# HARDERRORs, FIFOFULLs and FLOWERRORs in the trace

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This FAQ explains the three main error types encountered during trace recording and provides troubleshooting steps.

## FIFOFULL

A **FIFOFULL** occurs when the trace sources produce data faster than the trace infrastructure (the chip/interface) can process it. This results in lost trace packets.

You can search for **FIFOFULL** errors in the trace recording using the following command:

```
Trace.Find FIFOFULL /ALL
```

To resolve a **FIFOFULL**, you must either increase the bandwidth or decrease the data volume:

1. I**ncrease Bandwidth**:

- Ensure the trace clock is running at the maximum supported frequency.
- Use the highest available port speed and bus width.

**2. Decrease Data Volume:**

- **Disable unused sources:** Turn off trace sources not required for your current debug session (e.g., disable data trace if only instruction trace is needed).
- **Use Filters:** Apply selective program and/or data trace by using trace filters (**TraceEnable**, **TraceData**, **TraceON**, **TraceOFF**). Refer for more information to the description of the command `Break.Set` in the General Commands Reference Guide B.
- Some processor architectures allow stalling the CPU or suppress the output of the data flow information if a FIFO overflow is likely to happen.

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## HARDERROR

A **HARDERROR** indicates that the captured trace data is invalid or corrupted.

**Common Causes & Troubleshooting:**

- Setup/hold time violations or signal capturing failures.
- The trace port is multiplexed with other I/O functions, preventing valid data capture.
- The target frequency is set too high for the current trace configuration.

- An incorrect version of the PowerTrace module is being used.

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## FLOWERROR

A **FLOWERROR** indicates that the captured trace data is logically inconsistent with the current state of the target memory.

**Common Causes:**

- The trace data itself is invalid (often a secondary effect of a **HARDERROR**).
- Missing task switches in the trace in case of OS trace
- Memory contents have changed (e.g. self modifying code)

You can search for **FLOWERROR** occurrences in the trace recording using the following command:

```
Trace.Find FLOWERROR /ALL
```