

MiVoice MX-ONE

Cassandra Database - Fault Location

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# Introduction

This section describes the best practices for locating and repairing faults in the MX-ONE Service Node use of Cassandra database.

## Intended Audience

The Cassandra Database description provides required background information and it is required reading for anyone trying to troubleshoot Cassandra database in the MX-ONE Service Node.

**NOTE:** The Cassandra Database description also lists some other sources of Cassandra database information. The information available in those sources will not be duplicated here.

# General Fault Location

Check carefully to see where the fault really is. Check the information provided by the MX-ONE Service Node to get information about the fault. Mostly, the fault will not be related to the database.

## Log Files

Like all LINUX-based systems, the MX-ONE Service Node uses syslog (the system logging daemon) for logging of diagnostic messages. There is a configuration of syslog where to store or forward the messages, but normally the relevant messages will be found in the file `/var/log/messages`.

For the Cassandra database look in the `/var/log/cassandra/` folder for the files "debug.log" and "system.log".

## Alarms

Check with the command `alarm to print (list) alarms` in the alarm log. Use `alarm -p --format detail` to see the detailed information. The detailed alarm information points at the exact fault.

## Fault Messages

Use the command `trace -print 0` to print the fault messages in the system. The fault messages can be very useful when trying to understand a fault. But often an experienced service technician is needed to understand the information in the fault messages.

# System Hangs During Boot

If the system has not booted, you cannot login on the console. However, you can log in remotely using SSH. Log in using SSH and do the normal steps to locate the fault.

**NOTE:** The SSH daemon/service is started before many other services to allow an SSH login for fault location.

# Network Trouble

Many times, database problems are actually caused by network trouble. The database deployment in the MX-ONE Service Node is especially sensitive to network trouble during the initial startup and initial configuration of the system.

## Proper Operation of DNS

The database is very sensitive to mis-configuration of the name- and address-lookup facility. To see whether the results of a DNS and Reverse DNS query match, use the `/opt/eri_sn/sbin/mxone_dns -status -perform-lookup yes` command.

## Network Connectivity

Check network connectivity with ping. It is essential that the address translation echoed by ping match that of the host command.

## Time/Date Configuration Problems

Many features of the MX-ONE Service Node need the time and date to be synchronized between all LIMs. Database is only one of the functions that can be sensitive to time/date problems. Use `mxone_maintenance`, `more_configuration`, `ntp` and `check` to see the status of the NTP setup.

## Network Delay Between Databases

Check the network delay between the database nodes in different locations. The maximum delay supported between database nodes is 50 ms.

# Database Not Starting

This section shows how to verify the measures when there is an issue with the database starting.

## How to Find a Database Server

Use the command `mxone_data -p` and verify Database servers.

## Verify that the Database Server is Running

Use the systemd command `systemctl status mxone_db.service` to verify that the database is running, if it is not running use the systemd command `systemctl start mxone_db.service` to start it. If the database does not start, check log files.

## How to Check the Status of the Database Cluster

Use the commands `nodetool status` and `nodetool failedetector` to check the status of the rest of the databases.

**NOTE:** `nodetool` is capacity consuming command, so use it only during maintenance time and not at peak traffic, because it might cause traffic disturbances.



# Report Faults

If you have to resort to the manual fault repairing described in this document, for any other reason than broken hardware or administration failure, and you can reproduce the fault - please, report it.

