IT Automation

Host group management
Menu creation
【Practice】

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

Exastro IT Automation Version 1.7.2

Exastro developer

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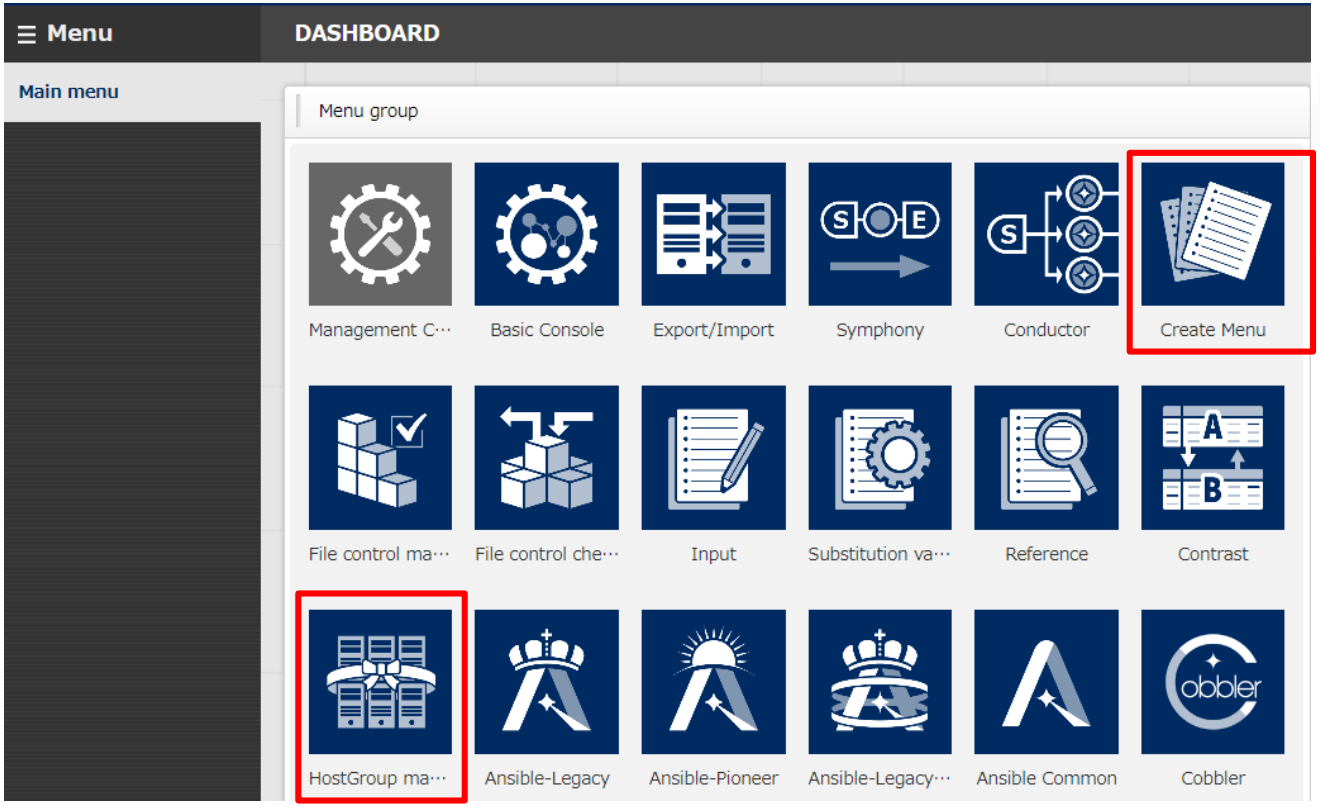
1. Introduction

1.1 About this document

About this document

This document will guide users through a practice scenario where users will be able to get some hands on experience to get a deeper understanding about the following functions.
We will use Ansible Legacy to execute the operations.

- Host group Management
- Create menu



Work environment

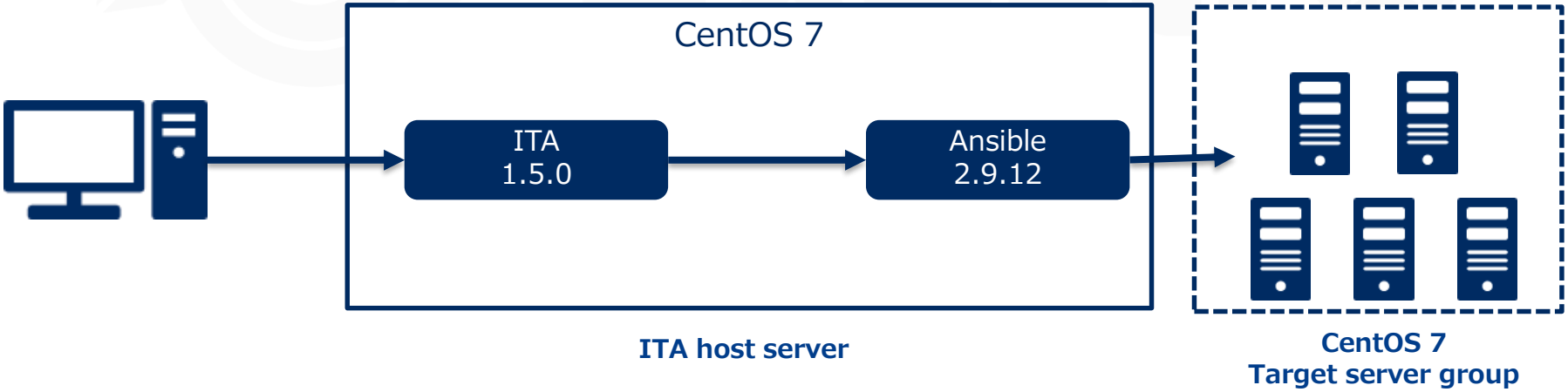
The work environment used in this document is as follows. Please prepare 5 servers in addition to the ITA Host server.(※1)The additional servers will be for operations.

ITA host server

- CentOS 7 (※2)
- ITA 1.5.0
- Ansible 2.9.12

Target

- CentOS 7.8 (※3) … 5 servers

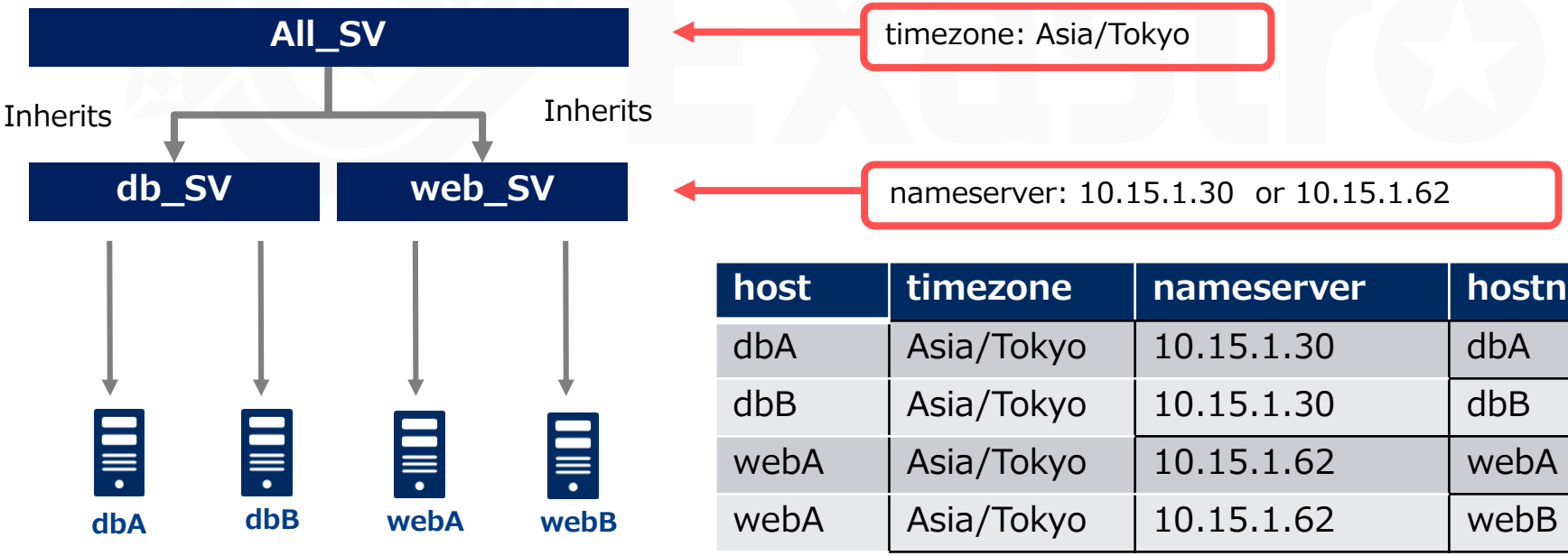


※1 While we recommend that you prepare 5 servers in order to get the best experience, it is possible to complete this scenario with 3~4 servers.
※2 Now CentOS7 will be used as the host server, but ITA can be installed on OS RHEL7 and RHEL8.
※3 Any OS compatible with Ansible can be used.

Scenario 1. Set basic settings for the whole server

Use the host group and menu creation functions to execute the tasks below.

① Set a common time zone for the parent host group "All_SV".
② Set different IP address of DNS server for child host group "db_SV" and "web_SV".
③ Set individual host name for each host.



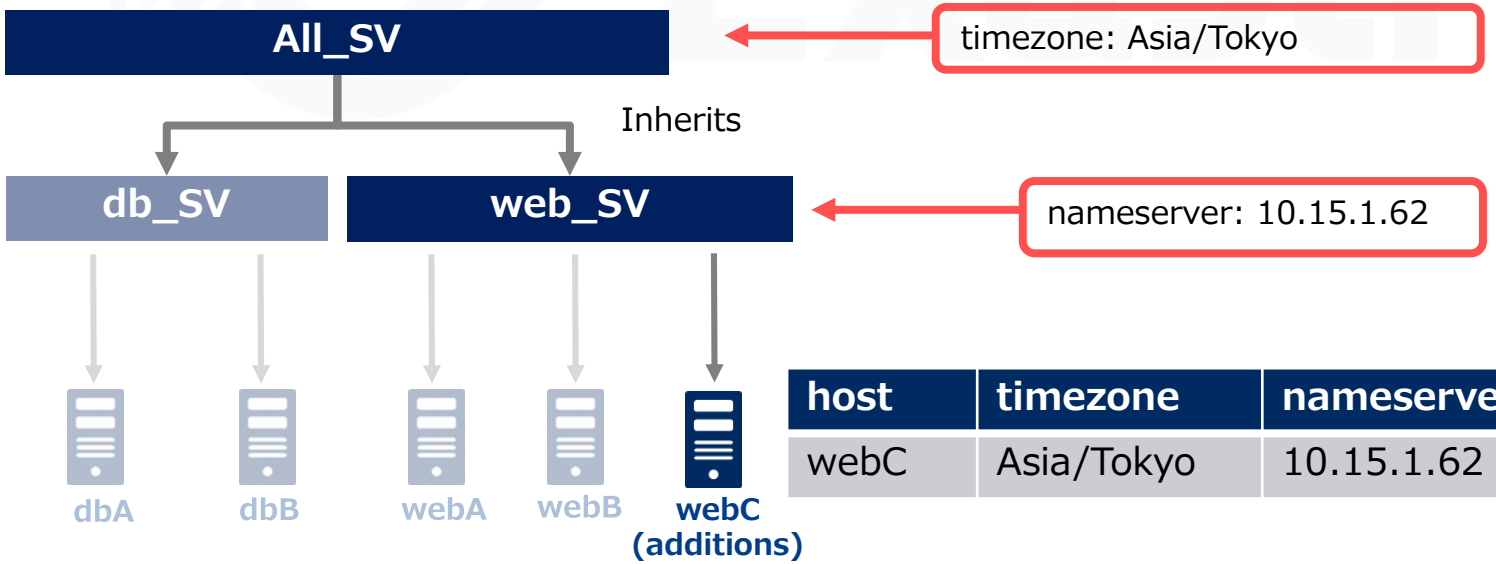
host	timezone	nameserver	hostname
dbA	Asia/Tokyo	10.15.1.30	dbA
dbB	Asia/Tokyo	10.15.1.30	dbB
webA	Asia/Tokyo	10.15.1.62	webA
webA	Asia/Tokyo	10.15.1.62	webB

Scenario 2 - Execute only on the additional server

This scenario assumes that the operation done in the previous section is completed.
If the playbook is idempotent,

1)Add the additional server to host group.2)Execute the same operation settings completed.

