

Issue on packets sending through ip_route_output_key() to xfrm_lookup() in native IPsec

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From: Park Lee (parklee_sel_at_yahoo.com)

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To: linux-kernel@vger.kernel.org

Hi,

In Linux native IPsec, there is a function `xfrm_lookup(struct dst_entry **dst_p, struct flowi *fl, struct sock *sk, int flags)` (in `/usr/src/linux-2.6.5-1.358/net/xfrm/xfrm_policy.c`).

Whenever a packet is sending, kernel will call `xfrm_lookup()` to finds/creates a bundle for it.

`xfrm_lookup()` can be called by many functions. one of these functions is `ip_route_output_key()`.

we can see its definition as follows:

```
int ip_route_output_key(struct rtable **rp, struct
flowi *flp)
{
    int err;
    if ((err = __ip_route_output_key(rp, flp)) !=
0)
        return err;
    return flp->proto ? xfrm_lookup((struct
dst_entry**)rp, flp, NULL, 0) : 0;
}
```

As `ip_route_output_key()` calls `xfrm_lookup()` with the argument `sk` set to `NULL`, Does this means that the packets sending through `ip_route_output_key()` to `xfrm_lookup()` have no corresponding local socket with them (because their `sk` is `NULL`)? Are these packets all created by special kernel socket (i.e. `icmp_socket` and `tcp_socket`)?

Thank you very much.

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Best Regards,

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Park Lee

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