

A decorative graphic on the left side of the cover, consisting of a network of interconnected nodes and lines, resembling a mesh or a web, in a lighter blue color against the dark blue background.

# zstack-ctl Command Manual

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# Contents

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<b>Copyright Statement.....</b>	<b>I</b>
<b>1 Introduction.....</b>	<b>1</b>
<b>2 Basic ctl Commands.....</b>	<b>2</b>
2.1 status.....	2
2.2 start.....	2
2.3 stop.....	2
2.4 start_ui.....	3
2.5 stop_ui.....	4
2.6 start_node.....	5
2.7 stop_node.....	5
2.8 restart_node.....	5
2.9 collect_log.....	6
2.10 configured_collect_log.....	6
2.11 dump_mysql.....	8
2.12 change_ip.....	8
2.13 show_configuration.....	9
2.14 configure.....	10
2.15 show_ui_config.....	10
2.16 config_ui.....	10
2.17 ui_status.....	12
2.18 install_license.....	12
2.19 reset_password.....	13
2.20 change_mysql_password.....	13
<b>3 Advanced ctl Commands.....</b>	<b>15</b>
3.1 install_management_node.....	15
3.2 upgrade_management_node.....	16
3.3 rollback_management_node.....	16
3.4 taillog.....	17
3.5 install_ui.....	17
3.6 install_db.....	18
3.7 upgrade_db.....	18
3.8 deploydb.....	19
3.9 rollback_db.....	20
3.10 clear_license.....	20
3.11 restore_config.....	20
3.12 save_config.....	21
3.13 set_deployment.....	21
3.14 start_vdi.....	22
3.15 stop_vdi.....	23
3.16 vdi_status.....	23

3.17 setenv.....	23
3.18 unsetenv.....	23
3.19 mysql_restrict_connection.....	24
3.20 getenv.....	24
3.21 bootstrap.....	25
3.22 upgrade_ctl.....	25
<b>Glossary.....</b>	<b>26</b>

# 1 Introduction

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CTL is a system command of ZStack Cloud. You can use this command to complete various system settings. The CTL command has multiple subcommands, which simplifies the system installation and environment configuration.

This Manual describes what these subcommands are and how to use them.

## 2 Basic ctl Commands

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### 2.1 status

#### Description

Displays the status and other information of ZStack Cloud on a specified node.

#### Usage

Parameter	Description	Example
none	Displays the status and other information on the current node.	<code>zstack-ctl status</code>
--host HOST	Displays the status and other information on the specified node.	<code>zstack-ctl status --host 192.168.0.10</code>

### 2.2 start

#### Description

Starts services related to ZStack Cloud, including the management node and the UI service.

#### Usage

Parameter	Description	Example
none	Starts the related services, including the management node and UI service.	<code>zstack-ctl start</code>
--daemon	Displays the daemon mode.	<code>zstack-ctl start --daemon</code>

### 2.3 stop

#### Description

Stops services related to ZStack Cloud, including the management node and the UI service.

## Usage

Parameter	Description	Example
none	Stops the related services, including the management node and UI service.	<code>zstack-ctl stop</code>

## 2.4 start\_ui

### Description

Starts the UI service of ZStack Cloud.

### Usage

Parameter	Description	Example
--host HOST	The IP address of the UI server. Default: <b>localhost</b> .	<code>zstack-ctl start_ui --host 172.20.11.122</code>
--mn-host MN_HOST	The IP address of the management node. Default: <i>127.0.0.1</i> .	<code>zstack-ctl start_ui --mn-host 127.0.0.1</code>
--mn-port MN_PORT	The port of the management node. Default: 8080.	<code>zstack-ctl start_ui --mn-port 8080</code>
--webhook-host WEBHOOK_HOST	The IP address of the webhook host. Default: <i>127.0.0.1</i> .	<code>zstack-ctl start_ui --webhook-host 127.0.0.1</code>
--webhook-port WEBHOOK_PORT	The port of the webhook host. Default: 5000.	<code>zstack-ctl start_ui --webhook-port 5000</code>
--server-port SERVER_PORT	The port of the UI server. Default: 5000.	<code>zstack-ctl start_ui --server-port 5000</code>
--log LOG	The directory to store UI logs. Default: <i>/usr/local/zstack/apache-tomcat/logs</i> .	<code>zstack-ctl start_ui --log /usr/local/zstack/apache-tomcat/logs</code>
--enable-ssl	Enables UI login through HTTPS.	<code>zstack-ctl start_ui --enable-ssl</code>
--ssl-keyalias SSL_KEYALIAS	The alias of the UI certificate.	<code>zstack-ctl start_ui --ssl-keyalias zstackui</code>
--ssl-keystore SSL_KEYSTORE	The path of the UI certificate. Default: <i>/usr/local/</i>	<code>zstack-ctl start_ui --ssl-keystore /usr/</code>

Parameter	Description	Example
	<i>zstack/zstack-ui/ui.keystore.p12.</i>	<code>local/zstack/zstack-ui/ui.keystore.p12</code>
<code>--ssl-keystore-type</code> <code>SSL_KEYSTORE_TYPE</code>	The type of the UI certificate. Default: <b>PKCS12</b> .	<code>zstack-ctl start_ui --ssl-keystore-type PKCS12</code>
<code>--ssl-keystore-password</code> <code>SSL_KEYSTORE_PASSWORD</code>	The private key password of the UI certificate. Default: <b>password</b> .	<code>zstack-ctl start_ui --ssl-keystore-password password</code>
<code>--db-url</code> DB_URL	The URL of the UI database. Default: <i>jdbc:mysql://10.0.46.243:3306</i> .	<code>zstack-ctl start_ui --db-url jdbc:mysql://10.0.46.243:3306</code>
<code>--db-username</code> DB_USERNAME	The username of the UI database. Default: <b>zstack_ui</b> .	<code>zstack-ctl start_ui --db-username zstack_ui</code>
<code>--db-password</code> DB_PASSWORD	The password of the UI database. Default: <b>zstack.ui.password</b> .	<code>zstack-ctl start_ui --db-password zstack.ui.password</code>
<code>--timeout</code> TIMEOUT	The time used for the UI to start up. Default: 120s.	<code>zstack-ctl start_ui --timeout 120</code>

**Note:**

If you want to change the username or password of the UI database, make sure that the **zstack\_ui** database can be accessed by using the new username and password.

