LAMP Image Guide

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NOTE:

By default, network access is turned off to a ECS instance. You can specify rules in a security group that allows access from an IP address range, port, or ECS security group.

You must specify port numbers (for TCP):

- 22 (ssh)
- 80 (http)
- 443 (https)
- 21, 20000~30000 (ftp)


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1 Image environment description

1.1 Image version description

Software version:
- Apache2.4.26
- PHP7.1.7, PHP7.0.21, PHP5.6.30, PHP5.5.38, PHP5.4.45, PHP5.3.29
- MySQL5.6.36 or MariaDB10.1.25
- Redis3.2.9
- Memcached1.4.39
- Jemalloc4.5.0
- Pure-FTPd1.0.46
- phpMyAdmin4.4.15.10

Image Feature:
1. Source compiler installation, download the latest and most stable version from the official, security optimization
2. Providing multiple PHP versions (PHP-7.1, PHP-7.0, PHP-5.6, PHP-5.5, PHP-5.4, PHP-5.3)
3. Jemalloc optimize MySQL/MariaDB
4. Providing add a virtual host script, include Let’s Encrypt SSL certificate
5. Add ftp account to apache via the shell script menu
6. Provide MySQL, PHP, Redis, Memcached, phpMyAdmin upgrade script
7. Provide local backup and remote backup (rsync between servers), Alibaba cloud OSS backup(Intranet) script
1.2 Application Installation Directories

Apache install directory: /usr/local/apache
Database install directory: /usr/local/mysql or /usr/local/mariadb
Database data directory: /data/mysql or /data/mariadb
Database Configuration File: /etc/my.cnf
PHP install directory: /usr/local/php
PHP Configuration Path: /usr/local/php/etc
PHP Configuration File: /usr/local/php/etc/php.ini
PHP Additional .ini File: /usr/local/php/etc/php.d/
Memcached install directory: /usr/local/memcached
Memcached Configuration File: /etc/init.d/memcached
Redis install directory: /usr/local/redis
Redis Configuration File: /usr/local/redis/etc/redis.conf
Web Context document root: /data/wwwroot/default
phpMyAdmin install directory: /data/wwwroot/default/phpMyAdmin
Web logs directory: /data/wwwlogs
Index demo url: http://<Public net IP>
Opcache Control Panel url: http://<Global IP Address>/ocp.php
phpmyadmin url: http://<Public net IP>/phpMyAdmin
# Pay attention to upper and lower case, rename or delete for security advice
PHP Prober url: http://<Public net IP>/prober.php

The default ip direct access to the contents of the corresponding root directory:/data/wwwroot/default, This directory contains the home pagedemo,Opcache Control Panel,phpinfo,phpMyAdmin,Probes and other documents, Directory inside the file can be deleted, the directory can not be deleted.

1.3 How do use scripts to optimize the parameters

Because this image was build based on 1 Core 1G ECS, the configuration and parameters for MySQL/MariaDB, PHP are original without any change, highly recommended. If this is not the case, run the following optimization script:

```
cd /root/oneinstack  # Must enter the directory execution under oneinstack
./optimize.sh       # Do not sh optimize.sh or bash optimize.sh such execution
```

**NOTE:**

1. It may take 1 minute, do not interrupt
2. This script will automatically optimize MySQL, PHP and other parameters according to the system configuration

2 How to Change your PHP Version

```
cd /root/oneinstack  # Must enter the directory execution under oneinstack

./change_php_version.sh  # Do not sh change_php_version.sh such execution
```

```
[root@OneinStack oneinstack]# ./change_php_version.sh

# OneStack for CentOS/RadHat 5+ Debian 6+ and Ubuntu 12+  #
# Change your PHP version  #
# For more information please visit https://oneinstack.com  #

Current PHP Version: 5.4

Please select a version of the PHP:
  1. php-7.1
  2. php-7.0
  3. php-5.6
  4. php-5.5
  5. php-5.4
  6. php-5.3

Please input a number:(Default 3 press Enter) 2
Gracefully shutting down php-fpm . done
Starting php-fpm  done

You have successfully changed to 7.0
```

3 Migrating website from OS disk to Data disk

**Note:** If you purchased a data disk (And only one data disk), it is recommended to mount the data disk first, the site content, database storage data cloud disk. **If there is no purchase data cloud disk Ignore the tutorial!**

```bash
cd /root/oneinstack  #Must enter the directory execution under oneinstack
./move_auto_fdisk.sh  #mount data disk and migrate
```

