Project Title
A Java API for unifying ad-hoc Wifi networking

Team Members
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Faculty Sponsor
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Client
Dr. Marius Silaghi - Associate Professor at College of Engineering & Science, FIT

Meetings with Sponsor/Client
Tuesday, March 5
Monday, March 11

Progress of current Milestone (progress matrix)

Task	To Do (Completion %)	Peter	Klaus	Michael	Robert
Create Showcase Poster	None 100%	25%	25%	25%	25%
Create Ebook Page	None 100%	25%	25%	25%	25%
Complete Direct P2P support	Peer group discovery 85%	43%	0%	0%	42%
Complete IP discovery	None 100%	30%	30%	20%	20%
Implement Android P2P support	Testing and bug fixes 50%	20%	5%	5%	20%
Create Demo Application	None 100%	0%	50%	50%	0%

Discussion (at least a few sentences, ie a paragraph) of each accomplished task (and obstacles) for the current Milestone

- Create Showcase Poster: Using the guidelines provided on the senior design class website, the poster for the Senior Design Showcase has been completed. It consists of sections that describe the goal of the project, the challenges, the API's features, the API's architecture, the tools used to make the API, and some metrics used in measuring the quality of the product. In addition, there is a system design diagram that provides a nice visual summary of (most of) the aforementioned sections.
- Create Ebook Page: Using the guidelines provided on the senior design class website, the ebook page for this project has been completed. The abstract provides an explanation for the goal and motivation of the project, challenges and the approaches that were taken to overcome them, as well as the benefits that this API will provide.
- Complete DirectP2P support: All P2P functions are completed except for group discovery. Group discovery requires finding the MAC address of the group owner. Our current use of wpa_supplicant p2p_find does not always succeed in giving output. We are investigating this as a problem in configuring wpa_supplicant or the call, and not as a fault of the tool itself.
- Complete IP discovery: We utilized a multithreaded approach to ping all IP addresses in the 169.254.1.N range. This is sufficiently fast for our purposes and accurately counts each device in the network. We expect this method would be laborious for networks that have few peers in them or that have frequently changing peers(joining/leaving) as it does incur overhead. Overall, this approach was the most reliable for all systems we could find at this time.
- Implement Android P2P support: Android P2P support is mostly through the coding stage. It is 50% complete because we are unsure of how Android handles in general, and so it requires more thorough testing to ensure everything is working as needed.
- Complete Demo Application: The Demo application will have the option to either host or join an Ad-Hoc network. The network will be used to send names from each client that joins to the server that hosts. The idea is that it could be used to record attendance at a class or event. The server will display some network diagnostics like the number of dropped packets as well as the names it has received from peers. This should demonstrate the utility of our API for various types of applications.

Discussion (at least a few sentences, ie a paragraph) of contribution of each team member to the current Milestone

- Peter Banis: Peter mainly focused on Direct P2P support for Linux for this milestone. He worked on IP Discovery and tested it for Linux. Peter also helped to implement P2P on Android, which will be tested and worked on further for the final milestone. He wrote half of the evaluation and provided assistance in finishing the poster and ebook.
- Klaus Cipi: Klaus mainly focused on the server component of the showcase demo. He worked on IP Discovery and tested it for Mac. He wrote the majority of the ebook abstract, and provided assistance in finishing the poster.
- Michael Kolar: Michael mainly focused on the client component of the showcase demo. He worked on IP Discovery and tested it for Windows 10. Michael developed the system design diagram on the showcase poster and wrote a sizable portion of the ebook.
- Robert Olsen: Robert mainly focused on Direct P2P support for Linux for this milestone. He worked on IP Discovery and tested it for Windows 7. Robert also helped to implement P2P on Android, which will be tested and worked on further for the final milestone. He wrote half of the evaluation and a majority of the poster.

Plan for the next Milestone (task matrix)

Task	Peter	Michael	Klaus	Robert
Create User Manual	25%	25%	25%	25%
Create Demo Video	25%	25%	25%	25%
Finish DirectP2P	50%	0%	0%	50%
Finish Android P2P support	35%	15%	15%	35%

Discussion (at least a few sentences, ie a paragraph) of each planned task for the next Milestone

- Create User Manual: The manual will provide insight into the proper usage of the API. We will provide descriptions of the functions that are used to form networks, connect to networks, and other functions for both Ad-Hoc and Peer-to-peer. In addition, any distinctions on an operating system basis that developers should be aware of will be clarified. Alongside these function descriptions will be examples that demonstrate the

proper usage of each.

- Create Demo Video: Our demo video will feature the demo application that was completed for this milestone. It is also the same application which will be used to demonstrate the capabilities of the API during the showcase. In brief, the program is an attendance checker where students must "clock-in" by sending their names to the server.

- Finish DirectP2P: Correct use of wpa_supplicant p2p_find command to find group owner and their needed information. This may be a configuration issue. We do not expect to need to use alternative tools. Once that is completed, we will do testing with Android to ensure connections can be created and utilized correctly.

- Finish Android P2P support: We need to create a simple handler app to enable us to test each of the API's functions individually and another handler to test the API functionality as a whole. We expect to encounter errors in these tests that require noticeable rework.

Sponsor feedback on each task for the current Milestone
- Create Showcase Poster:

- Create Ebook Page:

- Complete Direct P2P support:

- Complete IP discovery:

- Implement Android P2P support:

- Complete Demo Application::

Sponsor Signature: _____ Date: _____

Sponsor Evaluation
- Sponsor: detach and return this page to Dr. Chan (HC 322)
- Score (0-10) for each member: circle a score (or circle two adjacent scores for .25 or write down a real number between 0 and 10)

Peter Banis	0	1	2	3	4	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10
Klaus Cipi	0	1	2	3	4	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10
Michael Kolar	0	1	2	3	4	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10
Robert Olsen	0	1	2	3	4	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10

- Sponsor Signature: _____ Date: _____