



IT Automation

Ansible Driver [Practice]

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

Version1.6.2
Exastro developer

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A) Appendix

Introduction - How to use this document

How to use this document

- We will cover 3 scenarios.

[Ansible-Legacy] [Ansible-LegacyRole] [Ansible-Pioneer]

Users can learn how to use the different modes as well as their strengths by getting hands on experience.

As each scenario is independent, users can choose and learn whatever chapter they want.



Chapter 1 Ansible-Legacy
Register and use Playbook (YAML file).



Chapter 2 Ansible-LegacyRole
Register and use Role package.



Chapter 3 Ansible-Pioneer
Register and use Dialog files by using Ansible's original module provided by ITA.

Chapter 1 Ansible-Legacy



1.1 Work environment and Scenario

Work environment

The work environment used in this document is as follows.(The same as Chapter 2 Ansible-Legacy Role)

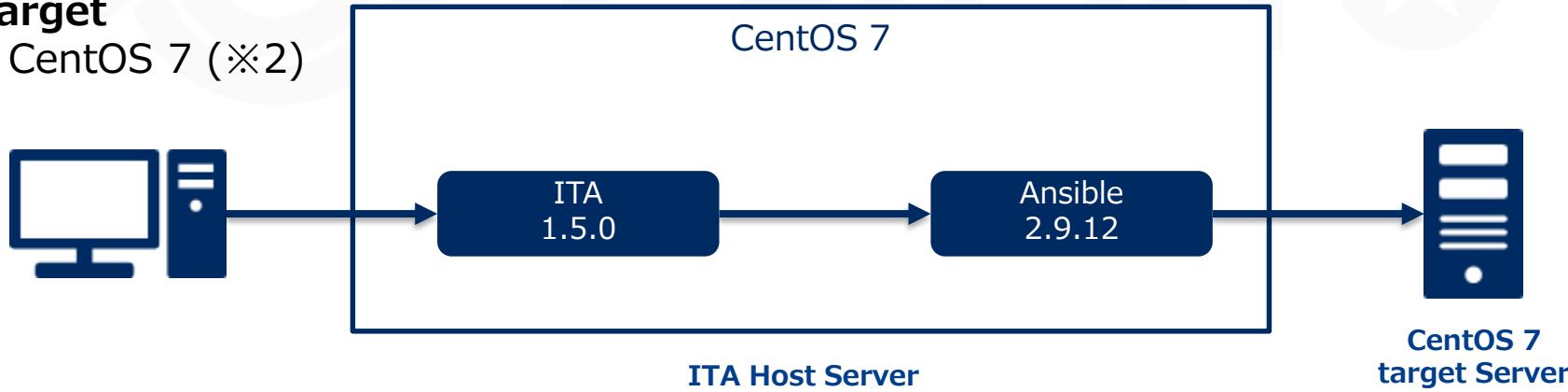
Please prepare a server in addition to the ITA Host server. The additional server will be target for operation.

ITA Host Server

- CentOS 7 (※1)
- ITA 1.5.0
- Ansible 2.9.12

Target

- CentOS 7 (※2)



※1 In this scenario, CentOS7 will be used for the host server, but ITA can be installed on any RHEL7 and RHEL8 type OS.

※2 Any OS compatible with Ansible can be used.

1.1 Work environment and Scenario

Scenario

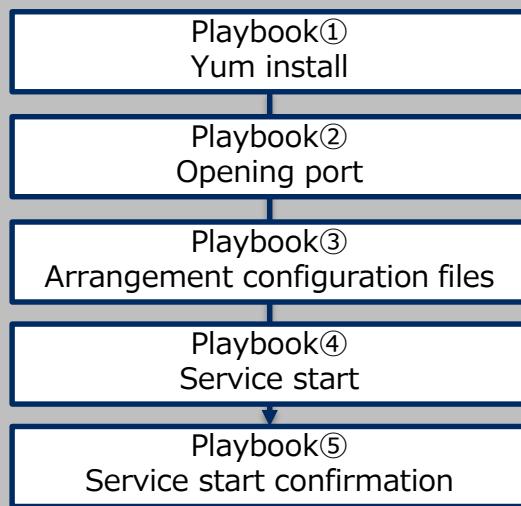
You can experience the reusability of Playbooks by going through a task that consists of three major steps.

- ① Combinne Movements and create Conductor.
- ② Create menu and register parameters.
- ③ Execute the created Conductor.

In this scenario, we will install and start both "Apache" and "Tomcat".

Scenario Image

① Create one Conductor



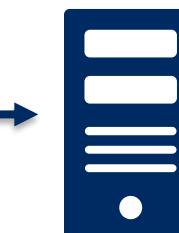
② Create Parameter sheet

(Manage the substitution values to the playbook and work target)



③ Check the addition of both services.

- Apache
- Tomcat



Target Server

1.2 Creation of required files(1/3)

Playbook creation

This scenario will create the following five playbooks.

[Attention] Create the yml file with Character code " UTF-8" and New line code "LF".

```
- name: install package with yum
  yum:
    name: "{{ item }}"
    state: present
  with_items: "{{ VAR_package_name }}"
```

File name : 1-yum_install.yml

Installs the specified package.
Multiple specific value variables are substituted in the Variables.

```
- name: open ports
  firewalld:
    port: "{{ VAR_port_number }}"
    state: enabled
    permanent: yes
    immediate: true
```

File name : 2-open_port.yml

Allows communication to the specified port.

1.2 Creation of required files(2/3)

Playbook creation

```
- name: copy httpd.conf
copy:
  src: "{{ CPF_httpd_conf }}"
  dest: /etc/httpd/conf/httpd.conf
  owner: root
  group: root
  mode: 0644
  backup: yes
when: 'VAR_service_name == "httpd"'
```

```
- name: start service
service:
  name: "{{ VAR_service_name }}"
  state: started
  enabled: yes
```

```
- name: check if service is running and enabled
command: 'systemctl status {{ VAR_service_name }}'
register: command_result
failed_when:
  - "enabled" not in command_result.stdout
  - "running" not in command_result.stdout'
```

File name: 3-deploy_config.yml

Deploys configuration files.
※ In this scenario, we will only deploy httpd.conf.

File name: 4-start_service.yml

Starts the specified service.

File name: 5-check_service.yml

Checks if the service has started.

1.2 Creation of required files(3/3)

httpd.conf creation

In this scenario, the configuration file is deployed using the "Fine Management Function".

Please create the following text file.

File name: httpd_config.txt

```
# ----- ITA Legacy Practice -----
ServerRoot "/etc/httpd"
Listen 80
Include conf.modules.d/*.conf
User apache
Group apache
ServerAdmin root@localhost
ServerName www.example.com:80

<Directory />
    AllowOverride none
    Require all denied
</Directory>
    DocumentRoot "/var/www/html"
<Directory "/var/www">
    AllowOverride None
    Require all granted
</Directory>
<Directory "/var/www/html">
    Options Indexes FollowSymLinks
    AllowOverride None
    Require all granted
</Directory>
<IfModule dir_module>
    DirectoryIndex index.html
</IfModule>
```

```
<Files ".ht*">
    Require all denied
</Files>
IncludeOptional conf.d/*.conf
ErrorLog "logs/error_log"
LogLevel warn
<IfModule log_config_module>
    LogFormat "%h %l %u %t \"%r\" %>s %b \"%{Referer}i\" \"%{User-Agent}i\" combined
    LogFormat "%h %l %u %t \"%r\" %>s %b" common
    <IfModule logio_module>
        LogFormat "%h %l %u %t \"%r\" %>s %b \"%{Referer}i\" \"%{User-Agent}i\" %I %O" combinedio
    </IfModule>
    CustomLog logs/access_log combined
</IfModule>
<IfModule alias_module>
    ScriptAlias /cgi-bin/ "/var/www/cgi-bin/"
</IfModule>
<Directory "/var/www/cgi-bin">
    AllowOverride None
    Options None
    Require all granted
</Directory>
<IfModule mime_module>
    TypesConfig /etc/mime.types
    AddType application/x-compress .Z
    AddType application/x-gzip .gz .tgz
    AddType text/html .shtml
    AddOutputFilter INCLUDES .shtml
</IfModule>
    AddDefaultCharset UTF-8
    <IfModule mime_magic_module>
        MIMEMagicFile conf/magic
    </IfModule>
    EnableSendfile on
    IncludeOptional conf.d/*.conf
```

1.3 Movement configuration(1/4)

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".

Register

Movement ID	Movement Name*	Delay timer	Host specific format*	WinRM connection	Header section
Auto-input					

* is a required item.

[Back](#) [Register](#)

Movement name	Host specific format
Install_Packages	IP
Open_Ports	IP
Start_Service	IP

1.3 Movement configuration(2/4)

Register playbook

Register the created playbook in ITA.

Menu : Ansible-Legacy > Playbook files

- ① Click Register > Start Registration.
- ② Select a playbook from "Browse" and click "Upload in advance".
- ③ Input the following information for each item and click "Register".

Register

Playbook ID	Playbook name*	Playbook files*	Access permission	
			Setting	Role to allow access
Auto-input	<input type="text"/>	<div><button>Choose file</button> No file chosen <button>Upload in advance</button> Upload status:</div>	Setting	

* is a required item.

[Back](#) [Register](#)

Playbook files name	Playbook files
yum_install	1-yum_install.yml
open_ports	2-open_ports.yml
deploy_config	3-deploy_config.yml
start_service	4-start_service.yml
check_service_state	5-check_service.yml

1.3 Movement configuration(3/4)

Register file

Register the prepared httpd configuration file in ITA.

Menu : Ansible Common > File list

- ① Click Register > Start Registration.
- ② Select the file from "Browse" and click "Upload in advance".
- ③ Input the following information for each item and click "Register".

Register

File ID	File embedded variable name*	Files*	Access permission
			Setting Role to allow access
Auto-input	<input type="text"/>	<input type="button" value="Choose file"/> No file chosen <input type="button" value="Upload in advance"/> Upload status:	Setting
※* is a required item.			
<input type="button" value="Back"/>		<input type="button" value="Register"/>	
File embedded variable name		File	
CPF_httpd_conf		httpd_config.txt	

1.3 Movement configuration(4/4)

Register the playbook in Movement

Link the created Movement and Playbook files.

By dividing the contents of the operation and giving them names makes it easier to reuse them.

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

- ① Click Register > Start Registration.
- ② Select or input the following information for each item and click "Register".

Register

Associated item No.	Movement*	Playbook files*	Include order*	Access permission	
	Setting	Role to allow access			
Auto-input	<input type="button" value="▼"/>	<input type="button" value="▼"/>	<input type="text"/>	<input type="button" value="Setting"/>	<input type="text"/>

* is a required item.

Back Register

Associated Table

Movement	Playbook files	Include order
Install Packages	yum_install	1
Open Ports	open_ports	1
Start Service	deploy_config	1
Start Service	start_service	2
Start Service	check_service_state	3

As a playbook that executes in sets,
"Start Service" links all three.

