

ITA\_User\_Manual

Collect function

-Ver 1.6 -

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# Introduction

This document explains the ITA Collect function and how to use it.

# 1 Collect function overview

This section explains the collect function.

# 1.1 About the collect function

The collect function automatically registers values to parameter sheets. The values are based on the results of executed operations (source files output in a specified format) in ITA.

This function uses Ansible-Driver as target.

For more information about Ansible, please refer to the Ansible product manual For more information about Ansible-Driver, please refer to "Exastro-

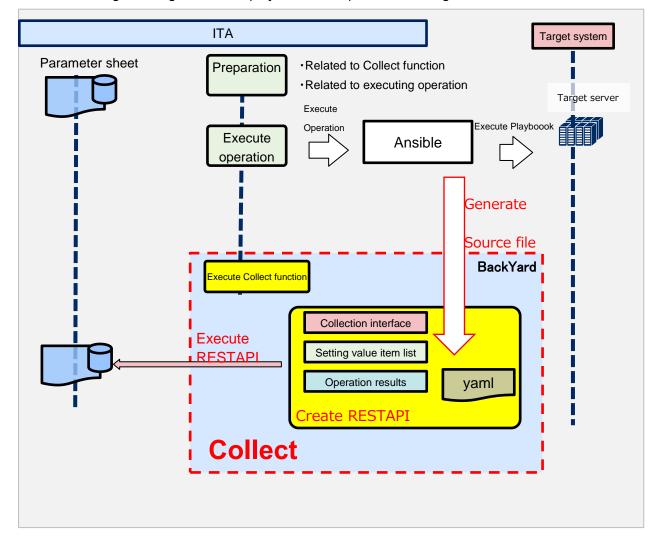
ITA User Instruction Manual Ansible-Driver"

For more information about Parameter sheets, please refer to "Exastro-

ITA User Instruction Manual Menu creation function".

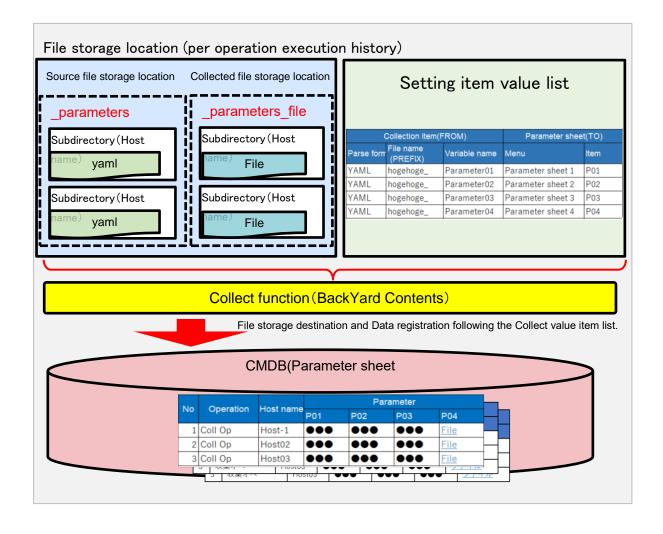
#### 1.1.1 Collect function overview diagram

The following is a diagram that displays the entire process of using the Collect function.



## 1.1.2 Collect function Data registration process overview diagram

The following is a diagram of the Collect function Data registration process.



# 1.2 Parametersheets registration

The collect function is an option of ITA and uses ITA's standard REST API function for the Parameter sheet registration process

For more information about the REST API Function, please refer to "Exastro-ITA User Instruction Manual RESTAPI"

## 1.2.3 Collect function requirements

Make sure that the requirements below are met.

- ITA is installed with "Createparam" and "Ansible\_driver" selected. (done in the installer)
- A parameter sheet (with Host/Operation) is created in the Menu definition/creation screen.
- The registration information (source file) is linked to the items in the Parameter sheet in the "Setting value item list"
- The Collection interfance information's REST access information is updated.
- The Collection target device (Host name) is already registered in the device list.

