

# ITA\_User Instruction Manual

Host group Function

-Version1.8 -

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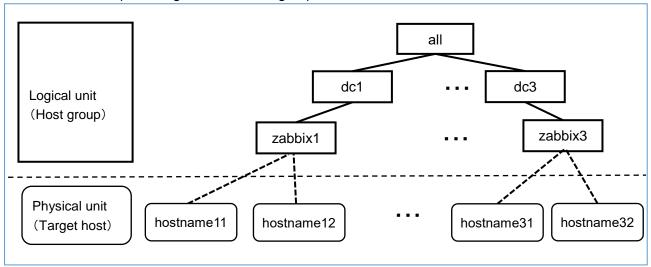
# Introduction

This document describes the functions and operation methods of the ITA host group function (hereinafter referred to as Host group) system.

# 1 Overview and Advantages of host groups

# 1.1 Overview of Host groups

A host group is a group of hosts organized in logical units (Functions/Roles) The conceptual diagram of the host group is as follows.



The above figure consists of the following elements.

### ■Host group

Described in the square with a single line frame in given figure dc1, dc3, zabbix1, zabbix3 all are applicable and stated above.

#### ■ Target host

Host indicating physical device.

Described as a round square corner in the given figure. Hostname11, hostname12, hostname31, hostname32 are applicable and stated above

The upper host group is called the parent host group, and the lower host group is called the child host group, and they have a parent-child relationship. The lower end host group is associated with target host. In above example the child host group is viewed from dc1 is zabbix1 and the parent host group is viewed from zabbix1 is dc1

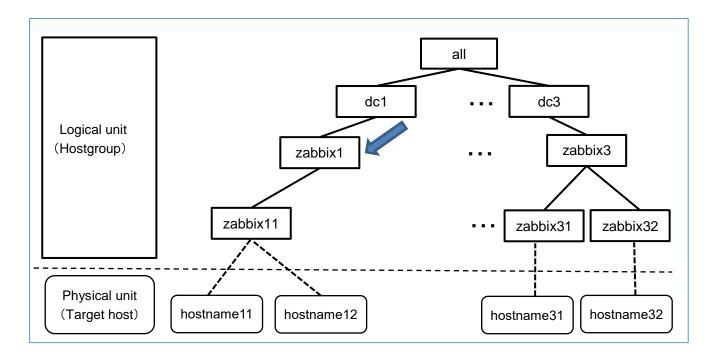
A hierarchy can be defined as count 1 host group as 1 level, Count a pair of parent and child as 2 levels. Up to 15 hierarchies can be defined from the host group at the top to the host group at the end. In the example from the above figure, if we go from "all" to "zabbix1", we get 3 hierarchies.

# 1.2 Advantages of host groups

#### 1.1.1 Inheritance of parameters between host groups

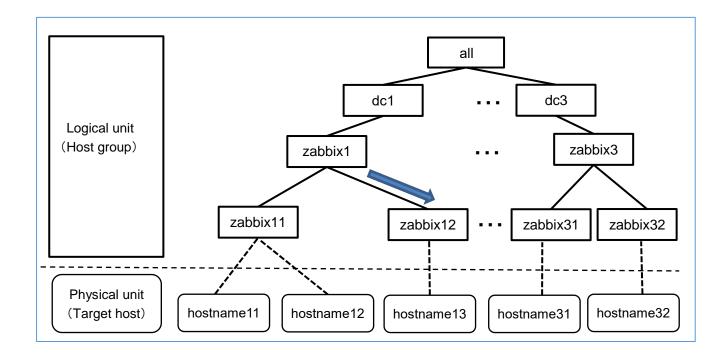
Parameters set in parent host group are inherited by child host group.

In the given example below, the parameters set for dc1 (for example, user password) are inherited to zabbix1. However, if there is no specific value, it is not inherited.