As shown below:

```bash
# Oneinstack for CentOS/RadHat 5+ Debian 6+ and Ubuntu 12+  #
# Auto fdisk  
# For more information please visit http://oneinstack.com  

Step 1. No lock file, begin to create lock file and continue

Step 2. Begin to check free disk
You have a free disk, now will fdisk it and mount it
This system have free disk:
/dev/vdb

Step 3. Begin to fdisk free disk

Step 4. Begin to make directory

Step 5. Begin to write configuration to /etc/fstab and mount device

Filesystem Size Used Avail Use% Mounted on
/dev/vdal     20G  3.8G  15G  21%  /
devtmpfs  488M    0  488M  0%  /dev
tmpfs     497M  24K  497M  1%  /dev/shm
tmpfs     497M  8.3M  489M  2%  /run
tmpfs     497M    0  497M  0%  /sys/fs/cgroup
tmpfs     100M    0  100M  0%  /run/user/0
/dev/vdbl  9.8G  37M  9.2G  1%   /data
[root@Oneinstack oneinstack]#
```

4 MySQL/MariaDB databases management

NOTE:

Use following URL to open phpMyAdmin page:

http://<Public net IP>/phpMyAdmin

phpMyAdmin is an application for MySQL databases management. With it you can create, alter, drop, delete, import and export MySQL database tables. You can also run MySQL queries, optimize, repair and check tables, change collation.

4.1 Display default MySQL root password

cd /root/oneinstack  #Must enter the directory execution under oneinstack

grep dbrootpwd options.conf  #Display MySQL root password

```
[root@oneinstack ~]# cd /root/oneinstack
[root@oneinstack ]# grep dbrootpwd options.conf

dbrootpwd=KeYpZrZx
```
4.2 Change MySQL root password

cd /root/oneinstack  # Must enter the directory execution under oneinstack

./reset_db_root_password.sh

```
# Oneinstack for CentOS/RadHat 5+ Debian 6+ and Ubuntu 12+  #
# Reset Database root password for OneinStack  #
# For more information please visit https://oneinstack.com  #

Please input the root password of database: oneinstack
Password reset succesfully!
The new password: oneinstack

[root@OneinStack oneinstack]# mysql -uroot -p
Enter password:
Welcome to the MySQL monitor. Commands end with ; or \
Your MySQL connection id is 376
Server version: 5.6.35-log MySQL Community Server (GPL)

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Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
MySQL [(none)]>
```
4.3 Create a MySQL Database

For example: create a database named 'oneinstack'

```bash
# mysql -uroot -p  # enter mysql console

Enter password:  # Enter mysql root password

MySQL [(none)]> create database oneinstack;  # Notice the semicolon at the end

MySQL [(none)]> show databases;

MySQL [(none)]> exit;  # quit mysql console, Notice the semicolon at the end
```
4.4 Delete a MySQL Database

MySQL [(none)]> drop database oneinstack;  #delete oneinstack database

MySQL [(none)]> exit;    # quit mysql console, Notice the semicolon at the end

4.5 Create a Database User

For security purposes, we usually create a unique database connection account for each web application (Account name can not be root).

E.g: add a user named: db_user, password:123456, Authorization for the localhost to the oneinstack database all permissions, the commands are as follows:

```
# mysql -uroot -p
MySQL [(none)]> grant all privileges on oneinstack.* to db_user@'localhost' identified by '123456';  # Notice the semicolon at the end
MySQL [(none)]> flush privileges;
MySQL [(none)]> exit;  # quit mysql console, Notice the semicolon at the end
```

4.6 How to setup a remote MySQL connection

For security reasons, OneinStack only allows the cloud host localhost to connect to the database, if you need a remote connection to the database, the following operations are required:

1. You must open port 3306 for Security groups

2. Database authorization

Remote Connection Create a new account (Account name can not be root)

E.g: add a user named db_user, password db_pass, Authorized as % ( % Represents all ip can connect, you can set the designated ip ) db_name database all authority, the commands are as follows

# mysql -u root -p

MySQL [(none)]> grant all privileges on db_name.* to db_user@'%' identified by 'db_pass';  # Authorization statement, Special attention to the semicolon

MySQL [(none)]> flush privileges;

MySQL [(none)]> exit;  # Quit the database console, Special attention to the semicolon

As shown below:
[root@OneinStack oneinstack]# mysql -uroot -p
Enter password:
Welcome to the MySQL monitor. Commands end with ; or \
Your MySQL connection id is 112
Server version: 5.6.35-log MySQL Community Server (GPL)

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '
' for help. Type '
c' to clear the current input statement.

