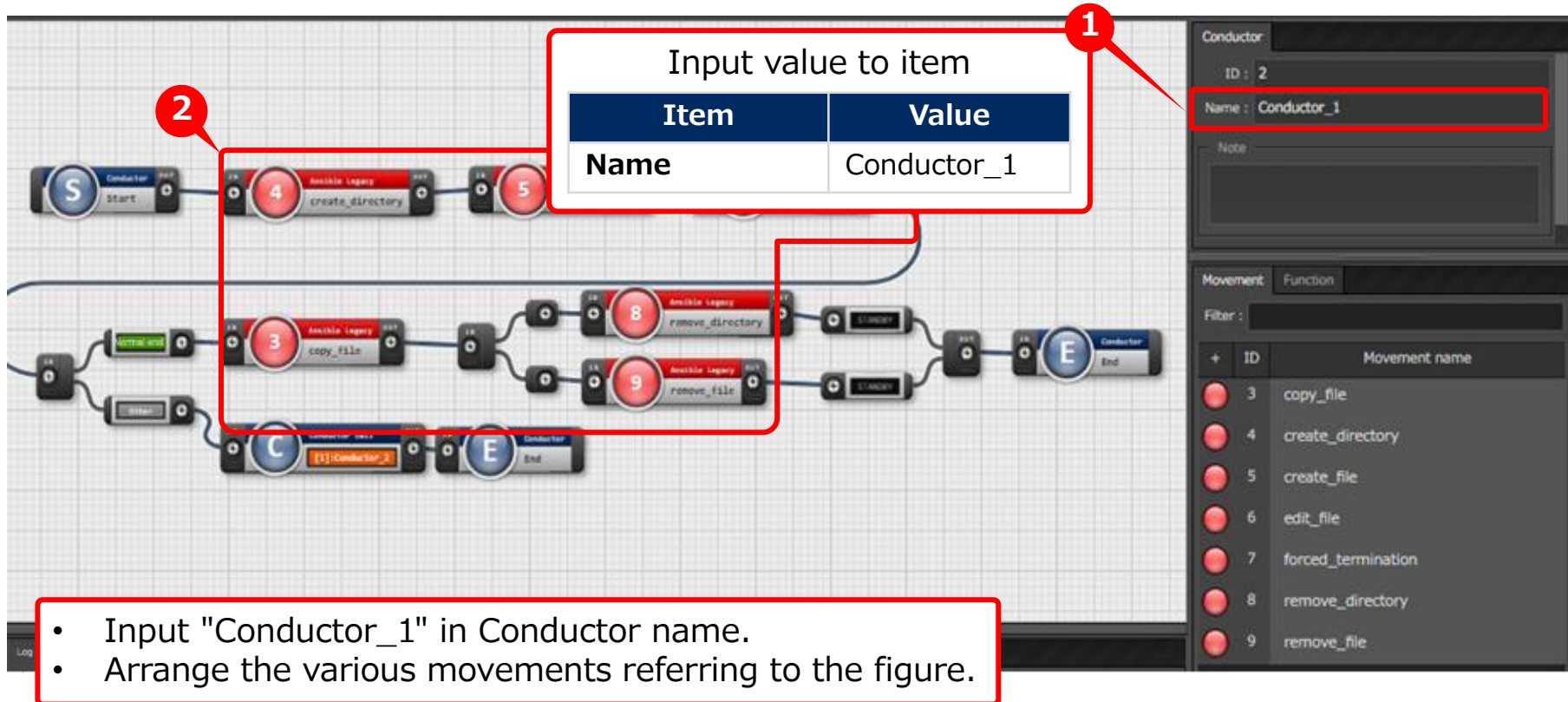
- Input "Conductor\_2" in "Conductor name".
- Drag and drop "forced\_termination" from the Movement.
- Connect "IN" and "OUT" as shown in the figure.
- Click the "Register" button at the bottom of the screen.

