ABSTRACT

In this modern era, many people need a security system for the data, but because of the rapid development of computer technology in the end the data becomes greater for both encryption and decryption using cryptography as a technique for securing information from third person, in the end to improve performance in the process of securing information using parallel computing techniques for computing simultaneously using all the CPU cores and GPU together to perform the encryption process, description and generate a public key and a private key on the RSA algorithm, which is one of cryptographic techniques.

In general, this software is created using the programming language C and CUDA as well as using some libraries to help parallel computing becomes more efficient for calculation algorithm public key and a private key, this application serves to encryption of data, decryption of data and generate the public key and the private key for now the application can only process plaintext.

The results of this research is the application can perform information security process using parallel computing on the CPU and the GPU so that the information security process can be done more quickly. the results of this test can be seen that the average total CPU time is 31.2 seconds and 3.4 seconds with the GPU is a significant proportion of time about 28 seconds between the GPU and CPU

Keywords: RSA, Graphic Processing Unit, Central Processing Unit, Cryptography