MySQL [(none)]> grant all privileges on db_name.* to db_user@'%' identified by 'db_pass';
Query OK, 0 rows affected (0.00 sec)
MySQL [(none)]> flush privileges;
Query OK, 0 rows affected (0.00 sec)
MySQL [(none)]> exit;
Bye

5 How to manage virtual host

5.1 How to add a virtual host

cd /root/oneinstack  # Must enter the directory execution under oneinstack

./vhost.sh  #NOTE: If no SSL certificate is purchased, SSL under Apache please enter n

In the above figure, the directory is the root directory of the Web site, the script is created automatically, Upload the code to the directory when deploying the
site (the directory, subdirectories, and file permissions are all:www), correspond

Apache the configuration file path is:

/usr/local/apache/conf/vhost/www.oneinstack.com.conf  (www.oneinstack.com Is the domain name that is bound)

Add a virtual host will automatically create this directory
5.2 How to delete a virtual host

cd /root/oneinstack  # Must enter the directory execution under oneinstack

./vhost.sh del
6 How to manage FTP User Accounts

cd /root/oneinstack  # Must enter the directory execution under oneinstack

./pureftpd_vhost.sh  #Do not sh pureftpd_vhost.sh such execution

```
[root@oneinstack ~]# ./pureftpd_vhost.sh

# OneinStack for CentOS/RadHat 5+ Debian 6+ and Ubuntu 12+
# FTP virtual user account management
# For more information please visit https://oneinstack.com

What Are You Doing?
  1. UserAdd
  2. UserMod
  3. UserPasswd
  4. UserDel
  5. ListAllUser
  6. ShowUser
  q. Exit
Please input the correct option: 1
Please input a username: yeho
Please input the password: oneinstack
Please input the directory( Default directory: /data/wwwroot): 
Password:
Enter it again: 

[yeho] create successful!
You user name is : yeho
You Password is : oneinstack
You directory is : /data/wwwroot
```
7 How to backup

Backup Set Parameters

cd /root/oneinstack  # Must enter the directory execution under oneinstack

./backup_setup.sh

Perform the backup immediately:

```bash
cd /root/oneinstack  # Must enter the directory execution under oneinstack
./backup.sh
```

Set Scheduled Task Automatic Scheduled Backup:

Example: Can be added to scheduled tasks, such as automatic backups every day at 1:00

```bash
# echo '0 1 * * * cd ~/oneinstack;/backup.sh > /dev/null 2>&1 && ' >> /var/spool/cron/root
```

View the backup:

View the local backup:

```bash
ls -1 /data/backup/
```
8 How to manage service

Apache:

    service httpd {start|stop|status|restart }

MySQL:

    service mysqld {start|stop|restart|reload|status}

Pure-Ftpd:

    service pureftpd {start|stop|restart|status}

Redis:

    service redis-server {start|stop|status|restart|reload}

Memcached:

    service memcached {start|stop|status|restart|reload}
9 How to upgrade

```bash
cd /root/oneinstack  # Must enter the directory execution under oneinstack

./upgrade.sh  # Do not sh upgrade.sh or bash upgrade.sh such execution
```

```
# OneinStack for CentOS/RadHat 5+ Debian 6+ and Ubuntu 12+
# upgrade Web,Database,PHP,Redis,phpMyAdmin for OneinStack
# For more information please visit https://oneinstack.com

What Are You Doing?
1. Upgrade Nginx/Tengine/OpenResty
2. Upgrade MySQL/MariaDB/Percona
3. Upgrade PHP
4. Upgrade Redis
5. Upgrade Memcached
6. Upgrade phpMyAdmin
q. Exit

Please input the correct option: 1

Current Nginx Version: 1.10.2

Please input upgrade Nginx Version(example: 1.9.15): 1.11.5
[openssl-1.0.2j.tar.gz] found
[pcre-8.39.tar.gz] found
Download [nginx-1.11.5.tar.gz] successfully!
[nginx-1.11.5.tar.gz] found
Press Ctrl+c to cancel or Press any key to continue...
```
10  How to add Extensions

```
cd /root/oneinstack  # Must enter the directory execution under oneinstack
./addons.sh  #NOTE: Support install and uninstall function
```

```
What Are You Doing?
1. Install/Uninstall PHP opcode cache
2. Install/Uninstall ZendGuardLoader/ionCube PHP Extension
3. Install/Uninstall ImageMagick/GraphicsMagick PHP Extension
4. Install/Uninstall fileinfo PHP Extension
5. Install/Uninstall memcached/memcache
6. Install/Uninstall Redis
7. Install/Uninstall Let's Encrypt client
q. Exit
Please input the correct option: 7

Please select an action:
1. install
2. uninstall
Please input a number: (Default 1 press Enter)
```
11 How to uninstall

Some items can be uninstalled separately, such as RDS database, the database can be uninstalled separately

```
cd /root/oneinstack  # Must enter the directory execution under oneinstack
./uninstall.sh  # NOTE: Please backup your data
```

![uninstall.sh output]

You will uninstall OneinStack. Please backup your configure files and DB data!

