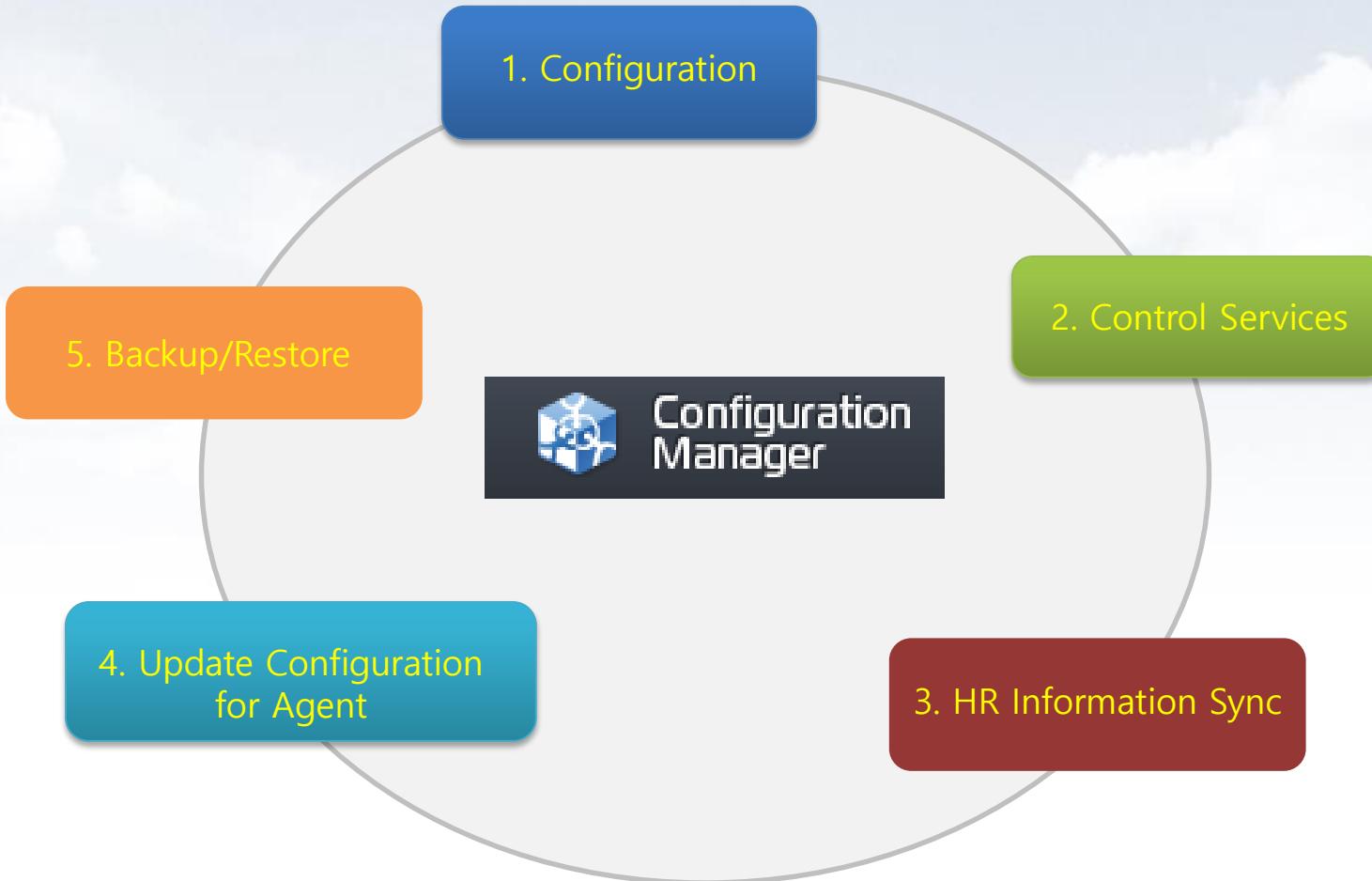




SOMANSA

Data Loss Prevention





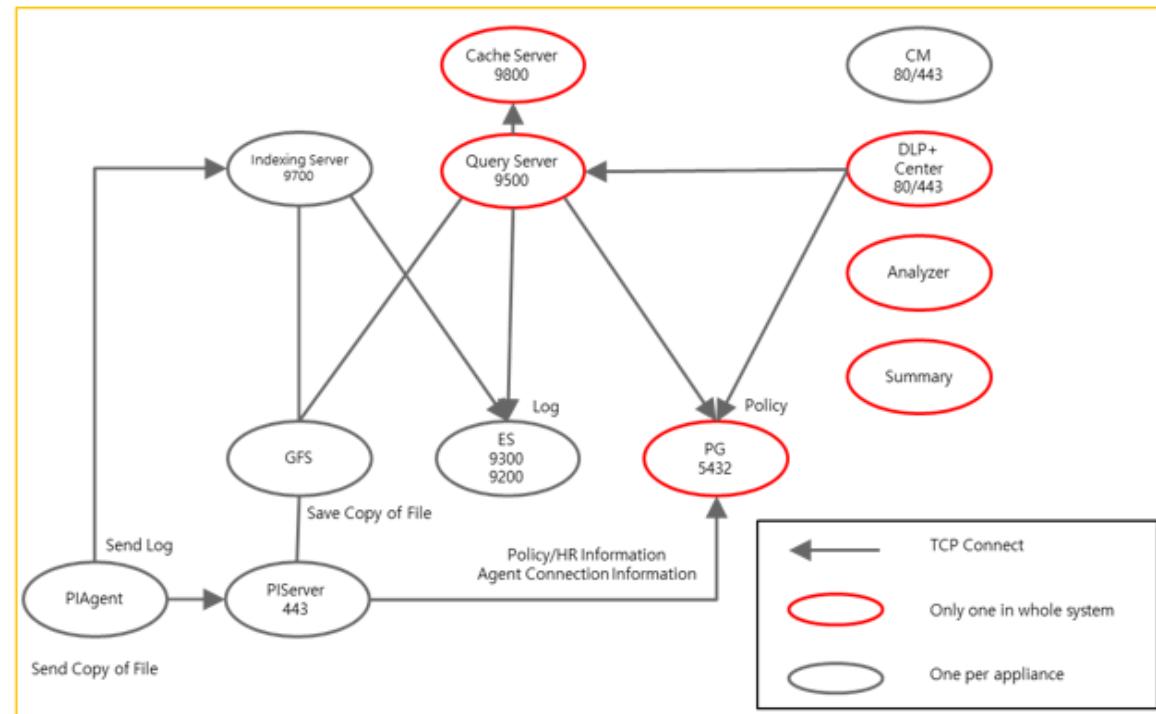
CONTENTS

- I. Structure
- II. General Setup the Server
- III. Specific Setup the Server
- IV. CM Access
- V. License
- VI. Common
- VII. Privacy-i
- VIII. Common
- IX. System Setting



I. Structure

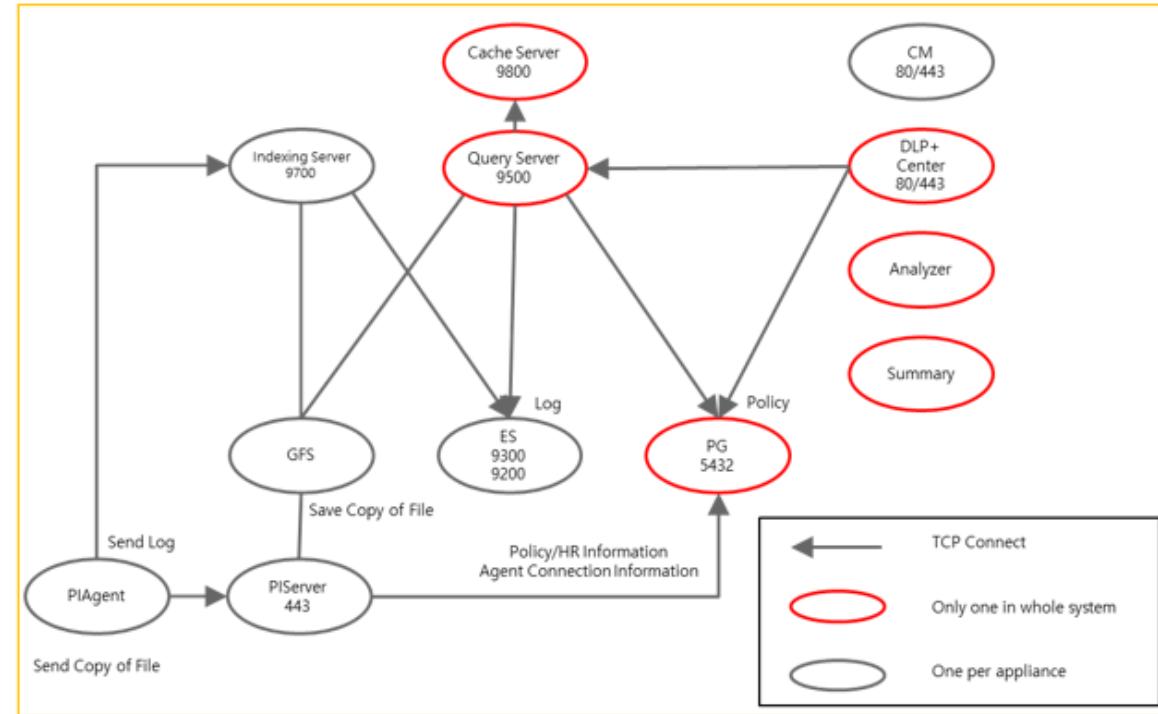
- Main Module, flow chart and port information used by Mail-i
- **PIServer (Privacy-i Server)** : Existing fuctions of version 5.0 except incident log process, such as login / policy / HR(Human Reasource) information / decide information / remote command, etc. , are provide to PIServer
- **CM(Configuration Manager)** : provides web based user interface for the operation and control of the product such as database configuration, PIServer execution and termination.
- **DLP+Center** : provides web based user interface for tasks such as incident (log) view, policy management and reports and so on.
- **Query Server** : views the incidents and deliver the policies and HR data to the PIServer.
- **Indexing Server (Indexer)** : saves the incident an PIServer has created in ElasticSearch.





