Memory Estimates

This appendix provides details of DLSw+ memory utilization. This information may be useful if you are upgrading from an older version of Cisco IOS Software and want to determine if you can run a newer level of software in conjunction with DLSw+.

In general, if you are installing DLSw+ in new Cisco routers, it is best to install enough memory so that you minimize your chances of having to visit remote sites. Many enterprises running Cisco 2500 Series routers at remote sites with Cisco IOS Release 11.0 will install 8 MB dynamic RAM and dual bank 8 MB Flash memory. For central site Cisco 4500 or 4700 Series routers with many peers, many enterprises choose to install the maximum amount of memory (32 MB of box memory and 16 MB of I/O memory). There are fewer Cisco 4x00 Series routers in a typical network, and the cost of the additional memory is not much of an issue.

Main Memory

The following can be used to calculate memory requirements:

number of TCP connections x 84

+

number of concurrent LLC2 connections x 838

+

number of SNA cache entries x ZZ

+

number of NetBIOS cache entries x YY

where ZZ is 178 for SNA entries in Cisco IOS Releases 10.3 and 11.0 and is 234 for SNA entries in Cisco IOS Release 11.1, and where YY is 188 for NetBIOS entries in Cisco IOS Releases 10.3 and 11.0 and is 244 for NetBIOS entries in Cisco IOS Release 11.1.

I/O Memory

You can also estimate buffer size requirements for DLSw+ with the following formula:

number of TCP connections x [max TCP window size + (TCP queue size x buffer size)]

+

number of concurrent LLC2 connections x [LLC2 maximum window size x MTU]

The default TCP window size is 20 K and the default TCP queue size is 100. The buffer size is the size of the buffer that will fit the LAN interface MTU.

Remember that if you specify the priority keyword in a dlsw remote-peer command, four TCP connections are established. An LLC2 corresponds to a circuit in all cases except DLSw+ local switching, where each circuit requires memory for two LLC2s. None of the above formulas accounts for non-DLSw+ traffic.