

April 12th, 2021
Dr. Mark Lanthier
Computer Science Department
Carleton University

Dear Mark Lanthier,

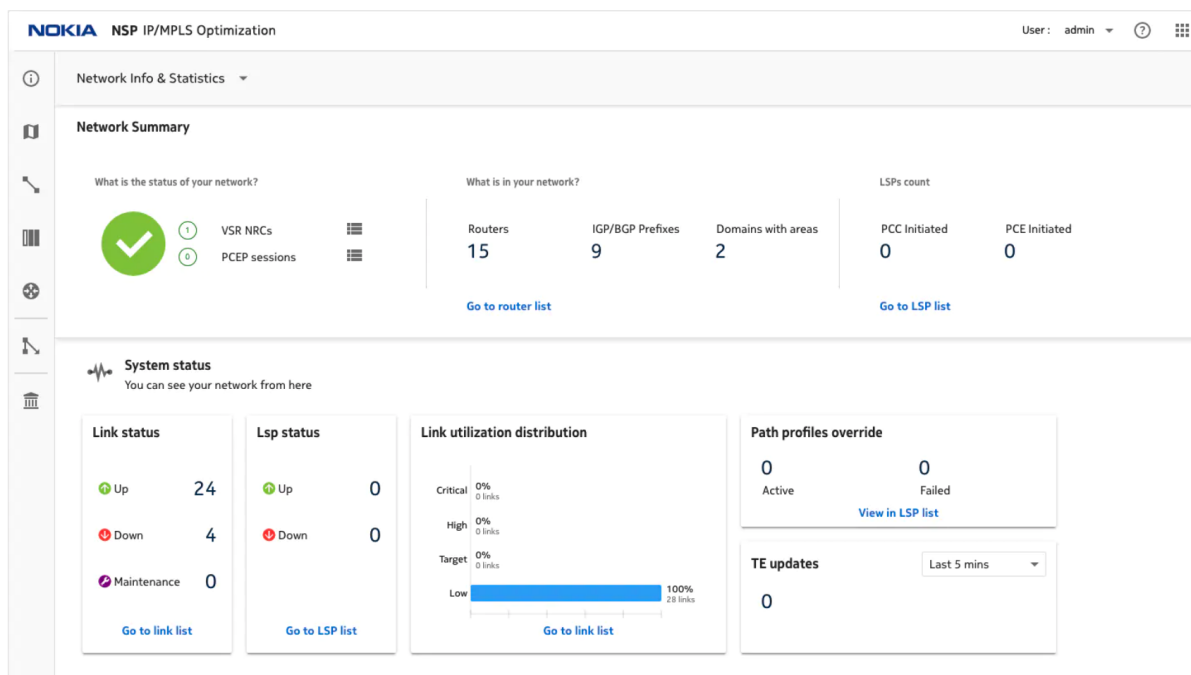
From Jan 4, 2021, to April 30, 2021, I had my second Co-op term as a Web Developer in part of the Development - NRC-P team at Nokia. I have extended the same position for the incoming summer Co-op term. My Co-op course number is COMP3999A. My supervisor is Ehsan Rezaaifar who is the software design manager in NRC-P.

The following interim Co-op work term report follows the guidelines set for the Co-op Work Term Report Guidelines. The report is my own original work and has not been previously submitted for credit.

Sincerely,
Zeye Gu
101036562

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COOP 3999A

Web Developer - IP SDN Co-op (DB6)
Second work term report
Interim report
Employer: Nokia
Supervisor: Ehsan Rezaaifar



NSP IP/MPLS Optimization -network info and statistics

Overview of the work planned over the entire work placement

Nokia is a global leader in the technologies that connect people and things. With state-of-the-art software, hardware and services for any type of network, Nokia is uniquely positioned to help communication service providers, governments, and large enterprises deliver on the promise of 5G, the Cloud and the Internet of Things. Serving customers throughout in over 100 countries, our research scientists and engineers continue to invent and accelerate new technologies that will increasingly transform the way people and things communicate and connect.