I. Structure

- **Cache Server (Redis)** : works as a temporary storage for viewed incidents.
- **SMSAnalyzer** : detects data patterns such as resident registration numbers from the saved incidents (Content/Attachment files).
- **SMSSummary** : performs scheduled summary task for incidents with patterns.
- **ElasticSearch (henceforth ES)** : saves the incidents in the form of an index.
- **GlusterFS (henceforth GFS)** : saves the attachment file of the incidents.
- **PostgreSQL** : saves system configuration, HR data, policies, data mining (reports) and audit logs.



SOMANSA / Privacy-i / CM



I. Structure

All-in-one
CM (Configuration Manager)
Indexer (Tomcat_indexer)
PIServer
Elasticsearch
GlusterFS
Queryserver (Tomcat_queryserver)
DLP+Center
Redis
Postgresql
SMSAnalyzer
SMSSummary

PIServer
CM (Configuration Manager)
Indexer (Tomcat_indexer)
PIServer
Elasticsearch
GlusterFS
Storage
CM (Configuration Manager)
Queryserver (Tomcat_queryserver)
Elasticsearch
GlusterFS
DLP+Center
Redis
Postgresql
SMSAnalyzer
SMSSummary

PIServer
CM (Configuration Manager)
Indexer (Tomcat_indexer)
PIServer
Elasticsearch
GlusterFS
Main Storage
CM (Configuration Manager)
Queryserver (Tomcat_queryserver)
Elasticsearch
GlusterFS
DLP+Center
Redis
Postgresql
SMSAnalyzer
SMSSummary
Sub Storage
Elasticsearch
GlusterFS



II. General Setup the Server

1. Configuration Manage IP

- recommend manage IP set up for eth0
- 1) Connect server
- 2) Edit for vi editor : vi
/etc/sysconfig/network-scripts/ifcfg-eth0
- 3) Change the IPADDR, NETMASK,
GATEWAY, ETC

```
DEVICE=eth0
HWADDR=08:00:27:07:0F:09
TYPE=Ethernet
UUID=71ade838-0cff-424f-91eb-acf9eb620724
NM_CONTROLLED=yes
ONBOOT=yes
BOOTPROTO=none
IPADDR=192.168.1.111
GATEWAY=192.168.1.1
DNS1=8.8.8.8
DNS2=8.8.8.8
NETMASK=255.255.255.0
USERCTL=no
PEERDNS=yes
IPV6INIT=no
```

2. Change Server Local Time

- 1) cp /usr/share/zoneinfo/"YOUR TIME"
/etc/localtime

```
[root@hello sysadmin]# date
Thu Jul 20 14:38:44 PDT 2017
[root@hello sysadmin]# cp /usr/share/zoneinfo/Asia/Seoul /etc/localtime
cp: overwrite `'/etc/localtime'? y
[root@hello sysadmin]# date
Fri Jul 21 06:38:50 KST 2017
[root@hello sysadmin]#
```

3. Change Hostname

- hostname must be unique
- 1) Move to path : cd /hyboost/init
 - 2) Execute script : ./all.init.sh