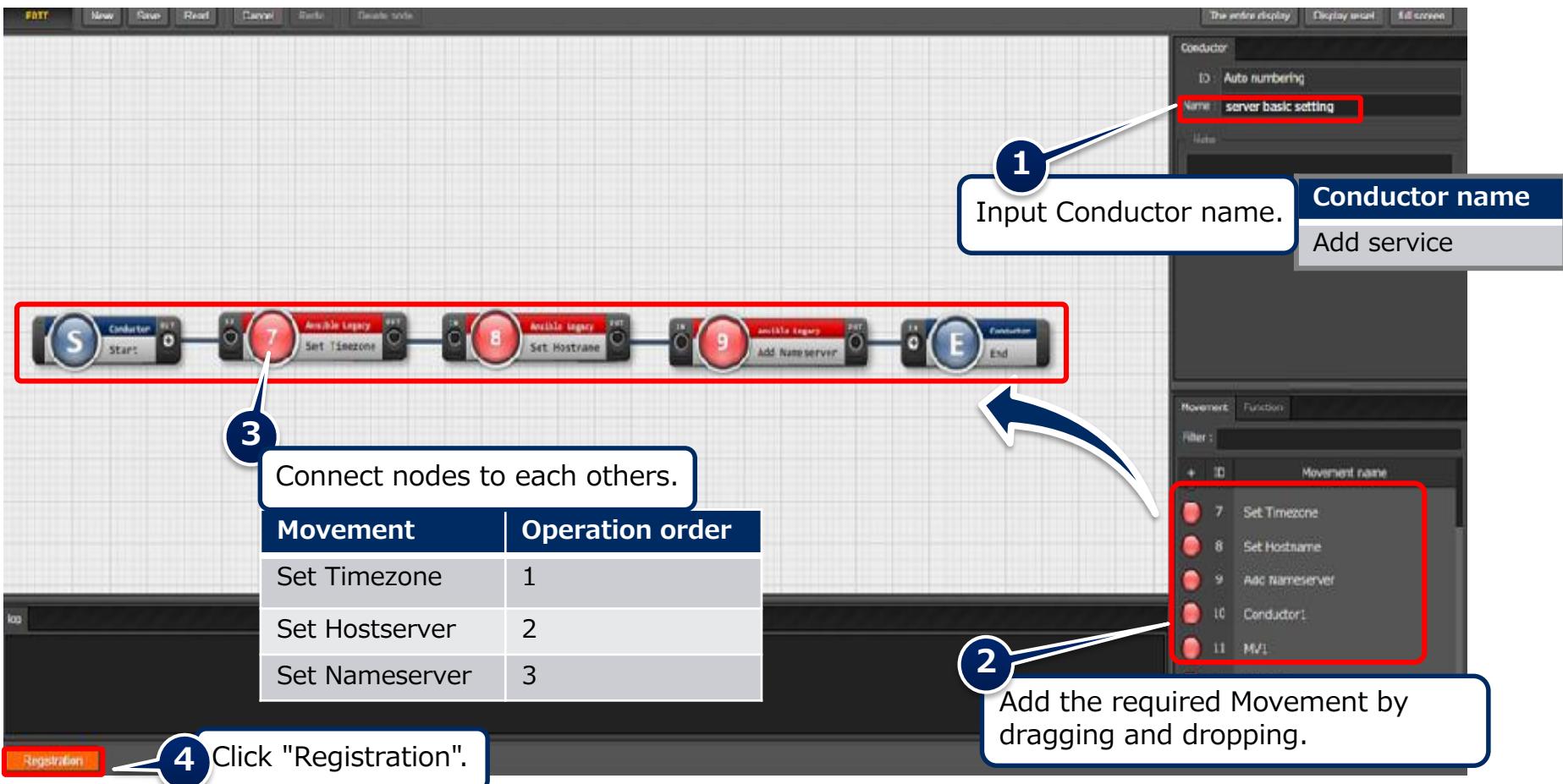
Point

1.4 Conductor creation

Create Conductor

Create a Conductor that collects the defined Movements.

Menu: Conductor > Conductor class edit



1.5 Operation registration

Register new operation

Create operation. Link Movement and Host.

※ Operation is the name of the work operation used in the ITA System and represents the entire operation.

Menu : **Basic Console > Input operation list**

- ① Click Register > Start Registration.
- ② Input the following information for each item and click "Register".

Register

No.	Operation ID	Operation name*	Scheduled date for execution*	Access permission	
				Setting	Role to allow access
Auto-input	Auto-input	<input type="text"/>	<input type="text"/>	<button>Setting</button>	<input type="text"/>

* is a required item.

[Back](#) [Register](#)

Operation name	Scheduled date for execution
Install Apache	(Enter arbitrary value)
Install Tomcat	(Enter arbitrary value)

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

1.6 Register to device list

Register a host to the device list

Register host to execute the work in ITA.

Menu : **Basic Console > Device list**

- ① Click Register > Start Registration.
- ② Select or input the following information for each item and click "Register".

※ * is a required item.

Back Register

Item	Input contents
HW device type	SV
Host name	(Arbitrary value)
IP address	(Arbitrary value)
Login user ID	(Arbitrary value)
Management	●
Login password	(Arbitrary value)
Authentication method	Password Authentication

1.7 Parameter sheet creation (1/2)

Create menu

Create a parameter sheet and manage the parameters that apply to the target host.

Menu : Create menu > Create/Define menu

Menu creation information

Id : Auto-input	
Menu name* : Legacy practice	
Creation target : Parameter Sheet(Host/Operal ▾)	
Display order* : 1	
Create as hostgroup menu : <input type="checkbox"/> Yes	
Create as vertical menu ? : <input type="checkbox"/> Yes	
Last modified : Auto-input	
Last updated by : Auto-input	
Target menu group	
Input* : Input	
Substitution value* : Substitution value	
Reference* : Reference	
Target menu group	
Permission role	
Role :	
Permission role select	
Explanation	

Input the following information.(Next item)

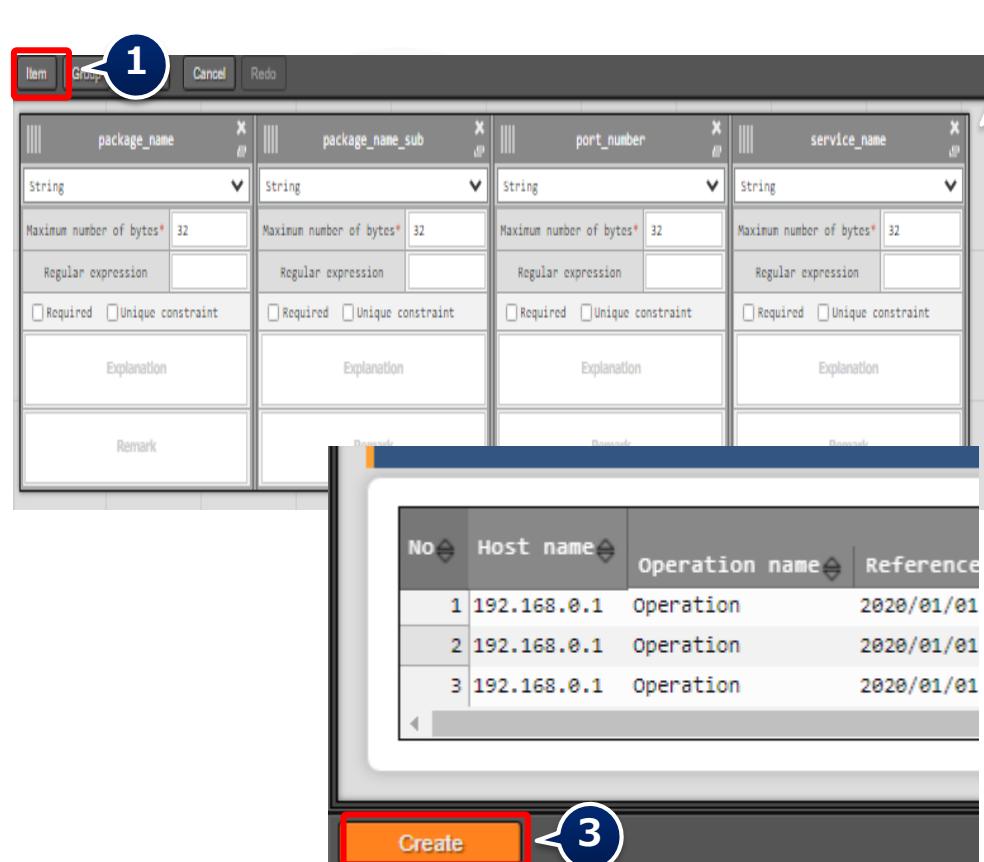
Item name	Input contents
Menu name	Legacy practice
Target	Parameter sheet (Host/Operation)
Display order	1

1.7 Parameter sheet creation (2/2)

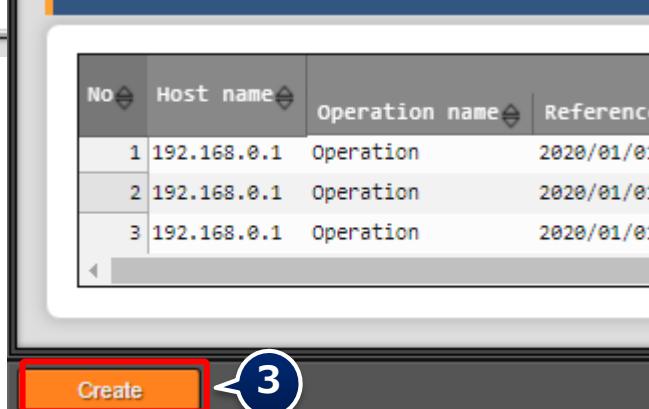
Define the item name of the parameters sheet

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

Menu : Create menu > Create/Define menu



Item name	Input method	Maximum number of bytes
package_name	String	32
package_name_sub	String	32
port_number	String	32
service_name	String	32



1.8 Data registration

Register data to the parameter sheet

The parameter sheet was created by the operation in the previous section.
Move to the created menu and input the data.

Menu: **For input > Legacy practice(Created menu)**

- ① Click Register > Start Registration.
- ② Select or input the following information for each item and click "Register".

No	Host name	Operation	Parameter
Auto	input	Operation	package_name package_name[2] port_number service_name

Host name	Operation	package_name	package_name_sub	port_number	service_name
(Target host)	Apache Install	httpd	(Null link)	80/tcp	httpd
(Target host)	Tomcat Install	tomcat	tomcat-webapps	8080/tcp	tomcat

1.9 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".

The screenshot shows a software interface titled 'Register'. At the top, there's a blue header bar with the title. Below it is a table with several columns: 'Item No.', 'Parameter sheet', 'Registration method', 'Movement', 'Key variable', 'Value variable', and 'NULL link'. Under 'Parameter sheet', there are dropdown menus for 'Menu group: Menu' and 'Item'. The 'Registration method' column contains dropdowns for 'Movement' and 'Substitution order'. The 'Key variable' and 'Value variable' columns have sub-tables with 'Variable name' and 'Substitution order' headers. The 'NULL link' column has a dropdown menu. A large red box highlights the 'Movement' and 'Substitution order' sections of the 'Value variable' row.

Menu	Item	Registration method	Movement	Value variable variable name	Substitution order
Legacy Praxis	package_name	Value type	Install Packages	VAR_package_name	1
Legacy Praxis	package_name_sub	Value type	Install Packages	VAR_package_name	2
Legacy Praxis	port_number	Value type	Open Ports	VAR_port_number	(Null link)
Legacy Praxis	service_name	Value type	Start Service	VAR_service_name	(Null link)

1.10 Check Substitution value and Target host

Check Substitution value and Target host

Check target host and values specified by substitution value automatic registration.

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

- ① Click "Filter".
- ② Check that the correct value is specified by "legacy substitution value automatic registration setting procedure".

Target host

Update	Discard	Item No. ◆	Operation ◆	Movement ◆	Host ◆	Remarks ◆	Last update date/time ◆	Last updated by ◆
Update	Discard	1:1:operation1	1:Legacy1	1:Tsai_test			2020/09/01 11:41:38	Data portability procedure
Update	Discard	2:1:operation1	3:Legacy_movement	Exchange ID has failed(2)			2020/10/07 10:33:55	Data portability procedure
Update	Discard	3:1:operation1	3:Legacy_movement	Exchange ID has failed(3)			2020/10/08 09:47:08	Data portability procedure
Update	Discard	4:1:operation1	1:Legacy1	Exchange ID has failed(3)			2020/10/15 10:21:55	Data portability procedure
Update	Discard	5:2:Test Operation	1:Legacy1	Exchange ID has failed(3)			2020/10/15 10:23:43	Data portability procedure
Update	Discard	6:2:Test Operation	1:Legacy1	1:Tsai_test			2020/10/16 13:35:55	Data portability procedure
Update	Discard	7:2:Test Operation	Exchange ID has failed(2)	2:1:Tsai_test			2020/10/16 13:36:08	Data portability procedure
Update	Discard	8:2:Test operation	3:Legacy_movement	1:Tsai_test			2020/10/16 13:37:57	Data portability procedure
Update	Discard	11:Exchange ID has failed(4)	1:Legacy1	4:testserverJoachim			2020/10/18 15:09:15	Data portability procedure
Update	Discard	12:Exchange ID has failed(4)	1:Legacy1	1:Tsai_test	This is test for milan		2020/10/20 15:27:38	Data portability procedure
Update	Discard	14:Exchange ID has failed(5)	5:Move1	1:Tsai_test			2020/10/21 09:41:13	Data portability procedure
Update	Discard	15:1:operation1	10:conductor1	1:Tsai_test			2020/11/10 16:14:08	Data portability procedure
Update	Discard	16:8:OP1	11:MV1	1:Tsai_test			2020/11/19 10:53:52	System Administrator
Update	Discard	17:9:operation	12:novel1	1:Tsai_test			2020/12/02 16:14:26	System Administrator
Update	Discard	18:9:operation	7:Set Timezone	1:Tsai_test			2020/12/03 11:53:05	System Administrator
Update	Discard	19:9:operation	8:Set Hostname	1:Tsai_test			2020/12/03 11:53:25	System Administrator

Substitution value list

Update	Discard	Item No. ◆	Operation ◆	Movement ◆	Host ◆	Variable name ◆	Specific value ◆	Substitution order ◆	Remarks ◆	Last update date/time ◆	Last updated by ◆
Update	Discard	1:1:Operation1	1:Legacy1	1:Tsai_test	1:VAR_dir_name	/root/test				2020/09/02 18:20:07	Data portability procedure
Update	Discard	2:1:Operation1	1:Legacy1	1:Tsai_test	2:VAR_owner	root				2020/09/02 18:20:19	Data portability procedure
Update	Discard	3:1:Operation1	1:Legacy1	1:Tsai_test	3:VAR_group	root				2020/09/02 18:20:35	Data portability procedure
Update	Discard	4:1:Operation1	1:Legacy1	1:Tsai_test	4:VAR_mode	0755				2020/09/02 18:20:46	Data portability procedure
Update	Discard	7:Exchange ID has failed(5)	5:Move1	1:Tsai_test	9:VAR_DIRECTORY	testdirectory				2020/10/21 09:42:23	Data portability procedure
Update	Discard	8:8:OP1	11:MV1	1:Tsai_test	12:VAR_directory	/tmp/work1				2020/11/19 10:57:36	System Administrator
Update	Discard	9:9:operation	12:move1	1:Tsai_test	13:VAR_DIRECTORY	testdirectory				2020/12/02 16:44:10	System Administrator

1.11 Execution (1/3)

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

The screenshot shows the 'Conductor Execution' menu interface. On the left is a vertical navigation bar with options like Main menu, Conductor interface information, Conductor class list, Conductor class edit, Conductor execution, Conductor confirmation, Conductor list, and Conductor Regularly execution. The 'Conductor execution' option is selected.