## 2.5 stop\_ui

### Description

Stops the UI service on the specified node.

### Usage

Parameter	Description	Example
<code>--host</code> HOST	The IP address of the UI server. Default: localhost.	<code>zstack-ctl stop_ui --host 172.20.12.111</code>



## 2.6 start\_node

### Description

Starts the management node service of ZStack Cloud on a specified node.

### Usage

Parameter	Description	Example
--host HOST	Specifies the SSH URL of the management node to be started.	<code>zstack-ctl start_node --host 172.20.11.122</code>
--timeout TIMEOUT	Sets the time used for ZStack Cloud to start up. Default: 300s.	<code>zstack-ctl start_node --timeout 600</code>
--daemon	Displays the daemon mode.	<code>zstack-ctl start_node --daemon</code>
--simulator	Enable the display of the simulator mode.	<code>zstack-ctl start_node --simulator</code>

## 2.7 stop\_node

### Description

Starts the management node service of ZStack Cloud on a specified node.

### Usage

Parameter	Description	Example
--host HOST	Specifies the SSH URL of the management node to be stopped.	<code>zstack-ctl stop_node --host 172.20.12.111</code>
--force, -f	Forcibly stops the java process.	<code>zstack-ctl stop_node --force</code>

## 2.8 restart\_node

### Description

Restarts a management node.

**Usage**

Parameter	Description	Example
none	Restarts a management node.	<code>zstack-ctl restart_node</code>

## 2.9 collect\_log

**Description**

Collects diagnostic logs.

**Usage**

Parameter	Description	Example
--db	Collects database diagnostic logs.	<code>zstack-ctl collect_log --db</code>
--mn-only	Collects only management node diagnostic logs.	<code>zstack-ctl collect_log --mn-only</code>
--full	Collects diagnostic logs of all management nodes and hosts.	<code>zstack-ctl collect_log --full</code>
--host HOST	Collects diagnostic logs of the management nodes and specified hosts.	<code>zstack-ctl collect_log --host 172.20.11.121</code>

## 2.10 configured\_collect\_log

**Description**

Collects diagnostic logs. Similar to `zstack-ctl collect_log`, the `configured_collect_log` command can be used to collect new logs and view the log size. You can also specify the log collection time, whether to collect logs of a single management node, database, or compute node, and whether to collect logs of all nodes.

**Usage**

Parameter	Description	Example
-p	Customizes the YAML configuration file path for log collection.	<code>zstack-ctl configured_collect_log -p /var/lib/zstack/</code>
--check	Only checks and displays the log size without collecting logs.	<code>zstack-ctl configured_collect_log --check</code>

Parameter	Description	Example
--full	(Default) Collects all logs other than database logs, including management node logs, compute node logs, backup storage logs, primary storage logs, and vRouter logs.	<pre>zstack-ctl configured_collect_log --full</pre>
--full-db	Collects all logs, including the database logs.	<pre>zstack-ctl configured_collect_log --full-db</pre>
--mn-db	Collects management node logs, including the database logs.	<pre>zstack-ctl configured_collect_log --mn-db</pre>
--mn-only	Collects only management node logs, excluding database logs.	<pre>zstack-ctl configured_collect_log --mn-only</pre>
--mn-host	Collects management node and compute node logs, excluding database logs.	<pre>zstack-ctl configured_collect_log --mn-host</pre>
--since SINCE	Collects logs within N days (Nd) or N hours (Nh).	<pre>zstack-ctl configured_collect_log --since 2d</pre>
--from-date FROM_DATE	<ul style="list-style-type: none"> <li>The date and time when logs are collected. Supported formats: <ul style="list-style-type: none"> <li>— yyyy-MM-dd: Sets only the year, month, and day. The hour, minute, and second are 0 by default. For example, 2018-11-22 (equals to 2018-11-22 00:00:00).</li> <li>— Sets the specific time, accurate to minutes. For example, 2018-11-22_09:30:00.</li> </ul> </li> <li>If you set only FROM_DATE, you can collect logs generated from</li> </ul>	<pre>zstack-ctl configured_collect_log --from-date 2018-11-22</pre>

Parameter	Description	Example
	<p>the value of FROM_DATE to the current time.</p> <ul style="list-style-type: none"> <li>If you set FROM_DATE to -1, you can collect all logs generated before the deadline.</li> </ul>	
--to-date TO_DATE	<ul style="list-style-type: none"> <li>The date and time when logs stop to collect. The format of this parameter is the same as the FROM_DATE parameter.</li> <li>If you set only the TO_DATE parameter, the value of FROM_DATE is 24 hours earlier than the current time.</li> </ul>	<pre>zstack-ctl configured_collect_log --to-date 2018-11-23</pre>

## 2.11 dump\_mysql

### Description

Saves the database to a backup file.

### Usage

Parameter	Description	Example
--file-name FILE_NAME	Sets a name for the backup database. Default: <b>zstack-backup-db</b> .	<pre>zstack-ctl dump_mysql --file-name 'zstack- backup-db'</pre>
--keep-amount KEEP_AMOUNT	Sets the number of backup databases. Default: 60. If the number of backup databases exceeds the threshold, excessive databases will be deleted.	<pre>zstack-ctl dump_mysql --keep-amount 50</pre>

## 2.12 change\_ip

### Description

Updates the management IP address from the configuration file of ZStack Cloud.

## Usage

Parameter	Description	Example
--ip IP	<p>Sets a new IP address for a management node. The new IP address is automatically synchronized to the configuration file of ZStack Cloud.</p> <div> <p><b>Note:</b></p> <p>If you changed the OS IP address of the current management node, you can use this command to change the IP addresses of all configuration file related to ZStack Cloud to the new IP address.</p> </div>	<pre>zstack-ctl change_ip --ip 172.20.12.47</pre>
--mysql_ip MYSQL_IP	Sets a new IP address for a database. By default, the IP address is the same as that of the corresponding management node.	<pre>zstack-ctl change_ip --mysql_ip 172.20.12.47</pre>
--cloudbus_server_ip CLOUDBUS_SERVER_IP	Sets a new IP for CloudBus. By default, the IP address is the same as that of the corresponding management node.	<pre>zstack-ctl change_ip --cloudbus_server_ip 172.20.12.47</pre>

## 2.13 show\_configuration

### Description

Displays information about the **zstack.properties** configuration file of ZStack Cloud.

