Procedure name	Please refer to the following file for required package.
HA configuration(Web・AP)	https://exastro-suite.github.io/it-automation-docs/asset/Learn/ITA-online-install_en.pdf
	All packages other than <Mariadb, Ansible> in 3.11 Configuration(7/7)

※ For the version(x.x.x) in Setting, Notes column, please replace with the ITA version to be installed.
　For strings such as "ITA installation target directory name", "IP address of external storage server", "Host name of Ansible server", please replace them according to the installation environment.

No.	Target	Target								Setting	Notes
		Common	File manage	Create menu	Host group	Ansible	Cobbler	OpenStack	Terraform		
Deploy ITA installation file											
1	Deploy ITA installation file	●								Please place the ITA file vx.x.x.tar.gz in the installation file deployment directory cd /(installation file deployment directory) ls −l vx.x.x.tar.gz	The deployment directory of the installation file can be any directory. Please acquire the file via the following command when performing online installation wget https://github.com/exastro-suite/it-automation/archive/vx.x.x.tar.gz
2										Please extract ITA installation file tar −zxf vx.x.x.tar.gz	
3										Set the ITA installation directory find it-automation−x.x.x −type f | xargs −I[] sed −i −e "s:%%%%ITA_DIRECTORY%%%%:/(ITA installation target directory):g" []	
Install yum-utils											
4	【For CentOS7、RHEL7】 Install yum-utils	●								Please install the following package yum-utils	Please install via the following command when performing online installation yum install −y yum-utils
Install Apache											
5	Install Apache	●								Please install the following package httpd mod_ssl	Please install via the following command when performing online installation yum install −y httpd mod_ssl
6	Set autostart of Apache	●								systemctl enable httpd	
Install PHP											
7	Install PHP	●								Please install the following package php php−bcmath php−cli php−ldap php−mbstring php−mysqlnd php−pear php−pecl−zip php−process php−snmp php−xml zip telnet mailx unzip php−json php−gd python3 php−devel libyaml libyaml−devel make sudo crontabs	Please enable the repository via the following command when performing online installation 【For CentOS7、RHEL7】 yum install −y http://rpms.remirepo.net/enterprise/remi-release-7.rpm yum−config−manager −−enable remi−php72 【For CentOS8、RHEL8】 No need to add repository. Please install via the following command when performing online installation yum install −y php php−bcmath php−cli php−ldap php−mbstring php−mysqlnd php−pear php−pecl−zip php−process php−snmp php−xml zip telnet mailx unzip php−json php−gd python3 php−devel libyaml libyaml−devel make sudo crontabs
8	Install PEAR library	●								Please install the following PEAR package HTML_AJAX−beta	Please install via the following command when performing online installation pear install HTML_AJAX−beta
9	Set HTML_AJAX−beta	●								ln −s /usr/share/pear-data/HTML_AJAX/js /usr/share/pear/HTML/js	
10	Install php-yaml	●								Please install the following package php−yaml	Please install via the following command when performing online installation pecl channel−update pecl.php.net echo "" | pecl install YAML
11	Install PhpSpreadsheet	●								Please create the following directory mkdir −p /usr/share/php/vendor	
12										Please install PhpSpreadsheet package in /usr/share/php/vendor directory	Please install via the following command when performing online installation curl −sS https://getcomposer.org/installer | php −− −−install−dir=/usr/bin /usr/bin/composer.phar require "phpoffice/phpspreadsheet":"*" mv vendor /usr/share/php/
Set PHP											
13	【For CentOS7、RHEL7】 Set php.ini	●								cp −p /(installation file deployment directory)/it-automation−x.x.x/ita_install_package/ext_files_for_CentOS7.x/etc/php.ini /etc/	
14	【For CentOS8、RHEL8】 Set php.ini	●								cp −p /(installation file deployment directory)/it-automation−x.x.x/ita_install_package/ext_files_for_CentOS8.x/etc/php.ini /etc/	
15	【For CentOS8、RHEL8】 Set www.conf	●								cp −p /(installation file deployment directory)/it-automation−x.x.x/ita_install_package/ext_files_for_CentOS8.x/etc_php-fpm.d/www.conf /etc/php-fpm.d/	
Edit sudoers											

