Slides for Proposal for Management Transport over SCSI infrastructure

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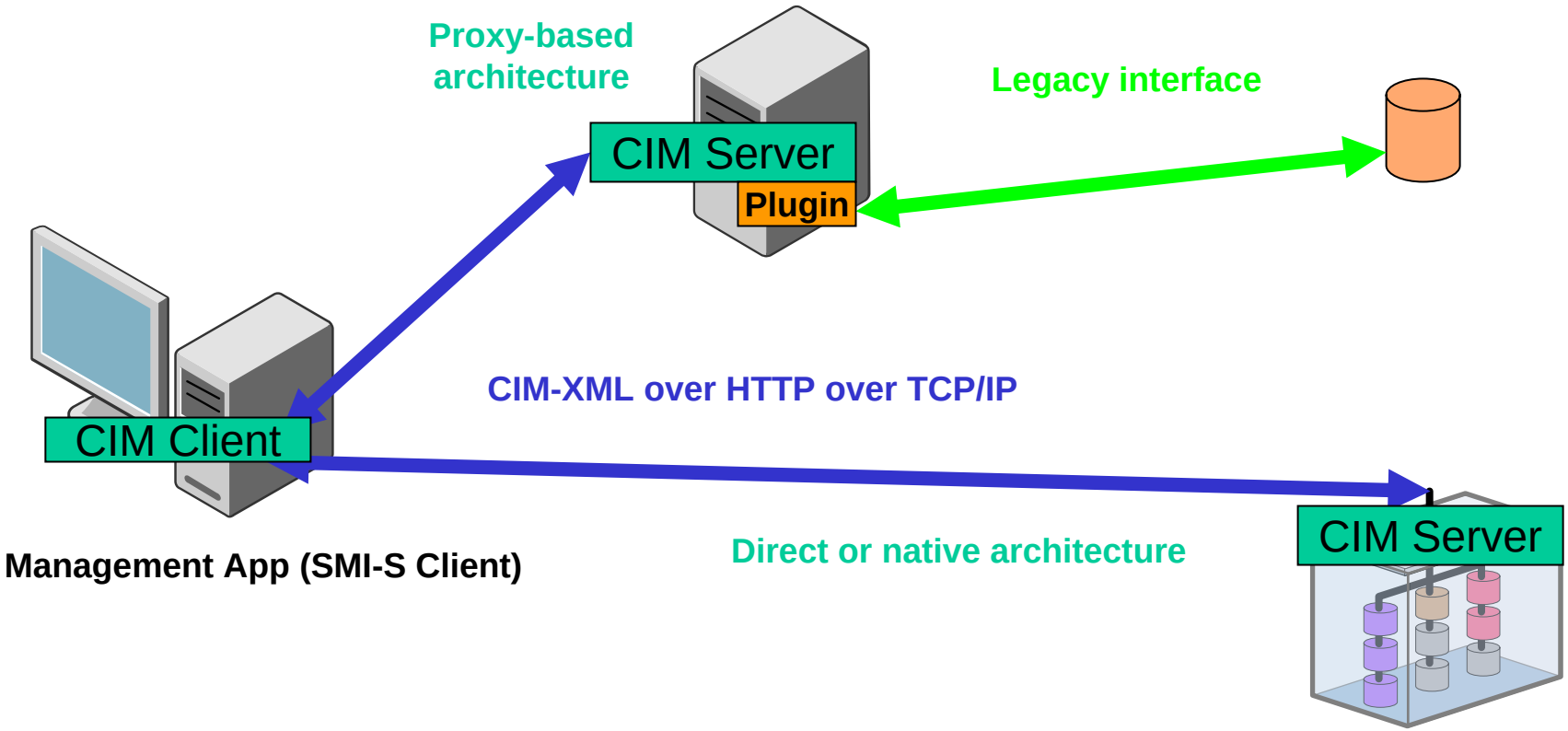
On behalf of the SNIA Management Protocol TWG

Background

- SNIA defined Storage Management Interface (SMI-S) in INCITS 388-2004
  - Uses Common Information Model (CIM) to represent managed devices
  - Uses Web-Based Enterprise Management (WBEM) stack for communication
    - CIM encoded in XML, transported over HTTP over TCP/IP

