



# SVI Maintenance Guide

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## Change History

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## 1.0 Introduction

Congratulations on your purchase of the SVI. This guide will talk you through the necessary considerations and setup in order to maintain your SVI. Please read the complete document before performing any maintenance on the SVI

Should you have any problems using this guide, please contact our Support team via email [support@squire-technologies.co.uk](mailto:support@squire-technologies.co.uk) or by phone on +44 (0) 1305 757314 and they will be happy to advise you.

**Note:** All commands in this document are for example purposes and should be used with care.

### 1.1 Customer Notice

After running the SVI for any period of time, logs and call data records will begin to accumulate. It is up to you the customer to put in place measures to ensure these are archived as required for your company.

## 2.0 Preparation

Before performing any maintenance on your system it is advised to take a backup.

### 2.1 SVI Backup

Squire technologies have provided a backup script in the “/” root directory on the SVI known as the “svi\_backup” script. This will be symbolically linked to the latest “svi\_backup” version at point of installation. If you require a later version please contact support to upgrade.

To backup the SVI you will need to run the below command from the “/” directory on the SVI.

“svi\_backup backup System-Backup-23-05-2013” then follow the on-screen prompts.

Once the backup is complete you will then see a file named below.

“ SVI\_BACKUP\_ System-Backup-23-05-2013.tgz”

It is recommended that a backup is taken monthly and stored off the SVI so that in a hardware failure the support team will be able to restore the system with your last know working configuration.

**Note:** The “svi\_backup” script will backup all configuration but excludes the MySQL “cdr\_table”. This is due to performance issues to backup the SQL database please use section

2.2.

### 2.2 SQL Backup

As the backup script does not backup the MySQL “cdr\_table” if you are planning on archiving CDR or MDR data it is recommended to take a full SQL backup of the database. Due to the large amount of data it can cause system performance issues and recommended to be performed in a maintenance window or during a period of low traffic. If this task is completed regularly the performance effect is greatly reduced.

To create a full backup of the SQL database. First log onto the SQL server, then run the command below.

#### 2.2.1 For SMSC Products

“mysqldump --routines svi\_smsc > SMSC-backup-23-05-2013.sql”

“mysqldump --routines svi\_ms > MS-backup-23-05-2013.sql”

#### 2.2.2 All other Products

“mysqldump --routines svi\_ms > MS-backup-23-05-2013.sql”

## 3.0 Maintenance

Now the system is fully backed up the below maintenance tasks can be performed.

### 3.1 Log Files

All SVI product log files are stored in the “/home/squire” Directory. Depending on the type of product you have purchased and the modules installed you will notice several different types of log files. You may notice also that depending on the amount of debug turned on during the time period for the log they may also be time stamped. Below is a list of the different log file names.

1. Gateway\_dd-mm-yyyy. (hh:mm:ss)
2. MG\_dd-mm-yyyy. (hh:mm:ss)
3. MS\_dd-mm-yyyy. (hh:mm:ss)
4. SMSC\_dd-mm-yyyy. (hh:mm:ss)
5. Security\_dd-mm-yyyy. (hh:mm:ss)
6. RTPRouter\_dd-mm-yyyy. (hh:mm:ss)  
(This log file is usually in a separate directory “/home/squire/rtrprouter”)
7. nohup.out
8. core.\*

It is recommended that at the end of the month all logs for the previous month are moved to an old directory and then compressed using “tar” and archived. Once this is complete the files can be removed from the system. An example of moving the logs to an old-logs directory and then using tar to back up the logs for June is described below.

**Note:** before using any of the commands below make sure you do not leave a space before the wild card “\*” as Linux will see this and select ALL files.

If for example the directory old-log does not exist, then to create a new directory use command.

```
“mkdir old-logs”
```

Next move the logs to the “old-logs”

```
“mv Gateway_*-06-* MG_*-06-* MS_*-06-* Security_*-06-* nohup.out old-logs/”
```

Once the Logs are moved change into the “old-logs” directory and compress the files using “tar” “tar -zcvf

```
June-2013-Logs.tgz Gateway_*-06-* MG_*-06-* MS_*-06-* Security_*-06-* nohup.out”
```

Once the compression is complete you can then remove the logs in “old-logs” from the system using the “rm” command.

```
“rm -f Gateway_*-06-* MG_*-06-* MS_*-06-* Security_*-06-* nohup.out”
```

**Note:** Before removing a core file the logs from the period for which it occurred should be compressed up separately and uploaded to your space on the squire ftp server and squire support notified so it can be investigated.