If the executed operations outputs any of the statuses below, it will be registered to the parameter sheet.

- Operation execution result, the operation has successfully ended.
- Directories and files are arranged in a specific structure as a result of the output of the operation execution.

\*Each user must prepare the IaC(Plabook, Role) that generates source files going to be registered to the parameter sheets.

Reference: Ansible Playbook Collection (OS Setting collection)
https://github.com/exastro-suite/playbook-collection-docs/blob/master/README.ja.md

# 2 Handling Directories, File structures and varibles in the Collect function.

# 2.1 Collectable Directories and File structures.

#### 2.1.1 Collectable File formats

(1) Files output in YAML format.

e.g.)

■File name:RH\_snmp.yml

■File contents:

VAR\_RH\_sshd\_config:

- key: PermitRootLogin

value: yes

- key: PasswordAuthentication

value: no

# 2.1.2 Collectable Directory configuration

The collectable directory path (output destination for the source file) can be handled as the following variable in IaC (Playbook, Role).

Table 2-1 Collectable directory ITA Original variables

ITA original variable	Variable specified contents	Remarks
parameter_dir	「_parameters」Operation result directory path	
parameters_file_dir	「_parameters_file」Operation result directory path	
parameters_dir_for_epc	「_parameters」Operation result directory path	
parameters_file_dir_for_epc	「_parameters_file」Operation result directory path	

The upper directory of the collectable directories (parameters) depends on the "Data relay storage path (Ansible", Ansible driver execution mdoe and the No. of the operation.

(The "Data relay storage path (Ansible) can be found in Ansible Common -> Interface information in ITA.)

Table 2-2 Collect function target Directory and file hierarchy

Hierarchy structure		Remarks
【Upper directory】		※1 Collectable directory(Fixed name)
parameters	<b>※</b> 1	※2Host name
- localhost	<b>※</b> 2	(Items registered in the device list are
- SAMPLE.yml	<b>※</b> 3	collectable)
parameters_file	<b>※</b> 4	※3 Collectable file
- localhost	<b>※</b> 2	%4Collectable directory for file uploads (Fixed
- test.txt	<b>※</b> 5	name)

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\*\*Hierarchical structure after data relay storage path (Ansible)

When creating a playbook that generate source files, not using the "Table 2-1 Collectable directory ITA Original variables" for the output destination will require the user to write the Playbook with the following structure in mind.

Table 2-3 Upper directory paths for the different Ansible-Driver modes

Mode	Mode identifier	Hierarchy structure	Remarks
Ansible-	legacy/ns/	/DataRelayStoragePath(Ansible)/legacy/ns/	
Legacy			
Ansible-	pioneer/ns/	/ DataRelayStoragePath(Ansible)/pioneer /ns/	
Pioneer			
Ansible-	legacy/rl/	/ DataRelayStoragePath(Ansible)/legacy/rl/	
LegacyRole			

e.g.) Collectable file paths and directory structures

Execution mode: Ansible-Legacy

Operation No : 1
Target host: localhost

Operation execution directory;/DataRelayStoragePath (Ansible)/legacy/ns/000000001/in/Operation results directory;/DataRelayStoragePath (Ansible)/legacy/ns/000000001/out/

Collectable file path and directory structures:

/ DataRelayStoragePath (Ansible)/legacy/ns/0000000001/in/\_parameters/localhost/SAMPLE.yml / DataRelayStoragePath (Ansible)/legacy/ns/000000001/in/\_parameters/localhost/OS/RH\_snmpd.yml / DataRelayStoragePath (Ansible)/legacy/ns/0000000001/in/\_parameters\_file/localhost/TEST.txt

Or,

/ DataRelayStoragePath (Ansible)/legacy/ns/000000001/out/\_parameters/localhost/SAMPLE.yml / DataRelayStoragePath (Ansible)/legacy/ns/000000001/out/\_parameters/localhost/OS/RH\_snmpd.yml / DataRelayStoragePath (Ansible)/legacy/ns/000000001/out/\_parameters\_file/localhost/TEST.txt

If the user wants the file upload menu to be collectable, a file with the same name as the value of the source file variable (file name) must be placed under \_parameters\_.

