

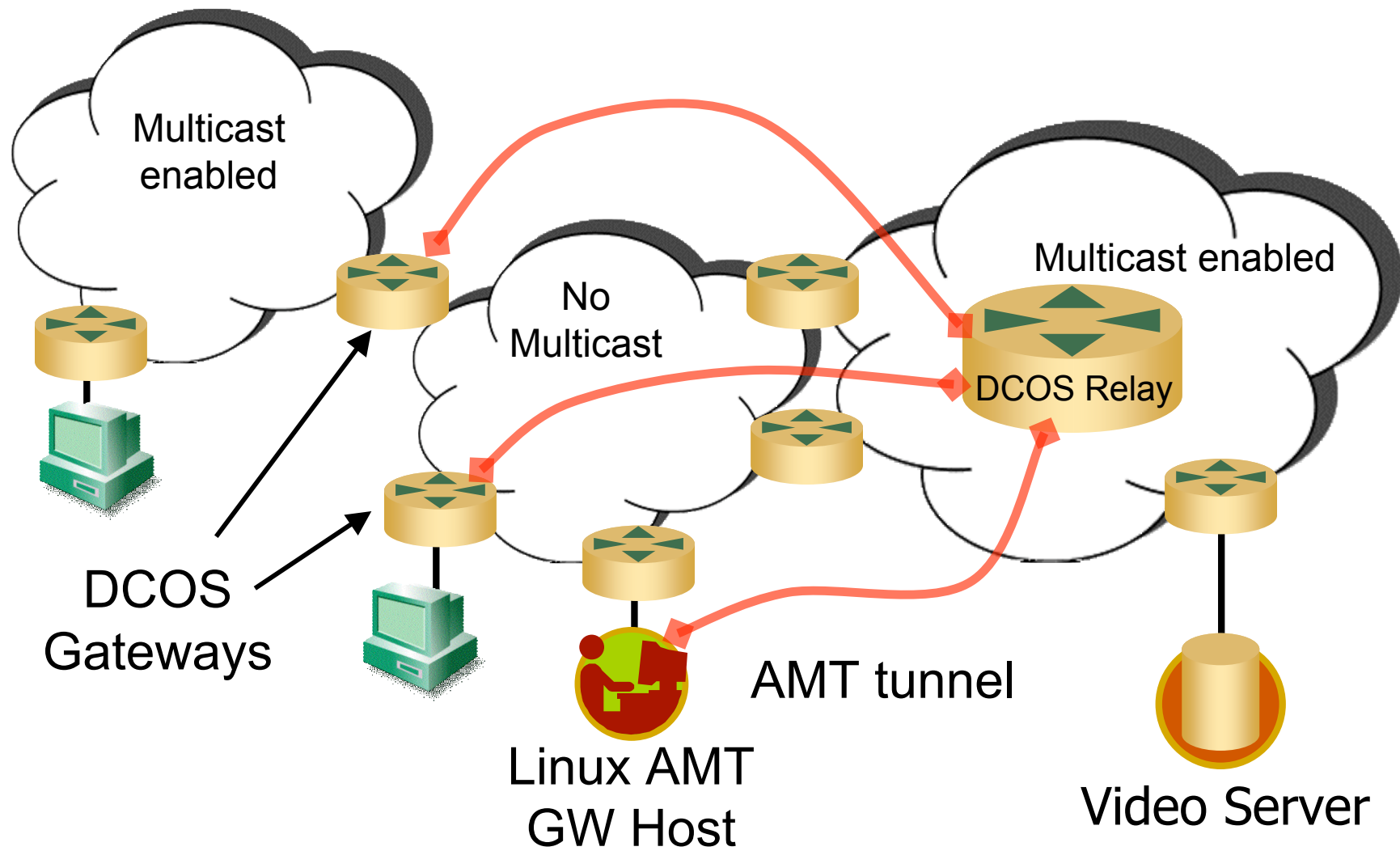
Automatic Multicast Tunneling

DCOS/Linux Interoperability Testing

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Test Topology

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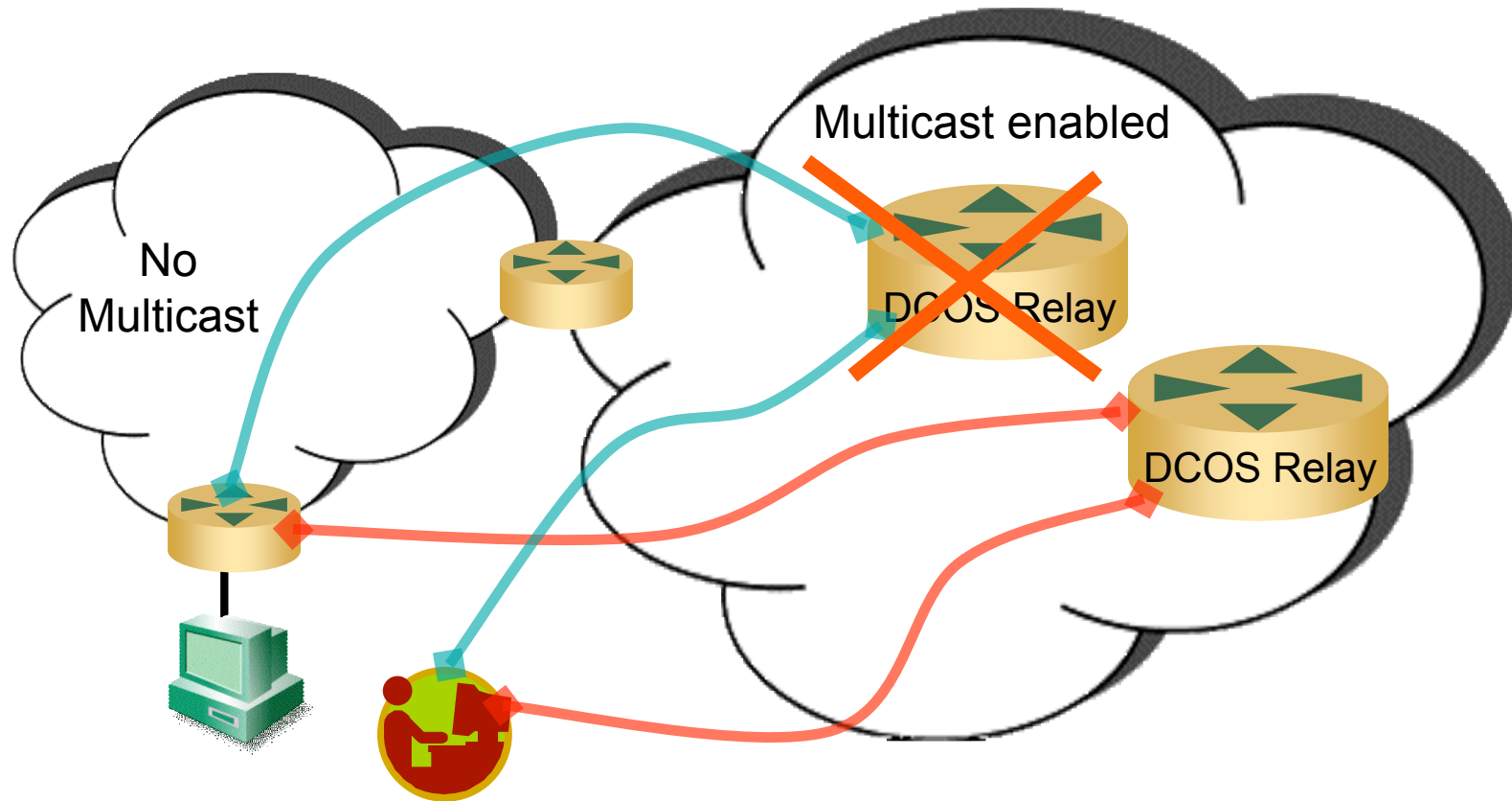


AMT Gateway Types

- DCOS gateway opens AMT tunnel on Mroute state creation
 - on receipt of IGMPv3 Report
 - on receipt of PIM (S,G) join
- UT Linux host AMT (amtgwd/gproxy)
 - UofT implementation

Multiple Relays

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Relay failed, Gateways switched

Changes Implemented

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- AMT now uses IGMP QQIC
- AMT can include both INCLUDE and EXCLUDE reports in the same AMT message

Open Questions

- Serialization of AMT requests and queries
- Should an AMT gateway RPF only to the AMT relay?
- Which IP address is used in the encapsulated IGMP report?
- What address is used for the Linux tunnel interface?
- Should a proxied report also be sent out the interface the application has joined?
- AMT reserved address space

