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一种用于网络计算的可定制启动协议

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Abstract
With the development of computer and network technologies and emerging of diverse types of terminal, the ability of network computing to tailor applications to the capabilities of heterogeneous client devices will realize its full potential at last. Most of the existing terminals first start OS locally and then load network-computing software. However, this booting way can't satisfy the diversity of terminals and the increasing of complexity of network-computing software. A reliable, secure, effective and customizable remote boot protocol named as NCBP (network-based client boot protocol) is presented in this paper, which is hoped to increase the flexibility of existing network computing terminals' booting process and thus increase the flexibility and availability of network computing. NCBP uses extended DHCP (dynamic host configuration protocol) to acquire local identifier, then loads a batch script language environment of MBatch (MenuBatch) by using secure APTP (active program transfer protocol). When executing the loaded MBatch script, NCBP allows users to select which OS to be loaded and then load the corresponding OS image in a customizable way. NCBP can be used for remote boot of network computers, PCs, and digital appliances.

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摘要
随着计算机网络技术的发展和各种终端设备的出现,网络计算技术能够根据终端类型定制应用程序的特点将全面实现其潜力.然而,现有的终端设备先从本地启动操作系统,再启动网络计算软件的单一的启动方式已不能满足终端设备的多样性和不断复杂的网络计算软件的需求.为了提高终端设备启动方式的灵活性和可用性,提出了一种可靠、安全、高效并可定制的远程启动协议NCBP(network-based client boot protocol).NCBP通过扩展DHCP(dynamic host configuration protocol)协议获得本机标识,再利用安全的APTP(active program transfer protocol)协议加载MBatch(MenuBatch)脚本执行环境.通过对MBatch脚本的解释执行,并根据用户的选择从服务器上加载相应的操作系统内核,从而实现终端设备的可定制远程启动.NCBP可用于网络环境下的网络计算机、PC机以及数字家电设备的远程启动.

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