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STANDARDIZATION SECTOR
OF ITU

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SERIES Y: GLOBAL INFORMATION
INFRASTRUCTURE, INTERNET PROTOCOL ASPECTS
AND NEXT-GENERATION NETWORKS

Next Generation Networks – Quality of Service and
performance

Centralized RACF architecture for MPLS core networks

Recommendation ITU-T Y.2175

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GENERATION NETWORKS

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Recommendation ITU-T Y.2175

Centralized RACF architecture for MPLS core networks

Summary

The architectural structure of a centralized resource admission and control functions (RACF) is considered in Recommendation ITU-T Y.2175. RACF is comprised of a transport resource control functional entity (TRC-FE) and a policy decision functional entity (PD-FE). This Recommendation defines an architecture, which considers a centralized RACF resulting from a centralized TRC-FE, specifies supporting requirements, and describes the resource reservation process for this specific architecture.

Source

Recommendation ITU-T Y.2175 was approved on 13 November 2008 by ITU-T Study Group 13 (2009-2012) under Recommendation ITU-T A.8 procedure.

FOREWORD

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In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

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Centralized RACF architecture for MPLS core networks

1 Scope

[ITU-T Y.2111] defines the general requirements for resource and admission control functions for next generation networks (NGNs). These requirements are independent of the underlying transport technology.

Multiprotocol label switching (MPLS) is considered to be a key transport technology in core networks. In particular, networks which use MPLS with traffic engineering (MPLS-TE) capabilities provide significant assurance that the delivery of the desired quality of service (QoS) for a variety of services and applications will occur.

Resource and admission control functions (RACF) are used to control the flow of traffic from access networks into the MPLS core [ITU-T Y.2111]. A centralized architectural structure of one RACF functional entity, the transport resource control functional entity (TRC-FE), is considered in this Recommendation. In this architectural arrangement, MPLS transport resource is monitored and controlled by the centralized control entity. This Recommendation defines the centralized architecture for the TRC-FE and specifies supporting requirements.

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

- [ITU-T Y.2012] Recommendation ITU-T Y.2012 (2006), *Functional requirements and architecture of the NGN release 1*.
- [ITU-T Y.2111] Recommendation ITU-T Y.2111 (2006), *Resource and admission control functions in next generation networks*.
- [IETF RFC 3814] IETF RFC 3814 (2004), *Multiprotocol Label Switching (MPLS) Forwarding Equivalence Class To Next Hop Label Forwarding Entry (FEC-To-NHLFE) Management Information Base (MIB)*.

3 Definitions

The definitions for the terms used in this Recommendation can be found in [ITU-T Y.2111].

4 Abbreviations and acronyms

This Recommendation uses the following abbreviations.

CAC	Connection Admission Control
E-LSP	EXP inferred LSP
FEC	Forwarding Equivalence Class
FTN	FEC-To-NHLFE
LER	Label Edge Router

L-LSP	Label inferred LSP
LSP	Label Switching Path
LSR	Label Switching Router
MPLS	MultiProtocol Label Switching
NHLFE	Next Hop Label Forwarding Entry
NMS	Network Management System
OAM	Operation, Administration and Maintenance
OSS	Operations and Support System
PD-FE	Policy Decision Functional Entity
PE-FE	Policy Enforcement Functional Entity
QoS	Quality of Service
RACF	Resource and Admission Control Functions
RIR	Resource Initiation Request
TE	Traffic Engineering
TRC-FE	Transport Resource Control Functional Entity
TRE-FE	Transport Resource Enforcement Functional Entity

5 Centralized RACF architecture

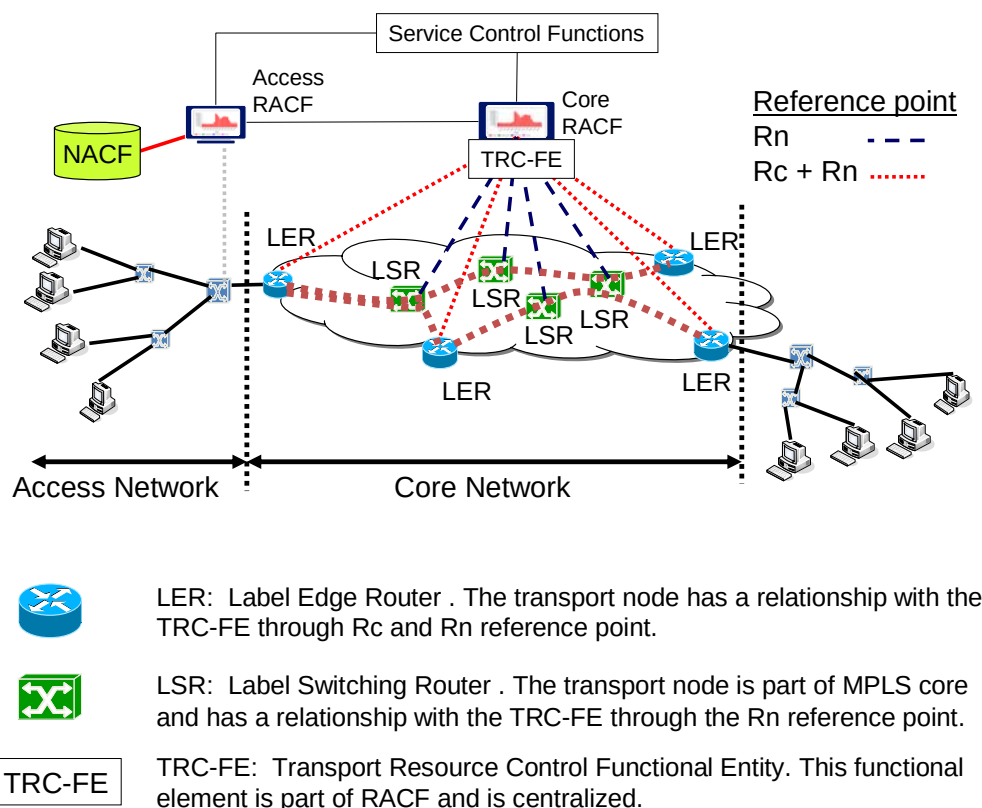


Figure 1 – Centralized RACF architecture