TWO SMI-S Architectures



Proxy-based Architecture

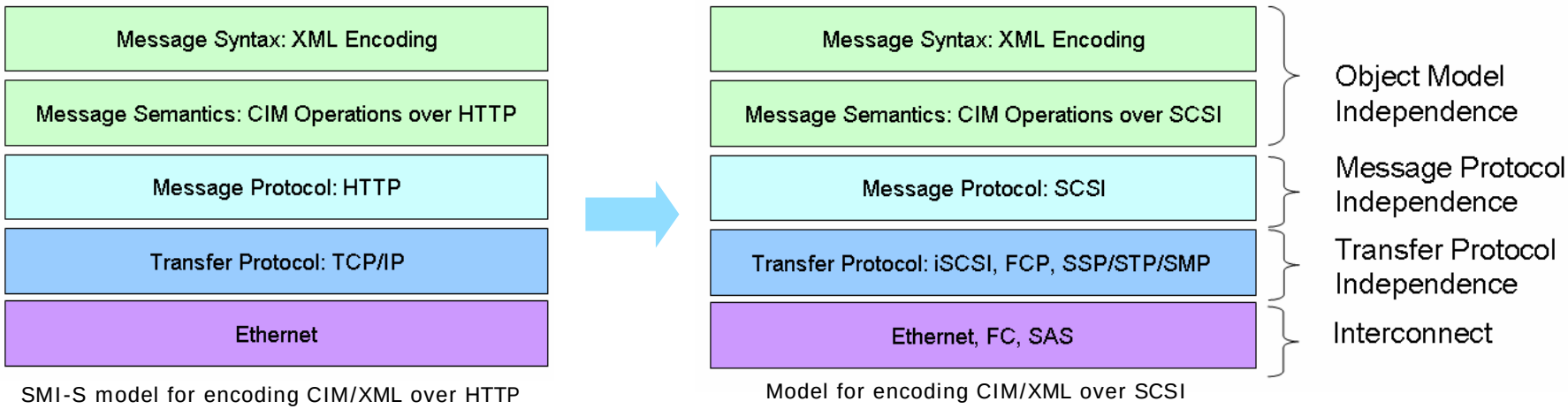
- CIM software stack located on server
- Plugin translates between CIM and another interface such as:
  - SNMP
  - SCSI to retrieve mode page information
  - Proprietary management interface
- Plugin needs to be created by storage device manufacturer
  - Separate plugin for each type of CIM stack
- Proxies have caused interoperability & performance problems in both SNIA plugfests & the field
  - Plugin designers not familiar with device operation etc.

Direct or Native Architecture

- CIM support embedded in storage device
- To support full WBEM transport, need:
  - Ethernet port
  - TCP/IP stack plus HTTP server
  - CIM-XML protocol support
- No need for Ethernet or TCP/IP if CIM-XML could be transported directly by SCSI

Proposal

- A method be defined of allowing CIM-XML to be transported across a SCSI infrastructure



SMI-S model for encoding CIM/XML over HTTP

Model for encoding CIM/XML over SCSI

Specific requirements

- Provide method of sending <16 megabytes of arbitrary data from an Initiator to a Target;
- Provide method of sending <16 megabytes of arbitrary data from a Target to an Initiator;
- Provide method of allowing a Target to notify an Initiator of the completion of an “event”;
- Provide method by which an Initiator can discover that a Target supports three above bullets above using the facilities provided by the FC-HBA API (INCITS 386:2004) or the later SM-HBA API

Will also help proxies…

- CIM software implementer can create single plugin for managing any storage device

Why not IP over FC?

- Still need full TCP/IP stack & HTTP server in storage device

1st Detailed Proposal (06-392r0)

- Add definition of SNIA
- Define 6 codes in the Security Protocol field in the Security Protocol In/Out commands as “defined by SNIA”
- Define a new “Management well known logical unit” to work with the SP In/Out commands with the field values above

1st Detailed Proposal (06-392r1)

- Posted since September CAP meeting
- Specific changes:
  - Add paragraph on access controls
  - Correct typos
  - Genericize code allocations
  - Update to reference SPC-4 Rev 07a

2nd Detailed Proposal (06-465r0)

- Add definition of SNIA
- Define new 12 byte Management Protocol In & Management Protocol Out commands
  - New Service Actions of SCC-2 MAINTENANCE IN and MAINTENANCE OUT commands
  - Define 6 codes in the Management Protocol field in the above commands as “defined by SNIA”
- Define a new “Management well known logical unit” to work with the Management In/Out commands above

SNIA Position

- Either detailed proposal is workable
- Choice should be made by T10