No.	Target	Target								Setting	Notes
		Common	File manage	Create menu	Host group	Ansible	Cobbler	OpenStack	Terraform		
16	Create sudo setting file	●								/etc/sudoers.d/(any desired file name) Please create a file with the following content in the directory above. daemon ALL=(ALL) NOPASSWD:ALL apache ALL=(ALL) NOPASSWD:ALL	Sample Command: cat << EOS > /etc/sudoers.d/it-automation daemon ALL=(ALL) NOPASSWD:ALL apache ALL=(ALL) NOPASSWD:ALL EOS
17	Change privilege of sudo setting file	●								Please change the prvilige of the sudo setting file to 440 chmod 440 /etc/sudoers.d/(any desired file name)	
18	Edit sudoers file	●								vi /etc/sudoers check the sudoers file. Please comment out the following line if it exists. (If it's already commented, this procedure is not required.) Defaults requiretty	

No.	Target	Common	File manage	Create menu	Host group	Ansible	Cobbler	OpenStack	Terraform	Setting	Notes
	Install ITA										
19	Create installation target directory	●								mkdir -p /(ITA installation target directory)	
20	Deploy ITA installation file	●								cp -rp /(installation file deployment directory)/it-automation-x.x.x/ita_install_package/ITA/ita-contents/ita-root /(ITA installation target directory)/.	
21	Deploy ITA setting file	●								cp -rp /(installation file deployment directory)/it-automation-x.x.x/ita_install_package/ITA/ita-confs /(ITA installation target directory)/ita-root/confs	
22	Create directory for ITA session	●								mkdir -m 777 /(ITA installation target directory)/ita_sessions	
23	Create data_relay_storage directory	●								mkdir /(ITA installation target directory)/data_relay_storage	
24	Create directory used by ITA	●								Please create one directories for each line of the paths written in /(installation file deployment directory)/it-automation-x.x.x/ita_install_package/install_scripts/list/create_dir_list.txt by adding /(ITA installation target directory) in the front of the paths mkdir -p /(ITA installation target directory)(path written in the file)	
25	Change privilege(755)	●								Please change privilege for every line of paths written in /(installation file deployment directory)/it-automation-x.x.x/ita_install_package/install_scripts/list/755_list.txt by adding /(ITA installation target directory) in front of the paths chmod 755 /(ITA installation target directory)(path written in the file)	
26	Change privilege(777)	●								Please change privilege for every line of paths written in /(installation file deployment directory)/it-automation-x.x.x/ita_install_package/install_scripts/list/777_list.txt by /(ITA installation target directory) in front of the paths chmod 777 /(ITA installation target directory)(path written in the file)	
27	Deploy the release file of ita_base	●								cp -p /(installation file deployment directory)/it-automation-x.x.x/ita_install_package/ITA/ita-releasefiles/ita_base /(ITA installation target directory)/ita-root/libs/release/.	
28	Deploy the release file of material		●							cp -p /(installation file deployment directory)/it-automation-x.x.x/ita_install_package/ITA/ita-releasefiles/ita_material /(ITA installation target directory)/ita-root/libs/release/.	
29	Deploy the release file of material（File link list(Ansible)） ※Please execute when installing material and ansible_driver		●			●				cp -p /(installation file deployment directory)/it-automation-x.x.x/ita_install_package/ITA/ita-releasefiles/ita_material2 /(ITA installation target directory)/ita-root/libs/release/.	
30	Deploy the release file of material（File link list(OpenStack)） ※Please execute when installing material and openstack_driver		●					●		cp -p /(installation file deployment directory)/it-automation-x.x.x/ita_install_package/ITA/ita-releasefiles/ita_material3 /(ITA installation target directory)/ita-root/libs/release/.	
31	Deploy the release file of createparam			●						cp -p /(installation file deployment directory)/it-automation-x.x.x/ita_install_package/ITA/ita-releasefiles/ita_createparam /(ITA installation target directory)/ita-root/libs/release/.	
32	Deploy the release file of hostgroup				●					cp -p /(installation file deployment directory)/it-automation-x.x.x/ita_install_package/ITA/ita-releasefiles/ita_hostgroup /(ITA installation target directory)/ita-root/libs/release/.	
33	Deploy the release file of hostgroup（Create HostGroupVariable list） ※Please execute when installing hostgroup and Ansible_driver				●	●				cp -p /(installation file deployment directory)/it-automation-x.x.x/ita_install_package/ITA/ita-releasefiles/ita_hostgroup2 /(ITA installation target directory)/ita-root/libs/release/. cp -p /(installation file deployment directory)/it-automation-x.x.x/ita_install_package/ITA/ita-releasefiles/ita_hostgroup3 /(ITA installation target directory)/ita-root/libs/release/.	
34	Deploy the release file of ansible_driver					●				cp -p /(installation file deployment directory)/it-automation-x.x.x/ita_install_package/ITA/ita-releasefiles/ita_ansible-driver /(ITA installation target directory)/ita-root/libs/release/.	
35	Deploy the release file of cobbler_driver						●			cp -p /(installation file deployment directory)/it-automation-x.x.x/ita_install_package/ITA/ita-releasefiles/ita_cobbler-driver /(ITA installation target directory)/ita-root/libs/release/.	
36	Deploy the release file of openstack_driver							●		cp -p /(installation file deployment directory)/it-automation-x.x.x/ita_install_package/ITA/ita-releasefiles/ita_openstack-driver /(ITA installation target directory)/ita-root/libs/release/.	
37	Deploy the release file of terraform_driver								●	cp -p /(installation file deployment directory)/it-automation-x.x.x/ita_install_package/ITA/ita-releasefiles/ita_terraform-driver /(ITA installation target directory)/ita-root/libs/release/.	
38	Set the connection information of MariaDB	●								①Please create a string of the following string that is by encoded with base64 and encrypted with rot13. mysql:dbname=(name of ITA DB);host=(IP address of DBMS server) ②Please overwrite the following file with the created string. ※Please delete the value that is already written. /(ITA installation target directory)/ita-root/confs/commonconfs/db_connection_string.txt	Example: In the case that the name of ITA DB is "ITA_DB" and the IP address of DBMS server is 1.1.1.1, users can acquire the string encoded with base 64 and encrypted with rot13 by the following command. echo -ne "mysql:dbname=ITA_DB;host=1.1.1.1" | base64 | tr '[A-Za-z]' '[N-ZA-Mn-za-m]'
39	Set the user information of MariaDB	●								①Please create a string of the user name of MariaDB that is encoded with base64 and encrypted with rot13. ②Please overwrite the following file with the created string. ※Please delete the value that is already written. /(ITA installation target directory)/ita-root/confs/commonconfs/db_username.txt	Example: In the case that the user name of MariaDB is "ITA_USER", users can acquire the string encoded with base 64 and encrypted with rot13 by the following command. echo -ne "ITA_USER" | base64 | tr '[A-Za-z]' '[N-ZA-Mn-za-m]'
40	Set the password information of MariaDB	●								①Please create a string of password of MariaDB that is encoded with base64 and encrypted with rot13. ②Please overwrite the following file with the created string. ※Please delete the value that is already written. /(ITA installation target directory)/ita-root/confs/commonconfs/db_password.txt	Example: In the case that the password of MariaDB is "ITA_PASSWD", users can acquire the string encoded with base 64 and encrypted with rot13 by the following command. echo -ne "ITA_PASSWD" | base64 | tr '[A-Za-z]' '[N-ZA-Mn-za-m]'

