Fusion Core Server
User Manual

2013R1

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1 Document Introduction

1.1 Document Purpose

The purpose of the document is to explain what Fusion Job Control Server is and how to use it.

1.2 Document Audience

Fusion Administrators.

1.3 Document History

Version	Editor	Date	Changes
1.0.2	M. Simonsen	18-Feb-09	Initial version
1.0.3	M. Simonsen	23-Mar-09	Revised version
1.0.4	M. Simonsen	03-Apr-09	Revised edition
1.0.5	M. Simonsen	25-Jun-09	Revised edition
1.1.0	M. Simonsen	12-Nov-09	Revised edition
1.1.5	M. Simonsen	20-Sep-10	Changed name from JCS to Core, refactored to make ReportDaemon
1.1.6	M. Simonsen	8-Nov-10	Added 3 new reports
1.1.7	M. Simonsen	5-Jan-11	Revised edition
1.2.2	M. Simonsen	25-Nov-11	Name change
1.2.3	M. Simonsen	06-Dec-11	Version change
1.5.17	M. Simonsen	12-Feb-13	2013R1

2 Introduction

Fusion Core Server is a key part of Fusion. This server is responsible for a number of tasks which run in the background:

- updating job counters
- stopping job automatically based on job rules
- remove old, finished jobs (cleanup)
- syslog deletion process, deletes old entries from the syslog database
- report generation
- [2013R1] shell script execution for TR-069/Web
- [2013R1] trigger release detection
- [2013R1] heartbeat detection

3 Configuration

The configuration of the Core server is important, because if not done properly it may cause a very heavy load on Fusion database. The two main culprits are syslog deletion and report generation, so take extra care around those issues. Let's go through the configuration step by step.

```
# --- Controls ---

# In general, read the doc about the groups/jobs and the core server.

# Old completed jobs must be removed from the job system, because it will
# decrease performance in the long run to keep them there. Hence this value.
# In hours. Default is 48.
completed.job.limit = 48
```

Simply specify an hour limit where old completed jobs are removed from the system.

```
# The syslog table must not grow too enormous, so we must delete old rows after
# some time. However, some rows/entries are more interesting than others time. To
# address this need Fusion supports the deletion of syslog entries based on
severity
# of the entry. In addition it is possible to set a deletion limit for a specific
# syslog event (must be set in Fusion Shell/Web). When conflict between the
severity
# limit and the event limit occurs, the highest value will "win".

# All values are stated as a number of days to save before deletion.
# Default 90 days for severity 0 (Emergency)
syslog.severity.0.limit = 90
# Default 90 days for severity 1 (Alert)
syslog.severity.1.limit = 90
# Default 90 days for severity 2 (Critical)
syslog.severity.2.limit = 90
# Default 90 days for severity 3 (Error)
syslog.severity.3.limit = 90
# Default 60 days for severity 4 (Warning)
syslog.severity.4.limit = 60
# Default 30 days for severity 5 (Notice)
syslog.severity.5.limit = 30
# Default 7 days for severity 6 (Info)
syslog.severity.6.limit = 7
# Default 4 days for severity 7 (Debug)
syslog.severity.7.limit = 4
```

The most probable distribution of your syslog messages is an clear overweight of info/debug message (if the devices or your Fusion system is set to log at this level). Then we expect less and less messages for each loglevel going up in severity. Thus there is little risk in keeping Errors a long time in the database, presumably because you do not want to loose such important data. As the number of messages in your syslog table grows, the time it takes to delete will also increase. You should therefore monitor xaps-core-heavy.log and see how long it takes. Keep in mind that if there are syslog messages you want to retain longer, you can override this severity based deletion limits and create a syslog event for that particular message with its own deletion limit.

```
# Syslog cleanup is very important to keep the database size in check.
```

```
# If activated it will only run in the first hour after midnight.
# There are three modes:
#
# normal : Will delete according to the deletion rules defined above as
# well as the syslog-event deletion limits.
#
# comprehensive: Will delete using the same rules as in normal mode.
# However, the normal mode will not check the entire database, only the
# most recent days. Comprehensive will check the whole database, but
# this is only necessary if you suspect a lot of garbage have been
# gathered in the syslog database.
#
# off: Will not run the deletion routine. Never set this is production
# other than for short tests of this module.
#
# Default mode is normal.
syslog.cleanup = normal
```

The comments explains the reason behind this setting. Keep it "normal" as the default setting suggest.

```
# If the server is a staging server (a special type of server only used by Ping
# Communications), then all UNCONFIRMED_FAILED jobs will be set to COMPLETED_OK
# after one hour, because the units are assumed to be staged to another
# provisioning server. Specify true/false. Default is false.
staging = false
```

This setting should always be false unless you are actually running a staging server. This is something only producers of devices would do, so it's a very special case.

```
# --- Reports ---
# Fusion will always produce Unit-reports (counting units). In addition
# you may specify "Basic" (to get Group/Job/Syslog-reports) and "Pingcom"
# to get VoIP/Hardware-reports. The latter is only possible if provisioning
# NPA201E, NPA101E, RGW208EN or IAD208AN devices.
# Default is empty string
# Examples:
# daily.reports =
# daily.reports = Basic
# daily reports = Basic, Pingcom

daily.reports =
hourly.reports =
```

Reports are a very important asset of Fusion. However, it requires a certificate for this particular feature to actually view the report information in Fusion Web. This backend process is only about gathering the information. The process is at times very slow, and you should also monitor this (fusion-core.log) and see if you're running too many reports.

```
# --- Shell Script Daemon ---

# This is the maximum number of shell script daemons pr user.
# The daemon is used whenever a script execution is requested, which
# can come from a Job, Trigger, SyslogEvent, Web (Script Execution Page)
# and Shell (setexecution command). Default size is 4.
shellscript.poolsize = 4
```

```
# The number of days to keep old script executions, both executed, failed
# or not started. Default is 7.
shellscript.limit = 7
```

Specify some limits in order to control how much resources the shell-script executions should take.

```
# --- Database ---

# Fusion database configuration. Format <user>/<password>@<jdbc-url>
#db.xaps = xaps/xaps@jdbc:oracle:thin:@//localhost:1521/orcl
db.xaps = xaps/xaps@jdbc:mysql://localhost:3306/xaps

# Syslog database configuration.
# Default is to place syslog on the same database as xaps. However, you may
# specify a database placed elsewhere, to relieve the xaps database of excessive
# load from syslogging.
db.syslog = db.xaps
```

The database setup and the log4j setup is similar to all the other modules.

4 Operation

Fusion Core Server performs several tasks simultaneously using many different "daemons" (background processes). These are:

- updating job counters
- stopping job automatically based on job rules
- remove old, finished jobs (cleanup)
- syslog deletion process, deletes old entries from the syslog database
- report generation
- [2013R1] shell script execution for TR-069/Web
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The operations are described in the log fusion-core.log, and should for all practical purposes remain background/unimportant to users of Fusion. However, at times the Core server may introduce heavy load on the server CPU/Memory/etc, so in those cases you should look into the log to see if there's any on-going process. It should then be possible to tune the configuration to lower the impact on the server resources.