

88 年度下半年暨 89 年度國家標準實驗室計畫執行成果摘要表 論文

計畫名稱	中文	建立及維持我國時間與頻率國家標準		
計畫編號	英文	The Maintenance and New Technology Establishment of National Standard for Time and Frequency		
計畫編號	TL-001-P301(89)			
執行單位	中華電信研究所		執行期間	88 年 7 月至 89 年 12 月
主持人	廖嘉旭		協同主持人	
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成果名稱	中文	設定 NTP 封包之優先權以提昇 NTP 校時協定之效能		
	英文	Promoting the Performance of Network Time Protocol by Setting Priority for NTP Packets		
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撰寫日期	中華民國 89 年 10 月 31 日		撰寫語言及頁數	英文 8 頁
解密期限	中華民國 年 月底解密		機密級	
關鍵詞	Network Time Protocol			
	Time Synchronization			
	Packet Delay			
	Priority Scheme			
<p>內容摘要：Network Time Protocol (NTP) is now the most accurate and popular time synchronization protocol for computers in the Internet. It can compute the network roundtrip delay and compensate for the effects of statistical delay variations. The error bound of the estimated clock offset is mainly dominated by the network roundtrip delay, which consists of propagation delay, packet transmission delay and packet queueing delay. And the delay variation is mainly due to the packet queueing delay. So if the queueing delay can be eliminated as much as possible, the accuracy of NTP can be significantly improved. Based on the queueing theory, the higher priority packets will encounter shorter queueing delay. Thus, setting priority to NTP packets will reduce the error bound of NTP. The aim of this paper is to discuss and evaluate the feasibility of such a priority scheme for NTP packets. Since the Internet Protocols IPv4 and IPv6, and the ATM protocol used in the WAN all support traffic priority services, we believe that it would not be difficult to implement the priority scheme.</p>				