

# SafeNet Network HSM 6.2.2

## TECHNICAL NOTE

### High Availability (HA) Log Messages

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## Description

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This document describes how to use the High Availability (HA) logging features provided by the HA sub-system of the SafeNet Network HSM 6.2.2 client. It provides the following information:

- How to configure HA logging. See ["Configuring HA Logging" below](#)
- Detailed descriptions of the log messages generated by the HA sub-system. See ["HA Log Messages" below](#).

## Configuring HA Logging

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Logging is automatically enabled when you configure an HA group. HA groups are configured on the client using LunaCM. Refer to the *HSM Administration Guide* for details. The HA configuration settings are saved to the **Chrystoki.conf** (Linux/Unix) or **crystoki.ini** (Windows) file, as illustrated in the following example:

```
VirtualToken = {
VirtualToken00Label = haGroup1; // The label of the HA group.
VirtualToken00SN = 11234840370164; // The pseudo serial number of the HA group.
VirtualToken00Members = 1234840370164, 1234924189183; // The serial number of the members.
VirtualTokenActiveRecovery = activeEnhanced; // The recovery mode.
}
HASynchronize = {
haGroup1 = 1; // Enable automatic synchronization of objects.
}
HAConfiguration = {
HAOnly = 1; // Enable listing HA groups only via PKCS#11 library.
haLogPath = /tmp/halog; // Base path of the HA log file; i.e., "/tmp/halog/haErrorLog.txt".
haLogStatus = enabled; // Enable HA log.
logLen = 100000000; // Maximum size of HA log file in bytes.
failover_on_deactivation = 1; // Enable failover when partition deactivated.
reconnAtt = 120; // Number of recovery attempts.
}
HARecover = {
haGroup1 = 1; // Trigger manual recovery by incrementing this value.
}
```

## HA Log Messages

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The following tables lists the messages generated by the HA sub-system and saved to the HA log. The HA log is saved to the location specified by **haLogPath** in the **Chrystoki.conf** (Linux/Unix) or **crystoki.ini** (Windows) file.

### Message Descriptions

In the message descriptions, the term **connection** refers to the connection between the SafeNet Luna client and the SafeNet Luna Network appliance. A connection is considered **valid** if the appliance responds correctly on the IP address and port. The connection can transition to **invalid** for a number of reasons. Some examples include if the appliance Ethernet cable is detached, if the appliance is shutdown/rebooted, or if the NTLS service is stopped/restarted.

Message ID	Description
HALOG_DROPMEMBER	The connection transitioned from valid to invalid, as determined after a HSM command fails. for example, C_Sign.
HALOG_DROPUNRECOVERABLE	The connection is invalid, as determined during a call to C_Initialize.

Message ID	Description
HALOG_LOGINFAILED	The connection transitioned from valid to invalid, as determined during a call to C_Login.
HALOG_MEMBER_DEACTIVATED (future)	The user manually deactivated the partition, as determined after a HSM command fails, for example, C_Sign.
HALOG_MEMBER_REVOKED	The user manually revoked the partition, as determined during a periodic recovery attempt.
HALOG_NEWMEMBER	The user manually added a member to the HA group without restarting the app, as determined during a periodic recovery attempt.
HALOG_RECOVERED	The connection transitioned from invalid to valid, as determined during a periodic recovery attempt.
HALOG_RECOVERYFAILED	The connection remains invalid, as determined during a periodic recovery attempt.
HALOG_REENABLEMEMBER (deprecated)	The user manually requested partition recovery, as determined during a periodic recovery attempt before an HSM command.
HALOG_UNRECOVERABLE (deprecated)	The connection is invalid and is not eligible for recovery.

## Message Format

Every HA log message has a consistent prefix consisting of the date, time, process id, and serial number (of the affected HA group). For example:

Wed Oct 4 16:29:21 2017 : [17469] HA group: 11234840370164 ...

The remainder of the message is formatted according to the message ID as follows:

Message ID	Message format
HALOG_DROPMEMBER	<MessagePrefix> has dropped member: <SerialNumber>
HALOG_DROPUNRECOVERABLE	<MessagePrefix> unable to reach member: <SerialNumber>. Manual Recover or Auto Recovery will be able to recover this member
HALOG_LOGINFAILED	<MessagePrefix> can not login to member: <SerialNumber>, autorecovery will be disabled. Code: <ErrorCodeHex> : <ErrorCodeString>
HALOG_MEMBER_DEACTIVATED (future)	<MessagePrefix> member: <SerialNumber> deactivated
HALOG_MEMBER_REVOKED	<MessagePrefix> member: <SerialNumber> revoked
HALOG_NEWMEMBER	<MessagePrefix> detected new member member: <SerialNumber>
HALOG_RECOVERED	<MessagePrefix> recovery attempt <Integer> succeeded for member: <SerialNumber>

Message ID	Message format
HALOG_RECOVERYFAILED	<p>&lt;MessagePrefix&gt; recovery attempt &lt;Integer&gt; failed for member: &lt;SerialNumber&gt;. Code: &lt;ErrorCodeHex&gt; : &lt;ErrorCodeString&gt;.</p> <p>If autorecovery fails, then a second message is logged, as follows:</p> <p>&lt;MessagePrefix&gt; exceeded maximum number of autorecovery attempts for member: &lt;SerialNumber&gt;. Autorecovery will be disabled</p>
HALOG_RENABLEMEMBER (deprecated)	<p>&lt;MessagePrefix&gt; Re-enable auto recovery process for member: &lt;SerialNumber&gt;</p>
HALOG_UNRECOVERABLE (deprecated)	<p>&lt;MessagePrefix&gt; recovery attempt &lt;Integer&gt; failed for member: &lt;SerialNumber&gt;. Manual Recover or Auto Recovery will not be able to recover this member. Code: &lt;ErrorCodeHex&gt; : &lt;ErrorCodeString&gt;</p>

## Support Contacts

Contact method	Contact
<b>Phone</b> (Subject to change. An up-to-date list is maintained on the Technical Support Customer Portal)	Global
	+1 410-931-7520
	Australia
	1800.020.183
	India
	000.800.100.4290
	Netherlands
	0800.022.2996
	New Zealand
	0800.440.359
	Portugal
	800.1302.029
	Singapore
	800.863.499
	Spain
	900.938.717
	Sweden
	020.791.028
	Switzerland
	0800.564.849
	United Kingdom
	0800.056.3158
	United States
	(800) 545-6608
<b>Web</b>	<a href="https://safenet.gemalto.com">https://safenet.gemalto.com</a>
<b>Customer Support Portal</b>	<a href="https://supportportal.gemalto.com">https://supportportal.gemalto.com</a> Existing customers with a Gemalto Customer Support Portal account can log in to manage incidents, get the latest software upgrades, and access the Knowledge Base.