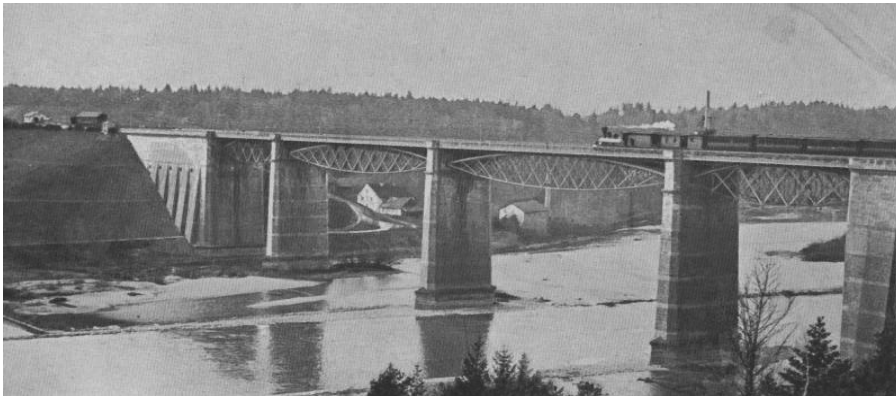


RBridge Release 2.x

A Remote Ethernet Bridge for Linux

Installation and Administration Manual



Status: **CURRENT**
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1 Introduction

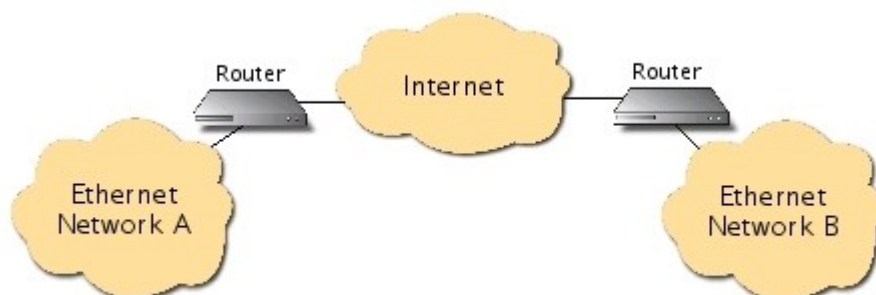
RBridge is a Remote Ethernet Bridge solution for Linux. It connects two trusted Ethernet segments remotely using a bidirectional UDP tunnel. Packets are being forwarded transparently on Ethernet level.

RBridge runs on Linux and is setup easily in a few minutes. RBridge is freely available at no charge according to the licensing terms as part of the distribution. Software support may be purchased if needed or required (please goto <http://www.inlab.de/rbridge/index.html> for further information).

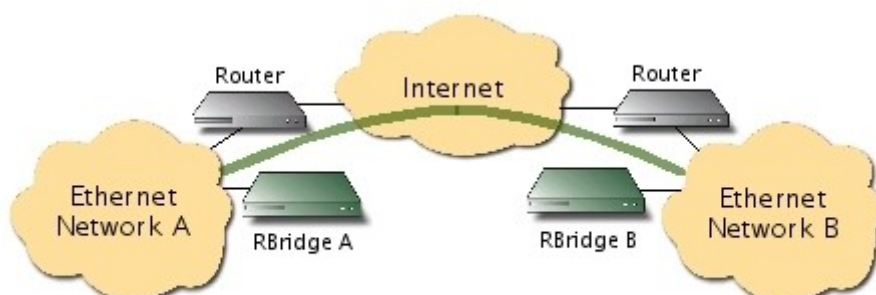
The only “drawback” is a short “Featured Software” textual note which tries to attract your attention to BalanceNG, our Software Load-Balancer product for Linux and Solaris.

WARNING: RBridge is a very powerful tool, which can compromise network security substantially. It's really like plugging two distinct networks together with a virtual Ethernet cable, so be careful and aware what you are doing.

The following figure shows two networks separated by routers and the big Internet in between as usual:



RBridge allows in that situation to connect the two Ethernet segments as if they were one single big layer 2 network:



Both RBridges are learning automatically the Ethernet addresses on the other side and start forwarding packets if necessary. This is implemented by using a simple and efficient UDP tunnel to carry the Ethernet packets (frames) from one side to the other.

