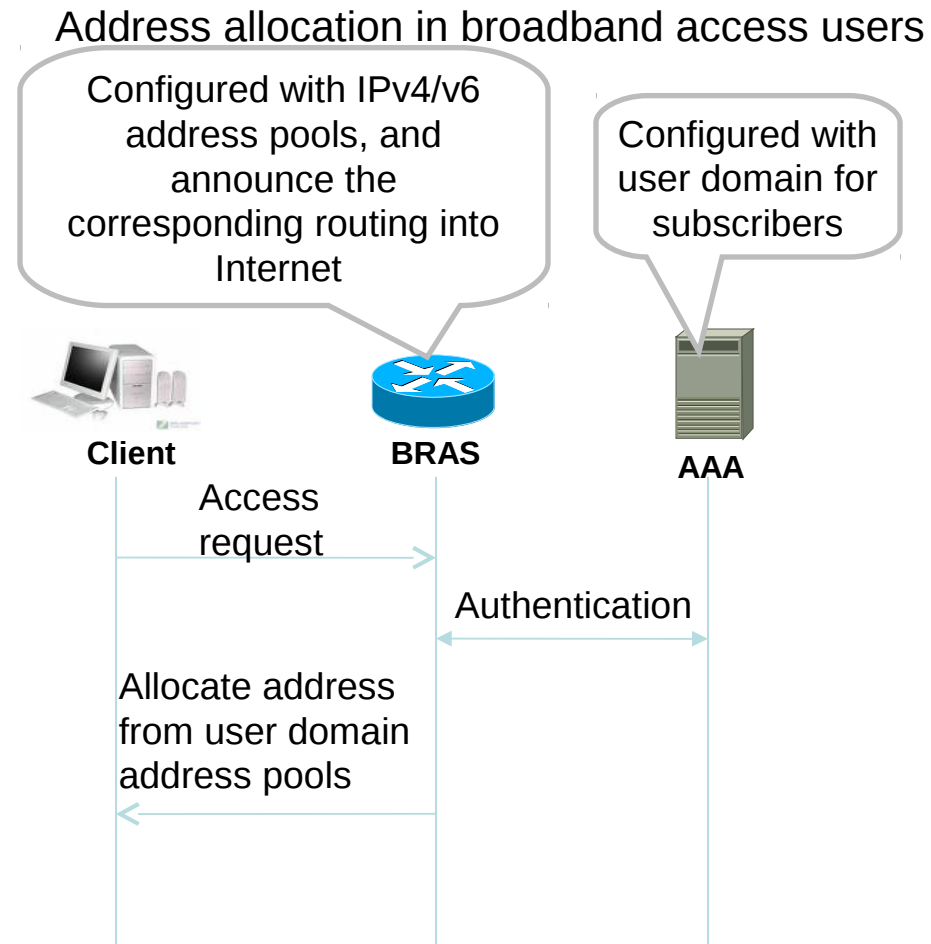


Interface to Address Pool Management

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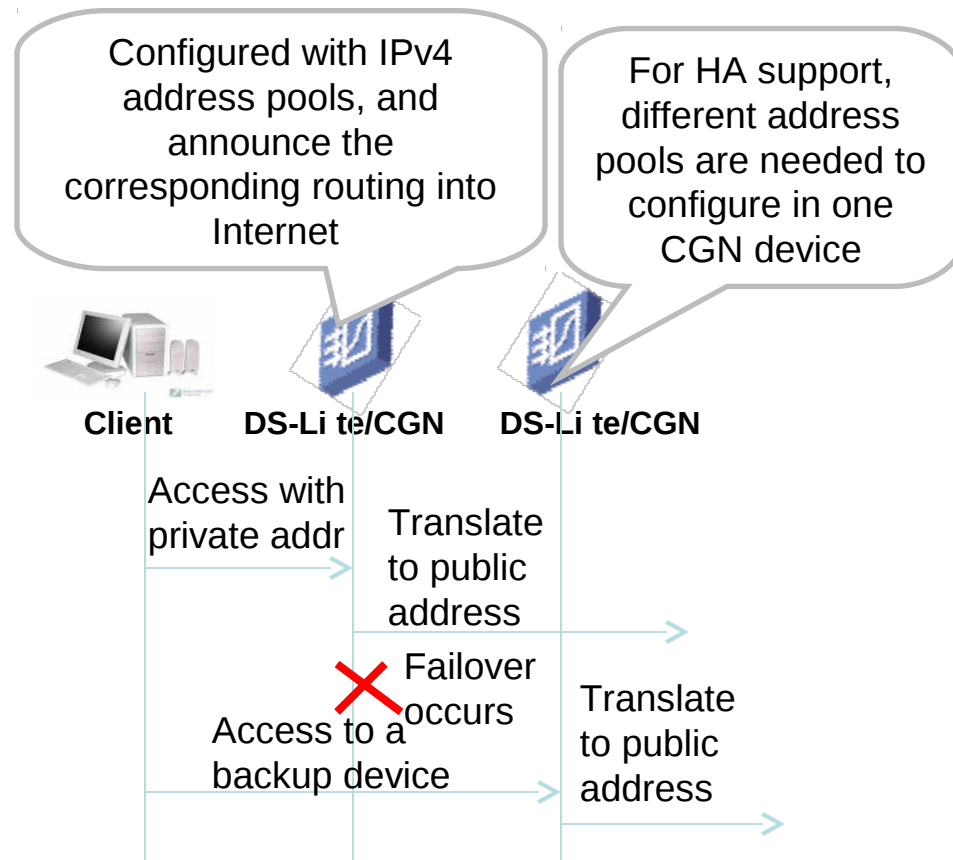
Current problem of address pool management in China Telecom (1)

