FOXMAN-UN
Logging Feature

Document ID	1KHW029166-FR18
Document edition	FOXMAN-UN System Release: R18
	Revision: A
	Date: 2025-06-03

Contents

1   Preface

This document contains information defining the scope and function to enhance the FOXMAN-UN software. The Information in this document with respect to the FOX61x is for information only in order that the reader of this document is able to understand the proposed changes.

2 Introduction

2.1 Scope

FOXMAN-UN is using logging of program output for

- development testing,
- development debugging,
- in field / operational problem solving.

The log output is intended for program developer and system testers but is not intended for the FOXMAN-UN users and administrators.

This document describes the basic concepts of the FOXMAN-UN build-in logging system.

2.2 Concept

The SW programs are using so called "loggers" (utilities) to output formatted program internal information & status information to the console.

The log output is printed to the console standard output (stdout) and to the console error output (stderr). For processes managed by systemd the console output is forward to the Linux system logging utility (rsyslogd).

As a minimal requirement the log message generated by the processes should contain date and time, host address, log level (ERROR, INFO, DEBUG etc.), and service (process) name of which is generating this log message. The rest of the information is formatted according to the SW development (testing, debugging) needs.

Example of a log message:

```
Aug 10 11:53:33 chbrn3-v-dev007 nem-bp-networkmgr [558137]: 34795 - 08/
10/2021 11:53:33.491 - [139719310325504]
ERROR feature.nem.rest.client.558137 application credentials couldn't
be read; falling back to default values [nemrestclient.cpp:365]
```

The loggers can be set up to output specific information (feature loggers) or basic information (default loggers).

A special case is the tracing facility where all possible logging information is output directly to the file system.

Loggers can be activated / updated without the need to restart the daemon / application.

For the daemons on the Linux operating system the systemd is processing the console output and forward them to the journald and to the rsyslogd.

The rsyslogd will parse received messages and forward it to the log files (/var/log/nem).

The following figure outlines the path a log message will take and where the message is stored in the file system.

/usr/lib/systemd/system/nem-bp-networkmgr.service
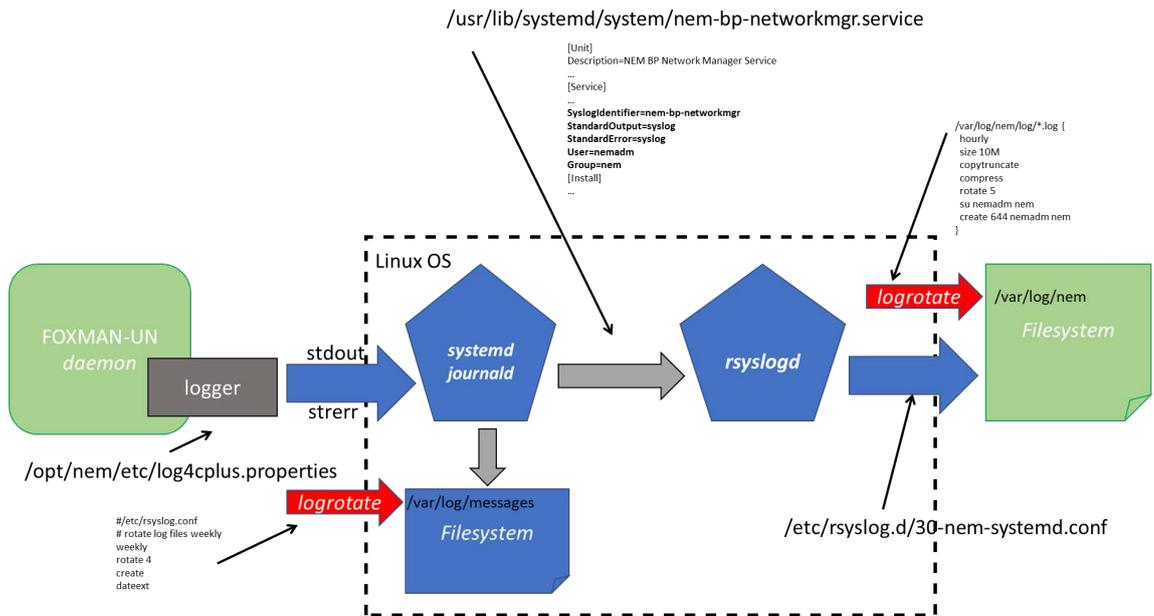
Figure 1:   Log message path

The references to the system configuration are only indicative and may change between releases.

