



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

G.8080/Y.1304

Amendment 2
(09/2010)

SERIES G: TRANSMISSION SYSTEMS AND MEDIA,
DIGITAL SYSTEMS AND NETWORKS

Packet over Transport aspects – Ethernet over Transport
aspects

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

Internet protocol aspects – Transport

Architecture for the automatically switched optical
network (ASON)

Amendment 2

CAUTION !

PREPUBLISHED RECOMMENDATION

This prepublication is an unedited version of a recently approved Recommendation. It will be replaced by the published version after editing. Therefore, there will be differences between this prepublication and the published version.

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Amendment 2 to Recommendation ITU-T G.8080/Y.1304 (2006)

Architecture for the automatically switched optical network (ASON): Amendment 2

Summary

Amendment 2 to ITU-T Recommendation G.8080/Y.1304 contains:

- Additions for multi-layer topology representation
- Addition of a directory service component
- An appendix illustrating rerouting and protection domain interaction

Amendment 2 to Recommendation ITU-T G.8080/Y.1304 (2006)

Architecture for the automatically switched optical network (ASON): Amendment 2

2 References

Remove references to ITU-T Recommendations G.707, G.709, G.783, G.798, G.803, G.872, M.3000, and M.3010.

3 Definitions

Add the following definition:

3.59 Transitional SNPP link: See [ITU-T Rec. G.8081].

6 Transport resources and their organization

For clause 6.1 of G.8080. Add after the sentence “The association of SNPPs on different subnetworks is an SNPP link”.

An SNPP link where each subnetwork is in a different layer is known as a transitional SNPP link. It may also be an SNPP link in which the subnetworks are in different sublayers of the same layer. They only occur across boundaries between layers or sublayers where [ITU-T G.800] transitional links can exist.

For clause 6.2 of G.8080. Add at the end of the clause.

Routing areas in different layers may be connected by transitional SNPP links. This enables multi-layer routing topology construction. Routing areas in different sublayers of the same layer may also be connected by transitional SNPP links.

Add new clause 6.5.3 “Multilayer Routing Topology”.

6.5.3 Multilayer Routing Topology

In addition to the single layer topology representation in clause 6.5.2, a routing topology representative of a multi-layer network may be constructed using transitional SNPP links that connect routing areas in different layers. Paths may be determined that traverse link and subnetwork connections in more than one layer and/or sublayer. Control plane components that are involved in configuring the resulting connection configure link connections, subnetwork connections, and transitional link connections.

The use of a transitional SNPP link implies that a sequence of adaptations between layers, or sequence of layer processors within a layer, is used. The transitional SNPP link enables a connected graph to be constructed that represents a multi-layer network for the purpose of routing.

Figure 14.1 illustrates the [ITU-T G.800] representation and the corresponding multilayer routing topologies.

