

Photo-me management system (PMS)

For Administrator

Build date: 21 Dec. 2013

In this document, basic specification of software, system configurations, and installation for this system will cover for Photome management system (PMS)'s operation of administrator. Because PMS was built by following J2EE standard that is spread widely in the enterprise, it is possible to deploy PMS package on any kind of environments that following J2EE standard. In other words, this document's contents can be different with some cases of environments in detail.

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1 Basic software specification

1.1 Main software Specification

All of major software applied on PMS were consisted and tested by following specification, so that if you try to use with different version of software, normal operation can be guaranteed even though using same kind of product.

Software Name	Category	Licence	Version	Comment
Cent OS	OS	Open source	CentOS 5.8	x86-64bit Architecture. Note : Current service hosted by Virtual OS.
Java	Dev. tool	GNU General Public License	1.7.0_45	Distributed by Oracle
MySQL	Database	GPL, FOSS	5.6.14	Distributed by Oracle
Tomcat	WAS	Apache License	7.0.40	
Spring Framework	Dev. tool	Apache License 2.0	3.2.1	
MyBatis	Dev. tool	Apache License 2.0	3.2.0	
Date Picker	Dev. tool	Free		
autoNumeric	Dev. tool	Free		For currency formatting
ParamQuery grid	Dev. tool	Free	1.1.2	For table grid

1.2 Tested browser

All of users who use PMS are users who use web browser. Browser specifications that tested for PMS are following table.

Browser Name	Version	Comment
Chrom	Version 31.0.1650.63 m	Google product
Internet Explorer	11	Microsoft product

Because all of web browser interpret web-contents in each own ways, if you try to use PMS with un-tested browser, it is possible to see broken screen or impossible to see some screen normally.

2 System setup for configuration

2.1 System directories

All of basic software of PMS is located in the “photome” users’ home directory and “/home/client/photome” is home directory of current system. (We can call this directory to “~photome”)

- **~photome/fileupload**
All attached files in the PMS are located here. If you would like to change this location, you also have to set the location information in the PMS. This directory has three subdirectories.
 PHOTOME
 SYSTEM
 USER_INFO
 Those above directories have to be created before PMS installation.
- **~photome/licence**
For licence file location.
- **~photome/logs**
All log files are located here. If you encounter some errors or problems, you can get some good information to solve the problems by analysing those log files. If you set log level to higher for more detail log trace, it can make system problem because more detail logging require more bigger size storage. Therefore system administrator should do monitoring periodically.
- **~photome/patch**
In case of applying new PMS package (photome.war) on PMS, all of those packages saved here for management of history.
- **~photome/tomcat-instance**
This directory is for Web application server (Tomcat) instance. And PMS package have to be located and deployed here. As its name implies, this directory has only minimum essential Tomcat gear for efficient management, but it is up to you. Practical Tomcat engine is located at “/app/apache-tomcat-7.0.40” that is just referenced by instance directory.

2.2 System account

2.2.1 OS account

On the OS layer, there are two important accounts. Those are “mysql” and “photome”. “mysql” account is needed for database and “photome” is needed for control and maintenance of PMS. The reason of separation of those two accounts is for system safety, security and efficient management. All of those controls can be done by root (superuser) easily but it can make very serious problems by some mistake like system black out so it is strongly not recommended.

2.2.2 Database account

All of data made by PMS are stored and modified on database system so it is essential to communicate with database. For this interaction with database, PMS have to know how can PMS connect and what is needed to connect to database (because we are suppose that database is installed on the same server machine with PMS, explanation of location information for database will skip). Current setting information for database connection can be referred by following table.

Item	Value	Comment
Location	localhost or Server IP	
Database Name	photome	
User name	photome	
User password	stevenjsmin	

If database connection informations changed on database system let PMS know the information. Database connection information on PMS is stored on “/photome/src/main/resources/config/env/app.properties”.

2.3 System configuration setting

2.3.1 OS configuration

All most of works like PMS start up, shutdown; log management and so on is done by “photome” account. Therefore all of system configuration work is for “photome” account.