> **i**
>
> **Please note:**
> The logrotate will limit the amount of free disk space required for the journal (max 4 weeks of journal data) and for the FOXMAN-UN log files (size and time limited).

2.3   Log Files

Files cerated by the loggers are using the following structure in the file name: <log_message_-generator>.log or <log_message_generator>.log.<date>.gz

Example log files:

- nem-np-networkmgr.log
- nem-np-networkmgr.log-20240226.gz
- nem-np-networkmgr.log-20240229.gz

Example trace files:

- trace_enpsecmgr_events.log

Log files directories on the core system:

- Core log files directory: /var/log/nem/log
- NEM client log files directory: /var/log/nem/logclient
- DIRAC log files directory: /var/log/dirac
- Logger configuration file: /opt/nem/etc/log4cplus.properties
- Logger properties files directory: /opt/nem/etc/log4cplus

Log files on the windows system:

- NEM client logfiles directory: C:\Users\<user>\AppData\Roaming\<company_name>\<appli-cation>\logfiles

> **i**
>
> **Please note:**
> Files with suffix <filename>.txt (e.g., the event.txt, the alarm.txt and the NeConfigChange.txt) which are located in the core log directories are history files and do not belong to the logging / tracing files.

2.4 Server Setup

For the setup of the core log file / trace file directory the following criteria can be used:

Number of log files * 10 MB + Number of log files * logrotations * 5 MB

Example: 60 log files

Maximum ≤ 2 GB disk space: (60 * 10) + (60 * 5 * 5) = 2100 MB

3   Event Server

3.1   Description

The Event Log Manager consists of two services - System Event Log Manager and Security Event Log Manager. These two services share their behavior and are shipped as a single jar file - all the differences in functionality are achieved through configuration files. Note that the collection of events involves a running process, therefore, with core layer down no system events are collected and with base layer down no security events are collected.

3.1.1   System Event Log Manager

System events are configured via the file `/opt/nem/voyager/etc/eventlogmanager-system.properties`.

The file provides the following configuration options:

```
# System Event Manager configuration
#
# nem.eventlogmanager.backends.syslog.enabled=true
# nem.eventlogmanager.logRotation.enabled=true
# nem.eventlogmanager.logRotation.threshold=100000
# nem.eventlogmanager.logRotation.purgePercent=20
# nem.eventlogmanager.logRotation.purgeFile.path=var/log
# nem.eventlogmanager.logRotation.purgeFile.namePrefix=events
# nem.eventlogmanager.logRotation.purgeFile.nameExtension=eventDump.log
```

System Event Log Manager applies a log rotation policy to the database entries. When the number of events in the database exceeds pre-defined threshold (by default, 10000 entries), the oldest 20% of events are saved to a file(s) in the `/opt/nem/var/log` directory. The saved events are distributed to the files in such way that events from each day are grouped in a separate file.

3.1.2   Security Event Log Manager

Security events are configured via the file `/opt/nem/voyager/etc/eventlogmanager-security.properties`.

The file provides the following configuration options:

```
# Security Event Manager configuration
#
# nem.eventlogmanager.backends.syslog.enabled=true
# nem.eventlogmanager.logRotation.enabled=false
```

3.1.3   Syslog backend

The events are logged to syslog via special logger configuration that sends the log messages to the rsyslog daemon over tcp protocol (locally). The messages from the two logging managers are sent with different tags (NEM_SYSTEM_EVENT and NEM_SECURITY_EVENT) and are dispatched to different files (`/var/log/nem/log/nem-system-event.log` and `/var/log/nem/log/nem-security-event.log` respectively) based on the tags.

3.1.4   Syslog Server

To forward system and security events to a syslog server, add to the /etc/rsyslog.conf the following lines (you must be root to do this):

```
#rules to forward system & security events to syslog server
module(load="imfile")
```

```
input(type="imfile" File="/var/log/nem/log/nem-system-event.log" Tag="system"
      Severity="info" Facility="user" ruleset="remote")
input(type="imfile" File="/var/log/nem/log/nem-security-event.log" Tag="security"
      Severity="info" Facility="user" ruleset="remote")
ruleset(name="remote"){
   action(type="omfwd" target="xxx.xxx.xxx.xxx" port="514" protocol="udp")
}
```

Replace the xxx.xxx.xxx.xxx with the syslog server IPv4 address and restart the rsyslog via the command:

```
systemctl restart rsyslog.service
```

3.1.5   Backup/restore interaction

3.1.5.1   System Events

System events are part of a regular backup. The restore procedure will overwrite anything that exists on the system, replacing previous content.