- Our problem:
 - With address shortage problem, the remaining IPv4 address pools are usually quite scattered.
 - It is complicated to manually configure all the address pools statically in BNGs (large MAN may have more than 100 BNGs).
 - Sometimes, the address pools are needed to be transited from one BNG to another.



Current problem of address pool management in China Telecom (2)

- Our problem
 - For IPv6 transition technologies, e.g. DS-Lite, lw4over6, etc., they need to be configured with address pools as translated addresses.
 - Different address pools are needed to be configured on each transition instance for HA support.
 - The occupation of the address pools may vary during different transition periods.

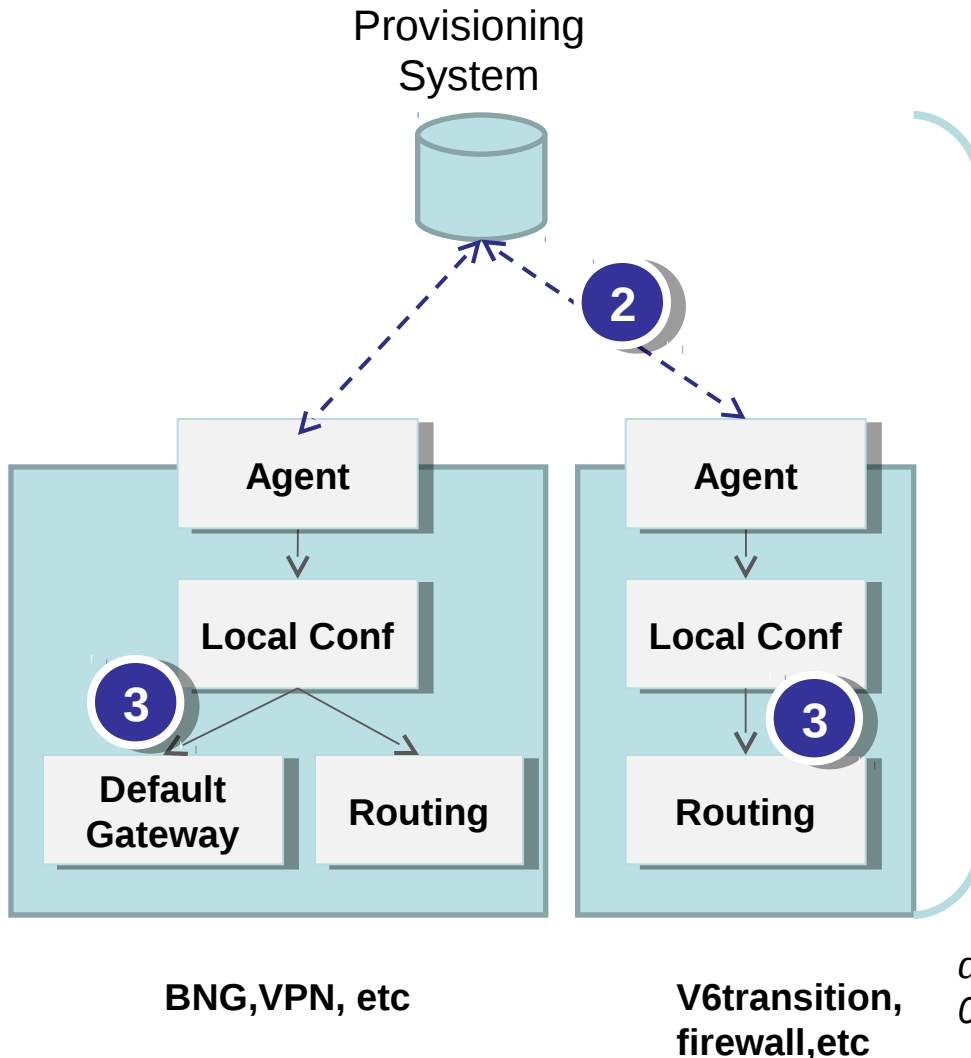


It is too complicated to configure all these address pools manually

Other use cases to configure address pools

- The firewall need to configure the address pool for ACL/NAT process.
- The VPN should also need to configure the address pools for end-users.