For more information about Collection item value list settings, please refer to "5.1.2 Collection item value list"

As the maximum file size for uploads depends on the server specifications, please refer to "Exastro-ITA\_User\_Instruction\_Manual\_RESTAPI" for more details.

# 2.2 Variable and variable types

The following 3 types of variables can be handled in the Collect function source file.

Table 2.1 Variables and types

Туре	Contents	Remarks
	Can have one specific value defined per each variable	
Normal variable	name.	
Normal variable	e.g.)	
	VAR_users: root	
	Can have multiple specific values defined per each	
	variable name	
Multiple specific	e.g.)	
value variable	VAR_users:	
	- root	
	- mysql	
	Hierarchical variable.	
	e.g.)	
	VAR_users:	
	- user-name: alice Member	
	authorized: password	
Multistage		
variable	Member variable names can contain any ascii character	
	excluding the seven characters below. ( '0x20~0x7e can be used)	
	" . [ ] ' ¥ :	
	Keep in mind that there are a few characters that can't be used at	
	the beginning of a variable name unless they are enclosed	
	in quotation marks.For more information, please refer to.	

# 3 Collect function console menu

This section explains the ITA Console menu structure

For more information on how to log in to the web console and the basic operations/components of the menu screen, please refer to "Exastro-ITA\_First\_Step\_Guide"

# 3.1 Menu/Screen list

## ① Ansible common console menu

The Ansible common console menu list is as following.

Table 3-1 Common console Menu/screen list

No	Menu group	Menu/Screen	Description
		Collection interface	Manage the connection interface information to the server
1		information	that accesses the ITA standard REST Function.
'	Ansible common		The REST function is used when registering data to
	console		parameter sheets.
	Console	Collected item value list	Set up the connection between the executed operation
2			output results (Source file) and the parameter sheet items
			and manages the Collection function parameter sheets.

#### 2 Ansible console menu

The list of menus corresponding to the Ansible consoles are as written below.

Table 3-2 Ansible driver console Menu/Screen list

	Menu group					
Ansible Console			Manual Carrage	Description.		
NO	Pioneer Legacy Role Legacy		Pioneer	Menu/Screen	Description	
14	0	0	0	Execution list	Manages operation execution history.  Refers to the registration status of the parameter sheet and execution log by the Collect function.	

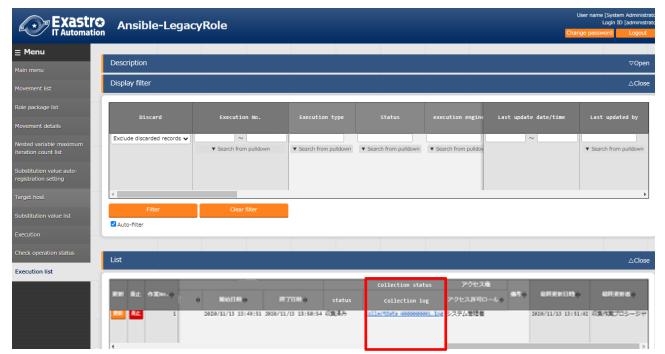


Figure 3.1-1 Execution list screen

# 4 Collect function user manual

This section describes the how to use the Collect function.

