Preface

In this book, the state of the art of research on the technology and structure to manage the network which a modern and large organization holds is reported. This research has been made to progress by an author for these approximately ten years, and intends for the network management scheme which is called the DACS Scheme. This network management scheme is realized on the TCP/IP network which is used in the network of almost all organizations. The TCP/IP is a standard communication protocol in the world of computer networks. By use of this protocol, all organizations can obtain a standardized network environment at relatively little cost. But, some problems exist in the operation and management of the organizations’ networks. In this book, the technology and structure of flexible and effective operational management in an organization’s network is presented. Specifically, the approach of policy-based network management is used for a new organization’s network management. As a kind of some policy-based network management schemes, the DACS Scheme is listed. It performs communication control of the network application on the client computer. Through it, the DACS Scheme can manage plural organizations’ networks as a whole as well as a single organization’s network. The study for the DACS Scheme has the purpose of the realization of the network management of the whole Internet system as well as the integrated management of plural organizations’ networks.

The author has developed his skills and experience for the information system and the operational management of the network system in some organizations. By the author’s motivation to promote efficiency in a company’s network management, this study was started and progressed. The core way of thinking of this study was created based on the experience of construction, operation, and management of the network system in the Toyota Technological Institute in Japan.

The book is organized in seven chapters. In Chapter 1, the motivation and problem statement and provides a summary of the concept of integrated Internet management is described. In Chapter 2, the existing PBNM is described. In Chapter 3, the details on relevant technologies, such as the PBNM technology, the Internet
technology, and the unification monitoring technology are described. In Chapter 4, the PBNM scheme called DACS Scheme is described. After an outline of the basic mechanism of the DACS Scheme is explained, the security and the extended functions are described.

In Chapter 5, the DACS Scheme-based web service and application are described. It is mainly described about the portal system which is realized on the network introducing the DACS Scheme. In Chapter 6, the policy-based wide area network management system is described. This is the system which has shifted the existing DACS Scheme to a cloud type. In Chapter 7, the wDACS Scheme as PBNM for plural organizations is described. This scheme is realized by extending the existing DACS Scheme. Then, the chapter illustrates how this method is applied throughout the Internet and the potential network service which is realized when the wDACS system is adopted.