3.1.5.2   Security Events

Security events are NOT a part of regular backup. The restore procedure will not modify their content in any way. In principle the security event data should be immutable. In practice it can be modified manually by a very determined person (by default the NEM scurity administrator), but there is no official workflow to do that. Security event database will only be wiped upon full FOXMAN-UN uninstallation.

3.1.5.3   Upgrade

With upgrade procedure understood as backup → uninstall → install → restore, the security event database will be wiped out completely and the system event database will be preserved.

4 Appendix

4.1 NEM Modules and Logs Definition

The table shows the process description and the corresponding log file and the property file.

Module / Component	Systemd Service Name	Process Name	Description	Logfile Name	Logging setup default directory /opt/nem/ etc/log4cplus
Postgres Date Base	--	NEM_DATABASE Postgres Data Base	The main data base of NEM containing the BP, NP and ENP data		
Postgres Date Base	--	PM_DATABASE Postgres Data Base	The Performance Data Records data base.		
Postgres Data Base	--	ALS Data Base	The ALS data base		
Postgres Date Base	--	DIRAC_DATABASE Postgres Data Base	The DIRAC data base		
System Service	rabbitmq-server.service	rabbitmq	RabbitMQ Message Broker	/var/lib/rabbitmq/mnesia /var/log/rabbitmq/log	
System Service	postgresql.service	postgresql	PostgreSQL database server	var/lib/pgsql/data /var/lib/pgsql/data/log	
System Service	--	--	Nem Systemd	/var/log/nem/log/nem-systemd.log	none
	nem-base.target	--	Controls the startup of the NEM base service	--	--
NEM Base Service	nem-influxdb.service	influxdb	Forwards performance data to the influx database	Not available	--
NEM Base Service	nem-prwd.service	prwd	NEM procwatch process supervise, start and stop of dynamic created processes (NEM agents)	/var/log/nem/log/nem-prwd.log	systemd defaults
NEM Base Service	nem-omni-event.service	notifd	NEM OmniORB Event Service CORBA event manager	/var/log/nem/log/omninotifd.log	/opt/nem/etc/omninotify.cfg

Module / Component	Systemd Service Name	Process Name	Description	Logfile Name	Logging setup default directory /opt/nem/etc/log4cplus
NEM Base Service	nem-omni-names.service	omninames	NEM OmniORB Naming Service CORBA Naming service	/var/log/nem/log/omninames-error.log	/opt/nem/etc/omni.cfg
NEM Base Service	nem-bp-eventchannel.service	Event channel initialize service	NEM BP Event channel utility to create the event channel	/var/log/nem/log/nem-bp-eventchannel.log	/etc/rabbitmq/rabbitmq.conf
NEM Base Service	nem-bp-mainstandby.service	mainstandby	NEM Voyager MainStandby Service to manage the main stand-by configurations and the keep alive supervision	/var/log/nem/log/nem-bp-mainstandby.log	/opt/nem/voyager/etc/mainstandby.properties
NEM Base Service	nem-bp-securitymgr.service	bpsecuritymgrd	NEM BP Security manager Interface to the Authentication systems (e.g., PAM)	/var/log/nem/log/nem-bp-securitymgr.log	bpsecuritymgrd.properties
NEM Base Service	nem-bp-cred.service	CRED initialize service	NEM BP Credentials utility to create credentials	/var/log/nem/log/nem-bp-cred.log	none
NEM Base Service	nem-bp-nemcore.service	nemcore	NEM Voyager NEMCORE Execute scripts for the remote executor function	/var/log/nem/log/nem-bp-nemcore.log	nemcore.properties
NEM Base Service	nem-bp-apigateway.service	apigateway	NEM Voyager API Gateway Internal API for http/https requests	/var/log/nem/log/nem-bp-apigateway.log	pubicgateway.properties
NEM Base Service	nem-bp-rmqvh.service	RMQ initialize service	NEM BP RabbitMQ VirtualHost	/var/log/nem/log/nem-bp-rmqvh.log	rabbitmq_logger.properties
	nem-core.target	--	Controls the startup of the NEM Core service		
NEM Core Service	nem-bp-networkmgr.service	bpnetworkmgrd	BP Network Manager Main Element Management coordination service	/var/log/nem/log/nem-bp-networkmgr.log	bpnetworkmgrd.properties
NEM Core Service	nem-bp-alarmmgr.service	bpalarmmgrd	BP Alarm Manager	/var/log/nem/log/nem-bp-alarmmgr.log	bpalarmmgrd.properties
NEM Core Service	nem-bp-networkquerymgr.service	bpnetworkmgrd	BP Network Query Manager Query interface to the Basic Package, Element Manager	/var/log/nem/log/nem-bp-networkquerymgr.log	bpnetworkquerymgrd.properties
NEM Core Service	nem-bp-eventlogmgr.service	bpeventlogmgrd	BP Eventlog Manager Maintain and forward system events	/var/log/nem/log/nem-bp-eventlogmgr.log	bpeventlogmgrd.properties