- **Java setting**

For WAS that is used for PMS running, JVM is essential program. Therefore we have to setup Java to let PMS know where Java is. Commonly, Java virtual machine is used by lots of programs on the same machine so it is recommend to be worked by super user (root) for global setting just once. “/etc/profile” (in case of Linux) is one of the locations for this setting. Refer following setting.

```
export JAVA_HOME=/app/jdk1.7.0_45
export JRE_HOME=/app/jdk1.7.0_45/jre
export PATH=$JAVA_HOME/bin:$PATH
```

And for location of tomcat engine, add following line as well.

```
export CATALINA_HOME=/app/apache-tomcat-7.0.40
```

- **MySQL setting**

For WAS that is used for PMS running, Database is essential program also. Therefore we have to setup Java to let PMS know where Java is. Commonly, database is used by lots of programs on the same machine so it is recommend to be worked by super user (root) for global setting just once. “/etc/profile” (in case of Linux) is one of the locations for this setting. Refer following setting.

```
export MYSQL_BASE=/app/mysql
export $MYSQL_BASE/bin:$PATH
```

- **“photome” account setting**

Because PMS shut down, start up, monitoring and so on are done by “photome” account, for more easy command and access file system make following aliasing at ~photome/.bash_profile.

```
# User specific environment and startup programs
alias log='tail -f /home/client/photome/logs/catalina.out'
alias logd='cd /home/client/photome/logs'
alias patchd='cd /home/client/photome/patch'
alias webappd='cd /home/client/photome/tomcat-instance/webapps'
```

2.3.2 Database basic setting

There are no special setting for database, however if there is some miss match with database and PMS setting for upload data location some screen can be broken like image or css design after start up. In this case, by modify this location information on the “Data Upload Rootpath” of “System Admin > System properties” after login or modify database ‘frwk_cmm_sysproperties’ table of “DATA_UPLOAD_ROOTPATH” column. And then just restart PMS system.

2.3.3 System log setting

System log setting can be done at “/photome/src/main/resources/config/env/log4j.xml”. We can set log level, log format, log rolling up and so on at here. For more detail setting, refer Log4J framework manual. One of the important things is that if you set log level too highly for make detail logging, it can make serious system problem because it require bigger size storage. Therefore system administrator should do monitoring periodically.

2.4 System log management

As described on the above, system log setting can be done at “/photome/src/main/resources/config/env/log4j.xml” and current system generate log file to “/home/client/photome/logs”. All of system logging is appended to “catalina.out” and log made by PMS are

appended to “photome.log”. If date is rolling up, those log files are backup to other file with appended extension file name (named by date) automatically.

For example:

- photome.log
- photome.log.2013-12-20
- photome.log.2013-12-19
- photome.log.2013-12-18
- photome.log.2013-12-17

- catalina.out
- catalina.2013-12-20.log
- catalina.2013-12-19.log
- catalina.2013-12-18.log
- catalina.2013-12-17.log

After login with “photome” account, if you made alias “log” like following

```
alias log='tail -f /home/client/photome/logs/catalina.out'
```

You can monitor by simple command “log”.

2.5 System start-up and shutdown

You can start-up or shutdown PMS system by using follow two scripts start-was.sh and stop-was.sh (those scripts are contained on CD)

- **Server start-up**

Just give following command.

```
> start-was.sh
```

- **Server stop**

Just give following command.

```
> stop-was.sh
```

3 Database backup

Way of database backup and restore is various according to environment conditions and policy therefor you have to refer their own product manual for more detail information.

In this section, “mysqldump” command for generating backup file and “mysql” command for restore will be introduced.

3.1 Database backup and restore

3.1.1 Backup

Firstly, for control database, we need to login with “mysql” account.

On the shell prompt, by using following command we can generate backup file that include database schemas and data to designated file.

```
shell> mysqldump -u root -p photome > photome_20131221.sql
```

To explain above command, login with root account (not OS account) → access to photome database → generate backup file named by photome_20131221.sql.

After giving this command to shell prompt, mysqldump require password of root user. If you key in right password for root user, it will start to generate backup file.

3.1.2 Restore

If you already made backup file, for restore with new backup file, firstly drop old database and then just create empty database with same name.