## 3.8 Register Conductor(3/7)

### ●Register Conductor

The overall view of "Conductor\_1" is as follows.

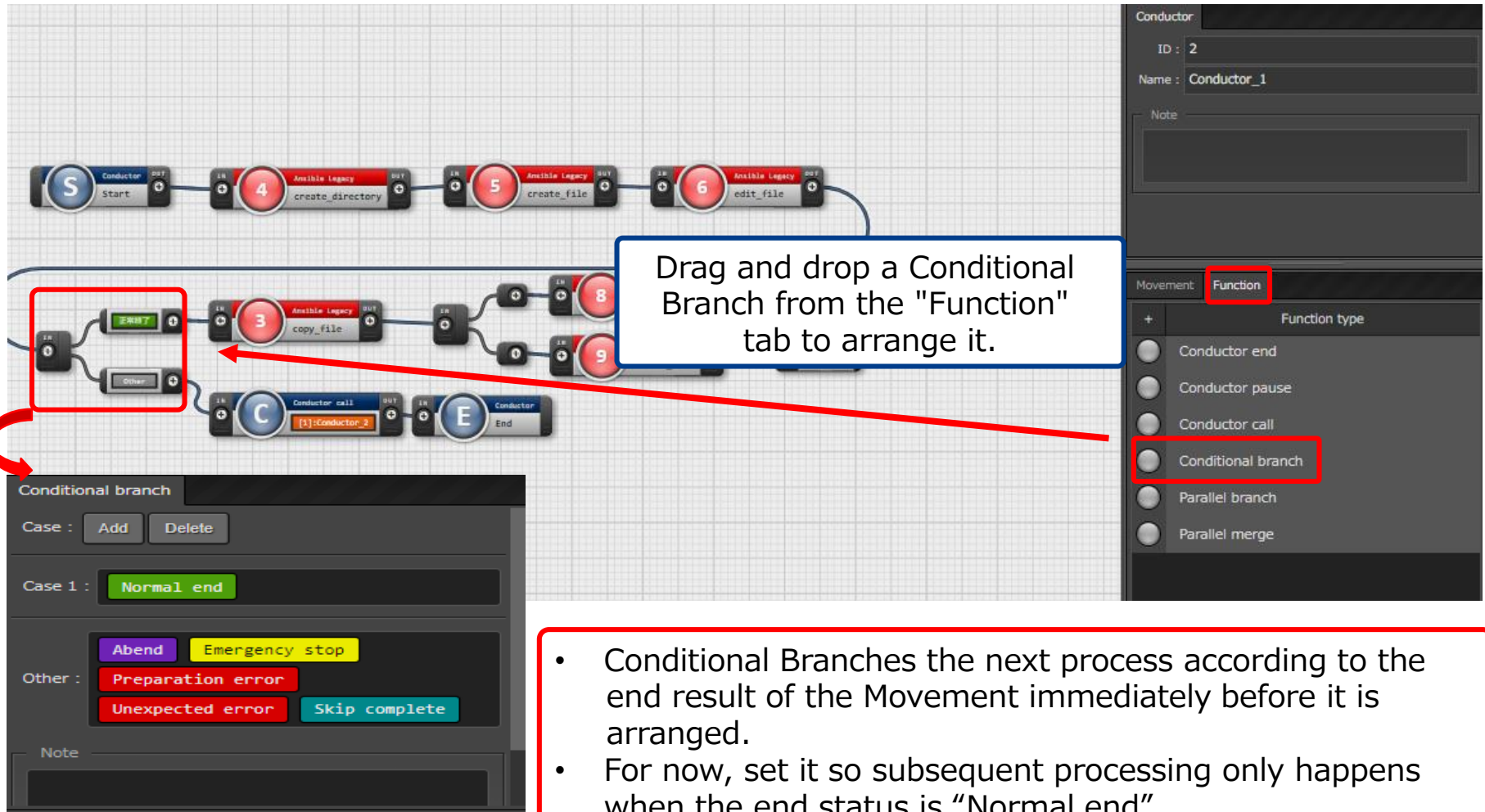
The details are explained on the next pages.