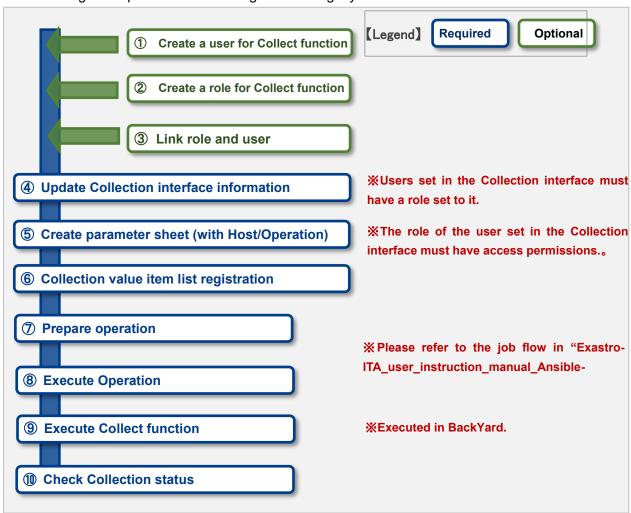
# 4.1 Work flow.

The standard workflow for implementing the Colelct function is as following For details on how to use ITA Ansible-Driver, please refer to Exastro-ITA\_User\_Instruction\_Manual\_Ansible-driver"

For details on how to use ITA Basic console, please refer to Exastro-ITA User Instruction Manual Basic console"

#### 4.1.1 Collect function work flow.

The following is the process before using Ansible-Legacy



#### Workflow and references.

#### ① Create a user for the Collect function.

Register a user for the Collect function in the ITA Management Console - Device list screen. For details on how to register, please refer to "Exastro-ITA User Instruction Manual Management console."

#### 2 Create a role for the Collect function

Register a role for the Collect function in the ITA Management Console – Role list screen For details on how to register, please refer to "Exastro-ITA User Instruction Manual Management console."

#### 3 Link role and user

Link the role and user in the ITA Management console – Role/User link screen For details, please refer to "Exastro-ITA User Instruction Manual Management console."

#### **4** Register Collection interface information

Register the connection information in the Ansible Common console – Collection interface information screen

For details, please refer to "5.1.1 Collection interface information"

#### **⑤** Create Parameter sheet (with host/operation)

Create a parameter sheet in the Menu creation console – Menu definition/creation screen For details, pelase refer to "Exastro-ITA\_User\_Instruction\_Manual\_Menu\_creation\_function"

## **6** Register Collection item value list.

Register the information that links the source files to the items in the parameter sheet. (Ansible common console – Collection item value list screen)
Fore details, please refer to "5.1.2 Collection item value list".

#### 7 Prepare Operation

Prepare the Operation to be executed.

For details, please refer to "Exastro-ITA\_User\_Instruction\_Manual\_Ansible-Driver",

"Exastro-ITA User Instruction Manual Symphony" and

"Exastro-ITA User Instruction Manual Conductor".

#### 8 Execute Operation

Select the execution date/time, input operation, movement and workflow, and start the execution process.

For details regarding execution, please refer to "Exastro-ITA\_User\_Instruction\_Manual\_Ansible-Driver", "Exastro-ITA\_User\_Instruction\_Manual\_Symphony" and "Exastro-ITA User Instruction Manual Conductor".

#### Execute Collect function

Initiate the Parameter sheet registration process with the executed operation's operation No. as target for the Collect function.

For details, please refer to "5.3 BackYard contents".

## **10** Check Collection status

Ain the operation list screen, (Ansible-Legacy/ Ansible-Pioneer/Ansible-LegacyRole), users can check the Collection status of completed operations and download the log file(s). For details, please refer to "5.2.1 Check Collection status"

# 5 Collect function operation explanation

This section explains how to operate the Collect function.

For details on how to register, please refer to "Exastro-ITA\_User\_Instruction\_Manual\_Basic\_console"

# **5.1 Ansible Common console**

This section explains how to operate the Ansible Common console.

#### 5.1.1 Collection interface information

(1) Since the ITA's standard REST API is used in this menu, it is required to update the Connection interface information for RESTAPI.

