



# ITA\_System Configuration/ Environment Construction Guide

Ansible-driver

— Version 1.5 —

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## Introduction

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This document explains the system configuration and environment construction for operating Ansible optional function (referred to as Ansible driver hereafter) in ITA.

To use the ITA Ansible driver, it is assumed that the basic ITA functions have been built. Please refer to "System Configuration/Environment Construction Guide - Basics" for constructing ITA basic function.

## 1 Function

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Ansible driver provides the following functions.

**Table 1 Function name**

No	Function name	Use	WEB Content	BackYard Content
1	Ansible driver	Manage construction of server, storage, network devices from ITA through Ansible or AnsibleTower.	○	○
2	Ansible RestAPI	Contents providing RestAPI for operating Ansible from external.	○	—

## 2 System configuration

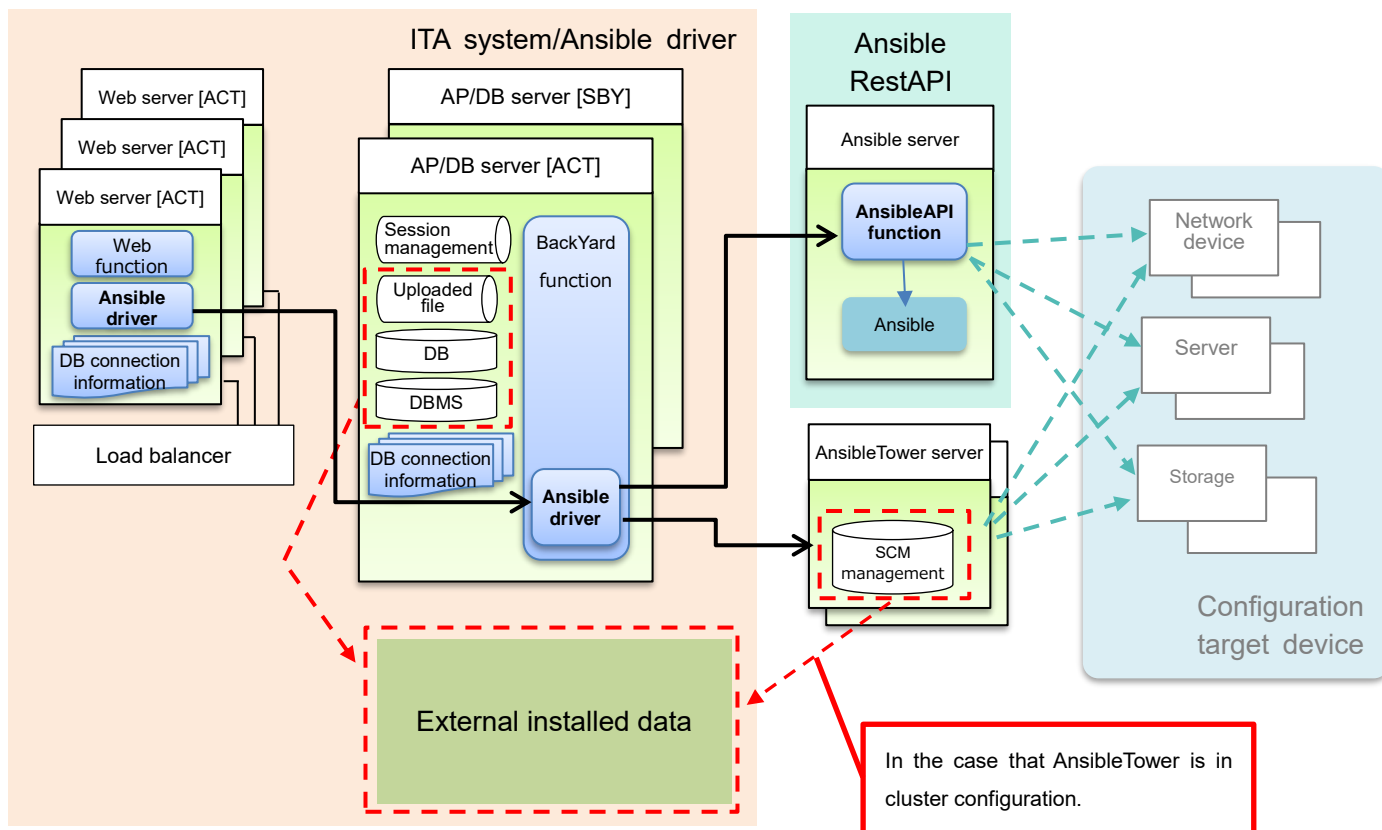
The system configuration of Ansible driver is same as the ITA system.