## 3.8 Register Conductor(4/7)

### ●Register Conductor

Please create the Conductor as shown in the figure below.



## 3.8 Register Conductor (5/7)

### ● Register Conductor

Please create the Conductor as shown in the figure below.

Drag and drop Conductor Call from the "Function" tab to arrange it.

Conductor call configuration panel:

- Default skip : ☐
- Conductor select:  
Conductor : [1]:Conductor\_2  
Conductor select Clear
- Operation select:  
Operation :   
Operation select Clear
- Note:

Function type list:

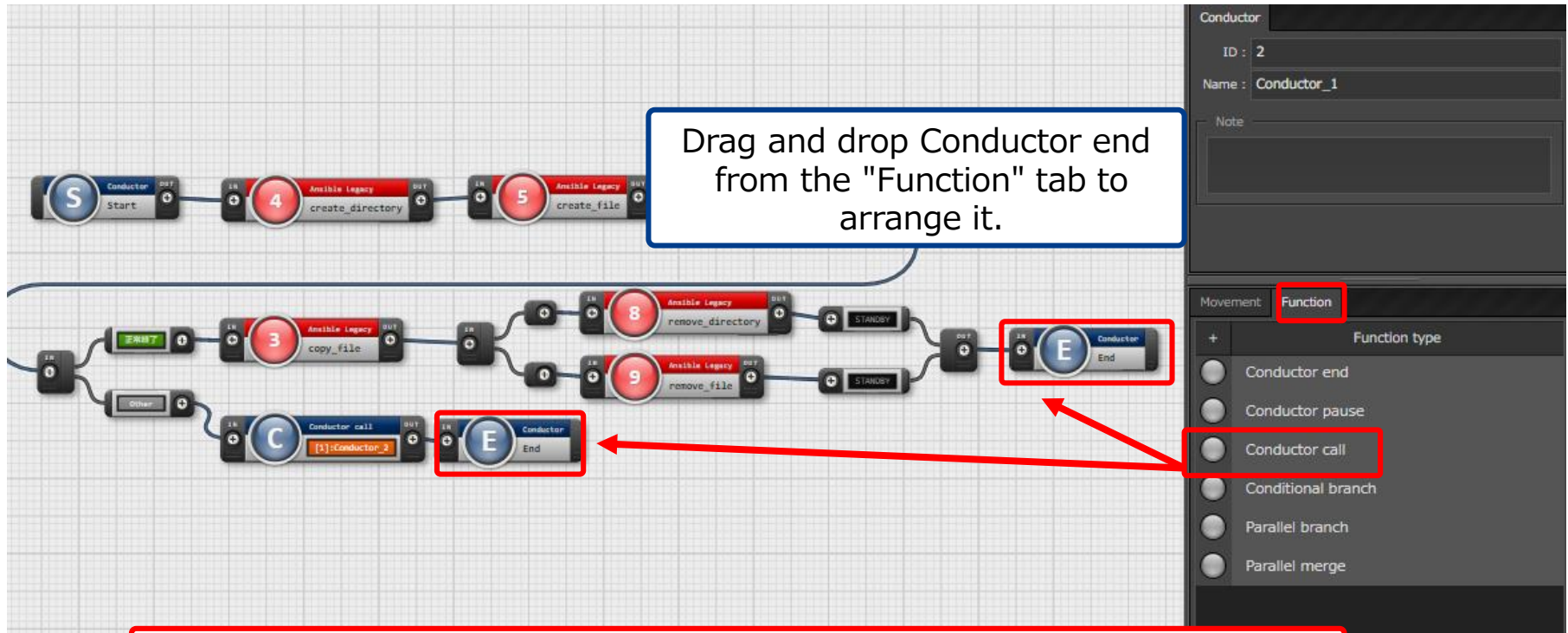
- Conductor end
- Conductor pause
- Conductor call
- Conditional branch
- Parallel branch
- Parallel merge

- “Conductor call” can call in and execute previously set Conductors and Operations.
- Specify the previously created Conductor\_2.