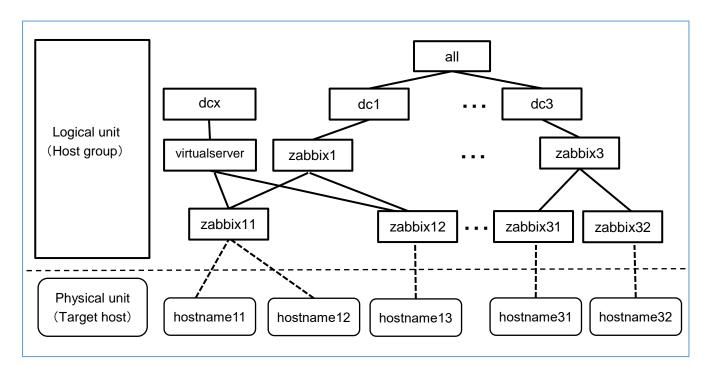


By localizing the settings in this way, assignment/change of settings can be simplified.

The parameter settings are automatically inherited even when a child host group is added. In the example below, when one zabbix server is added, zabbix12 is linked to zabbix1. As a result, the settings of zabbix1 are inherited by zabbix12 in the same way follows to zabbix11.



A child host group can be linked to multiple parent host groups. Here explains the inheritance of parameters when there are multiple parent host groups. In the example below, zabbix11 and zabbix12 belongs to zabbix1 and virtual server.



If parameters are overlap between the host groups, they are applied from the lowest host group. In the above example, if the same parameters are set for dcx and zabbix1, the parameters inherited by zabbix11 and zabbix12 are not dcx but lower zabbix1 parameters.

If the parameters overlap in the same hierarchy, they are inherited from the parent host group with higher priority. In the above example, if the same parameters are set for virtual server and zabbix1, if the priority of virtual server is1 and if the priority of zabbix1 is 2, then the priority of zabbix1 is higher, so the parameter of zabbix1 is inherited by child host group.

How to set the priority is described in "4.2 Register host group"

# 2. Main features of the host group function

The main features of the host group function are classified into the following categories.

① Web

Web content<sub>o</sub> A screen that allows to use the host group function provided by the browser.

② BackYard

A resident process that runs on a server independently of Web content.

# 3. Menu group of host group function

The menu groups of the host group function and the menus belonging to them are as follows.

Menu	Affiliated menu	Section	Description
group			
Hostgroup	Hostgroup Management	4.2	Register host group
management	Hostgroup parent-child	4.3	Define the parent-child relationship of host group
console	link list		
	Host link list	4.4	Associate host group with operation and target hosts

# 3.1 About the "Host Group Management Console" menu group

Host group management, host group parent-child link list, host link list are the menu required to register host groups and define which operation is to be performed on which host. Details of the operation are described in "4 Set information for each host".

# 4. Set information for each host

The following table shows the workflow for registering host groups and setting information for each host using Web content.

Details of the work are described in each section.

Section	Contents of	User	Menu group	Menu used	Remarks
	work	operation	used		
4.1	Create parameter sheet	Yes	Create parameter list	Menu creation information	_
	<u>oneot</u>		menu	Menu item creation	
			moria	information	
				Execute menu	
				creation	
				Menu creation	
				management	
4.2	Register host	Yes	Host group	Host group	_
	group		management	management	
4.3	Define a parent-	Yes	Host group	Host group parent	_
	child relationship of		management	child link list	
	host group-				
4.4	Associate host	Yes	Host group	Host link list	_
	group with		management		
	operation and				
	target hosts				
4.5	Register parameter	Yes	<b>※</b> 2	Menu created in_	_
	sheet menu			<u>"4.1Create parameter</u>	
				sheet"	
4.6	Hosting	No	<b>※</b> 2	Menu created in_	Manual
		<b>※</b> 1		<u>"4.1Create parameter</u>	registration/Update
4.7	A : - t -	\/	W0	sheet"	unavailable
4.7	<u>Associate</u>	Yes	<b>※</b> 2	Substitute value	Refer to "Parameter
	operation with			automatic registration	Management Menu
	setting value of the			setting	Guide" for substitution value automatic
	item in each target				registration setting.
4.8	host Reflect operation to	No	<b>※</b> 3	Target host	Refer to "Parameter
4.0	the associated	*1	**3	largernost	Management Menu
	target host	, , , , , , , , , , , , , , , , , , ,			Guide" for substitution
	targot noot				value automatic
					registration setting.
4.9	Reflect substitution	No	<b>※</b> 3	Substitution value list	Refer to "Parameter
	<u>values</u>	<b>※</b> 1			Management Menu
					Guide" for substitution
					value automatic
					registration setting.

