7. Conclusions - Future Scope

7.1. Conclusion

Software developers generally employ licensing restrictions on their products to control the number of instances the product can be run on their machines. These restrictions are implemented during the installation of the product on their machines in the form of license agreement certificate. Developers restrict the use of their product in the form of licensing to obtain license fee and revenue for each execution of the product. Many licensing techniques are available and all these fall into two main categories. The first one is the NodeLock Licensing Methodology which is the main theme of our work. The other is the Floating Licensing that is significantly different from NodeLock system.

The first licensing model is the NodeLock Licensing Methodology in which the software is restricted to a single machine for execution. Only a single instance of the application is run at a time on the machine. The main advantage of NodeLock is that it gets tied up with the hardware details of the machine on to which it is installed. This model is typically limited to single-instance software applications that operate exclusively on only one computing system.

The other type of licensing model is the floating or network model which in contrast to the NodeLock methodology provides a specific number of licenses and the License Manager determines if the user can obtain the license to run the software on his machine. Floating licenses are not entirely unrestricted, but they may be adapted to much larger processing environments. For example, floating licenses might be restricted by the total number of licenses available, user ids that can execute the software, or IP Address ranges where the software is capable of running [71].

Many number of variations and patterns have been derived in our current research to address various licensing needs based on software types like OS, firmwares, device drivers and software application; cost variations like high, low and medium; band width variations like offline, online network availabilities, etc.

7.2. Future Scope

In this research, we have presented many patterns and variations of NodeLock Licensing Methodologies using extended RSA called Rebalanced Multi Prime RSA. With this we could cover server grade to PC grade, advanced smart phones, etc but we still see that there are some peripheral devices where the computational capabilities are less and need of NodeLock Licenses through the take outs of the current research can easily be applied here. We see further optimized ways to manage this process i.e., instead of using advanced cryptographic concepts like, Rebalanced Multi Prime RSA, simple and optimized cryptography concepts/ patterns can be derived so that running these security algorithms on low power hardware platforms will not degrade the performance.
In other aspects, we also see the need of taking or considering different aspects of hardware attributes into consideration so that NodeLock Licensing process will be optimized to the core to address specific needs in low power embedded systems/hardware platforms.