

Introduction

What are quantum walks

Quantum walks are quantum analogues of classical random walks. In contrast to the classical random walk, where the walker occupies definite states and the randomness arises due to stochastic transitions between states, in quantum walks randomness arises through: (1) quantum superposition of states, (2) non-random, reversible unitary evolution and (3) collapse of the wave function due to state measurements.

RESEARCH PAPER TOPIC

Evolution of a quantum algorithm based on quantum random walks for server traffic control and task scheduling

Abstract

The server cluster technology may be connecting multiple independent servers, and, in the same time, it must provide services as a whole by a cluster. In the server cluster, how to solve the problem of server traffic control and task scheduling is very important.

In order to reduce the access time, optimize the overall performance and achieve parallel program in a high efficiency; the task request must be allocated to each on the server. So, load balancing mechanism is the core of cluster technologies.

My work will be to create a quantum algorithm to control the load balancing in different servers