Parameter	Description	Example
none	Displays the information about the <b>zstack.properties</b> configuration file of ZStack Cloud.	<pre>zstack-ctl show_configuration</pre>

## 2.14 configure

### Description

Modifies the configuration file of ZStack Cloud.

### Usage

Parameter	Description	Example
--host HOST	Sets the IP address or domain name for a management node . Default: localhost.	<code>zstack-ctl configure --host root@192.168.0.10</code>
--duplicate-to-remote DUPLICATE_TO_REMOTE	Synchronizes the configuration file of the current management node to a remote node.	<code>zstack-ctl configure --duplicate-to-remote root@192.168.0.10</code>
--use-file USE_FILE	Sets the location of the configuration file.	<code>zstack-ctl configure --use-file /usr/local/zstack/apache-tomcat/webapps/zstack/WEB-INF/classes/zstack.properties</code>

## 2.15 show\_ui\_config

### Description

Displays UI configurations, such as the service port.

### Usage

Parameter	Description	Example
none	Displays UI configurations, such as the service port.	<code>zstack-ctl show_ui_config</code>

## 2.16 config\_ui

### Description

Configure the UI address, port, and other information.

## Usage

Parameter	Description	Example
--host HOST	The IP address of the UI server. Default: <b>localhost</b> .	<code>zstack-ctl config_ui --host 172.20.11.122</code>
--init	Initializes <b>zstack.ui.properties</b> .	<code>zstack-ctl config_ui --init</code>
--restore	Resets <b>zstack.ui.properties</b> to the default value.	<code>zstack-ctl config_ui --restore</code>
--mn-host MN_HOST	The IP address of the management node. Default: <b>127.0.0.1</b> .	<code>zstack-ctl config_ui --mn-host 127.0.0.1</code>
--mn-port MN_PORT	The port of the management node. Default: 8080.	<code>zstack-ctl config_ui --mn-port 8080</code>
--webhook-host WEBHOOK_HOST	The IP address of the webhook host. Default: <b>127.0.0.1</b> .	<code>zstack-ctl config_ui --webhook-host 127.0.0.1</code>
--webhook-port WEBHOOK_PORT	The port of the webhook host. Default: 5000.	<code>zstack-ctl config_ui --webhook-port 5000</code>
--server-port SERVER_PORT	The port of the UI server. Default: 5000.	<code>zstack-ctl config_ui --server-port 5000</code>
--ui-address UI_ADDRESS	Changes the IP address of the UI server.	<code>zstack-ctl config_ui --ui-address 172.20.0.10</code>
--log LOG	The UI log directory. Default: <code>/usr/local/zstack/apache-tomcat/logs</code> .	<code>zstack-ctl config_ui --log /usr/local/zstack/apache-tomcat/logs</code>
--enable-ssl {True,False}	Enables or Disables UI login through HTTPS. Default: <b>False</b> .	<code>zstack-ctl config_ui --enable-ssl True</code>
--ssl-keyalias SSL_KEYALIAS	The alias of the UI certificate. Default: <b>zstackui</b> .	<code>zstack-ctl config_ui --ssl-keyalias zstackui</code>
--ssl-keystore SSL_KEYSTORE	The path of the UI certificate. Default: <code>/usr/local/zstack/zstack-ui/ui.keystore.p12</code> .	<code>zstack-ctl config_ui --ssl-keystore /usr/local/zstack/zstack-ui/ui.keystore.p12</code>
--ssl-keystore-type {PKCS12,JKS}	The type of the UI certificate. Default: <b>PKCS12</b> .	<code>zstack-ctl config_ui --ssl-keystore-type PKCS12</code>

Parameter	Description	Example
--ssl-keystore-password SSL_KEYSTORE_PASSWORD	The private key password of the UI certificate. Default: <b>password</b> .	<code>zstack-ctl config_ui --ssl-keystore-password password</code>
--db-url DB_URL	The URL of the UI database. Default: <code>jdbc:mysql://10.0.46.243:3306</code> .	<code>zstack-ctl config_ui --db-url jdbc:mysql://10.0.46.243:3306</code>
--db-username DB_USERNAME	The username of the UI database. Default: <b>zstack_ui</b> .	<code>zstack-ctl config_ui --db-username zstack_ui</code>
--db-password DB_PASSWORD	The password of the UI database. Default: <b>zstack.ui.password</b> .	<code>zstack-ctl config_ui --db-password zstack.ui.password</code>

**Note:**

If you want to change the username or password of the UI database, make sure that the **zstack\_ui** database can be accessed by using the new username and password.

## 2.17 ui\_status

### Description

Checks the UI service status of a specified node.

### Usage

Parameter	Description	Example
--host HOST	Specifies the IP address of the UI server to be checked. Default: localhost.	<code>zstack-ctl ui_status --host 172.20.11.12</code>

## 2.18 install\_license

### Description

Installs the license of ZStack Cloud. Note that you need to refresh the UI after installing the license.



**Usage**

Parameter	Description	Example
--license LICENSE, -f LICENSE	Specifies the complete path for the license.	<code>zstack-ctl install_license -- license /root/trailext- license-100days-6hosts.txt</code>
--prikey PRIKEY	Optional. Specifies the path for the generated license private key.	<code>zstack-ctl install_license -- prikey /root/tmp</code>

## 2.19 reset\_password

**Description**

Resets the password of the admin in ZStack Cloud.

**Usage**

Parameter	Description	Example
--password PASSWORD	Resets the password of the admin in ZStack Cloud. If not set, the default one (password) is used.	<code>zstack-ctl reset_password -- password 123456</code>

## 2.20 change\_mysql\_password

**Description**

Changes the password of the MySQL database.

**Usage**

Parameter	Description	Example
--root-password ROOT_PASSWORD, -root ROOT_PASSWORD	The original root password of the MySQL database.	<code>zstack-ctl change_mysql_password --root-password oldpswd</code>
--user-name USER_NAME, -user USER_NAME	The username whose password to be changed.	<code>zstack-ctl change_mysql_password --user-name root</code>
--new-password NEW_PASSWORD, -new NEW_PASSWORD	The new password.	<code>zstack-ctl change_mysql_password --new-password newpswd</code>

Parameter	Description	Example
<code>--remote-ip REMOTE_IP, -ip REMOTE_IP</code>	The remote IP address to be set if you need to change the password of a remote database.	<pre>zstack-ctl change_mysql_password --remote-ip 10.0.0.2</pre>

## 3 Advanced ctl Commands

### 3.1 install\_management\_node

#### Description

Installs ZStack Cloud management node on the current node or a remote node according to the configuration file. Before you can install other nodes, configure the current node first.