However, there are some playbooks are not idempotent such as those that add to the file.
If this is applied repeatedly to the same host, excess Post Scripts and other troubles might occur.
Taking that into consideration, all operation in scenario 2 will take place on the additional servers.
The contents of the Conductor that is going to get executed are the same as the ones in scenario 1.

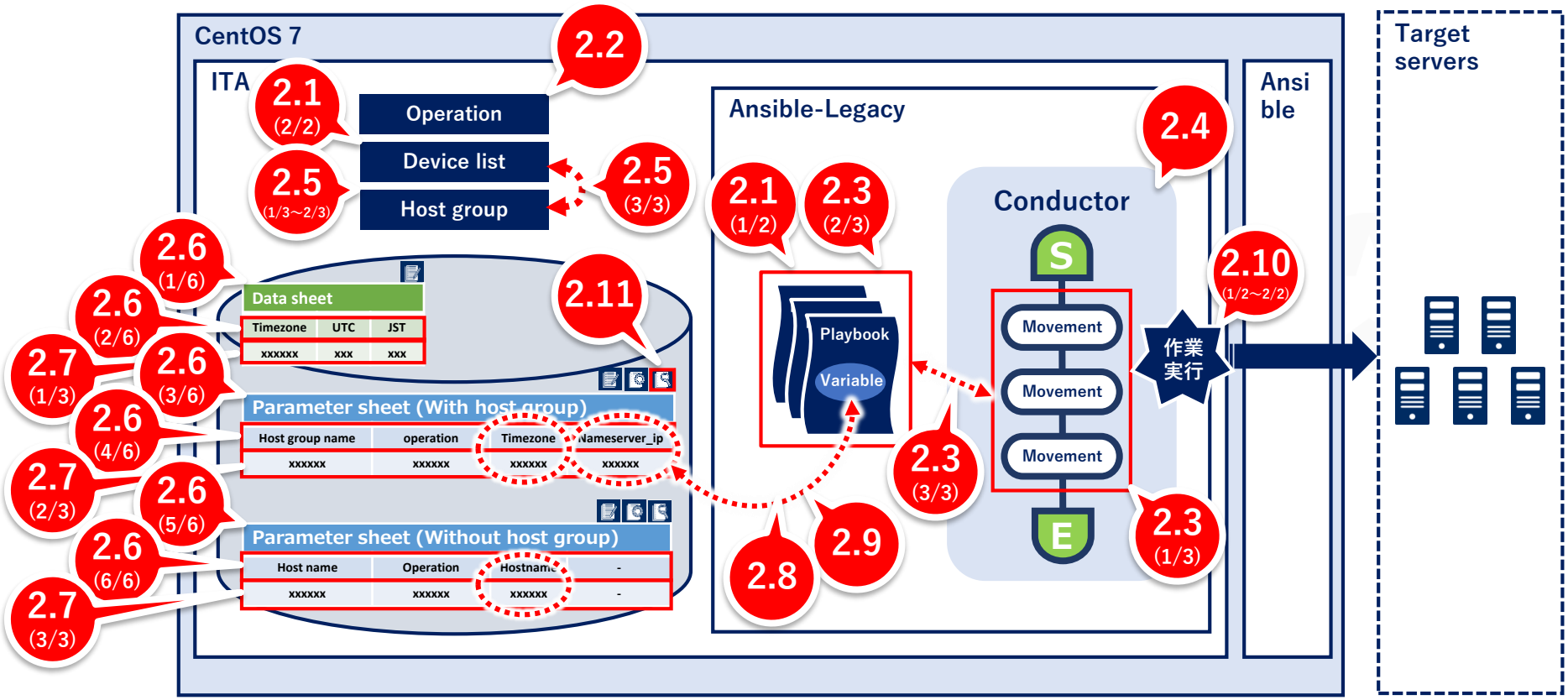


host	timezone	nameserver	hostname
webC	Asia/Tokyo	10.15.1.62	webC

2. Practice Scenario 1

Scenario 1 - Overview

The diagram below displays Scenario 1's procedure.



2.1 Preparation (1/2)

Playbook creation

This scenario will use the following three playbooks.
Please create a file with the following contents.
[Attention] Create the yml file with Character code " UTF-8", New line code "LF".

```
- name: Set Timezone
  timezone:
    name: "{{ VAR_locale_timezone }}"
```

File name: 1-set_timezone.yml
Changes the time zone to the specified value.
In this scenario, all host`s common value will be substituted.

```
- name: Set Hostname
  hostname:
    name: "{{ VAR_hostname }}"
```

File name: 2-set hostname.yml
Changes the hosts name.
In this scenario, value will be substituted per host.

```
- name: Add Nameserver
  shell: 'echo nameserver {{ VAR_nameserver_ip }} >>
/etc/resolv.conf'
```

File name: 3-set nameserver.yml
Adds postscript to /etc/resolv.conf.
As it isn't idempotent, it will be only be executed to each host once.

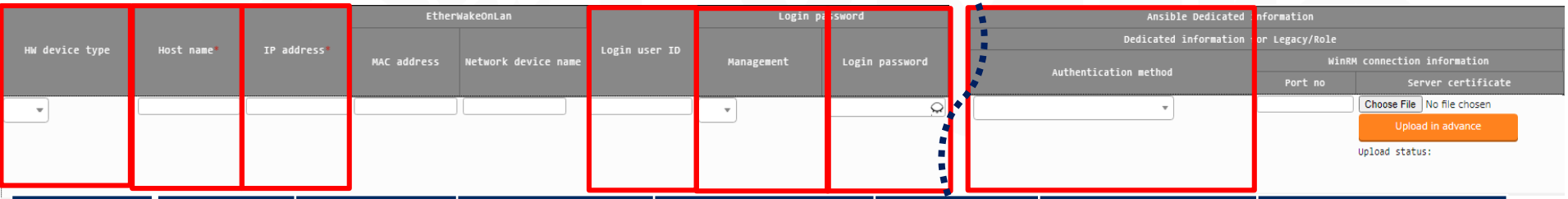
Target host registration

Register host to execute the work in ITA.
This time, we will register 5 servers.
※ webC is used in scenario 2.

Menu **: Basic Console > Device list**

① Click Register > Start Registration.

② Select or input the following information for each item and click "Register".



Item	HW Device type	Host name	IP Address	Login user ID	Manage ment	Login password	Authentication method
Server1	SV	webA	Target device IP Address	(Input free value)	●	(Input free value)	Password authentication
Server2		webB					
Server3		dbA					
Server4		dbB					
Server5		webC					

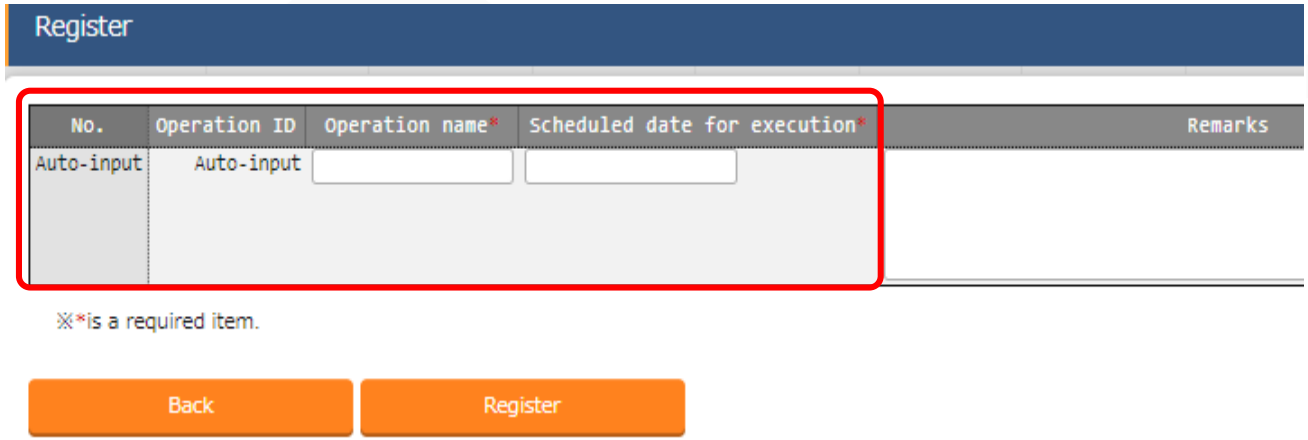
Register new operation

Create operation

Menu : Basic Console > Operation list

① Click Register > Start Registration.

② Input the following information for each item and click "Register".



Operation name	Scheduled date for execution
Basic settings all	(Enter free value)

※ "Scheduled date for execution" is just an item for management. It will not be executed automatically.

2.3 Movement configuration (1/3)

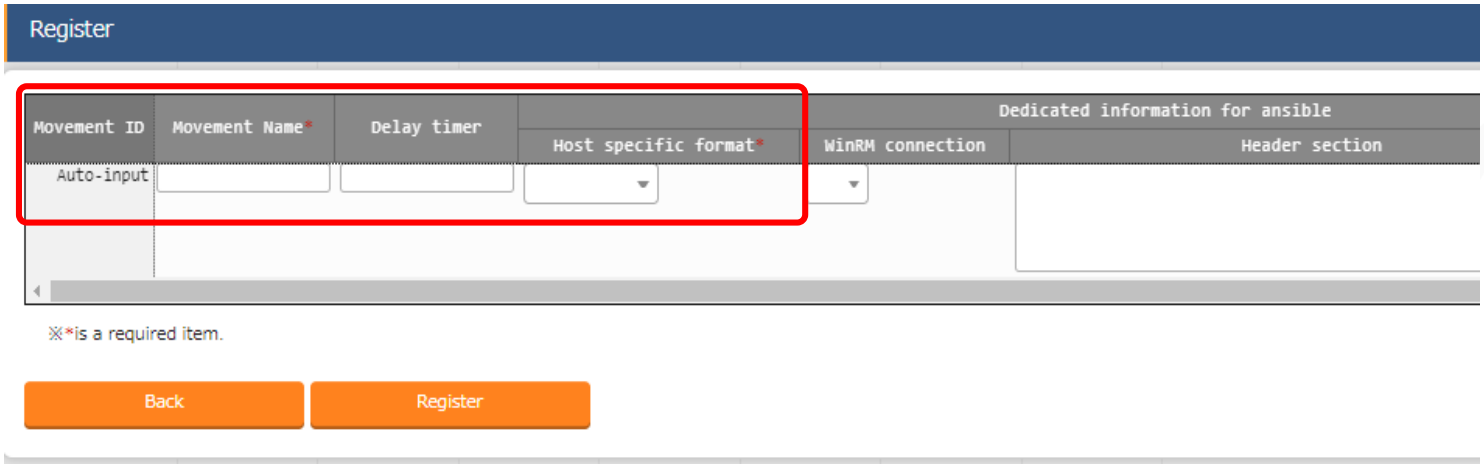
Create Movement

Register the Movements that is going to be associated with the playbooks.