Module / Component	Systemd Service Name	Process Name	Description	Logfile Name	Logging setup default directory /opt/nem/etc/log4cplus
NEM Core Service	nem-bp-alarmmgr.service	bpblmgrd	BP Business Logic Manager Implements logic functions for ESM management, Password Management and Profile Management at Element Management level	/var/log/nem/log/nem-bp-blm.log	bpblmgrd.properties
NEM Core Service	nem-bp-taskmgr.service	bptaskmgrd	BP Task Manager Executes tasks generated by the Busines Logic Manager or tasks generated by internal sources; example Node backup rotation in the data base	/var/log/nem/log/nem-bp-taskmgr.log	bptaskmgrd.properties
NEM Core Service	nem-bp-pmasyncmgr.servic	bppmasynchmgrd	BP PM Async Manager Execute Loading of PM records from the NE according to the schedule of PM collection	/var/log/nem/log/nem-bp-pmasyncmgr.log	bppmasynchmgrd.properties
NEM Core Service	nem-bp-pmcollector.service	pmcollector	BP PM Collector Generate PM records into DB	/var/log/nem/log/nem-bp-pmcollector.log /var/log/nem/log/pmcollector-x.log	pmcollector_log.xml
NEM Core Service	nem-bp-servicemgr.service	bpservicemgrd	BP Service Manager Responsible for the definition and execution tasks for the Service supervision.	/var/log/nem/log/nem-bp-servicemgr.log	bpservicemgrd.properties
NEM Core Service	nem-bp-als.service	als	BP ALS Server Network Element Manager for special purpose devices	/var/log/nem/log/nem-bp-als.log	
NEM Core Service	nem-bp-alsdb.service	derbyclient	NEM BP ALS Database Service	/var/log/nem/log/nem-bp-alsdb.log	
NEM Core Service	nem-enp-mgr.service	enpmgrd	ENP Network Manager Ethernet Network Manager for MPLS-TP services	/var/log/nem/log/nem-enp-mgr.log	enpmgrd.properties

Module / Component	Systemd Service Name	Process Name	Description	Logfile Name	Logging setup default directory /opt/nem/etc/log4cplus
NEM Core Service	nem-enp-secmgr.service	enpsecuritymgrd	ENP Security Manager Ethernet Network Security Manager includes Master Key management, Crypto Device (SECU) management, Crypto Engine management and the creation & deletion of secure segments in the network	/var/log/nem/log/nem-enp-securitymgr.log	enpsecuritymgrd.properties
NEM Core Service	nem-bp-cem.service	(java)	Circuit Emulation Manager	/var/log/nem/log/nem-bp-cem.log	/opt/nem/voyager/cem/etc/cem.properties
NEM Core Service	nem-bp-esw.service	(java)	ESW Management and Distribution	/var/log/nem/log/nem-bp-esw.log	/opt/nem/voyager/esw/etc/esw.properties
NEM Core Service	nem-bp-taskscheduler.service	(java)	Task Scheduler Scheduling of ESW Distribution and other tasks	/var/log/nem/log/nem-bp-taskscheduler.log	/opt/nem/voyager/taskscheduler/etc/taskscheduler.properties
NEM NP Service	nem-np-networkmgr.service	npnetworkmgr	NP Network Manager SDH/PDH End to End Path Manager	/var/log/nem/log/nem-np-networkmgr.log	npnetworkmgrd.properties
NEM CLI Service	nem-bp-reportmgr.service	bpreportmgrd	BP Report Manager NBI CLI to retrieve information from the Element Manager	/var/log/nem/log/nem-bp-reportmgr.log	bpreportmgrd.properties
NEM CLI Service	nem-bp-linetestmgr.service	bpreportmgrd	BP Linetest Manager NBI CLI to execute Line Tests for POTS units	/var/log/nem/log/nem-bp-linetestmgr.log	bplinetestmgrd.properties
NEM CLI Service	nem-bp-ecliproxy.service	ecliproxyd	BP ECLI Proxy NBI CLI to access FOX61x's ECLI (Embedded CLI)	/var/log/nem/log/nem-bp-ecliproxy.log	ecliproxyd.properties
NEM HLM Service	nem-hlm-snmpnbi.service	snmpagentd	BP SNMP Agent NBI for Higher Layer Manager to access Equipment and Port reports and Alarms	/var/log/nem/log/nem-hlm-snmpagent.log	snmpagentd.properties
NEM Microservice	nem-bp-qoste.service	qoste	NEM Voyager QOSTE Service to manager QoS settings on the Node	/var/log/nem/log/nem-bp-qoste.log	qoste.properties
NEM Microservice	nem-bp-healthcheck.service	healthcheck	NEM Voyager Healthcheck REST Service to Provide Performance information for the MPLS interfaces	/var/log/nem/log/nem-bp-healthcheck.log	healthcheck.properties

