User-Centric Network MIMO With Dynamic Clustering

ABSTRACT

Recent research has investigated the potential of network MIMO (netMIMO) which combines multiple APs (or distributed antennas) to form a virtual netMIMO AP (nAP). A virtual nAP can exploit all its antennas to serve multiple clients simultaneously. Ideally, to maximize the spatial multiplexing gains, one might want to form a giant nAP with all available antennas. However, in practice the processing power of a backend server always has a limit. The number of concurrent spatial streams processed by a backend server is restricted by its computational power and network I/O capacity. Hence, a practical netMIMO system would group distributed antennas into a number of small clusters (nAPs), so that the process power required by each nAP can fit into the capability of one backend server.

EXISTING SYSTEM

Recent advances have demonstrated the potential of network MIMO (netMIMO), which combines a practical number of distributed antennas as a virtual netMIMO AP (nAP) to improve spatial multiplexing of an WLAN. Existing solutions, however, either simply cluster nearby antennas as static nAPs, or dynamically cluster antennas on a per-packet basis so as to maximize the sum rate of the scheduled clients. To strike the balance between the above two extremes

DIS ADVANTAGES

- The processing power of a backend server always has a limit.
- The number of concurrent spatial streams processed by a backend server is restricted by its computational power and network I/O capacity.

PROPOSED SYSTEM

In Proposed System, we present FlexNEMO, a flexible network MIMO system that adapts the nAP structure to dynamic client distributions and traffic demands. This adaption significantly reduces inter-cell interference and improves the antenna utilization. Besides, FlexNEMO dynamically reforms clusters around every transmitting client. This improves not

only the fairness among different clients, but also the signal strength of the transmitting clients, and hence increases the overall network through

hput. We demonstrate via test bed experiments and trace-driven emulations that FlexNEMO efficiently coordinates antennas and clients to realize the potential gains of multi-user network MIMO.

ADVANTAGES

- It achieves better utilization of all available antennas, and also remove the border-node problem naturally.
- Both the overall network throughput and the fairness among different clients have been greatly improved.

SYSTEM ARCHITECTURE
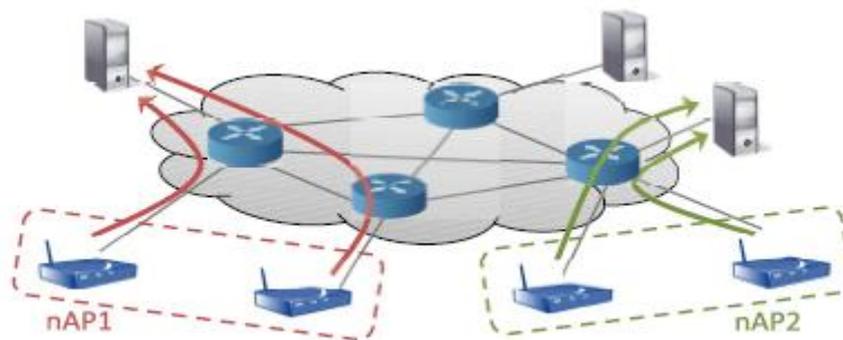
Architecture of FlexNEMO

SYSTEM REQUIREMENTS

H/W System Configuration:-

Processor   -   Pentium –III

RAM   -   256 MB (min)

Hard Disk   -   20 GB

Key Board   -   Standard Windows Keyboard

Mouse   -   Two or Three Button Mouse

Monitor   -   SVGA

S/W System Configuration:-

Operating System   :   Windows95/98/2000/XP

Application Server   :   Tomcat5.0/6.X

Front End   :   HTML, Jsp

Scripts   :   JavaScript.

Server side Script   :   Java Server Pages.

Database   :   MySQL 5.0

Database Connectivity   :   JDBC