Implementation of Duplicate MD (Proxy-Agent) with distributed functions and high reliability

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Abstract

Implementation of MD which provides the mediation function of an interface is a key to TMN-based management of the non-Q3 interface NE. We have implemented MD which has the mediation function of the Q3 interface in a conventional agent to Proxy-Agent. We have also duplicated Proxy-Agent to improve the reliability of the network management system and have succeeded the performance improvement by distributing the functions. This paper, first of all, posits the management of agent and MIB by defining them as the managed objects, which is a part of the system management function and is at the same level management as configuration management function for network and NE. Secondly, this paper presents the classification of the Proxy-Agent functions while considering relationships between a CMIP operation from Manager and access patterns of Proxy-Agent to NE and MIB. Thirdly, this paper proposes the performance improvement of the agent in the case of mixed CMIP operations in the real operational case by breaking down the agent functions to "concentrated functions type" and "distributed functions type," which is defined in relation to the access patterns of the agent, in a duplicate Proxy-Agent system. Finally, in this paper, to keep synchronization of MIB, we propose updating the duplicate MIB by two-step CMIP operations.

Key Words

CMIP agent, Proxy-Agent, MD (Mediation Device), duplicate system, distributed functions, fault tolerance, high reliability and performance