

## Autonomous Decentralized System Middleware

### Features

#### (1) Data Communication

##### [Basic communication functions]

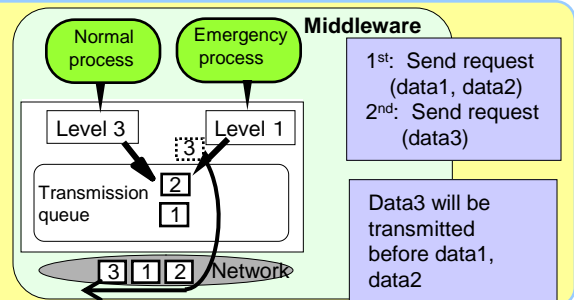
- Multicast one-way communication
- Multicast inquiry/response communication
- Peer-to-peer communication
- One-to-many inquiry/response communication

##### [Network traffic control]

##### • Data Priority Control

- Data processing is scheduled according to up to 7 priority levels.

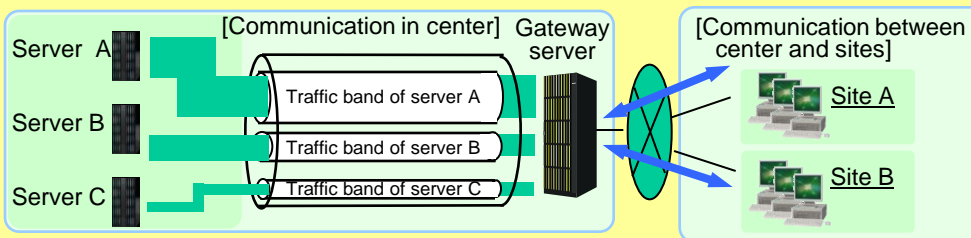
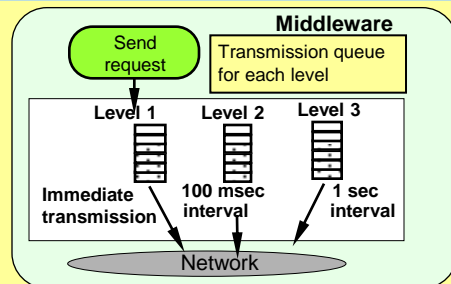
# Higher priority data can be transmitted without interference from lower priority data.



##### • Traffic Bandwidth Allocation

- Traffic bandwidth is allocated for each priority level according to its transmission interval.

# Control LAN traffic



#### (2) Large-Capacity File Transfer and Distribution

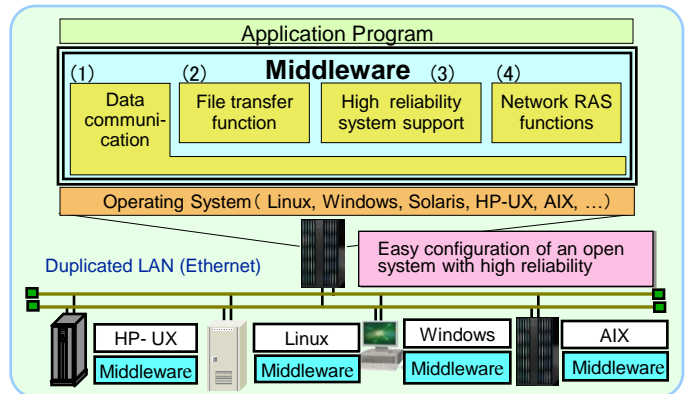
- Peer-to-peer transfer between nodes
- One-to-many transfer to multiple nodes

