

Firewall and Service Tickets (FaST)

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IETF105

Problem

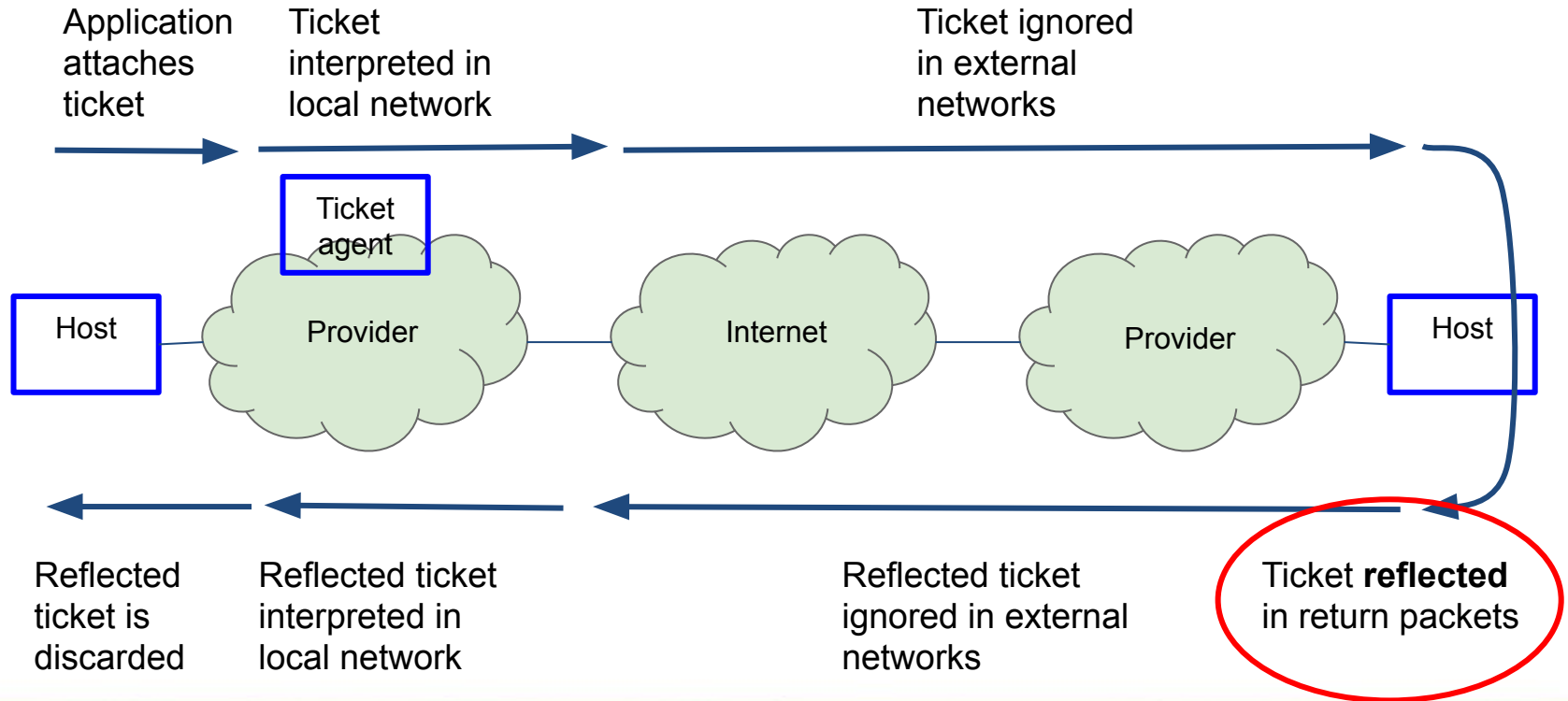
There is currently no useful, extensible, and secure mechanism that allows applications or hosts to signal the network to apply specific service to packets

Solution: FAST

- Ticket agent issues tickets
- Tickets attached to packets
- Allow admission through firewall
- Grant network services to packet
- Tickets are stateless, bidirectional, secure, non-transferable and revocable



Tickets in the datapath



EH option format

Option type	Data length	Type	Reserved
Ticket			

- Option type: 0x4F* for unmodifiable, 0x6F* for modifiable option
- Data length: Normal option length
- Type: 0 for don't reflect, 1 for reflect, 2 for reflected ticket
- Ticket: ticket data

* Proposed values

Participants

- Local network
 - Ticket manager
 - Ticket aware FW and ingress service mappers
- Applications
 - Request tickets
 - Attach tickets to packets
- Peer servers on the Internet
 - Ticket reflection with interpretation

Prototype Implementation

- FAST+ILA
- Mobility without needed mapping database

11:43:26.728 IP6 3333::1 > 2017:0:0:9::1365: **HBH** 34512 > 7777: Flags [.), ack 25, win 507, options [nop,nop,TS val 3808759702 ecr 1149647939], length 0

0x0000: 6009 59a4 0040 003e 3333 0000 0000 0000

0x0010: 0000 0000 0000 0001 2017 0000 0000 0009

0x0020: 0000 0000 0000 1365 **0603 3e18 4641 5354**

0x0030: **1000 0000 0000 002c 0000 007f 2017 0000**

0x0040: **0000 0001 0102 0000** 86d0 1e61 40c2 4b76

0x0050: a7ba 9c55 8010 01fb 66df 0000 0101 080a

0x0060: e305 0f96 4486 3c43

Thank you!