**Week 1**

Date: 16th May

We were provided with our equipment such as laptops and are being assigned to our mentor. We were allotted our cubicle and we got acquainted to all other members of the team. I became part of Team-infra.

Date: 17th May

We went through those wiki pages of nutanix for new hire guide where they stated clearly things which we do during our first week. We read about company goals and policies and watched few videos of what our company

tries to achieve.

Date: 18th May

On third day, they organized a bootcamp for us. The bootcamp session is an integral part of the company for all those fresher which are either new-hire or interns. The session talks about what actually company does and its purpose.

It mainly consisted about overview of nutanix architecture and theoretical aspect of what it does.

Date: 19th May

After the initial bootcamp, we realized some basic aspects and terms used by other team members. We were ready to play around with some stuffs. We cloned the whole git repo on our machine and went through few various instances of code. We filed a ticket to get dev vm for our self.

Date: 20th May

We were assigned a dev vm and allotted its ip. We can ssh into the vm and then clone whole repo and then do our initial work of browsing through the instances of code. I was assigned a project and he suggested me to have a look on the code to get some idea about how SNMP works.

Signature

Comments

**Week 2**

Date: 23rd May

We now intermingled more with other interns and team members. We started getting accustomed to our new environment. We worked in our cabin and whenever we feel like refreshing our self, we could either play carom or fussball.

Date: 24TH May

As my mentor, Supreeth was in US related to some company work, we scheduled a webex video call to discuss more on how should I proceed and things which i should ask to clarify myself on the given project topic. I went through what SNMP actually, basically a network protocol and why is it used.

Date: 25th May

We got initial two weeks’ accommodation and we were staying in the hotel.

We used to come office via cab they provided. There is not so much constraint

on timings and it basically routed down to our convenience. They were few other seniors from our college in company and we talked with them to get basic aura. Pulkit, being our senior and also part of my team, helped me a

lot and guided me whenever I had few problems setting up few things.

Date: 26th May

Initially we had the task of generating a dummy new alert and get it displayed on prism gui. We created a json plugin schema and defined a new notification for it. This changes were made in our dev vm, we compiled it and now to run this, we needed to deploy it on cvm.

Date: 27TH May

I was given a cvm to continue my task. We replaced the binaries and ran the script to install new ncc binary. On the cluster, we set up the environment and

ran python code to check the alert files being generated in log files.

Signature

Comments

**Week 3**

Date: 30th May

We set up our sync up with Supreeth and Pulkit and I asked few doubts which I was not able to refer to. I read more about snmp, snmp objects, OIDs and traps. SNMP traps are the notifications which get generated when something goes wrong in the node and it is being sent to our client side. We needed to make this trap smarter and elaborative.

Date: 31th May

When I went through code patches on opengrok, I realized we have a generic trap for all alerts defined in our ncc folder. We aimed at creating more traps for each alert, one to one mapping with more descriptive traps. We aimed it to do it through an automatic tool which can be polled periodically.

Date: 1st June

To make more traps and to initialize them, we need to change our MIB file to publish those new traps. My mentor assigned me task to go through this file and take time to understand how are objects and notification type structures are being defined in file.

Date: 2nd June

I tried few changes manually in the file and to see if changes are in correct format, we used online mib checker to validate it. I got accustomed to the syntax used in the file and now I started emphasizing on implementing a python script on top of it which could do it automatically.

Date: 3rd June

To check whether we capture traps on the client side, Supreeth suggested to add a new snmp user with my credentials and run the daemon tool on my dev vm. Dev vm acted as client and cluster cvm acted as snmp agent sending traps. I manually sent few snmp traps and got it received on the client side.

Signature

Comments

**Week 4**

Date: 6th June

Now we started working on creating a new mib file from the python script.

We created some class and defined a structure way to publish it into mib

file. We wrote a python script which first read the source file and add all its traps and objects already defined into a list.

Date: 7th June

Proceeding with the previous work, we now focused on reading json file and

parsing those alert proto and dump its content as snmp trap in the mib file.

We checked whether the mib file generated is valid and worked on to add more attributes of the trap.

Date: 8th June

Now pulkit suggested to create a mib wrapper around the file so that this script could read any mib file, find its desired content and have following

Defined operations such as list-traps, add-traps-from-alerts, add-objects-from-attributes. . I was allotted a null hypervisor cluster to check and test the running program.

Date: 9th June

Read about google proto buffer the way it is used by our system. We then

converted plugin schema as proto and read the attributes from proto as it was easier to use and more convenient method to work around. I did some testing and worked some examples about how proto buffer basically works.

Date: 10th June

Now we tried implementing add-trap functions and we tested it by running a background process on client side which aims at capturing dummy alerts being created by our snmp agent. We spent some time testing and debugging all the faults and errors.

Signature

Comments

**Week 5**

Date: 13th June

Now we aimed at establishing some invariants about how to add a new trap.

Adding a new trap requires a new OID (object identifier) to be attached along and this should be unique/retained across all the releases of the node.