III. Specific Setup the Server

1. All-in-one

- If you run the *all-init.sh*, no further configuration is required.

```
Changing hostname must be done before serviced in site.
We don't have any responsibility for chaning hostname when it is on service.
There will be problem with those type of hostname. Type the new hostname to use.
- Don't use _ or space inside the hostname.

hostname : sky

===== Check HostName =====
The hostname you entered is [ sky ]
Do you want to continue?
y. yes
n. no
>> y

127.0.0.1 localhost localhost.localdomain localhost4 localhost4.localdomain4 sky
192.168.1.116 sky

===== Restarting Postgresql =====
Stopping postgresql-9.3 service:                                         [ OK ]
Starting postgresql-9.3 service:                                         [ OK ]

===== QueryServer Reconfigure =====
Check QueryServer : ip=https://sky

===== ES/GFS Reconfigure =====
>>>> WARNING <<<<
ES/GFS Reconfigure is only required for All-in-One System.
If it's multi-node(storage) system or system that agent and storage is seperated,
check for the elasticsearch/glusterfs guide.
Have you understand the warning and going to continue reconfiguration ? (y/n)
>> y

===== Elasticsearch Reconfigure =====
Stopping elasticsearch:                                                 [ OK ]
node.name: 'sky'
discovery.zen.ping.unicast.hosts: ['sky:9300']
network.host: ['sky','localhost']
Starting elasticsearch:                                                 [ OK ]

===== GlusterFS Reconfigure =====
```



III. Specific Setup the Server

2. PI Server 1 + Storage 1

2.1 Hostname

- 1) Edit for vi editor : `vi /etc/hosts`
- 2) At the bottom, enter IP and hostname of each server (Applies to all servers)

```
127.0.0.1 localhost localhost.localdomain
192.168.1.112 PI Server
192.168.1.113 storage server
```

2.2 ES of PI Server

- 1) Edit for vi editor : `vi /etc/elasticsearch/elasticsearch.yml`
- 2) At the bottom, change value
(`node.master:true`, `node.data:false`)
- 3) Add Storage server host
(`discovery.zen.ping.unicast.hosts:[PI Serverhost:9300,storagehost:9300]`)

```
node.name: 'PI Server'
discovery.zen.ping.unicast.hosts: ['PI Server:9300', 'storage server:9300']
network.host: ['PI Server', 'localhost']
path.repo: ['/somansa/backup/maili', '/somansa/backup/wk', '/somansa/backup']
index.max_result_window: 2147483647
index.query.bool.max_clause_count: 4096
node.master: true
node.data: false
```

2.3 ES of Storage Server

- 1) Edit for vi editor : `vi /etc/elasticsearch/elasticsearch.yml`
- 2) At the bottom, change value
(`node.master:true`, `node.data:true`)
- 3) Add Storage server host
(`discovery.zen.ping.unicast.hosts:[PI Serverhost:9300,storagehost:9300]`)
- 4) ES service of PI Server and Storage Server restart

```
node.name: 'storage server'
discovery.zen.ping.unicast.hosts: ['PI Server:9300', 'storage server:9300']
network.host: ['storage server', 'localhost']
path.repo: ['/somansa/backup/maili', '/somansa/backup/wk', '/somansa/backup']
index.max_result_window: 2147483647
index.query.bool.max_clause_count: 4096
node.master: true
node.data: true
```



III. Specific Setup the Server

2.4 GFS of Storage Server

- 1) Move to path : `cd /hyboost/init`
- 2) Execute script : `/gfs.setting.sh`
 - a. Select **1.GlusterFS All-in-one System**

```
===== GlusterFS Setting Service =====
!!!!After the script starts, the data is initialized!!!!
1. GlusterFS All-in-one System
2. GlusterFS Multi System ( Multi System )
3. GlusterFS Add Brick
4. Stop
>> 1
```

2.5 GFS of Agent Server

- 1) Move to path : `cd /hyboost/init`
- 2) Execute script : `/gfs.connect.sh`
 - a. Insert Storage Server hostname

```
===== GFS linked Storage Server =====
Please enter Hostname for Storage Server
hostname: Mainstorage
Storage Hostname is [ Mainstorage ]
Do you want to continue?
y.Yes
n.No
>>y
```



III. Specific Setup the Server

3. Agent 2 + Storage 2

3.1 Hostname

- 1) Edit for vi editor : `vi /etc/hosts`
- 2) At the bottom, enter IP and hostname of each server (Applies to all servers)

3.2 ES of PIServers

- 1) Edit for vi editor : `vi /etc/elasticsearch/elasticsearch.yml`
- 2) At the bottom, change value
(`node.master:true` , `node.data:false`)
- 3) Add Storage server host
(`network.host:[‘PIServerhost1:9300’, ‘PIServerhost2:9300’, ‘storagehost1:9300’, ‘storagehost2:9300’]`)

```
127.0.0.1 localhost localhost.  
192.168.1.8 Mainstorage  
192.168.1.9 Substorage  
192.168.1.10 PIServer1  
192.168.1.11 PIServer2
```

```
node.name: 'PIServer1'  
discovery.zen.ping.unicast.hosts: ['PIServer1:9300', 'PIServer2:9300', 'Mainstorage:9300', 'Substorage:9300']  
network.host: ['PIServer1', 'localhost']  
path.repo: ['/somansa/backup/maili', '/somansa/backup/wk', '/somansa/backup/pvi']  
index.max_result_window: 2147483647  
index.query.bool.max_clause_count: 4096  
node.master: true  
node.data: false
```



