Discussion of 1af exchanges

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Classes of participants

- End-device   ED
- Network-attachment-point   NAP
- Network-infrastructure-device   NID

- Note: an NAP is also an NID to other NIDs

Scenarios

1) ED to NAP

2) ED1 to ED2

3) NID1 to NID2

Roles

- Initiator or Requestor
- Responder

Situations

1) Scenario 1 where ED starts

2) Scenario 1 where NAP starts and reverses role

3) Scenario 2 where Either ED1 or ED2 can start

4) Scenario 2 where Starting ED wishes to be responder

5) Scenario 2 where Responding ED wishes to be initiator

6) Scenario 2 with race condition one ED will become responder (if no 'natural' responder, lowest MAC takes role)

Situations 3 – 6 with NIDs

Comments on EAP Methods

- All but one Situation presented work with any EAP method
- This one is where either peer can start the EAP method with no impact on outcome
  - This includes Situations 3 and 6
  - E.G. a Diffie-Hellman based method

Exchanges

- 'Classic' – Situations 1, 3
- 'Role Reversal v 1 – Initiator wishes to be Responder' – Situation 2, 4
- 'Role Reversal v 2 – Responder wishes to be Initiator' – Situation 5
- 'Race condition' – Situation 6
  - Both parties start at the same time

'Classic' – Situations 1, 3

Init

Start-Accept-Control

Start-Accept-Control

EAP res Ident

Resp

Start-to-Control

EAP req Ident

EAP Success|EAP Failure

'Role Reversal v 1 – Initiator wishes to be Responder' – Situation 2, 4

Init

Start-to-Control

EAP req Ident

EAP Success|EAP Failure

Resp

Start-Accept-Control

EAP req Ident

'Role Reversal v 2 – Responder wishes to be Initiator' – Situation 5

Init

Start-Accept-Control

EAP req Ident (Avoid attack by
waiting for 2nd Start-Accept-Control and
no Start-to-Control)

EAP Success|EAP Failure

Resp

Start-Accept-Control

EAP res Ident

'Race condition' – Situation 6

Init

Start-Accept-Control

Start-Accept-Control

EAP res Ident

Resp

Start-Accept-Control

Start-to-Control

EAP req Ident (Avoid attack by
waiting for 2nd Start and Start-to-Control)

EAP Success|EAP Failure