

**CHENNAI – PONDICHERRY**

**Routing to Multi-Instantiated Destinations:Principles, Practice, and Applications**

**Abstract:**

Prior solutions for routing to multi-instantiated destinations simply adapt existing routing algorithms designed for single-instance destinations, or rely on flooding techniques. In this paper, a new approach for routing to multi-instantiated destinations is introduced, and the MIDR (Multiple Instance Destination Routing) framework is presented as an example of the approach. MIDR uses only distance information to multi-instantiated destinations, without routers having to establish overlays, know the network topology, use complete paths to destination instances, or know about all the instances of destinations. MIDR can be used in name-based content routing, IP unicast routing, multicasting, and anycasting; even in scenarios where the network topology is highly dynamic such as in the case of MANETs. It is shown that MIDR provides multiple loop-free paths to destination instances. Extensive simulation-based experiments performed in the context of MANETs show that MIDR outperforms traditional approaches based on unicast protocols and that it scales to large networks.

**Existing System:**

Traditional notions of unicast, anycast, and multicast routing need to be revised in favor of an integrated framework for routing in which any destination may have multiple instances. Section 3 presents the main principles of such a framework. In a nutshell, routing to multi-instantiated destinations entails establishing a lexico graphic ordering of distances to destinations in which the identifiers of the routers to which destination instances are attached are part of the attribute set used to define the ordering. Many concrete approaches are possible based on this simple observation.

**Proposed System:**

MIDR is the first routing framework for multi-instantiated destinations and uses only distance information about destinations. MIDR does not require routers to know the network topology, path information, routes to all network sites, or all the instances of any given destination. Instead, for each multi-instantiated destination, MIDR partitions the network into connected components composed of nodes that share a common closest destination instance and establishes an ordering over the nodes that can be used to route data from any node to its closest destination instance through loop-free paths. This way, nodes only need to keep state regarding their closest instance of each destination. This section also presents the Interest-driven Multiple Instance Destination Routing Protocol (Id-MIDR) which is an instantiation of MIDR that is well suited to scenarios where the network topology is highly dynamic and the network resources are scarce.