#### (3) High Reliability System Support

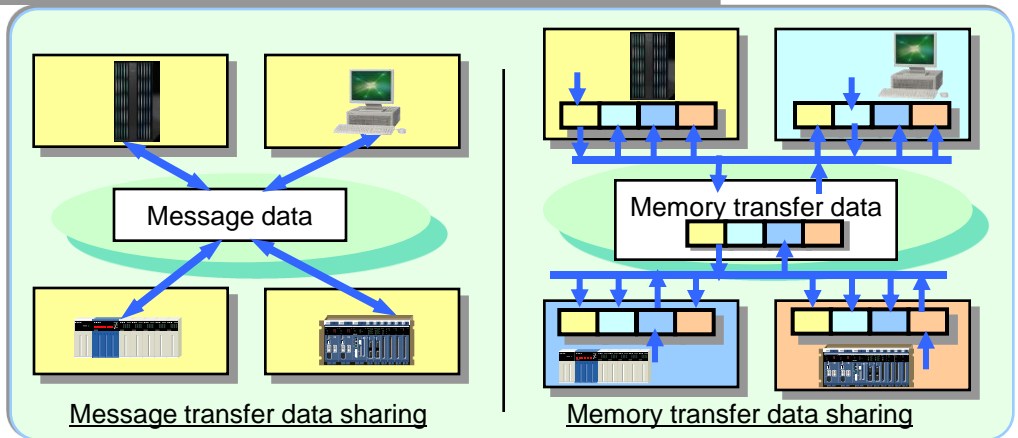
- Redundant communication path control
- Reliable multicast communication with retransmission control

#### (4) Network RAS (Reliability, Availability, Serviceability) Functions

- Network resource monitoring functions (node, network, buffer, application, etc.)
- Journaling functions (transaction events and transaction information)
- System testing support functions

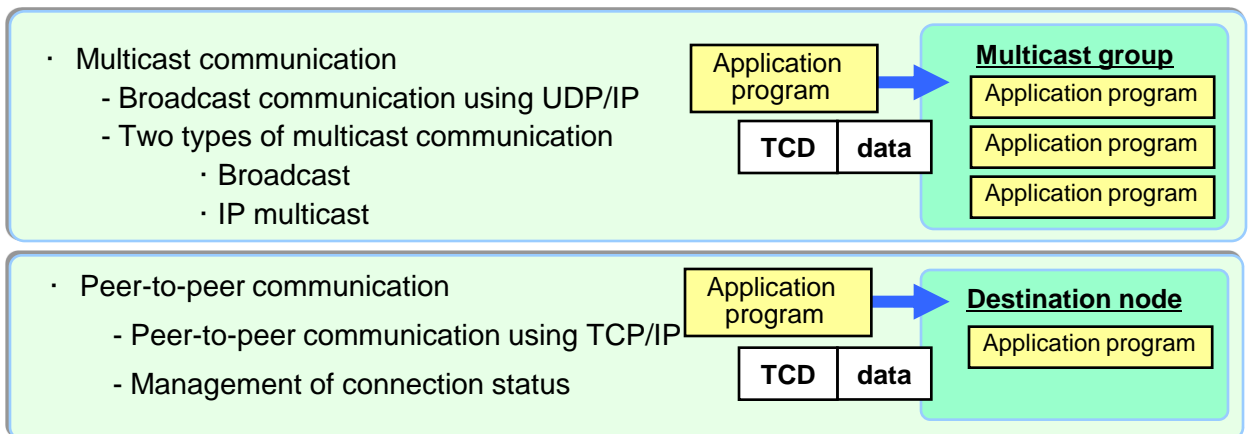


1. Data sharing mechanism – Messages (Files) and Memory transfer



(1) Message transfer data sharing

- Simplified communication using messages with transaction codes (TCD)
- Multicast communication and peer-to-peer communication



(2) File transfer data sharing

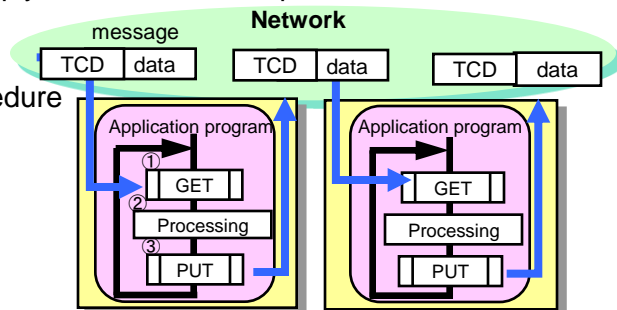
- High-speed file distribution to multiple nodes  
(Eliminating the disadvantage of FTP load of the network and CPU)

(3) Memory transfer data sharing

- Middleware allocates consistently the memory areas on each computer by using unique transfer memory identifiers.
- Application software does not need to comply with transmission protocols.

2. Easy programming

- Programming using a simplified GET/PUT procedure
  - Step ① "GET" message from the network
  - Step ② Message processing
  - Step ③ "PUT" message onto the network
- C language (shared library, DLL)
- No need for TCP/IP protocol knowledge or programming skills.
  - Simple and comprehensible process structure



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