## 3.8 Register Conductor (6/7)

### ● Register Conductor

Please create the Conductor as shown in the figure below.

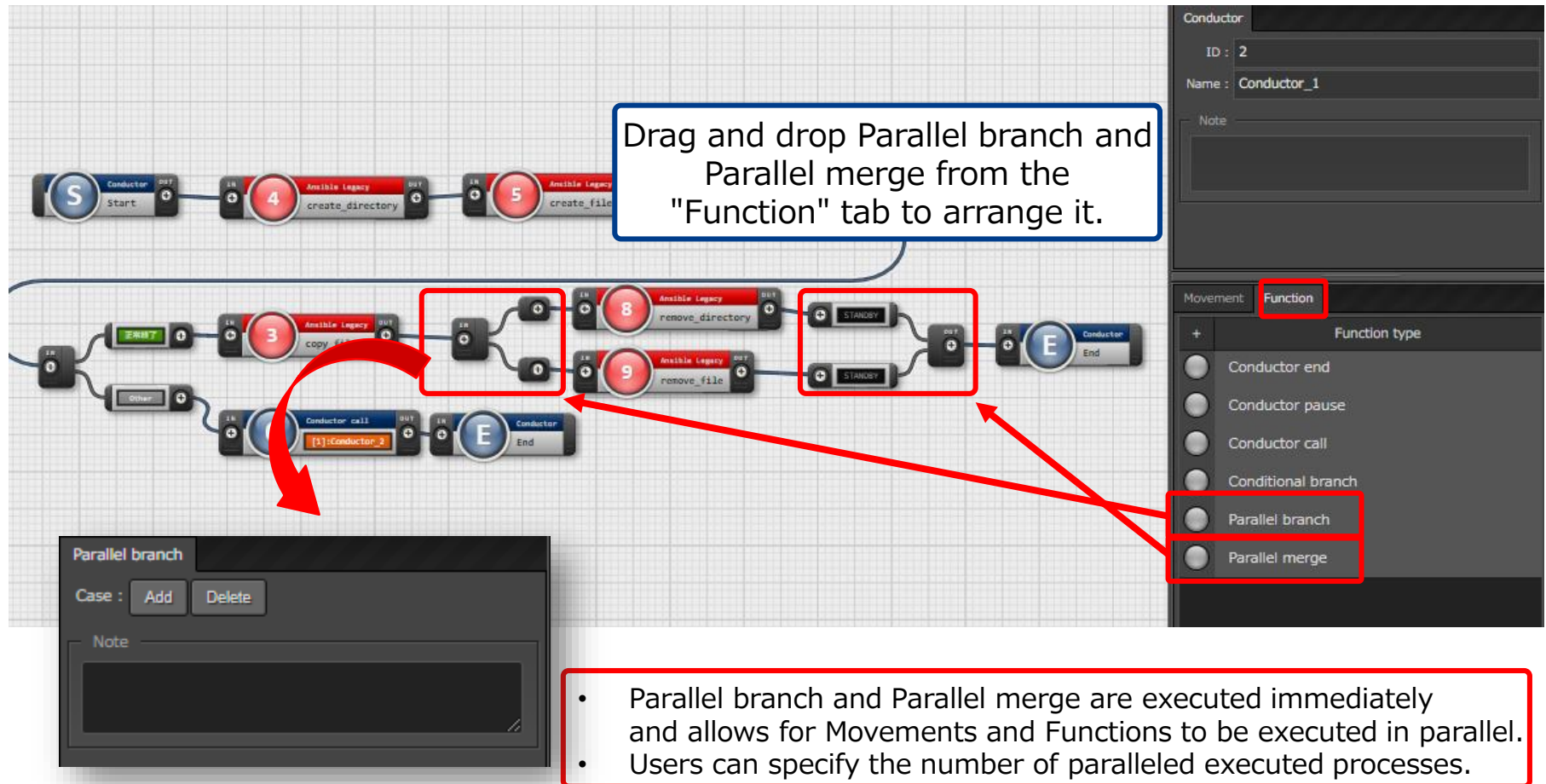


- The “Conductor end” node is placed at the end of the process string.
- It is also deployed at the end of the branch process introduced in (5/7).

## 3.8 Register Conductor (7/7)

### ● Register Conductor

Please create the Conductor as shown the figure below.



## 3.9 Conductor execution

### ●Conductor execution

"Conductor" menu group >> "Conductor execution" menu.

- ① Determine the execution date and time from the "Schedule date/time" item in the "Conductor [list]" submenu.
- ② Select "Conductor\_1" in the "Conductor name" , "Conductor [List]" submenu items.
- ③ Select "operation" in the "operation name" , "operation [list]" submenu items.
- ④ Click the "Execute" button.

The screenshot shows the Exastro Conductor execution interface. It includes a 'Description' section, a 'Scheduling' section with a 'Specify the scheduled date/time in (YYYY/MM/DD)' field, and a 'Conductor [filter]' section. Below these are three submenus: 'Conductor [List]', 'Operation [Filter]', and 'Operation [List]'. Each submenu has a table of items. Red callouts with numbers 1 through 4 point to specific elements: 1 points to the 'Schedule date/time' field in the 'Scheduling' section; 2 points to the 'Conductor\_1' row in the 'Conductor [List]' table; 3 points to the 'Operation\_1' row in the 'Operation [List]' table; and 4 points to the 'Execute' button at the bottom right. A large diagram on the right side of the interface shows a complex flowchart of operations and their dependencies.

**1** Select the following value

Item	Value
Schedule date/time	Optional

**2** Select the following value

Item	Value