#### **※**1

No user operation is required because it is executed by internal processing. Processing results can be checked on the menu screen.

#### X2

Menu group specified in "4.1 Create parameter sheet" .

#### **X**3

Menu group that performs substitution value automatic registration.

After each operation, the image of the record will be as shown in the table below.

Section	Contents of			lmag	e of record		
	work						
4.2	Register host group	HG 1 HG 2 hg_1a hg_1b hg_2a hg_2b	group				
4.3	Define parent- child relationship of host group	Parent ho HG_1 HG_1 HG_2 HG_2		Child hg_1a hg_1b hg_2a hg_2b	host group		
4.4	Associate host group with operation and target hosts	hg_1a hg_1b hg_2a hg_2b	group	2017/10/31 2017/10/31 2017/10/31 2017/10/31	1001_OP1 1001_OP1	targe host_1a host_1b host_2a host_2b	) a
4.5	Register parameter sheet menu		t host st group	2017/10/31 2017/10/31		1111	1 Item 2  AAA BBB
4.6	Hosting						
		Target host	Schedule execution date		Operation	Item1	Item 2
		host_1a host_1b host_2a host_2b	2017/10/31 2017/10/31 2017/10/31 2017/10/31	1001 1001	OP1 OP1 OP1 OP1	111   111   —   —	AAA AAA BBB BBB

4.7	Associate				
	operation with	Menu group name: Menu name	Item	Movement	Variable name
	setting value of	Parameter management (hosting): Created menu name	Item 1	Movement1	VAR_variable1
	the item in each target host	Parameter management (hosting): Created menu name	Item 2	Movement2	VAR_variable2

Section	Contents of work			Image of re	cord	
4.8	Reflect operation to the associated target host.	Operation 1001_OP1 1001_OP1 1001_OP1 1001_OP1 1001_OP1 1001_OP1 1001_OP1	Movement Movement1 Movement1 Movement2 Movement2 Movement2 Movement2 Movement2	Target host host_1a host_1b host_1a host_1b host_1b host_2a host_2b		
4.9	Reflect substitution values	Operation  1001_OP1 1001_OP1 1001_OP1 1001_OP1 1001_OP1 1001_OP1	Movement  Movement1  Movement2  Movement2  Movement2  Movement2  Movement2	Target host host_1a host_1b host_1a host_1b host_1b host_2a host_2b	Variable name  VAR_variable1  VAR_variable1  VAR_variable2  VAR_variable2  VAR_variable2  VAR_variable2	Specific value 111 111 AAA AAA BBB BBB

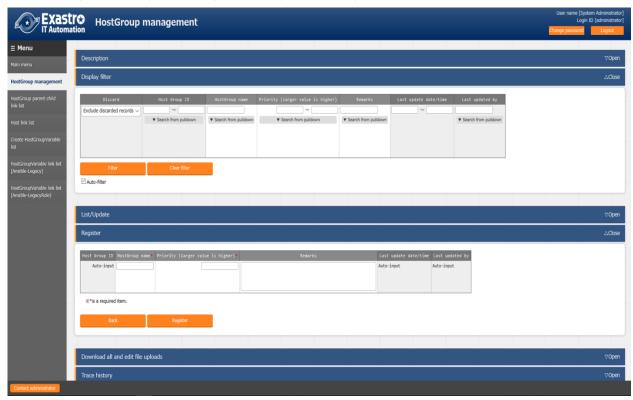
# 4.1 Create parameter sheet

Create parameter sheet menu using the parameter list creation information.

