



# Profile Fibre Channel Server Interface

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## Overview

The Profile Fibre Channel Server Interface allows an SGI Origin 200 or Origin 2000 server to appear to Media Manager or automation software as another Profile system by emulating selected features of a Profile system. When in operation, files stored on the Origin server can be accessed by the Profile system using Media Manager or automation software through API calls.

The Profile Fibre Channel Server Interface is designed for applications like News and Networked Video on Demand, where an Origin server is the central storage system, a set of Profile systems function as the intake and play-out system, and the two systems must inter-operate over Fibre Channel.

## System Requirements

The following system requirements must be met for the interface software to perform correctly:

***NOTE: The Genroco Fibre Channel controller should only be installed by qualified personnel.***

- At least one Genroco Fibre Channel controller card with microcode version 1.7.6 must be installed in the SGI Origin server. Installation instructions from Genroco are provided with the card.
- Genroco Fibre Channel controller card driver, version 2.0, must be installed in the Origin server. To verify that the Genroco Fibre Channel controller is installed, enter *netstat -i* and check the results for a line that begins with grx (where x is a number such as 0 or 1).
- The Origin server requires operating system version 6.4 with the May 1998 roll up patch set.
- The Profile system must have the Fibre Channel option installed and must be running Profile System Software 2.4 or higher.



## Installing the Software on the Origin Server

Follow this procedure to set up the Origin server for installation and use of the software. The procedure is divided into the operations that are performed as “root” and those that are performed as user “profile.”

### Operations Performed as “root”

1. Add the following line to the `/etc/passwd` file...  
`profile:7XHZFbk3c0SZ6:888:88:GuestAccount:/usr/people/profile:/bin/csh`
2. Create the directory `/usr/people/profile` and make sure it is owned by user “profile.”
3. Add the IP address for the Fibre Channel card to the `/etc/hosts` file...  
`xxx.xxx.xxx.xx <hostname>_fc0 myFC`

**NOTE:** *The alias `myFC` is required, as is the convention “<hostname>\_fc0,” where <hostname> is replaced with the name of the host machine.*

Also add ethernet and fibre channel addresses for all Profile systems to which the Origin server will connect.

4. Run **inst**, the install utility, to install the software from the Profile Fibre Channel Server Interface CD-ROM. Enter the commands as shown in this example:

```
# inst
Inst> from /CDROM/dist
Inst> install *
Inst> list  (i) pdrStream
           (i) pdrClean
           (i) pdrServer
           .
           .
           .
Inst> go
#
```

Verify that you have the following command files installed in `~profile/bin`

**pdrshrc mkset pdr pdrClean pdrServer pdrStream**

and that **profile\_start** is installed in `/etc/init.d`.

5. Create a symbolic link to */etc/init.d/profile\_start* in */etc/rc2.d* as shown here.  
# cd /etc/rc2.d  
# ln -s ../init.d/profile\_start S999profile
6. Establish a storage location for movies on the Origin server by creating a directory that will serve as the top of the movie directory structure. This directory is typically called */movies*, and should be the mount point of a RAID file system.
7. Give user “profile” ownership of the directory that will contain movies.  
# chown -R profile.guest /directory\_name/

### **Operation Performed as User “profile”**

Run **mkset** to create a directory that represents a PDR Dataset.

```
> mkset INT1 /directory_name
```



## Setting up the Profile System

Use either the Fibre Channel dialog box in the Configuration Manager or the **fcconfig** command to set up the Profile system's Fibre Channel configuration. In the *Profile Family User Manual*, refer to "Setting Up Fibre Channel Networking" when using the Configuration Manager, or to "Fibre Channel IP Address Set Up" when using **fcconfig**. These references contain general information about configuring the Profile system for Fibre Channel.