Conductor name	Conductor_1

**3** Select the following value

Item	Value
Operation name	Operation_1

**4** Execute

## 3.10 Conductor confirmation

### Conductor confirmation

- Selecting a running or an already executed movement will move you to a screen where you can check the logs and the operation status.

The screenshot displays the 'CHECKING' interface of the Conductor system. On the left, a workflow diagram shows a sequence of operations: 'Start' (S), 'create\_directory' (DONE), 'create\_file' (DONE), 'edit\_file' (DONE), 'copy\_file' (DONE), 'remove\_directory' (DONE), 'remove\_file' (COMPLETE), and 'End' (DONE). A red box highlights the 'create\_directory' operation. A large red arrow points from this box to the 'Target Operation' table on the right.

The 'Target Operation' table shows the following details:

Item	Value
Execution No.	51
Execution type	Normal
Status	Completed
execution engine	Ansible Engine
Caller symphony	
Caller conductor	Sample1
Execution user	System Administrator
ID	1
Name	Legacy1
Delay timer (minutes)	
Dedicated information for ansible	Host specific format
No.	1
Name	Operation1
ID	1
Host management	confirmation
Substitution value	confirmation
Input data	Populated data
Output data	Result data
Scheduled date/time	
Start date/time	2020/11/11 08:44:45
End date/time	2020/11/11 08:44:58

The 'Progress status(Execution log)' section shows the following log entry:

```
>rotate_src": null,  
"sollevel": null,  
"serole": null,  
"setype": null,  
"seuser": null,  
"src": null,  
"state": "directory",  
"unsafe_writes": null  
},  
"mode": "0755",  
"owner": "root",  
"path": "/root/test",  
"size": 0,  
"state": "directory",  
"uid": 0  
}  
META: ran handlers  
META: ran handlers  
PLAY RECAP *****
```



**Exastro**