Module / Component	Systemd Service Name	Process Name	Description	Logfile Name	Logging setup default directory /opt/nem/ etc/log4cplus
NEM Microservice	nem-bp-webfrontend.service	webfrontend	NEM Voyager WEB Frontend REST Interface to Support WEB based UI	/var/log/nem/log/nem-bp-webfrontend.log	webfrontend.properties
NEM Microservice	nem-bp-ptpmap.service	ptpmap	NEM Voyager PTP Map REST Interface to access Node PtP status information	/var/log/nem/log/nem-bp-ptpmap.log	ptpmap.properties
NEM Microservice	nem-bp-eventlogmanager-system	eventlogmanager-system	All system events	/var/log/nem/log/nem-system-event.log	rsyslog tag NEM_SYSTEM_EVENT /opt/nem/voyager/etc/ eventlogmanager-system.properties
NEM Microservice	nem-bp-eventlogmanager-security	eventlogmanager-security	User session events Database backup events	/var/log/nem/log/nem-security-event.log	rsyslog tag NEM_SECURITY_EVENT /opt/nem/voyager/etc/ eventlogmanager-ensure-sec-db.properties, /opt/nem/voyager/etc/ eventlogmanager-security.properties
NEM Microservice MIB	nem-bp-mib	mib	MIB Layer Service	/var/log/nem/log/nem-bp-mib.log	opt/nem/voyager/etc/ mib.properties
NEM Agent	(managed by prwd)	bpnetworkagentmgrd	FOX515 Agent Agent to access devices of type FOX515	/var/log/nem/log/ bpnetworkagentmgrd_x.log	see Note 1
NEM Agent	(managed by prwd)	gennetworkagentmgrd	FOX61x Agent Agent to access devices of type FOX61x	/var/log/nem/log/ gennetworkagentmgrd_x.log	see Note 1
NEM Agent	(managed by prwd)	snmpnetworkagentmgrd	SNMP devices Agent to access SNMP managed devices (The list of supported devices updated in the Release information)	/var/log/nem/log/ snmpnetworkagentmgrd_x.log	see Note 1

Module / Component	Systemd Service Name	Process Name	Description	Logfile Name	Logging setup default directory /opt/nem/etc/log4cplus
DIRAC Microservice	diracserverd.service	dirac-server	DKM REST Server REST interface to the DIRAC manager	/var/log/dirac/server.log /var/log/dirac/ server_errorWarning.log /var/log/dirac/debugserver.log	/etc/dirac/server-logback.xml
Dirac Cli	--	--	DIRAC Cli	/var/log/dirac/cli.log /var/log/dirac/cli_errorWarning.log /var/log/dirac/cli.history	/etc/dirac/cli-logback.xml
Client Language Translation Utility			Client log, containing not translated properties (use for updating language packs)	/var/log/nem/log/ missing_translation_en.log	none
/opt/nem/bin/edbcreate			Script to create and initiate DB	/var/log/nem/log/edbcreate.log	none
/opt/nem/bin/ edbbackup			Utility to backup the database	/var/log/nem/log/edbbackup.log	none
/opt/nem/bin/ edbrestore			Utility to restore the database	/var/log/nem/log/edbrestore.log	none
/opt/nem/bin/npresynch			Utility to synchronize Basic Package Data with Networking Package Data	/var/log/nem/log/npresynch.log	none
/opt/nem/bin/ npresynchfo			Utility to synchronize Basic Package Data with Networking Package Data for Foreign Object	/var/log/nem/log/npresynchfo.log	none