For the details of the parameter sheet creation function, please refer to "User instruction manual\_Parameter Sheet Creation Function."

# 4.2 Register host group

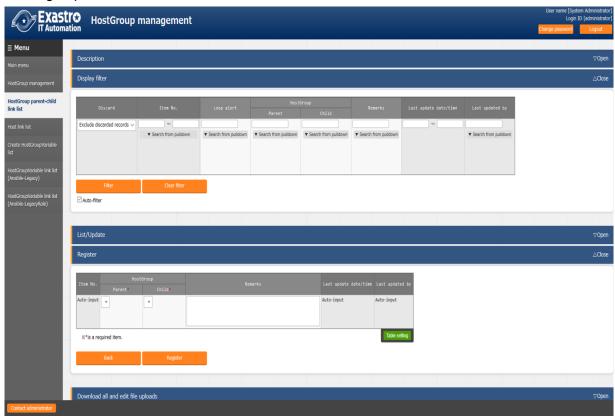
Register host group using the host group management menu.



Column name	Description
Host group name	Enter the name of the host group
Priority (larger value is	Enter the priority. The input range is from 1 to 2,147,483,647
higher)	

### 4.3 Define the parent-child relationship of host group

Use the Host group parent-child link list menu to define the parent-child relationship of the host group.



Column name		Description
Host group	Parent	Select the parent host group name
	Child	Select the child host group name associate with the parent host group

If there is host group that has parent-child loop, which is "●" displayed in the Loop alert column

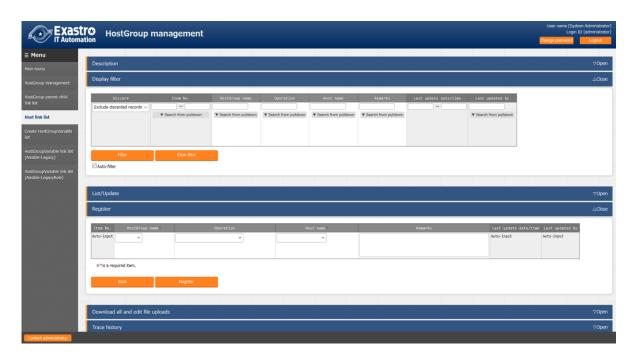
Of the display results of display filter

In the example below. Although the parent-child relationship between zabbix1 (parent) and zabbix11 (child) has already been defined, it also defines the reverse parent-child relationship of zabbix11 parent) and zabbix1 (child), and the parent-child relationship is a loop. Please make sure not to create a loop because if there is a loop already, the internal processing is described below "Host group decomposition function", "Host group variable conversion function", and "Host group variable registration function" will not execute.



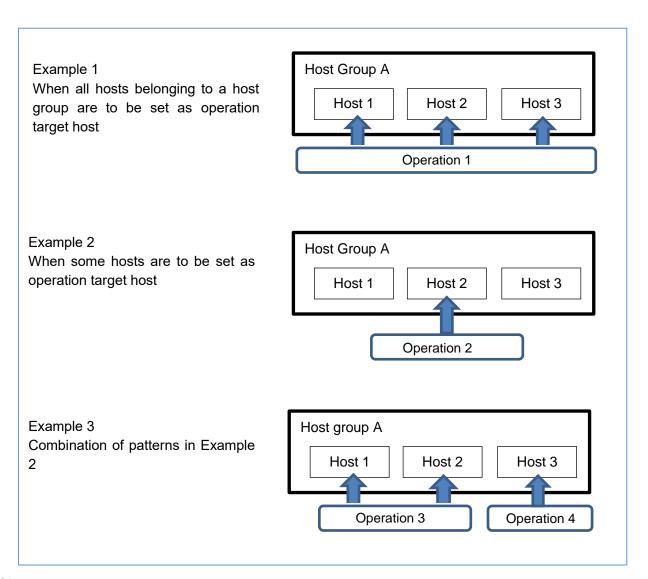
# 4.4 Associating a host group with an operation and target hosts

Use the host link list menu to register the target host to be associated with the host group and operation.



