ABS Tech Note: SNA•ps02 Gateway Memory Issues (5/92)

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TOPIC ----------

This technical note describes the memory usage of the SNA•ps Gateway 1.1 on NuBus communications boards. It will help users configuring and running the SNA•ps Gateway product to accurately predict workable memory configurations for a particular NuBus card.

DISCUSSION ----------

Introduction

SNA•ps 1.1 includes support for the new Apple Token Ring 4/16 card. When running a SNA•ps Gateway on the Apple Token Ring 4/16 card it is recommended that the card contain a minimum of 1Mb of memory. A minimum of 2.5Mb of memory is recommended on the Apple 4/16 Token Ring NB card to run the 64 LU gateway package.

The Apple Serial NB ("SDLC") card can now run both MacX25 Version 1.1 and the SNA•ps Gateway simultaneously; the only requirement is that the SNA•ps Gateway must be running before MacX25 is loaded.

Token Ring Card Details

For the two Apple Token Ring cards (the original Apple TokenTalk NB and the new Apple Token Ring 4/16), the number of sessions that can be supported depends on whether TokenTalk is concurrently running on the card, and how much memory is installed on the card.

TokenTalk 2.2 uses 12,000 bytes on the card. Running TokenTalk 2.2 on a TokenTalk NB card leaves 43,000 bytes available for use by the SNA•ps Gateway. This is enough memory to run the 8 LU SNA•ps Gateway package.

TokenTalk 2.4, which is required for the Token Ring 4/16 card, uses 54,000 bytes on the card. Therefore, in order to run a SNA•ps Gateway on the Apple Token Ring 4/16 card it is recommended that the card contain a minimum of 1Mb of memory. To run the 64 LU SNA•ps Gateway package, a minimum of 2.5MB of memory on the card is recommended.

Apple Serial NB Card Details

When a SNA•ps Gateway is loaded onto a 1/2 megabyte SDLC card with no other applications running on it, 54,000 bytes are available for the gateway.

SDLC cards can run MacX25 in addition to the SNA•ps Gateway. However, the SNA•ps Gateway must be loaded and started before MacX25 is loaded. The SNA•ps Gateway limits the amount of memory it reserves to twice the minimum amount, as calculated below. The remainder is available for use by MacX25 or other applications.

Coax/Twinax NB Card Details

Since the SNA•ps Gateway doesn't allow you to change the configuration of a coax gateway to more than 5 LUs, memory usage is not an issue. Configurations will always fit on an Apple Coax/Twinax NB card.

Minimum Memory Usage Computation

To run a gateway, you must first configure objects on that gateway. The description given below is of the procedure that is used by SNA•ps to compute the amount of memory required for a given gateway configuration.

The total amount of memory that is used by the various configurable objects is given in the table below. Use this table to calculate the amount of memory used by your configuration.

Bytes Used	Resource
7490	Gateway Overhead (always required)
250	Line
1160	Host Partner
690	Peer Partner
270	6.2 LU (Local LU)
1930	3270 LU
270	Local LU User or Profile
190	Transaction Program
190	Transaction Program User
1100	Remote LU with parallel sessions enabled
120	Remote LU without parallel session enabled
200	Mode
1600	Each 6.2 Peer Session
2100	Each 6.2 Host Session

In addition to the memory amounts listed above, there is a factor for the allocation of data buffers which must be made based on the largest BTU (I-frame) that has been configured. The following table indicates the multiplier. Multiply the number obtained by adding up all the individual requirements above by the multiplier given below.

Max BTU Size	Multiplier
0 - 265	1.43

266 - 521	2.00
522 - 1033	2.50
1034 - 2057	3.33
2058 or larger	5.00

After this computation is complete, the memory required for the link buffers must be added. If there are any Local LUs (6.2 LUs) in the configuration, add 8 times the size of the largest BTU that has been configured to the total. Additionally, if this is a Token Ring configuration, add 160 to the total, and also add 8 times the size of the largest BTU to the total. The result is the final amount of memory required.

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