Menu **: Ansible-Legacy > Movement list**

① Click Register > Start Registration.

② Select or input the following information for each item and click "Register".



Movement name	Host specification format
Set Timezone	IP
Set Hostname	IP
Add Nameserver	IP

2.3 Movement configuration (2/3)

Register playbook

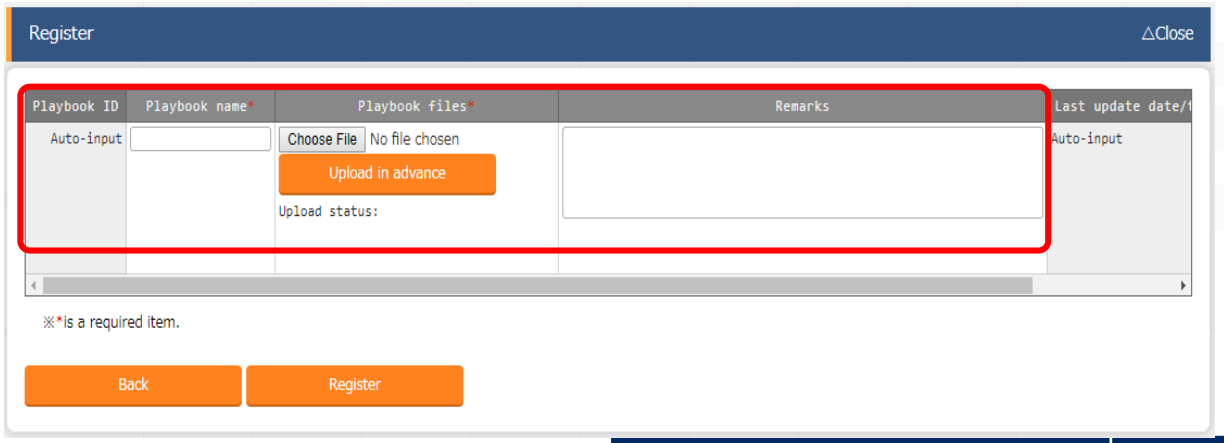
Register the created playbook in ITA.

Menu : Ansible-Legacy > playbook files

① Click Register > Start Registration.

② Select a playbook from "Browser" and click "Upload in advance".

③ Input the following information for each item and click "Register".



Playbook file name	Playbook file
set_timezone	1-set_timezone.yml
add_nameserver	2-.set_nameserver.yml
set_hostname	3-set_hostname.yml

2.3 Movement configuration (3/3)

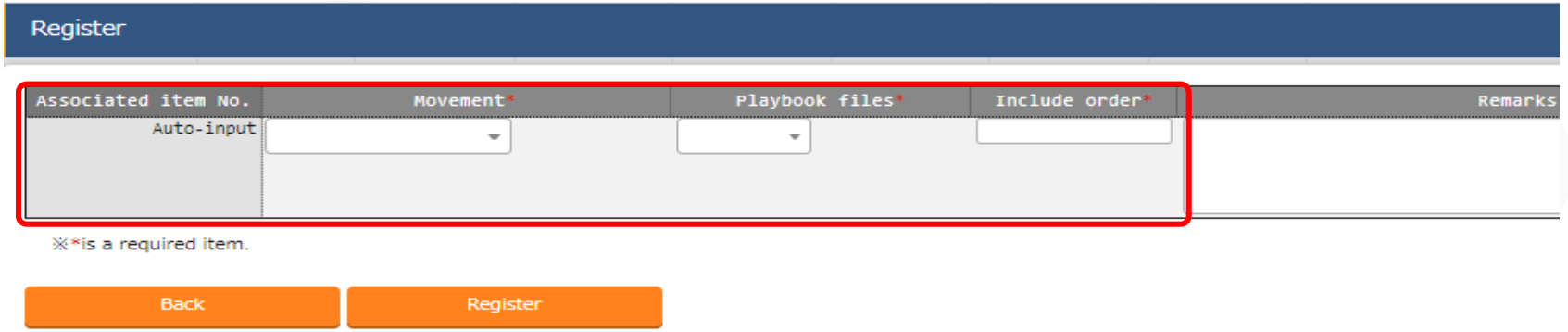
Register the playbook to Movement.

Link the created Movement and Playbook files.

Menu : Ansible-Legacy > Movement details

① Click Register > Start Registration.

② Select or input the following information for each item and click "Register".



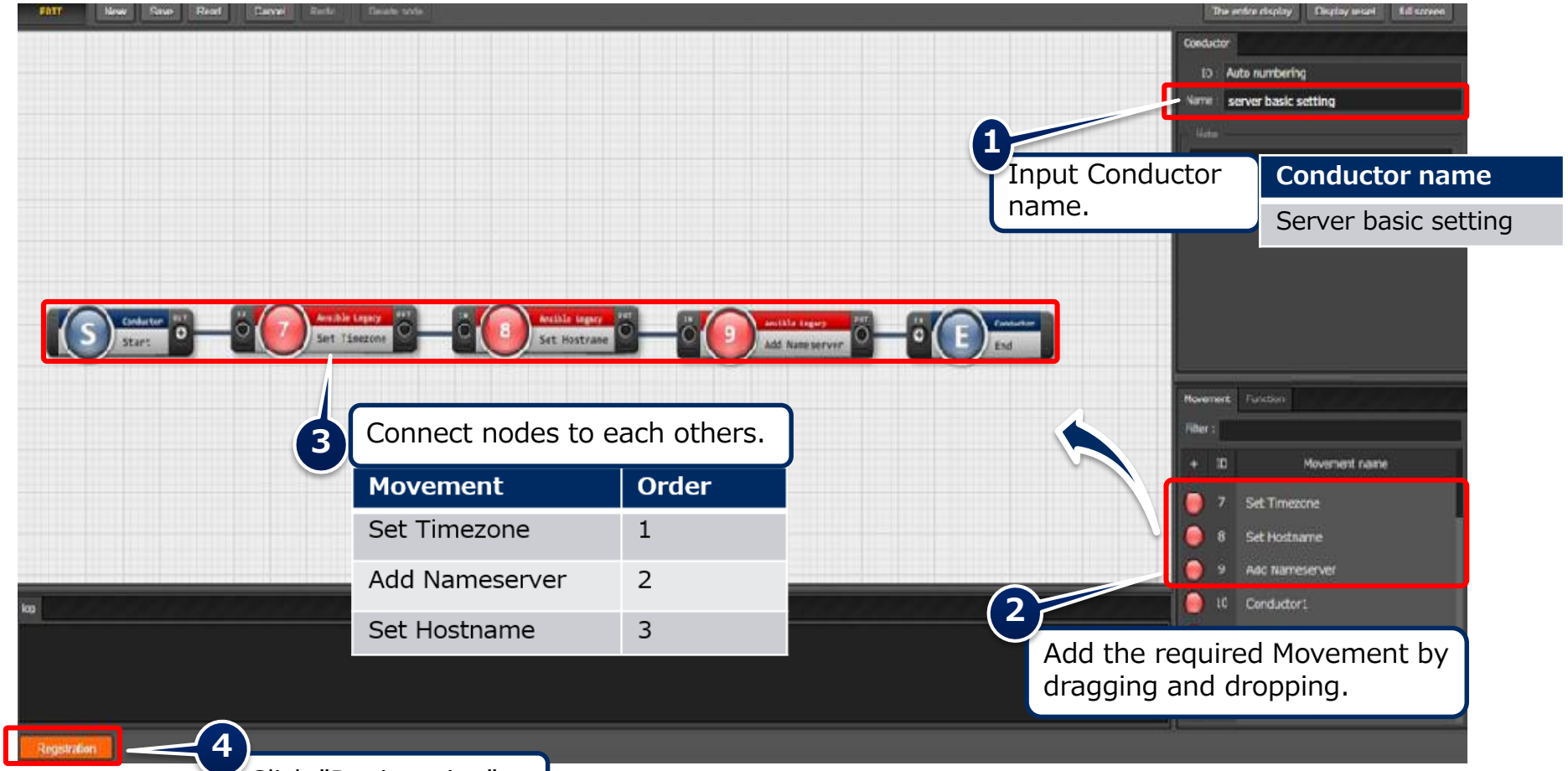
Related table

Movement	Playbook file	Include order
Set Timezone	set_timezone	1
Add Nameserver	add_nameserver	1
Set Hostname	set_hostname	1

Create Conductor

Create a Conductor that collects the defined Movements.

Menu: **Conductor > Conductor class edit**



2.5 Host group setting (1/4)

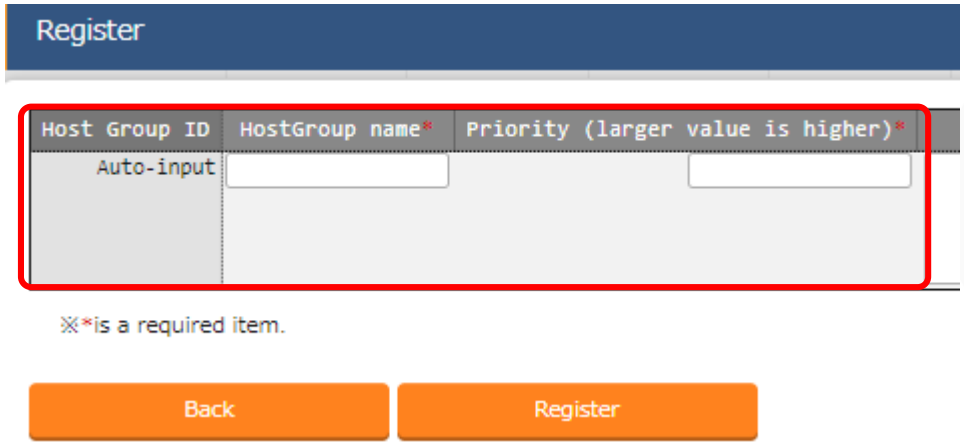
Define host groups

First, create the host groups to which the host belongs.

Menu : **Host group management > Host group management**

① Click Register > Start Registration.

② Select or input the following information for each item and click "Register".



Host group name	Priority order
All_SV	1
web_SV	2
db_SV	3

2.5 Host group setting (2/4)

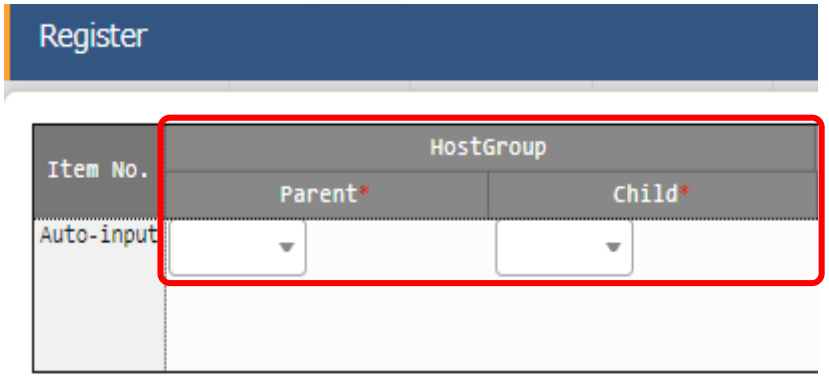
Define the parent-child relationship of host groups

Define the parent-child relationship in host groups.