Step 1: A callout points to the 'Conductor [List]' tab with the text 'Select the Conductor to execute.' A red box highlights the first row of a table listing conductors. The table columns are: Select, Conductor class ID, Conductor name, Explanation, Remarks, Last update date/time, and Last updated by. The first row contains: 1, Server basic setting, 2020/09/02 10:28:03, Data portability procedure, and a user icon.

Select	Conductor class ID	Conductor name	Explanation	Remarks	Last update date/time	Last updated by
<input type="radio"/>	1	Server basic setting			2020/09/02 10:28:03	Data portability procedure
<input type="radio"/>	2	KATO TEST1104			2020/11/04 15:16:16	Data portability procedure
<input type="radio"/>	3	Conductor1			2020/11/10 16:26:42	Data portability procedure

Step 2: A callout points to the 'Operation [List]' tab with the text 'Select Operation.' A red box highlights the first row of a table listing operations. The table columns are: Select, No., Operation ID, Operation name, Scheduled date for execution, Last execution date, Remarks, Last update date/time, and Last updated by. The first row contains: 1, 1 Operation1, 2020/08/27 16:15, 2020/12/04 09:21, Test for Host group menu creation, 2020/12/04 09:21:54, Legacy execution procedure.

Select	No.	Operation ID	Operation name	Scheduled date for execution	Last execution date	Remarks	Last update date/time	Last updated by
<input type="radio"/>	1	1	1 Operation1	2020/08/27 16:15	2020/12/04 09:21	Test for Host group menu creation	2020/12/04 09:21:54	Legacy execution procedure
<input type="radio"/>	2	2	2 Test Operation	2020/10/08 10:00	2020/10/23 16:21		2020/10/23 16:21:05	Legacy execution procedure
<input type="radio"/>	6	6	6 Basic settings all	2020/10/24 09:54			2020/10/22 09:54:53	Data portability procedure
<input type="radio"/>	7	7	7 op1	2020/11/10 14:00			2020/11/10 14:00:49	Data portability procedure
<input type="radio"/>	8	8	8 OPI	2020/11/21 09:20			2020/11/19 09:03:14	System Administrator
<input type="radio"/>	9	9	9 operation					

Step 3: A callout points to the 'Execution' button at the bottom of a modal window titled 'log'. The button is labeled 'Execution' and has a red box around it.

Tips: Click "Execution" at the bottom of the screen.

The screen will automatically change to the "Conductor Confirmation" screen after executing.

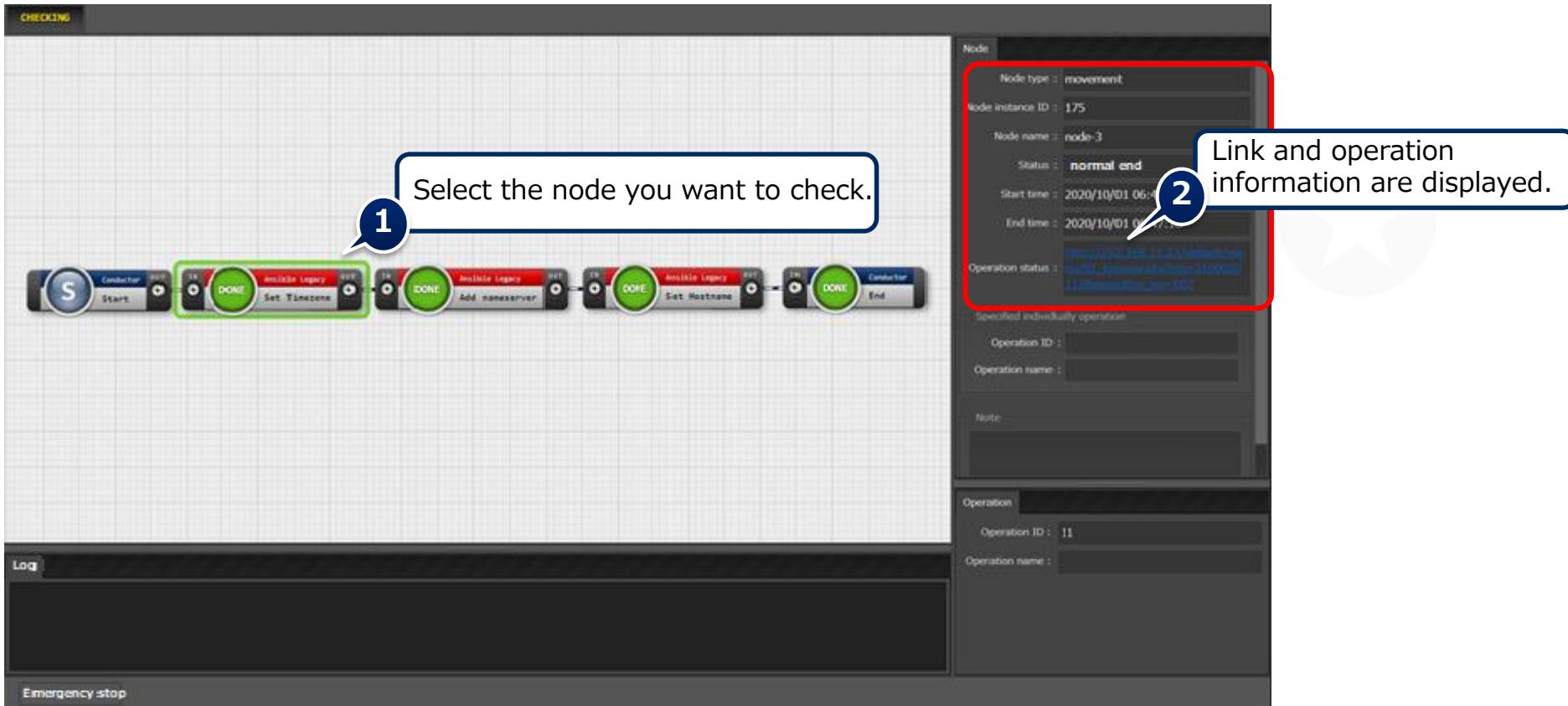
1.11 Execution (2/3)

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**



1.11 Execution (3/3)

Check the detailed results for each Movement

Clicking the link will transfer the user to a screen where **Execution status** and **logs** are displayed..

Users can also check the input data and output data.

The screenshot shows two main sections: 'Target Operation' and 'Progress status(Execution log)'.

Target Operation: This section contains various configuration parameters:

Item	Value												
Execution No.	51												
Execution type	Normal												
Status	Completed												
Execution engine	Ansible Engine												
Caller symphony													
Caller conductor	Sample1												
Execution user	System Administrator												
Movement	<table border="1"><tr><td>ID</td><td>1</td></tr><tr><td>Name</td><td>Legacy1</td></tr><tr><td>Delay timer (minutes)</td><td></td></tr><tr><td>Dedicated information for ansible</td><td><table border="1"><tr><td>Host specific format</td><td>IP</td></tr><tr><td>WinRM connection</td><td></td></tr></table></td></tr></table>	ID	1	Name	Legacy1	Delay timer (minutes)		Dedicated information for ansible	<table border="1"><tr><td>Host specific format</td><td>IP</td></tr><tr><td>WinRM connection</td><td></td></tr></table>	Host specific format	IP	WinRM connection	
ID	1												
Name	Legacy1												
Delay timer (minutes)													
Dedicated information for ansible	<table border="1"><tr><td>Host specific format</td><td>IP</td></tr><tr><td>WinRM connection</td><td></td></tr></table>	Host specific format	IP	WinRM connection									
Host specific format	IP												
WinRM connection													
Operation	<table border="1"><tr><td>No.</td><td>1</td></tr><tr><td>Name</td><td>Operation1</td></tr><tr><td>ID</td><td>1</td></tr></table>	No.	1	Name	Operation1	ID	1						
No.	1												
Name	Operation1												
ID	1												
Host management	<table border="1"><tr><td>confirmation</td></tr><tr><td>confirmation</td></tr><tr><td>InputData_000000051.zip</td></tr><tr><td>ResultData_000000051.zip</td></tr></table>	confirmation	confirmation	InputData_000000051.zip	ResultData_000000051.zip								
confirmation													
confirmation													
InputData_000000051.zip													
ResultData_000000051.zip													
Substitution value													
Input data	Populated data												
Output data	Result data												
Operation status	<table border="1"><tr><td>Scheduled date/time</td><td>2020/11/11 08:44:45</td></tr><tr><td>Start date/time</td><td>2020/11/11 08:44:45</td></tr><tr><td>End date/time</td><td></td></tr></table>	Scheduled date/time	2020/11/11 08:44:45	Start date/time	2020/11/11 08:44:45	End date/time							
Scheduled date/time	2020/11/11 08:44:45												
Start date/time	2020/11/11 08:44:45												
End date/time													

Tips

Users can download a zip file that collects input data and result data.

Tips

Users can check the installation of Apache and Tomcat in the following URLs.

Apache- [http://\(Host IP address\):80](http://(Host IP address):80)
Tomcat- [http://\(Host IP address\):8080](http://(Host IP address):8080)

Chapter 2 Ansible-LegacyRole



2.1 Work environment and Scenario

Work environment

The work environment used in this document is as follows.(The same as Chapter 1 Ansible-Legacy Role)

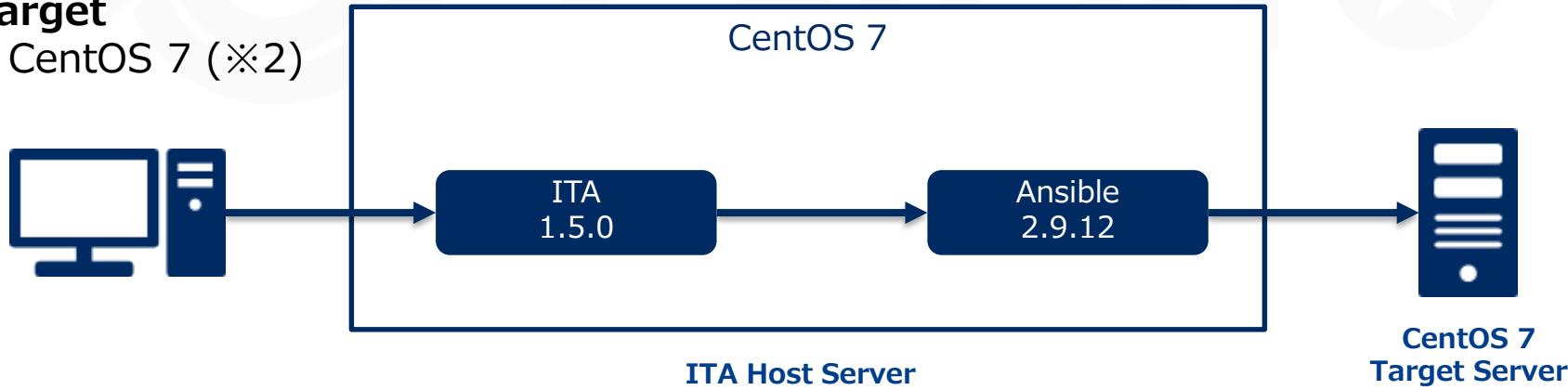
Please prepare a server in addition to the ITA Host server. The additional server will be target for operation.

ITA Host Servers

- CentOS 7 (※1)
- ITA 1.6.0
- Ansible 2.9.12

Target

- CentOS 7 (※2)



※1 In this scenario, CentOS7 will be used for the host server, but ITA can be installed on any RHEL7 and RHEL8 type OS.

※2 Any OS compatible with Ansible can be used.

2.1 Work environment and Scenario

Scenario

The most important feature of LegacyRole is that allows users to **register and use role packages**.

In this document, we will register and execute the Role downloaded from Ansible Galaxy to ITA.