We discussed about how this could be carried out with my mentor.

Date: 14th June

We implemented the basic details of the workaround. We checked the trap OID which we receive on the client side is same as we sent it and running this script again and again doesn’t duplicate the alerts already existing. My mentor suggested me to improve the code style and follow the basic guidelines described in google docs.

Date: 15th June

I started making few changes to my code style and we had few discussions on how we could improve this feature making it more dynamic as such automatically adding more objects for a trap to make it more descriptive.

But we basically focused on one aspect of doing the basic setup first and then moving on ahead with it

Date: 16th June

Now as new traps were published in mib file, one more additional task we needed to do is to attach information such as its severity, impact and name along with the trap. To do so, we needed to modify the existing code of snmp agent code running on the client side. We modified the code, added few functions to retrieve the basic attributes of alert proto to send trap details.

Date: 17th June

It was a day which was planned to be intern days-out. I booked my place in it but I missed the trip as I was late in waking up and reaching the pickup place at

the given time.

Signature

Comments

**Week 6**

Date: 20th June

I made few changes to snmp agent code and to test it, I needed to deploy it on our cvm. We searched our way how to replace the binary on the cvm side to see the changes we committed. I worked on more on improving the code style and making more changes to make it work more cleanly.

Date: 21st June

We did have few problems deploying alert manager binary on cvm. My mentor helped me and sorted out the problem and made it running. He also allotted a different cvm for me and told me to shift my changes to that cluster.

Date: 22nd June

I tried adding more details to alerts but we were not successful in doing so.

It required us to extract some details from plugin schema but we did not have any way to extract it from alert proto. We added few log info and then while sending traps, we tailed those log files and tried finding out the basic error in my code.

Date: 23rd June

While sending traps across the network, it required that the length of alert

Name should be restricted to some pre-defined length. I asked my mentor about the same and he suggested me to use two cases use name if length of name doesn’t exceed otherwise use alert id for the same.

Date: 24th June

I made those changes in my script and snmp agent code. We removed all those errors highlighting the code pattern and then I did send my code changes for code review. I uploaded my patch set and assigned the task of reviewing to my mentor.

Signature

Comments

**Week 7**

Date: 27th June

My team manager asked me to present my work on coming Friday. My mentor and i discussed briefly about how should we present our work. Meanwhile we did sit together discussed few more changes which we can apply to our functions and he suggested me to make amends to my script.

Date: 28th June

We had few more issues with making that binary compatible. We updated the git repo, run make on the local repo again and updated ncc installer on the cvm side. This way it started working again. We sent few traps and now we received it on the client side with its OID along with its details such as impact, name and severity.

Date: 29th June

I worked on my code reviews and did few more test to see that adding a dummy json gets it new OID and the new mib file published did retain all its

old trap features. I went through few more codes to see the pattern how the

organization uses template and other libraries for their purpose.

Date: 30th June

I worked meanwhile on presenting my work in a brown bag session. I had to present my snmp work and then discuss my progress and future endeavors

which can be used in future. My mentor helped me in sorting things out and adding more appropriate details. My mentor did receive his super hero award that day for his last month achievements.

Date: 1st July

I presented my work before the team. It lasted for around 20 minutes with me explaining what snmp is and why we are working on the same. I added a brief video of running code and generating mib file automatically. I presented few test case and showed them my changes on it.

Signature

Comments

**Week 8**

Date: 4th July

Next few days, I was assigned to work on code reviews and update my patch set. I have already committed my changes in experimental folder. Pulkit told me there will be few iterations of code review before they actually deploy it for their proper use.

Date: 5th July

I had few problems with my cluster settings. It got broke few times and I was not able to verify my changes. We started working on reviews and used more re python library as stated in comments. I also asked few details which I needed to clarify and I got it rectified. I committed my work and sent it for the code review again.

Date: 6th July

EID Vacation

Date: 7th July

The team found out that the binary which we deployed may not be compatible with the version of cluster it already had. Few changes were made and cluster was again running. I tested my left out changes and did look on my errors and changed it on hand. We had our whole team session with founder of the company.

Date: 8th July

Pulkit sent me some more reviews stating where I missed out. I debugged them and we discussed of taking input mib file as gflags or an argument.

They told me once all the comments get addressed, then they send it to more appropriate team to work on and test it.

Signature

Comments

**Week 9**

Date: 11th July

I was not feeling well. So I did not attend. Leave.

Date: 12th July

I worked on few reviews and we decided it to commit it back replying Pulkit comments. I started working on making those input name which was initially globally defined as gflags.

Date: 13th July

The company released its new version 4.7 of its product and the whole team decided to have a party for it. We did lunch, went to play bowling, stayed in mall, watched movie and came back. My mentor in subsequent time addressed few more reviews and told me to change few comments and publish my assumption wherever I used one.

Date: 14th July

I am working on adding gflags as a convenient method to give address of source and destination file. I worked on getting those documents given to us verified.

Date: 15th July

Returning back those equipment and other customary works.

Signature

Comments