Menu : **Host group management > Host group parent-child link list**

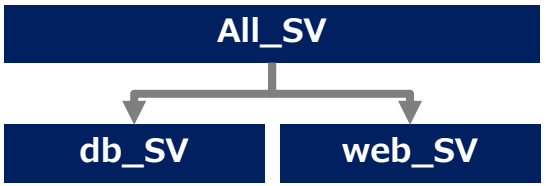
① Click Register > Start Registration.

② Select the following information for each item and click "Register".



Host group parent	Host group child
All_SV	web_SV
All_SV	db_SV

Image



2.5 Host group setting (3/4)

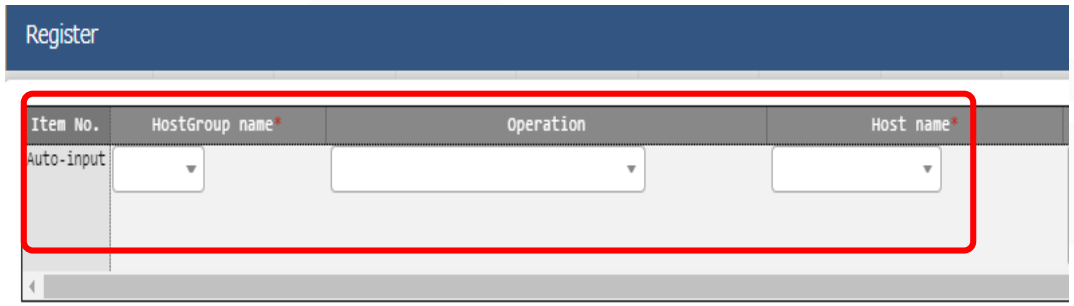
Register the host to host group

Link the target host with the created host group.

Menu : **Host group management > Host link list**

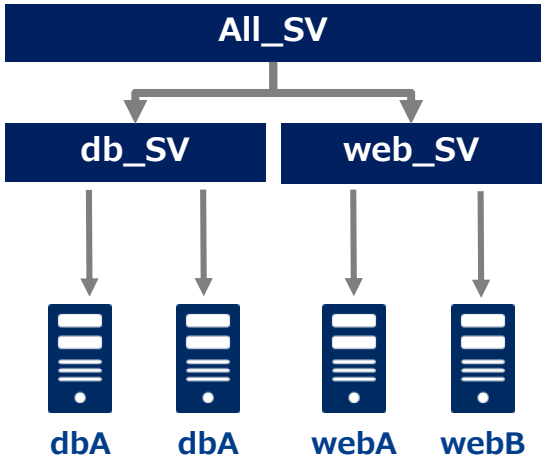
① Click Register > Start Registration.

② Select the following information for each item and click "Register".



Host group name	Operation	Host name
web_SV	Basic settings all	webA
web_SV	Basic settings all	webB
db_SV	Basic settings all	dbA
db_SV	Basic settings all	dbB

Image



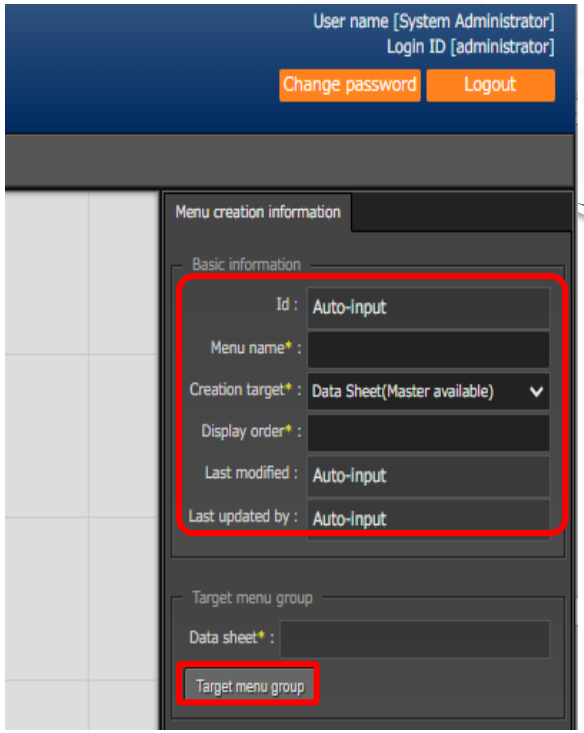
Create data sheet

Create data sheet.
The value registered here will later be selectable from a pull-down menu.

Menu : **Create menu > Create/Define menu**

① Input the following information for each item.

② Click "Target menu group“ and then select “Input”.



Item name	Input contents
Menu name	Time zone list
Target operation	Data sheet
Display order	1

2.6 Menu list(2/6)

Define the item name of the data sheet

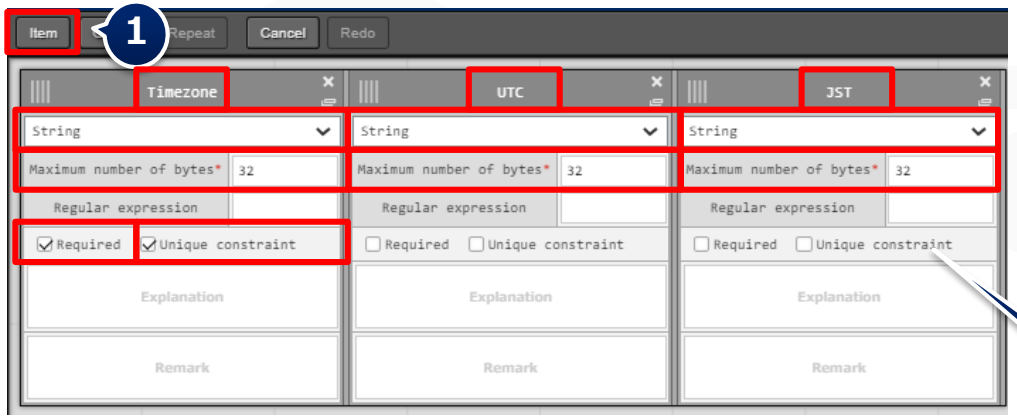
Continuing from the previous section, define the items on the sheet.

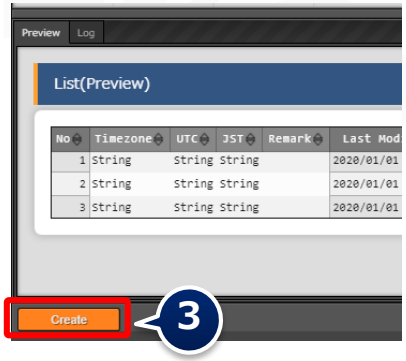
Menu **: Create menu > Create/Define menu**

① Click "Item" and add a new item.

② Input the following for each of the items.

③ Click "Create" at the bottom of the screen.





Item name	Input method	Maximum no. of bytes	Required	Unique constraint
Timezone	string	32	✓	✓
UTC	string	32	-	-
JST	String	32	-	-

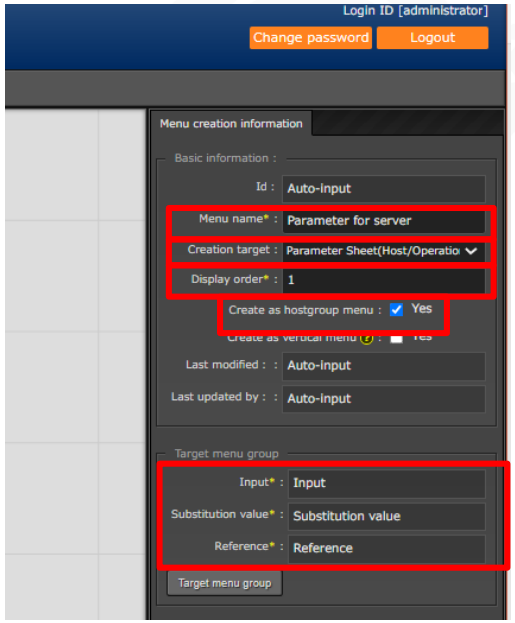
Create the menu for the host group

Create a parameter sheet for the host group and manage the parameters that apply to your host group.

Menu : **Create menu > Create/Define menu**

① "Basic information" Input the following information for each item.

② Leave the Target Menu group as it is with its default values. (Input, Substitution value and Reference)



Item name	Input content
Manu name	Parameter for server
Creation target	Parameter sheet (Host/Operation)
Display order	1
Create as Hostgroup menu	✓

2.6 Menu list(4/6)

Define the item name of the parameters sheet

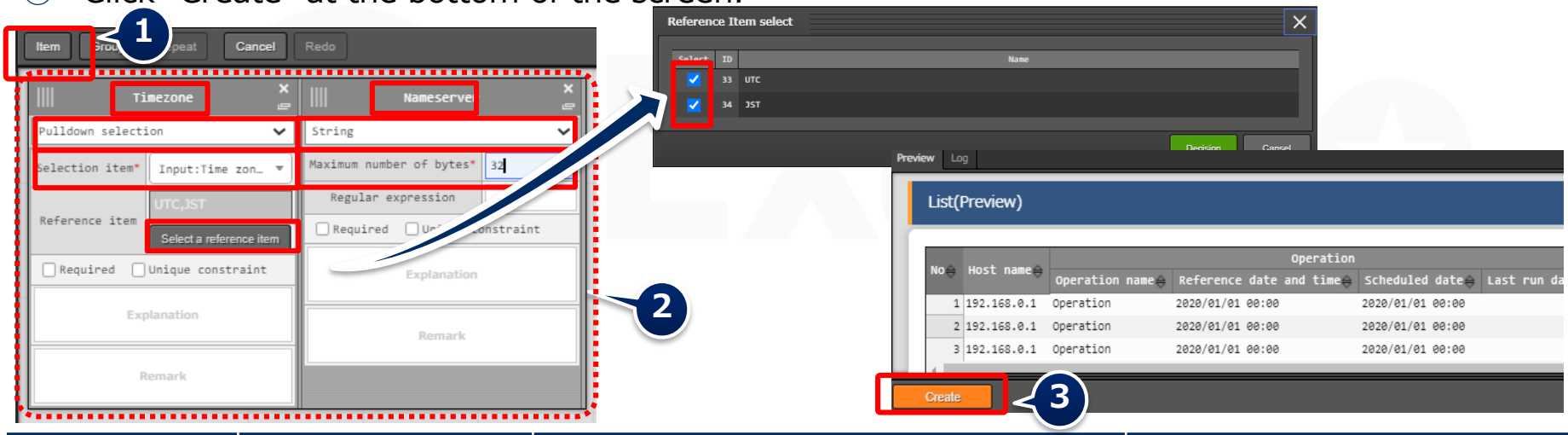
Continuing from the previous section, define the items on the sheet.

Menu : **Create menu > Create/Define menu**

① Click "Item" and add a new item.

② Input the following for each of the items.

③ Click "Create" at the bottom of the screen.



