Hybrid Computing and Network Awareness and Routing architecture for CATS

draft-yi-cats-hybrid-solution-02

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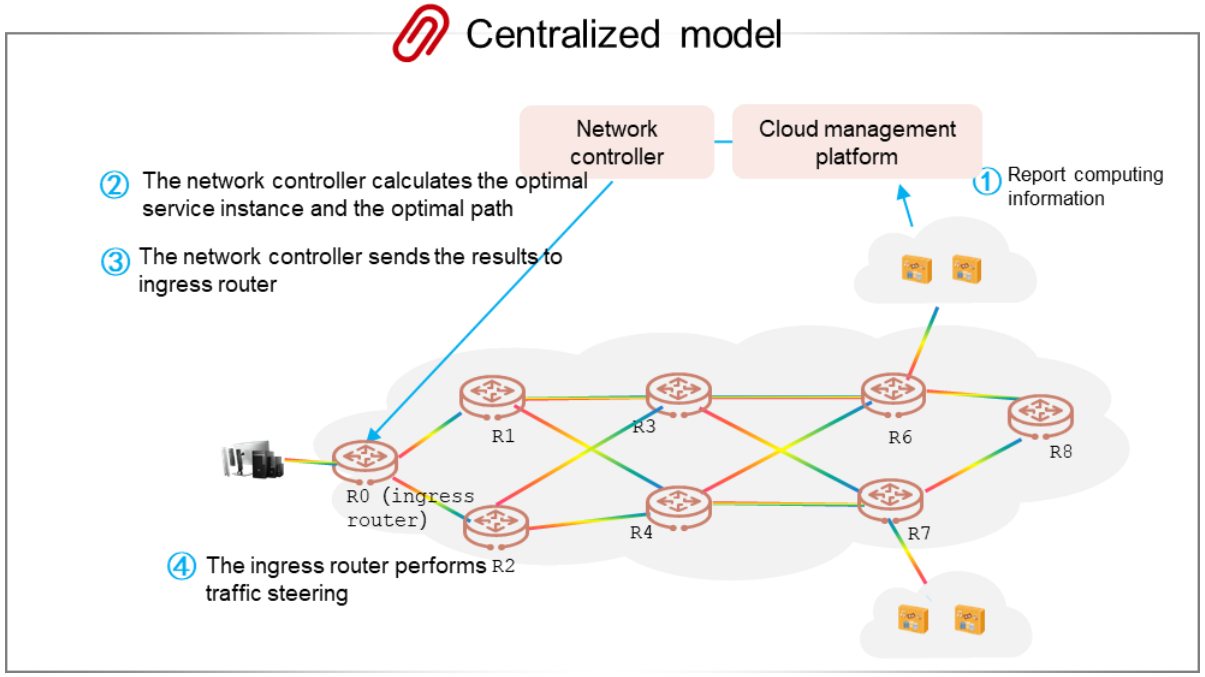
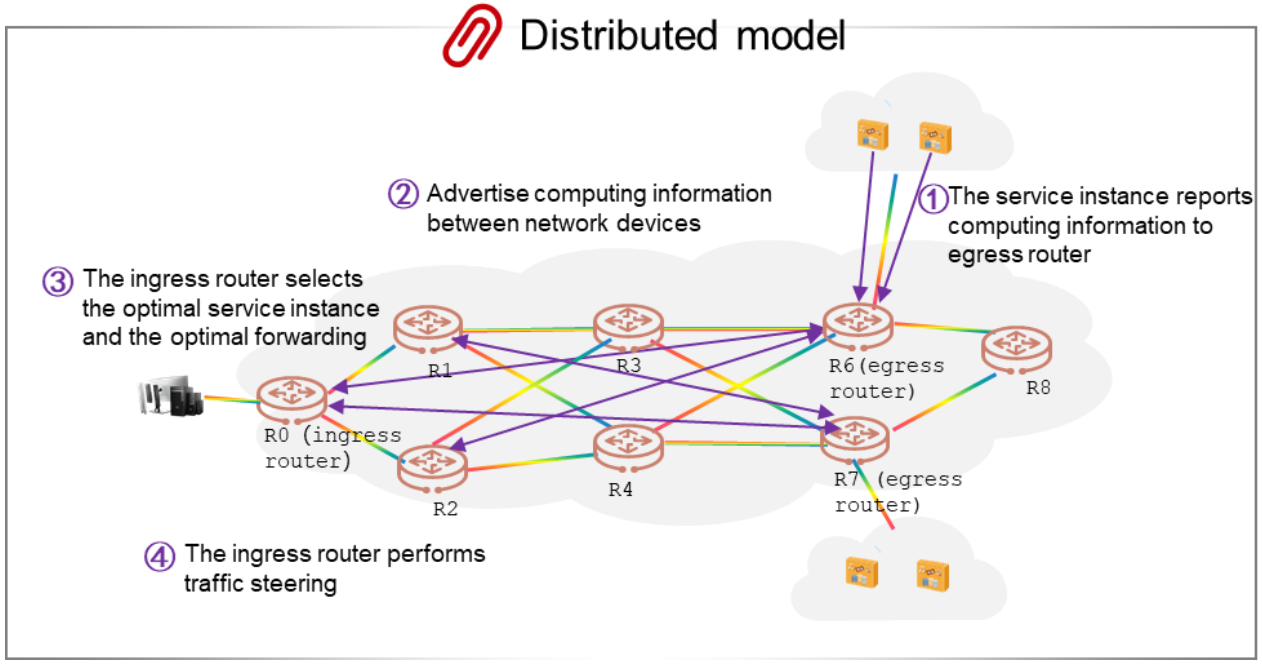
What CATS care about

