INTERNATIONAL STANDARD

ISO/IEC 4396-7

First edition
2023-12

Telecommunications and information exchange between systems — Recursive inter-network architecture —

Part 7: Flow allocator

Télécommunications et échange d'information entre systèmes — Architecture récursive inter-réseaux —

Partie 7: Allocateur de débit

Reference number
ISO/IEC 4396-7:2023(E)

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Published in Switzerland

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Foreword

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This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 6 *Telecommunications and information exchange between systems*.

A list of all parts in the ISO/IEC 4396 series can be found on the ISO and IEC websites.

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Introduction

This document defines the sequencing of the interactions of the flow allocator (FA). It is not, strictly speaking, a protocol specification. The protocol used in this document is the common distributed application protocol (CDAP). This document uses the objects required to create a flow between two processes and bind their endpoints to the applications that requested the flow.

The flow allocator is responsible for creating and managing an instance of interprocess communication (IPC), i.e. a flow. The IPC-API communicates requests from the application to the distributed IPC facility (DIF). An Allocate-Request causes an instance of the flow allocator to be created. The flow allocator-instance (FAI) determines what policies will be utilized to provide the characteristics requested in the Allocate. It is important that how these characteristics are communicated by the application is decoupled from the selection of policies. This gives the DIF important flexibility in using different policies, but also allows new policies to be incorporated. The FAI creates the error and flow control protocol (EFCP) instance for the requested flow before sending the CDAP Create Flow Request to find the destination application and determine whether the requestor has access to it.

A create request is sent with the source and destination application names, quality of service information, and policy choices, as well as the necessary access control information. Using the name space management (NSM) function, the FAI searches the IPC process (IPCP) in the DIF that resides on the processing system that has access to the requested application. This exchange accomplishes three functions:

— follows the search rules using the NSM function to find the address of an IPC-Process with access to the destination application;

— determines whether the requesting application process has access to the requested application process and whether or not the destination IPC-Process can support the requested communication;

— instantiates the requested application process, if necessary, and allocate a FAI and port-id in the destination IPCP.

The create response will return an indication of success or failure. If successful, destination address and connection-id information will also be returned along with suggested policy choices. This gives the IPC-Processes sufficient information to then bind the port-ids to an EFCP-instance, i.e. a connection, so that data transfer may proceed.

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Telecommunications and information exchange between systems — Recursive inter-network architecture —

Part 7: Flow allocator

1 Scope

This document provides the flow allocator (FA) specification. It includes an overview of the flow allocator, its service definition, and its specification.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 4396-1, *Telecommunications and information exchange between systems – Recursive Inter-Network Architecture – Part 1: Reference Model*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 4396-1 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
directory forwarding table
table that maintains a set of entries that map application naming information to interprocess communication (IPC) process addresses which belong to the IPC Processes, where the requested application can be found or has information about where to search next

3.2
error and flow control protocol instance
EFCP instance
instantiation of EFCP for managing a single connection

3.3
Quality of Service-cube-id
QoS-cube-id
identifier unambiguous within this distributed IPC facility (DIF) that identifies a QoS-hypercube

Note 1 to entry: As QoS-cubes are created they are sequentially enumerated. QoS-cube-id is an element of Data Transfer PCI that may be used to classify protocol-data-units (PDUs).

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