Item name	Input method	Select item	Reference item
Timezone	Pulldown selection	Basic server settings: Timezone list: Parameter/Timezone	UTC,JST

Item name	Input method	Maximum no. of bytes
Nameserver	String	32

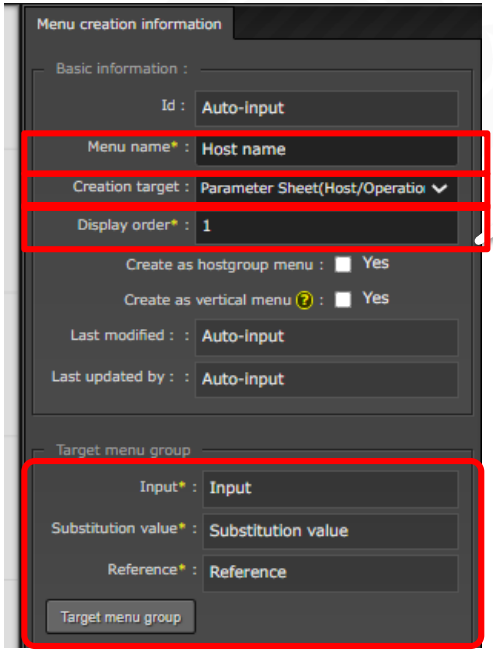
Create menu without host group

Create a parameter sheet for the host group and manage the parameters that apply to your host group.

Menu : **Create menu > Create/Define menu**

① "Basic information" Input the following information for each item.

② Leave the Target Menu group as it is with its default values. (Input, Substitution value and Reference)

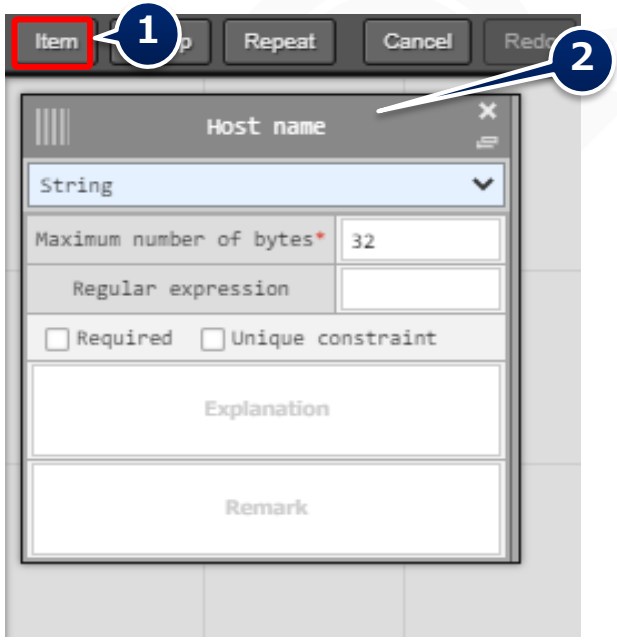


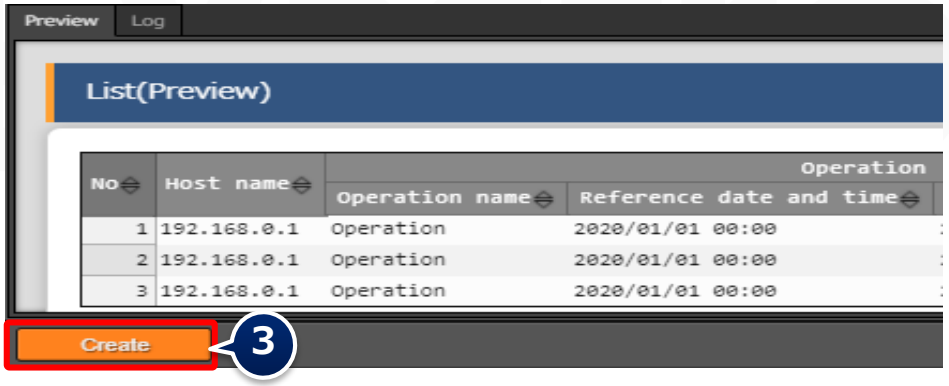
Item name	Enter content
Menu name	Host name
Creation target	Parameter sheet (Host/Operation)
Display order	1

Define the item name of the parameters sheet

Continuing from the previous section, define the items on the sheet.

① Click "Item" and add a new item.
② Input the following for each of the items.
③ Click "Create" at the bottom of the screen.





Item name	Input method	Maximum number of bytes
Hostname	String	32

2.7 Data registration(1/3)

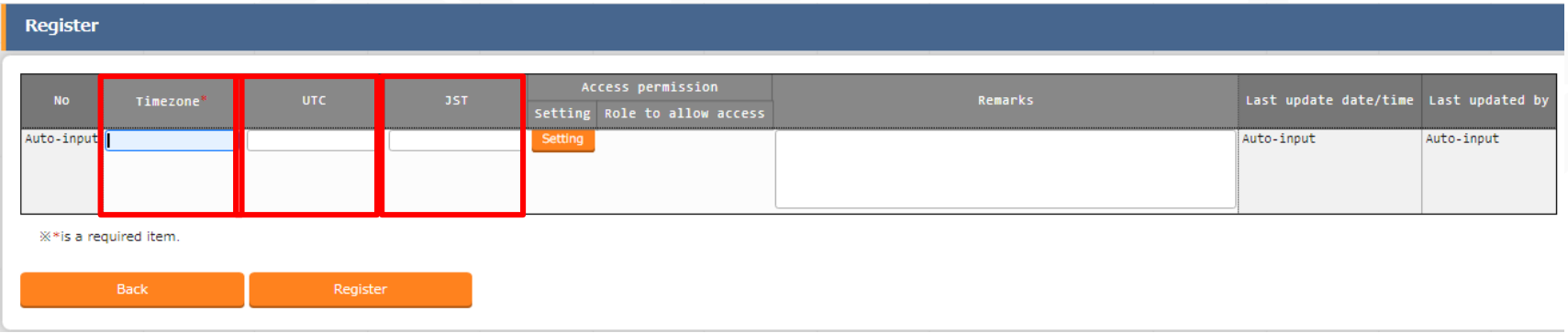
Register data to the data sheet.

The Data and Parameter sheet are now created.
Move to the created menu and input the data.

Menu: **Input> Time zone list**

① Click Register > Start Registration.

② Select or input the following information for each item and click "Register".



Timezone	UTC	JST
Asia/Tokyo	+9	0
America/New_York	-4	-13

2.7 Data registration(2/3)

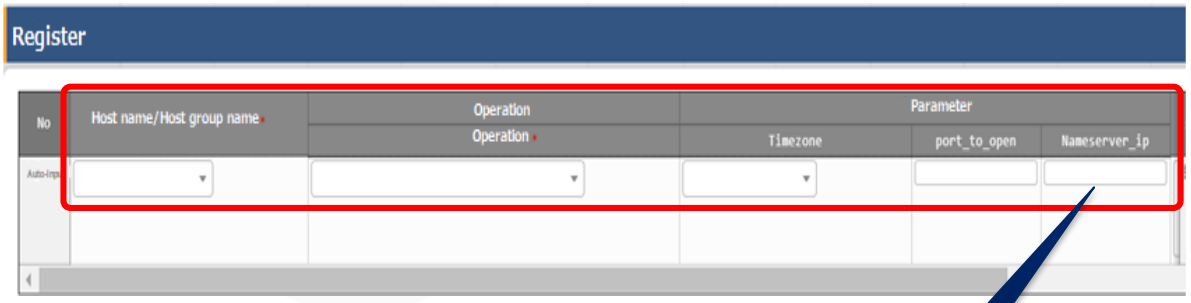
Register data to the parameter sheet

Move to the created menu and input the data.

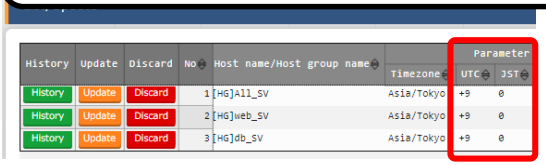
Menu**: Input> Parameter for server**

① Click Register > Start Registration.

② Select or input the following information for each item and click "Register".



After registering, we can see both of the reference items, UTC and JST



Point

Users can select from the contents entered in the data sheet in the previous section.

Host name/Host group name	Operation	Timezone	Nameserver
[HG]All_SV	Basic settings all	Asia/Tokyo	10.15.1.30
[HG]web_SV	Basic settings all	Asia/Tokyo	10.15.1.62
[HG]db_SV	Basic settings all	Asia/Tokyo	10.15.1.30

2.7 Data registration(3/3)

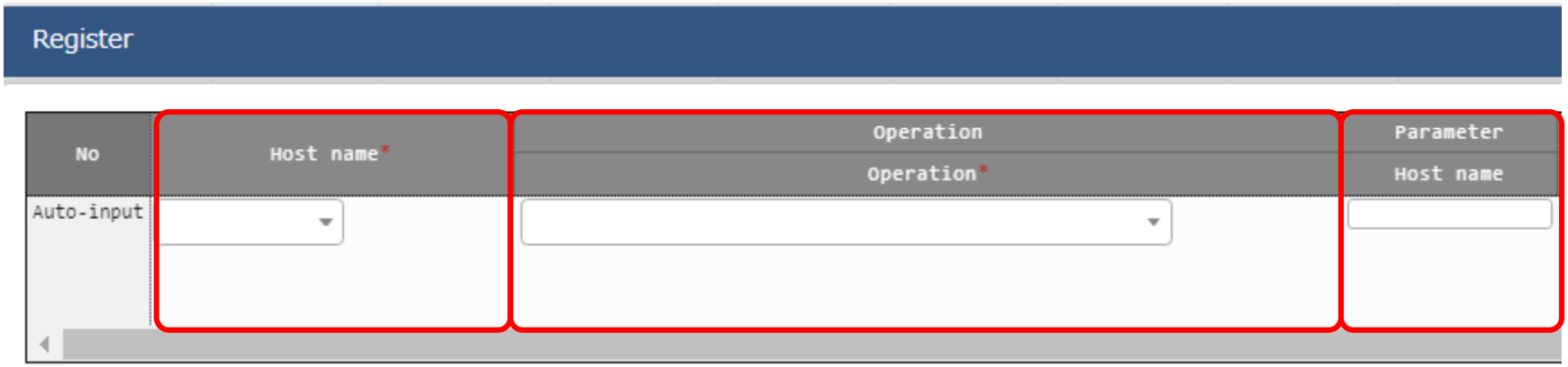
Register data to the parameter sheet

Next, register the data from the menu created in the menu group for the host.

Menu: **Input> Host name**

① Click Register > Start Registration.

② Select or input the following information for each item and click "Register".



Host name	Operation	Hostname
webA	Basic settings all	webA
webB	Basic settings all	webB
dbA	Basic settings all	dbA
dbB	Basic settings all	dbB

2.8 Substitution Value Automatic Registration setting

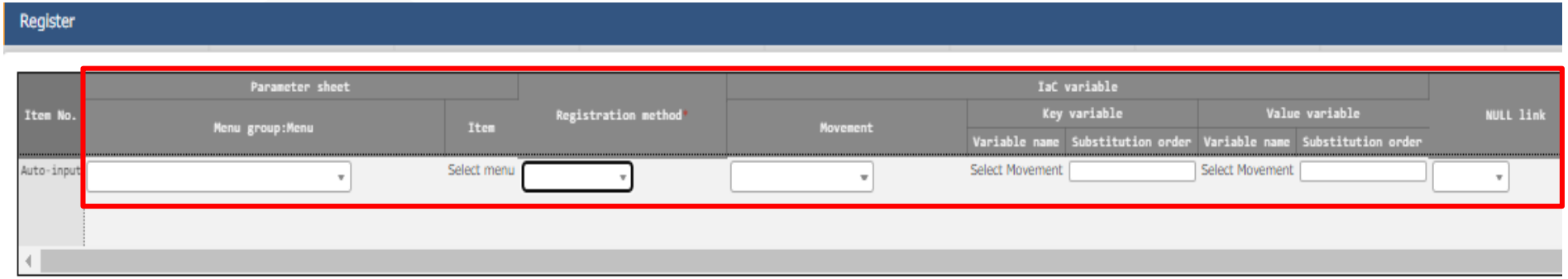
Set Substitute Value Automatic Registration settings

Connect the variables to each item after entering the data in the parameter sheet.