Note 1:   Agent logging/tracing configuration files must be generated by the tool generatenetworkagentlogger

Usage: generatenetworkagentlogger [OPTION]

Generate NetworkAgent Logger Property File

Options:

 [-t] Agent Type [1=FOX515, 2=FOX61x, 3=OMS, 4=SNMP, 5=ALS]

 [-i] Agent ID

 [-h] Display this help text

4.2   NEM Client Log Files (/var/log/nem/logclient)

Component / Process	Log File Name	Description	Definition File
Nem Client	nemclient.log	NEM Client	/opt/nem/client/etc/nemclient_log.xml
Nem Client RAT	remoteadmintool.log	NEM Client Remote Admin Tool	/opt/nem/client/etc/remoteadmintool_log.xml

4.3 Enable / Disable Program Tracing

Tracing is enabled / disabled by the following procedure

a   Including the property file into the /opt/nem/etc/log4cplus.properties:

Example:

```
# ----
# Process loggers
# ----
#include /opt/nem/etc/log4cplus/bpalarmmgrd.properties
#include /opt/nem/etc/log4cplus/bpblmgrd.properties
#include /opt/nem/etc/log4cplus/bplinetestmgrd.properties
#include /opt/nem/etc/log4cplus/bpnetworkmgrd.properties
#include /opt/nem/etc/log4cplus/bpnetworkquerymgrd.properties
#include /opt/nem/etc/log4cplus/bppmasynchmgrd.properties
#include /opt/nem/etc/log4cplus/bpreportmgrd.properties
#include /opt/nem/etc/log4cplus/bpsecuritymgrd.properties
#include /opt/nem/etc/log4cplus/bpservicemgrd.properties
#include /opt/nem/etc/log4cplus/bptaskmgrd.properties
#include /opt/nem/etc/log4cplus/ecliproxyd.properties
#include /opt/nem/etc/log4cplus/enpmgrd.properties
#include /opt/nem/etc/log4cplus/enpsecuritymgrd.properties
#include /opt/nem/etc/log4cplus/generatenetworkagentlogger
#include /opt/nem/etc/log4cplus/nemtasktool.properties
#include /opt/nem/etc/log4cplus/networkagentmgr.template
#include /opt/nem/etc/log4cplus/npnetworkmgrd.properties
#include /opt/nem/etc/log4cplus/snmpagentd.properties
```

b   Sending a SIGHUP signal to the process; this will is enable or disable program tracing.

Example: killall --signal SIGHUP enpmgrd

The trace output directory, filename and trace file rotate strategy is defined in the properties appender definition.

Example of the appender definition in the properties file:

```
#### appender nemtrace_enpmgr ################
log4cplus.appender.nemtrace_enpmgr=log4cplus::RollingFileAppender
log4cplus.appender.nemtrace_enpmgr.File=${NEM_HOME}/var/trace/
trace_nemtrace_enpmgr.log
log4cplus.appender.nemtrace_enpmgr.MaxFileSize=50MB
log4cplus.appender.nemtrace_enpmgr.ImmediateFlush=false
log4cplus.appender.nemtrace_enpmgr.MaxBackupIndex=10
log4cplus.appender.nemtrace_enpmgr.layout=log4cplus::PatternLayout
log4cplus.appender.nemtrace_enpmgr.layout.ConversionPattern=%r - %D{%x
%H:%M:%S.%q} - [%t] %-5p %c %m [%l]%n
#################################################
```

4.4 Log, Trace and *.txt File Rotation Definitions

Log, trace and *.txt files are rotated to prevent filling up disk space.