### 3.2 CDR Data

It is recommended to archive CDR information via the SVI Management System keeping only 1-3 months of CDR or MDR information depending on how much data is required for billing purposes.

In order to do this please follow the below steps;

1. Log into the SVI Management System and navigate to the "Calls" tab
2. In the "CDRs" table select "Archive"
3. Then type the file location and name of the archive file  
"/home/squire/cdrs-june-2013.csv"
4. Next select the time period for the archive
5. Then click done
6. This will create a file in the location set and can be downloaded via a scp client.

The archive button in the GUI calls the "archiveCDRs" script from "/home/squire/scripts". This script can be call manually run or called via a Linux Cronjob. The input values of the script are as follows.

1. \$1 = database name
2. \$2 = file name and location
3. \$3 = start date in format yyyy-mm-dd hh:mm:ss
4. \$4 = end date in format yyyy-mm-dd hh:mm:ss

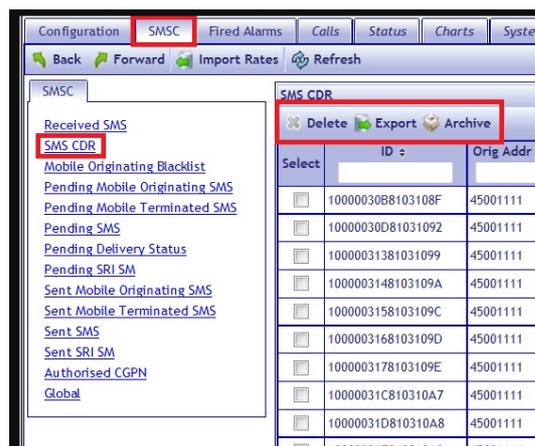
Example;

```
./archiveCDRs 'svi_ms' '/home/squire/CDRs.csv' '2013-01-31 23:59:59' '2013-03-01 00:00:00'"
```

**Note:** This script assumes that the database is local to the script. If the database is remote the script can be copied to the remote SQL and run from there.

### 3.3 SMSC CDR Data

1. There is GUI Support through the SMSC tab to search, export and archive of CDR for our SMSC products (see below)



2. The /home/squire/scripts/gui/ folder in an up-to-date system will have two scripts "exportSMSCDRs" and "archiveSMSCDRs" which can be used to do cronjobs for automated exports and archive.

SMS CDR archival can be completed using below script:

```

/home/squire/scripts/gui
archiveSMSCDRs
#!/bin/sh

#sed command effect
#s/\t/"/g  replace all tabs for literal ","
#s/^\t/"/  add a " at the beginning of the string
#s/$/"/   and add " at the end
#s/\n//g   remove all newlines

MySQL $1 -B -e "select * from Cdr where ReceivedTimeDate between '$3' and '$4';" | sed
's/\t/"/g;s/^\t/"/;s/$/"/;s/\n//g' > $2
MySQL $1 -e "delete from Cdr WHERE ReceivedTimeDate between '$3' and '$4';"

```

To run this script there parameters are: (Database name, Archive Name, date from, date to)

This will archive CDR's between date from and date to.

\$1 = Database name i.e. svi\_smsc in this case  
 \$2 = Output file where cdr's will be exported and then deleted from Database  
 \$3= Start Date/Time  
 \$4= End Date/Time

#### Example:

```

/home/squire/scripts/gui/archiveSMSCDRs svi_smsc /tmp/test.csv "2016-12-05 14:20:25"
"2016-12-05 14:20:26"

```

```

/home/squire/scripts/gui/exportSMSCDRs svi_smsc /tmp/test.csv "2016-12-05 14:20:25" "2016-
12-05 14:20:26"

```

This will archive CDR's from 05<sup>th</sup> December from time to 05<sup>th</sup> December to time into /tmp as test.csv file.

### 3.4 SDR Data

SDRs need to be regularly exported/post processed, archived or deleted to maintain final\_sdr table size. There is a bash script in /home/squire/scripts/ named final\_sdr\_maintenance.sh which needs to be run by a cron job.

This script has the top part that can be adapted a bit for each customer's need:

```

# RECONFIGURE THESE IF REQUIRED:
DATE=`date +%F_%H-%M-%S`
DB="svi_smsc"
OLDER_THAN=2 # days
DESTINATION="/home/squire/cdr/cdr_archive_`${DATE}`"
LIMIT=10000
PROCESSED="post_process=1 and" #set PROCESSED="" in case you want to delete/archive all SDRs not
only the processed ones

```

By changing the OLDER\_THAN variable, you control when SDRs will be deleted.