No.	Target	Target								Setting	Notes
		Common	File manage	Create menu	Host group	Ansible	Cobbler	OpenStack	Terraform		

Set shared directory

No.	Target	Common	File manage	Create menu	Host group	Ansible	Cobbler	OpenStack	Terraform	Setting	Notes
41	Set shared directory	●								Please set the shared directory for external storage as follows.	

Shared directory for Web/AP	Shared directory for external storage
/(ITA installation target directory)/data_relay_storage	/(any desired shared directory)/data_relay_storage
/(ITA installation target directory)/ita_sessions	/(any desired shared directory)/ita_sessions
/(ITA installation target directory)/ita-root/temp	/(any desired shared directory)/ita-root/temp
/(ITA installation target directory)/ita-root/uploadfiles	/(any desired shared directory)/ita-root/uploadfiles
/(ITA installation target directory)/ita-root/webroot/uploadfiles	/(any desired shared directory)/ita-root/webroot/uploadfiles
/(ITA installation target directory)/ita-root/webroot/menus/sheets	/(any desired shared directory)/ita-root/webroot/menus/sheets
/(ITA installation target directory)/ita-root/webroot/menus/users	/(any desired shared directory)/ita-root/webroot/menus/users
/(ITA installation target directory)/ita-root/webconfs/sheets	/(any desired shared directory)/ita-root/webconfs/sheets
/(ITA installation target directory)/ita-root/webconfs/users	/(any desired shared directory)/ita-root/webconfs/users