Standard nem-* log rotates definition, e.g., for all files generated by the rsyslog and defined in the file /etc/rsyslog.d/30-nem-systemd.conf: Note that depending on the installed options, some of the entries might not be present in your system.

```
# NEM systemd rules
$umask 0000
$FileOwner nemadm
$FileGroup nem
$FileCreateMode 0600
:syslogtag, contains, "nem-bp-networkmgr" /var/log/nem/log/nem-bp-networkmgr.log
:syslogtag, contains, "nem-bp-alarmmgr" /var/log/nem/log/nem-bp-alarmmgr.log
:syslogtag, contains, "nem-bp-securitymgr" /var/log/nem/log/nem-bp-securitymgr.log
```

17

```
:syslogtag, contains, "nem-bp-blm" /var/log/nem/log/nem-bp-blm.log
:syslogtag, contains, "nem-bp-ecliproxy" /var/log/nem/log/nem-bp-ecliproxy.log
:syslogtag, contains, "nem-bp-linetestmgr" /var/log/nem/log/nem-bp-linetestmgr.log
:syslogtag, contains, "nem-bp-networkquerymgr" /var/log/nem/log/nem-bp-
networkquerymgr.log
:syslogtag, contains, "nem-bp-pmasyncmgr" /var/log/nem/log/nem-bp-pmasyncmgr.log
:syslogtag, contains, "nem-bp-pmcollector" /var/log/nem/log/nem-bp-pmcollector.log
:syslogtag, contains, "nem-bp-reportmgr" /var/log/nem/log/nem-bp-reportmgr.log
:syslogtag, contains, "nem-bp-servicemgr" /var/log/nem/log/nem-bp-servicemgr.log
:syslogtag, contains, "nem-bp-taskmgr" /var/log/nem/log/nem-bp-taskmgr.log
:syslogtag, contains, "nem-enp-mgr" /var/log/nem/log/nem-enp-mgr.log
:syslogtag, contains, "nem-enp-securitymgr" /var/log/nem/log/nem-enp-securitymgr.log
:syslogtag, contains, "nem-hlm-snmpagent" /var/log/nem/log/nem-hlm-snmpagent.log
:syslogtag, contains, "nem-np-networkmgr" /var/log/nem/log/nem-np-networkmgr.log
:syslogtag, contains, "nem-bp-apigateway" /var/log/nem/log/nem-bp-apigateway.log
:syslogtag, contains, "nem-bp-discovery" /var/log/nem/log/nem-bp-discovery.log
:syslogtag, contains, "nem-bp-nemcore" /var/log/nem/log/nem-bp-nemcore.log
:syslogtag, contains, "nem-bp-qoste" /var/log/nem/log/nem-bp-qoste.log
:syslogtag, contains, "nem-bp-publicgateway" /var/log/nem/log/nem-bp-publicgateway.log
:syslogtag, contains, "nem-bp-healthcheck" /var/log/nem/log/nem-bp-healthcheck.log
:syslogtag, contains, "nem-bp-qoste" /var/log/nem/log/nem-bp-qoste.log
:syslogtag, contains, "nem-bp-mainstandby" /var/log/nem/log/nem-bp-mainstandby.log
:syslogtag, contains, "nem-bp-cred" /var/log/nem/log/nem-bp-cred.log
:syslogtag, contains, "nem-bp-rmqvh" /var/log/nem/log/nem-bp-rmqvh.log
:syslogtag, contains, "nem-omni-names" /var/log/nem/log/nem-omni-names.log
:syslogtag, contains, "nem-omni-event" /var/log/nem/log/nem-omni-event.log
:syslogtag, contains, "nem-bp-eventchannel" /var/log/nem/log/nem-bp-eventchannel.log
:syslogtag, contains, "nem-prwd" /var/log/nem/log/nem-prwd.log
:syslogtag, contains, "nem-bp-alsdb" /var/log/nem/log/nem-bp-alsdb.log
:syslogtag, contains, "nem-bp-als" /var/log/nem/log/nem-bp-als.log
:syslogtag, contains, "nem-bp-taskscheduler" /var/log/nem/log/nem-bp-taskscheduler.log
:syslogtag, contains, "nem-bp-esw" /var/log/nem/log/nem-bp-esw.log
:syslogtag, contains, "nem-bp-cem" /var/log/nem/log/nem-bp-cem.log
:syslogtag, contains, "nem-bp-dcnmanager" /var/log/nem/log/nem-bp-dcnmanager.log
:syslogtag, contains, "nem-bp-ptpmap" /var/log/nem/log/nem-bp-ptpmap.log
:syslogtag, contains, "nem-bp-mib" /var/log/nem/log/nem-bp-mib.log
:syslogtag, contains, "nem-bp-credentialdistribution" /var/log/nem/log/nem-bp-
credentialdistribution.log
:syslogtag, contains, "nem-supervision" /var/log/nem/log/nem-supervision.log
:syslogtag, contains, "nem-bp-eventlogmanager-security" /var/log/nem/log/nem-bp-
eventlogmanager-security.log
:syslogtag, contains, "nem-bp-eventlogmanager-system" /var/log/nem/log/nem-bp-
eventlogmanager-system.log
:syslogtag, contains, "nem-bp-tagmanager" /var/log/nem/log/nem-bp-tagmanager.log
:syslogtag, contains, "nem-voyager-pm" /var/log/nem/log/nem-voyager-pm.log

if $syslogtag contains 'systemd' and ($msg contains 'NEM') then /var/log/nem/log/nem-
systemd.log

:syslogtag, contains, "NEM_SYSTEM_EVENT" /var/log/nem/log/nem-system-event.log
:syslogtag, contains, "NEM_SECURITY_EVENT" /var/log/nem/log/nem-security-event.log
```

