IT Automation

Online Installation

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

Version 1.1

Exastro developer

Table of Contents

1. Introduction

Exastro

About this guide

- This guide describes how to set up IT Automation in an all-in-one configuration by using its installer and external repositories.

2. System Organization

Functions executed in conjunction with other tools

- IT Automation supports the tools for the following functions:

Driver	Tool name (orchestrator)	Function name	Description	Installable with the IT Automation configuration tool	To be installed through this guide
Material	Git	Management of configuration materials	This function allows you to “Check out” and “Check in” configuration materials registered in the standard configuration tools and to manage the versions of the materials via Git.	Yes	No
Create_param	-	Creation of parameter sheets	This function allows you to create and manage parameter sheets (Web menus).	-	Yes
Hostgroup	-	Host grouping	This function allows you to group hosts into logical units (functions and roles) and to manage the parameters to be applied.	-	No
Ansible driver	Ansible	System construction	A Red Hat-provided OSS tool for setting up a platform. For a networked device, this tool allows you to install software, configure various settings, transfer files, and apply patches, based on an IaC called Playbook.	Yes	Yes
AnsibleTower driver	Ansible Tower	System construction	A management platform to enhance Ansible with such functions as access control, job scheduling, and task visualization.	No	No
Cobbler driver	Cobbler	OS installation	An OSS tool for automating installation. For a networked device, this tool allows you to install an OS, based on a prepared template.	Yes	No
OpenStack driver	OpenStack	Virtual system construction	An OSS tool for setting up a cloud environment. This tool allows you to set up virtual machines, storages, and networks.	No	No
PowerShell DSC driver	PowerShell DSC	System construction	A Microsoft-provided tool for setting up a platform. For a Windows environment, this tool allows you to create server users and install software.	No	No

The followings are the system requirements to use IT Automation:

- Operating conditions for the server

OS	Red Hat Enterprise Linux	6.6 or later
	CentOS	6.6 or later

- Minimum specifications for the server

CPU	1 Core
Memory	1 GB
Disk capacity	1 GB (only for the IT Automation)

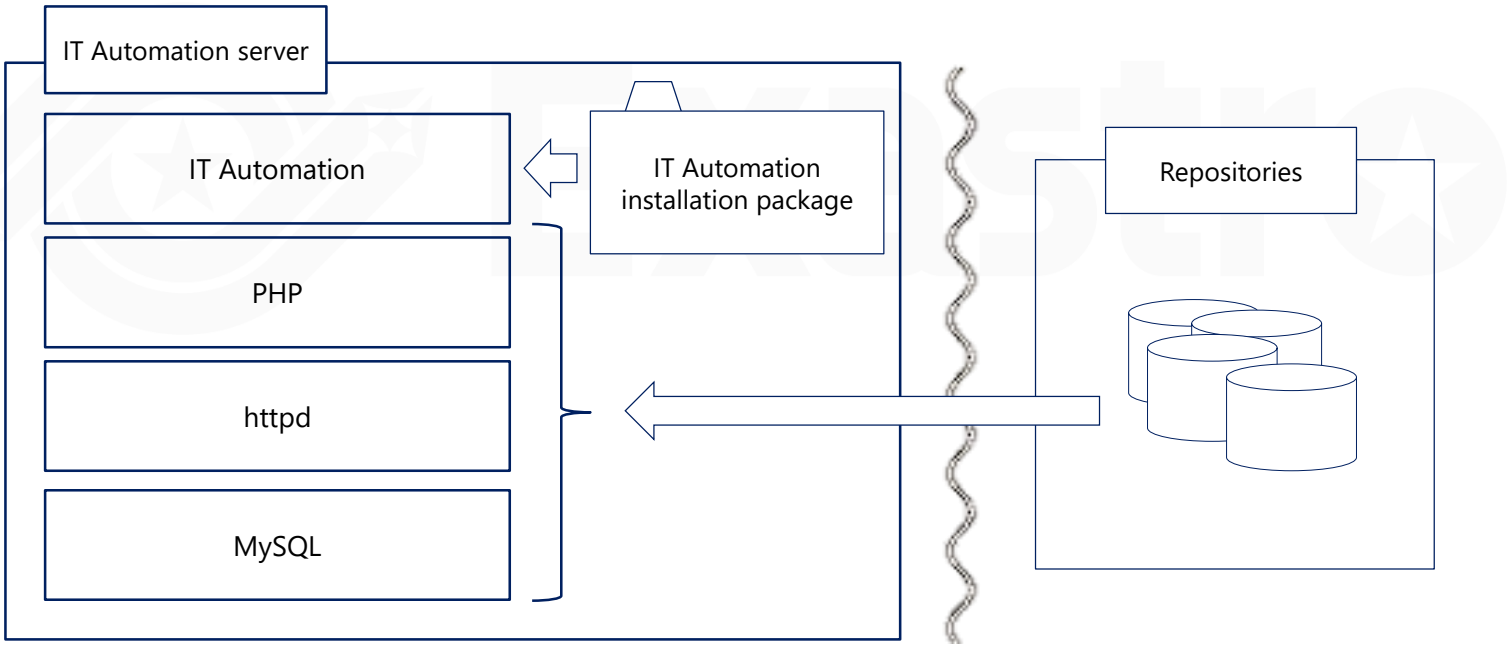
- Operating conditions for the client PC

