

This directory has an example loadable kernel server and a user-level program that communicates with it.

The loadable kernel server accepts only one MiG-generated remote procedure call, **mydriver_do_log()**, which causes the server to log a message using **kern_serv_log()**.

Before the user program calls **mydriver_do_log()**, it enables logging by calling **kern_loader_log_level()**. After calling **mydriver_do_log()**, the user program calls **kern_loader_get_log()** and then listens on a port for the reply message. When the reply message arrives, the user program sends the message to a handling function (using **kern_loader_reply_handler()**). The handling function prints the data from the message and exits.

Chapter 3, "Using Loadable Kernel Servers," of *NeXT Operating System Software* gives more information on implementing user-level programs that communicate with loadable kernel servers. *Writing Loadable*

Kernel Servers gives information on implementing your own loadable kernel server.

To build the loadable kernel server and user program, follow these steps:

1) Make a copy of this directory and change to the new directory in a Terminal window. For example:

```
localhost> cp -r /NextLibrary/Documentation/NextDev/Examples/Log ~  
localhost> cd ~/Log
```

2) Run **make** in the **KernelServer** directory. (It's important that you make the server before the user program, since the user program depends on files created during this step.)

```
localhost> cd KernelServer  
localhost> make
```

3) Run **make** in the **User** directory.

```
localhost> cd ../User  
localhost> make
```

To use the user program:

1) Allocate the loadable kernel server. It loads automatically once it's allocated.

```
localhost> su  
Password:  
localhost# kl_util -a ../KernelServer/mydriver_reloc  
Adding server with relocatable /me/Log/User/../../KernelServer/  
mydriver_reloc
```

```
Allocating server mydriver
Server mydriver linking /me/Log/User/../../KernelServer/mydriver_reloc
    against /mach
Server mydriver linking relocatable "/me/Log/User/../../KernelServer/
    mydriver_reloc"
Server mydriver Allocated
Server mydriver loading
regs.pc = 40294f0
Server mydriver download complete
Server mydriver starting up
Server mydriver Loaded
localhost#
```

2) Run the user program.

```
localhost# ./log
```

```
Waiting for the log level to change before calling
```

```
    mydriver_do_log()...
```

```
Calling mydriver_do_log().
```

```
Calling kern_loader_get_log().
```

```
Received a message on the reply port.
```

```
Calling kern_loader_reply_handler().
```

```
log_data: 172800757:    This is the log message (at level  
                LOG_WARNING).
```

3) If you wish to modify the loadable kernel server and then reload it, you should delete the running version of the **kern_loader** before allocating the kernel server again.

```
localhost# kl_util -d mydriver  
removing server mydriver  
Server mydriver deallocating  
Server mydriver unloading  
Server mydriver re-Allocated  
Server mydriver Deallocated
```