1. Set the Profile system's Fibre Channel IP address.
2. Set the gateway address to be the same as the Origin server's Fibre Channel address. If several Fibre Channel cards are installed on the Origin server, configure each Profile system connected to a particular Origin server Fibre Channel card to use that card's Fibre Channel address as that Profile system's gateway address.
3. Set the subnet mask to 255.255.255.0.
4. Set the hardware address to a unique non-zero number in the range 1 to 120.
5. Open the *C:\winnt\system32\drivers\etc\hosts* file in **Notepad**.
  - a. Add to the file the Ethernet and Fibre Channel IP addresses for all Profile systems to which the Origin server will connect.
  - b. Add to the file the Origin server's Ethernet and Fibre Channel IP addresses following this format:

```
xxx.xxx.xxx.xx <hostname>  
yyy.yyy.yyy.yy <hostname>_fc0
```
6. Make sure the following are running on the Profile system. You can start these manually, or by adding them to the *pdrstart.bat* file (the commands are most likely there already and you need only to remove the *rem* statements).  
**htssvc**      **chgsrvr**      **portsvr**
7. Check the NT Services to verify that the *portmap* service is running.

## Command Descriptions

These are the commands installed on the Origin server. These descriptions are available in manpage format when the manpath is updated to include the location of the manpage files. Update the manpath by including the path in the *.cshrc* file

**mkset** – make an Origin server dataset

### Synopsis

```
mkset dataset directory_name
```

### Description

mkset is a utility script that makes a dataset (a partition) for the Profile Fibre Channel Server Interface PDR services. A UNIX directory is created that corresponds to the dataset/partition, and an entry for this translation is appended to the *partnames* file.

Because all client requests are initiated as Tektronix TekPDR clients, the movie name representation has the form:

```
DATASET:/group/movie
```

On the Origin server, this is converted to the native directory format:

```
/fs_mount_point/directory_name/group/movie
```

### Example

Create a dataset INT1 for file system /raid2\_xls1:

```
>mkset INT1 /raid2_xls1
```

The format in the *partnames* file will be:

```
INT1: /raid2_xls1/INT1
```

Two groups, default and Recycled, are also created:

PDR Name	Unix Name
INT1:/default	/raid2_xls1/INT1/default
INT1:/Recyled	/raid2_xls1/INT1/Recyled



A movie “foo” in the default directory yields:

<b>PDR Name</b>	<b>Unix Name</b>
INT1:/default/foo	/raid2_xls1/INT1/default/foo

### **See Also**

pdr(1), pdrClean(1), pdrStream(1), pdrServer(1)

### **Note**

By convention, there is one dataset for each file system mounted.  
The owner of the file system mount point must be user “profile”.

**pdr** – start/stop the Profile Fibre Channel Server Interface PDR services

### **Synopsis**

```
pdr {start|stop}
```

### **Description**

pdr is a utility script that starts or stops the Profile Fibre Channel Server Interface PDR services.

The utility should only be run by user “profile”.

### **Options**

stop - stop pdrServer and pdrStream processes

start - clean the PDR datasets, start pdrServer and pdrStream processes

### **See Also**

mkset(1), pdrClean(1), pdrStream(1), pdrServer(1)

### **Note**

To override the default number of streams or the default buffer size (in kbytes) modify the environmental variables \$NUM\_PDR\_STREAM\_BUFS and \$PDR\_STREAM\_BUF\_SIZE.

**pdrClean** – remove corrupted movie files from the Origin server

### Synopsis

pdrClean [dataset\_name]

### Description

pdrClean removes any corrupted movies from the Origin server. If no dataset is specified, pdrClean checks each movie in each group in each dataset. If a malformed movie is found, that movie is deleted.

### See Also

pdr(1), mkset(1), pdrServer(1), pdrStream(1)

### Notes

pdrClean should only be run by user “profile”.  
“pdr stop” should be executed before executing pdrClean.  
“pdr start” implicitly calls pdrClean.