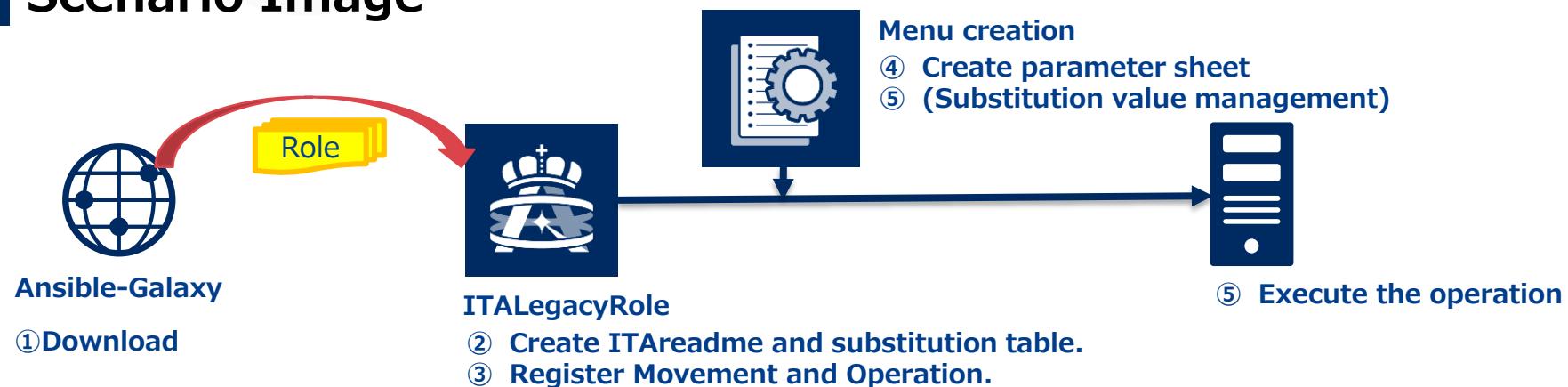
First, Please acquire the role from the URL below.



<https://galaxy.ansible.com/weareinteractive/sudo>

A role package that adds files under /etc/sudoers.d

Scenario Image



2.2 Role package preparation(1/4)

Before preparing the package

Let's look at the role's defaults/main.yml that we are going to use.(Refer to the figure below)

There are two points that need to be changed before execution.

In cases like these, by creating ITAreadme and substitution tables, users can make **necessary changes to the variable definitions** without changing the file inside the package.

```
---  
# sudo_defaults:  
#(omission) ~~~~  
# package name (version)  
sudo_package: sudo  
# list of username or %groupname  
sudo_users: []  
# list of username or %groupname and their defaults  
sudo_defaults: []  
# default sudoers file  
sudo_sudoers_file: ansible  
# path of the sudoers.d directory  
sudo_sudoers_d_path: /etc/sudoers.d  
# delete other files in `sudo_sudoers_d_path`  
purge_other_sudoers_files: no  
  - defaults: env_reset  
# - name: user1  
#  defaults: requiretty  
# sudo_users:  
#  - name: '%group1'  
#  - name: 'bar'  
#  nopasswd: yes  
~~~
```

The correct mapping example is commented out and only an empty array is defined.

1

- **Change the structure using ITAreadme. Use the **substitution table** to enable editing in ITA.**

The part that the user wants to change is the name of the file when it is generated during execution time.

2

- **Use the **substitution table** to enable editing in ITA.**

2.2 Role package preparation(2/4)

ITAreadme descriptions

ita_readme is a configuration file for adding and changing variable definitions.
※ For details about ITAreadme, please refer to this [Manual](#).

File name: ita_readme_ansible-sudo-master.yml

```
sudo_users:  
  - name:
```

Image

Change to the correct mapping.

1

```
defaults/main.yml  
sudo_package: sudo  
sudo_users: []
```

Fill in the correct mapping.

2

```
ITAreadme  
sudo_users:  
  - name:
```

Actual variables used

```
sudo_package: sudo  
sudo_users:  
  - name: example_name
```



Substitution value
management

Variable name	Member variable name	Specific value
LCA_sudo_users	[0].name	example_name



The substitution table will be described in the next section.

2.2 Role package preparation(3/4)

Substitution table description

The substitution table is defined in the defaults variable definition file or ITAreadme. It is a file that allows for specific values of variables other than "VAR_..." to be set in ITA.

※For details about the substitution table, please refer to this [Manual](#).

File name: ita_translation-table_ansible-sudo-master.txt

LCA_sudo_users: sudo_users

LCA_sudo_sudoers_file: sudo_sudoers_file

Image

defaults/main.yml
sudo_users: []
~~~~~ (omission) ~~~~~  
**LCA\_sudoers\_file:** ansible

**ITAreadme**  
**sudo\_users:**  
- name:

#### Actual variables used

sudo\_users:  
- name: example\_name  
sudo\_sudoers\_file: example\_sudoers



#### Substitution value management

**substitution table**  
LCA\_sudo\_users: **sudo\_users**  
LCA\_sudo\_sudoers\_file: **sudo\_sudoers\_file**

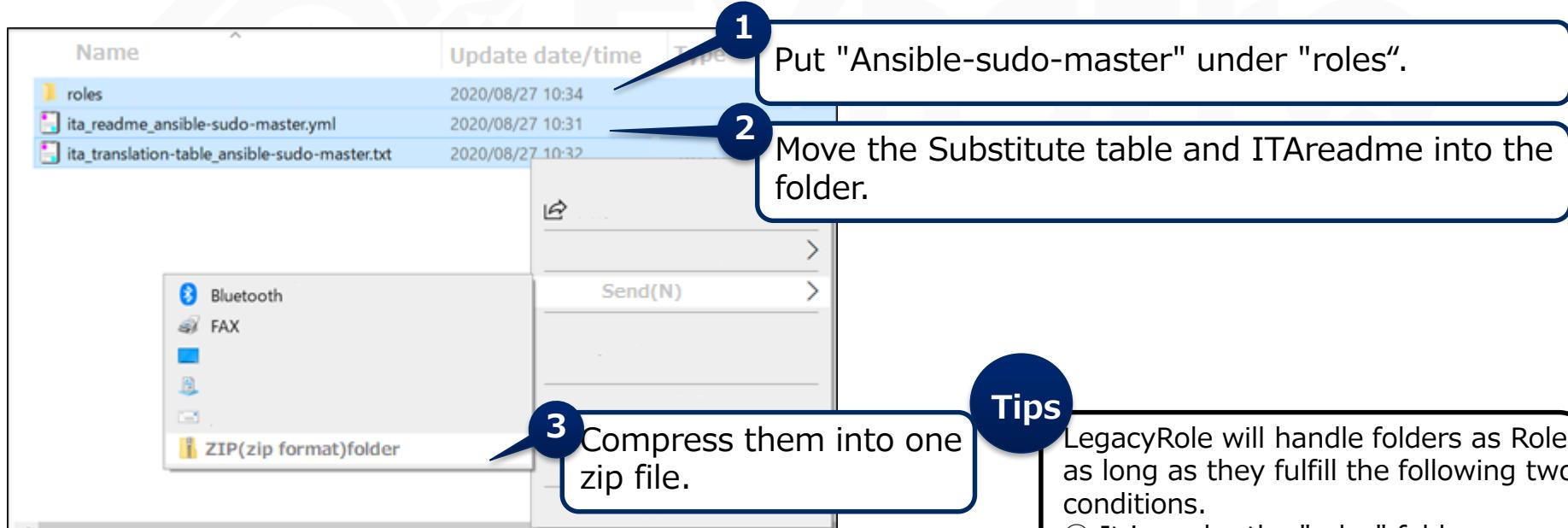
| Variable name         | Member variable name<br>(Added ITAreadme) | Specific value  |
|-----------------------|-------------------------------------------|-----------------|
| LCA_sudo_users        | [0].name                                  | example_name    |
| LCA_sudo_sudoers_file |                                           | example_sudoers |

## 2.2 Role package preparation(4/4)

### Collect the necessary files into a zip file

Let's collect all the items we've created into a **zip file** and register them to ITA.  
Please create a zip file as described below.

- ① Create a "roles" folder and put the downloaded Role in it.
- ② Arrange the substitution table and ITAreadme side by side in the "roles" folder.
- ③ Compress the "roles" folder, Substitute table and the ITAreadme into one zip file.



## 2.3 Movement configuration(1/3)

### Create Movement

Create a movement that is going to be linked to the Role.

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

- ① Click Register > Start Registration.
- ② Select or input the following information for each item and click "Register".

Register

| Movement ID | Movement Name* | Delay timer | Host specific format* | Dedicated information for ansible |                |
|-------------|----------------|-------------|-----------------------|-----------------------------------|----------------|
|             |                |             |                       | WinRM connection                  | Header section |
| Auto-input  |                |             |                       |                                   |                |

\* is a required item.

Back      Register

| Item name            | Input contents      |
|----------------------|---------------------|
| Movement name        | Sudoer registration |
| Host specific format | IP                  |

## 2.3 Movement configuration(2/3)

### Role package registration

Register the role package file you created.

Menu: **Ansible-LegacyRole > Role package list**

- ① Click Register > Start Registration.
- ② Select the created **zip file** from "Browse" and click "Upload in advance".
- ③ Input the following information for each item and click "Register".

Register

| Item No.   | Role package name*                                           | Role package file (ZIP format)* |
|------------|--------------------------------------------------------------|---------------------------------|
| Auto-input | <input type="text"/> <span>Choose file</span> No file chosen | <span>Upload in advance</span>  |
|            |                                                              | <span>Upload status:</span>     |

**Role package name** sudo-master

## 2.3 Movement configuration(3/3)

### Register role names to Movement

Register individual role names to Movement.

Menu: **Ansible-LegacyRole > Movement details**

- ① Click Register > Start Registration.
- ② Select or input the following information for each item and click "Register".

Register

| Associated item No. | Movement*            | Role package name    | Role name           | Include order*       |
|---------------------|----------------------|----------------------|---------------------|----------------------|
| Auto-input          | <input type="text"/> | <input type="text"/> | Select role package | <input type="text"/> |

\* is a required item.

[Back](#) [Register](#)

| Movement name       | Role package name | Role name           | Include order |
|---------------------|-------------------|---------------------|---------------|
| Sudoer registration | sudo-master       | ansible-sudo-master | 1             |

※ Do not register multiple role packages in the same Movement. Unexpected errors will occur when executed.

## 2.4 Operation configuration

### Register new operation

Create operation. Link Movement and Host.

Menu : Basic Console > Input operation list

- ① Click Register > Start Registration.
- ② Input the following information for each item and click "Register".

Register

| No.        | Operation ID | Operation name* | Scheduled date for execution* | Access permission |                      |
|------------|--------------|-----------------|-------------------------------|-------------------|----------------------|
|            |              |                 |                               | Setting           | Role to allow access |
| Auto-input | Auto-input   |                 |                               | Setting           |                      |

\* is a required item.

Back      Register

| Item name                    | Input contents          |
|------------------------------|-------------------------|
| Operation name               | LegacyRole_Practice     |
| Scheduled date for execution | (Enter arbitrary value) |

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

## 2.5 Register to device list

### Register a host to the device list

Register host to execute the operation in ITA.

Menu : **Basic Console > Device list**

- ① Click Register > Start Registration.
- ② Select or input the following information for each item and click "Register".

The screenshot shows the 'Register' page in the Basic Console. The page has a header 'Register'. Below it is a form with several input fields. The first row contains 'Managed system item number' (dropdown, 'Auto-input'), 'HW device type' (dropdown), 'Host name\*' (text input), and 'IP address\*' (text input). The second row contains 'EtherWakeOnLan' (checkbox), 'MAC address' (text input), 'Network device name' (text input), 'Login user ID' (text input), 'Management' (checkbox), and 'Login password' (text input). The third row contains 'ssh authentication key file' (file upload, 'Choose file', 'No file chosen', 'Upload in advance') and 'Authentication method' (dropdown). A note at the bottom left says '※\* is a required item.' At the bottom are 'Back' and 'Register' buttons.

| Item                  | Input contents          |
|-----------------------|-------------------------|
| HW device type        | SV                      |
| Host name             | (Arbitrary value)       |
| IP address            | (Arbitrary value)       |
| Login user ID         | (Arbitrary value)       |
| Management            | ●                       |
| Login password        | (Arbitrary value)       |
| Authentication method | Password Authentication |

## 2.6 Parameter sheet creation(1/2)

### Create menu

Create a parameter sheet and manage the parameters that apply to the target host.