III. Specific Setup the Server

3.3 ES of Storage Servers

- 1) Edit for vi editor : vi
/etc/elasticsearch/elasticsearch.yml
- 2) At the bottom, change value
(node.master:true , node.data:true)
- 3) Add Storage server host
(discovery.zen.ping.unicast.hosts:[PISer
verhost1:9300,
'PIServerhost2:9300','storagehost1:9300
,'storagehost2:9300',localhost])
- 4) ES service of PIServer and Storage
Server restart

```
node.name: 'Mainstorage'
discovery.zen.ping.unicast.hosts: ['PIServer1:9300','PIServer2:9300','Mainstorage:9300','Substorage:9300']
network.host: ['Mainstorage','localhost']
path.repo: ['/somansa/backup/maili','/somansa/backup/wk','/somansa/backup/pvi']
index.max_result_window: 2147483647
index.query.bool.max_clause_count: 4096
node.master: true
node.data: true
```



III. Specific Setup the Server

3.4 GFS of Main Storage Server

- 1) Service glusterd start
- 2) Move to path : cd /hyboost/init
- 3) Execute script : /gfs.init.sh
- 4) Execute script : /gfs.setting.sh
 - a. Select **2. GlusterFS Multi System**
 - b. Select **y. Add Brick Service Start**
 - c. Insert Storage Count 1
 - d. Insert Sub Storage hostname and IP

※ If more storage server exist, please add the below step
- 5) Execute script : /gfs.setting.sh
 - 1) Select **3. GlusterFS Add Brick**
 - 2) Insert Storage Count 1 or more
 - 3) Insert Sub Storage hostname and IP
- 6) How to check
 - 1) Gluster volume info
 - 2) Gluster volume status
 - 3) Gluster peer status

```
[root@Mainstorage init]# ./gfs.init.sh
umount: /somansta/data/gfs_data: not mounted
Stopping volume will make its data inaccessible. Do you want to continue? (y/n) y
volume stop: gfs_volume: failed: Volume gfs_volume does not exist
Deleting volume will erase all information about the volume. Do you want to continue? (y/n) y

===== GlusterFS Setting Service =====
!!!!After the script starts, the data is initialized.!!!!
1. GlusterFS All-in-one System
2. GlusterFS Multi System ( Multi System )
3. GlusterFS Add Brick
4. Stop
>> 3

===== GlusterFS Add Brick =====
Do you want to add a brick to the volume?
y. Add Brick Service Start
n. stop
>> y

How many additional storage would you like to add?
Storage Count >> 1

Please enter the hostname of the additional storage.
Hostname : Substorage
Please enter the IP of the hostname.
IPADDR : 192.168.3.10
```



III. Specific Setup the Server

3.5 GFS of other Storage Server

- 1) Service glusterd start

```
[root@Substorage ~]# service glusterd restart
Starting glusterd: [ OK ]
```

3.6 GFS of PIServers

- 1) Move to path : cd /hyboost/init
- 2) Execute script : /gfs.connect.sh

```
===== GFS linked Storage Server =====
Please enter Hostname for Storage Server
hostname: Mainstorage
Storage Hostname is [ Mainstorage ]
Do you want to continue?
y.Yes
n.No
>>y
```