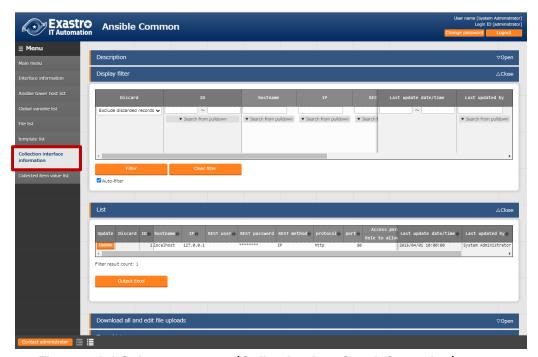


Figure 5.1-1 Submenu screen (Collection interface information)

(2) Register Collection interface information with the "List"-"Update" button.



Figure 5.1-2 Update screen(Collection interface information)

(3) The item list for the Collection interface information is shown below.
If the operation was executed with no Collection interface information registered or with multiple records registered, the Collect function will not register any information to the

Table 5.1-1 Registration screen, Item list (Interface information)

Item	Description	Input required	Input method	Constraints
Host name	Input host name	0	Manual input	
	Initial value:localhost			
IP	Input IP Address	0	Manual input	
	Initial value: 127.0.0.1			
REST user	Input ITA user login ID		Manual input	<b>※</b> 1
REST password	Input ITA user login password		Manual input	
RESTmethod	Choose IP or Host name	0	Choose from	
	● IP		list	
	Host name			
Protocol	Input protocol	0	Manual input	
	Initial value: http			
Port	Input port	0	Manual input	
	Initial value:80			
Remarks	Free description field	-	Manual input	

- X1 Users entered in the "REST user" field will have the following required.
  - The role that the user belongs to has to have permission to access the menu items in the created parameter sheet.
  - The role linked to the user (in the Menu's role information) has to be "Can Maintain" set to it.

For more information regarding Users, creating Roles and linking them, please refer to "Exastro-ITA\_User\_Instruction\_Manual\_Management\_console."

#### 5.1.2 Collection item value list

(1) In the "Collection item value list", set the link between the Colelction items and the items in the parameter sheet.

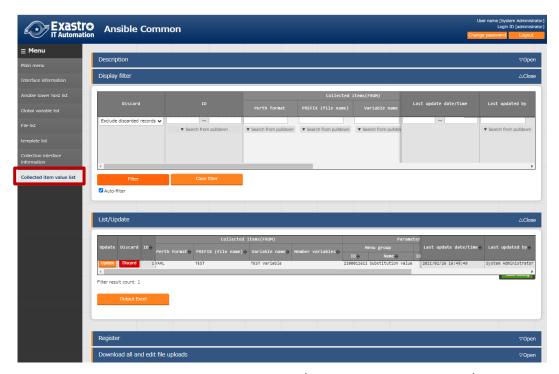


Figure 5.1-3 Submenu screen (Collection item value list)

(2) Register Collection item(s) with the "List"-"Start Registration" button.



Figure 5.1-4 Registration screen (Collection item value list)

(3) The Collection item value list screen's item list is as follows.

Table 5.1-1 Registration screen Item list(Collection item value list)

Item		Description	Input required	Input method	Constraints
Collected	Parse format	Select source file format.	0	Select	
items				from list	
(FROM)	PREFIX(File name)	Enter the file name of the source file	0	Manual	<b>※</b> 1
		(Exclude the file extension).		input	
	Variable name	Input variable name	0	Manual	<b>%</b> 1
				input	
	Member variables	Input if the variable is a multilevel		Manual	<b>※</b> 1

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Item		Description	Input required	Input method	Constraints
		variable or if it has multiple concrete		input	
		valies.			
Paramet	Menu group	Select from a list of menus created	0	Select	
er	Menu	by the Menu creation function		from list	
sheet(TO		Group name: Menu name			
)	Item	Select item.	0	Select	
				from list	

X1 Example of file name, variable and member value input value

e.g.) If the variable has a normal variable structure.