Menu : Create menu > Create/Define menu

Menu creation information

|                                                                                              |                               |
|----------------------------------------------------------------------------------------------|-------------------------------|
| Id :                                                                                         | Auto-input                    |
| Menu name*                                                                                   | LegacyRole practice           |
| Creation target :                                                                            | Parameter Sheet(Host/Operal ▾ |
| Display order*                                                                               | 2                             |
| Create as hostgroup menu : <input type="checkbox"/> Yes                                      |                               |
| Create as vertical menu <span style="color: yellow;">?</span> : <input type="checkbox"/> Yes |                               |
| Last modified :                                                                              | Auto-input                    |
| Last updated by :                                                                            | Auto-input                    |
| Target menu group                                                                            |                               |
| Input*                                                                                       | Input                         |
| Substitution value*                                                                          | Substitution value            |
| Reference*                                                                                   | Reference                     |
| Target menu group                                                                            |                               |
| Permission role                                                                              |                               |
| Role :                                                                                       |                               |
| Permission role select                                                                       |                               |
| Explanation                                                                                  |                               |

Input the following information.(Next item)

| Item name       | Input contents                      |
|-----------------|-------------------------------------|
| Menu name       | LegacyRole practice                 |
| Creation target | Parameter sheet<br>(Host/Operation) |
| Display order   | 2                                   |

## 2.6 Parameter sheet creation(2/2)

### 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

The screenshot shows the 'Create/Define menu' interface. On the left, there are two parameter items: 'sudoer\_name' and 'sudoer\_filename'. Both are set to 'String' type, with a maximum byte length of 32. The 'sudoer\_name' item has 'Required' checked. Below each item is a 'List(Preview)' section showing a table of operations. The 'Create' button at the bottom is highlighted with a red box and a callout.

1 Press to add a new item.

2 Define the contents of the item as shown in the table below.

3 Press to execute menu creation.

| Item name       | Input method | Maximum number of bytes |
|-----------------|--------------|-------------------------|
| sudoer_name     | String       | 32                      |
| sudoer_filename | String       | 32                      |

| No | Host name   | Operation name | Reference date and time |
|----|-------------|----------------|-------------------------|
| 1  | 192.168.0.1 | Operation      | 2020/01/01 00:00        |
| 2  | 192.168.0.1 | Operation      | 2020/01/01 00:00        |
| 3  | 192.168.0.1 | Operation      | 2020/01/01 00:00        |

## 2.7 Data registration

### Register data to the parameter sheet

The parameter sheet was created by the operation in the previous section.  
Move to the created menu and input the data.

Menu: **For input > LegacyRole practice(Created menu)**

- ① Click Register > Start Registration.
- ② Select or input the following information for each item and click "Register".

| No         | Host name | Operation | Parameter   |                 |
|------------|-----------|-----------|-------------|-----------------|
| Auto-input |           | Operation | sudoer_name | sudoer_filename |

### Input Example

| Host name     | Operation           | sudoer_name  | sudoer_filename |
|---------------|---------------------|--------------|-----------------|
| (Target host) | LegacyRole_Practice | example_name | example_sudoers |

## 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-LegacyRole > Substitution value automatic registration setting**

- ① Click Register > Start Registration.
- ② Select or input the following information for each item and click "Register".

Register

| Item No.   | Parameter sheet(From) |                 | Registration method* | IaC variable(To)   |                 |                      |                    |
|------------|-----------------------|-----------------|----------------------|--------------------|-----------------|----------------------|--------------------|
|            | Menu group:Menu       | Item            |                      | Key variable       |                 | Value variable       |                    |
|            |                       | Variable name   | Member variable name | Substitution order | Variable name   | Member variable name | Substitution order |
| Auto-input | Select menu           | Select Movement | Select variable name |                    | Select Movement | Select variable name |                    |

\*Is a required item.

Back      Register

| Menu group :<br>Menu     | Item            | Registration<br>method | Movement               | Value variable<br>Variable name | Value variable<br>member<br>variable name |
|--------------------------|-----------------|------------------------|------------------------|---------------------------------|-------------------------------------------|
| LegacyRole for<br>Praxis | sudoer_name     | Value type             | Sudoer<br>registration | LCA_sudo_users                  | [0].name                                  |
| LegacyRole for<br>Praxis | sudoer_filename | Value type             | Sudoer<br>registration | LCA_sudo_sudoers_file           | (Null link)                               |

## 2.9 Check Substitution value and Target host

### Check Substitution value and Target host

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

Menu: Ansible-LegacyRole > Target host & Ansible-LegacyRole > Substitution value list

- ① Click "Filter".
- ② Check that the correct value is specified by "LegacyRole substitution value automatic registration setting procedure".

#### Target host

| List/Update |         |            |                        |                        |              |           |                         |                                                                        |
|-------------|---------|------------|------------------------|------------------------|--------------|-----------|-------------------------|------------------------------------------------------------------------|
| Update      | Discard | Item No. ⇕ | Operation ⇕            | Movement ⇕             | Host ⇕       | Remarks ⇕ | Last update date/time ⇕ | Last updated by ⇕                                                      |
| Update      | Discard | 2          | 10:LegacyRole_Practice | 13:Sudoer registration | 5:testgurung |           | 2020/12/21 15:18:27     | LegacyRole substitution value automatic registration setting procedure |

Filter result count: 1

#### Substitution value list

| List/Update |         |            |                        |                        |              |                 |                        |                  | △Close                  |                                                                        |
|-------------|---------|------------|------------------------|------------------------|--------------|-----------------|------------------------|------------------|-------------------------|------------------------------------------------------------------------|
| Update      | Discard | Item No. ⇕ | Operation ⇕            | Movement ⇕             | Host ⇕       | Variable name ⇕ | Member variable name ⇕ | Specific value ⇕ | Last update date/time ⇕ | Last updated by ⇕                                                      |
| Update      | Discard | 2          | 10:LegacyRole_Practice | 13:Sudoer registration | 5:testgurung | 14:VAR_users    | 11:[0].authorized      |                  | 2020/12/21 15:20:14     | LegacyRole substitution value automatic registration setting procedure |

Filter result count: 1

# 2.10 Execution (1/2)

## Execute Movement directly

The Movement created in this scenario is one.

Let's skip the Conductor creation and use the **direct execution** feature.

Menu: Ansible-LegacyRole > Execution

The screenshot shows the Ansible-LegacyRole Execution menu. The left sidebar lists various options like Main menu, Movement list, and Execution. The main area has tabs for Description, Scheduling, Movement [Filter], and Movement [List]. A callout '1' points to the Movement [List] tab, with the text 'Select the Movement to execute.' A red box highlights the table in the Movement [List] tab, which contains one row for 'movement01'. Another callout '2' points to the Operation [List] tab, with the text 'Select Operation.' A red box highlights the table in the Operation [List] tab, which contains several rows of operations. A callout '3' points to the 'Execute' button at the bottom of the screen, with the text 'Click "Execute".' A blue circle labeled 'Tips' contains the note: 'The screen will automatically change to the "Check work status" screen after executing.'

1 Select the Movement to execute.

2 Select Operation.

3 Click "Execute".

**Tips**

The screen will automatically change to the "Check work status" screen after executing.

## 2.10 Execution (2/2)

### Check execution results

Clicking the link will transfer the user to a screen where **Execution status** and **logs** are displayed.

Menu : **Ansible-LegacyRole > Check operation status**

**Target Operation**

| Item                              | Value                                                                                                                                                                                                                                                                                                                            |                                          |    |                  |            |                       |   |                                   |                                                                                                                        |                      |    |                  |  |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|----|------------------|------------|-----------------------|---|-----------------------------------|------------------------------------------------------------------------------------------------------------------------|----------------------|----|------------------|--|
| Execution No.                     | 51                                                                                                                                                                                                                                                                                                                               |                                          |    |                  |            |                       |   |                                   |                                                                                                                        |                      |    |                  |  |
| Execution type                    | Normal                                                                                                                                                                                                                                                                                                                           |                                          |    |                  |            |                       |   |                                   |                                                                                                                        |                      |    |                  |  |
| Status                            | Completed                                                                                                                                                                                                                                                                                                                        |                                          |    |                  |            |                       |   |                                   |                                                                                                                        |                      |    |                  |  |
| execution engine                  | Ansible Engine                                                                                                                                                                                                                                                                                                                   |                                          |    |                  |            |                       |   |                                   |                                                                                                                        |                      |    |                  |  |
| Caller symphony                   |                                                                                                                                                                                                                                                                                                                                  |                                          |    |                  |            |                       |   |                                   |                                                                                                                        |                      |    |                  |  |
| Caller conductor                  | Sample1                                                                                                                                                                                                                                                                                                                          |                                          |    |                  |            |                       |   |                                   |                                                                                                                        |                      |    |                  |  |
| Execution user                    | System Administrator                                                                                                                                                                                                                                                                                                             |                                          |    |                  |            |                       |   |                                   |                                                                                                                        |                      |    |                  |  |
| Movement                          | <table border="1"><tr><td>ID</td><td>1</td></tr><tr><td>Name</td><td>Legacy1</td></tr><tr><td>Delay timer (minutes)</td><td></td></tr><tr><td>Dedicated information for ansible</td><td><table border="1"><tr><td>Host specific format</td><td>IP</td></tr><tr><td>WinRM connection</td><td></td></tr></table></td></tr></table> | ID                                       | 1  | Name             | Legacy1    | Delay timer (minutes) |   | Dedicated information for ansible | <table border="1"><tr><td>Host specific format</td><td>IP</td></tr><tr><td>WinRM connection</td><td></td></tr></table> | Host specific format | IP | WinRM connection |  |
| ID                                | 1                                                                                                                                                                                                                                                                                                                                |                                          |    |                  |            |                       |   |                                   |                                                                                                                        |                      |    |                  |  |
| Name                              | Legacy1                                                                                                                                                                                                                                                                                                                          |                                          |    |                  |            |                       |   |                                   |                                                                                                                        |                      |    |                  |  |
| Delay timer (minutes)             |                                                                                                                                                                                                                                                                                                                                  |                                          |    |                  |            |                       |   |                                   |                                                                                                                        |                      |    |                  |  |
| Dedicated information for ansible | <table border="1"><tr><td>Host specific format</td><td>IP</td></tr><tr><td>WinRM connection</td><td></td></tr></table>                                                                                                                                                                                                           | Host specific format                     | IP | WinRM connection |            |                       |   |                                   |                                                                                                                        |                      |    |                  |  |
| Host specific format              | IP                                                                                                                                                                                                                                                                                                                               |                                          |    |                  |            |                       |   |                                   |                                                                                                                        |                      |    |                  |  |
| WinRM connection                  |                                                                                                                                                                                                                                                                                                                                  |                                          |    |                  |            |                       |   |                                   |                                                                                                                        |                      |    |                  |  |
| Operation                         | <table border="1"><tr><td>No.</td><td>1</td></tr><tr><td>Name</td><td>Operation1</td></tr><tr><td>ID</td><td>1</td></tr></table>                                                                                                                                                                                                 | No.                                      | 1  | Name             | Operation1 | ID                    | 1 |                                   |                                                                                                                        |                      |    |                  |  |
| No.                               | 1                                                                                                                                                                                                                                                                                                                                |                                          |    |                  |            |                       |   |                                   |                                                                                                                        |                      |    |                  |  |
| Name                              | Operation1                                                                                                                                                                                                                                                                                                                       |                                          |    |                  |            |                       |   |                                   |                                                                                                                        |                      |    |                  |  |
| ID                                | 1                                                                                                                                                                                                                                                                                                                                |                                          |    |                  |            |                       |   |                                   |                                                                                                                        |                      |    |                  |  |
| Host management                   | <table border="1"><tr><td>confirmation</td></tr></table>                                                                                                                                                                                                                                                                         | confirmation                             |    |                  |            |                       |   |                                   |                                                                                                                        |                      |    |                  |  |
| confirmation                      |                                                                                                                                                                                                                                                                                                                                  |                                          |    |                  |            |                       |   |                                   |                                                                                                                        |                      |    |                  |  |
| Substitution value                | <table border="1"><tr><td>confirmation</td></tr></table>                                                                                                                                                                                                                                                                         | confirmation                             |    |                  |            |                       |   |                                   |                                                                                                                        |                      |    |                  |  |
| confirmation                      |                                                                                                                                                                                                                                                                                                                                  |                                          |    |                  |            |                       |   |                                   |                                                                                                                        |                      |    |                  |  |
| Input data                        | Populated data                                                                                                                                                                                                                                                                                                                   | <a href="#">InputData_000000051.zip</a>  |    |                  |            |                       |   |                                   |                                                                                                                        |                      |    |                  |  |
| Output data                       | Result data                                                                                                                                                                                                                                                                                                                      | <a href="#">ResultData_000000051.zip</a> |    |                  |            |                       |   |                                   |                                                                                                                        |                      |    |                  |  |
| Operation status                  | Scheduled date/time                                                                                                                                                                                                                                                                                                              |                                          |    |                  |            |                       |   |                                   |                                                                                                                        |                      |    |                  |  |
|                                   | Start date/time                                                                                                                                                                                                                                                                                                                  | 2020/11/11 08:44:45                      |    |                  |            |                       |   |                                   |                                                                                                                        |                      |    |                  |  |
|                                   | End date/time                                                                                                                                                                                                                                                                                                                    | 2020/11/11 08:44:58                      |    |                  |            |                       |   |                                   |                                                                                                                        |                      |    |                  |  |

**Progress status(Execution log)**

| Filter:                                                                                                         | <input type="checkbox"/> Display only corresponding lines                               |
|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| task path: /exastro/data_relay_storage/ansible_driver/legacy/r1/0000000002/in/roles/sudoers/tasks/config.yml:12 |                                                                                         |
| skipping: [testserver] => {                                                                                     |                                                                                         |
| "changed": false,                                                                                               |                                                                                         |
| "skip_reason": "Conditional result was False"                                                                   |                                                                                         |
| }                                                                                                               |                                                                                         |
| TASK [Remove unmanaged /etc/sudoers.d files] ****                                                               |                                                                                         |
| task path: /exastro/data_relay_storage/ansible_driver/legacy/r1/0000000002/in/roles/sudoers/tasks/config.yml:20 |                                                                                         |
| skipping: [testserver] => {                                                                                     |                                                                                         |
| "changed": false,                                                                                               |                                                                                         |
| "skip_reason": "Conditional result was False"                                                                   |                                                                                         |
| }                                                                                                               |                                                                                         |
| META: ran handlers                                                                                              |                                                                                         |
| META: ran handlers                                                                                              |                                                                                         |
| PLAY RECAP                                                                                                      |                                                                                         |
| testserver                                                                                                      | : ok=3    changed=0    unreachable=0    failed=0    skipped=2    rescued=0    ignored=0 |

Tips

Users can download a zip file that contains input and result data..

