Network Working Group
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NETWORK ACTIVITY REPORT: UCSB <- -> RAND

UCSB RJE/RJOR

The UCSB Remote Job Entry (RJE) and Remote Job Out- put Retrieval (RJOR) Systems described in NWG/RFC #105 have been used and validated from Rand. The facility is now being used on a limited basis as a production tool by another research group at Rand.

Access to the UCSB facility from Rand is through the Network Service Program (NSP). This program is driven by Rand Video-Graphic consoles and allows a console user access to both local file storage (at Rand) and to the Network. A small module (UCSBMGR) was added to NSP to handle the UCSB RJE and RJOR protocols and data formats.

In exercising the RJE/RJOR facility over the past two months, typical job sizes included input decks of 800 to 2800 80-character card images and output files of about 30 pages of printer linstings.

NETWORK OBSERVATIONS

In sending files to UCSB we did a timing study over several transmissions of the above mentioned 2800 record file. On the average this file was transmitted at a rate of 250 80-character cards per minute. (Each 80-character card was a separte Network message.) This is, of course, much less than the advertised 30 kilobit rate; however, it should be remembered that the path from Rand to UCSB is through at least one intermediate IMP. On the other hand, the processes at each end of the connection were running at maximum priority with very small loads on either machine. An obvious area for speed-up would be the blocking of card images for network transmission.

In the course of the last two months of networking, we have noticed approximately five serious failures in transmitted messages. In two instances, the RFNM on the control link from UCSB to Rand was lost. Its loss was not reported via a type 9 IMP-to-Host message as would be expected. We have not been able to cause the problem to occur; hence we are unable to ascertain whether it is an IMP problem or a problem with the UCSB Host Interface.

The other three errors were related to the garbling of a data message between the Rand NSP and UCSB RJE. In all three instances, it was the second card image trans- ferred to RJE. We were unable to cause this problem at will; hence have been unable to track it down. Unfortun- ately the HASP system at USCB merely ignored this image rather than printing it so we are not aware of the nature nor source

of the garbling. It could be anywhere from the disk file storage at Rand on down the line. This problem was observed sporadically in our early trans- missions to UCSB and has disappeared. We feel relatively confident, however, that our Host software on either end was not at fault.

Lest these last two figures seem too terrifying, it should be noted that we have run over 100 jobs at UCSB from Rand, each job consisting of many Network transmissions.

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