

Procedure								The necessary packages are as listed below			
HA Construction (backyard)								https://github.com/exastro-suite/it-automation-docs/blob/master/asset/Documents/ITA-online-install_en.pdf			
3.14 Construction(9/10)Library overview (Other than what is included in <Mariadb, httpd, Ansible>)											
※ Please change the the version number (x.x.x) written under “Settings” or “Remarks” to match the version of ITA being installed. Please also change text such as “Host name” , ITA Install directory” to fit your environment.											
No.	Goal	Goal						Settings	Remarks		
		Common	Menu create	Host group	Ansible	Cobbler	Terraform			CI/CD for IaC	
Unpack ITA Installation files											
1	Unpack ITA Installation files	●						Deploy the ITA file exastro-it-automation-x.x.x.tar.gz to the installation file directory. cd /(Install file unpack directory) ls -l exastro-it-automation-x.x.x.tar.gz	“The install files can be unpacked in any directory. For online, uesr the following command to gather them. wget https://github.com/exastro-suite/it-automation/releases/download/vx.x.x/exastro-it-automation-x.x.x.tar.gz ※Use the following command for v1.10.1 and later versions. curl -OL https://github.com/exastro-suite/it-automation/releases/download/vx.x.x_tag/exastro-it-automation-x.x.x.tar.gz”		
2								Unpack the ITA Installation files tar xzf exastro-it-automation-x.x.x.tar.gz			
3								Configure ITA Installation directory find it-automation-x.x.x -type f xargs -tI{} sed -i -e “s:%%lITA_DIRECTORY%%%:/(ITA Install directory):g” {}			
Install yum-utils											
4	【For CentOS7, RHEL7】 Install yum-utils	●						Install the following package yum-utils	For Online, use the following command to install yum install -y yum-utils		
Install MariaDB											
5	Install MariaDB	●						Install the following packages 【For CentOS7, RHEL7】 MariaDB 【For CentOS8, RHEL8】 mariadb	For online environments, use the following command to activate respositories 【For CentOS7, RHEL7】 curl -sS https://downloads.mariadb.com/MariaDB/mariadb_repo_setup bash 【For CentOS8, RHEL8】 No repository will be added For online, use the following commands to install. 【For CentOS7, RHEL7】 yum install -y MariaDB 【For CentOS8, RHEL8】 yum install -y mariadb		
Install PHP											
6	Install PHP	●						install the following packages php php-bcmath php-cli php-ldap php-mbstring php-mysqldb 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	For Online, use the following command to activate Repositories 【For CentOS7, RHEL7】 yum install -y http://rpms.remirepo.net/enterprise/remi-release-7.rpm yum-config-manager --enable remi-php72 【For CentOS8, RHEL8】 Repositories will not be added For Online, use the following command to install. yum install -y php php-bcmath php-cli php-ldap php-mbstring php-mysqldb 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		
7	Install PEAR Library	●						Install the following PEAR package HTML_AJAX-beta	For online, use the following command to install pear install HTML_AJAX-beta		
8	Configure HTML_AJAX-beta settings	●						ln -s /usr/share/pear-data/HTML_AJAX/js /usr/share/pear/HTML/js			
9	Install php-yaml	●						Install the following package php-yaml	For online installation, please use the following command to install. pecl channel-update pecl.php.net echo "" pecl install YAML		

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10	Install PhpSpreadsheet	●							Create the following directory mkdir -p /usr/share/php/vendor		
11									Install the PhpSpreadsheet package to the /usr/share/php/vendor directory.	For online, use the following command to install.。 curl -sS https://getcomposer.org/installer php -- --install-dir=/usr/bin /usr/bin/composer.phar require "phpoffice/phpspreadsheet": "1.18.0" mv vendor /usr/share/php/	
12	Install pip3 library						●		Install the following package. python-hcl2	If online, use the following command to install pip3 install python-hcl2	
Configure PHP											
13	【For CentOS7, RHEL7】 Configure php.ini	●							cp -p /(Installation file unpack location)/it-automation-x.x.x/ita_install_package/ext_files_for_CentOS7.x/etc/php.ini /etc/		
14	【For CentOS8, RHEL8】 Configure php.ini	●							cp -p /(Installation file unpack location)/it-automation-x.x.x/ita_install_package/ext_files_for_CentOS8.x/etc/php.ini /etc/		
15	【For CentOS8, RHEL8】 Configure www.conf	●							cp -p /(Installation file unpack location)/it-automation-x.x.x/ita_install_package/ext_files_for_CentOS8.x/etc_php-fpm.d/www.conf /etc/php-fpm.d/		
Install ITA											
16	Create Installation directory	●							mkdir -p /(ITA Install directory)	※Make sure that “other users” also have permission to run all the parent directories of the ITA Install directory.	