OS	Windows	Windows 7 or later
Application	Excel	MS Office 2007 or later
Browser	Google Chrome	73 or later
	Firefox	41 or later
	Microsoft Edge	20 or later

3. IT Automation Configuration Procedure

Installation procedure

- When the IT Automation server has an internet-connection, install necessary libraries via the Internet and execute the IT Automation installer to perform configuration.



3.2 Preparation (1/2)

Enabling repositories (only for online installation)

- Depending on your OS version, enable the following repositories:

OS	Repository
RHEL 7	http://ftp-srv2.kddilabs.jp/Linux/distributions/fedora/epel/7/x86_64/Packages/e/epel-release-7-11.noarch.rpm
	https://repo.mysql.com/mysql57-community-release-el7-11.noarch.rpm
	http://rpms.remirepo.net/enterprise/remi-release-7.rpm
RHEL 6	http://ftp-srv2.kddilabs.jp/Linux/distributions/fedora/epel/6/x86_64/Packages/e/epel-release-6-8.noarch.rpm
	https://repo.mysql.com/mysql57-community-release-el6-11.noarch.rpm
	http://rpms.remirepo.net/enterprise/remi-release-6.rpm
CentOS 7	epel-release
	https://repo.mysql.com/mysql57-community-release-el7-11.noarch.rpm
	http://rpms.remirepo.net/enterprise/remi-release-7.rpm
CentOS 6	epel-release
	https://repo.mysql.com/mysql57-community-release-el6-11.noarch.rpm
	http://rpms.remirepo.net/enterprise/remi-release-6.rpm

