Revised Architecture Model - Overview

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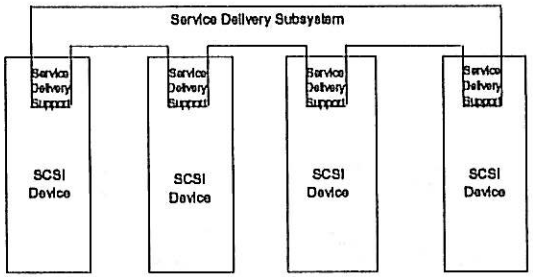
Summary of changes

- Added 'Service Delivery Subsystem'
  - Incorporates all protocol interfaces and transport mechanism.
- Used procedure-based client-server model.
- Revised terminology

Domain



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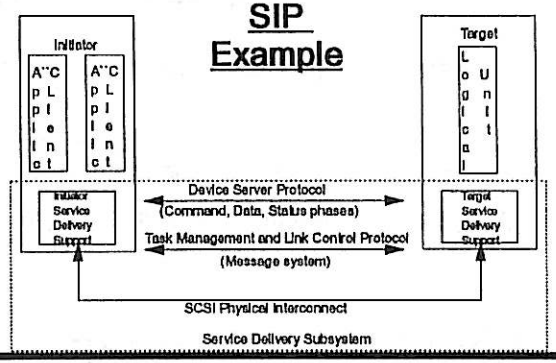
Service Delivery Subsystem

- Purpose - Reliable delivery of initiator requests and target responses.
- Architecture is protocol-specific
- Includes:
  - Device-resident interfaces
  - Protocols
  - Link Control
  - Physical transports

SIP Example



Request Response Delivery Model

- Common client-server interface
- Implements simple procedural model
  - Client issues request for service then waits for response.
  - Response is:
    - Service complete.
    - Service delivery subsystem failure.

Request-Response Rules

- Single request gets single response
- Single request can trigger responses for other outstanding requests (e.g. Clear Queue)
- Events within the Service Delivery Subsystem can cause responses for outstanding requests.
- There are no unsolicited responses.

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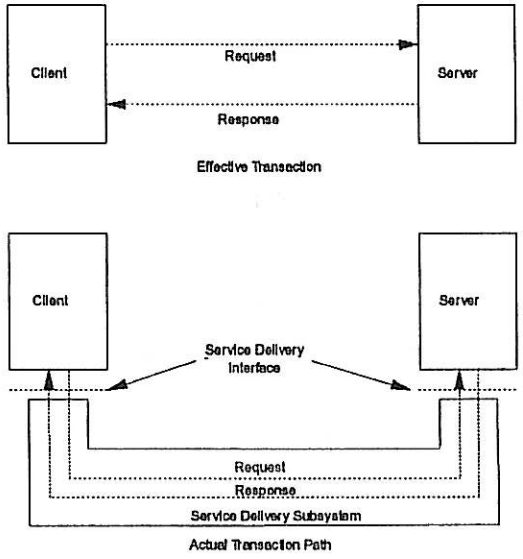
Client-Server Request-Response Transactions



Target Services

- Command
  - A request which describes work to be done by a target device
  - May contain a CDB and other command parameters
- Linked Command
  - Command with LINK bit asserted.
- Task Management function
  - Object which effects tasks (eg. Abort Tag, Clear Queue)
- Task
  - An object associated with a command or group of linked commands

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I/O Process

- Protocol-specific object used by the target to identify and manage all initiator service requests.
- Components of an I/O Process
  - Task
  - Task Management function
  - Protocol-specific function (link control, etc)

SCSI Device Model

- Initiator
  - An SCSI device which consists of zero or more application clients and the associated service delivery support.
- Target
  - An SCSI device which consists of one or more logical units and the associated service delivery support.
- Logical Unit
  - An object within the target, which consists of a device server and task manager

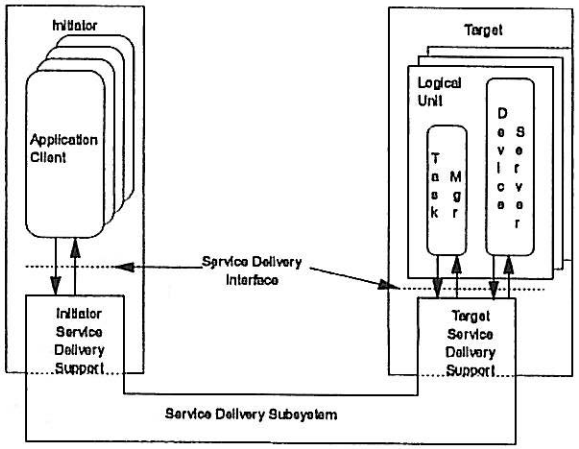
Clients and Servers

- Application Client
  - An object within the initiator that is the source of a command, a linked command or a task management function.
- Device Server
  - Object within the logical unit that does the work specified by a command or a linked command.
- Task Manager
  - Object within the logical unit that does the work defined by a task management function.