The logfile rotate configuration is defined in the /etc/logrotate.d/nem file:

Example / Default setting:

```
/var/log/nem/log/*.log {
 hourly
 size 10M
 copytruncate
 compress
 rotate 5
 su nemadm nem
 create 644 nemadm nem
}
```

The DIRAC file rotate configuration is defined in the appender for the log output:

```
/etc/dirac/cli-logback.xml
/etc/cli-logback.xml
```

Other files:
- alarm.txt
- events.txt
- np_events.txt
- neConfigChange.txt

The rotate definition is according to the file

```
/opt/nem/bin/private/logcycle
```

triggered by:

```
crontab -l
55 23 * * * /opt/nem/bin/private/logcycle
```

| i |

Please note:

NEM logs are sent to the /var/log/messages, therefore it is also important that the messages file is rotated according to time and size:

> /var/log/cron
>
> /var/log/maillog
>
> /var/log/messages
>
> /var/log/secure
>
> /var/log/spooler
>
> {
>
> missingok
>
> sharedscripts
>
> postrotate
>
>   /usr/bin/systemctl kill -s HUP rsyslog.service >/dev/null 2>&1 || true
>
> endscript
>
> }

and:

The trace files rotate configuration is part of the log appender definition.

Example:

```
#### appender nemtrace_enpmgr ################
log4cplus.appender.nemtrace_enpmgr=log4cplus::RollingFileAppender
log4cplus.appender.nemtrace_enpmgr.File=${NEM_HOME}/var/trace/trace_nemtrace_enpmgr.log
log4cplus.appender.nemtrace_enpmgr.MaxFileSize=50MB
log4cplus.appender.nemtrace_enpmgr.ImmediateFlush=false
log4cplus.appender.nemtrace_enpmgr.MaxBackupIndex=10
log4cplus.appender.nemtrace_enpmgr.layout=log4cplus::PatternLayout
log4cplus.appender.nemtrace_enpmgr.layout.ConversionPattern=%r - %D{%x %H:%M:%S.%q} -
[%t] %-5p %c %m [%l]%n
##############################################
```

The database log rotation is defined in:

```
/var/lib/pgsql/data/postgresql.conf
```

See part:

```
#-------------------------------------------------------------------
# ERROR REPORTING AND LOGGING
#-------------------------------------------------------------------
```

5   Annex

5.1   Document History

Table 1:   Document History

Document ID	FOXMAN-UN Release	Rev	Date	Changes since previous version
1KHW029166-FR18	R18	A	Jun 2025	Updated for current release.
1KHW029166-FR17A	R17A	A	Sep 2024	Updated for current release.
1KHW029166-FR17A	R16B	C	Feb 2024	Inserted new section 3 "Event Server". Added Annex with 5.1 "Document History".
1KHW029166-FR16B	R16B	B	Feb 2024	Updated sections 4.1 "NEM Modules and Logs Definition" and 4.4 "Log, Trace and *.txt File Rotation Definitions" with new entries.
1KHW029166-FR16B	R16B	A	Aug 2023	First version published for R16B.

Hitachi Energy Ltd
Bruggerstrasse 72
5400 Baden - Switzerland

Phone: please refer to https://www.hitachienergy.com/contact-us/Customer-Connect-Center
              (Customer Connect Center)
E-Mail: communication.networks@hitachienergy.com

www.hitachienergy.com/communication-networks