Menu: **Ansible-Legacy > Substitution value automatic registration setting**

① Click Register > Start Registration.

② Select or input the following information for each item and click "Register".



Parameter sheet (from) -Menu group:Menu	Parameter sheet (from) -Item	Registration method	IaC Variable (to) -Movement	IaC variable (to) - Value variable -Variable name
Parameter for server	Timezone	Value type	Set Timezone	VAR_locale_timezone
Parameter for server	Nameserver_ip	Value type	Add Nameserver	VAR_nameserver_ip
Host name	Hostname	Value type	Set Hostname	VAR_hostname

2.9 Check Substitution value・Target host

Check Substitution value and Target host

Check the value specified by the substituted value automatic registration and the target host.

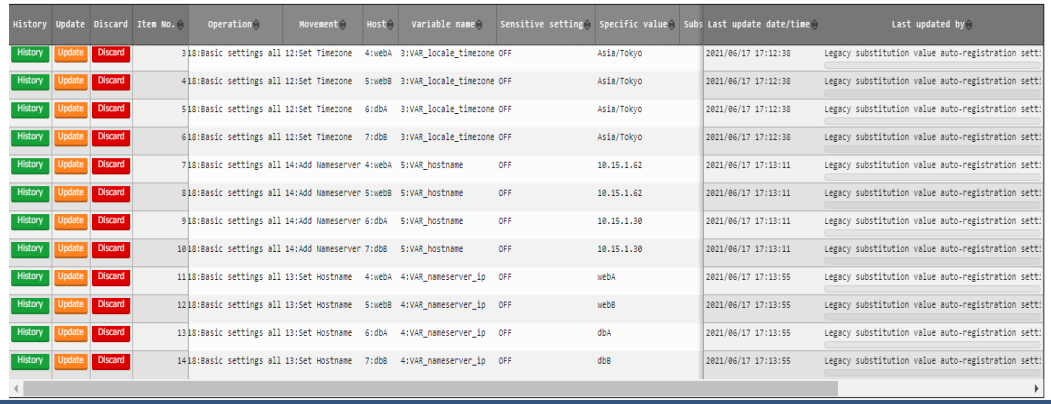
Menu**: Ansible-Legacy > Target host/Substitution value list**

① Click "Filter".

② Check that the correct value is specified by "legacy substitution value automatic registration setting procedure".

History	Update	Discard	Item No.	Operation	Movement	Host	Substitution value management	Access permission: Role to allow access	Remarks	Last update date/time	Last updated by
History	Update	Discard	2	18:Basic settings all	12:Set Timezone	4:webA	Substitution value management			2021/06/17 17:12:38	Legacy substitution value auto-registration sett:
History	Update	Discard	3	18:Basic settings all	12:Set Timezone	5:webB	Substitution value management			2021/06/17 17:12:38	Legacy substitution value auto-registration sett:
History	Update	Discard	4	18:Basic settings all	12:Set Timezone	6:dbA	Substitution value management			2021/06/17 17:12:38	Legacy substitution value auto-registration sett:
History	Update	Discard	5	18:Basic settings all	12:Set Timezone	7:dbB	Substitution value management			2021/06/17 17:12:38	Legacy substitution value auto-registration sett:
History	Update	Discard	6	18:Basic settings all	14:Add Nameserver	4:webA	Substitution value management			2021/06/17 17:13:11	Legacy substitution value auto-registration sett:
History	Update	Discard	7	18:Basic settings all	14:Add Nameserver	5:webB	Substitution value management			2021/06/17 17:13:11	Legacy substitution value auto-registration sett:
History	Update	Discard	8	18:Basic settings all	14:Add Nameserver	6:dbA	Substitution value management			2021/06/17 17:13:11	Legacy substitution value auto-registration sett:
History	Update	Discard	9	18:Basic settings all	14:Add Nameserver	7:dbB	Substitution value management			2021/06/17 17:13:11	Legacy substitution value auto-registration sett:
History	Update	Discard	10	18:Basic settings all	13:Set Hostname	4:webA	Substitution value management			2021/06/17 17:13:55	Legacy substitution value auto-registration sett:
History	Update	Discard	11	18:Basic settings all	13:Set Hostname	5:webB	Substitution value management			2021/06/17 17:13:55	Legacy substitution value auto-registration sett:
History	Update	Discard	12	18:Basic settings all	13:Set Hostname	6:dbA	Substitution value management			2021/06/17 17:13:55	Legacy substitution value auto-registration sett:
History	Update	Discard	13	18:Basic settings all	13:Set Hostname	7:dbB	Substitution value management			2021/06/17 17:13:55	Legacy substitution value auto-registration sett:

Target host



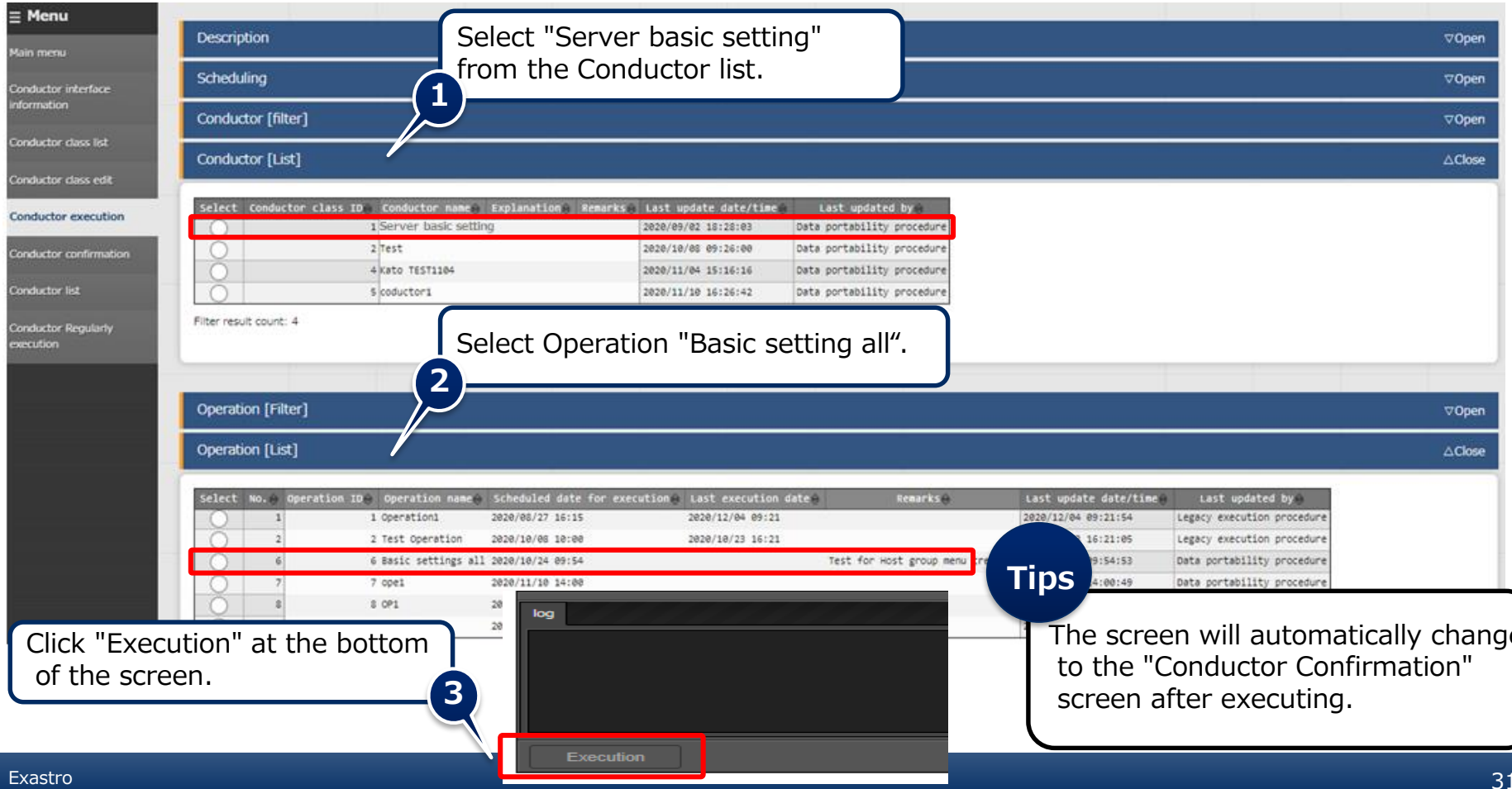
History	Update	Discard	Item No.	Operation	Movement	Host	Variable name	Sensitive setting	Specific value	Subs	Last update date/time	Last updated by
History	Update	Discard	3	18:Basic settings all	12:Set Timezone	4:webA	3:VAR_locale_timezone	OFF	Asia/Tokyo		2021/06/17 17:12:38	Legacy substitution value auto-registration sett:
History	Update	Discard	4	18:Basic settings all	12:Set Timezone	5:webB	3:VAR_locale_timezone	OFF	Asia/Tokyo		2021/06/17 17:12:38	Legacy substitution value auto-registration sett:
History	Update	Discard	5	18:Basic settings all	12:Set Timezone	6:dbA	3:VAR_locale_timezone	OFF	Asia/Tokyo		2021/06/17 17:12:38	Legacy substitution value auto-registration sett:
History	Update	Discard	6	18:Basic settings all	12:Set Timezone	7:dbB	3:VAR_locale_timezone	OFF	Asia/Tokyo		2021/06/17 17:12:38	Legacy substitution value auto-registration sett:
History	Update	Discard	7	18:Basic settings all	14:Add Nameserver	4:webA	5:VAR_hostname	OFF	10.15.1.62		2021/06/17 17:13:11	Legacy substitution value auto-registration sett:
History	Update	Discard	8	18:Basic settings all	14:Add Nameserver	5:webB	5:VAR_hostname	OFF	10.15.1.62		2021/06/17 17:13:11	Legacy substitution value auto-registration sett:
History	Update	Discard	9	18:Basic settings all	14:Add Nameserver	6:dbA	5:VAR_hostname	OFF	10.15.1.30		2021/06/17 17:13:11	Legacy substitution value auto-registration sett:
History	Update	Discard	10	18:Basic settings all	14:Add Nameserver	7:dbB	5:VAR_hostname	OFF	10.15.1.30		2021/06/17 17:13:11	Legacy substitution value auto-registration sett:
History	Update	Discard	11	18:Basic settings all	13:Set Hostname	4:webA	4:VAR_nameserver_ip	OFF	webA		2021/06/17 17:13:55	Legacy substitution value auto-registration sett:
History	Update	Discard	12	18:Basic settings all	13:Set Hostname	5:webB	4:VAR_nameserver_ip	OFF	webB		2021/06/17 17:13:55	Legacy substitution value auto-registration sett:
History	Update	Discard	13	18:Basic settings all	13:Set Hostname	6:dbA	4:VAR_nameserver_ip	OFF	dbA		2021/06/17 17:13:55	Legacy substitution value auto-registration sett:
History	Update	Discard	14	18:Basic settings all	13:Set Hostname	7:dbB	4:VAR_nameserver_ip	OFF	dbB		2021/06/17 17:13:55	Legacy substitution value auto-registration sett:

Substitution value list

Execute Conductor

If you finished the operations in the previous section, the Conductor should be created and the substitute values should be registered.
Finally, execute Conductor and check the result on the target host.