17	Create Common directory	●							Create directory to share the following external storage. /(ITA Install directory)/data_relay_storage /(ITA Install directory)/ita-root/temp /(ITA Install directory)/ita-root/uploadfiles /(ITA Install directory)/ita-root/webroot/uploadfiles /(ITA Install directory)/ita-root/webroot/menus/sheets /(ITA Install directory)/ita-root/webroot/menus/users /(ITA Install directory)/ita-root/webconfs/sheets /(ITA Install directory)/ita-root/webconfs/users /(ITA Install directory)/ita-root/repositorys		
18	Configure common directory								Configure the external storage common directory settings to be as bellow.		
									common backyard server directory	External storage common directory	
		●							/(ITA Install directory)/data_relay_storage	/(Free Directory)/data_relay_storage	
		●							/(ITA Install directory)/ita-root/temp	/(Free Directory)/ita-root/temp	
		●							/(ITA Install directory)/ita-root/uploadfiles	/(Free Directory)/ita-root/uploadfiles	
		●							/(ITA Install directory)/ita-root/webroot/uploadfiles	/(Free Directory)/ita-root/webroot/uploadfiles	
		●							/(ITA Install directory)/ita-root/webroot/menus/sheets	/(Free Directory)/ita-root/webroot/menus/sheets	
		●							/(ITA Install directory)/ita-root/webroot/menus/users	/(Free Directory)/ita-root/webroot/menus/users	
		●							/(ITA Install directory)/ita-root/webconfs/sheets	/(Free Directory)/ita-root/webconfs/sheets	
		●							/(ITA Install directory)/ita-root/webconfs/users	/(Free Directory)/ita-root/webconfs/users	
								●	/(ITA Install directory)/ita-root/webconfs/repositorys	/(Free directory)/ita-root/webconfs/repositorys	

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19	Deploy ITA Files	●							cp -rp /(Installation file unpack location)/it-automation-x.x.x/ita_install_package/ITA/ita-contents/ita-root /(ITA Install directory)/.	
20	Deploy ITA Settings files	●							cp -rp /(Installation file unpack location)/it-automation-x.x.x/ita_install_package/ITA/ita-confs /(ITA Install directory)/ita-root/confs	
21	Create ITA Directory	●							For paths written in the /(Installation file unpack location)/it-automation-x.x.x/ita_install_package/install_scripts/list/create_dir_list.txt file, create directories one line at a time with /(ITA Install directory) at the beginning. mkdir -p /(ITA Install directory) (File path written in the document)	
22	Change permission(755)	●							For paths written in the /(Installation file unpack location)/it-automation-x.x.x/ita_install_package/install_scripts/list/755_list.txt, Change the permissions one line at a time with /(ITA Install directory) at the beginning. chmod 755 /(ITA Install directory) (File path written in the document)	
23	Change permission(777)	●							For paths written in the /(Installation file unpack location)/it-automation-x.x.x/ita_install_package/install_scripts/list/777_list.txt, Change the permissions one line at a time with /(ITA Install directory) at the beginning. chmod 777 /(ITA Install directory) (File path written in the document)	
24	Deploy ita_base release files	●							cp -p /(Installation file unpack location)/it-automation-x.x.x/ita_install_package/ITA/ita-releasefiles/ita_base /(ITA Install directory)/ita-root/libs/release/.	
25	Deploy createparam release file		●						cp -p /(Installation file unpack location)/it-automation-x.x.x/ita_install_package/ITA/ita-releasefiles/ita_createparam /(ITA Install directory)/ita-root/libs/release/.	
26	Deply hostgroup release files			●					cp -p /(Installation file unpack location)/it-automation-x.x.x/ita_install_package/ITA/ita-releasefiles/ita_hostgroup /(ITA Install directory)/ita-root/libs/release/.	
27	Deploy ansible_driver release files				●				cp -p /(Installation file unpack location)/it-automation-x.x.x/ita_install_package/ITA/ita-releasefiles/ita_ansible-driver /(ITA Install directory)/ita-root/libs/release/.	
28	Deploy cobbler_driver release files					●			cp -p /(Installation file unpack location)/it-automation-x.x.x/ita_install_package/ITA/ita-releasefiles/ita_cobbler-driver /(ITA Install directory)/ita-root/libs/release/.	
29	Deploy terraform_driver release files						●		cp -p /(Installation file unpack location)/it-automation-x.x.x/ita_install_package/ITA/ita-releasefiles/ita_terraform-driver /(ITA Install directory)/ita-root/libs/release/.	
30	Deply cidc_for_iac release files							●	cp -p /(Installation file unpack location)/it-automation-x.x.x/ita_install_package/ITA/ita-releasefiles/ita_cicd /(ITA Install directory)/ita-root/libs/release/.	
