memorandum

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T10/07-174r2

To	From	Subject	Date
INCITS T10 Committee	Michael Banther, HP	ADC-2 Device server and logical unit definitions	20 June 2007

Revision History

07-174r0 – Initial document.

07-174r1 – Includes comments from 18 April 2007 teleconference, i.e. text to resolve HPQ-55 and HPQ-57.

07-174r2 – Includes comments from 20 June 2007 teleconference.

Related documents

Automation/Drive Interface – Commands – 2 (ADC-2), T10/1741-D, revision 7e, 31 May 2007.

Background

HP registered comment HPQ-30, HPQ-55, and HPQ-57 during letter ballot for ADC-2. These comments call for the definition of the ADC, RMC, and SMC device servers and logical units. The ADC-2 editor has requested a proposal to resolve this letter ballot comment. This proposal fulfils that request.

In this proposal, deleted text appears in ~~red strikeout~~, new text appears in blue, and notes that do not form a part of the proposal appear in pink.

Changes to the ADC-2 draft standard

3.1 Definitions

3.1.S ADC device server: A device server (see 3.1.14) that reports the value 12h in the PERIPHERAL DEVICE TYPE field of its standard INQUIRY data (see SPC-3).

3.1.T ADC logical unit: A logical unit (see 3.1.19) containing an ADC device server (see 3.1.S).

3.1.9 bridging: A DT device (see 3.1.13) facilitating invocation of commands or task management requests on the remote SMC ~~device server~~ logical unit (see 4.3).

3.1.U local SMC logical unit: An SMC logical unit (see 3.1.Z) in a DT device containing a local SMC device server (see 3.1.19).

3.1.30 remote SMC device server: The SMC device server in an automation device that receives commands ~~and task management requests~~ via a DT device implementing bridging (see 4.3).

3.1.V remote SMC logical unit: An SMC logical unit (see 3.1.Z) in an automation device containing a remote SMC device server (see 3.1.30).

3.1.W RMC device server: A device server (see 3.1.14) that supports removable medium commands (see 3.1.29).

3.1.X RMC logical unit: A logical unit (see 3.1.19) containing an RMC device server (see 3.1.W).

3.1.Y SMC device server: A device server (see 3.1.14) that reports the value 08h in the PERIPHERAL DEVICE TYPE field of its standard INQUIRY data (see SPC-3).

3.1.Z SMC logical unit: A logical unit (see 3.1.19) containing an SMC device server (see 3.1.Y).

3.1.40 task set: A group of tasks within a ~~device server~~ logical unit (see 3.1.19), whose interaction is dependent on the task management and auto-contingent allegiance rules (see SAM-3) and the contingent allegiance rules (see SAM-2).

4.1 Automation/drive interface model overview

An automation device contains:

a) an SMC ~~device server~~ logical unit, which controls a mechanism to move storage media among DT devices and storage elements;

b) zero or more automation device primary ports, through which the SMC ~~device server~~ logical unit receives SCSI commands or task management requests;

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c) an automation application client (see 3.1.6); and

d) one or more ports through which the automation application client transmits SCSI requests to and receives SCSI responses from the ADC device server in the DT device.

These operations are performed by invoking various commands and task management requests on the ADC ~~device server~~ logical unit. The application client within the automation device that invokes these requests is called the automation application client. Communication between device servers within the automation device and the automation application client are outside the scope of this standard.

4.3.1 ADI bridging introduction

The DT device may support ADI bridging for the automation device. When ADI bridging is enabled via the ENABLE bit of the SMC Logical Unit descriptor (see 6.2.2.3.3), the DT device shall contain the bridging manager and the local SMC device server (see figure 3). The DT device shall report to its DT device primary port(s) a local SMC logical unit (see 3.1.U) ~~that implements an SMC device server (i.e., the local SMC device server)~~, and the automation device shall report a remote SMC logical unit (see 3.1.V) to the automation device ADI port ~~that implements an SMC device server (i.e., the remote SMC logical unit implementing the remote SMC device server)~~. The local SMC ~~device server~~ logical unit may be accessible ~~as a logical unit~~ through the DT device ADI port, and may support asymmetric logical unit access (see SPC-3).

The local SMC ~~device server~~ logical unit receives a command or task management request via a DT device primary port. In processing the command or task management request, the local SMC ~~device server~~ logical unit may require the automation device to perform ~~tasks~~ additional processing. To ~~do~~ perform this additional processing, the local SMC ~~device server~~ logical unit passes requests to an application client in the DT device (i.e., the bridging manager). This communication is performed by means outside the scope of this standard. Using the ADI ports on the DT device and automation device, the bridging manager then invokes commands or task management requests on the remote SMC ~~device server~~ logical unit that resides in the automation device.

As a result some or all commands and task management requests addressed to the local SMC ~~device server~~ logical unit are passed to the remote SMC ~~device server~~ logical unit through the ADI port.

4.3.2 Local SMC device server operation

ADI bridging is enabled and disabled via the SMC Logical Unit descriptor of the ADC Device Server Configuration mode page implemented by the ADC device server (see 6.2.2.3.3). The descriptor specifies the logical unit number of the corresponding local SMC device server. When bridging is disabled, the SMC logical unit shall not be included in the logical unit inventory (see SPC-3) and shall be considered an incorrect logical unit by the task routers (see SAM-3).

The local SMC device server shall support commands as required by the SCSI Media changer device type. If the transport protocol connecting the bridging manager and the remote SMC ~~device server~~ logical unit does not carry information about which I_T nexus originated a SCSI command or task management request, then the remote SMC device server is not able to implement the complete set of commands. A~~S~~s a result, the local SMC ~~device server~~ logical unit shall service commands and task management functions that require knowledge of the originating initiator port.