Menu : **Conductor > Conductor execution**

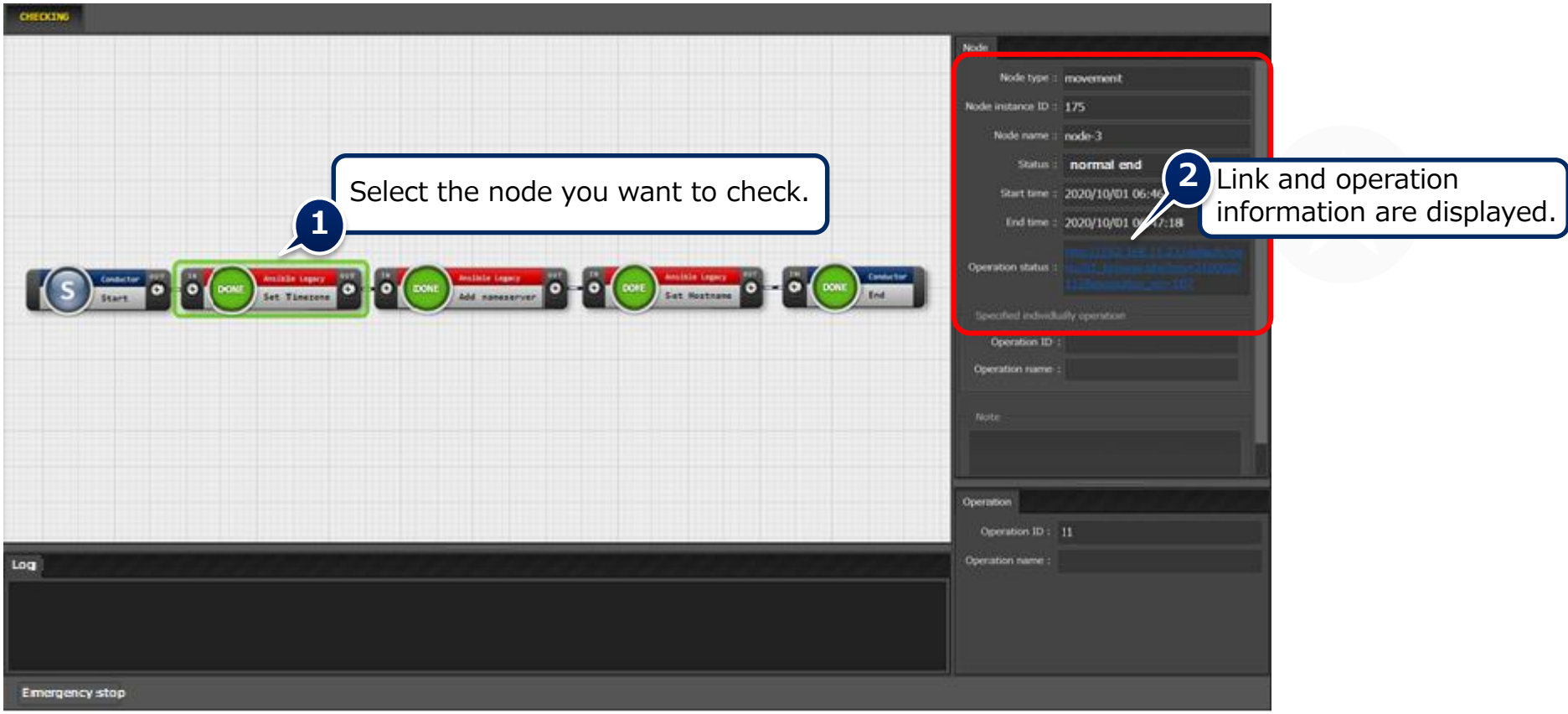


2.10 Conductor execution(2/2)

Check the Conductor Execution results

In the work confirmation screen, you can check the results of the whole execution or execution per node.
Selecting an inputted Movement will show a link to a more detailed result screen.

Menu : **Conductor > Conductor confirmation**



2.11 Reference parameter sheet confirmation

Check contents of the reference parameter sheet

By completing the operation in the previous section, the set parameters have now been applied to the target host.
Finally, check the reference parameter sheet and confirm that the update date and time etc. are recorded.
Menu: Basic server setting(Reference)

① Click "Filter".

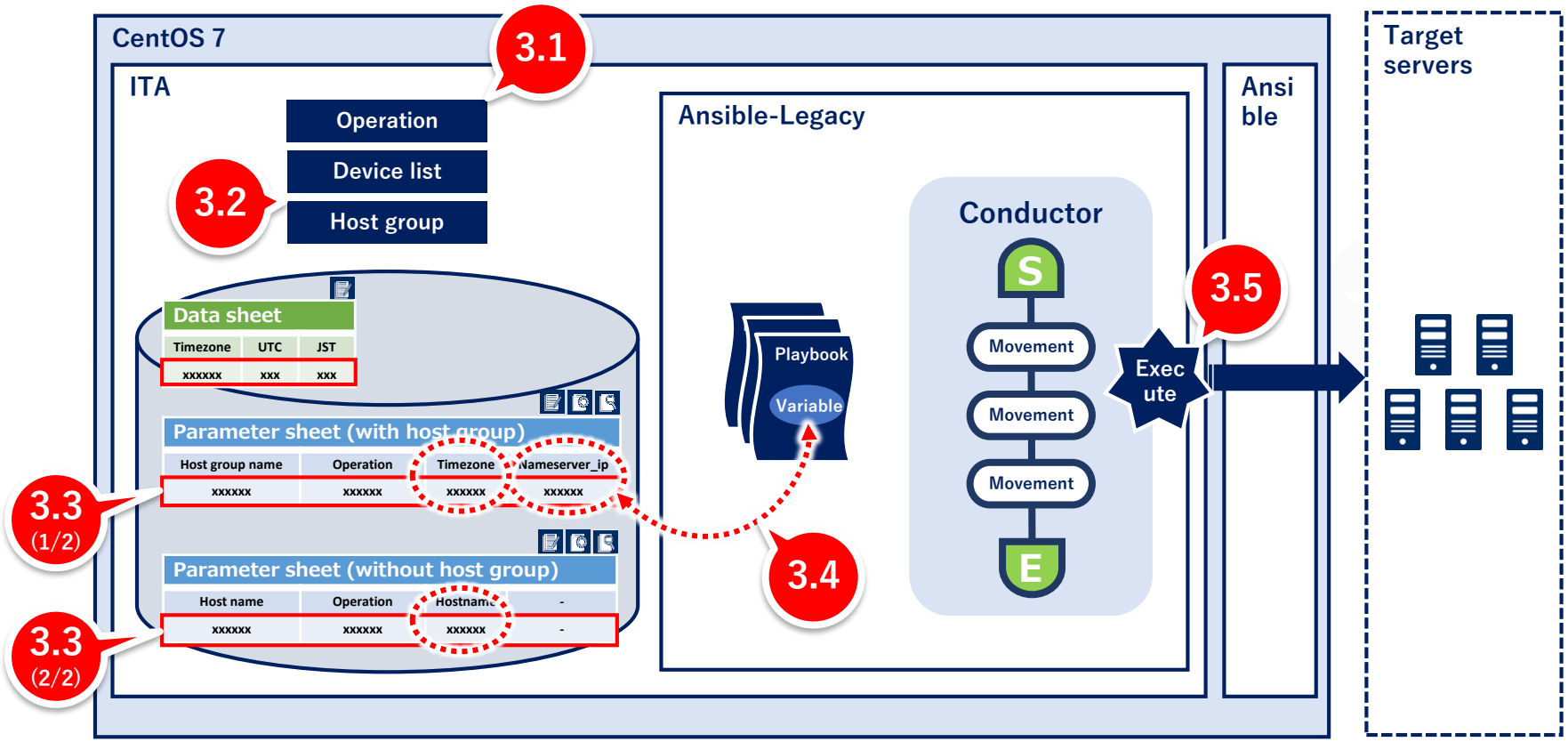
② Confirm that the “Reference date/time" and "Last update date/time" are updated.

Update	Discard	No	Host name	Operation					Parameter				Last update date/time	Last updated by
				ID	Operation name	Reference date	Scheduled date for execution	Last execution date	path	owner	group	m		
Update	Discard	1		2	Test Operation	2020/10/23 16:21	2020/10/08 10:00	2020/10/23 16:21	/tmp/work2	root	root	0	2020/12/07 10:51:36	System Administrator
Update	Discard	2		9	operation	2020/12/03 15:50	2020/12/18 16:03	2020/12/03 15:50	/tmp/work2	root	root	0	2020/12/07 10:55:44	System Administrator
Update	Discard	3		1	Operation1	2020/12/04 09:21	2020/08/27 16:15	2020/12/04 09:21	/tmp/work2	root	root	0	2020/12/07 10:57:33	System Administrator

3. Practice Scenario 2

Scenario 2 - Overview

The diagram below displays Scenario 1's procedure.



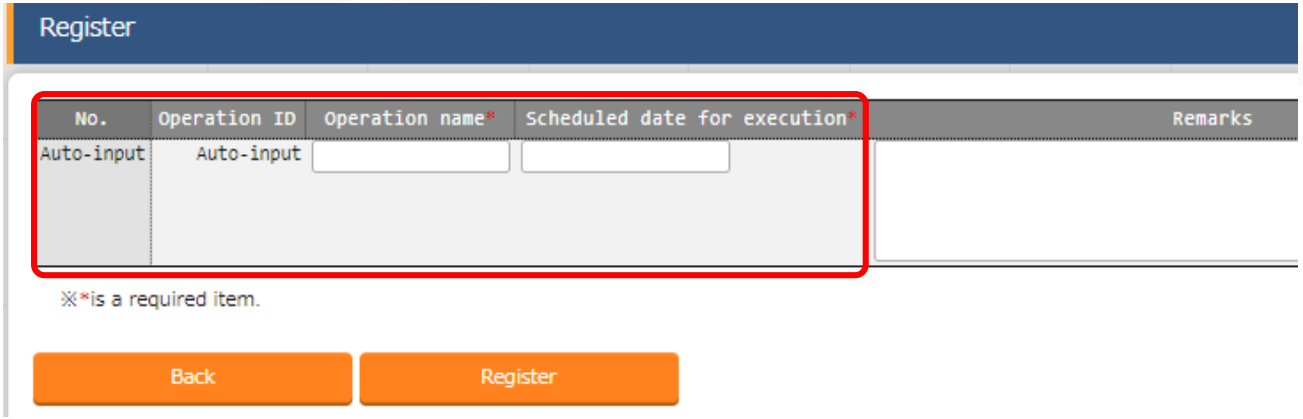
Register new operation

Create an additional operation.

Menu : **Basic Console > Operation list**

① Click Register > Start Registration.

② Input the following information for each item and click "Register".



Operation name	Scheduled date for execution
Basic setting Additional server only	(Enter arbitrary value)

※ "Scheduled date for execution" is just an item for management. It will not be executed automatically.