Set Apache

No.	Target	Common	File manage	Create menu	Host group	Ansible	Cobbler	OpenStack	Terraform	Setting	Notes
42	Set /etc/hosts	●								vi /etc/hosts Please add the follows.(For the desription of associated driver server, please add servers that are used only.) 127.0.0.1 (Host name of the backyard server) (IP address of Ansible server) (Host name of Ansible server) (IP address of AnsibleTower server) (Host name of AnsibleTower server) (IP address of Cobbler server) (Host name of Cobbler server)	
43	【For CentOS7、RHEL7】 Deploy certificate	●								cp -p /(installation file deployment directory)/it-automation-x.x.x/ita_install_package/ext_files_for_CentOS7.x/etc_pki_tls_certs/exastro-it-automation.crt /etc/pki/tls/certs/	
44	【For CentOS7、RHEL7】 Deploy conf file forApache	●								cp -p /(installation file deployment directory)/it-automation-x.x.x/ita_install_package/ext_files_for_CentOS7.x/etc_httpd_conf.d/vhosts_exastro-it-automation.conf /etc/httpd/conf.d/	
45	【For CentOS8、RHEL8】 Deploy certificate	●								cp -p /(installation file deployment directory)/it-automation-x.x.x/ita_install_package/ext_files_for_CentOS8.x/etc_pki_tls_certs/exastro-it-automation.crt /etc/pki/tls/certs/	
46	【For CentOS8、RHEL8】 Deploy conf file forApache	●								cp -p /(installation file deployment directory)/it-automation-x.x.x/ita_install_package/ext_files_for_CentOS8.x/etc_httpd_conf.d/vhosts_exastro-it-automation.conf /etc/httpd/conf.d/	
47	Restart Apache	●								systemctl restart httpd	

Install Git

No.	Target	Common	File manage	Create menu	Host group	Ansible	Cobbler	OpenStack	Terraform	Setting	Notes
48	Install Git		●							Please install the following package git	Please install via the following command when performing online installation. yum install -y git

Operation check

No.	Target	Common	File manage	Create menu	Host group	Ansible	Cobbler	OpenStack	Terraform	Setting	Notes
49	Web operation check	●								http://(IP address of Web/AP server)	Login ID：administrator Default password：password ※For the method to access via HTTPS, please refer to "Check access via HTTPS".
50	Update interface information of Ansible					●				Please enter (Host name of Ansible server) for "Host" in [Ansible common]-[Interface information] menu	
51	Update interface information of AnsibleTower ※Please enter when using Ansible Tower					●				Please enter (Host name of AnsibleTower server) (Certificate Token created on AnsibleTower server side) for "AnsibleTower interface" in [Ansible common]-[Interfacce information] menu	
52	Check if the profile created in Cobbler server is read.						●			Please check if the name of profile created in Cobbler server is displayed in "List" of [Cobbler]-[Profile list]menu	
53	Enter the information of the server to be installed operation system by Cobbler server						●			Enter the information of the server to be installed in "Register" of [Basic console]-[Device list] menu ※Please refer the following manual for the content to be entered. https://exastro-suite.github.io/it-automation-docs/asset/Documents/Exastro-ITA_System_Configuration_Enviroment_Construcion_Guide_Cobbler-driver.pdf ・Cobbler-driver user instruction manual Cobbler-driver(Page11)	

Check access via HTTPS

No.	Target	Common	File manage	Create menu	Host group	Ansible	Cobbler	OpenStack	Terraform	Setting	Notes
54	Edit the hosts file in client	●								Please add the following content in C:¥Windows¥system32¥drivers¥etc¥hosts (IP address of Web/AP server) exastro-it-automation	
55	Import certificate into client	●								Please refer to the following manual for the method to import certificate into client https://exastro-suite.github.io/it-automation-docs/asset/Learn/ITA-online-install_en.pdf 4.5 Operation check(5/6)	
56	Check connection via HTTPS	●								https://exastro-it-automation	

No.	Target	Target								Setting	Notes
		Common	File manage	Create menu	Host group	Ansible	Cobbler	OpenStack	Terraform		
57	Restrict access from HTTP or HTTPS	●								Please refer to the following manual for the method to restrict access via HTTP or HTTPS https://exastro-suite.github.io/it-automation-docs/asset/Learn/ITA-online-install_en.pdf 4.7 Reference	