- Computing information awareness
- Select the optimal service instance
- Calculate the optimal forwarding path

Centralized model or distributed model





Problem statements

- A number of devices will be upgraded and the cost will be high, if the computing information needs to be notified between service instance and egress router.
- As business scenarios become more and more diverse, CATS needs to provide differentiated network and computing capabilities for different requirements of different businesses.

Consideration

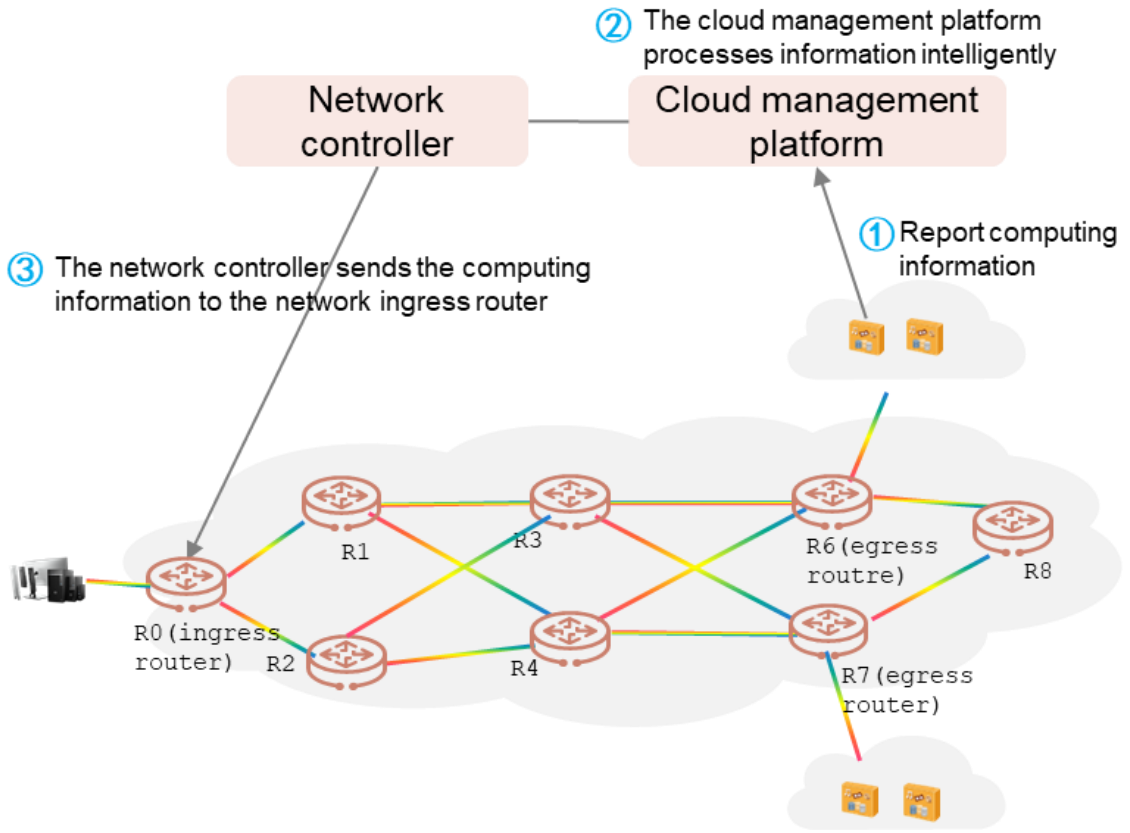
- Consideration 1: Use a easier and less costly way to aware the computing information
- Consideration 2: Provides enhanced capabilities for demanding scenarios
- Consideration 3: Provide diverse capabilities for rich business scenarios

