A Framework for Computing-Aware Traffic Steering (CATS)
draft-ldbc-cats-framework-03
to
draft-ldbc-cats-framework-06

Cheng Li /Zongpeng Du/Mohamed Boucadair/Luis M. Contreras/John E Drake
IETF#119, Brisbane, March 2024
Agenda

• Changes since Last IETF Meeting
• Pending Issues
Update summary from revision 03 to 04

• Main update from 03-04: Addressed 13 issues, most of them are editorial
• The updates mainly include:
  • Updated the definition of terms including
    • Service Request
    • CATS-Forwarder
    • CATS Path Selector
  • Deleted the description of "The CS-ID does not need to be globally unique, though."
  • Renamed 'Service request' by 'Service Access’
  • Added example of Service-specific Packets and related references

Service request: The request for a specific service. Such a request is steered to a service contact instance.

Service request: A request to access or invoke a specific service. Such a request is steered to a service contact instance via CATS-Forwarders.

CATS-Forwarder: A network device that makes forwarding decisions

A service request is placed using service-specific protocols.

Service requests are not explicitly sent by clients to CATS-Forwarders.

CATS-Forwarder: A network entity that makes forwarding decisions

Current Issues: https://github.com/boucadair/CATS-framework/pulls
Update summary from revision 04 to 05

• Main changes:
  • Fixed editorial comments from Hang Shi, Christian Jacquenet, Cheng Li, Zongpeng, Luis and others.
  • Clarified that the CATS metrics can be aggregated in deployment
  • Clarified the C-SID with metrics MAY be distributed via different paths to an ingress CATS-Forwarder.
  • Clarified the C-TC and C-PS entries are populated before the service access packets arrival

Current Issues: https://github.com/boucadair/CATS-framework/pulls
Update summary from revision 05 to 06

• This update mainly integrated some content from draft-yao-cats-awareness-architecture:
  • Added a new Section 3.3 Framework Overview to provide a high-level overview of the CATS framework
  • Added text in C-PS definition to explain this logical component can be implemented on a Controller
  • Added three deployment models: Distributed, Centralized, and Hybrid in Deployment section
  • Added related text and figures to describe these three models in Metric distribution section
  • Added examples of service access packet in Service access Processing section
  • And many other edits
Sample CATS Deployments

- **Distributed model**: Computing metrics are distributed among network devices directly using distributed protocols without interactions with a centralized control plane. Service scheduling function is performed by the CATS forwarders. Therefore, the C-PS is integrated into an Ingress CATS-Forwarder.

- **Centralized model**: Computing metrics are collected by a centralized control plane, and then the centralized control plane performs service scheduling function, and computes the forwarding path for service requests and syncs up with an Ingress CATS-Forwarder. C-PS is implemented in the centralized control plane.

- **Hybrid model**: Is a combination of distribution and centralized models.
Current state of the draft

• IPR call passed with no IPR
  • Thanks for Adrian to issuing the IPR call.
  • Thanks for contributors to feedback in short time.

• WG adoption passed with a lot of supports
  • The draft-ietf-cats-framework-00 has been upload this week.
  • We also received some comments in the WG adoption call from Joel, Dirk, Hang, Huijuan, etc.
Pending Issues

Issues · boucadair/CATS-framework (github.com)

- Editorial review of Figures 3 to 5
  - #67 opened 2 days ago by luismcontreras

- Clarify objective function
  - #65 opened last week by boucadair

- Encrypted service identifiers
  - #63 opened last month by boucadair

- Jim’s comment of Service ID mapping
  - #53 opened on Dec 7, 2023 by muziking

- Discuss more threats in the Security Section
  - #8 opened on Mar 3, 2023 by boucadair
Next Steps

• Address the pending issues
• Seek for more reviewers