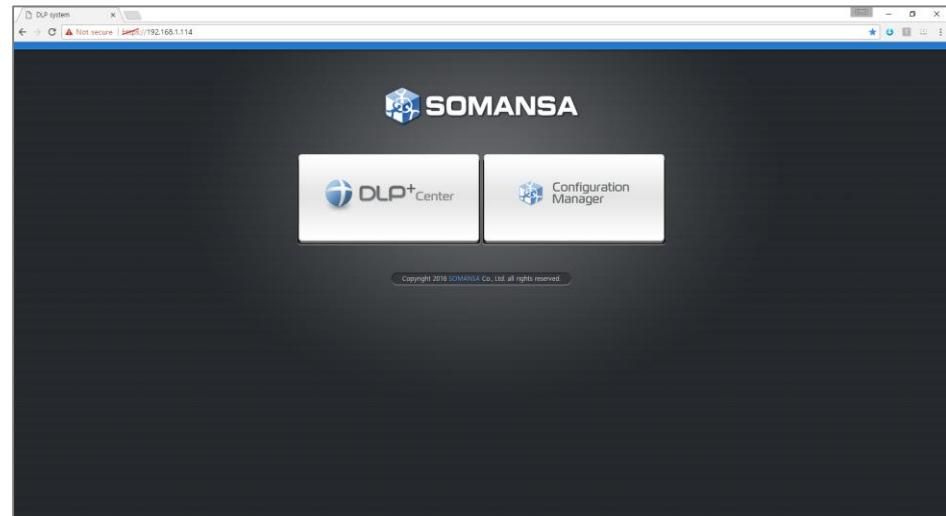
SOMANSA / Privacy-i / CM



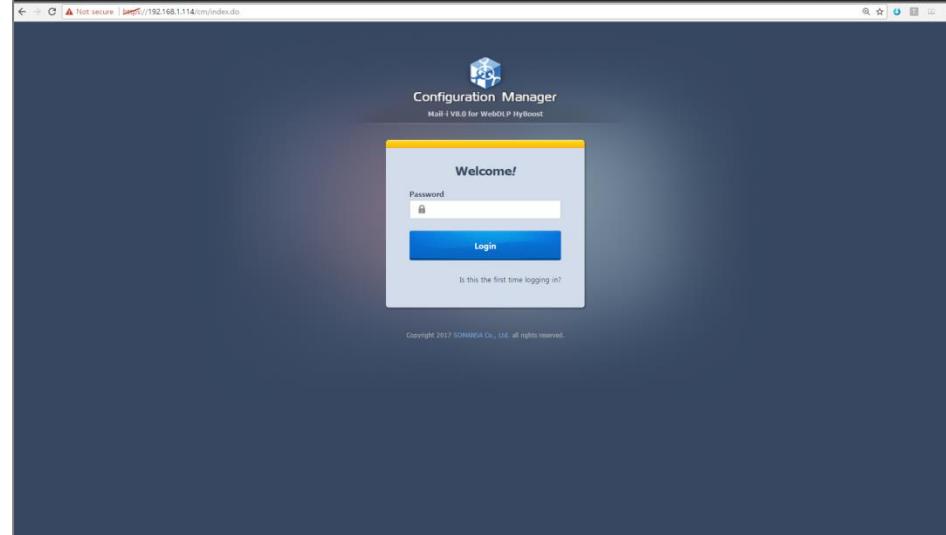
IV. CM (Configuration Manager) Access

1. Access the CM

- 1) The management console.
- 2) Enter the <https://IPAddress> in web browser
- 3) Click the **Configuration Manager**



2. Login





V. License

1. License Update

- Without a license, CM can't be set-up

- 1) Select **Setting** button
- 2) Click **Choose File** and Select **License File**
- 3) Click **Choose File** and Select **Serial File**
- 4) Click **Update**
- 5) Restart CM

License Update

License File	<input type="button" value="Choose File"/> No file chosen
Serial File	<input type="button" value="Choose File"/> No file chosen
Memo (Optional)	<input type="text"/>

Update

Unrenewed license file will be backed up in the folder of the renewed date.
This memo can be checked from the Audit logs.



VI. Common

1. DB Connection

- Postgresql default Port is 5432.
- All-in-one structure. If you have separate DB Storage, connection to DB Storage.

- Select **Common > General Settings > Database**
- Enter Connection Settings
- Click **Check Connection**
- Click **OK**

Common General Settings

Database MQTT Settings

Connection Settings

Database	192.168.1.114	5432
Login	postgres	Password

Product Schema Management

DLP+ Center Mail-i **Generate Schema**

2. Generate Schema

- Check DLP+ Center and click **Generate**
- Check Mail-i and click **Generate**



IX. Common

1. Search Service Control

- 1) Select **Common > Search Service Control**
- 2) Click **Start** or **Stop** to control Service

2. Search Service Back-up/Restore

- 1) Select **Common > Search Service > Search Service Back-up/Restore**
- 2) To schedule back-up, select Storage Schedule Settings
- 3) Click the **Save**
 - To back-up and restore immediately,
- 1) Select **Common > Search Service Back-up/Restore**
- 2) Check Box you want to back-up or restore index
- 3) Click the **Backup or Restore**
- 4) Click the **OK**

The screenshot shows the 'Search Server Control' section of the Common Search Service. It lists three components: Search Server, Indexing Server, and Search Engine. Each component has a status bar with four green squares. Below each status bar are 'Refresh', 'Start', 'Stop', and 'Event Log' buttons.

The screenshot shows the 'Search Service Back-up/Restore' section of the Common Search Service. It includes:

- Storage List:** A table with columns: Storage Name, Storage Path, Registration Schedule, and Original File Delete. One entry is shown: pvi_repository, /somanza/backup/pvi, No, -.
- Storage Schedule Settings:** A form to set up a backup schedule. It includes fields for Storage Name (pvi_repository), Storage Path (/somanza/backup/pvi), Back-up Schedule (radio buttons for 'Don't Register' and 'Register'), Deletion of Original (radio buttons for 'Don't Delete' and 'Delete'), and a 'Copy' section. A 'Save' button is at the bottom.
- Index/Backup List:** Two tables: 'Original File' and 'Index List'. The 'Original File' table has columns: Index Name and Back up. The 'Index List' table has columns: Index Name and Backed up. Both show one entry: p_i_201710_2, Backed up. To the right is a 'pvi.repository Backup List' table with columns: Backup Name and p_i_201710_2.