Consideration 1: Use a easier and less costly way to aware the computing information

- Collect the computing information through the cloud management platform
- Then process and send it to the ingress router on demand.

Advantage :

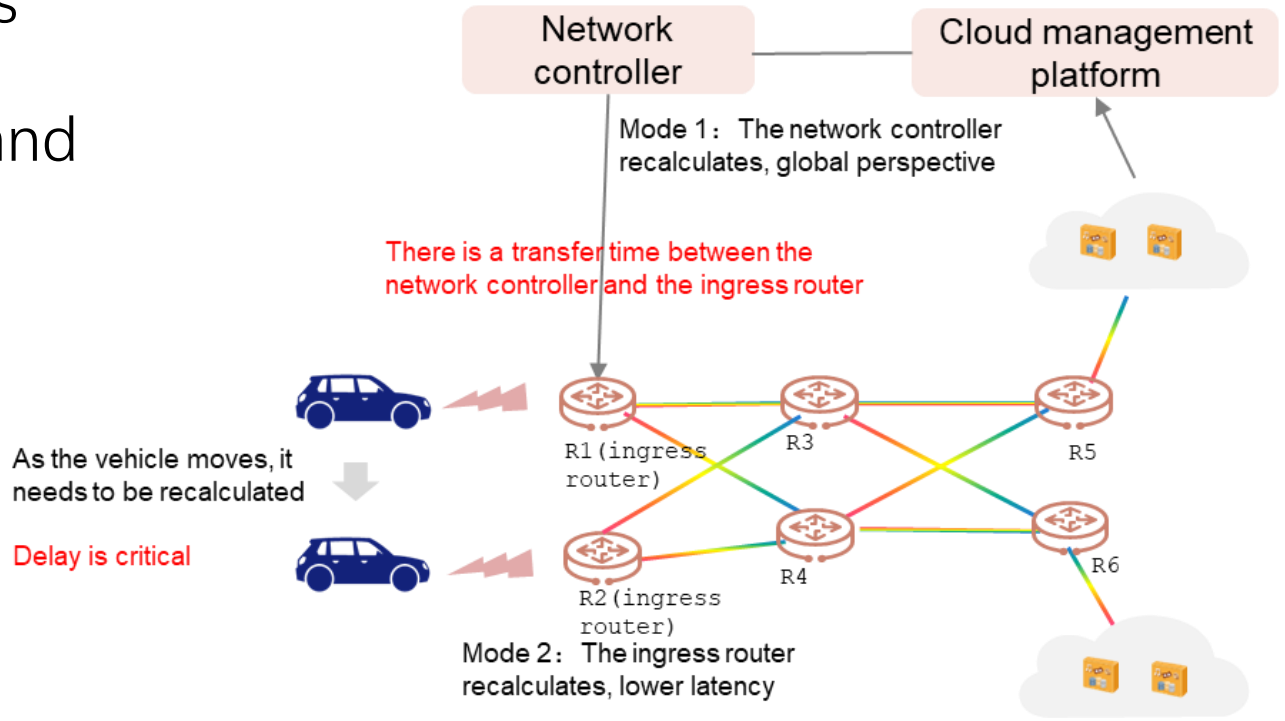
- No need to report computing information between service instance and egress router



Consideration 2: Provides enhanced capabilities for demanding scenarios

- The ingress router of CATS makes routing decision, rather than the network controller recalculating and sending to the ingress router.