■File name: SAMPLE.yml

**■**File contents

VAR\_sample\_config\_1: yes

VAR\_sample\_config\_2: test\_parameter

■Values that can be input in the Collected item (from) in the Collected value item list.

PREFIX(File name): SAMPLE

Variable name: VAR\_sample\_config\_1

VAR\_sample\_config\_2

e.g.) If the variable has a multiple variable structure.

■File name:SAMPLE\_2.yml

■File contents

VAR\_sample2\_conf:

SAMPLE1

SAMPLE2

SAMPLE3

■Values that can be input in the Collected item(from) in the Collected value item list.

PREFIX(File name): SAMPLE\_2

Variable name: VAR\_sample2\_conf

Member variables: [0]

[1]

[2]

e.g.) If the variables has Multiple specific value structure.

■File name:RH\_sshd.yml

■File contents

VAR\_RH\_sshd\_config:

- key: PermitRootLogin

value: yes

- key: PasswordAuthentication

value: no

■Values that can be input in the Collected item(from) in the Collected value item list.

PREFIX(File name): RH\_sshd

Variable name: VAR\_RH\_sshd\_config:

Member variables: [0].key

[0].value [1].key [1].value

e.g.) If the variable has Multiple specific value structure 2

■File name:RH\_snmp.yml

■File contents

VAR\_RH\_snmpd\_info:

com2sec:

sec\_name: "testsec" source: "192.168.1.0/24" community: "public"
sec\_name: "local" source: "localhost" community: "private"

■Values that can be input in the Collected item(from) in the Collected value item list.

com2sec[1].community

PREFIX(File name): RH\_snmp

# 5.2 Ansible-Legacy、Ansible-Pioneer、Ansible-LegacyRole Console

#### 5.2.1 Check Collection status

It is possible to check the status of completed operations and download the log files in each console's (Ansible-Legacy/ Ansible-Pioneer/Ansible-Legacy role) Execution list screen.

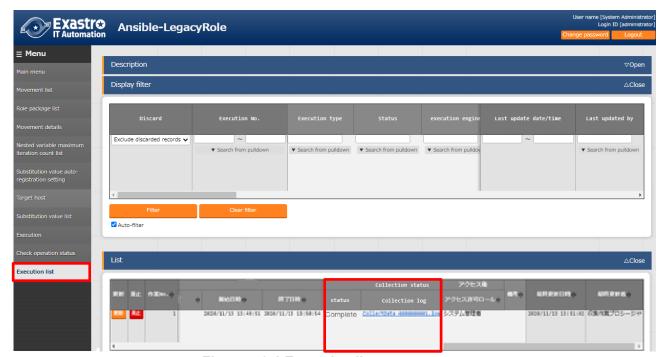


Figure 5.2-1 Execution list screen

Table 5.2-1 Execution list Collection status details

Item	Description	Remarks			
Status	Collection function execution status	*			
	Not target; Not a Collect function target (No target				
	file)				
	Collected: Collect function executed.				
	Collected (with notification): If any errors occurred				
	during registration/update.				
Collection log	Download the collect function execution log.				

Table 5.2-2 Collection status details

Operati	on status	Collect	Collection status		
Status	Target file	function target	Status	Collection log	Remarks
Other than	No	Not target	Blank	Blank	
Complete					
Other than	Yes	Not target	Blank	Blank	

Operation status		Collect	Collection status		
Status	Target file	function target	Status	Collection log	Remarks
Complete					
Complete	No	Target	Not target	Blank	
Complete	Yes	Target	Collected	With log file	
Complete	No	Target	Collected (with notification)	With log file	

# \*Regarding Status notations

- If the Operation status shows "Not complete", the collection status will not be updated because it is not subject to the Collect function. Therefore, it will remain as "Blank"
- If the operation status shows as "Complete" and there are no files to collect, the status will show as "Collected" and the collection log will be blank.
- Even if the RESTAPI registration process fails during collecting the "Collection interface information", Settings item value list" or "Menu access rights/permission roles", the collection will show as "Complete (with notification)".

