MITRE eCTF Challenge 2016

Hand-off Document: Team CSI (Northeastern University)

Members: Benjamin Tan, Emily Pankosky, Erin O'Neill, Kim Tran, Mark Wilkening, Nicholas Kubasti, Samantha Gray, Victoria Suha

Irreversible Configurations Made

Our system does not require any irreversible configurations.

Master PIN

To set a new Master PIN:

- Run `python change_master.py` from the same directory as the server.
- Follow the prompts to enter the current and new PINs.
- You will receive the message `Master PIN changed. Please restart the server.` if the action was successful.

Image Install

Our image can be written to an SD card, when the BBB is turned on the new image will be installed.

Please note that it is recommended to not have the cape on while installing the image!

Additional Notes

- To initiate a registration request, enter `*#*#*#*#`
- To attempt to unlock the door, type `<6 digit pin> #`
- To change the tenant pin, `<6 digit pin>*<new 6 digit pin>#`
- For debugging, you can use the netcat and socat instructions provided by MITRE

About the System

- First the widget client reads the keypad for a registration request, password change, or request to open the door.
  - The AVR chip indicates whether or not the operation was successful.
  - Once the operation is successful, the data is passed to the server.

- Then the server loads the REGISTERED_WIDGETS file and compares the data sent from the widget_client to the server.
  - If the user requested to register a new device and it was successful, copy the line of data from the REQUESTED_WIDGETS file and paste it into the REGISTERED_WIDGETS file.

- In order to ensure that our device_key is persistent, we pull the serial number from the ECC chip.

- The server limits to a maximum of 60 requests per hour. It is a rolling limit, so if there are 60 requests from 2:15 to 3:10, it will not permit entry until 3:15 in order to prevent brute force attacks.

Contact

Please contact us at suha.v@husky.neu.edu if any problems occur. Thank you!