Request-Response Interfaces

- Target Service Delivery Interface
  - An interace to the service delivery subsystem through which a logical unit receives requests and returns responses.
- Initiator Service Delivery Interface
  - An interface to the service delivery subsystem through which an application client initiates a request for service and receives a response for that request.

Clients, Servers and Service Delivery Subsystem



Behavioral Model

- One Application Client per pending request
- Procedure Based Model - Application client submits request, then waits for response
- Each request is one of the following:
  - Task Management Function
  - Command
  - Linked Command
  - Protocol-specific service request (not defined by SAM)

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Task Management Function

- Task Management Request
  - Request for the delivery of a task management function to an SCSI task manager
- Task Management Response
  - A response from the target indicating the result of a task management function.

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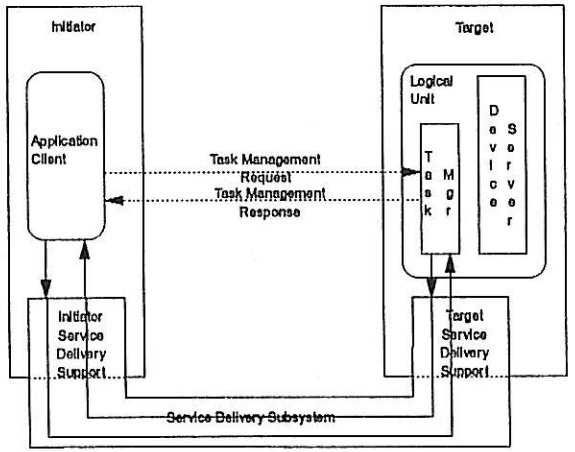
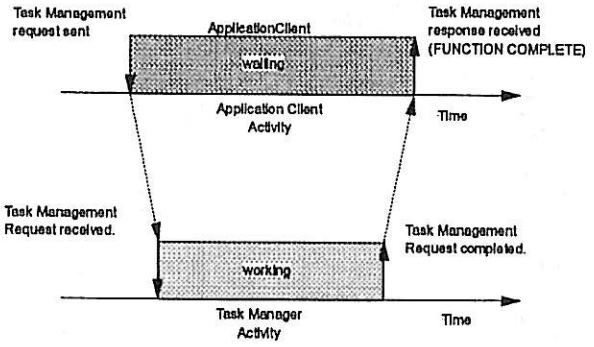
Task Management Function



Task Management Function Events

Initiator

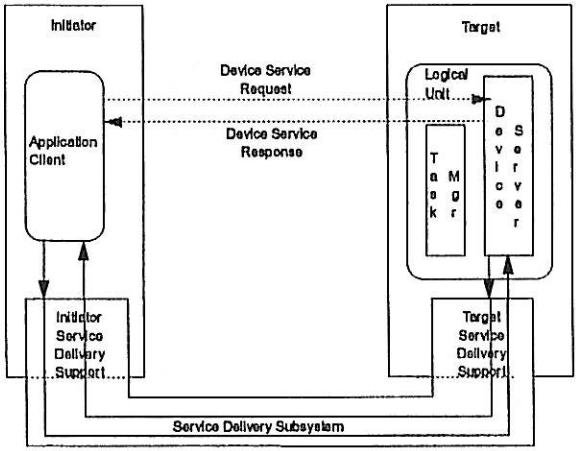


Target

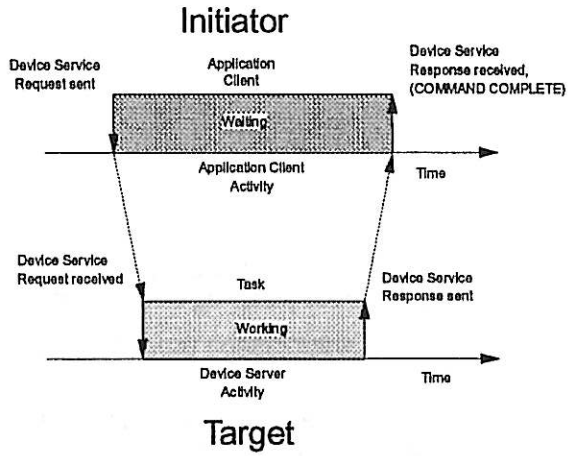
Command or Linked Command

- Device Service Request
  - –A request for the delivery of a command or linked command to an SCSI device server.
- Device Service Response
  - –A response from the target conveying the result of a device service request.

Command or Linked Command



Non Linked Command Events



Linked Command Events