Overlapping Request Problem

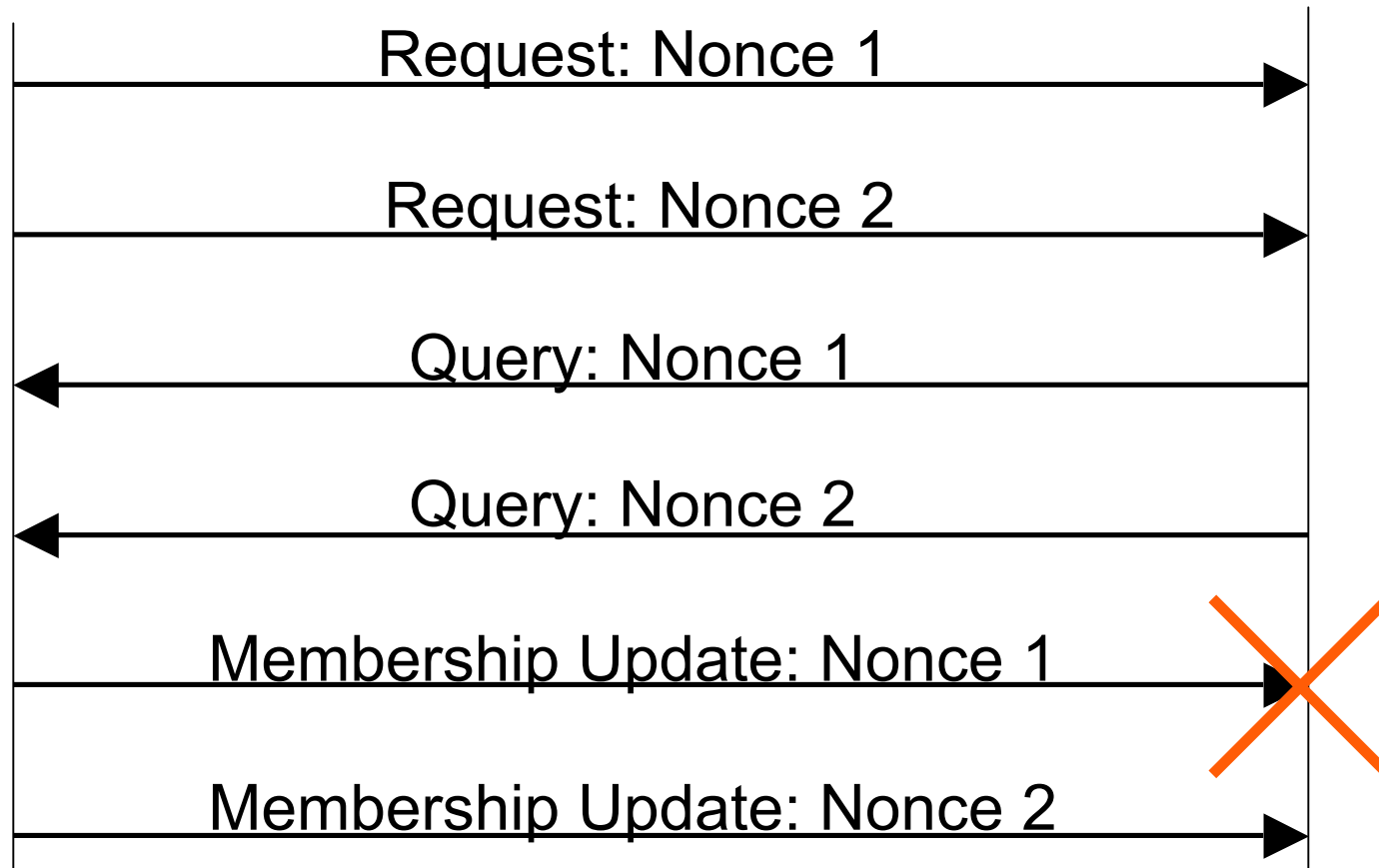
- IGMPv3 says send <robust> unsolicited reports separated (0, robust-interval) apart
- Application may join the group, then join the (S,G)
- Short intervals results in back-to-back requests at the Relay
- Back-to-back requests skew the Request NONCE

