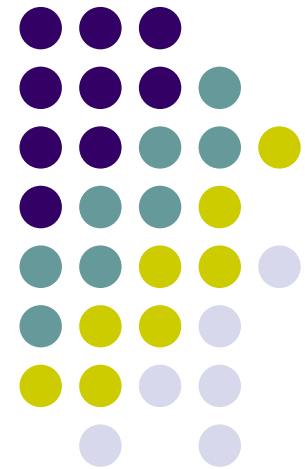


# DHCPv4 Static Routing Configuration (RFC3442 bis)

draft-hui-mif-dhcpv4-routing-03

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MIF WG @ IETF78  
July 29, 2010  
Maastricht, NL





# The limitations of RFC3442

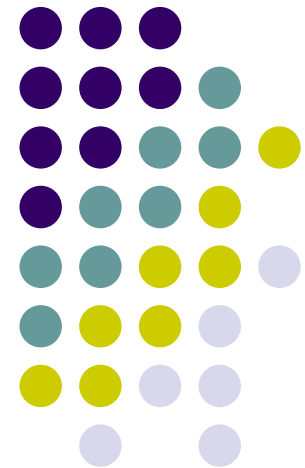
- The Classless Static Routes option in RFC3442 does provide a subnet mask for each static route entry
- In multiple domains scenario, it is desired to convey more information to the host
  - Next hop
  - Metric?
  - TOS?
- Recharter to include this work item?

# Backup slides



# Extension of DHCPv4 for policy routing of multiple interfaces terminal

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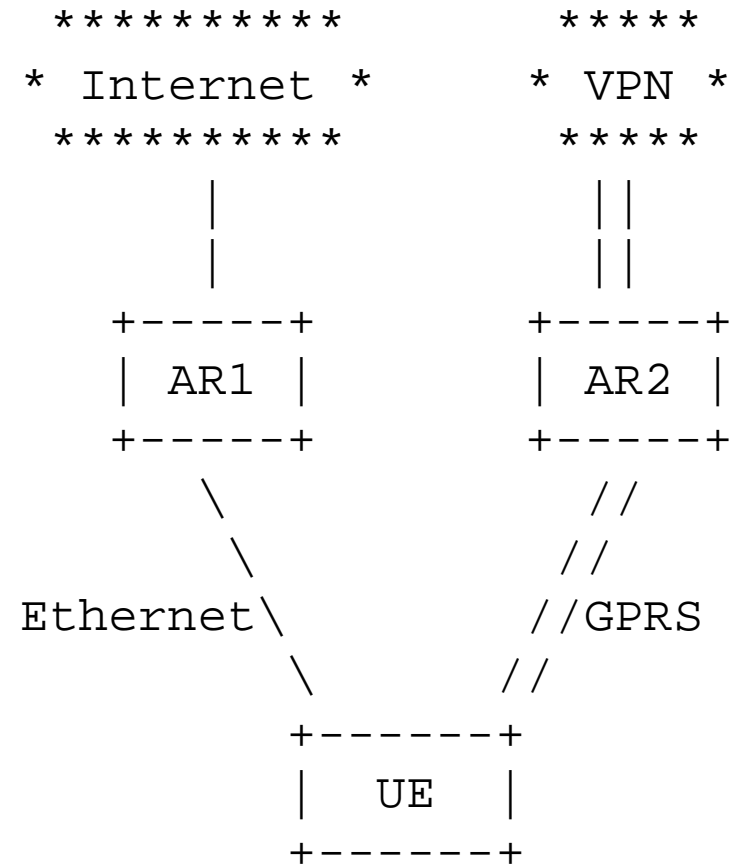


# Introduction



- Scenario
  - Since there are various access networks and UE is equipped with several interfaces, the host may connect to more than one physical network through different network interfaces simultaneously.
- Problem
  - The problem is current TCP/IP model only allows one default network connection at once, no route item will lead traffic to appropriate next-hop router
- This document extends DHCPv4 option to carry policy in order to form static rout item in host.

# Scenario



# DHCPv4 extension



Code	Len	Destination 1				Mask 1	
x	n	d1	d2	d3	d4	m1	
-----							
TOS1		Router1			Metric1		
t1	r1	r2	r3	r4	e1	d1	
-----							
Destination 2		Mask2		TOS2	Router2		
d2	d3	d4	m1	t1	r1	r2	
-----							
Metric2							
-----							
r3	r4	e1	...				
-----							

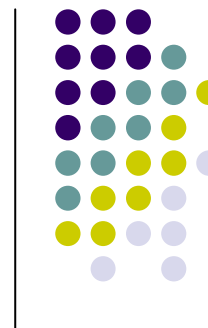
1. When host requires IP configuration as soon as it first attaches the network, DHCP server will send the routing policy together with the IP configuration to the host.
2. Then the routing policy carried on the DHCP message is obtained by the host, and applied as the static routing entries in the host routing table.

# DHCPv4 option



- Code is a number represents the specific DHCP option, which needs to be assigned by IANA.
- Len represents the length of the option form the byte after the Len field.
- Destination is the Destination IP address of the datagram, occupying 4 byte. Mask field represents the subnet mask of the destination.
- TOS follows the definition in RFC1349, and it represents the requirement of specific IP flow, such as bandwidth and delay.
- Router is the IP address of the network gateway. Either the router interface address or the corresponding host interface address is suitable.
- Metric is the measurement of the routing performance, it represent different types of value to measure the route, such as hops.





**Thanks**