第26部

ネットワーク管理とセキュリティ

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第1章　Introduction

The WIDE-Netman-WG has been carrying out research and development to make the Internet more manageable and secure. In the quickly evolving Internet the major shift is towards mobility on one hand and advanced applications on the other hand. The quick evolution has given rise to new requirements particularly in the area of network monitoring and management.

The WG has examined the issue of accuracy and consistency of measurements in systems that are widely deployed. An interim report has been generated.

The WG is carrying out preliminary investigations on the requirements to extend the PMIPv6-MIB to incorporate extensions to the base Proxy Mobile IPv6 (PMIPv6) protocol [74] for IPv4 support [75], Access Network Identifier (ANI) Option [76] and the IPv4 Traffic Offload Selector option [77].

The WG continued with its investigation on applying network management to the greening of the environment.

Finally, mining for information on traces of network activities, the WG focused on ARP packets, to discover patterns of activities in the network.

第2章　How accurate are your measurements?

Taking a closer and harder look at issues related to accuracy, performance and operations, the WG considered the inconsistency issues in network measurement.To examine the current status, the WG performed a survey of the existing IETF standards track MIBs. The survey revealed that more than 1200 tables are defined in the MIBs but less than 200 have provisions to indicate the last time the table was changed. This implies that it is not possible to confirm the consistency of the values of objects in most MIB tables and thus the snapshots that will be obtained from such tables are of limited utility. Please refer the document included in the USB key for more detail.

(Message to editors: Please include wide-memo-netman-measuring-bw-utilization-01.pdf into the USB key)

第3章　Network management and the greening of the environment.

Continuing the work on looking into the social and environmental aspects of the Internet and its management the WG did a comprehensive survey of information available for detecting and monitoring active devices. We focused on the start-up behavior of various operating systems and confirmed that the timing at which a device becomes active can be effectively determined using the traces logged by the device. The WG carried out a long-term study of real network environment to show and quantify the wasteful period of activity. The electrical energy wasted due to the wasteful active period was estimated. We also examined the relationship between the activity pattern of individual ICT devices and network topology and discussed how a Greener Network Architecture can be achieved.The results are summarised in a paper [78].

(Please refer wide-paper-netman-ijeic2013-00.txt)

第 4 章 Mining for information on traces of network devices and their activities.

The WG examined the information that can be mined from the network about network devices and their activities. The primary source of information are the broadcast packets in the network. Preliminary analysis has shown that the packets do carry a finger-print of the device type, operating system, and the related activity. This is an ongoing activity.

第 5 章 Plans for 2014.

The WIDE-Netman-WG will continue investigation on data collection on a large scale and from small devices. We will be focusing on

a. the discovery of device related information from the network
b. a framework to evaluate the performance of NMS systems.