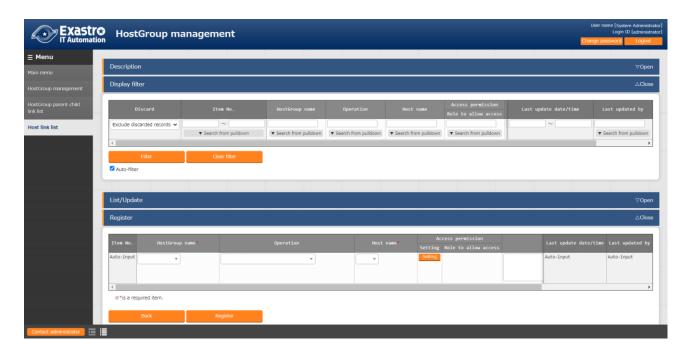
Column name	Description
Host group name	Select a host group.
Operation	Select a operation. ※1
Host name	Select a target host.

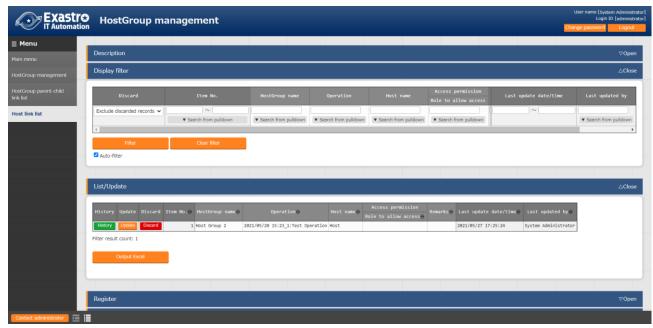
By associating the host group and operation with the target host, you can select the target host in the host group as shown in the figure below.



**X**1

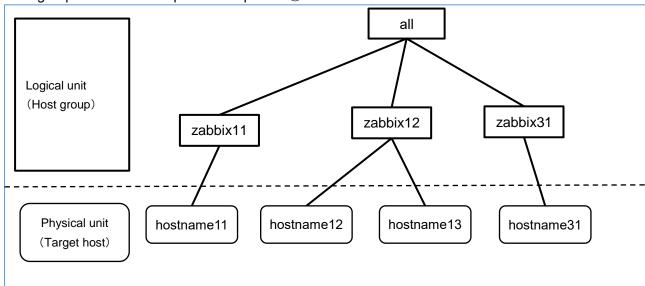
In the host link list menu, the operation can also be registered as NULL. In case if NULL is registered, association will be enabled for all operations.



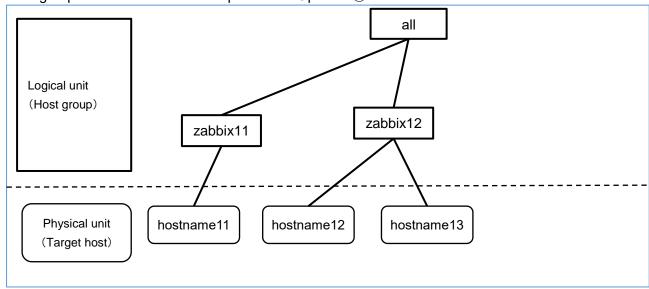


In the above example, the association of host groups zabbix1 and zabbix2 where the operation is registered as NULL which is valid for all operations. On the other hand, the host group zabbix3 for which the operation has been registered is valid only for the registered operation for "Operator①".

