



MOBILE COMPUTING

mobile computing

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About the Tutorial

Mobile Computing is a technology that allows transmission of data, voice and video via a computer or any other wireless enabled device without having to be connected to a fixed physical link.

This tutorial will give an overview of Mobile Computing and then it will take you through how it evolved and where is the technology headed to in future along with the classifications and security issues involved.

Audience

This tutorial has been prepared for beginners to help them understand the basics of Mobile Computing. After completing this tutorial, you will find yourself at a moderate level of expertise in Mobile Computing from where you can take yourself to the next level.

Prerequisites

This tutorial assumes you are completely unaware of the basic concepts of Mobile Computing, but still you are living in the present where mobile phones, PDAs and Tablet PCs are being used in day-to-day life.

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1. MOBILE COMPUTING – OVERVIEW

Mobile Computing is a technology that allows transmission of data, voice and video via a computer or any other wireless enabled device without having to be connected to a fixed physical link. The main concept involves:

- Mobile communication
- Mobile hardware
- Mobile software

Mobile Communication

The mobile communication in this case, refers to the infrastructure put in place to ensure that seamless and reliable communication goes on. These would include devices such as protocols, services, bandwidth, and portals necessary to facilitate and support the stated services. The data format is also defined at this stage. This ensures that there is no collision with other existing systems which offer the same service.



Since the media is unguided/unbounded, the overlaying infrastructure is basically radio wave-oriented. That is, the signals are carried over the air to intended devices that are capable of receiving and sending similar kinds of signals.

Mobile Hardware

Mobile hardware includes mobile devices or device components that receive or access the service of mobility. They would range from portable laptops, smartphones, tablet PCs, Personal Digital Assistants.



These devices will have a receptor medium that is capable of sensing and receiving signals. These devices are configured to operate in full-duplex, whereby they are capable of sending and receiving signals at the same time. They don't have to wait until one device has finished communicating for the other device to initiate communications.

Above mentioned devices use an existing and established network to operate on. In most cases, it would be a wireless network.

Mobile Software

Mobile software is the actual program that runs on the mobile hardware. It deals with the characteristics and requirements of mobile applications. This is the engine of the mobile device. In other terms, it is the operating system of the appliance. It is the essential component that operates the mobile device.



Since portability is the main factor, this type of computing ensures that users are not tied or pinned to a single physical location, but are able to operate from anywhere. It incorporates all aspects of wireless communications.

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