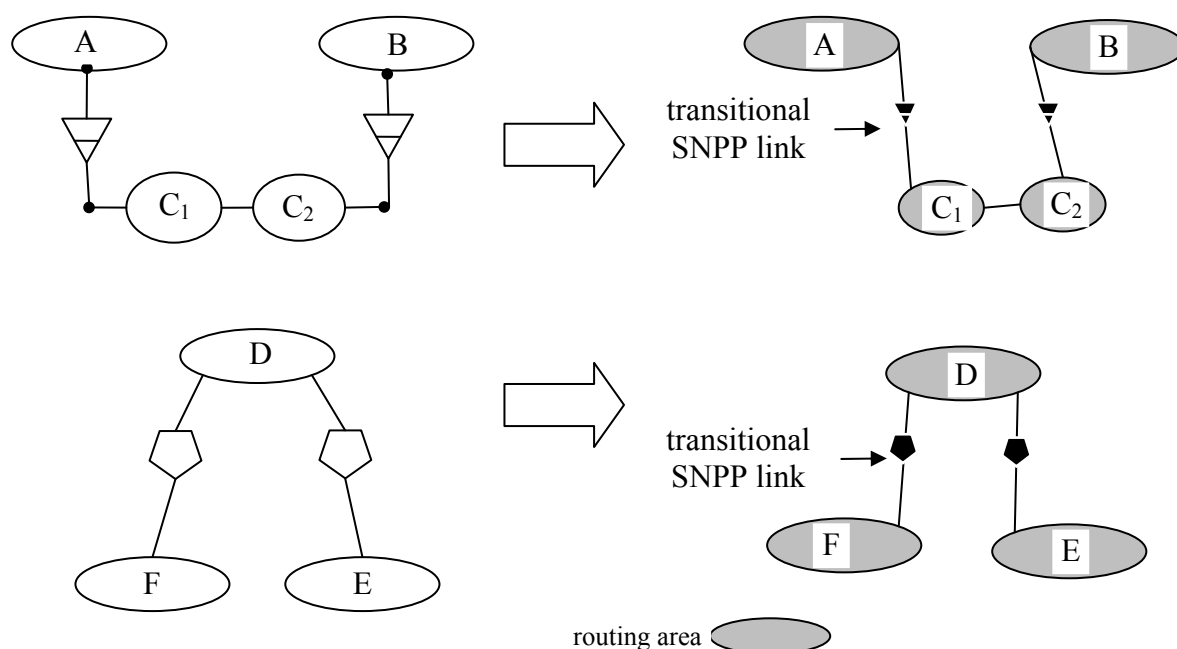


Figure 14.1. Multilayer routing topology representations

A multilayer topology corresponding to the model in Figure 14 is illustrated in Figure 14.2 on the left. It differs from the model in Figure 14 in that the topology is multilayer (i.e., contains both client and server SNPPs).

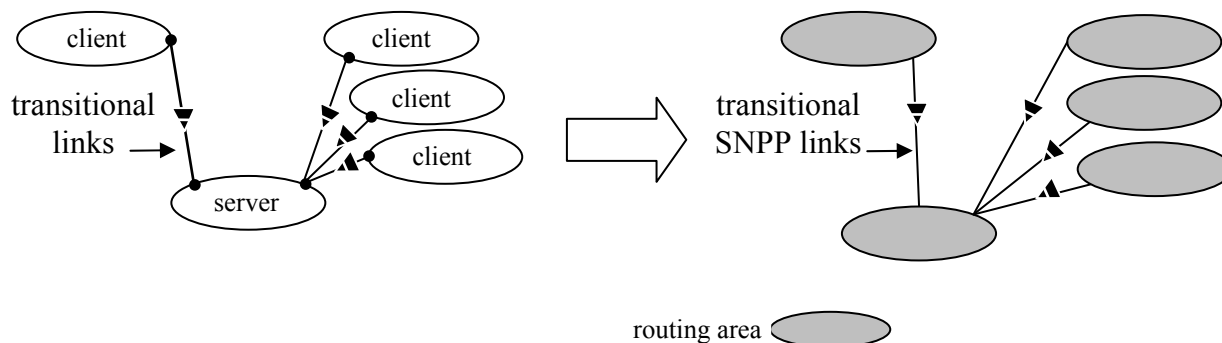


Figure 14.2 Multilayer routing topology representation of Figure 14.

A path computation begins by selecting two (sets of) points at the boundary of a routing area. The path computation may be accomplished using a set of subordinate path computations involving contained routing areas. The routing areas relevant to the path computation are selected by the path computation algorithm, and these routing areas may belong to one or more layers (i.e., they may be part of a multi-layer topology).

In a multilayer routing topology, when a transitional SNPP link is used between a routing area in a first layer to another routing area in an adjacent second layer and the first layer is traversed further in a route, it is expected that a corresponding transitional link is used to eventually return to the first layer in computed paths.

For segments of a path computed between sublayers, traversal of a single transitional SNPP link is allowed.