This connections works completely transparent for any protocol which may be existent on top of Ethernet, just because RBridge does not know anything about the upper protocol layers.

For bigger packets RBridge relies completely on the usual UDP/IP fragmentation and reassembly. UDP traffic is unencrypted, packets from another machine than the configured peer are discarded without any notice or error message.

2 Installation

Installation of RBridge is done by unpacking the tarball distribution and by moving the single "rbridge" binary to a suitable place (for example /sbin/rbridge). The installation process may look like this:

```
root@x:/tmp# tar xvfz RBridge-2.1-Linux-x86.tar.gz
RBridge-2.1-Linux-x86/
RBridge-2.1-Linux-x86/README
RBridge-2.1-Linux-x86/rbridge
RBridge-2.1-Linux-x86/LICENSE
RBridge-2.1-Linux-x86/RELEASE
root@x:/tmp# cd RBridge-2.1-Linux-x86
root@x:/tmp/RBridge-2.1-Linux-x86# cp rbridge /usr/sbin/rbridge
root@x:/tmp/RBridge-2.1-Linux-x86#
```

3 Operation

Invoking RBridge requires root privileges. Invoking RBridge with no argument prints out the version and some usage information:

```
# rbridge
```

```
Featured Software:
```

```
+-----+
| BalanceNG - The Software Load-Balancer for Linux and Solaris |
| -> www.BalanceNG.net |
+-----+
```

```
This is RBridge 2.1 (created 2008/12/28)
```

```
Copyright (C) 2006-2008,2009 by Inlab Software GmbH, Germany
All rights reserved / Alle Rechte vorbehalten
More information at: http://www.inlab.de/rbridge/index.html
```

```
usage: rbridge [-l <lp>] [-r <rp>] <interface> <peerhost>
rbridge -i
```

```
#
```

Setting up / starting rbridge on one side of the tunnel requires the local Ethernet interface as the first argument and the peer hostname (or IP address) as the second argument. RBridge immediately puts itself into background and starts operating the tunnel at one side:

```
# rbridge eth0 rbridge2.inlab.net
RBridge: starting background operation ...
#
```

RBridge has to be started on both sides of the tunnel for normal operation.

The UDP tunnels uses port 439 as source and destination port per default. The local port may be specified by using the "-l" option, the remote port by using the "-r" option.

UDP packets from other unexpected source addresses than the configured peer are silently discarded. This is the only security mechanism currently available.

"rbridge -i" starts an interactive command shell:

```
# rbridge -i
```

```
Featured Software:
```

```
+-----+
| BalanceNG - The Software Load-Balancer for Linux and Solaris |
| -> www.BalanceNG.net                                         |
+-----+
```

```
This is RBridge 2.1 (created 2008/12/28)
```

```
Copyright (C) 2006-2008,2009 by Inlab Software GmbH, Germany
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More information at: http://www.inlab.de/rbridge/index.html
```

```
Connected to RBridge PID 30048
Rbridge>
```

"help" displays the following help information:

```
RBridge> help
available commands:
  help          display this information
  interfaces    show interface information
  machash       show learned mac addresses
  stop          stop background process end exit
  uptime        show uptime
type EOF to exit interactive mode.
```

"interfaces" shows interface statistic information:

```
RBridge> interfaces
```

```
interface eth0, type eth
  received packets: 1069
  received bytes...: 168812
  sent packets.....: 0
  sent bytes.....: 0

interface rbridge2.inlab.net:439:439, type udp
  received packets: 0
  received bytes...: 0
```

```
sent packets.....: 176
sent bytes.....: 19127
```

"machash" shows the current learned mac addresses:

```
RBridge> machash
06:00:ac:11:02:70 local
00:e0:81:58:ef:30 local
00:00:48:b1:b5:10 local
00:40:63:c9:f0:ab local
00:19:5b:ef:12:93 local
00:0e:0c:6c:ba:4a local
00:0a:8a:f8:cb:01 local
00:18:4d:0a:c4:5c local
00:00:5e:00:01:09 remote
00:e0:81:5d:2a:64 remote
```

"uptime" shows uptime information:

```
RBridge> uptime
current uptime is 1516 seconds
```

"stop" terminates both the background process and the interactive shell immediately:

```
RBridge> stop
ok!
no peer available
#
```