Tips

To check the results on the target host, please refer to /etc/sudoers.d

# Chapter 3 Ansible-Pioneer



# 3.1 Work environment and Scenario

## Work environment

The work environment used in this document is as follows.

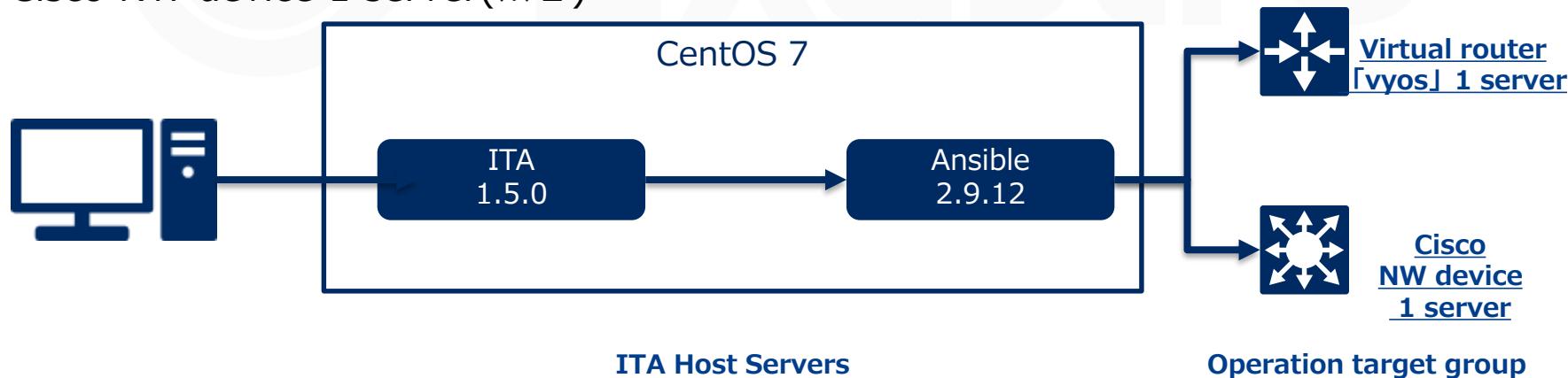
We will operate on a **NW Device**, so please prepare the following environment.

### ITA Host Servers

- CentOS 7 (※1)
- ITA 1.6.0
- Ansible 2.9.12

### Target

- Virtual router 「vyos」 1 server
- Cisco NW device 1 server(※ 2)



※1 In this scenario, CentOS7 will be used for the host server, but ITA can be installed on any RHEL7 and RHEL8 type OS.

※2 This document uses Layer 3 switches for input examples for each item. If you are using a router or Layer 2 switch, please make sure to replace it accordingly.

# 3.1 Work environment and Scenario

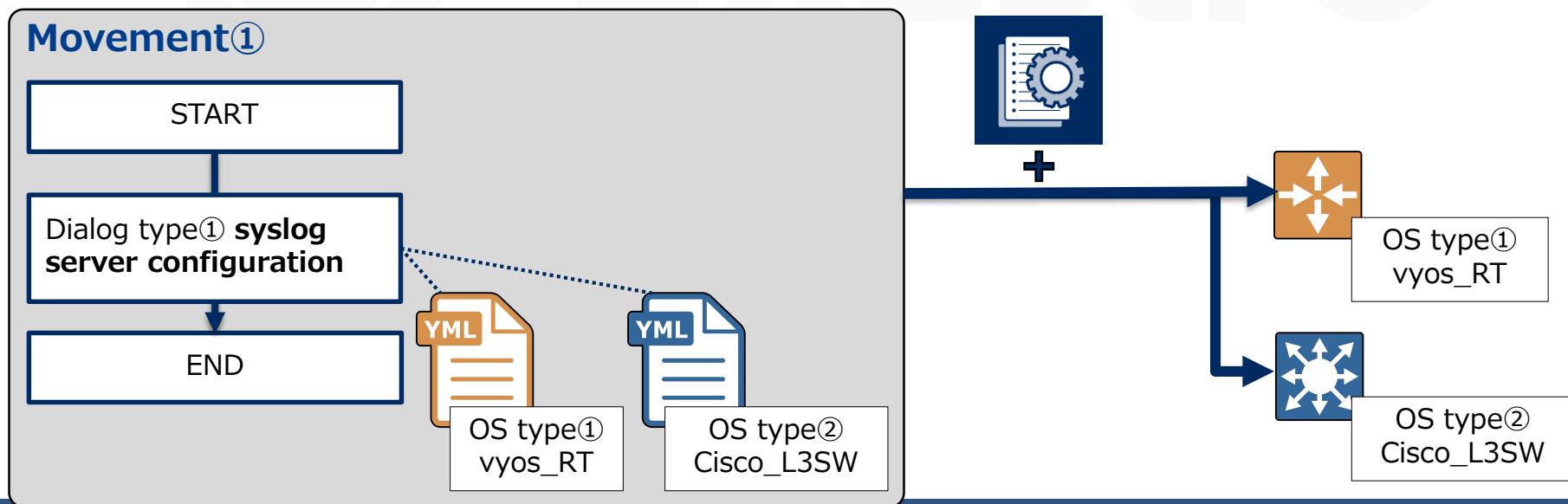
## Scenario

Ansible-Pioneer is used to specify log servers for NW device with different vendors. This scenario lets you experience the following 3 features of the Pioneer mode.

- ① Being able to execute dialog files as well as Telnet or ssh communication is provided.
- ② Execution without having to worry about OS, Differences by utilizing Dialog types and OS types.
- ③ Repetition of tasks and conditional branching using proprietary modules.

## Scenario images

### Movement creation



## 3.2 Dialog file creation(1/2)

### Dialog file creation

Create the file that we are going to use in this scenario.

[Attention]

Please use "UTF-8" for the character code.

Log server registration command to vyos.  
This will use "with\_items" to do iterative processing.

This will check settings.  
Outputs settings information and returns "failed" if the specified string is missing.  
Conditional judgement will be made for each iteration by "with\_items".

```
conf:  
  timeout: 10  
  
exec_list:  
  - expect: 'password:'  
    exec: '{{ __loginpassword__ }}'  
  
  - expect: '{{ __loginuser__ }}@{{ __loginhostname__ }}'  
    exec: 'set terminal length 0'  
  
  - expect: '{{ __loginuser__ }}@{{ __loginhostname__ }}'  
    exec: 'configure'  
  
  - command: 'set system syslog host {{ item.0 }} facility all level {{ VAR_log_severity }}'  
    prompt: 'vyos@{{ __loginhostname__ }}'  
    with_items:  
      - '{{ VAR_syslog_server_ip }}'  
    when:  
      - VAR_log_severity is define  
  
  - expect: 'vyos@{{ __loginhostname__ }}'  
    exec: 'commit'  
  
  - expect: 'vyos@{{ __loginhostname__ }}'  
    exec: 'save'  
  
  - expect: 'vyos@{{ __loginhostname__ }}'  
    exec: 'exit'  
  
  - command: 'show configuration'  
    prompt: 'vyos@{{ __loginhostname__ }}'  
    with_items:  
      - '{{ VAR_syslog_server_ip }}'  
    failed_when:  
      - stdout match(host *{{ item.0 }})  
  
File name: vyos_set_syslog_server.yml
```

## 3.2 Dialog file creation(2/2)

### Prepare the dialog file

Similarly, create file on the right.

Displays configurations for the log and stores the contents of the standard output in "register".

Log server registration command to CiscoIOS.  
Will use "with\_items" to do iterative processing.  
In "exec\_when", the decision to execute the process is made according to the contents stored above.

```
conf:  
  timeout: 10  
  
  File name: ios_set_syslog_server.yml  
  
exec_list:  
  - expect: 'Username:'  
    exec: '{{ __loginuser__ }}'  
  
  - expect: 'Password:'  
    exec: '{{ __loginpassword__ }}'  
  
  - expect: '{{ __loginhostname__ }}'  
    exec: 'enable'  
  
  - expect: 'Password:'  
    exec: '{{ __loginpassword__ }}'  
  
  - expect: '{{ __loginhostname__ }}'  
    exec: 'terminal length 0'  
  
  - command: 'show logging'  
    prompt: '{{ __loginhostname__ }}'  
    register: result_stdout  
  
  - expect: '{{ __loginhostname__ }}'  
    exec: 'configure terminal'  
  
  - command: 'logging host {{ item.0 }}'  
    prompt: '{{ __loginhostname__ }}'  
    with_items:  
      - '{{ VAR_syslog_server_ip }}'  
    exec_when:  
      - result_stdout no match(Logging to {{ item.0 }})  
  
  - command: 'logging facility {{ VAR_log_facility }}'  
    prompt: '{{ __loginhostname__ }}'  
    when:  
      - VAR_log_facility is define  
  
  - command: 'logging trap {{ VAR_log_severity }}'  
    prompt: '{{ __loginhostname__ }}'  
    when:  
      - VAR_log_severity is define
```

## 3.3 OS type creation

### Create "OS type"

Pioneer can choose the code to be dropped depending on the OS of the target host.  
First, register "OS type" to ITA.

Menu: **Ansible-Pioneer > OS type master**

- ① Click Register > Start Registration.
- ② Input the following information for each item and click "Register".

Register

| os type ID | os type name* | Device type |
|------------|---------------|-------------|
| Auto-input | SV            | NW ST       |

\*is a required item.

Back Register

| OS type name | Device type/NW |
|--------------|----------------|
| vyos_RT      | ●              |
| Cisco_L3SW   | ●              |

## 3.4 Movement configuration(1/4)

### Create Movement

Movement is the smallest unit of operation in ITA.  
Create a Movement and link it to the **dialog type**.

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

- ① Click Register > Start Registration.
- ② Select or input the following information for each item and click "Register".

Register

| Movement ID | Movement Name*       | Delay timer | Dedicated information for ansible |                               | Access permission                      |                      |
|-------------|----------------------|-------------|-----------------------------------|-------------------------------|----------------------------------------|----------------------|
|             |                      |             | Host specific format*             | Number of parallel executions | Setting                                | Role to allow access |
| Auto-input  | <input type="text"/> |             | <input type="text"/>              | <input type="text"/>          | <input type="button" value="Setting"/> |                      |

\* is a required item.

| Item                 | Input contents           |
|----------------------|--------------------------|
| Movement name        | Log server configuration |
| Host specific format | IP                       |

## 3.4 Movement configuration(2/4)

### Create dialog type

Next, create "Dialog type".

Menu: **Ansible-Pioneer > Dialog type list**

- ① Click Register > Start Registration.
- ② Input the following information for each item and click "Register".

Register

| Item No.   | Dialog type name*    | Access permission |                      |
|------------|----------------------|-------------------|----------------------|
|            |                      | Setting           | Role to allow access |
| Auto-input | <input type="text"/> | Setting           |                      |

\* is a required item.

**Back** **Register**

| Item name        | Input contents              |
|------------------|-----------------------------|
| Dialog type name | syslog server specification |

## 3.4 Movement configuration(3/4)

### Register Dialog files

When you're done preparing, register the Dialog file.

We will link all the Dialog types and the OS Types we've created up until this point.

Menu: **Ansible-Pioneer > Dialog files**

- ① Click Register > Start Registration.
- ② Choose a Dialog file from "Browse" and click "Upload in advance".
- ③ Select the following for the other items and click "Register".