3.2 Add host to host group

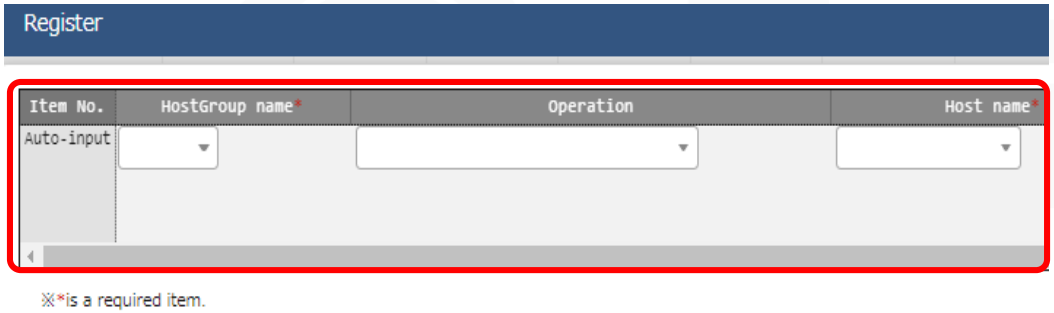
Register host to host group

Register additional hosts in the host group.

Menu: **Host group management > Host link list**

① Click "New register "Register > Start Registration.

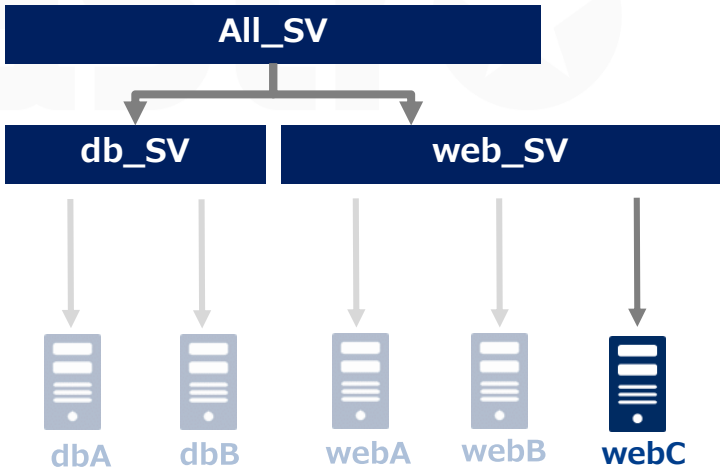
② Select the following information for each item and click "Register".



※*is a required item.

Host group name	Operation	Host name
web_SV	Basic settings additional server only	webC

Image



Point

The host group, "web_SV" is used for "Basic settings all servers", but this time, we are only adding the operation "Basic settings additional server only".
That is why when we are executing the operation, only webC will be applicable.

3.3 Data registration(1/2)

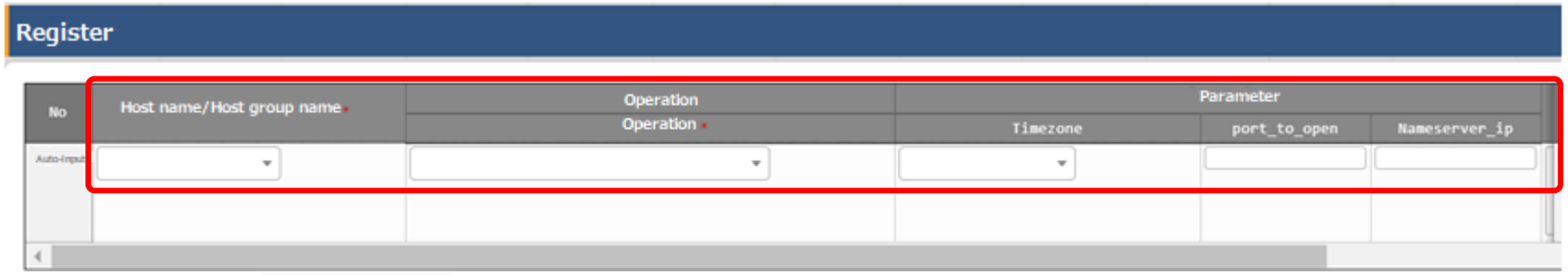
Register data in the parameter sheet

Move to the menu created in scenario 1 and input the following data.

Menu: **Input>Parameter for server**

① Click Register > Start Registration.

② Select or input the following information for each item and click "Register".



Users can select from the contents entered in the data sheet in the previous section.

Host name/Host group name	Operation	Timezone	Nameserver_ip
[HG]web_SV	Basic settings additional server only	Asia/Tokyo	10.15.1.62

3.3 Data registration(2/2)

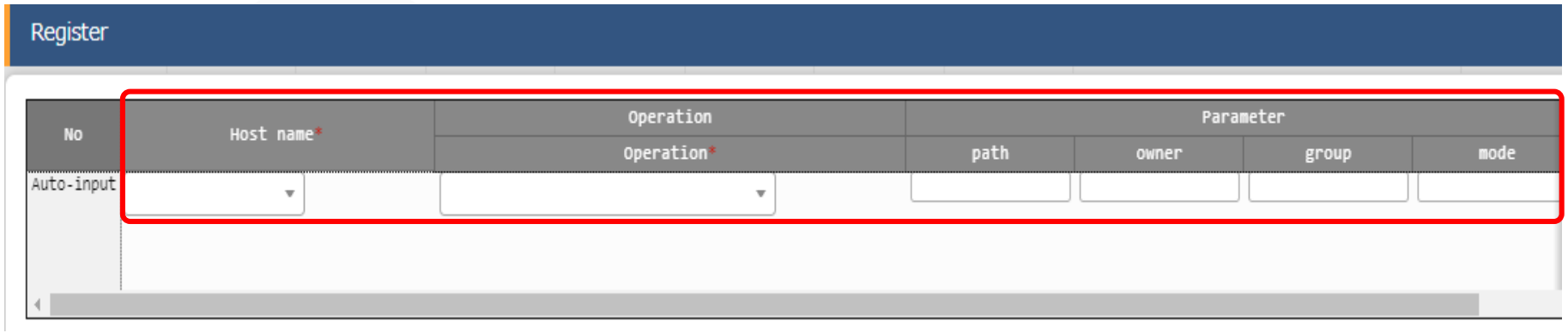
Register data in the parameter sheet

Next, register the data from the menu created in the menu group for the host.

Menu: **Input > Host name**

① Click Register > Start Registration.

② Select or input the following information for each item and click "Register".



Host name	Operation	Hostname
webC	Basic settings additional server only	webC

Check Substitution value and Target host

Check the value specified by the substituted value automatic registration and the target host.

Menu: **Ansible-Legacy > Target host /Substitution value list**

① Click "Filter".

② Check that only the data of "webC" is added by the "legacy substitution value automatic registration setting procedure".

Target host

History	Update	Discard	Item No.	Operation	Movement	Host	Substitution value management	Access perm Role to allow
History	Update	Discard	14	19:Basic settings Additional server only	12:Set Timezone	8:webC	Substitution value management	
History	Update	Discard	15	19:Basic settings Additional server only	14:Add Nameserver	8:webC	Substitution value management	
History	Update	Discard	16	19:Basic settings Additional server only	13:Set Hostname	8:webC	Substitution value management	

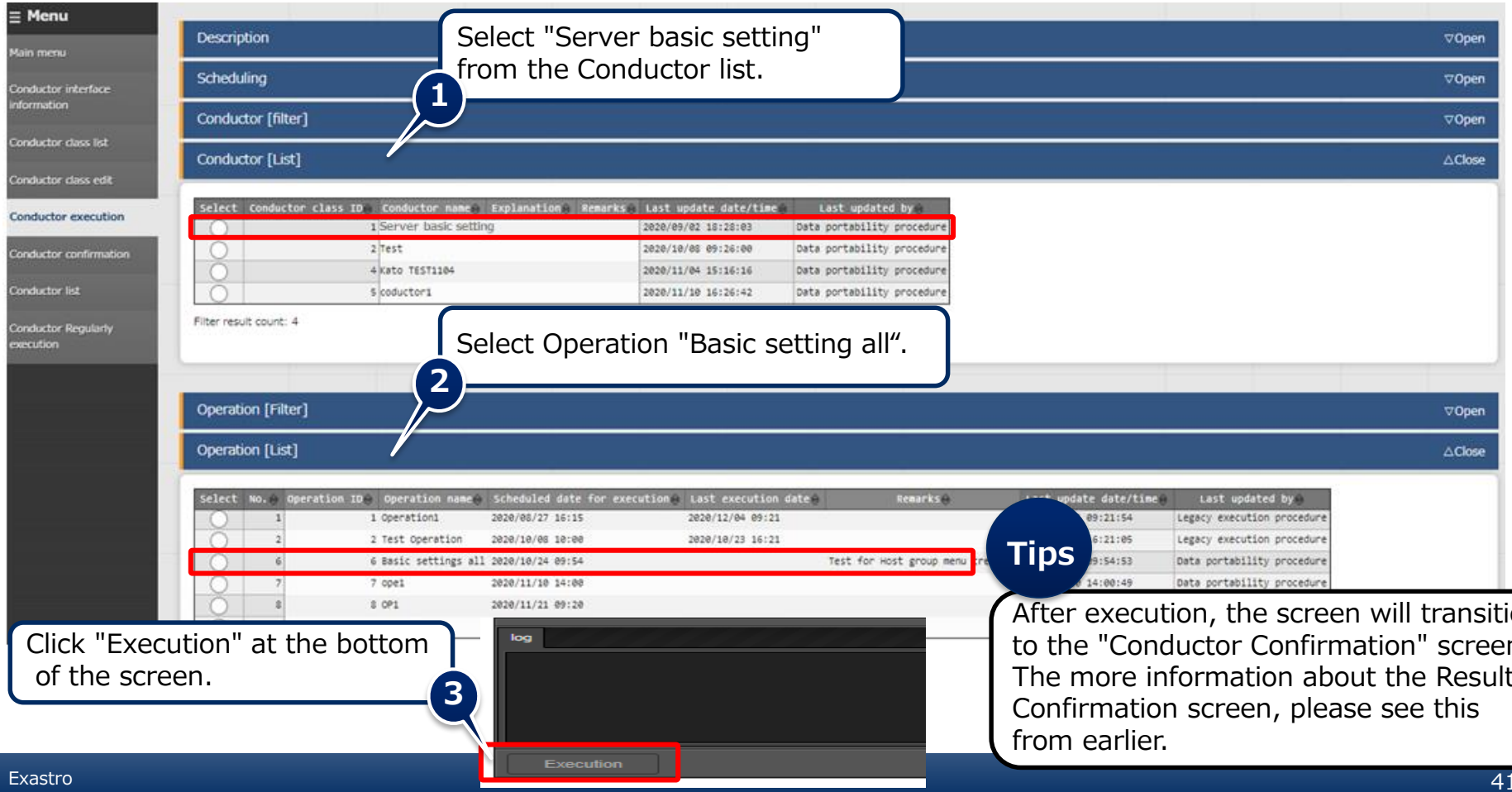
Substitution value list

History	Update	Discard	Item No.	Operation	Movement	Host	Variable name	Sensitive setting	Spec
History	Update	Discard	15	19:Basic settings Additional server only	12:Set Timezone	8:webC	3:VAR_locale_timezone	OFF	Asia/
History	Update	Discard	16	19:Basic settings Additional server only	14:Add Nameserver	8:webC	5:VAR_hostname	OFF	10.15
History	Update	Discard	17	19:Basic settings Additional server only	13:Set Hostname	8:webC	4:VAR_nameserver_ip	OFF	webC

Execute Conductor

Execute Conductor again. Ensure that the work is reflected only on the host "webC".

Menu**: Conductor > Conductor execution**



Exastro