

1394PWG Meeting Minutes
14-15 December 1998
Marriott Suites, San Diego, CA

Chair: **Greg LeClair** **Epson**

Attendance:

Secretary 1: Larry Stein Warp Nine Engineering
Secretary 2: Lee Farrell Canon
Editor: Alan Berkema HP – Roseville

Fumio Nagasaka Epson
Brian Batchelder HP - Vancouver
Greg Shue HP – Rancho Bernardo
Laurie Lasslo HP – Rancho Bernardo
Scott Bonar HP - Boise
Don Wright Lexmark
Jerry Thrasher Lexmark
Takashi Isoda Canon
Akihiro Shimura Canon
Osamu Hirata Canon
Ats Nakamura Canon
Mike Fenelon Microsoft
Robert Morford SIS Microsystems
Mauro DePonti ST Microelectronics
Peter Johansson Congruent Software
Randy Turner Sharp

Agenda:

Max_Task_Set_Size (Shimura-san)
Model and Command Set (Alan Berkema)
Kill Command (Isoda-san)
Profile – Bridges
ConfigROM – 1212, OUI
Abort Task (Isoda-san)

1- Max_Task_Set_Size (Shimura-san)

Presentation on Queue and Max_Task_Set_Size
Refer to “VarMaxT1.pdf” sent to reflector.

Proposal to dynamically change the Max_Task_Set_Size after a login.

Proposed to add 2 new commands:

A- Update Max_Task_Set_Size (MTSS)

Target updates maximum number of re-orderable tasks by allocating/freeing its resources.

Discussion postponed pending review of all Command related presentations.

2- Model and Command Set (Alan Berkema)

Review of PWGPR43.

A) Channel

Peter suggested that we define “Channel” in this document. A Channel is a special case of a connection that uses two queues for bi-directional communication.

B) Section 3.2 Target to Initiator Communications

Discussion ensued on how a T2I transaction gets started. Do we use Login and a T2I command for a Connect? Peter believes that this is not necessary and that we can use existing 1212 CSR (Message_Request / Message_Response) definition for this. The issue bears on resource allocation. Discussions reviewed these option:

- 1- A T2I requires that Logins be maintained.
- 2- Require maintaining the EUI-64 of the Initiator devices or some other method of notifying the requested device. Use a Message Request/Message Response to get the attention of the Initiator.
- 3- Maintain a persistent Status FIFO. This option is not standard for SBP2.

Resolution was to pursue item 2, Message Request/Response to get the attention of an Initiator.

Action Item: Need someone to generate a proposal.

C) Max_Task_Set_Size

Discussion on how to handle changing the MTSS after a Login. Refer to Shimura-san's presentation.

Options discussed are:

- 1- Fixed per queue
- 2- Global per Login (Transport Capabilities)
- 3- New Dynamic command
- 4- Connect Request/Reply

Action: ?

D) Disconnect

Peter raised the issue that I2T Disconnect may have different behavior than a T2I Disconnect. On a I2T the state of the connection (idle with no more commands or data) is known by the initiator. On a T2I Disconnect the Target does not know if the Initiator is "about" to send something.

Nothing decided.

E) 4.3.3 Service_ID_String

Parameters: What are the string requirements?

Follow IANA guidelines?

Action: Brian Batchelder will look into this.

F) 4.3.6 Result

Four return codes currently defined:

- 1- Success
- 2- Busy
- 3- No Service
- 4- Refused

Brian suggested adding "Invalid Service"

3- Kill Command, Abort Task (Isoda Takashi)

Isoda-san presented two methods of implementing a "Queue Kill" command.

Receipt of this command would terminate all Tasks associated with that Queue, terminate the connection, and reclaim any freed buffer space.

A) Solution 1

Clean up the rest of the ORBs bound to the queue that has already terminated using completion status without execution.

B) Solution 2

Make the initiator keep the order of the ORBs that belong to the queue being terminated. This would apply to all ORBs related to the queue #0.

4- Profile – Bridges

Nothing to add at this point.

5- IEEE 1212, OUI (Brian Batchelder)

Brian provided an update on 1212.

A) Function Classes: Provide “Keywords” rather than explicit registry items. The keywords would be provided in a restricted ASCII format (lowercase a-z, 0-9, -).

Action: The PWG needs to provide a list of what keywords would apply to devices considered by this group. Printer, for example.

List: printer fax mfp color sbp-2 photo laser ink inkjet thermal dye-sub
pcl

There seems to be a question as to whether we provide keywords for functions or attributes of services. Should these go into the feature directory?

B) Message Request and Message Response extensions.

C) 1212 Meeting
Tuesday, January 26th, 1999, in Maui.

6- PWG-PWG/C Joint Meeting

Topics for discussion in Maui:

- A) Status of DPP 1.0
- B) Keyword discussions

Day Two – 15 December

Model and Command Set Issues:

- A) Max_Task_Set_Size
- B) Matched Request/Reply ORB
- C) Commands vs. Actions
- D) Tag Bit
- E) Connection uses string or ID
- F) Disconnection
- G) Kill Queue Command
- H) Notify Initiator Mechanism
Message Request/Response?
- I) 1212 Keywords
Function- Printer
Scanner
FAX
- J) 1212 Feature
Attributes - Color
Laser
Inkjet

A) Max_Task_Set_Size

From yesterday:

- 1- Fixed per queue
- 2- Global per Login (Transport Capabilities)
- 3- New Dynamic command
- 4- Connect Request/Reply

	Variable	Fixed
Per Queue	4	1
Per Login	3	2

Issues raised as to when the Target would need to change it’s MTSS.