#### Usage

Parameter	Description	Example
--host HOST	Specifies the IP address of the management node to be installed.	<code>zstack-ctl install_management_node --host 172.20.12.111</code>
--install-path INSTALL_PATH	Specifies the path for installing the management node. Default: <code>/usr/local/zstack</code> .	<code>zstack-ctl install_management_node --install-path /usr/ local/zstack</code>
--source-dir SOURCE_DIR	Specifies the path for installing Apache Tomcat. Default: <code>/usr/local/zstack/apache-tomcat/</code> .	<code>zstack-ctl install_management_node --source-dir /usr/ local/zstack/apache- tomcat/</code>
--debug	Displays Ansible debugging details.	<code>zstack-ctl install_management_node --debug</code>
--force-reinstall	Deletes the existing Apache Tomcat and re-installs the management node.	<code>zstack-ctl install_management_node --force-reinstall</code>
--yum YUM	Uses the YUM repos predefined by ZStack Cloud. Available repos: alibase, aliepel, 163base, ustcepel, and zstack-local.	<code>zstack-ctl install_management_node --yum 163base</code>
--ssh-key SSH_KEY	Sets a private key path for SSH login.	<code>zstack-ctl install_management_node --ssh-key /root/.ssh/ id_rsa</code>

## 3.2 upgrade\_management\_node

### Description

Upgrades the management node to a specified version.

### Usage

Parameter	Description	Example
--host HOST	Specifies the SSH URL of the node to be upgraded.	<code>zstack-ctl upgrade_management_node --host 172.20.31.34</code>
--war-file WAR_FILE	Sets the URL for the <b>zstack.war</b> package. The URL can be an HTTP URL or a complete path.	<code>zstack-ctl upgrade_management_node --war-file /usr/local/ zstack/zstack.war</code>
--debug	Displays Ansible debugging details.	<code>zstack-ctl upgrade_management_node --debug</code>
--ssh-key SSH_KEY	Sets a private key path for SSH login.	<code>zstack-ctl upgrade_management_node --ssh-key /root/.ssh/ id_rsa</code>

## 3.3 rollback\_management\_node

### Description

Rolls back to the management node status if the upgrade fails.

### Usage

Parameter	Description	Example
--host HOST	Specifies the IP address of the management node to be rolled back.	<code>zstack-ctl rollback_management_node --host 172.20.12.111</code>
--war-file WAR_FILE	Sets the URL for the <b>zstack.war</b> package. The URL can be an HTTP URL or a complete path.	<code>zstack-ctl rollback_management_node --war-file /usr/local/ zstack/zstack.war</code>
--debug	Displays Ansible debugging details.	<code>zstack-ctl rollback_management_node --debug</code>

Parameter	Description	Example
--ssh-key SSH_KEY	Sets a private key path for SSH login.	<code>zstack-ctl rollback_management_node --ssh-key /root/.ssh/ id_rsa</code>
--property-file PROPERTY_FILE	Specifies the configuration file to be rolled back.	<code>zstack-ctl rollback_management_node --property-file / usr/local/zstack/ apache-tomcat/webapps/ zstack/WEB-INF/classes/ zstack.properties</code>

## 3.4 taillog

### Description

Displays log updates of the management node.

### Usage

Parameter	Description	Example
none	Displays log updates of the management node.	<code>zstack-ctl taillog</code>

## 3.5 install\_ui

### Description

Installs ZStack Cloud UI.

### Usage

Parameter	Description	Example
--host HOST	Specifies the node on which ZStack Cloud UI is installed. By default, the UI is installed on the current management node.	<code>zstack-ctl install_ui --host 172.20.12.144</code>
--ssh-key SSH_KEY	Sets a complete path for the private key. Ansible will automatically log in to the specified node to install the UI.	<code>zstack-ctl install_ui --ssh-key /root/.ssh/ id_rsa</code>

## 3.6 install\_db

### Description

Installs ZStack Cloud database.

### Usage

Parameter	Description	Example
--host HOST	Sets an IP address or a domain name for the database server. Default value: localhost	<code>zstack-ctl install_db --host</code>
--root-password ROOT_PASSWORD	Sets a new password for root users of the MySQL database.	<code>zstack-ctl install_db --root-password</code>
--login-password LOGIN_PASSWORD	Sets an original login password for the MySQL database.	<code>zstack-ctl install_db --login-password password1</code>
--yum YUM	Uses the YUM repos predefined by ZStack Cloud. Available repos: alibase, aliepel, 163base, ustcepel, and zstack-local.	<code>zstack-ctl install_db --yum 163base</code>
--no-backup NO_BACKUP	Disables auto backup if your database is large and you want manual backup. Default: false, that is, the database is automatically backed up.	<code>zstack-ctl install_db --no-backup</code>
--ssh-key SSH_KEY	Sets a private key path for SSH login.	<code>zstack-ctl install_db --ssh-key /root/.ssh/id_rsa</code>

## 3.7 upgrade\_db

### Description

Upgrades the database to the latest version.

## Usage

Parameter	Description	Example
<code>--force</code>	Upgrades the database without checking the management node status.	<code>zstack-ctl upgrade_db --force</code>
<code>--no-backup NO_BACKUP</code>	Disables auto backup if your database is large and you want manual backup. Default: false, that is, the database is automatically backed up.	<code>zstack-ctl upgrade_db --no-backup</code>
<code>--dry-run</code>	Checks whether the database can be upgraded.	<code>zstack-ctl upgrade_db --dry-run</code>

## 3.8 deploydb

### Description

Configures ZStack Cloud database.

