

Homework 5

NIS & NFS

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Outline

- HW 5-1: NIS client
- HW 5-2: NFS client
- HW 5-3: NIS & NFS server

HW 5-1: NIS client (20%)

HW 5-1: Requirement

- Set up NIS client
 - Bind on **sahw5.nctu.cs** (WireGuard IP: **10.113.0.199**)
 - Local users can login to your server, so can NIS users
 - Query NIS Server first, then local file
 - NIS users' home directories would be at */net/home/{nisusername}*
 - There are 3 existing NIS users
 - Shared account: “**nisuser1**”, “**nisuser2**”
 - Password is identical to username
 - Your own account: “**nisstu{ID}**” ({ID} is your WireGuard ID)
 - Password is the first five characters of your WireGuard private key

HW 5-2: NFS client (40%)

HW 5-2: Requirement (1/2)

- Set up a NFS client
 - Mount four directories on **sahw5.nctu.cs** (WireGuard IP: **10.113.0.199**)
 - */net/home/nisuser1, /net/home/nisuser2*
 - Read only
 - */net/data/{ID}*
 - Read only
 - */net/home/nisst{ID}*
 - Allow read & write
 - Will be mounted automatically when accessed (Hint: **autofs**)

HW 5-2: Requirement (2/2)

- Display FTP upload log through HTTPS
 - Record every file uploading into “**public_html**” folder in your NIS user’s home directory (*/net/home/nisstu{ID}/public_html/uploadscript.log*) rather than */var/log/uploadscript.log*
 - Modify first part of HW3-2
 - Show your *uploadscript.log* on the webpage
 - URL: <https://{ID}.nctu.cs/~nisstu{ID}/uploadscript.log>
 - Use the domain name you have set on HW4
 - Allow users to host static websites on “public_html” folder in their home directories

HW 5-3: NIS & NFS server (40%)

HW 5-3: Requirement (1/2)

- Set up your own NIS and NFS server
 - Let your NIS & NFS client bind and mount directories on **{ID}.sahw5.nctu.cs** (WireGuard IP: **10.113.254.{ID}**)
 - i.e. set up another machine with this new IP
 - WG public key is the same to **10.113.0.{ID}**
 - WG private key is located at */net/data/{ID}/private.key* on TA's NFS server
 - Add a user called “judge” for Online Judge on this server
 - All setting is identical to “judge” on your client which you have set on HW1
 - Using "sh" as default shell
 - “judge” needs to run sudo without password
 - Accept “judge” to login your server by our ssh public key

HW 5-3: Requirement (2/2)

- Requirements for your server
 - Restrict other hosts to bind on NIS
 - Allow only **10.113.0.0/24** and **localhost**
 - Restrict other hosts to mount on storage
 - Only **10.113.0.0/24** can mount on */net/home/nisuser1* and */net/home/nisuser2*
 - Only **10.113.0.{ID}/32** can mount on */net/data/{ID}* and */net/home/nisstu{ID}*
 - Use only reserved port (less than 1024) on NFS
 - */etc/exports* must be **NFSv4** format
 - When mounting on your storage as “root”, they only have permissions same as “nobody”



Grading

- HW 5-1: NIS client (20%)
- HW 5-2: NFS client
 - Mount successfully (5%)
 - Mount automatically (10%)
 - Record file upload (10%)
 - Show log on webpage (15%)
- HW 5-3: NIS & NFS server
 - NIS client works (10%)
 - NFS client works
 - Mount successfully (4%)
 - Mount automatically (8%)
 - Record file upload (8%)
 - Requirements (10%)

Attention!

- We'll judge your server (HW5-3) by using your client (HW5-1, HW5-2)
- Make sure everything is fine after reboot
- Backup your server before judge every time
- Due date: **23:59 January 6th (Wed.) 2021**

Help me!

- TA office hours: 3 GH at EC 324 (PC Lab) or by appointment (mail us)
 - We do not accept walk-ins except for TA office hours
- Questions about this homework
 1. Make sure you have studied through lecture slides and the HW spec.
 2. Clarify your problems and google it to find out solutions
 3. Ask them on <https://groups.google.com/g/nctunasa>
 - Be sure to include all information you think others would need
- We MIGHT give out hints on google group
 - Be sure to join the group :D
- Do not mail us unless it's personal or you're making an appointment

Good Luck!