LIMIT is the number of MySQL rows that will be deleted in one go (in order to avoid huge deletions)

PROCESSED needs to be set according to how customer does export/archive: if they post process (and set that flag in MySQL) or not.

By default: The script deletes 10000 rows a time from SQL, and then takes a short break. It repeats this cycle until all SDRs that are older than 2 days are deleted.

### 3.5 PCAP Traces

It is recommended that old custom pcap files are removed from both the “/root” and “/home/squire” directory. You can list the files using command “ll -lrt | grep \*.pcap” and the removing then with the “rm” command “rm -f test1.pcap test2.pcap test3.pcap test4.pcap”.

### 3.5 Processor / Memory Usage

Periodically the processor and system memory usage should be checked. To do this you can run the command “top”. None of the SVI processes should be running at 100% this also includes the “tomcat” and “MySQL” services. If this is the case please get in contact with support so this can be investigated.

### 3.6 Disk Space

To check disk space on the SVI use command “df -ah” this will display a percentage usage for the hard drives configured on the system.

You can then run the following command in the in any directory to display the 20 largest files.

```
“du -hsx * | sort -rh | head -20”
```

Depending on the type of file and location this can then be archived off the system or removed.

### 3.7 Debug Configuration

It is very easy to configure a high level of debug when debugging an issue but often this gets left on when the issue is resolved. This in turn prints unnecessary debug information to the log files and increases the amount of disk space used. It is recommended that all debug is constantly turned off during normal operation. The information printed to the log file will then be minimal.

This then allows the system administrator to monitor for any major system errors and increase the level of debug when required for investigation. Debug levels can be turned on and off via the Management System “Right Panel” and clicking on the relevant process tabs.

## 4.0 Recommended System Checks

The below points are recommendations that can be reformed at any time to ensure system integrity.

### 4.1 CDR Data

It is recommended that data in the cdr table is checked periodically for ambiguities such as large number of calls with only "Setup" and "Clear" times with state as "Setup" this can indicate issues with routing and should be investigated.

Any cdr with termination of "Softswitch" and cause codes for 5xx need to be investigated as to the cause of the call failing.

**Note:** The information in the CDR table will vary depending on the type of service and traffic that you are providing.

### 4.2 Failover Test (Redundant System)

It is recommended that periodically, a maintenance window is scheduled so that a redundant system fail over can be performed and restarted to check system redundancy. This test should be carried out, as should the system or network fail at any time during normal operation you can be assured that a production service will continue.

### 4.3 Call / Billing Testing

It is recommended that periodically, the system administrator tests client routes and the system configuration and to ensure the system rate sheets for billing systems are configured correctly to ensure no loss of revenue.

### 4.4 Replication Checks (Redundant Systems Only)

It is recommended for Redundant Systems that you check replication status of your system to ensure upon the unlikely event a failover occurs, the system continues to operate as expected.

To do so, note the information below:

```
# mysql svi_ms
mysql> show slave status \G
***** 1. row *****
      Slave_IO_State: Waiting for master to send event
      Master_Host: 190.14.192.227
      Master_User: slave2_user
      Master_Port: 3306
      Connect_Retry: 60
      Master_Log_File: mysql-bin.000193
      Read_Master_Log_Pos: 163897508
      Relay_Log_File: slave-relay.007467
      Relay_Log_Pos: 163897645
      Relay_Master_Log_File: mysql-bin.000193
      Slave_IO_Running: Yes
      Slave_SQL_Running: Yes
```

```
Replicate_Do_DB: svi_ms
Replicate_Ignore_DB:
Replicate_Do_Table:
Replicate_Ignore_Table:
Replicate_Wild_Do_Table:
Replicate_Wild_Ignore_Table:
  Last_Errno: 0
  Last_Error:
  Skip_Counter: 0
Exec_Master_Log_Pos: 163897508
Relay_Log_Space: 163897645
Until_Condition: None
Until_Log_File:
Until_Log_Pos: 0
Master_SSL_Allowed: No
Master_SSL_CA_File:
Master_SSL_CA_Path:
Master_SSL_Cert:
Master_SSL_Cipher:
Master_SSL_Key:
Seconds_Behind_Master: 0
1 row in set (0.00 sec)
```

**show master status \G**

```
mysql> show master status \G
```

```
***** 1. row *****
      File: mysql-bin.000915
      Position: 141001787
  Binlog_Do_DB: svi_ms
  Binlog_Ignore_DB:
1 row in set (0.00 sec)
```

You can set up a cron job to check this on a regular basis and notify you.