# Example of Log file output contents.

```
e.g.) Example of Log file output contents (Registration process failed)
2020-11-06 13:32:52 Collect START(Host name:ita-sample File name:RH_snmpd)
2020-11-06 13:32:52 [処理]REST Access failed
Array
(
        [0] => http://127.0.0.1:80/default/menu/07_rest_api_ver1.php?no=0000000005
        [1] => [["Register","","","ita-sample","","","","",""2023¥/10¥/26 16:35_1:OP001","Root
<root@localhost>(configure ¥/etc¥/snmp¥/snmp.local.conf)","Unknown (edit
¥/etc¥/snmp¥/snmpd.conf)","public","notConfigUser","","","","""]]
        [2] =>
{"Error":"¥u30e1¥u30f3¥u30c6¥u30ca¥u30f3¥u30b9¥u6a29¥u9650¥u304c¥u3042¥u308a¥u307e¥u305b
¥u3093¥u3002","Exception":"Generic error","StackTrace":"none"}
```

)

2020-11-06 13:32:52 Collect END ( Host name:ita-sample File name:RH\_snmpd )

e.g.) Example of Log file output contents (Not target) 2020-11-05 16:55:31 [Process]The target device is not registered or is obsolete, so skip the registration and update process(Host name:ita-test)

# 5.3 BackYard contents

#### 5.3.1 Overview of the Parameter sheet registration process.

- (1) Acquire Collection interface information
- (2) Acquire list over completed operations (with Normal end)

  Collection target status: Complete
- (3) Acquire the following information from the collectable operation no.
  - Operation information
  - Target host
  - Target source file
- (4) Inquire wether the target host is registered in the Device list or not

Registered: Collectable
Not registered: Not collectable

- (5) Acquire the Menu ID of the target Parameter sheet from the source file and the Collection item value list.
- (6) Create RESTAPI Parameter with the information gathered in Step 1-4.

Query the Menu ID for data and determine the RESTAPI Execution type.

Register: Unique operation and Host combination data is not registered.
Update: Unique operation and Host combination data is registered

- (7) Register/Update the data using ITA Standard RESTAPI functions
- (8) Update the status of the Collection status to the Operation No.

Keep in mind that the timing of the data registration to the Parameter sheet depends on the startup cycle of the Automatic process.

For more information regarding changing the startup cycle, please refer to "6.2 Maintenance".

The access permission roles of the Registered/Updated records will inherit the access permission roles of the Collectable operation results.  $_{\circ}$ 

For more information regarding Target operation results, please refer to "Exastro-ITA User Instruction Manual Ansible-driver".

# 6 Operation

Operation that uses this function includes: Inputs from users using browsers from client PCs and Operations done directly from the system operation/maintenance.

## 6.1 Maintenance

The following files are required to Start/Stop/Restart the Collect function process.

Description	File name
Automatic Parameter registration	ky_std_synchronize-Collector.service
The operation is executed and will be registered to the	
parameter sheet based on the information registered in the	
setting item value list from the Operation results.	

The files are stored in 「/usr/lib/systemd/system」
The Start/Strop/Restart process methods are as following:
(Execute the commands with Root privileges)

Start process

# systemctl start ky\_std\_synchronize-Collector.service

1 Stop process

# systemctl stop ky\_std\_synchronize-Collector.service

2 Restart process

# systemctl restart ky\_std\_synchronize-Collector.service

Replace each file name with the target file name and start/stop/restart.

# 6.2 Maintenance

Change level to NORMAL

Rewrite the eigth row, "NORMAL, to "DEBUG".

