

TURN-Lite: A Lightweight TURN Architecture and Specification ([draft-wang-tram-turnlite-03](#))

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IETF 93@Prague, July 21 2015

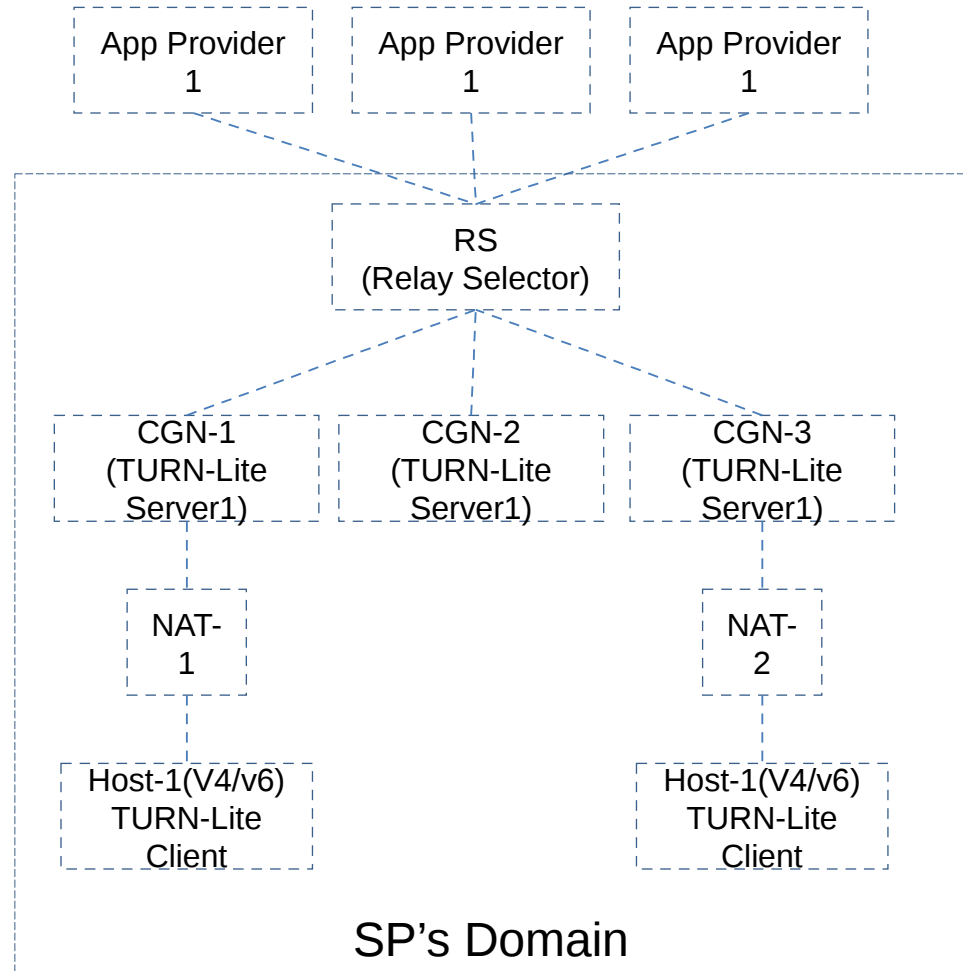
Why we proposed a new architecture

- We've been exploring:
 - Service Providers might provide TURN relay service to their customers (mostly ICPs, Application Providers)
 - Utilize the already deployed CGN/CDN devices as TURN servers
 - **Minimum changes to the exist CGN/CDN devices.**
- But we found it was complex
 - Every CGN (TURN server) needs reserve and plan Address/Port, which is a big burden for SPs, especially there are many CGN devices deployed in a distributed manner
 - Signaling is complex: ICE-based interaction; different processing for UDP, TCP and v4-v6 communication
 - The CGN devices might hardly open to customers directly

TURN-Lite Architecture (Updated since last presentation)

