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Abstract

Most people say they view home network industry as one of the most important things that are central to creating high profit in the near future. Home network industry will grow in the direction that improves human life more conveniently. We think that key issues in the future home network are security and lightweight function fit to diverse home network environment. In this paper, we discuss the security infrastructure required for remote access in the home networks. I will present three distinct sections: 1) what we need for home network security; 2) security framework for remote access; 3) How to adopt the existing security technologies.

1. Introduction

In the past, most people should share a computer and use limited resource. However, there today are many devices, many resources and useful information around us. They provide us with exciting, interesting and various services. These changes are expected to be more accelerated due to advent of ubiquitous paradigm. Currently, there is a worldwide trend towards ubiquitous home. The diverse devices connected with home network can communicate with each other and provide various services like as home automation, home security, e-learning, healthcare and so on. These information technologies get our life to change more conveniently. People can enjoy a game, watch TV and communicate with each other at any time or any where. For ubiquitous home, multi-home roaming that enables a device to move from one home to another home would be come true. In that case, the device will use some other services of another home. Consequently, home network will become beyond communication technology and be very closely related to life of people. However even if home network become a part of life, we should never forget that security of home network is very important factor for such a cultural revolution. That’s why compromise of home network would cause many social problem and apprehensions. We consider a flaw or weakness in a system’s design, implementation or operation that could be exploited to violate the system’s security. Especially, we concern about the remote access to home network. Firstly, we discuss security vulnerability to home network. Secondly we describe security requirements of home network. Finally, we conclude with how to adopt existing security technologies.

2. Security Risks of Home Network

There are many security threats and vulnerabilities in the IT world. Home network is no exception. Generally people say that a risk is the potential that a threat will exploit a vulnerability and cause damage or loss to an asset. That is to say, security vulnerability combined with a security threat creates a security risk. In this paper we will consider how to remove the security risk. In the below figure, we can know the various security threats and vulnerabilities in the home network. From now on we will try to find the solutions of those problems in the home network.