IX. Common

3. MQTT advanced option

※ This is an advanced option for using Response Message function of DLP + Center.

The screenshot shows the Configuration Manager interface with the 'Common' tab selected. On the left sidebar, under 'General Settings', the 'MQTT Settings' option is highlighted. The main content area displays the 'Common General Settings' page, specifically the 'MQTT Settings' section. It contains a 'Server Information' field with the value '192.168.1.1' and a port field with the value '1883'. A blue 'OK' button is visible at the bottom right of the form.



IX. Common

4. HR Information Sync

- Import customer HR (human resource) Information. The target is DB (database) and AD (Active Directory).
 - The type of data must be organized in a tree. If not, you need to edit it in tree form via 'Editing Script'.

- Select **Common > HR Information Sync > Database Registration**.
- Enter information about the server where the customer information is located and click **Save**
- Select **Sync Information Settings**
- Enter information about **Top Dept Code** and click **Save**

※ The Top Dept Code must be unique.

- Select **Column Mapping**
- Select Temp Table, Sync Database Name and Default Table and click **Save**
- Click **OK**

Common HR Information Sync

Database Registration Sync Information Settings Column Mapping Editing Script Scheduling Sync Simulation

Sync Results

Database Registration

Alias	Type	IP	Database Name
test_somansa	POSTGRESQL	192.168.1.113	somansa

Database Type: Postgresql IP: test_somansa
Database IP / Port: 192.168.1.113 Port: 5432
Login: postgres Password:
Database Name: somansa

New Save Delete

Common HR Information Sync

Database Registration Sync Information Settings Column Mapping Editing Script Scheduling Sync Simulation

Sync Results

Dept Information Settings

Top Dept Code:
Dept Criteria: Dept Code
 Delete a Dept information without users in case of HR Information Sync

IP Sync: Sync IP after Initializing TA_DB IP (Data will not be deleted if an error occurs during Sync.)
 Sync only one user when multiple users exist in one IP of HR DB.

Save



IX. Common

- 8) Select **Editing Script** and click **Save**.
Editing Script can be used to modify additional or insufficient information
- 9) Select **Scheduling**
- 10) Click **New**
- 11) Enter **Schedule Name** and select **Task Cycle** you want to time
- 12) Set the **Script order** and click **Save**
- 13) Select **Sync Simulation**
- 14) Select **Schedule Selection** and click **Perform Sync Simulation**
- 15) Select **Mapping Table** and click **Search Data**
- 16) Select **Sync Results**. You can check logs for Sync results

The screenshot shows the 'Common HR Information Sync' interface. At the top, there are tabs: Database Registration, Sync Information Settings, Column Mapping, **Editing Script**, Scheduling, and Sync Simulation. The 'Editing Script' tab is active.

Editing Script section:

- Script type: HR Information Extraction Script (selected)
- Mapping Name: User Information_test_somansa
- Buttons: Search Script, Save

Script code:

```
SELECT "tb_mempdata"."userid", "tb_mempdata"."empname" FROM ta_db."tb_mempdata"
```

INSERT(UPDATE):

```
INSERT INTO TA_DB.SCMIM_TEMPUSER (USERID, EMPNAME) values ( ?, ? )
```

Script Performance Test section:

IP Type	Approval Status	User ID	User Name	Dept Code	Employee Resignation	Company	E-Mail	Phone Number	Dept Name	User Password	User ID	Employee Code
			Unregistered IP	Unregistered IP								
			dobbie	dobbie								
			grant	grant								



X. SYSTEM

- System default setting possible



1. Check UID
 - UID is used as a unique key in the system and required for license renewal requests.
 - 1) Select **SYSTEM > Settings**. You can check
2. SMTP Settings
 - The SMTP Settings is required before using mail related functions in DLP+Center.
 - 1) Select **SYSTEM > Settings**
 - 2) Insert SMTP Host / Port and Sender and select SMTP Authentication, Encoding and SMTP ID / Password
 - 3) Click **OK**
3. Session Time
 - You can change Session Time for CM.
 - 1) Select **SYSTEM > Settings**
 - 2) Insert Session Duration Time you want
 - 3) Click **OK**

