



Wireless mesh networks rate adaptation joint scheduling, routing and power control

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ABSTRACT

We present a number of significant engineering insights on what makes a good configuration for medium- to large size wireless mesh networks when the objective function is to maximize the minimum throughput among all flows. For this, we first develop efficient and exact computational tools using column generation with greedy pricing that allow us to compute exact solutions for networks significantly larger than what has been possible so far. We also develop very fast approximations that compute nearly optimal solutions for even larger cases. Finally, we adapt our tools to the case of proportional fairness and show that the engineering insights are very similar.

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Introduction

Wireless mesh networks are seen as a promising alternative to other broadband access technologies. In order to offer high throughput, WMNs will have to be tightly managed. Once an operator has placed his mesh routers and his gateway to offer appropriate coverage to a set of end-users, he will need to engineer his WMN to maximize the network performance. This means choosing among a number of sometimes conflicting options with complex interactions that can affect performance to various degrees. The main objective of this paper is to produce quantitative measures of the impact of these choices on the performance of networks of realistic sizes. We examine these issues in the centralized framework, we assume that the position of the nodes, the flows, the interference, and propagation models are known at a central location where the optimal configuration is computed and then passed along to each mesh router.

Prior Work

In the existing system there is no priority wise for sending the message to the destination and Power control simulation is not existed in the delivery of message.

Proposed Work

In this project we going to do

- Information resend to the destination, if Transaction fails.
- There will be proper priority wise for sending the message to the destination.
- It can provide routing, joint scheduling, power control.
- To propose a column-generation technique which allows us to solve exactly medium-size problems? The difficulty is to solve the NP-hard pricing sub problem in an efficient manner. This is especially important since it has to be solved repeatedly. We do that by introducing a technique that we call “greedy pricing,” which uses an enumeration based algorithm on a restricted set of links.
- We show that this technique allows us to compute exact solutions for problems much larger than what an improved version of the original technique proposed in [3] can do. For

networks small enough for both techniques to handle, our technique also turns out to be much faster.

•We also propose and compare two approximate algorithms that are fast and very accurate. They can be used to compute solutions for much larger networks.

Complete Step Wise Module Of Project:

In this project, we developed three modules. They are,

- Setup Multi-hop Connection
- Column Generation Technique
- Professional Fairness

Multi hop-connection Module

A destination station in a wireless communication system for a multi-hop connection selects a transmission path having a minimum total of required transmission power values of respective stations on the transmission path among candidates of the transmission path from a source station to the destination station and transmits a pilot signal to the source station and a relay station, the pilot signal including identification information about the respective stations on the selected transmission path and required transmission power values thereof.

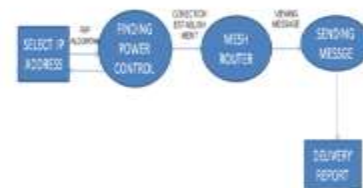


Fig 3: Multi hop Connection for DFD

Thus, the source station and the relay station, which have received this pilot signal, can determine the transmission path having the minimum total of the required transmission power values by use of the identification information included in the received pilot signal.

- Assigning Multiple Hop in a Mesh Router
- It better than single hop.
- Joint Scheduling.

- Routing,
- Control.

Column Generation Technical Module

- Choosing best priority for sending the Information.

The problem studied is that of solving linear programs defined recursively by column generation techniques or cutting plane techniques using, respectively, the primal projective method or the dual projective method.

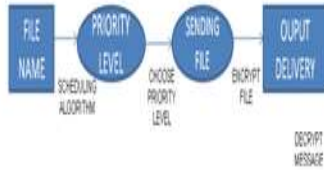


Fig 2: Column Generation for DFD

This paper considers the problem of the scheduling of preemptive jobs on unrelated parallel machines, which differs from those discussed in the literature in that it includes changeovers of machines as well as temporary constraints of resources. This problem is complicated to such an extent that even its mathematical formulation seems impossible. Its solution calls therefore for the introduction of some heuristics. The paper presents a two-stage heuristic integrating the column generation technique with a genetic algorithm for the purpose of minimizing the make span and the total cost of changeovers. The quality of this heuristic is evaluated by comparing the solutions to a lower bound on the objective function optimal value. An integer-linear programming procedure determining the lower bound is proposed. Extensive experimental study shows that the two-stage heuristic presented is effective for medium-size problems with strong temporary resource constraints in the case of the total cost of changeovers being not in excess of 10% of the make span cost.

Professional Fairness Module – For Sequential delivering data to destination.

This module will enable delegates to identify the correct procedures and people skills when dealing with Fairness and Professional Standards whilst adopting a Value Driven leadership approach. The delegates will explore the positive influence the MPS values and behaviors have when dealing with these issues.

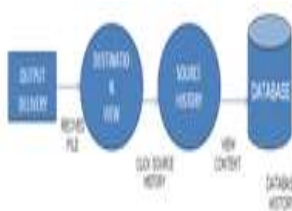


Fig 3: Professional Fairness for DFD

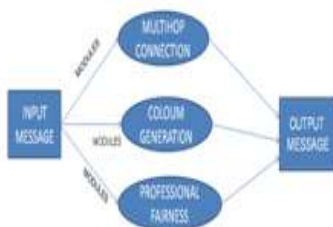


Fig 4: Level 1

Results and Discussions



Fig 5: Login page



Fig 6: Sending files to client



Fig 7: Decrypted file



Fig 8: Complete History about the data



Fig 9 : Hacking Detection

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