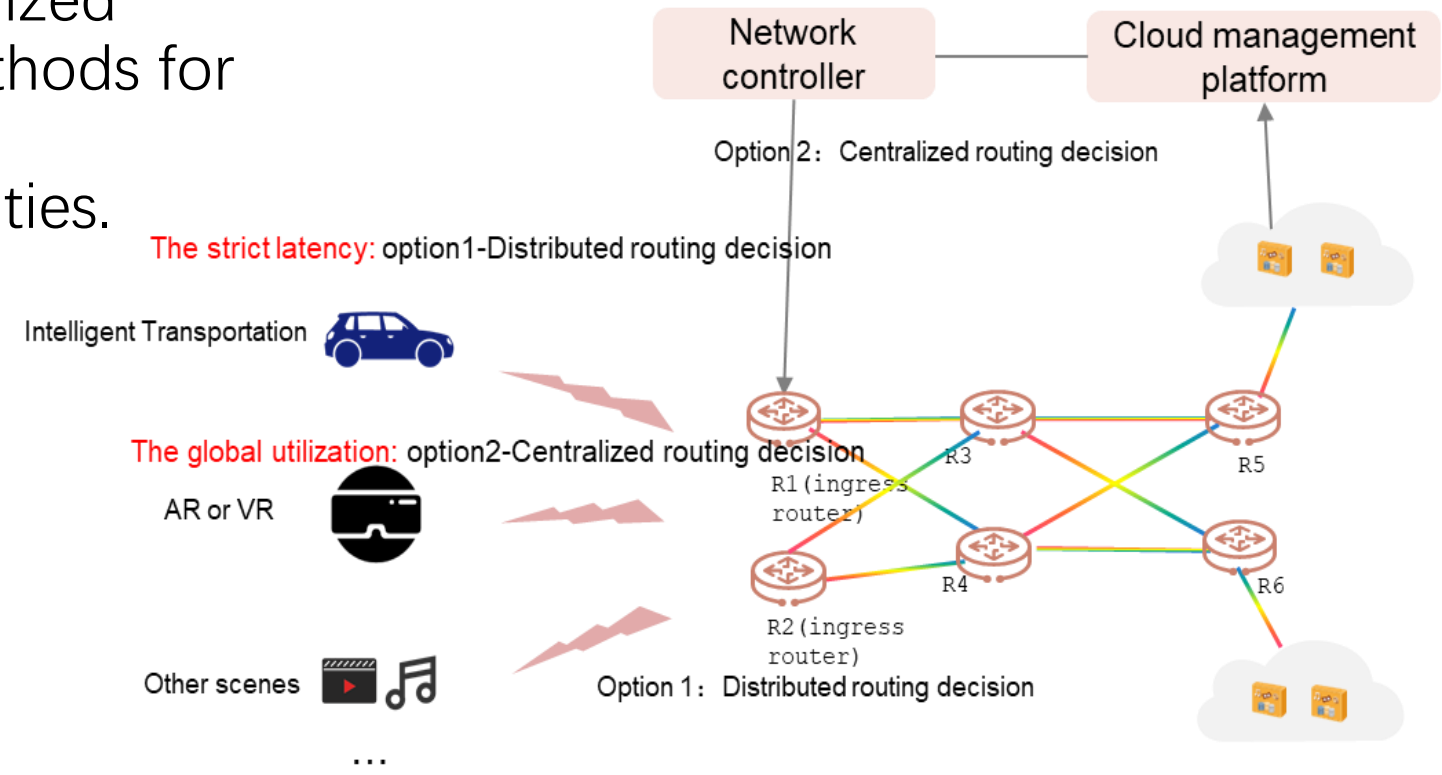
- Advantage:
- There is no transfer time between the network controller and the ingress router



Consideration 3: Provide diverse capabilities for rich business scenarios

- Provide distributed or centralized routing decision-making methods for different services to achieve differentiated service capabilities.

- Advantage:
- Different business types, different business requirements, you can choose different modes



Service Flow

1. The service instance reports the computing information to the cloud management platform.

2. The cloud management platform processes computing information and send it to the network controller.

3. The network controller collect the network information and process it along with computing information.

 1) Distributed routing decision mode: The network controller sends computing information to the network ingress router. The ingress router selects the optimal service instance and calculates the optimal forwarding path.

 2) Centralized routing decision mode: The network controller selects the optimal service instance, calculates the optimal forwarding path and sends the result to the ingress router.

4. The ingress router performs traffic steering.

Next Step

- Refine the draft upon comments and suggestions
- More comments, suggestions and contributions would be welcome.