Ansible RestAPI is considered to be configured in a dedicated Ansible server separated from the Ansible driver.

Also, preparing a designated server for Ansible Tower is required. (Consolidating the construction into one server is also possible.)

This figure shows a configuration in which an Ansible RESTAPI server is added to the balanced HA type, the recommended configuration for the ITA system.

※The figure here is a omitted version. Please refer to "System Configuration/Environment Construction Guide - Basics" for details.



### 3 System requirements

Since Ansible driver is based on system requirements of ITA system, please refer to "System Configuration/Environment Construction Guide - Basics". This section describes the requirements for BackYard, Ansible RestAPI, and Ansible Tower.

#### ● BackYard

**Table 3-1. Linux commands required for Ansible BackYard**

Command	Note
zip	

**Table 3-2. External modules required for Ansible BackYard**

External module	Version	Note
php-yaml	2.1.0 or higher	

#### ● Ansible RestAPI

**Table 3-3 Ansible RestAPI system requirements**

Package	Version	Note
Ansible	2.5 or higher	
Python	3.0 or higher	
pywinrm		Python module. If installation fails when using yum, please use pip to install.
Pexpect		Python module.
telnet	—	Required for telnet connection to the configuration target.
Apache	2.2 series / 2.4 series	Required when operating the function on the server different from the ITA system. The package and version should match the ITA system servers

**Table 3-4 Linux command required for Ansible Driver**

Command	Note
expect	

#### ● Ansible Tower

**Table 3-5 Ansible Tower system requirements**

Package	Version	Note
Ansible Tower	3.5.0 or higher	The user/password authentication method under version 3.5.0 is not supported

## 4 Prepare shared directory

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### 4.1 Ansible driver – Ansible RestAPI

Please prepare a shared directory which both Ansible driver and Ansible RestAPI can refer. After installing Ansible driver and Ansible RestAPI, it is required to register the shared directory to ITA system. Please refer to "Interface information" in "User instruction manual - Ansible-driver" and perform registration.

### 4.2 Ansible driver – Ansible Tower server

Please prepare a shared directory which both Ansible driver and AnsibleTower server can reference. After installing Ansible driver and constructing AnsibleTower server, registering the shared directory to ITA system is required. Please refer to "Interface information" in "User instruction manual - Ansible-driver" and perform registration.

### 4.3 Ansible Tower SCM management directory

SCM type is set to manual when creating an AnsibleTower project from ITA. When constructing AnsibleTower in cluster configuration, please prepare a shared directory for the project base path (/var/lib/awx/projects) and share all instances with it.



## 5 AnsibleTower initial settings

Perform settings required for AnsibleTower after installing AnsibleTower.

### 5.1 Settings

Login AnsibleTower from browser, set “/var/lib/awx/.ssh” in “SETTINGS” → “JOBS” → “PATHS TO EXPOSE ISOLATED JOBS”.

According to this setting, ssh connection that does not require the user and password of the target node with key exchange is enabled.

SETTINGS / JOBS

#### JOBS

ANSIBLE MODULES ALLOWED FOR AD HOC JOBS ? REVERT

command

shell

yum

apt

apt\_key

apt\_repository

apt\_rpm

service

group

user

mount

ping

selinux

setup

win\_ping

win\_service

win\_updates

win\_group

PATHS TO EXPOSE TO ISOLATED JOBS ? REVERT

/var/lib/awx/.ssh

\* ENABLE JOB ISOLATION ?

ON

DEFAULT PROJECT UPDATE TIMEOUT ? REVERT

0

\* ISOLATED STATUS CHECK INTERVAL ? REVERT

30

EXTRA ENVIRONMENT VARIABLES ? REVERT

1 {}

\* JOB EXECUTION PATH ? REVERT

/tmp

ANSIBLE CALLBACK PLUGINS ? REVERT

DEFAULT JOB TIMEOUT ? REVERT

0

PER-HOST ANSIBLE FACT CACHE TIMEOUT ? REVERT

0

\* ISOLATED LAUNCH TIMEOUT ? REVERT

600

\* MAXIMUM SCHEDULED JOBS ? REVERT

10

PATHS TO HIDE FROM ISOLATED JOBS ? REVERT

DEFAULT INVENTORY UPDATE TIMEOUT ? REVERT

0

ENABLE ROLE DOWNLOAD ?