31	Configure MariaDB Connection information	●							①Make sure that following character string is base64 encoded and rot13 encrypted. mysql:dbname=(ITA Database name);host=(DBMS Server IP Address.) ②Write the created character string into the file below. ※Delete any value already there. /(ITA Install directory)/ita-root/confs/commonconfs/db_connection_string.txt	Example : If the ITA Database name is “ITA_DB” and the DBMS Server IP Address is 1.1.1.1, The following command can be used to retrieve the base64-encoded, rot13-encrypted string. echo -ne "mysql:dbname=ITA_DB;host=1.1.1.1" base64 tr '[-Za-z]' '[N-ZA-Mn-za-m]'
32	Configure MariaDB User information	●							①Make sure that the MariaDB Username is base64 encoded and rot13 encrypted. ②Write the created character string into the file below. ※Delete any value already there. /(ITA Install directory)/ita-root/confs/commonconfs/db_username.txt	Example : If the MariaDB Username is “ITA_USER, The following command can be used to retrieve the base64-encoded, rot13-encrypted string. echo -ne "ITA_USER" base64 tr '[-Za-z]' '[N-ZA-Mn-za-m]'
33	Configure MariaDB Password information	●							①Make sure that the MariaDB Password is base64 encoded and rot13 encrypted. ②Write the created character string into the file below. ※Delete any value already there. /(ITA Install directory)/ita-root/confs/commonconfs/db_password.txt	Example : If the MariaDB password is “ITA_PASSWD, The following command can be used to retrieve the base64-encoded, rot13-encrypted string. echo -ne "ITA_PASSWD" base64 tr '[-Za-z]' '[N-ZA-Mn-za-m]'

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Configure ITA backyard settings											
34	Create backyard file link.	●							In -s /(ITA Install directory)/ita-root/confs/backyardconfs/ita_env /etc/sysconfig/ita_env		
35	Copy the ita_base backyard process service file.	●							Copy the service file written in the (Installation file unpack location)/it-automation-x.x.x/ita_install_package/install_scripts/list/base_service_list.txt file to /usr/lib/systemd/system/ cp -p /(ITA Install directory)/(Service file written in base_service_list.txt).service /usr/lib/systemd/system/.		
36	Copy the createparam backyard process service file.		●						Copy the service file written in the (Installation file unpack location)/it-automation-x.x.x/ita_install_package/install_scripts/list/createparam_service_list.txt file to /usr/lib/systemd/system/ cp -p /(ITA Install directory)/(Service file written in createparam_service_list.txt).service /usr/lib/systemd/system/.		
37	Copy the hostgroup backyard process service file.			●					Copy the service file written in the (Installation file unpack location)/it-automation-x.x.x/ita_install_package/install_scripts/list/hostgroup_service_list.txt file to /usr/lib/systemd/system/ cp -p /(ITA Install directory)/(Service file written in hostgroup_service_list.txt).service /usr/lib/systemd/system/.		
38	Copy the ansible_driver backyard process service file.				●				Copy the service file written in the (Installation file unpack location)/it-automation-x.x.x/ita_install_package/install_scripts/list/ansible_service_list.txt file to /usr/lib/systemd/system/ cp -p /(ITA Install directory)/(Service file written in ansible_service_list.txt).service /usr/lib/systemd/system/.		
39	Copy the ansible_driver (Collect function) backyard process service file. ※Only if you are installing createparam and Ansible_driver.		●		●				Copy the service file written in the (Installation file unpack location)/it-automation-x.x.x/ita_install_package/install_scripts/list/createparam2_service_list.txt file to /usr/lib/systemd/system/ cp -p /(ITA Install directory)/(Service file written in createparam2_service_list.txt).service /usr/lib/systemd/system/.		
40	Copy the cobbler driver backyard process service file.					●			Copy the service file written in the (Installation file unpack location)/it-automation-x.x.x/ita_install_package/install_scripts/list/cobbler_service_list.txt file to /usr/lib/systemd/system/ cp -p /(ITA Install directory)/(Service file written in cobbler_service_list.txt).service /usr/lib/systemd/system/.		
41	Copy the Terraform_driver backyard process service file.						●		Copy the service file written in the (Installation file unpack location)/it-automation-x.x.x/ita_install_package/install_scripts/list/terraform_service_list.txt file to /usr/lib/systemd/system/ cp -p /(ITA Install directory)/(Service file written in terraform_service_list.txt).service /usr/lib/systemd/system/.		
42	Copy the cid_for_iac backyard process file.							●	Copy the service file written in the (Installation file unpack location)/it-automation-x.x.x/ita_install_package/install_scripts/list/cid_service_list.txt file to /usr/lib/systemd/system/ cp -p /(ITA Install directory)/(Service file written in cid_service_list.txt).service /usr/lib/systemd/system/.		
43	Configure the service resident settings.	●							ls -l /usr/lib/systemd/system/. grep ky_ xargs systemctl enable		
44	Start service	●							ls -l /usr/lib/systemd/system/. grep ky_ xargs systemctl start		
Configure ITA cron											
45	Configure cron	●							crontab -e Add the following contents 01 00 * * * su - -c /(ITA Install directory)/ita-root/backyards/common/ky_execinstance_dataautoclean-workflow.sh' 02 00 * * * su - -c /(ITA Install directory)/ita-root/backyards/common/ky_file_autoclean-workflow.sh'		
Configure hosts settings											
46	Configure /etc/hosts	●							vi /etc/hosts Add the following.(For the description of link driver server, please add only the one for the server to be used.) 127.0.0.1 (Backyard server host name) (Ansible Server IP Address) (Ansible Server Host name) (AnsibleTower Server IP Address) (AnsibleTower Server Host name) (Cobbler Server IP Address) (Cobbler Server Host Name)''		
Install Git											
47	Install Git							●	Install the following package git	For Online, use the following command to install yum install -y git	