

DCCP and Mobility?

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DCCP and Mobility -- Why?

- Transport layer mobility has some advantages over IP mobility
 - Home agent is not available everywhere
 - IPv4-IPv6 hand-offs would not be possible with MIPv4 or MIPv6
 - When server is fixed, it is enough if end hosts support mobility
 - Shim6 could be the closest alternative
- Mobility can be supported on multiple layers at the same time
 - Cellular networks do mobility below IP
 - If everything else fails, even application must be “mobile”
 - i.e., try reconnecting socket
- Use case: Mobile terminal with several access interfaces
 - WLAN, GPRS/WCDMA, docked to Ethernet
 - Many access interfaces can be available at the same time
 - Other interfaces can be kept active in the background while using fastest interface as the primary path

Single-homed or Multi-homed?

- Re-using SCTP's Add-IP model would have its benefits
 - Utilize lessons learned in SCTP
 - Implementations might share parts of framework and control logic
- Multi-homing seems good match for multi-access hosts
 - Some access technologies are more transient than others
 - Setup procedures are time consuming on some access technologies
 - ⇒ Useful to keep persistent link as back-up for faster transient link
 - Robustness in addition to mobility
- How much more complex is “Add-IP” than “Move”?
 - In both models address updates should be authenticated
 - Both need some external logic to decide on address changes
 - “Add-IP” would not require *Mobility Identifier*
 - Multi-homed would need path-specific state data
 - Multi-homed would need more protocol overhead than single-homed
- Make single-homed solution that can be extended to be multi-homed?

Should we do DCCP Mobility?

- Here Mobility means either single-homed or multi-homed
- Benefits
 - Enables mobility on per connection level
 - Makes mobility possible without network support in many cases
 - Could be a small additional incentive to switch over from UDP to DCCP
- Disadvantages
 - Might contribute significantly to protocol complexity
 - Many mobility messages if several connections are being moved
- Proposal: DCCP Mobility as experimental option
 - Implementers could decide whether to use it