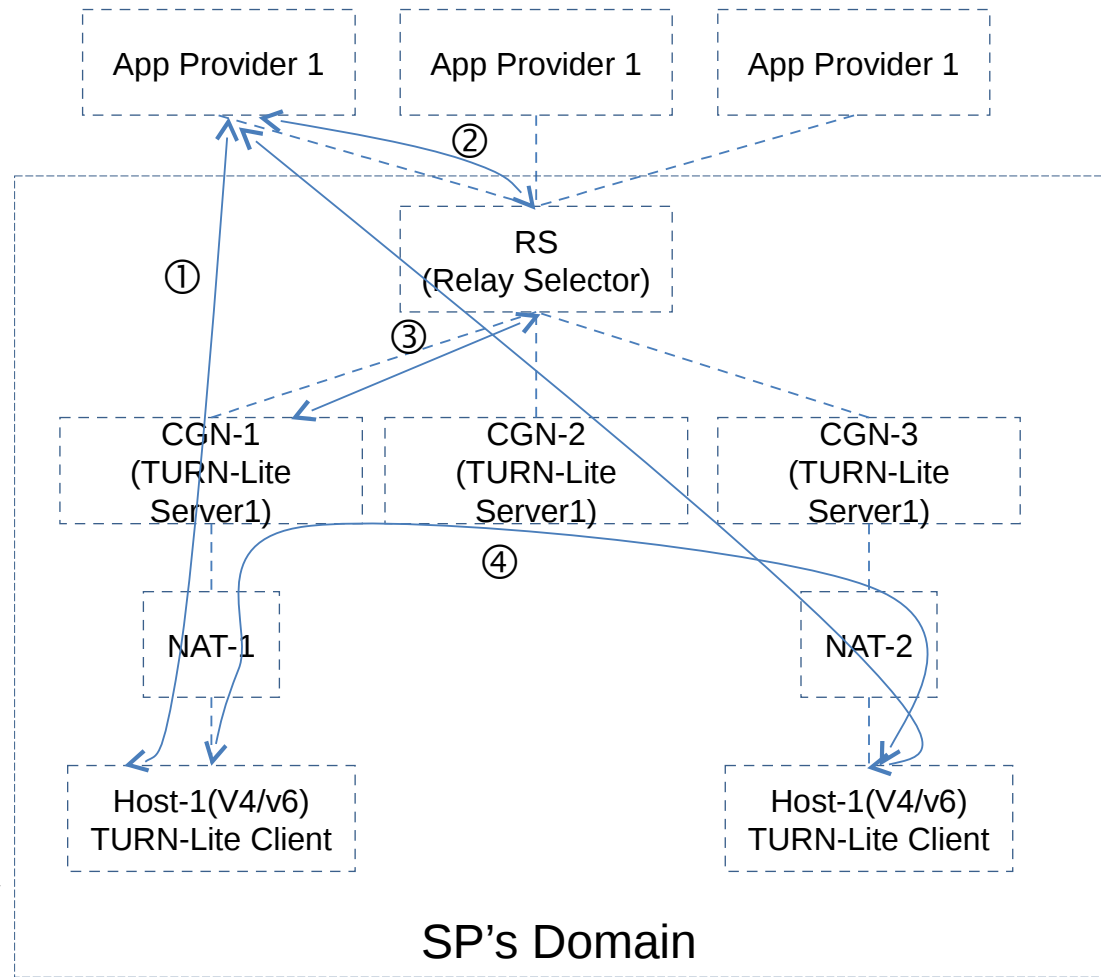
■ TURN-Lite entities

- RS—Relay Selection
- Data relay (CGN)
- Client---Connection Initial



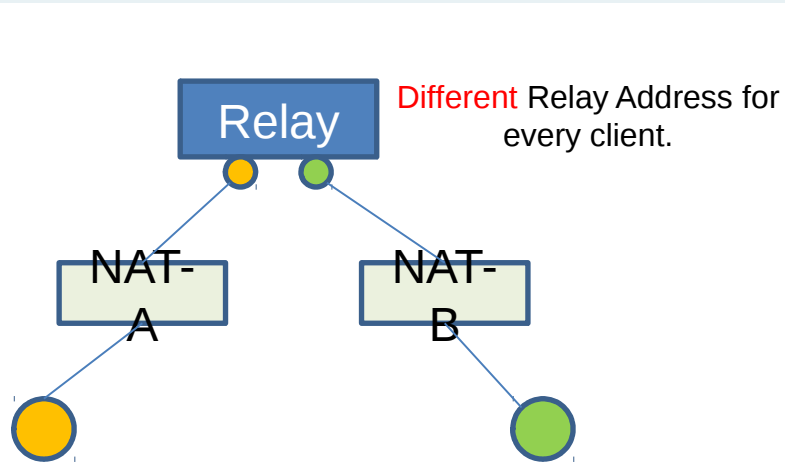
Communication Procedures

1. Clients register to their App server, and gets the RS address, get their reflective addresses to RS(REFLX_RS) and report them to App server
2. App server sends REFLX_RS pair to RS, let RS select one optimal relay device to relay data.
3. Clients get their reflective addresses to Relay (REFLX_Relay) and report them to RS, RS form **COUPLE command (a new extension to STUN)** and send it to the selected CGN devices.
4. Clients send TCP/UDP packet via the selected CGN device, CGN device relay the data based on the table built by COUPLE command.

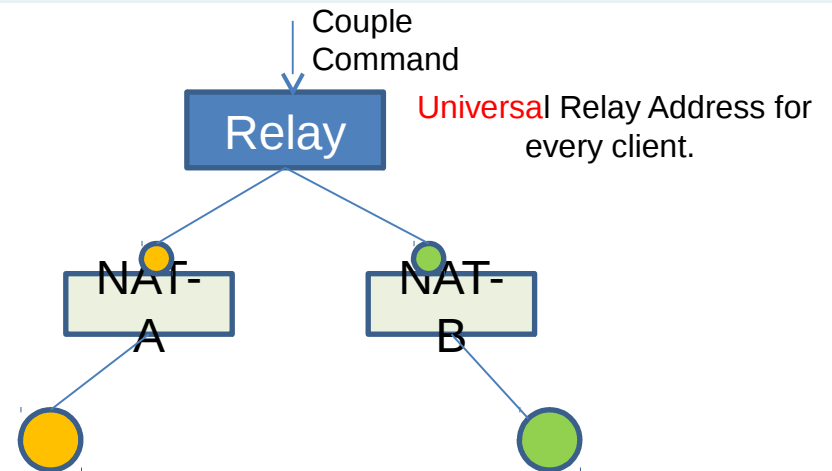


Key differences between TURN-Lite and TURN

	TURN	TURN-Lite
Relay Address Allocation	Different for every client	Same for every client under one Relay.
TCP/UDP Data Relay	Different Signaling Process and Data Transfer Procedure	Same Signaling Process and Data Transfer Procedure
Relay Selection Decision	Done by every client	Done by Relay Selector which has whole system view
Necessary Signaling Number	8 (Binding/Allocate/Send/Data/Channel Bind/Connect/ConnectBind/ConnectAttempt)	2 (Binding/Couple)



TURN



TURN-Lite

Benefits of TURN-Lite

■ Reduce the complexity

- Relay(CGN/CDN) needs not allocate different relay address for clients.
- signaling procedures are significantly simplified
- a single RS interface for opening.

■ So that

- SPs can easily integrate the relay functions into distributed devices such as CGNs.
- SPs can easily provides data relay service to IC P/App Provider via RS Interface

Relationship with TURN

- TURN-Lite is NOT intended to be a full alternative of TURN
- We consider it as a complementary solution for SP-Public-Relay-Service

Next Steps

- Feedbacks are welcomed
 - Especially from ICP perspective
 - Also from ISP/CDN provider perspective
- A useful work? Potentially added to the charter?

Comments?
Thank you!

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Backup Slide: Communication Procedure

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Under different SP Domain

1. When communication clients located in different SP's domain, the App provider can select one of RS to finish the "relay selection" function.
2. Even better is to let the RS in different SP' domain select their prefer relay device, and build tunnel between two relay devices
3. Detail procedure will be provided in further version of this draft.