### Usage

Parameter	Description	Example
<code>--root-password ROOT_PASSWORD</code>	Creates a MySQL root user and sets a password.	<code>zstack-ctl deploydb --root-password root123</code>
<code>--zstack-password ZSTACK_PASSWORD</code>	Creates a user with the name <b>ZStack</b> and sets a password.	<code>zstack-ctl deploydb --zstack-password zstack123</code>
<code>--host HOST</code>	Sets an IP address or a domain name for the database server. Default: localhost.	<code>zstack-ctl deploydb --host 172.20.11.133</code>
<code>--port PORT</code>	Sets the MySQL port. Default: 3306.	<code>zstack-ctl deploydb --port 3300</code>
<code>--no-update</code>	Does not upgrade the database information to the configuration file.	<code>zstack-ctl deploydb --no-update</code>
<code>--drop</code>	Deletes existing databases.	<code>zstack-ctl deploydb --drop</code>
<code>--keep-db</code>	Keeps existing databases from being upgraded.	<code>zstack-ctl deploydb --keep-db</code>

### 3.9 rollback\_db

#### Description

Rolls back to the database status if the upgrade fails.

#### Usage

Parameter	Description	Example
--db-dump DB_DUMP	Specifies backup files to be recovered.	<code>zstack-ctl rollback_db --db-dump /zstackdb/backupdb.bk</code>
--root-password ROOT_PASSWORD	The MySQL root password, which is blank by default.	<code>zstack-ctl rollback_db --root-password password</code>
--force	<p> Ignores to check the management node status.</p> <div> <p><b>Note:</b></p> <p>Exercise caution. Make sure that you totally understand the consequence before you run this command.</p> </div>	<code>zstack-ctl rollback_db --force</code>

### 3.10 clear\_license

#### Description

Clears and backs up ZStack Cloud licenses.

### 3.11 restore\_config

#### Description

Restores ZStack Cloud from the configuration file in a specified directory, including keys of zstack.properties and ssh host.

#### Usage

Parameter	Description	Example
--restore-from RESTORE_FROM	Specifies the path of the configuration file to be used.	<code>zstack-ctl restore_config --restore-from /usr/</code>



Parameter	Description	Example
		<code>local/zstack/apache-tomcat/webapps/zstack</code>

## 3.12 save\_config

### Description

Saves the configuration file of ZStack Cloud to a specified path under ZSTACK\_HOME.

### Usage

Parameter	Description	Example
<code>--save-to SAVE_TO</code>	Specifies the path for the configuration file of ZStack Cloud.	<code>zstack-ctl save_config --save-to /usr/local/zstack/apache-tomcat/webapps/zstack</code>

## 3.13 set\_deployment

### Description

Sets the cluster deployment scale of ZStack Cloud.

### Usage

Parameter	Description	Example
<code>--size</code>	Specifies the cluster deployment scale of ZStack Cloud. Options: small, large, medium, and default.	<code>zstack-ctl set_deployment --size small</code>

### Scenario

From version 3.10.0, ZStack Cloud allows you to specify the cluster deployment scale and assign different attribute values to clusters accordingly. Options: default, small, medium, and large, where default is the default scale.

The following table lists the attribute values of each scale.

Attribute	Default	Small	Medium	Large
Existing attribute : DbFacadeDa	100	64	128	128

Attribute	Default	Small	Medium	Large
taSource. maxPoolSize				
Existing attribute : Prometheus. scrapeInterval	15 (seconds)	15	30	60

Recommended resource configuration of each scale:

- **default**: Default environment, which allows for 50 hosts.
- **small**: Small-size environment, which allows for 100 hosts or 1000 VM instances.
- **medium**: Medium-size environment, which allow for 400 hosts or 4,000 VM instances.
- **large**: Large-size environment, which allows for 1,000 hosts or 10,000 VM instances.

## 3.14 start\_vdi

### Description

Starts the UI service of ZStack Cloud VDI.

### Usage

Parameter	Description	Example
--mn-port MN_PORT	The port of ZStack Cloud management node. Default: 8080.	<code>zstack-ctl start_vdi --mn-port 8000</code>
--webhook-port WEBHOOK_PORT	The port of the webhook node. Default: 9000.	<code>zstack-ctl start_vdi --webhook-port 9050</code>
--server-port SERVER_PORT	The port of the UI service. Default: 9000.	<code>zstack-ctl start_vdi --server-port 9050</code>
--vdi-path VDI_PATH	The VDI path. Default: <code>/opt/zstack-dvd/zstack-vdi.war</code> .	<code>zstack-ctl start_vdi --vdi-path /opt/root/zstack-vdi.war</code>
--log LOG	The UI log directory. Default: <code>/usr/local/zstack/apache-tomcat/logs</code> .	<code>zstack-ctl start_vdi --log /usr/log/logs</code>

### 3.15 stop\_vdi

#### Description

Stops the VDI service on the local node.

#### Usage

Parameter	Description	Example
none	Stops the VDI service on the local node.	<code>zstack-ctl stop_vdi</code>

### 3.16 vdi\_status

#### Description

Checks the VDI status on the local node.

#### Usage

Parameter	Description	Example
none	Checks the VDI status on the local node.	<code>zstack-ctl vdi_status</code>

### 3.17 setenv

#### Description

Sets variables in `/usr/local/zstack/zstack-ctl/ctl-env` of `zstack-ctl`.

#### Usage

Parameter	Description	Example
none	Sets variables in <code>/usr/local/zstack/zstack-ctl/ctl-env</code> of <code>zstack-ctl</code> .	<code>zstack-ctl setenv</code>

### 3.18 unsetenv

#### Description

Cancel to set variables in `/usr/local/zstack/zstack-ctl/ctl-env` of `zstack-ctl`.

**Usage**

Parameter	Description	Example
none	Cancels to set variables in <code>/usr/local/zstack/zstack-ctl/ctl-env</code> of zstack-ctl.	<code>zstack-ctl unsetenv</code>

## 3.19 mysql\_restrict\_connection

**Description**

Sets an allowlist policy for the database account of the management node. After an allowlist is enabled, only the management node where the database is located can access the database. The path of other non-management nodes cannot access the database.

**Usage**

Parameter	Description	Example
--restrict	Enables the allowlist policy to restrict database access.	<code>zstack-ctl mysql_restrict_connection --root-password zstack.mysql.password --restrict</code>
--restore	Restores the previous policy so that the access to the database is not restricted.	<code>zstack-ctl mysql_restrict_connection --root-password zstack.mysql.password --restore</code>

## 3.20 getenv

**Description**

Obtains variables from `/usr/local/zstack/zstack-ctl/ctl-env`.

