



**scidiag**  
**SCI diagnostic tool**

**User's Guide**

**Dolphin Interconnect Solutions AS**

Olaf Helsets vei 6  
P.O.Box 70, Bogerud  
N-0621 Oslo, Norway

Phone: +47 23 16 70 00  
Telefax: +47 23 16 71 80  
E-mail:

Date: April, 1999  
Version: 0.1  
Part: DI950-10295





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# 1 Introduction

Scidiag is a diagnostic tool for Dolphin's SCI adapters and switches. Users having problems with their SCI system should run scidiag in order to gain additional insight into possible problems, or just to get status information.

There is no complex user interface, just start the tool, and read what is printed. The output of scidiag contains a list of adapters found and their state, plus a list of all remote nodes and switches found. If problems are encountered, scidiag will give a set of hints to assist in the solution of the problem.

The relationship of the software and the hardware is shown in the following table:

Type of environment	Layers
User space:	Scidiag
Kernel:	IRM driver
I/O bus:	SBUS or PCI bus
Hardware:	Dolphin adapter cards with interconnect

Scidiag will check the adapter(s) and indicate problems, if any. It both analyzes and tests the adapter(s).

Scidiag does the following:

- 1) Check that IRM is running. If ok, continue:
- 2) Check that the local adapter and link is alive. If ok, continue:
- 3) Check that the local adapter configuration is as required.
- 4) Give list of all "visible" remote nodes (topology overview). User must check that this is as she/he perceives.
- 5) The user will be presented with various information about software and hardware.

Failure at any point shall result in various hints to user.

Scidiag is completely non-destructive. It does only perform read operations to the software and hardware, no write operations.

## 2 Usage

### 2.1 Synopsis and options

scidiag has a simple command line syntax:

```
scidiag [-h] [-v] [-n]
```

The command line options has the following effect on the operation:

- h prints short help on command line syntax
- n no diagnostics of remote connected SCI HW is performed
- v verbose mode

Default operation is to run scidiag with no options. The result is various output to screen:

- Information about the state of the local adapter(s). If the state is erroneous, various hints are (hopefully) given.
- A list is given of all remote nodes discovered.

If the verbose mode ( -v option ) is used, the following is printed in addition to the result above:

- a list of all local readable registers and their values
- count of interrupts
- stream information for PCI adapters
- list of all remote LC registers and their value

The user should check the output for the list of nodes found. Are all nodes listed? Or did he/she expect to see more nodes being listed? Then it is time to check that all cables are connected properly. Also run scidiag on *all* hosts, and see if anything interesting shows up.

At the end of the output scidiag will write the number of errors found. If this is non-zero, then the output of scidiag should be read carefully.

Scidiag in verbose mode prints out a lot of register and interrupt information. This information is primarily for Dolphin use only. The explanation of this information is beyond the scope of this document.

Please note that interrupts do NOT necessarily indicate errors.

### 2.2 Example

Below is an example output from scidiag taken on a simple 2node system with one Dolphin D310 PCI adapter card per host. In this case scidiag finds no errors in the system.

```
=====
SCI diagnostic tool -- Scidiag 1.1.0 ( Mar 17 1999 )
=====

***** VARIOUS INFORMATION *****
```



Driver: Dolphin IRM 1.9.2 ( pre Alpha2 Candidate 99/02/25 )
Date: Wed Mar 17 12:23:03 MET 1999
System: SunOS scitest42 5.5.1 Generic sun4u sparc SUNW,Ultra-1
Number of configured local adapter found: 1

Local adapter 0 > Type : D310
Nodeld : 8
SerialNum : 3129
Scrubber : no
Firmware : 2 98/06/77
CardPrint : CC

\*\*\*\*\* TEST OF ADAPTER 0 \*\*\*\*\*

==> Local adapter 0 ok.

\*\*\*\*\* TOPOLOGY SEEN FROM ADAPTER 0 \*\*\*\*\*

Adapters found: 2 Switch ports found: 0

----- List of all adapters and switches found:

Sci adapter> Nid: 0004 Scrubber: 1 BlinkId: 1

Firmware: 2

Sci adapter> Nid: 0008 Scrubber: 0 BlinkId: 1 <-- On Local Host

Firmware: 2

----- List of all ranges (rings) found:

In range 0: 0004 0008

In range 1:

In range 2:

In range 3:

In range 4:

In range 5:

In range 6:

In range 7:

In range 8:

In range 9:

In range 10:

In range 11:

In range 12:

In range 13:

In range 14:

In range 15:

-----
scidiag discovered 0 error(s).

The next example is from the same SCI system, but this time one of the SCI cables are not properly inserted.

=====
SCI diagnostic tool -- Scidiag 1.1.0 ( Mar 17 1999 )
=====

\*\*\*\*\* VARIOUS INFORMATION \*\*\*\*\*

Driver: Dolphin IRM 1.9.2 ( pre Alpha2 Candidate 99/02/25 )
Date: Wed Mar 17 12:31:29 MET 1999
System: SunOS scitest42 5.5.1 Generic sun4u sparc SUNW,Ultra-1

Number of configured local adapter found: 1

Local adapter 0 > Type : D310  
Nodeld : 8  
SerialNum : 3129  
Scrubber : NA  
Firmware : 0 98/06/77  
CardPrint : CC

\*\*\*\*\* TEST OF ADAPTER 0 \*\*\*\*\*

PROBLEM: Lc2 chip does not respond properly in adapter 0.

Possible explanation(s):

- LC2 failure.
- Some cable on local ring out or faulty.

ioctl failed : IOC\_GET\_LC\_REG (GetRemoteCsr). RemoteNodeld: 0xf00b, Offset: 0x180: No access to SCI link

PROBLEM: Link does not respond properly in adapter 0.

Possible explanation(s):

- LC2 failure.
- Some cable on local ring out or faulty.

==> Local adapter 0 NOT ok!

\*\*\*\*\* TOPOLOGY SEEN FROM ADAPTER 0 \*\*\*\*\*

Adapters found: 0 Switch ports found: 0

----- List of all adapters and switches found:

----- List of all ranges (rings) found:

In range 0:

In range 1:

In range 2:

In range 3:

In range 4:

In range 5:

In range 6:

In range 7:

In range 8:

In range 9:

In range 10:

In range 11:

In range 12:

In range 13:

In range 14:

In range 15:

-----

scidiag discovered 2 error(s).

---

### **3 Still problems ?**

If scidiag reports error(s) in your system and the hints doesn't help you solve your problem, run

`scidiag -v`

and email this output to Dolphin:

`pci-support@dolphinics.no`

`sbus-support@dolphinics.no`