Host group association in operation "Operator ①"

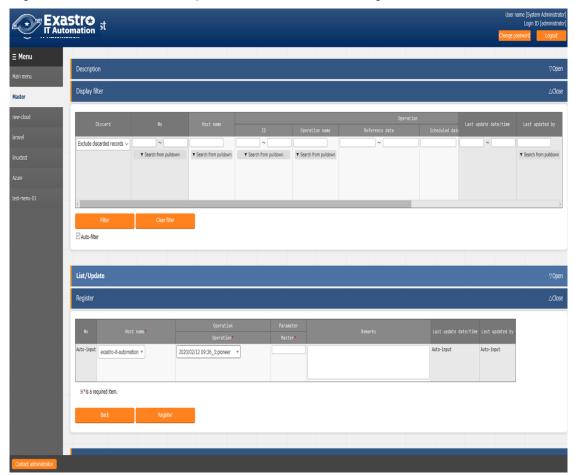


Host group association other than operation "Operator 1"



### 4.5 Register parameter sheet menu

In the parameter sheet menu for the host group created in "4.1 <u>Create Parameter Sheet</u>", the specific value for each operation is registered in the item with the target host or host group. After registration, users can View/Update/Discard/Restore the registration.



Column name	Description
Host name/Host group	Select the target host or host group. The prefix [H] is the target host and [HG] is
name	the host group.
Operation	Select an operation.
Item name	Enter the specific value of the item.
(Item name defined in <u>"4.1</u>	The specific values entered are reflected as the specific value for the operations
Parameter Sheet Creation")	and the variables associated with Movement and the target host in the "4.9
	Reflection of the substitution value"

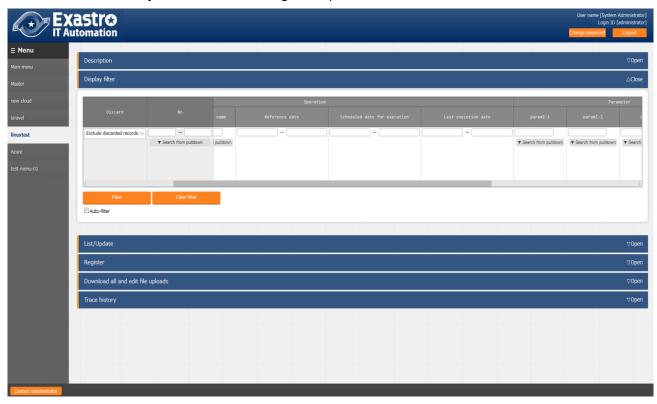
The combination of "Host name/Host group" and "Operation" is registered uniquely. The same host can be registered if combined with different operations.

# 4.6 Hosting

The information registered "<u>4.5 Register the menu in parameter sheet</u>" menu is compiled for each operation by the internal processing "Host group decomposition function" and is further inherited to the target host until according to the host group association.

The information inherited by each target host can be viewed in the parameter sheet menu created in "4.1 Create Parameter Sheet"

Users can only view, but cannot Register/Update/Discard/Restore.



An example of the workflow of hosting is described below.

(1) The items registered in the parameter sheet menu are as follows. (Information registered in "4.5 Register the parameter sheet menu")

Target host or Host group	Operation	Item 1	Item 2
HG_1	2017/10/31_1001_OP1	111	AAA
HG_2	2017/10/31_1001_OP1	_	BBB
host_1a	2017/10/31_1001_OP1	222	_

(2) The parent-child relationship of the host group is as follows.

(Information registered "4.3 Defining parent-child relationship of host group")

Parent host group	Child host group
HG_1	hg_1a
HG_1	hg_1b
HG_2	hg_2a
HG 2	ha 2b

(3) The association information of the Host group, operation, and target host is as follows. (Information registered in "4.4 Associate host group with operation and target hosts")

Host group	Operation	Target host
hg_1a	2017/10/31_1001_OP1	host_1a
hg_1b	2017/10/31_1001_OP1	host_1b
hg_2a	2017/10/31_1001_OP1	host_2a
hg_2b	2017/10/31_1001_OP1	host_2b

(4) If hosting is performed with the information registered in  $(1) \sim (3)$ , the record are as follows, users can know that the information is set to the target host until that belongs to the host group.