Can it shrink or grow the resources after Login?

The consensus is that this is a desirable feature. The issue is the mechanism to do this.
Add a new Command or modify an existing command?

Peter made a motion that: **“The MTSS be variable during the course of a Login, but be allocated per Connection”**. This means that resources allocated by one connection cannot be used by another.

Seconded by Greg Shue.

Discussion ensued to clarify motion.

Vote: 9 for, 1 against. Motion Passed.

Mike Fenelon (Microsoft) voted no based upon the current Windows 2000 implementation plans for SBP2. Resource management will not allow this type of operation.

What is the mechanism to do this?

Greg made a motion **“To restrict the change to MTSS to happen at Connect and Disconnect”**.

Seconded by Brian. Thirded by Randy.....

Discussion: none

Vote: 13 yes, 0 no 1 abstain (Mike F.).

Requires a change to 4.3.1 in the “Model and Command Set” document.

Clarification: The parameter to change the MTSS increases the number of tasks for a particular queue.

Peter made a motion: **“Create an unsigned parameter, Task_Slots, whose intended usage shall be restricted to the connect requests and responses.”**

Seconded by Greg Shue

No discussion

Vote: 15 yes, 0 no, 1 abstain (Mike F.)

B) Matched Request/Reply ORB

C) Commands vs. Actions

Section 3.1 of the Model and Command document.

Peter made a presentation at this point. His presentation addressed both the Matched Request/Reply ORB and the “Commands vs. Actions” items.

1- All control functions in “data” stream
i.e., in buffers, not in ORB

2- ORB Commands
I2T_Control
T2I_Control
I2T_Data
T2I_Data

3- Login Grants:

- Queue 0
- n Task_Slots (minimum 1)
(more at targets option?)

4- Control

I → T Queue an ORB

T → I Set a “please fetch control information” in status block, or Unsolicited Status block

5- Control Functions

Connect

Disconnect

Kill

6- Control Stream encode:

Length	Control	Request	Params
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Length	Control	Response	Params
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Brian questioned why we need separate I2T and T2I since we have a direction bit in the ORB?
This would reduce the commands to:

Control
Data

With the direction set in the ORB.

This concept will be kept open pending a more detailed review. The group was polled for a group “opinion” as to whether this is worth working on in more detail.

Action: This was agreed upon and Peter offered to work on this and provide more detail at the Maui meeting.

Issue: Decide on PWG Profile direction or Peter’s concept.

H) Notify Initiator Mechanism

Action: Mike Fenelon will provide information on how Unsolicited Status is implemented in Windows 2000.

I) 1212 Keywords

J) 1212 Feature

Differences between keywords and attributes. Keywords allow for “rapid” discovery of devices that you would be interested in. Once these devices are identified, the attributes (features) would be used to provide more detailed information on the device.

Issue: Do we provide a recommendation for separate Function and Attribute keywords, or do we just provide a list of words.

Action: Fill out a list of keywords.

Greg LeClair will maintain a list of words.

Lunch

E) Connection uses string or ID

In Tucson we discussed using a 24 bit ID. IANA uses a string with limited ASCII.
We will use a string in connect requests.

F) Disconnection

If the Initiator gets a disconnect does it immediately send a reply or does it clean up it’s outstanding ORBs and then send the reply?

See discussion below on Kill Queue Command

G) Kill Queue Command

This led to a larger discussion on how disconnect is used and how it is different from the Kill Queue proposal by Isoda-san.

Definitions used:

Synchronous disconnect command is sent on the queue for the connection and should not require special clean-up when closing the connection.

Asynchronous disconnect is sent on queue 0 and require external synchronization to clean-up when closing the connection.

Randy raised issue about bring down the connection and acknowledging the disconnect.

Greg LeClair pointed out that Synchronous and Asynchronous have different usage model.

The group should recommend that the disconnect is placed on the queue for the specific connection(synchronous).

The disconnect placed on queue 0 (asynchronous) fulfills the kill queue requirement and requires a different encoding (connection params). The group decided to add a command called "ABORT_CONNECTION".

D) Tag Bit

Brian's idea. Used to indicate Out Of Band data (OOB).

Action: Brian will provide a better explanation.

7. Abort_Task_SET / TARGET_RESET (Isoda Takashi)

How to be transparent to the application when an "ABORT_TASK_SET" or "TARGET_RESET" command is received. How does the device/connection recover from here?

Solution:

ABORT_TASK_SET

- Question was raised as to why someone would want to continue if this command is received. Greg LeClair explained that a typical use of ABORT_TASK_SET would be a execution timeout for an ORB. An initiator may try to submit the ORBs again or may return the buffers to the upper layer.
- RESOLUTION: This will be handled in the same was as BUS_RESET event. Buffers will be resubmitted with the same CDB and buffer content.

TARGET_RESET

- Requires more investigation because the next command after a TARGET_RESET will cause a UNIT_ATTENTION condition.

Next Meeting:

Maui Marriott on Kaanapali Beach

Meeting dates: Thursday-Friday, Jan 21-22 (1394PWG)

Rate: \$159.00 plus tax

Group name: PWG, Printer Working Group, Warp Nine

Phone: 1-800-763-1333 or 1-808-667-1200

Deadline: **December 18, 1998**

Meeting charge: \$30-\$40

Dress code: Shorts and wildest Hawaiian Shirt

Social function: Wednesday night whale watching.

Cost: \$35-\$45

RSVP to Larry at lstein@fapo.com

Minutes submitted: Larry Stein