

在嵌入式Linux系統上的新一代網路協定轉換軟體開發

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摘要

近年來網路以倍數成長，使得現有的IPv4 網路位址即將不敷使用。為解決此問題，新一代的網際網路通訊協定IPv6 已被提出。從IPv4 向IPv6 的過渡仍需相當長的過程，在此期間，必須讓現有的IPv4 應用軟體仍可繼續使用。因此IETF 訂定了一系列的標準，提供了多種轉移的過渡策略。其中網路協定轉換機制 (NAT-PT)正在Windows、FreeBSD、Linux 等系統上研發。本文提出在居家用閘道器 (Residential Gateway) 建置網路協定轉換機置 (NAT-PT)，來解決家用網路與新一代網際網路的連接問題，同時分析網路的處理效能需求和在嵌入式系統上能源的消耗，基於嵌入式系統對電源消耗量的考量，分析重點放在低功率消耗的NAT-PT 模組設計上，並針對NAT-PT 部分模組進行演算法最佳化的研究，分析記憶體存取指令數來減少記憶體的

關鍵詞：嵌入式系統、LINUX、IPv6、閘道器、NAT-PT

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