

## **P54Messenger: A simple program for testing Project54 application messaging**

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The P54Messenger program can submit and receive Project54 application messages via the Project54 proxy application (proxy.dll), which supports version 2 messaging with remote applications (or remote application managers) via UDP/IP network packets. The program has two windows: one for typing in messages to be submitted to the remote Project54 Application Manager, and one for displaying messages received from the remote Project54 Application Manager. All messages sent and received can be stored in a log file for later analysis.

The P54Messenger program can be run on the same computer as the Project54 system, or can be run on a different computer attached to the same IP network as the Project54 system. P54Messenger.exe is a stand-alone program and does not require any of the Project54 components.

### ***Sending Project54 Messages***

The command window of the P54Messenger program allows you to type in simple version 2 messages in the form:

“source;destination;identifier;messagebody”

Once you have sent a single message using the full format above, you can create new messages to the same remote application, using the same fake local application name and id string, by simply typing in the message text with no “;” characters:

“some new message text to the same app”

For example:

```
>test;lights;id1;FEEDBACK ON  
>REAR STROBES  
>STROBES OFF  
>FEEDBACK OFF  
>
```

Here, status feedback from the “lights” application is enabled, the rear strobes are turned on and then off, and then the status feedback from the “lights” application is disabled.

You can use the full form of the command string at any time to change the local or remote application names or the message identifier string.

### ***Viewing Project54 Messages***

The message log window of the P54Messenger program allows you to view messages sent to and received from the remote system in the forms:

```
[msecs] <P54V2>source;destination;identifier;messagebody  
<msecs> <P54V2>source;destination;identifier;messagebody
```

Messages sent to the remote system have the time stamp (millisecond units) in square brackets, while messages received from the remote system have the time stamp (millisecond units) in angle brackets.

For example, the window contents after sending the commands indicated above were:

```
[00027612] <P54V2>test;lights;id1;FEEDBACK ON  
<00027612> <P54V2>lights;test;id1;STATUS FRONT STROBES  
<00027707> <P54V2>lights;test;id1;STATUS WIG WAGS OFF  
<00027816> <P54V2>lights;test;id1;STATUS TAKE DOWNS OFF  
<00027926> <P54V2>lights;test;id1;STATUS REAR FLOODS OFF  
<00028035> <P54V2>lights;test;id1;STATUS SIREN OFF  
<00028144> <P54V2>lights;test;id1;STATUS SIRENMODE Off  
<00028254> <P54V2>lights;test;id1;STATUS LIGHTS CONTROL HEAD OFF  
[00035782] <P54V2>test;lights;id1;REAR STROBES  
<00035782> <P54V2>lights;test;id1;STATUS FRONT STROBES OFF  
<00035878> <P54V2>lights;test;id1;STATUS REAR STROBES  
[00045828] <P54V2>test;lights;id1;STROBES OFF  
<00045828> <P54V2>lights;test;id1;STATUS REAR STROBES OFF  
[00052719] <P54V2>test;lights;id1;FEEDBACK OFF
```

### ***Log Files***

If logging is enabled in the “File” menu, all messages displayed in the message log window will also be added to the text file “P54Messenger.txt” in the default program path.

### ***Local and Remote Network Specifications***

The “Set IP and Port” item in the “File” menu allows you to set the IP addresses and port numbers used by the P54Messenger program for the local and remote ends of the UDP pathway. Normally, the messenger local IP address can be left set to the default value of 0.0.0.0, port 0 in which case the appropriate local IP address and port is determined automatically. The remote IP address and port must match the IP address and port used by the proxy application on the Project54 system under test. The remote IP address must

be either given explicitly, or should be set to 127.0.0.1 if the Project54 system under test is running on the same computer as the P54Messenger program.

### ***Running Multiple Copies of P54Messenger***

Multiple copies of the P54Messenger program can be run simultaneously. This is useful, for example, to use one copy as a message sniffer and another copy to send fake messages, mimicking a Project54 application component. However, each running copy will get its network and other parameter settings from the path:

HKEY\_LOCAL\_MACHINE\SOFTWARE\Catlab\P54Messenger

and each copy will log results to the file P54Messenger.txt (if logging is enabled in each copy). This is not a problem if logging is only enabled in one of the running copies (so that log file name redundancy is not a problem) and if each copy is attached to the same Project54 Application Manager for messaging (so that network parameter redundancy is not a problem).

The running program code actually builds the window names, registry paths and log file name from the name of the executable file. For example, if a second copy of the file P54Messenger.exe is made and renamed to P54Sniffer.exe, then that copy (when executed) will get its network and other parameter settings from the path:

HKEY\_LOCAL\_MACHINE\SOFTWARE\Catlab\P54Sniffer

and that copy will log results to the file P54Sniffer.txt (if logging is enabled). Thus, by first creating multiple copies of the file P54Messenger.exe and giving each copy a unique file name, it is possible to run multiple copies of the program simultaneously with each copy having different window names for easy identification, and with each copy using separate initialization parameters and log file name.