# IoT(Internet of Things) Network Security

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PIPELINES

NREIP
NAVAL RESEARCH ENTERPRISE INTERNSHIP PROGRAM

## Project Objective and Intern Contribution

- Our aim was to Improve the existing SLICT(Secured Linux integration configuration tool), that secures IoT devices.
- Specifically, to automate the configuration and security settings allowing a quick and safe connection to the network.
- Some of the features included on the interface are:
  - **Disabling unused services :** Eliminates the number of open ports or entry points
  - **Uploading public keys :** Specifies who the device should talk to
  - **Configuration of Ip tables:** We can apply certain firewall rules
  - **Managing Multiple Devices:** applies to, devices by IP address input
  - etc.

## The methods we used to accomplish this aim:

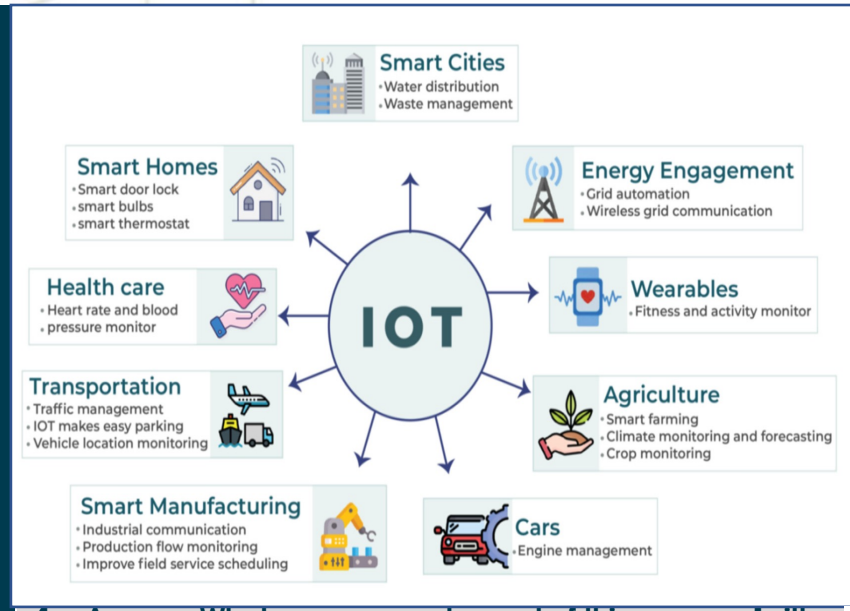
- A folder of ansible scripts for automation, python to work with the running flask server, and html with JavaScript for the web interface.

## We were assigned to:

- Include user input to the tool that allows an IP address to be passed as the target.
- Update the scripts to work on all Linux distributions

## Our contributions were:

- Introducing python code to receive an IP address.
- Edit the html to update the interface.
- Update ansible scripts to automate network connection utilizing the users input IP address




## Results / Accomplishments / Next Steps:

### We demonstrated:

We demonstrated that automation for network configuration con be applied to a wide range of devices and provide optional security features for each device.

### The impact for the Navy is

### What's most important is:

In the future this work will be able to be applied to all secured networks to easily add IoT devices and use them securely. Sailors working with computer systems from any location such as in the field, on naval ships, or at the home base can use the tool without a need for years of experience on configuring IoT devices.

1. **Answer: What are you most proud of this summer [with respect to your experience/project]?**

We were able to have a successful connection between our testing virtual machine and the SLICT tool.

2. **Answer: Why was the internship valuable?**

This project permits testing and the use of IoT to be up to security standards almost immediately, instead of manually changing the security settings to safely use the device.

3. **Answer: Advice for future cohorts?**

Take time learning what is established before trying to add other features. Additionally, when contributing to preexisting software include documentation for future contributions.