And then just giving following command on the shell prompt.

```
shell> mysql -u root -p photome < photome_20131221.sql
```

To explain above command, login with root account (not OS account) → access to photome database → restore from backup file named by photome_20131221.sql.

After giving this command to shell prompt, mysql require password of root user. If you key in right password for root user, it will start to generate backup file.

It is recommended to generate backup file and save to separate location from PMS server. Then you can restore simply like above way if you meet some trouble safely to the point of backup time.

4 Package install

On the delivered CD, there is “photome.war” package. This is complete PMS package for PMS system. The way of execution on the Web application server (WAS) depend on what kind of WAS used.

In this section, I will introduce using Tomcat WAS. Detail configuration and setup can be differed depend on kinds of WAS and it's versions.

Following procures are basic step for install.

- Setup database properly and restore (copy) from latest backup file.
- File upload directory setting and copy.
- Stop WAS.
- Copy “photome.war” to Web application directory that can be recognized by WAS.
- Start WAS.
- Check successful deploying on the web-browser by key in `http://server_ip:port/photome`.

The current location of “photome.war” is “/home/client/photome/tomcat-instance/webapps”.

“server_ip” is the server IP address or domain name that installed PMS.

Port can be differed depend on WAS configuration.

If you deploy “photome.war” on the server and didn't change default configuration, the default context name will be fixed by “photome”.

If you made sure database connection information and data upload directory properly, there is no big problem for start-up. Even though there is some mistake with data upload directory, there will no problem for starting server. However if database connection information is not settled properly, it is not possible to start up. Therefore if you face like this kind of problems, you need to test for connection and solve this problem and after solve the problem just re-start Tomcat again.

5 Applying official licence

Because basic provided “photome.war” package is type of evaluation, this system will be stopped after some days. Therefore after official contract with software provider, you have to patch licence file. The procedure of the patch of licence file is, firstly copy the file (cosmosfrwk.lic) to specified location and then restart WAS.

Note: If there is no licence file or not properly licence file, PMS system will be started by Evaluation mode.

Following procedure is for patch licence file.

- ✓ Take official licence file (cosmosfrwk.lic) from software provider.
- ✓ Copy the file to “/home/client/photome/licence”.
- ✓ Restart WAS.

Note: Because default file and location of the licence are “/home/client/photome/licence/cosmosfrwk.lic”, if you would like to change the location or file, you have to give JVM (that used by WAS) “licence.file” option.

E.g. : -Dlicence.file=\var\photome\appdata\photome\cosmosfrwk.lic

6 CD contents

In the delivered CD, there are “photome.war” package, Java sources, front-end sources, referenced libraries, database (schemas/data), and manual and so on.

Directory of CD is consisted like following.

①	+ PMS
②	+ Source
③	+ photome
④	+ src
⑤	+ main
⑥	+ java
⑦	+ resources
⑧	+ webapp
⑨	+ jsp
⑩	+ resources
⑪	+ WEB-INF
⑫	+ fileupload
⑬	+ PHOTOME
⑭	+ SYSTEM
⑮	+ USER_INFO

- ✓ ① In the PMS directory, there are exist important file like “photome.war” package and latest backup file (21, Dec. 2013).
- ✓ ② Source directory is the root of all of source.
- ✓ ⑥ This is root directory for Java source.
- ✓ ⑦ This is also Java source directory but it is not pure Java. In this location, there are other kinds of resources files like XML or Properties. Therefore these resources must to be referable by Java class (classpath).
- ✓ ⑨ ~ ⑪ This parts are deployed by WAS. Actually this area completely same with extracted “photome.war” package. For security all of important JSP files are located bellow WEB-INF. In the resources, there are

general front-end resource files like css, javascript. And in the WEB-INF, there are a lot of java libraries, java compiled class files and so on.

- ✓ ⑫~⑮ As already explained, this directory is for data upload directory. These directories have to be created before system start up and PMS also have to know this location. To this setup, modify on the “Data Upload Roothpath” of “System Admin > System properties” screen or modify database ‘ frwk_cmm_sysproperties’ table of “DATA_UPLOAD_ROOTPATH” column directly.