Overlapping Request Problem

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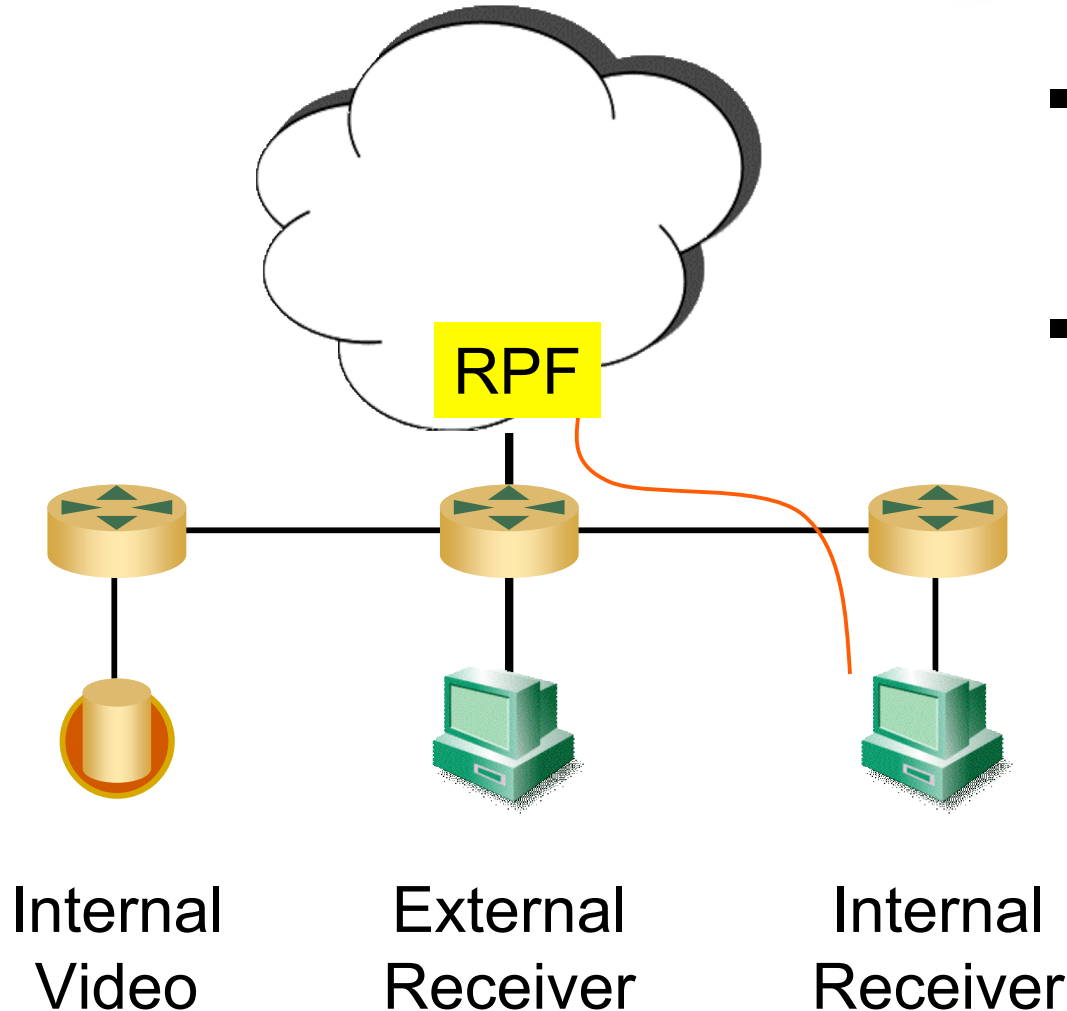
Gateway

Relay



Combined Gateway & Router

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- AMT Gateway can only RPF to the AMT Relay or internally -- Not both.
- Internal Receiver cannot receive internal video

Which IP Address?

- Linux amtgwd allocates TUN0 address from 154.17.0.0 by default.
- AMT Query encapsulates an IGMP Query and uses the same source address for both headers
- Linux amtgwd encapsulates the IGMP report, but may use the source address of -any-interface.
- When do you ignore the source address?

Proxy Reports

- Linux correctly proxies IGMP reports over the AMT tunnel, but also sends reports out the interface the application joins.
- Is this OK?
- Potentially receive duplicate data

AMT Relay address

- Is the AMT Relay address always 154.17.0.1?
- What is the rest of this address space used for?

Linux Multi-home host

- Assuming that a route to default cannot be used:
 - Install route to AMT relay address:
157.14.0.1
 - Install route to AMT tunnel endpoint address