**Usage**

Parameter	Description	Example
none	Obtains variables from <code>/usr/local/zstack/zstack-ctl/ctl-env</code> .	<code>zstack-ctl getenv</code>

## 3.21 bootstrap

### Description

Creates ZStack Cloud users and user groups and add them to sudoers.

### Usage

Parameter	Description	Example
none	Creates ZStack Cloud users and user groups and add them to sudoers.	<code>zstack-ctl bootstrap</code>

## 3.22 upgrade\_ctl

### Description

Upgrades zstack-ctl to a new version.

### Usage

Parameter	Description	Example
<code>--package PACKAGE</code>	Specifies a path for zstack-ctl installation package.	<code>zstack-ctl upgrade_ctl --package ./apache- tomcat-7.0.35/ webapps/zstack/WEB- INF/classes/tools/ zstackctl-1.8.tar.gz</code>

# Glossary

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## VM Instance

A VM instance is a virtual machine instance running on a host. A VM instance has its own IP address and can access public networks and run application services.

## Volume

A volume provides storage space for a VM instance. Volumes are categorized into root volumes and data volumes.

## Root Volume

A root volume provides support for the system operations of a VM instance.

## Data Volume

A data volume provides extended storage space for a VM instance.

## Image

An image is a template file used to create a VM instance or volume. Images are categorized into system images and volume images.

## Instance Offering

An instance offering defines the number of vCPU cores, memory size, network bandwidth, and other configuration settings of VM instances.

## Disk Offering

A disk offering defines the capacity and other configuration settings of volumes.

## GPU Specification

A GPU specification defines the frame per second (FPS), video memory, resolution, and other configuration settings of a physical or virtual GPU. GPU specifications are categorized into physical GPU specifications and virtual GPU specifications.

## Auto-Scaling Group

An auto-scaling group is a group of VM instances that are used for the same scenarios. An auto-scaling group can automatically scale out or in based on application workloads or health status of VM instances in the group.

## Snapshot

A snapshot is a point-in-time capture of data status in a volume.

## Affinity Group

An affinity group is an orchestration policy for IaaS resources to ensure the high performance and high availability of businesses...

## Zone

A zone is a logical group of resources such as clusters, L2 networks, and primary storages. Zone is the largest resource scope defined in the Cloud.

## Cluster

A cluster is a logical group of hosts (compute nodes).

## Host

A host provides compute, network, and storage resources for VM instances.

## Primary Storage

A primary storage is one or more servers that store volume files of VM instances. These files include root volume snapshots, data volume snapshots, image caches, root volumes, and data volumes.

## Backup Storage

A backup storage is one or more servers that store VM image templates, including ISO image files .

## iSCSI Storage

iSCSI storage is a SAN storage that uses the iSCSI protocol for data transmission. You can add an iSCSI SAN block as a Shared Block primary storage or pass through the block to a VM instance.

## FC Storage

FC storage is an SAN storage that uses the FC technology for data transmission. You can add an FC SAN block as a Shared Block primary storage or pass through the block to a VM instance.

## L2 Network

An L2 network is a layer 2 broadcast domain used for layer 2 isolation. Generally, L2 networks are identified by names of devices on the physical network.

## VXLAN Pool

A VXLAN pool is a collection of VXLAN networks established based on VXLAN Tunnel Endpoints (VTEPs). The VNI of each VXLAN network in a VXLAN pool must be unique.

## L3 Network

An L3 network includes IP ranges, gateway, DNS, and other network configurations that are used by VM instances.

## Public Network

Generally, a public network is a logical network that is connected to the Internet. However, in an environment that has no access to the Internet, you can also create a public network.

## Flat Network

A flat network is connected to the network where the host is located and has direct access to the Internet. VM instances in a flat network can access public networks by using elastic IP addresses.

## VPC Network

A VPC network is a private network where VM instances can be created. A VM instance in a VPC network can access the Internet through a VPC vRouter.

## Management Network

A management network is used to manage physical resources in the Cloud. For example, you can create a management network to manage access to hosts, primary storages, backup storages, and VPC vRouters.

## Flow Network

A flow network is a dedicated network for port mirror transmission. You can use a flow network to transmit the mirrors of data packets of NIC ports to the target ports.



## VPC vRouter

A VPC vRouter is a dedicated VM instance that provides multiple network services.

## VPC vRouter HA Group

A VPC vRouter HA group consists of two VPC vRouters. Either VPC vRouter can be a primary or secondary VPC vRouter for the group. If the primary VPC vRouter does not work as expected, the VPC vRouter becomes the secondary VPC vRouter in the group to ensure high availability of business.

## vRouter Image

A vRouter image encapsulates network services and can be used to create VPC vRouters and load balancers. vRouter images can be categorized into VPC vRouter images and load balancer (LB) images.

## Dedicated-Performance LB Image

A dedicated-performance load balancer (LB) image encapsulates dedicated-performance load-balancing services and can be used to create load balancer instances. However, a dedicated-performance load balancer image cannot be used to create VM instances.

## vRouter Offering

A vRouter offering defines the number of vCPU cores, memory size, image, management network, and public network configuration settings of VPC vRouters. You can use a vRouter offering to create VPC vRouters that can provide network services for public networks and VPC networks.

## LB Instance Offering

A load balancer (LB) instance offering defines the CPU, memory, image, and management network configuration settings used to create LB instances. LB instances provide load balancing services for the public network, flat network, and VPC network.

## SDN Controller

An SDN controller is used to control network devices such as switches. You can add an external SDN controller to the Cloud and use the controller to control external switches and other network devices.

## Security Group

A security group provides security control services for VM instances on the L3 network. It filters the ingress or egress TCP, UDP, and ICMP packets of specified VM instances in specified networks based on the specified security rules.

## VIP

In bridged network environments, a virtual IP address (VIP) provides network services such as serving as an elastic IP address (EIP), port forwarding, load balancing, IPsec tunneling. When a VIP provides the preceding network services, packets are sent to the VIP and then routed to the destination network where VM instances are located.

## EIP

An elastic IP address (EIP) functions based on the NAT technology. IP addresses in a private network are translated into an EIP that is in another network. This way, private networks can be accessed from other networks by using EIPs.