According to Nokia NSP page, Network Services Platform (NSP) helps people automate their IP and optical networks to simplify their operations, respond quickly to fast-changing demand, get the most from your resources and ensure maximum service performance and reliability.

During my entire work placement, my main responsibility to assist in implementing web GUI features that are built with React and Redux. I also need to collaborate with other developers and testers to develop or maintain the product.

Description of the work done during the current academic term

From January 4, 2021, to April 30, 2020, I am having my second Co-op term as a Web developer in part of the NRC-P Development team at Nokia. During this work term, I have contributed to parts of the NSP NRC-P App: IP/MPLS Optimization(NRC-P) and IP/MPLS Simulation(NRC-P simulator). The NRC-P shows the network info and statistics, and NRC-P simulator. shows the simulation results for the networks.

Since I already had some experience in React and Redux before. After four days, I was told by my mentor Nazia to start working on updating the React components in NRC-P and NRC-P simulator. Both of them have shared components. If I want to update a Fold Panel to a Collapsible Panel. First I need to find where the UI actually is. It also helps me to get familiar with this application. Then I need to understand the props in both new and old components so that I can upgrade the component effectively. I have two types of documentation that I can use for reference. The first one is like an introductory book of the React components we used in the app. It describes what the uses of the components are and has explanations of all props in the components. The other documentation is more external, and it gives me examples of how my colleagues use these components. The example comes from not only the app I am working on but also the ones from other apps.

After I replace the props correctly, the new components will show up in the UI, but it probably has different styles such as margin, padding or border, etc. The goal of updating the components is to keep the same UI and same functionalities after upgrading the components. Sometimes minor changes are acceptable but I need to discuss them with my colleagues Nazia

and Maryam. The functionalities of the app are more important. I use the React Develop Tool from Chrome extension and the general developer tool a lot. My colleagues also give me talented ideas on how to perform bug tracing. I have gained plenty of experience in developing from them.

When coding for UI and functionalities are done. I clean up the comments, print statements. I have learned how to use Gitlab which is similar to Github that I used before. In the merge request, I usually post not only the decision of the task but also the screenshots of both deprecated and new components so that my colleagues can understand the merge request visually.

By the end of this Co-op term, I have updated many React components in the Nokia NSP app, and become more familiar with it. I have gained experience in using different front-end developer tools as well. When I was updating multiple components in different branches, I learned to use 'git stash' which allows me to switch branches without committing the code. These valuable experiences allow me to develop my aptitude for troubleshooting and the ability to work in a team environment.

Not only the coding skills but also the communication skills are important in developing progress at Nokia. Every week I had three important meetings which directly related to my responsibilities. My colleagues and I shared our developing process and asked for help or tips. Communication with other teams is significant as well. There was a bug that the MenuItem component with icons had unusual space between each instance. I found that if I removed the icon, the padding would be correct, and the developer tool showed that the spacing was not set by our code. After discussing with Nazia and Maryam, I reported this problem to another colleague who was in another team. He told us that the MenuItem component was not supposed to have the icons at all. The problem was solved.

Description of the work expected to be done for the remainder of the placement

During the summer Co-op term which starts from May 2021. I will be expected to update the React Schema Form. It is built by a third-party library called Formik. In the new Schema Form, I can write the schema config which is like a JSON object, and submit it to get the form. Besides the Schema Form, I will also need to solve PTS since I am definitely more familiar with the app after four months of working.

I am excited and looking forward to having further development and debugging experience during my next work term at Nokia.

Acknowledgments

None of my achievements is possible without my supervisor's trust and colleagues' support. I want to express my sincerest gratitude for their help.

References

Network Services Platform Automate, manage and control IP and optical networks
<https://www.nokia.com/networks/solutions/network-services-platform/> [April 12, 2021]