

**Internet of Things Security (IoT sec) Challenges, Current Status, Trends and Architecture.****Munasinghe, M.A.K.S., Botheju, D., Silva, L. and Sandaru, T.**

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**Abstract**

This paper presents a survey on the challenges, current status, trends and the architecture of Internet of Things (IoT) Security. Security is a major part in the Information era and IoT now plays a very important role in the information era as well. Internet of Things consists of different layers and different security principles that will be and can be implemented at different layers of IoT to maintain a secure and a standardized behavior. IoT Security challenges, current status, trends and architecture will be analyzed thoroughly to have a better understanding of the importance of Security on IoT and the implementation of IoT Security. With the recent trends in technology and advancements, all devices around us used in our day to day activities, are somehow being connected with technology. Technologies such as cloud computing and improved broadband connections are a key contributor to this. Since more “things” are being connected to internet all around the world, the security factor too should be analyzed, as by the growing trend of IOT in the future with more devices being used, security will be a vital part of these devices and their users. With the advancement of technology, security vulnerabilities all over the world too increase and these must be handled. From accessories we wear, things we use, work we do, mobiles and other devices we use, and up to cars we drive, everything is being made smart. The big era of smart computers is evolving very rapidly, drives getting smaller and smaller, and from wired to wireless. However, even though these devices have evolved, are we certain that the security of these have also evolved, and in comparison, when will we feel safe to use them without any exposure to threats and risks. IoT is a great space where these devices that we use are still in their wired old-fashioned state. With the growth of IoT devices and their possible uses in the real world, we need to look at challenges to IoT and its security concerns that have been and not yet been addressed as yet. From viruses and malware to denial of service attacks and cyber warfare, security concerns have advanced in their aspect of technology with time, and this has become a hot topic in the industry as well as a major concern. The risks and their direct and indirect threats can cause many companies to panic and endanger their valuable data. With the growing use of IoT devices in workplaces and private homes, attached to high processing speed, sensitive, high capacity sensors and actuators, security solutions available in today's industry must be applied to these devices. Also, concurrently more IoT devices and appropriate security protocols will be researched into and analyzed. As we can see a fully interconnected network with IoT devices that will be coming into our society in the near future, the first stages towards embracing this technology will be in implementing appropriate security models.

**Keywords:** *Internet of Things; IoT; Security*