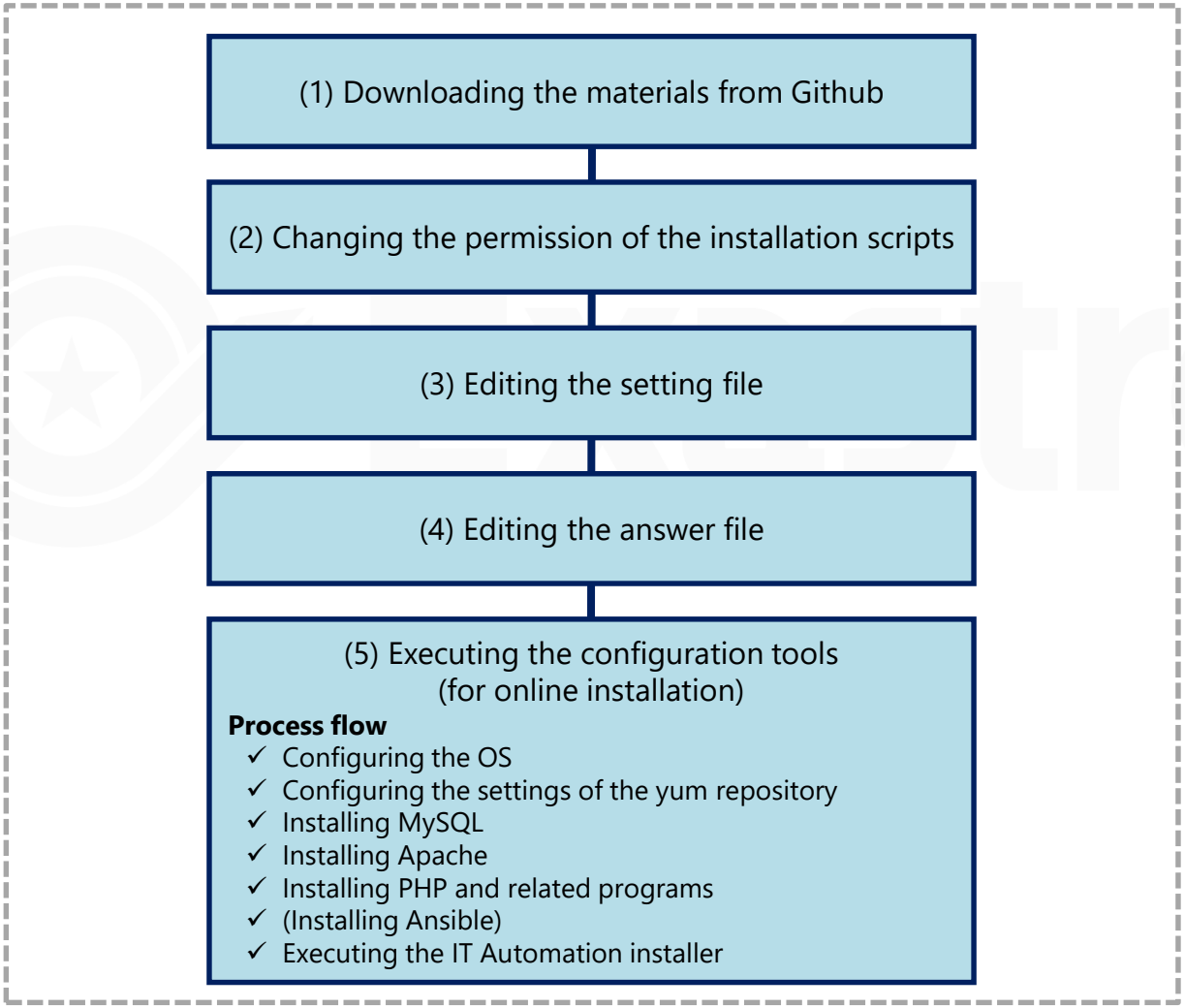
IT Automation configuration tools

- The following table lists tools for configuring IT Automation:

Description	File	Path location
Library collection script	ita_gather_library.sh	/(Extract path)/ita_install_package/install_scripts/
Configuration tool (for offline installation)	ita_builder_offline.sh	/(Extract path)/ita_install_package/install_scripts/
Configuration tool (for online installation)	ita_builder_online.sh	/(Extract path)/ita_install_package/install_scripts/
Setting file	ita_builder_setting.txt	/(Extract path)/ita_install_package/install_scripts/
IT Automation installer	ita_installer.sh	/(Extract path)/ita_install_package/install_scripts/
Answer file	ita_answers.txt	/(Extract path)/ita_install_package/install_scripts/

Configuration flow (online)

- The configuration flow is as follows:



3.5 Configuration (1/7)

Downloading the materials from Github

- Download the materials with the following command:

```
$ wget https://github.com/exastro-series/it-automation/archive/vx.x.x.tar.gz
```

*The wget command needs to be installed in advance.
*Change the (x.x.x) for the version to be installed.

Changing the permission of the installation scripts

- Unzip the .gz file and change the permission of the installation scripts.

```
$ tar zxf vx.x.x.tar.gz
$ find ./it-automation-x.x.x/ita_install_package/ -type f –name *.sh | xargs chmod 755
```

Changing the directory

- Move to the directory where the setting file and the shell are stored for configuration.

```
$ cd it-automation-x.x.x/ita_install_package/install_scripts
```

Editing the setting file

- The following table lists what to be edited in the setting file (ita_builder_setting.txt) for IT Automation configuration:

Item	Required	Initial value	Description
linux_os	Yes (for all OS)	-	OS of the IT Automation server: CentOS 6, CentOS 7, RHEL 6, or RHEL 7
redhat_user_name	For RHEL OS	-	Username for the Red Hat account
redhat_user_password	For RHEL OS	-	Password for the Red Hat account
pool_id	For RHEL OS	-	Pool ID for the Red Hat account
server_address	For Cobbler	-	IP address of the IT Automation server (Cobbler server) to be set in the settings file of Cobbler
default_password	For Cobbler	-	Root password for the OS installation target server to be set in the settings file of Cobbler *The hash value of the entered value will be set in the settings file.
cobbler_ip	For Cobbler	-	IP address to be set for **subnet** of dhcp.template
cobbler_subnet	For Cobbler	-	IP address to be set for **netmask** of dhcp.template
cobbler_gateway	For Cobbler	-	IP address to be set for **option routers** of dhcp.template
cobbler_dns	For Cobbler	-	IP address to be set for **domain-name-servers** of dhcp.template
dynamic_address_min	For Cobbler	-	IP address (minimum value) to be set for **range dynamic-bootp** of dhcp.template
dynamic_address_max	For Cobbler	-	IP address (maximum value) to be set for **range dynamic-bootp** of dhcp.template

