NAME

btpand - Bluetooth PAN daemon

SYNOPSIS

btpand [**-i** *ifname*] [**-m** *mode*] **-a** *addr* **-d** *device* {**-s** *service* | **-S** *service* [**-p** *psm*]}
btpand [**-c** *path*] [**-i** *ifname*] [**-l** *limit*] [**-m** *mode*] [**-p** *psm*] **-d** *device* {**-s** *service* | **-S** *service*}

DESCRIPTION

The **btpand** daemon handles Bluetooth Personal Area Networking services in the system. It can operate in client mode as a Personal Area Networking User (PANU) or in server mode as Network Access Point (NAP), Group ad-hoc Network (GN) or PANU host. **btpand** connects to the system via a tap(4) virtual Ethernet device and forwards Ethernet packets to remote Bluetooth devices using the Bluetooth Network Encapsulation Protocol (BNEP).

The PANU client is the device that uses either the NAP or GN service, or can talk directly to a PANU host in a crossover cable fashion.

A GN host forwards Ethernet packets to each of the connected PAN users as needed but does not provide access to any additional networks.

The NAP service provides some of the features of an Ethernet bridge, with the NAP host forwarding Ethernet packets between each of the connected PAN users, and a different network media.

Note, the only differences between NAP and GN services as implemented by **btpand** are in the SDP service record. The bridging of packets by the NAP must be configured separately.

The options are as follows:

-a *address* In client mode, address of remote server. May be given as BDADDR or name, in which case **btpand** will attempt to resolve the address via the bt_gethostbyname(3) call.

-c *path* In server mode, specify *path* to the sdpd(8) control socket. The default path is */var/run/sdp*.

-d *device* Restrict connections to the local *device*. May be given as BDADDR or name, in which case **btpand** will attempt to resolve the address via the bt_devaddr(3) call. **btpand** will set the tap(4) interface physical address to the BDADDR of the Bluetooth radio.

-i *ifname* **btpand** uses the tap(4) driver to create a new network interface for use. Use this option to select a specific tap(4) device interface which must already be created.

-l *limit* In server mode, limit the number of simultaneous connections. The default limit is 7 for NAP and GN servers, and 1 for a PANU server.

-m *mode* Set L2CAP connection link mode. Supported modes are:

auth	require devices to be paired.
encrypt	auth, plus enable encryption.
secure	encryption, plus change of link key.

NOT YET SUPPORTED. Use global device settings to set authentication and encryption.

-p *psm* Use an alternative L2CAP Protocol/Service Multiplexer (PSM) for server mode or client mode (when not using Service Discovery). The default PSM for BNEP is 15 (0x000f).

-s *service* Name of *service* to provide or connect to, the following services are recognised:

GN	Group ad-hoc Network.
NAP	Network Access Point.
PANU	Personal Area Networking User.

-S *service* As per **-s** except that **btpand** will not use SDP services for connection setup.

When providing networking services, the Bluetooth PAN profile says that the 'Class of Device' property of the bluetooth controller SHALL include Networking capability (set bit 0x020000). See hccontrol(8) for details.

After **btpand** has set up the client or server connection and opened the tap(4) interface, it will create a pid file and detach.

FILES

/dev/tap
/etc/bluetooth/hosts
/var/run/sdp
/var/run/tapN.pid

EXIT STATUS

The **btpand** utility exits 0 on success, and >0 if an error occurs.

EXAMPLES

```
ifconfig tap1 create
```

```
btpand -a host -d mydevice -s NAP -i tap1
dhclient tap1
```

Will create a connection to the NAP on *host*, and link that to the *tap1* interface.

```
btpand -d mydevice -s GN
```

Will create a Group Network and register the GN service with the local SDP server.

SEE ALSO

bluetooth(3), bridge(4), tap(4), dhclient(8), hccontrol(8), ifconfig(8), sdpd(8)

The "Personal Area Networking Profile" and "Bluetooth Network Encapsulation Protocol" specifications are available at

http://www.bluetooth.com/

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BUGS

There is no way to supply alternative values for the SDP record.

There is no way to set net type or multicast address filters.

btpand does not do any address routing except to directly connected unicast addresses. All other packets are multicast.

As **btpand** uses the BDADDR of the Bluetooth radio as the physical address of the tap, only one instance can be run per radio.

btpand can only provide a single service.