Target host	Operation			Item 1	Item 2
	Scheduled execution date	ID	Operation name		
host_1a	2017/10/31	1001	OP1	222 (※1)	AAA (※2)
host_1b	2017/10/31	1001	OP1	111	AAA
host_2a	2017/10/31	1001	OP1	<b>—</b> ( <b>※</b> 3)	BBB
host_2b	2017/10/31	1001	OP1	<b>—</b> ( <b>※</b> 3)	BBB

- (※1) When you register an item in a host group and target host, the item in the target host takes the priority. Therefore, "222" is registered in host 1a is applied.
- (※2) The item of the target host has priority, but in case if it is empty, it is inherited from the higher level. Since item 2 of host1\_a was empty, So "AAA" of the parent host group HG\_1 was inherited.
- (※3) Item1 of host\_2a and host\_2b and is empty because item 1 of HG\_2 is empty
- ( $\frac{1}{2}$ 4) The host group function will not function properly if there is a host in the "Device list" menu with a system number that exceeds 10,000,000.

If you want to use the host group function, make sure that the management system number are below 10,000,000.

### 4.7 Associate operation with setting value of the item in each target host

Associate the menus and items that were linked on the "Substitute value automatic registration setting" menu screen with the variables of Movement. Users can Register/Update/Discard/Restore.

The registered information is reflected to the "Substitution value list" menu screen and "Target host" menu screen by internal process.

For more details, please refer to "Parameter Management Menu Guide".

### 4.8 Reflect operation to the associated target host

The target host associated with the operation is automatically reflected. Users can check the result on "Target host" menu screen.

For more details, please refer to "Parameter Management Menu Guide".

### 4.9 Reflect substitution values

For each operation, the specific value is assign to the variable "VAR\_" in the Playbook or template file used in the target Movement is automatically reflected.

The specific value here is the specific value entered in "4.5 Register the menu in parameter sheet" .The reflection result can be confirmed on the "Substitution value list" menu screen.

For more details, please refer to "Parameter Management Menu Guide".

### 5. Application Operation

Operations that utilize the host group function include not only input by the user from the browser screen of the client PC, but also operations by system operation and maintenance. The operation and maintenance are as follows.

- Maintenance
- Change log level

#### 5.1 Maintenance

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

Description	Target file name		
Host group decomposition function	ky_hostgroup_split.service		
Decompose design information which is entered in host group and			
host group units.			
Loop check function	ky_hostgroup_check_loop.service		
This function checks whether the parent-child relationship of the host			
group is in a loop.			

The target file is stored in "/usr/lib/systemd/system" .The method of Start/Stop/Restart a process is as follows. Please execute the command with root privileges.

1 Process start

# systemctl start ky hostgroup split.service ←

2 Process stop

# systemctl stop ky\_hostgroup\_split.service +

3 Process restart

# systemctl restart ky\_hostgroup\_split.service ←

Similarly, please replace each target file name to start/stop/restart the process.

# 5.2 Change log level

- ① Change to NORMAL level
  Rewrite "DEBUG" on the 8 <sup>th</sup> line of the target file to "NORMAL"
  Log level setting file: <!nstall directory>/ita-root/confs/backyardconfs/ita\_env
- ② Change to DEBUG level
  Rewrite "NORMAL" on the 8<sup>th</sup> line of the target file to "DEBUG"
  Log level setting file: <Install directory>/ita-root/confs/backyardconfs/ita\_env

After rewriting, the log level change is effective after restarting (restart) the process.

Please refer to "0 Maintenance" to restart.

Log file output destination: <a href="mailto:strength://linear.new.logs/backyardlogs">lnstall directory>/ita-root/logs/backyardlogs</a>