Register

| Dialog ID  | Dialog type*           | OS type*               | Dialog file*                                                                                                    |
|------------|------------------------|------------------------|-----------------------------------------------------------------------------------------------------------------|
| Auto-input | <input type="button"/> | <input type="button"/> | <input type="button"/> Choose file No file chosen<br><input type="button"/> Upload in advance<br>Upload status: |

\* is a required item.

| Dialog type                 | OS type    | Dialog files               |
|-----------------------------|------------|----------------------------|
| syslog server specification | vyos_RT    | vyos_set_syslog_server.yml |
| syslog server specification | Cisco_L3SW | ios_set_syslog_server.yml  |

## 3.4 Movement configuration(4/4)

### Register the Dialog type to Movement

Link movement and Dialog type.

Menu: Ansible-Pioneer > Movement details

- ① Click Register > Start Registration.
- ② Select or input the following information for each item and click "Register".

Register

| Associated item No. | Movement*                        | Dialog type*                     | Include order*       |
|---------------------|----------------------------------|----------------------------------|----------------------|
| Auto-input          | <input type="button" value="▼"/> | <input type="button" value="▼"/> | <input type="text"/> |

\* is a required item.

[Back](#) [Register](#)

| Item          | Input contents              |
|---------------|-----------------------------|
| Movement      | Log server configuration    |
| Dialog type   | syslog server specification |
| Include order | 1                           |

# 3.5 Operation registration

## Register new operation

Create operation. Link Movement and Host.

Menu : **Basic Console > Input operation list**

- ① Click Register > Start Registration.
- ② Input the following information for each item and click "Register".

Register

| No.        | Operation ID | Operation name*  | Scheduled date for execution* | Access permission |                      |
|------------|--------------|------------------|-------------------------------|-------------------|----------------------|
|            |              |                  |                               | Setting           | Role to allow access |
| Auto-input | Auto-input   | Pioneer_Practice |                               | Setting           |                      |

※\* is a required item.

Back Register

| Item name                    | Input contents          |
|------------------------------|-------------------------|
| Operation name               | Pioneer_Practice        |
| Scheduled date for execution | (Enter arbitrary value) |

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

# 3.6 Register to device list

## Register NW device to the device list

Register this work target from the device list.

Please note that, different from Legacy mode and Legacy-Role mode, **you will need to fill in "Pioneer Usage Information"**.

Menu: Basic Console > Device list

- ① Click Register > Start Registration.
- ② Select the following information for each item and click "Register".

Register

|                            |                |            |             |                |                     |            |                |                               |
|----------------------------|----------------|------------|-------------|----------------|---------------------|------------|----------------|-------------------------------|
| Managed system item number | HW device type | Host name* | IP address* | EtherWakeOnLan | Login user ID       | Management | Login password | Ansible Dedicated information |
| Auto-input                 |                |            |             | MAC address    | Network device name |            |                | Pioneer Dedicated information |
|                            |                |            |             |                |                     |            |                | Protocol                      |
|                            |                |            |             |                |                     |            |                | OS type                       |
|                            |                |            |             |                |                     |            |                | Connection options            |

\* is a required item.

Back      Register

| Item                              | Vyos Virtual router | Cisco device |
|-----------------------------------|---------------------|--------------|
| HW device type                    | NW                  |              |
| Host name                         | (Arbitrary value)   |              |
| IP address                        | (Arbitrary value)   |              |
| Login user ID                     | (Arbitrary value)   |              |
| Management                        | ●                   |              |
| Login password                    | (Arbitrary value)   |              |
| Pioneer uses information/Protocol | ssh                 | telnet       |
| Pioneer uses information/OS type  | vyos_RT             | Cisco_L3SW   |

### 3.7 Parameter sheet creation (1/2)

#### Create menu

Create parameter sheet.

create and manage parameters to apply to the target host.

Menu : Create menu > Create/Define menu

1 Input the following information.(Next item)

| Item                   | Input contents                  |
|------------------------|---------------------------------|
| <b>Menu name</b>       | Pioneer practice                |
| <b>Creation target</b> | Parameter sheet(Host/Operation) |
| <b>Display order</b>   | 3                               |

Menu creation information

**Id :** Auto-input

**Menu name\*** : Pioneer practice

**Creation target** : Parameter Sheet(Host/Operal ▾)

**Display order\*** : 3

**Create as hostgroup menu** :  Yes

**Create as vertical menu** :  Yes

**Last modified** : Auto-input

**Last updated by** : Auto-input

**Target menu group**

**Input\*** : Input

**Substitution value\*** : Substitution value

**Reference\*** : Reference

**Role** :

**Permission role select**

**Explanation**

## 3.7 Parameter sheet creation (2/2)

### 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

The screenshot shows a software interface for creating a parameter sheet. At the top, there are four parameter definitions:

- syslog\_server\_ip**: String type, Maximum number of bytes: 32, Regular expression: (empty), Required: unchecked, Unique constraint: unchecked.
- sub\_syslog\_server\_ip**: String type, Maximum number of bytes: 32, Regular expression: (empty), Required: unchecked, Unique constraint: unchecked.
- log\_facility**: String type, Maximum number of bytes: 32, Regular expression: (empty), Required: unchecked, Unique constraint: unchecked.
- log\_severity**: String type, Maximum number of bytes: 32, Regular expression: (empty), Required: unchecked, Unique constraint: unchecked.

Below these definitions is a **List(Preview)** section containing a table with three rows of data:

| No | Host name   | Operation name | Reference date   |
|----|-------------|----------------|------------------|
| 1  | 192.168.0.1 | Operation      | 2020/01/01 00:00 |
| 2  | 192.168.0.1 | Operation      | 2020/01/01 00:00 |
| 3  | 192.168.0.1 | Operation      | 2020/01/01 00:00 |

At the bottom left is a red **Create** button. A blue callout bubble with the number 3 points to the **Create** button with the text "Press to execute menu creation."

A blue callout bubble with the number 1 points to the **Item** button at the top left with the text "Press to add a new item."

A blue callout bubble with the number 2 points to the second column of the preview table with the text "Define the contents of the item as shown in the table below."

| Item name            | Input method | Maximum number of bytes |
|----------------------|--------------|-------------------------|
| syslog_server_ip     | String       | 32                      |
| sub_syslog_server_ip | String       | 32                      |
| log_facility         | String       | 32                      |
| log_severity         | String       | 32                      |

## 3.8 Data registration

### Register data to the parameter sheet

Now that we have created the Menu, let's register the data we're going to use to configure the target host.

#### Menu: For input > Pioneer practice (Created Menu)

- ① Click Register > Start Registration.
- ② Select or input the following information for each item and click "Register".

| No    | Host name | Operation | Parameter                                                       |
|-------|-----------|-----------|-----------------------------------------------------------------|
| Auto- |           | Operation | syslog_server_ip sub_syslog_server_ip log_facility log_severity |
| input |           |           |                                                                 |

| Host name                | Operation        | syslog_server_ip     | sub_syslog_server_ip | log_facility | log_severity |
|--------------------------|------------------|----------------------|----------------------|--------------|--------------|
| (Cisco device selection) | Pioneer_practice | Arbitrary IP address | Arbitrary IP address | local7       | info         |
| (vyos router selection)  | Pioneer_practice | Arbitrary IP address | Arbitrary IP address | local7       | info         |

### 3.9 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-Pioneer > Substitution value automatic registration setting**

- ① Click Register > Start Registration.

The screenshot shows the 'Register' screen with the following sections:

- Parameter sheet:** Contains fields for 'Item No.' (Auto-input), 'Menu group: Menu' (Pioneer Praxis), 'Item' (syslog\_server\_ip), 'Registration method' (Value type), and 'Movement' (Log server configuration).
- Iac variable:** Contains two tables:
  - Key variable:** Columns: Variable name, Substitution order. Row: Select Movement.
  - Value variable:** Columns: Variable name, Substitution order. Row: Select Movement.

A red box highlights the 'Item No.' field and the 'Value variable' section.

- ② Input link settings as shown in the table below and click "Register".

| Menu           | Item                 | Registration method | Movement                 | Value variable<br>Variable name | Substitution order |
|----------------|----------------------|---------------------|--------------------------|---------------------------------|--------------------|
| Pioneer Praxis | syslog_server_ip     | Value type          | Log server configuration | VAR_syslog_server_ip            | 1                  |
| Pioneer Praxis | sub_syslog_server_ip | Value type          | Log server configuration | VAR_syslog_server_ip            | 2                  |
| Pioneer Praxis | log_facility         | Value type          | Log server configuration | VAR_log_facility                | Null link          |
| Pioneer Praxis | log_severity         | Value type          | Log server configuration | VAR_log_severity                | Null link          |

# 3.10 Check Substitution value and Target host

## Check Substitution value and Target host

Check target host and values specified by substitution value automatic registration.

Menu: Ansible-Pioneer > Target host & Ansible-Pioneer > Substitution value setting

- ① Click "Filter".
- ② Check that the correct value is specified by "Pioneer substitution value automatic registration setting procedure".

| Target host |         |            |                     |                             |              |        |           |                         |                                                                     |
|-------------|---------|------------|---------------------|-----------------------------|--------------|--------|-----------|-------------------------|---------------------------------------------------------------------|
| Update      | Discard | Item No. ▾ | Operation ▾         | Movement ▾                  |              | Host ▾ | Remarks ▾ | Last update date/time ▾ | Last updated by ▾                                                   |
| Update      | Discard | 1          | 11:Pioneer_Practice | 14:Log server configuration | 5:testgurung |        |           | 2020/12/21 15:14:07     | Pioneer substitution value automatic registration setting procedure |
| Update      | Discard | 2          | 11:Pioneer_Practice | 14:Log server configuration | 1:Tsai_test  |        |           | 2020/12/21 15:15:23     | Pioneer substitution value automatic registration setting procedure |

| Substitution value list |         |            |                     |                             |              |                 |                  |                      |                         |                                                                     |
|-------------------------|---------|------------|---------------------|-----------------------------|--------------|-----------------|------------------|----------------------|-------------------------|---------------------------------------------------------------------|
| Update                  | Discard | Item No. ▾ | Operation ▾         | Movement ▾                  | Host ▾       | Variable name ▾ | Specific value ▾ | Substitution order ▾ | Last update date/time ▾ | Last updated by ▾                                                   |
| Update                  | Discard | 1          | 11:Pioneer_Practice | 14:Log server configuration | 5:testgurung | 1:VAR_DIRECTORY |                  |                      | 2020/12/21 15:16:24     | Pioneer substitution value automatic registration setting procedure |
| Update                  | Discard | 2          | 11:Pioneer_Practice | 14:Log server configuration | 1:Tsai_test  | 1:VAR_DIRECTORY |                  |                      | 2020/12/21 15:38:47     | Pioneer substitution value automatic registration setting procedure |

# 3.11 Execution (1/2)

## Execute Movement directly

The number of Movements created in this scenario is 1. There is no need to create any Conductors. **Execute them individually** from the "Execution" menu.

Menu : Ansible-Pioneer > Execution

The screenshot shows the Ansible-Pioneer execution interface. On the left, a vertical menu lists various options like Main menu, Movement list, Dialog type list, etc. The 'Execution' option is selected. The main area has two tabs: 'Movement [List]' and 'Operation [List]'. A callout '1' points to the 'Movement [List]' tab with the text 'Select the Movement to execute.' A red box highlights the first row of the table, which contains Movement ID 14, Name Log server configuration, and Operator Ansible Pioneer. A callout '2' points to the 'Operation [List]' tab with the text 'Select Operation.' A red box highlights the first row of the table, which contains Operation ID 1, Name Operation1, and Scheduled date 2028/08/27 16:00. A callout '3' points to the bottom of the screen with the text 'Click "Execute".' A red box highlights the 'Execute' button. A 'Tips' callout on the right says: 'The screen will automatically change to the "Check operation status" screen after executing.'