Log level settings file: < Install directory > /ita-root/confs/backyardconfs/ita env

② Change level to DEBUG

Rewrite the eigth row, "DEBUG", to "NORMAL".

Log level settings file: < Install directory > /ita-root/confs/backyardconfs/ita env

③ Change boot cycle.

Change the 5<sup>th</sup> parameter of ExecStart for each target file. (Unit: seconds) Use the default value for boot cycles (except for exceptions).

ExecStart=/bin/sh \${ITA\_ROOT\_DIR}/backyards/common/ky\_loopcall-php-procedure.sh /bin/php | flTA\_ROOT\_DIR}/backyards/ansible\_driver/ky\_std\_synchronize-Collector.php \${ITA\_ROOT\_DIR}/logs/backyardlogs 10 \${ITA\_LOG\_LEVEL} > /dev/null 2>&1

Anything rewritten will take effect after the process is restarted.

Log file output destination: <a href="mailto:slike-not/logs/backyardlogs"><a href="mailto:slike-not/logs/backyardlogs-backyar

## 7.1 References

Below are examples of IaCs (Playbook and Role)

- Ansible Playbook Collection (Collect OS Settings)
   https://github.com/exastro-suite/playbook-collection-docs/blob/master/README.ja.md
- 2. Ansible config collecting and Parameter creating Playbook.

makeYml Ansible.yml

```
- name: make yaml file
  blockinfile:
    create: yes
    mode: 644
    insertbefore: EOF
    marker: ""
    dest: "{{ __parameter_dir__ }}/{{ inventory_hostname }}/Ansible_conf.yml"
    content: |
      ansible architecture: {{ ansible architecture }}
      ansible_bios_version: {{ ansible_bios_version }}
      ansible default ipv4 address: {{ ansible default ipv4.address }}
      ansible default ipv4 interface: {{ ansible default ipv4.interface }}
      ansible default ipv4 network: {{ ansible default ipv4.network }}
      ansible distribution: {{ ansible distribution }}
      ansible_distribution_file_path: {{ ansible_distribution_file_path }}
      ansible distribution file variety: {{ ansible distribution file variety }}
      ansible_distribution_major_version: {{ ansible_distribution_major_version }}
      ansible_distribution_release: {{ ansible_distribution_release }}
      ansible distribution version: {{ ansible distribution version }}
      ansible_machine: {{ ansible_machine }}
      ansible_memtotal_mb: {{ ansible_memtotal_mb }}
      ansible nodename: {{ ansible nodename }}
      ansible os family: {{ ansible os family }}
      ansible_pkg_mgr: {{ ansible_pkg_mgr }}
      ansible processor cores: {{ ansible processor cores }}
      ansible processor count: {{ ansible processor count }}
      ansible processor threads per core: {{ ansible processor threads per core }}
      ansible_processor_vcpus: {{ ansible_processor_vcpus }}
      ansible product name: {{ ansible product name }}
      ansible product serial: {{ ansible product serial }}
      ansible_product_uuid: {{ ansible_product_uuid }}
      ansible product version: {{ ansible product version }}
      ansible python executable: {{ ansible python.executable }}
      ansible_python_version: {{ ansible_python_version }}
```

```
ansible_service_mgr: {{ ansible_service_mgr }}
    ansible_php_config: php.ini
    delegate_to: localhost

- name: get php config
    fetch:
        src: /etc/php.ini
        dest: "{{ __parameters_file_dir__ }}/{{ inventory_hostname }}/"
        flat: yes
```

When you run makeYML\_Ansible.yml and generate the Collectable source file (yaml), you need to enable gather facts.

When editing the Movement list in Ansible Legacy, enter the following in the header section.

For details regarding Changing settings, pleaser refer to

"Exastro-ITA User Instruction Manual Ansible-driver".

e.g) gather\_facts Valid setting example.

```
- hosts: all
remote_user: "{{ __loginuser__ }}"
gather_facts: yes
become: yes
```