Do you want to uninstall? [y/n]: n
12 More

12.1 How to deploy a website on a server

1. Create the database required for the site, reference [Create a database](https://oneinstack.com/docs/lampstack-image-guide-en/

2. Add a virtual host, reference [How to add a virtual host](https://oneinstack.com/docs/lampstack-image-guide-en/)

3. Create an FTP account, reference [How to manage FTP accounts](https://oneinstack.com/docs/lampstack-image-guide-en/)

4. Deploy the code to the site root directory

**NOTE:** Ftp upload code do not need to modify permissions, default is already www;
Download the code in server, you must modify the site root and subdirectories, Directory file permissions are www; If there is a problem with site permissions, Please refer to [About site root permissions](https://oneinstack.com/docs/lampstack-image-guide-en/)

wget Download the code to deploy a WordPress, As shown below:

```
[oneinstack@root oneinstack]$ cd /root/oneinstack/src
[oneinstack@root oneinstack]$ wget -c https://wordpress.org/wordpress-4.6.1.tar.gz
Resolving wordpress.org... 66.155.40.249, 66.155.40.250
Connecting to wordpress.org[66.155.40.249]:443... connected.
HTTP request sent, awaiting response... 416 Requested Range Not Satisfiable
The file is already fully retrieved; nothing to do.
[oneinstack@root oneinstack]$ tar xzf wordpress-4.6.1.tar.gz
[oneinstack@root oneinstack]$ mv wordpress/ /data/wwwroot/oneinstack.com/
[oneinstack@root oneinstack]$ ls -l /data/wwwroot/oneinstack.com/
```

```
total 184
-rw-r--r-- 1 nobody nfsanobody 418 Sep 25 2013 index.php
-rw-r--r-- 1 nobody nfsanobody 19935 Mar 6 2016 license.txt
-rw-r--r-- 1 nobody nfsanobody 7344 Aug 17 04:39 readme.html
```

Access http://www.oneinstack.com, enter the database address (localhost), user named (root), password (database root password).

As shown below:

![Database Configuration](https://oneinstack.com/docs/lampstack-image-guide-en/)
12.2 About the PHP opcode cache

by default, in order to reduce PHP compile time, improve performance (Opcache is recommended for production environments), the PHP environment loads the Opcache module by default (PHP7.1, 7.0, 5.6, 5.5), Please refer to the principle:《In-depth understanding of PHP Opcode caching principles》

But this will appear PHP code updates, take 2 to 3 minutes to take effect. This affects the efficiency of the site during the commissioning phase suggest that you close or refresh the cache every time there is a code update (Recommended method two)

**Method 1:** Uninstall Opcache

```bash
cd /root/oneinstack
./addons.sh
```

![CLI screenshot](https://oneinstack.com/docs/lampstack-image-guide-en/)
**Method 2:** Refresh the PHP cache

Access http://<Public net IP>/ocp.php,

Or direct access http://<Public net IP>/ocp.php?RESET=1

As shown below:
12.3 Proper permissions for files/folders

Web site root permissions to follow:

file 644, folder 755, Permissions Users and groups www

If there is a file permissions problem, execute the following three commands:

```
chown -R www:www /data/wwwroot/
find /data/wwwroot/ -type d -exec chmod 755 {} \;
find /data/wwwroot/ -type f -exec chmod 644 {} \;
```
12.4 About Redis and Memcached

Redis default port: 6379

Memcached default port: 11211

default only listen IP: 127.0.0.1

1. How to increase the maximum memory size of Redis
   vi /usr/local/redis/etc/redis.conf
   maxmemory 1024000000  # <bytes>
   service redis-server restart  # restart the redis for changes to take effect

2. How to increase the maximum memory size of memcached
   vi /etc/init.d/memcached
   CACHESIZE=256       # <Megebyte>
   service memcached restart  # restart the memcached for changes to take effect

3. How to change the listening port for redis
   vi /usr/local/redis/etc/redis.conf
   bind 127.0.0.1 changed to bind 0.0.0.0
   service redis-server restart  # restart the redis for changes to take effect

4. How to change the listening port for memcached
   vi /etc/init.d/memcached
   OPTIONS="-l 127.0.0.1" changed to OPTIONS=""
   service memcached restart  # restart the memcached for changes to take effect

### 12.5 About iptables Firewall

By default, iptables firewall is not running.