Sample of the setting file (ita_builder_setting.txt)

- The following shows an example of the setting file (ita_builder_setting.txt):

OS of the installation target server: RHEL 7

```
# Select Operation System. ("CentOS6","CentOS7","RHEL6","RHEL7")
# e.g) linux_os:RHEL7
linux_os: RHEL7

##################################################
#Only when you select linux_os with RHEL6 or RHEL7

# Enter the Red Hat user name and user password
# e.g) redhat_user_name:sample
redhat_user_name:sample

# e.g) redhat_user_password:sample_password
redhat_user_password: sample_password

# e.g) pool_id:samplePoolID
pool_id: samplePoolID

##################################################
#Only when you install cobbler driver

#Cobra server IP address
server_address:10.10.10.10

#Password set for OS installation target server
default_password:sample_password

#DHCP setting
#Network address of cobbler server
cobbler_ip:10.10.10.0

#subnet mask of cobbler server
cobbler_subnet:255.255.255.0

#default gateway of cobbler server
cobbler_gateway:0.0.0.0

#DNS server IP address (Separate space if more than one)
cobbler_dns:8.8.8.8

#dynamic dhcp IP address(min)
dynamic_address_min:10.10.10.230

#dynamic dhcp IP address(max)
dynamic_address_max:10.70.10.250
```

POINT

Enter values for these items only if you use RHEL.

POINT

Entering values for these items is unnecessary because this procedure does not require installing the Cobbler driver.

Editing the answer file (ita_answers.txt)

- Edit the answer file for IT Automation installation in advance.
- For **ita_base**, **ansible_driver**, and **create_param**, each of the initial values is set to **yes**. Change the value to **no** if the corresponding installation is not necessary.

Item	Required	Default value	Description
install_mode	Yes	Install	Installation mode: **Install** or **Uninstall**
ita_directory	Yes	–	Specify the absolute path to the directory where IT Automation will be installed. If the directory does not exist, it will be newly created.
ita_language	Yes	en_US	IT Automation display language: **ja_JP** (Japanese) or **en_US** (English)
ita_os	Yes	RHEL7	OS for IT Automation: **RHEL6** or **RHEL7**
db_root_password	Yes	–	Root password for MySQL
db_name	Yes	–	Database name for MySQL
db_username	Yes	–	Database username for MySQL
db_password	Yes	–	Database password for MySQL
ita_base	Yes	yes	Only **yes** can be specified to install IT Automation.
Material	Yes	no	Whether the **Management of configuration materials** function is to be installed
create_param	Yes	yes	Whether the **Creation of parameter sheets** function is to be installed
Hostgroup	Yes	no	Whether the **Host grouping** function is to be installed
ansible_driver	Yes	yes	Whether the Ansible driver is to be installed
cobbler_driver	Yes	no	Whether the Cobbler driver is to be installed
openstack_driver	Yes	no	Whether the OpenStack driver is to be installed
dsc_driver	Yes	no	Whether the DSC driver is to be installed
ansibletower_driver	Yes	no	Whether the Ansibletower driver is to be installed

Sample of the answer file (ita_answers.txt)

- The following shows an example of the answer file (ita_answers.txt):

```
#Select install mode. ("Install" or "Uninstall")
# e.g) install_mode:Install
install_mode:Install

#Enter install directory.
# e.g) ita_directory:/ exastro
ita_directory:/ exastro

# Select language. ("ja_JP" or "en_US")
# e.g) ita_language:en_US
ita_language:en_US

# Select Operation System. ("RHEL6" or "RHEL7")
# e.g) ita_os:RHEL7
ita_os:RHEL7

# Enter the MySQL root user's password
# e.g) db_root_password:sample_root_password
db_root_password: sample_root_password

# Decide the database name, username, and password for ITA.
# e.g) db_name:sample_db_name
db_name:sample_db_name
# e.g) db_username:sample_db_username
db_username:sample_db_username
# e.g) db_password:sample_db_password
db_password:sample_db_password

# Select the target you need to install.
# yes : need
# no  : no need
ita_base:yes
material:no
createparam:yes
hostgroup:no
ansible_driver:yes
cobbler_driver:no
openstack_driver:no
dsc_driver:no
ansibletower_driver:no
```

POINT

With the answer file, define the password for MySQL.