## Port Forwarding

Port forwarding functions based on the layer-3 forwarding service of VPC vRouters. This service forwards traffic flows of the specified IP addresses and ports in a public network to specified ports of VM instances by using the specified protocol. If your public IP addresses are insufficient, you can configure port forwarding for multiple VM instances by using one public IP address and port.

## Load Balancer

A load balancer distributes traffic flows of a virtual IP address to backend servers. It automatically inspects the availability of backend servers and isolates unavailable servers during traffic distribution. This way, the load balancer improves the availability and service capability of your business.

## Listener

A listener monitors the frontend requests of a load balancer and distributes the requests to a backend server based on the specified policy. In addition, the listener performs health checks on backend servers.

## Forwarding Rule

A forwarding rule forwards the requests from different domain names or URLs to different backend server groups.

## Backend Server Group

A backend server group is a group of backend servers that handles requests distributed by load balancers. It is the basic unit for traffic distribution by load balancer instances.

## Backend Server

A backend server handles requests distributed by a load balancer. You can add a VM instance on the Cloud or a server on a third-party cloud as a backend server.

## Frontend Network

A frontend network is a type of network that is associated with a load balancer. Requests from the network are distributed by the load balancer to backend servers based on a specified policy.

## Backend Network

A backend network is a type of network that is associated with a load balancer. Requests from frontend networks are distributed by the load balancer to servers in the backend network.

## Load Balancer Instance

A load balancer instance is a custom VM instance used to provide load balancing services.

## Certificate

If you select HTTPS for a listener, associate it with a certificate to make the listener take effect.

You can upload either a certificate or certificate chain.

## Firewall

A firewall is an access control policy that monitors ingress and egress traffic of VPC vRouters and decides whether to allow or block specific traffic based on a defined set of security rules.

## IPsec Tunnel

An IPsec tunnel encrypts and verifies IP packets that transmit over a virtual private network (VPN ) from one site to another.

## OSPF Area

An OSPF area is split from an autonomous system based on the OSPF protocol. This splitting simplifies the management of vRouters.

## NetFlow

An NetFlow monitors the ingress and egress traffic of the NICs of VPC vRouters. The supported versions of data flows are V5 and V9.

## Port Mirroring

Port mirroring mirrors the traffic data of VM NICs and sends the traffic data to the target ports. This allows for the analysis of data packets of ports and simplifies the monitoring and management of data traffic and makes it easier to locate network errors and exceptions.

## Route Table

A route table contains information about various routes that you configure. Route entries in a route table must include the destination network, next hop, and route priority.

## CloudFormation

CloudFormation is a service that simplifies the management of cloud resources and automates deployment and O&S. You can create a stack template to configure cloud resources and their dependencies. This way, resources can be automatically configured and deployed in batches. CloudFormation provides easy management of the lifecycle of cloud resources and integrates automatic O&S into API and SDK.

## Resource Stack

A resource stack is a stack of resources that are configured by using a stack template. The resources in the stack have dependencies with each other. You can manage resources in the stack by managing the resource stack.

## Stack Template

A stack template is a UTF8-encoded file based on which you can create resource stacks. The stack template defines the resources that you want, the dependencies between the resources , and the configuration settings of the resources. When you use a stack template to create a resource stack, CloudFormation parses the template and the resources are automatically created and configured.

## Sample Template

A sample template is a commonly used resource stack. You can use a sample template provide by the Cloud to create resource stacks.

## Designer

A designer is a CloudFormation tool that allows you to orchestrate cloud resources. You can drag and drop resources on a canvas and use lines to establish dependencies between the resources.

## Baremetal Cluster

A baremetal cluster consists of baremetal chassis. You can manage baremetal chassis by managing a baremetal cluster where the chassis reside.

## Deployment Server

A deployment server is a server that provides PXE service and console proxy service for baremetal chassis.

## Baremetal Chassis

A baremetal chassis is used to create a baremetal instance and is identified based on the BMC interface and IPMI configuration setting.

## Preconfigured Template

A preconfigured template is used to create a preconfigured file that allows for unattended batch installation of an operating system for baremetal instances.

## Baremetal Instance

A baremetal instance is an instantiated baremetal chassis.

## Elastic Baremetal Management

Elastic Baremetal Management provides dedicated physical servers for your applications to ensure high performance and stability. In addition, this feature allows elastic scaling. You can apply for and scale resources based on your needs.

## Provision Network

A provision network is a dedicated network for PXE boot and image downloads while creating elastic baremetal instances.

## Elastic Baremetal Cluster

An elastic baremetal cluster consists of elastic baremetal instances. You can manage elastic baremetal instances by managing an elastic baremetal cluster where the instances reside.

## Gateway Node

A gateway node is a node where the ingress and egress traffic of the Cloud and elastic baremetal instances is forwarded.

## Baremetal Node

A baremetal node is used to create a baremetal instance and is identified based on the BMC interface and IPMI configuration setting.

## Elastic Baremetal Instance

An elastic baremetal instance has the same performance as physical servers and allows elastic scaling. You can apply for and scale resources based on your needs.

## Elastic Baremetal Offering

An elastic baremetal offering defines the number of vCPU cores, memory size, CPU architecture, CPU model, and other configuration settings of elastic baremetal instances.

## vCenter

The Cloud allows you to take over vCenter and manage resources on the vCenter.

## VM Instance

A VM instance is an ESXi virtual machine instance running on a host. A VM instance has its own IP address to access public networks and can run application services.

## Network

A vCenter network defines the network settings of VM instances on vCenter, such as IP range, gateway, DNS, and network services.

## Volume

A volume provides storage space for a VM instance on vCenter. A volume attached to a VM instance can be used as a root volume or data volume. A root volume provides support for the system operations of a VM instance. A data volume provides extended storage space for a VM instance.

## Image

An image is a template file used to create a VM instance or volume on vCenter. Images are categorized into system images and volume images.

## Event Message

Event Message displays event alarm messages of vCenter that is took over by the Cloud. This feature allows you to locate errors and exceptions efficiently.

## Network Topology

A network topology visualizes the network architecture of the Cloud. It allows for efficient planning , management, and improvement of network architecture. Network topologies can be categorized into global topologies and custom topologies.

## Performance Analysis

Performance Analysis displays the performance metrics of key resources under monitoring in the Cloud. Cloud resources can be externally or internally monitored. You can use either method to monitor the performance of resources in the Cloud and improve O&S efficiency.