I2APM Architecture



- We need to specify:
 - Overall architecture for I2APM
 - 1 – Interface to address pool management
 - Mechanism to manage to address pools automatically

draft-sun-i2apm-address-pool-management-arch-00

Interface Example: A YANG data model

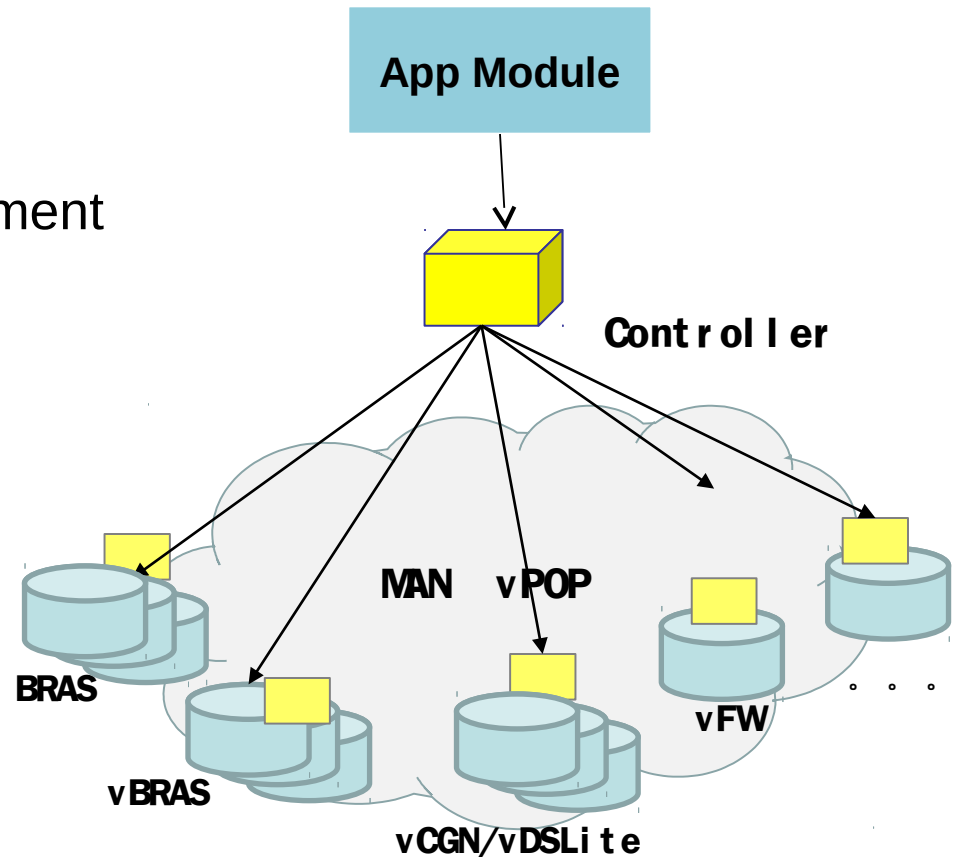
```
module: ietf-address-pool
+--rw address-pool* [address-pool-name] string
  +--rw address-pool-entries
  +--rw ipv4-address-range* [ip]
    | +--rw ip-lower-address inet:ipv4-address-no-zone
    | +--rw ip-upper-address inet:ipv4-address-no-zone
    | +--rw usergateway      inet:ipv4-address-no-zone
    | +--rw gwnetmask        yang:dotted-quad
  +--rw ipv6-address-range* [ip]
    | +--rw ipv6-lower-address inet:ipv6-address-no-zone
    | +--rw ipv6-upper-address inet:ipv6-address-no-zone
    | +--rw usergateway        inet:ipv6-address-no-zone
    | +--rw gwnetmask          yang:dotted-quad
  +--rw type
    | +--rw usergateway
    |   +--rw ip
    |   +--rw netmask
  +--rw lifetime
  +--rw instance (VPN instance, v6transition)
  +--rw warning-threshold
  +--rw warning-threshold
  +--rw address-sharing-ratio
  +--rw action
```

```
module: ietf-address-pool-status
+--rw address-pool* [address-pool-name] string
  +--rw status
  +--rw ipv4-address-range* [ip]
    | +--rw ip-lower-address      inet:ipv4-address-no-zone
    | +--rw ip-upper-address      inet:ipv4-address-no-zone
    | +--rw peak-address-usage-ratio
    | +--rw average-address-usage-ratio
  +--rw ipv6-address-range* [ip]
    | +--rw ipv6-lower-address    inet:ipv6-address-no-zone
    | +--rw ipv6-upper-address    inet:ipv6-address-no-zone
    | +--rw peak-address-usage-ratio
    | +--rw average-address-usage-ratio
  +--rw port-range-status
    | +--rw peak-port-usage-ratio
    | +--rw average-port-usage-ratio
  +--rw instance (VPN instance, v6transition)
  +--rw action
```

Other requirement on Access Services Management

- We are now trying to offer access services more flexible.

- On-demand bandwidth adjustment
- Session-limitation change
- Traffic scheduling



- We hope to define YANG modules for access services as well.

Next step

- Should we focus on address pool management only ? Or Access service management as well ?
- Where to discuss it ? Create a mailing-list ?