ON

ISOLATED CONNECTION TIMEOUT ? REVERT

10

REVERT ALL TO DEFAULTCANCELSAVE

## 5.2 Package confirmation

Confirm packages that are required for Ansible-driver are installed.

If not installed, it's required to install the packages.

- Required package  
pexpect
- Method to confirm  
su - awx  
source /var/lib/awx/venv/ansible/bin/activate  
pip list  
deactivate
- Method to install  
su - awx  
source /var/lib/awx/venv/ansible/bin/activate  
umask 0022  
pip install --upgrade pexpect  
deactivate

## 5.3 Required resource preparation

It is required to register projects, inventory, credentials, and application with Ansible Tower in advance.

**Table 5-1 AnsibleTower required resource**

Type	Use	Name	Description
Project	Operation before creating new project	ita_executions_prepare_build	Copy the role structure directory received from shared directory to the project base path of AnsibleTower
Project	Operation after deleting project	ita_executions_cleanup	Delete the directory created in the above "Operation before creating new project".
Inventory	Local access	ita_executions_local	Inventory information for executing the operation of above project in AnsibleTower locally.
Credential	Local access	ita_executions_local	Credential for executing the operation of project above in AnsibleTower locally.
Application	Authentication application	o_auth2_access_token	Application information for authentication when connecting from ITA to AnsibleTower with RestAPI
User	Token	-	Connection token used to connect from ITA to AnsibleTower with RestAPI

### 5.3.1 [Project] Operation before creating new project

- Create directory in AnsibleTower server

Project root (Default: /var/lib/awx/projects/)

```
└─ ita_executions_prepare_build/
   └─ site.yml
      └─ roles/
         └─ copy_materials_role/
            └─ tasks/
               └─ main.yml
```

- Content of site.yml

```
---
- name: copy materials from data_relay_storage to projects
  gather_facts: no
  hosts: all
  roles:
    - copy_materials_role
```

- Content of main.yml

```

---
- name: copy_materials
  copy:
    src: "{{ if_info_data_relay_storage }}/{{ driver_type }}/{{ driver_id }}/{{ execution_no_with_padding }}/in/"
    dest: "/var/lib/awx/projects/ita_{{ driver_name }}_executions_{{ execution_no_with_padding }}"

```

- AnsibleTower settings
  - Name : ita\_executions\_prepare\_build
  - Organization : Default
  - SCM type : Manual (Machine)
  - PLAYBOOK directory : ita\_executions\_prepare\_build

### 5.3.2 [Project] Operation after deleting project

- Directory configuration in AnsibleTower server

Project root (Default: /var/lib/awx/projects/)

```

└─ ita_executions_cleanup/
    └─ site.yml
        └─ roles/
            └─ rmdir_role/
                └─ tasks/
                    └─ main.yml

```

- Content of site.yml

```

---
- name: remove local directory
  hosts: all
  gather_facts: no
  roles:
    - rmdir_role

```

- Content of main.yml

```

- name: rmdir_local
  file:
    path:
      "/var/lib/awx/projects/ita_{{ driver_name }}_executions_{{ execution_no_with_padding }}"
    state: absent

```

- AnsibleTower settings
  - Name : ita\_executions\_cleanup
  - Organization : Default
  - SCM type : Manual (Machine)
  - PLAYBOOK directory : ita\_executions\_cleanup

### 5.3.3 [Inventory] Local access

- AnsibleTower settings (inventory)
  - Name : ita\_executions\_local

- Organization : Default
- AnsibleTower settings(in inventory - host)
  - Host name : localhost
  - Variable :

ansible\_ssh\_host: localhost

#### 5.3.4 [Credential] Local access

- AnsibleTower settings
  - Name : ita\_executions\_local
  - CREDENTIAL TYPE : Machine
  - User name : Linux user
  - Password : password

The user/password to execute Project:ita\_executions\_cleanup/ita\_executions\_prepare\_build. Please use the user that owns read/write permission of project base path(/var/lib/awx/projects). Creating a dedicated Linux user is recommended.

When constructing AnsibleTower in cluster configuration, creating Linux users / passwords that is same with each Ansible Tower server in advance is required.

#### 5.3.5 Application

- AnsibleTower settings
  - Name : o\_auth2\_access\_token
  - Organization : Default
  - Authorization Grant Type : Password base of resource owner
  - Client type : Secret

#### 5.3.6 [User] Token

- AnsibleTower settings
  - APPLICATION : o\_auth2\_access\_token
  - SCOPE : write

Login with the user used to login AnsibleTower beforehand is required.

The generated token must be set as the connection token in the interface information of the AnsibleTower console.