**pdrServer** – Profile Fibre Channel Server Interface Server

### Synopsis

pdrServer

### Description

pdrServer provides emulation of a sub-set of the tekPDR API from the Tektronix Profile SDK. The supported sub-set of api calls are:

- PdrCloseFind
- PdrFindFirstDataset
- PdrFindFirstGroup
- PdrFindFirstMovie
- PdrFindNextDataset
- PdrFindNextGroup
- PdrFindNextMovie
- PdrMovieExists
- PdrGetListOfNames



PdrGetNumMovies  
PdrGetMovieChanges  
PdrDeleteMovie  
PdrRenameMovie  
PdrGetMovieState  
PdrGetCurrentDataset  
PdrGetCurrentGroup  
PdrSetCurrentDataset  
PdrSetCurrentGroup

The Tektronix TekPDR API is only available on Windows NT clients that have been installed with Tektronix Profile SDK.

### **See Also**

pdr(1), mkset(1), pdrClean(1), pdrStream(1)

### **Note**

pdrServer should only be run by user “profile”.

## **pdrStream** – Profile Fibre Channel Server Interface Streamer

### **Synopsis**

pdrStream [num\_buffers buffersize\_in\_kbytes]

### **Description**

pdrStream provides streaming services to/from a Profile unit over TCP/IP. This process can support multiple concurrent streams in and out of the Origin server.

A streamed movie may be played out by a Profile unit as it arrives, without waiting for the entire movie to be transferred into the Profile unit.

A movie can be streamed to the Origin server while being recorded on a Profile unit.

Each stream uses a double buffering technique to sustain transfers at the TCP/IP rate to/from the file system.



### Options

num\_buffers — defaults to 16, which supports 8 streams

bufferize\_in\_kbytes — The size of each buffer in kbytes, defaults to 4096 (4 MBytes total).

### See Also

pdr(1), mkset(1), pdrClean(1), pdrStream(1)

### Note:

pdrSstream should only be run by user “profile”

**profile\_start** – Automatically starts the Profile Fibre Channel Server Interface when the Origin server boots.

### Synopsis

```
/etc/init.d/profile_start
```

### Description

This command is to be used with a cold boot, and should be installed in */etc/init.d*. A symbolic link to it should be created in */etc/rc2.d* Use a high number....e.g.:

```
cd /etc/rc2.d
```

```
ln -s ../init.d/profile_start S999profile
```

### See Also

pdr(1), mkset(1), pdrClean(1), pdrStream(1)

### Note:

profile\_start should only be run by user “profile”\



## Troubleshooting

If you experience difficulty in completing the installation and getting the Origin server up and running, the following checks might help locate the problem.

- Check Ethernet IP addresses on the Origin server and each Profile system *hosts* file.
- Check Fibre Channel IP addresses on the Origin server and each Profile system *hosts* file.
- Check the **fcconfig** setting for the IP address on each Profile system
- Check the **fcconfig** setting for the IP gateway address on each Profile system (it should be the Origin server address on that loop for normal installations)
- Check the **fcconfig** setting for the hardware address on each Profile system. Each hardware address must be unique.
- On the Origin server, check that you have an IP alias “myFC” for the IP address “sgi\_fc0”.
- Verify that **fcping -all** runs and all hosts can be resolved by name.
- Verify on the Origin server that **ping** to “YYY.YYY.YYY.255” sees all Profile system Fibre Channel addresses on that Fibre Channel subnet
- If you have more than one Fibre Channel port on the Origin server, make sure you use Class B network addresses on the networks attached to those ports.

If all routes are set up correctly and you still fail to connect the Origin server to a Profile system via the Media Manager, try the following:

- Ensure that **portmap** and **chgsrvr** are running on the Profile system (should be in *pdrstart.bat*). Refer to page 4.
- On the Origin server, verify that the *partnames* file contents correspond to a valid dataset made by **mkset**.

**Hint:** There should be a *default* and *Recycled* directory in each dataset.