1 Select the Movement to execute.

2 Select Operation.

3 Click "Execute".

Tips

The screen will automatically change to the "Check operation status" screen after executing.

| Select                           | Movement ID | Movement Name            | Orchestrator    | Delay timer | Dedicated information for ansible                   | Variable count | Remarks | Last update date/time | Last updated by      |
|----------------------------------|-------------|--------------------------|-----------------|-------------|-----------------------------------------------------|----------------|---------|-----------------------|----------------------|
| <input checked="" type="radio"/> | 14          | Log server configuration | Ansible Pioneer | IP          | host specific format, Number of parallel executions | 1              |         | 2028/12/21 14:38:07   | System Administrator |

| Select                           | No. | Operation ID | Operation name      | Scheduled date   | Remarks             | Last update date/time | Last updated by                |
|----------------------------------|-----|--------------|---------------------|------------------|---------------------|-----------------------|--------------------------------|
| <input checked="" type="radio"/> | 1   | 1            | Operation1          | 2028/08/27 16:00 |                     | 2028/12/21 10:43:11   | LegacyHole execution procedure |
| <input checked="" type="radio"/> | 2   | 2            | Test Operation      | 2028/10/08 16:00 |                     | 2028/10/23 16:21:05   | Legacy execution procedure     |
| <input checked="" type="radio"/> | 6   | 6            | Basic settings all  | 2028/10/08 16:00 | group menu creation | 2028/10/22 09:54:53   | Data portability procedure     |
| <input checked="" type="radio"/> | 7   | 7            | ope1                | 2028/11/10 16:00 |                     | 2028/11/10 14:00:49   | Data portability procedure     |
| <input checked="" type="radio"/> | 8   | 8            | OPI                 | 2028/11/21 09:00 |                     | 2028/11/19 09:03:14   | System Administrator           |
| <input checked="" type="radio"/> | 9   | 9            | operation           | 2028/12/18 16:00 |                     | 2028/12/03 15:50:03   | Legacy execution procedure     |
| <input checked="" type="radio"/> | 10  | 10           | LegacyHole Practice | 2028/12/21 10:57 |                     | 2028/12/21 10:57:54   | System Administrator           |
| <input checked="" type="radio"/> | 11  | 11           | Pioneer_Practice    | 2028/12/21 14:45 |                     | 2028/12/21 15:41:13   | Pioneer execution              |

Movement ID: 14  
Movement Name: Log server configuration

Dry run      Execute

# 3.11 Execution (2/2)

## Check execution results

Executing the operation will transfer the user to a screen where **Execution status** and **logs** are displayed.

Menu : **Ansible-Pioneer > Check operation status**

### Execution status

| Target Operation                  |                                                                                                                                                                                                                                                                                                                                  |                      |    |                  |                     |                       |                     |                                   |                                                                                                                        |                      |    |                  |  |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----|------------------|---------------------|-----------------------|---------------------|-----------------------------------|------------------------------------------------------------------------------------------------------------------------|----------------------|----|------------------|--|
| Item                              | Value                                                                                                                                                                                                                                                                                                                            |                      |    |                  |                     |                       |                     |                                   |                                                                                                                        |                      |    |                  |  |
| Execution No.                     | 51                                                                                                                                                                                                                                                                                                                               |                      |    |                  |                     |                       |                     |                                   |                                                                                                                        |                      |    |                  |  |
| Execution type                    | Normal                                                                                                                                                                                                                                                                                                                           |                      |    |                  |                     |                       |                     |                                   |                                                                                                                        |                      |    |                  |  |
| Status                            | Completed                                                                                                                                                                                                                                                                                                                        |                      |    |                  |                     |                       |                     |                                   |                                                                                                                        |                      |    |                  |  |
| execution engine                  | Ansible Engine                                                                                                                                                                                                                                                                                                                   |                      |    |                  |                     |                       |                     |                                   |                                                                                                                        |                      |    |                  |  |
| Caller symphony                   |                                                                                                                                                                                                                                                                                                                                  |                      |    |                  |                     |                       |                     |                                   |                                                                                                                        |                      |    |                  |  |
| Caller conductor                  | Sample1                                                                                                                                                                                                                                                                                                                          |                      |    |                  |                     |                       |                     |                                   |                                                                                                                        |                      |    |                  |  |
| Execution user                    | System Administrator                                                                                                                                                                                                                                                                                                             |                      |    |                  |                     |                       |                     |                                   |                                                                                                                        |                      |    |                  |  |
| Movement                          | <table border="1"><tr><td>ID</td><td>1</td></tr><tr><td>Name</td><td>Legacy1</td></tr><tr><td>Delay timer (minutes)</td><td></td></tr><tr><td>Dedicated information for ansible</td><td><table border="1"><tr><td>Host specific format</td><td>IP</td></tr><tr><td>WinRM connection</td><td></td></tr></table></td></tr></table> | ID                   | 1  | Name             | Legacy1             | Delay timer (minutes) |                     | Dedicated information for ansible | <table border="1"><tr><td>Host specific format</td><td>IP</td></tr><tr><td>WinRM connection</td><td></td></tr></table> | Host specific format | IP | WinRM connection |  |
| ID                                | 1                                                                                                                                                                                                                                                                                                                                |                      |    |                  |                     |                       |                     |                                   |                                                                                                                        |                      |    |                  |  |
| Name                              | Legacy1                                                                                                                                                                                                                                                                                                                          |                      |    |                  |                     |                       |                     |                                   |                                                                                                                        |                      |    |                  |  |
| Delay timer (minutes)             |                                                                                                                                                                                                                                                                                                                                  |                      |    |                  |                     |                       |                     |                                   |                                                                                                                        |                      |    |                  |  |
| Dedicated information for ansible | <table border="1"><tr><td>Host specific format</td><td>IP</td></tr><tr><td>WinRM connection</td><td></td></tr></table>                                                                                                                                                                                                           | Host specific format | IP | WinRM connection |                     |                       |                     |                                   |                                                                                                                        |                      |    |                  |  |
| Host specific format              | IP                                                                                                                                                                                                                                                                                                                               |                      |    |                  |                     |                       |                     |                                   |                                                                                                                        |                      |    |                  |  |
| WinRM connection                  |                                                                                                                                                                                                                                                                                                                                  |                      |    |                  |                     |                       |                     |                                   |                                                                                                                        |                      |    |                  |  |
| Operation                         | <table border="1"><tr><td>No.</td><td>1</td></tr><tr><td>Name</td><td>Operation1</td></tr><tr><td>ID</td><td>1</td></tr></table>                                                                                                                                                                                                 | No.                  | 1  | Name             | Operation1          | ID                    | 1                   |                                   |                                                                                                                        |                      |    |                  |  |
| No.                               | 1                                                                                                                                                                                                                                                                                                                                |                      |    |                  |                     |                       |                     |                                   |                                                                                                                        |                      |    |                  |  |
| Name                              | Operation1                                                                                                                                                                                                                                                                                                                       |                      |    |                  |                     |                       |                     |                                   |                                                                                                                        |                      |    |                  |  |
| ID                                | 1                                                                                                                                                                                                                                                                                                                                |                      |    |                  |                     |                       |                     |                                   |                                                                                                                        |                      |    |                  |  |
| Host management                   |                                                                                                                                                                                                                                                                                                                                  |                      |    |                  |                     |                       |                     |                                   |                                                                                                                        |                      |    |                  |  |
| Substitution value                |                                                                                                                                                                                                                                                                                                                                  |                      |    |                  |                     |                       |                     |                                   |                                                                                                                        |                      |    |                  |  |
| Input data                        | Populated data                                                                                                                                                                                                                                                                                                                   |                      |    |                  |                     |                       |                     |                                   |                                                                                                                        |                      |    |                  |  |
|                                   | <a href="#">InputData_0000000051.zip</a>                                                                                                                                                                                                                                                                                         |                      |    |                  |                     |                       |                     |                                   |                                                                                                                        |                      |    |                  |  |
| Output data                       | Result data                                                                                                                                                                                                                                                                                                                      |                      |    |                  |                     |                       |                     |                                   |                                                                                                                        |                      |    |                  |  |
|                                   | <a href="#">ResultData_0000000051.zip</a>                                                                                                                                                                                                                                                                                        |                      |    |                  |                     |                       |                     |                                   |                                                                                                                        |                      |    |                  |  |
| Operation status                  | <table border="1"><tr><td>Scheduled date/time</td><td></td></tr><tr><td>Start date/time</td><td>2020/11/11 08:44:45</td></tr><tr><td>End date/time</td><td>2020/11/11 08:44:58</td></tr></table>                                                                                                                                 | Scheduled date/time  |    | Start date/time  | 2020/11/11 08:44:45 | End date/time         | 2020/11/11 08:44:58 |                                   |                                                                                                                        |                      |    |                  |  |
| Scheduled date/time               |                                                                                                                                                                                                                                                                                                                                  |                      |    |                  |                     |                       |                     |                                   |                                                                                                                        |                      |    |                  |  |
| Start date/time                   | 2020/11/11 08:44:45                                                                                                                                                                                                                                                                                                              |                      |    |                  |                     |                       |                     |                                   |                                                                                                                        |                      |    |                  |  |
| End date/time                     | 2020/11/11 08:44:58                                                                                                                                                                                                                                                                                                              |                      |    |                  |                     |                       |                     |                                   |                                                                                                                        |                      |    |                  |  |

### Log

#### Progress status (Execution status)

```
Filter :  □, Display only corresponding lines

"exec_file": "/exastro/data_relay_storage/ansible_driver/pioneer/ns/00000000103/in/dialog_files/vyos-test/0000000001-7118.v",
"extra_args": " _undefinedsymbol_",
"exec_shell_dir": "/library",
"host_vars_file": "/exastro/data_relay_storage/ansible_driver/pioneer/ns/00000000103/tmp/original_host_vars/vyos-test",
"inventory_hostname": " _undefinedsymbol_",
"log_file_dir": "/exastro/data_relay_storage/ansible_driver/pioneer/ns/00000000103/out",
"protocol": "ssh",
"ssh_key_file": " _undefinedsymbol_",
"username": "vyos"
}
},
"msg": "normal exit"
}
META: ran handlers
META: ran handlers
PLAY RECAP ****
: ok=1    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
:
: ok=1    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
:
```

Tips

Users can download a zip file that contains input and result data.

Tips

If you want to check the results of the execution by using commands, you can use the commands below to check the log settings.  
IOS - "# show logging"  
vyos - "\$ show configuration"

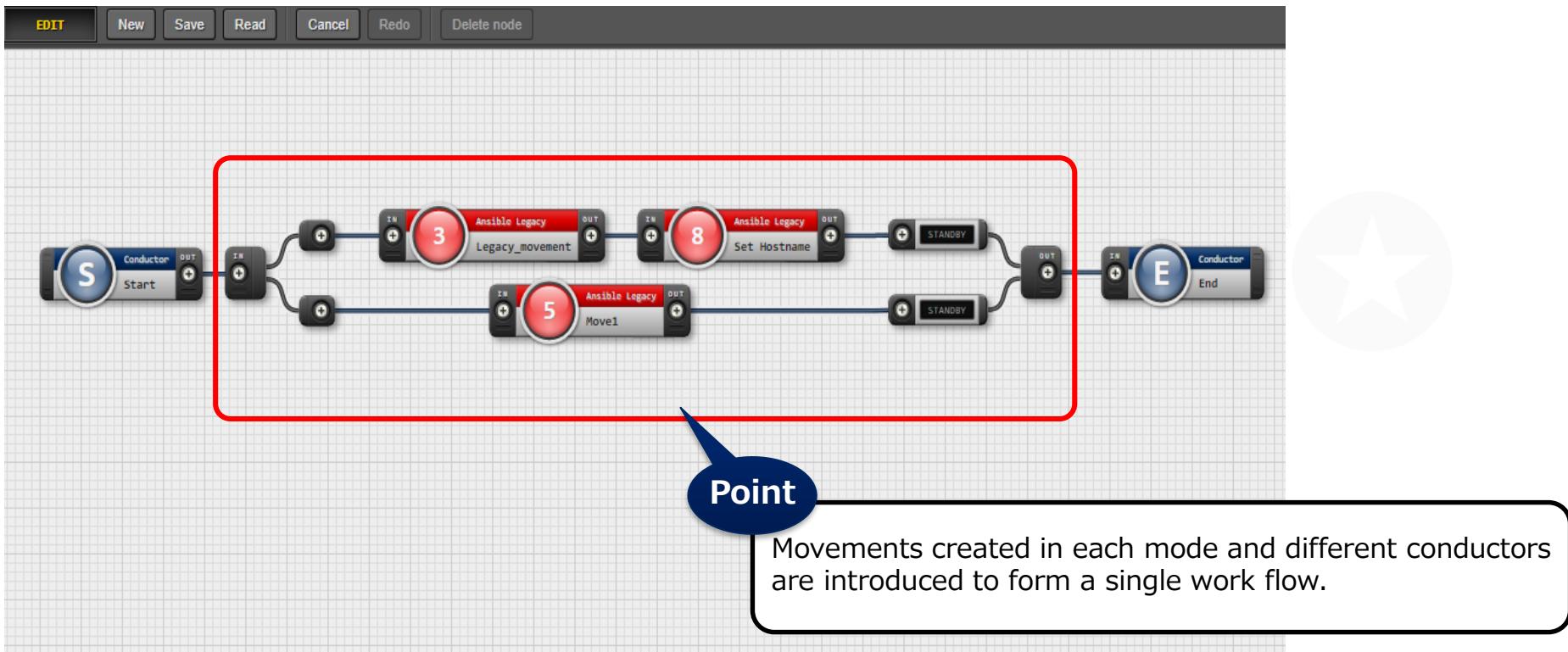
# A) Appendix



# Appendix 1) Bundling and running 3 modes in Conductor

## Bundle up the 3 modes and execute them

In this document, we executed the work for each mode individually, but users can also create a work flow that executes work in multiple modes by using Conductor.





**Exastro**