3.10 Configuration (6/7)

Executing the configuration tool (for online installation)

- Execute the configuration tool with the following command:

  $sh ita_builder_online.sh

Checking the process

- Executing the configuration tool outputs the process details to ita_builder.log and ita_installer.log.
- Path to the logs

  /(Extract path)/ita_install_package/install_scripts/log/

Libraries installed through the configuration

- The following table lists the libraries installed through the execution of the configuration tool:

Installation driver	Library type	Library name
ita_base	Installation tool	yum-utils, createrepo
ita_base	IT Automation common	zip, telnet, mailx, unzip
ita_base	MySQL	mysql-community-server, expect pexpect, pywinrm
ita_base	httpd	httpd, mod_ssl
ita_base	php	php, php-bcmath, php-cli, php-ldap, php-mbstring, php-mcrypt, php-mysql, php-mysqlnd, php-pear, php-pecl-crypto, php-pecl-zip, php-process, php-snmp, php-xml
ita_base	php plug-in	PHPExcel, Spyc, Twig, MDB2, HTTP_Request2, Auth, HTML_AJAX-beta
material	git	git
ansible_driver	Ansible	ansible, python-pip
cobbler_driver	Cobbler	cobbler, cobbler-web, dhcp, pykickstart, fence-agents, debmirror, xinetd

4. IT Automation Operation Check

4.1 Operation Check (1/5)

Checking the main menu

- After completing the installation, take the following steps with a Windows PC client to access the main menu of IT Automation and to check that the IT Automation and all the drivers are shown properly.

Preparation

- Specify the IP address and host name of the IT Automation server in the hosts file of the Windows client.
- For Windows 7, the hosts file is located at the following:

```
C:¥Windows¥System32¥drivers¥etc¥hosts
```

- To the hosts file, add the following settings:

```
"IP address of the IT Automation server"    exastro-it-automation

e.g.,
192.168.0.3    exastro-it-automation
```

4.2 Operation Check (2/5)

Importing the certificate to the Windows client

- The certificate is stored in the following directory of the IT Automation installation package.
- Use a tool (such as FFFTP and WinSCP) to download the client.

OS of the IT Automation server	File path	File name
RHEL 6, CentOS 6	/(extract path)/ita_install_package/ext_files_for_CentOS6.x/etc_pki_tls_certs/	exastro-it-automation.crt
RHEL 7, CentOS 7	/(extract path)/ita_install_package/ext_files_for_CentOS7.x/etc_pki_tls_certs/	exastro-it-automation.crt

- Import the certificate to a Web browser.
- For Google Chrome, import the certificate as follows.

1. Start up Google Chrome. Then select **Settings button** in the upper right > **settings**.
2. Select **Advanced** in the Lower part of browser > **Manage certificates**.
3. In the **Trusted Root Certification Authorities** tab click the **Import** button in the lower left.
4. When the certificate import wizard appears, click **Next**.
5. Specify the name of the file to be imported. Then click **Next**.
6. Make sure that the **Place all certificates in the following store** option is selected.
7. Select **Trusted Root Certification Authorities** and click **Next**.
   ※If not selected, select **Trusted Root Certification Authorities** from **Reference** on the right.
8. Click **Finish**.

4.3 Operation Check (3/5)

Accessing the login screen

- Access the login screen with the following URL:
- URL: https://exastro-it-automation/

Logging in

- When the IT Automation login screen appears, enter the given login ID and initial password and then click the **Login** button.
  - Login ID: administrator
  - Initial password: password
- If you have logged in for the first time after the installation, you will be prompted to change the password.
- Change the initial password.

4.4 Operation Check (4/5)

IT Automation login screen

- Having been successfully installed, IT Automation displays the following login screen:

Checking the content by displaying the menus

- After logging in, check that the following menus are shown properly:

Function	Menu
IT Automation (main body)	Management Console
	Basic Console
Creating parameter sheets	Create master menu
	Create parameter list menu
Ansible driver	Ansible Common
	Ansible-Legacy
	Ansible-Pioneer
	Ansible-LegacyRole


Exastro