SYSTEM

Settings Audit Log Event Log

UID

UID	wy6vza0
-----	---------

SMTP Settings

SMTP Host / Port	mail.somansa.com	25
SMTP Authentication	<input type="radio"/> Use <input checked="" type="radio"/> Don't Use	
SMTP ID / Password	SMTP ID	SMTP Password
Sender	chohm@somansa.com	
Encoding	<input type="radio"/> EUC-KR <input checked="" type="radio"/> UTF-8	OK Initialize

Session Time

Session Duration Time	10	Minute	OK
-----------------------	----	--------	-----------



X. SYSTEM

4. Server IP Settings

- Server IP is automatically set.
- 1) Select **SYSTEM > Settings**. You can check Server IP.
 - If the IP is different from the actual IP, change the information below.
 - 1) Connect SSH
 - 2) Edit for vi editor : vi /somansa/common/conf/common.properties
 - 3) Change the UseIP

5. Configuration Manager Administrator Information

- Set administrator password change.
 - 1) Select **SYSTEM > Settings**
 - 2) Insert current Password and New Password
 - 3) Click **OK**
- Set administrator password policy.
 - 1) Select **SYSTEM > Settings**
 - 2) Select Password Expiry Policy
 - 3) Click **OK**

The screenshot shows two stacked dialog boxes. The top dialog is titled 'Server IP Settings' and contains a note about setting the actually used IP when many IPs are allocated. It has a 'Server IP' dropdown set to '192.168.1.114' and an 'OK' button. The bottom dialog is titled 'Configuration Manager Administrator Account Information' and contains fields for 'Password', 'New Password', and 'Re-enter Password'. At the bottom, it has a 'Password Expiry Policy' section with radio buttons for 'Use' and 'Don't Use', and an 'OK' button.



X. SYSTEM

6. Time Synchronization

- Synchronize system time.
- 1) Select **SYSTEM > Settings**
 - 2) Check Sync time cycle you want
 - 3) Click **Apply**
 - 4) Insert **Time Server**
 - 5) Click **OK**

7. Integrity Check

- Set the system Integrity check.
- 1) Select **SYSTEM > Settings**
 - 2) Check Integrity time cycle you want
 - 3) Click **Apply**

※ Configuration Manager Initialization is advanced option.

The screenshot displays three configuration panels:

- Time Synchronization**: Shows the current server time (2017-07-22 04:27:19) and a button to synchronize with local standard time. It includes a checkbox for sync every 1 hour and buttons for Run and Apply.
- Integrity Check**: Allows checking now or setting a check every 60 minutes cycle. It includes buttons for Run and Apply.
- Configuration Manager Initialization**: Describes initializing Configuration Manager data while preserving database settings, with a prominent Initialize button.



X. SYSTEM

8. Audit Log

- Search audit log

- 1) Select **SYSTEM > Audit Log**
- 2) Select Date
- 3) Click **Search**

SYSTEM

Settings Audit Log Event Log

search audit log

Date	2017-08-01	~ 2017-08-31	Log Type	-- ALL --
IP	Log Contents			
2017-08-30 05:18:47	Access	96.64.237.21	System > Settings was accessed.	[URL] :/cm/enviroment.init.json [detail] : SYSTEM ACCESS LOG
2017-08-30 05:18:45	Access	96.64.237.21	COMMON > General Settings was accessed.	[URL] :/cm/common.mng.init.json [detail] : SYSTEM ACCESS LOG
2017-08-30 05:18:44	Login	96.64.237.21	Logged in to Configuration Manager	[detail] Logged in to Configuration Manager
2017-08-30 04:19:09	Logout	35.167.83.225	Logged off from Configuration Manager	[detail] Logged off from Configuration Manager
2017-08-30 04:18:37	Access	35.167.83.225	COMMON > HR Information Sync was accessed.	[URL] :/cm/im.mng.init.json [detail] : SYSTEM ACCESS LOG
2017-08-30 04:18:20	Access	35.167.83.225	COMMON > General Settings was accessed.	[URL] :/cm/common.mng.init.json [detail] : SYSTEM ACCESS LOG

9. Event Log

- Retrieve event log

- 1) Select **SYSTEM > Event Log**
- 2) Select Module
- 3) Select Log file
- 4) Click **Search or Download**

SYSTEM

Settings Audit Log Event Log

Event Log Retrieval

Module DLP+ Center Log file catalina.out Search Stop Download Initialize event log

The event log is being retrieved.

```
[2017-09-06 06:21:05] DEBUG [java.sql.ResultSet@27] - (rset-531284) Result: [93]
[2017-09-06 06:21:05] DEBUG [com.ibatis.common.jdbc.SimpleDataSource@27] - Closed connection 1894701205.
[2017-09-06 06:21:10] DEBUG [dlpcenter.common.interceptor.AuthInterceptor@125] -
=====AuthInterceptor=====
```



SOMANSA

www.somansatech.com