FACULTY OF ENGINEERING & TECHNOLOGY

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Topics Covered

Hybrid Routing Protocol (HRP)

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Hybrid Routing Protocol (HRP) is a network routing protocol that combines Distance Vector Routing Protocol (DVRP) and Link State Routing Protocol (LSRP) features. HRP is used to determine optimal network destination routes and report network topology data modifications.

HRP features are as follows:

Requires less memory and processing power than LSRP
Integrates reactive and proactive routing advantages
Serves activated nodes via reactive flooding

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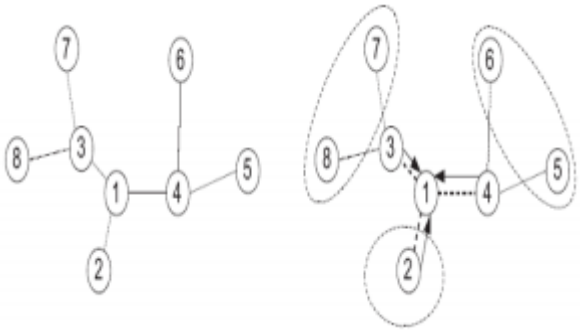
Core Extraction Distributed Ad Hoc Routing(CEDAR) protocol Zone Routing Protocol (ZRP) Zone-based Hierarchical Link State (ZHLS) Routing Protocol Routing Protocols with Efficient Flooding Mechanisms Preferred link–based rooting(PLBR) protocols Neighbor Degree-based Preferred Link Algorithm Weight-based Preferred Link algorithm Optimized link state routing(OSLR) protocol



The differences between wired, fixed networks and wireless networks open up various topics:

Interference: Radio transmission cannot be protected against interference using shielding as this is done in coaxial cable or shielded twisted pair. For example, electrical engines and lightning because severe interference and result in higher loss rates for transmitted data or higher bit error rates respectively.

Regulations and Spectrum: Frequencies have to be coordinated, and unfortunately, only a very limited amount of frequencies are available (due to political and technical reasons). A research topic involves determining how to use available frequencies more efficiently, e.g. by new modulation schemes or on demand multiplexing. Further improvements are new air interfaces, power aware ad-hoc networks, smart antennas, and SDR (Software Defined Radios).

Low Bandwidth: Although bandwidths are continuously increasing, transmission rates are still very low for wireless devices compared to desktop systems. Local wireless system reach some Mbit/s while wide area systems only offer some 10 Kbit/s. 1 task would involve adapting applications used with high-bandwidth connections to this new environment so that the user can building. Researchers look for efficient communication protocols with low overhead.

High delays, large delay variation: The big variation in link characteristics is a serious problem for communication protocols used in today's internet (TCP/IP). In wireless systems, delays of several seconds can make links vary asymmetrical (i.e., the links offer different service quality depending on the direction to and the wireless device). Applications must be tolerant and use-robust protocols.

Lower security, simple to attack: Not only can portable devices be robbed more easily, but the radio interface is also prone to the dangers of eavesdropping. Wireless access must always include authentication, encryption, and other security mechanisms which must be efficient and simple to use.

Shared medium: Access of radio is always realized via a shared medium. As it is impossible to have a separate wire between a sender and each receiver, different competitors have to ?fight' for the medium. Although different medium access schemes have been developed, several questions are still unanswered as example how to provide quality of service efficiently with different combinations of access, coding, and multiplexing schemes.

Ad-hoc networking: Wireless and mobile computing permits for spontaneous several new questions for research - routing on the networking and application layer, service discovery, network scalability, reliability, and stability etc.