## Capacity Management

Capacity Management visualizes the capacities and usages of key resources in the Cloud. You can use this feature to improve O&S efficiency.

## MN Monitoring

MN monitoring allows you to view the health status of each management node when you use multiple management nodes to achieve high availability.

## Alarm

An alarm is used to monitor the status of time-series data and events and respond to the status change. Alarms can be categorized into resource alarm, event alarm, and extended alarm.

## One-Click Alarm

A one-click alarm integrates multiple metrics of a resource. You can create one-click alarms for multiple resources to monitor these resources.

## Alarm Template

An alarm template is a template of alarm rules. If you associate an alarm template with a resource group, an alarm is created to monitor the resources in the group.

## Resource Group

A resource group consists of resources grouped based on your business needs. If you associate an alarm template with a resource group, the alarm rules specified by the template take effect on all the resources in the group.

## Message Template

A message template specifies the text template of a resource alarm message or event alarm message sent to an SNS system.

## Message Source

A message source is used to take over extended alarm messages. If you configure alarms for message sources, extended alarm messages can be sent to various endpoints.

## Endpoint

An endpoint is a method that users obtain subscribed messages. Endpoints are categorized into system endpoints, email, DingTalk, HTTP application, short message service, and Microsoft Teams.

## Alarm Message

An alarm message is a message sent the time when an alarm is triggered.

## Operation Log

An operation log is a chronological record of operations on the specified objects and their operation results.

## Audit

Audit monitors and records all activities on the Cloud. You can use this feature to implement operation tracking, cybersecurity classified protection compliance, security analysis, troubleshooting, and automatic O&M.

## Backup Management

Backup management integrates multiple disaster recovery technologies such as incremental backup and full backup that are suitable for multiple business scenarios. You can implement local backup and remote backup based on your business needs.



## Backup Job

You can create a backup job to back up local VM instances, volumes, or databases to a specified storage server on a regular basis.

## Local Backup Data

Local backup data of VM instances, volumes, and databases is stored in the local backup storage.

## Local Backup Storage

A local backup storage is located at the local data center and is used to store local backup data.

## Remote Backup Storage

A remote backup storage is located at a remote data center or a public cloud and is used to store remote backup data.

## Continuous Data Protection (CDP)

Continuous Data Protection (CDP) provides second-level and fine-grained continuous backups for important business systems in VM instances, allowing users to restore VM data to any time state and retrieve files without restoring the system.

## CDP Task

You can create a CDP task to continuously back up your VM data to a specified backup storage to achieve continuous data protection and restoration.

## CDP Data

The backup data generated from continuous data protection on VM instances is stored in local backup storages.

## Scheduled Job

A scheduled job defines that a specific action be implemented at a specified time based on a scheduler.

## Scheduler

A scheduler is used to schedule jobs. It is suitable for business scenarios that last for a long time.

## Tag

A tag is used to mark resources. You can use a tag to search for and aggregate resources.

## Migration Service

The Cloud provides V2V migration service that allows you to migrate VM instances and data from other virtualized platform to the current cloud platform.

## V2V Migration

V2V Migration allows you to migrate VM instances from the VMware or KVM platform to the current cloud platform.

## V2V Conversion Host

A V2V conversion host is a host in the destination cluster that you need to specify during V2V migration to cache VM instances and data when you implement V2V migration. After the VM instances and data are cached in the V2Vconversion host, they are migrated to the destination primary storage.

## User

A user is a natural person that constructs the most basic unit in business management.

## Member Group

A member group is a collection of natural persons or a collection of project members. You can use a member group to grant permissions.

## Role

A role is a collection of permissions that can be granted to users. A user that assumes a role can call API operations based on the permissions specified by the role. Roles are categorized into system roles and custom roles.

## 3rd Party Authentication

The 3rd party authentication feature allows you to integrate third-party authentication systems to the Cloud. Then you can use a third-party account to log in to the Cloud and use the resources in the Cloud. You can add an AD or LDAP server to the Cloud.

## Project

A project is a task that needs to be accomplished by specific personnel at a specified time.

Resources and budgets are also specified for projects. In business management, you can plan resources at the project granularity and allocate an independent resource pool for a project.

## Project Member

A project member is a member in a project who is granted permissions on specific project resources and can use the resources to accomplish tasks. Project members include the project admin, project managers, and normal project members.

## Process Management

Process management is part of ticket management that manages the processes related to the resources of projects. Processes can be categorized into default processes and custom processes .

## My Approvals

In the Cloud, only the administrator and project administrators are granted approval permissions. the administrator and project administrators can approve or reject a ticket. If a ticket is approved, resources are automatically deployed and allocated to the specified project.

## Bills

A bill is the expense of resources totaled at a specified time period. Billing is accurate to the second. Bills can be categorized into project bills, department bills, and account bills.

## Pricing List

A pricing list is a list of unit prices of different resources. The unit price of a resource is set based on the specification and usage time of the resource.

## Console Proxy

Console proxy allows you to log in to a VM instance by using the IP address of a proxy.

## AccessKey Management

An AccessKey pair is a security credential that one party authorizes another party to call API operations and access its resources in the Cloud. AccessKey pairs shall be kept confidential.

## IP Blocklist/Allowlist

An IP blocklist or allowlist identifies and filters IP addresses that access the Cloud. You can create an IP allowlist or blocklist to improve access control of the Cloud.

## Application Center

Application Center allows you to add third-party applications to the Cloud and then access the applications by using the Cloud. It extends the functionality of the Cloud.

## Sub-Account Management

A sub-account is created and managed by the admin. Resources created under a sub-account is managed by the sub-account.

## Theme and Appearance

You can customize the theme and appearance of the Cloud.

## Email Server

If you select Email as the endpoint of an alarm, you need to set an email server. Then alarm messages are sent to the email server.

## Log Server

A log server is used to collect logs of the management node. You can add a log server to the cloud and use the collected logs to locate errors and exceptions. This makes your O&M more efficient.

## Global Setting

Global Setting allows you to configure settings that take effect on the whole platform.

## Scenario Template

Scenario Template provides multiple templates that encapsulate scenario-based global settings . You can apply a template globally with one click based on your business needs. This improves your O&M efficiency.