IPv6 Modeling in E-ID Cards as Efficiency Efforts in the Population Registration Process

[1*] ***A M H Pardede***, STMIK Kaputama, Binjai, Indonesia
[2] ***Y Maulita,*** STMIK Kaputama, Binjai, Indonesia
[3] ***R Buaton***, STMIK Kaputama, Binjai, Indonesia
[4] ***H Mawengkang***, Universitas Sumatera Utara, Medan, Indonesia
[5] ***M Zarlis***, Universitas Sumatera Utara, Medan, Indonesia

Abstract--- In order to be registered in an institution / organization, each resident / community must register by providing identity data personally. When someone wants to be registered in an institution such as Birth Certificate, School, College, residence, Tax, BPJS, Bank, Driver Lisence, Passport and others, they must register and register one by one and have a registration number or account for each agency. It can be said that nowadays everyone is bothered with the registration process, starting from the time of birth they must register to be registered as residents, to enter the school must also register, this is felt to be ineffective and inefficient because one must continue to register one by one and redundancy have a registration number that is different for each agency.

The presence of an electronic resident card (e-KTP) aims to make data collection easier and there is no double KTP number, but this is not yet maximal, there are still multiple KTP numbers, proven by many multiple data communities. Seeing these problems need to find a solution or an effort to ensure that the affairs of registration are not repeated and once up and the number is valid for all agencies. The presence of the latest technology namely IP v6 (Internet Protocol) brings the opportunity for the efficiency and effectiveness of the registration system, because IP v6 is able to provide numbers up to trillions addressing numbers.

The objectives of this study are: 1) Designing an analytical model to build an IP V6 model on e-KTP registration. 2) Application of one IP v6 model on e-KTP registration using IPv6 IP address, once the child is born automatically has one registration number i.e. IPv6 address number, and the number applies to all agencies. The method used in this study is an exploration and modeling study of system development with NDLC to produce a model for building IP v6 implementation on e-KTP. The results of the study will show that the community has one registration number, namely IP v6, and the number is valid since the child is born and for all agencies such as birth certificates, e-KTP, Student Number, Passport, Driver's License, Bank and others

The results of the study that implemented IPv6 on numbering e-KTP with a total length of 128 bits, greatly facilitated citizens in terms of registration services because each resident only has one identification number will apply to all agencies, because there is no data repetition or data redundancy, one e-ID card can be applied to elementary schools, high schools, hospitals, BPJS, Driver's License, passports and for communication addressing or IP addresses to be part of the e-KTP.

Keywords--- IPv6, ID_Number, e-Id, e-Government

I. Introduction

The most common identification and authentication is to use ID cards in interacting with every public service, online shopping, and other transactions. This can also be a necessity in providing complete and guaranteed identity information [1]. Electronic identity card (E-Id) is a tool for owners to prove their identity, both physically and digitally. E-Id contains information that can be read by humans and machines or computers [2].

The development of the times and technology today has major impacts and changes to human life, including increasing needs, lifestyles and activities of everyone. Humans are always faced with a registration process, this can be seen starting from when someone is born must register to get a master number and then registered as a resident on a family card, in other words everyone for now has dozens of registration numbers (ID) as identification or identity. This is not efficient because for someone's identification number requires tens or even hundreds of ID numbers or registration number. With the presence of a registered or properly recorded identity, this can facilitate tracking in crime and fraud [3].

Along with the development of IP v6 technology that replaced the predecessor version of IP v4 brought a major change to the development of IP addressing, with the birth of IP v6 addressing increasingly added address

*Corresponding Author: A M H Pardede
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9. With e-KTP each resident can register to get an internet protocol (IP Address), this IP address is the same as the e-KTP number used to access the internet with various applications and devices, each resident has their own IP address to use to access internet or sistemonline.

IV. Conclusion

Based on the discussion of interim results, some conclusions can be taken as follows

1. Internet Protocol Numbering version 6 can be applied for numbering e-KTP
2. With IPv6 numbering, an identity number or e-KTP can generate numbers with a total length of 128 bits or 2128 or 340,282.366,920,938,463,374,607,431,768,211,456 numbers.
3. From the simulations carried out, residents are greatly helped in terms of registration services because each resident has only one number and is valid for all agencies
4. Registration system management agency is very helpful because there is no data repetition or data redundancy.
5. It's easy to know and get population data when needed by the relevant agencies
6. There is no repetition of data, data errors, because data is centralized in one system to be used in each agency
7. One e-ID card can be applied to primary or secondary education institutions, high schools, hospitals, BPJS, Sims, passports and for communication addressing or ip addresses to be part of e-KTP.

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