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Patent Search

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Abstract:

Abstract The rapid and extensive proliferation of IoT devices as part of mobile-edge computing has led to the development and deployment of numerous IoT applications with high requirements for system resources. Surprisingly, the mobile-edge computing infrastructure has many nodes at the edge with limited resources, high operational complexity, and a high chance of failing. As a result, there is an immediate prerequisite to improve the performance of the task distribution structure and maximize the utilization of edge network servers. While simultaneously taking a certain degree of communication delay into account when an Internet of Things use is separated into manifold collective initial tasks distributed throughout numerous edge clouds. To begin with, this work introduces a holistic optimization target that considers the degree of inaccessibility, communication delay, and resource consumption while distributing a group of IoT applications over several edge clouds. Then, a plan is presented to reduce this optimization aim while meeting the required communication timeframe. A thorough simulation experiment is performed to prove the efficacy of the proposed strategy and show that it outperforms conventional approaches.

Complete Specification

Description: Evaluating the Impact of Mobile Edge Computing On IOT Device Performance and Optimization

Field and Background of the Invention

Mobile Edge Computing (MEC) aims to reduce delay, boost throughput, and quicken response times by processing data closer to its point of origin, or "edge," within the mobile network's infrastructure. By integrating computing procedures into nearby mobile base stations, MEC enables localized data processing close to the end user, mitigating the problem of slowness throughout data transfer. With MEC, data is generated and processed locally, decisions are made quickly, and data is transmitted near real-time at the network's periphery. This technology is essential in 5G networks, where smart online traffic control and congestion relief are needed. Augmented reality (AR) is one area where MEC shines because it emphasizes low latency and high throughput. Streaming social media and paid television, e-commerce, the Internet of Things, connected vehicles, and even computers are just a few industries that can benefit from MEC technology. Telecommunications firms and mobile phone networks are improving their infrastructure to store media files more closely to the user network structure, relocating backend functions closer to the user. In-store systems may operate more efficiently, evaluate data more quickly, and provide a more seamless experience with the help of MEC deployment. The proliferation of IoT gadgets and the requirement for real-time data processing are driving the expansion of the MEC industry, which in turn relieves stress on cloud networks and reduces energy usage. Vehicles with built-in computers, wireless technology, and sensors are called "connected vehicles," they are expected to improve production methods and pave the way for new connected car ecosystems.

As more sectors see MEC's value, its potential uses will only increase. By decreasing latency, conserving energy, expanding bandwidth, boosting security, and optimizing

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