EAP Authentication Extensions for the Dynamic Host Configuration Protocol for Broadband
draft-pruss-dhcp-auth-dsl-06

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Quick reminder of “DHCP Proxy” to AAA*

Host configuration provided by centralized AAA systems
RADIUS subscriber attributes are mapped to DHCP Options
Driven by the need to protect massive investments in custom AAA systems and back-end infrastructure

* This function is available from a number of NAS vendors today

Relying on option 82 marking may not be sufficient in some cases:
- Migration existing Username/Password systems
- End user controlled retail ISP selection (@domain)
- Subscriber nomadicity
- Line information at the Access Node may not always be reliable
Message Flows

• DHCP v4 message flow with BNG acting as server
• DHCP v4 message flow with BNG acting as relay
BNG Acting as DHCPv4 Server

- DHCP Discover (w/ DHCP-auth-proto EAP)
- DHCP Vendor Message (w/ EAP Request Option)
- DHCP Vendor Message (w/ EAP response option)
- DHCP Vendor message (w/ EAP Request option)
- DHCP Vendor message (w/ EAP Response option)
- RADIUS Access Request (EAP)
- RADIUS Access Accept (EAP)
- DHCP Vendor message (w/ EAP SUCCESS) option
- DHCP Offer
- DHCP Request
- DHCP Ack
- Repeats until SUCCESS or failure
BNG acting as DHCPv4 Relay

1. DHCP Discover (w/ DHCP-auth-proto EAP)
2. DHCP Vendor Message (w/ EAP Request Option)
3. DHCP Vendor Message (w/ EAP response option)
4. DHCP Vendor message (w/ EAP Request option)
5. DHCP Vendor message (w/ EAP Response option)
6. DHCP Vendor message (w/ EAP SUCCESS option)
7. DHCP Offer
8. DHCP Request
9. DHCP Ack
10. DHCP Discover (w/o DHCP auth proto)
11. RADIUS Access Request (EAP)
12. RADIUS Access Accept (EAP)
13. RADIUS Access Request (EAP)
14. RADIUS Access Accept (EAP)
15. RADIUS Access Request (EAP)
16. DHCP Discover (w/o DHCP auth proto)
Implementations

- Server and relay - IOS
- Client – Linux - Linksys
Q&A