

Network Programming

Testing and Debugging Network Programs

Note: This class lecture will be recorded!

If you do not consent to this recording, please do not ask questions via your video, audio or public chat; send your question to the instructor using the private chat.

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Error Handling

➤ System Calls

- -1 and set errno → perror()
- Return error number → strerror()
- Python: try-except
- Java: try-catch

➤ Server handling errors

➤ Client handling errors

- User-friendly error message
- Why is it also good to display the OS specific error message to the user?

Fatal Error?

- ▶ What errors should be fatal errors (end the program)?



General Strategies

- ▶ Check for error for ALL system calls
- ▶ Consider wrapper functions
- ▶ Develop the approach that works best for you and the application!

Debugging

- ▶ What are some ways to debug your program?
- ▶ What new problems may be introduced by network programming?

Helpful Tools

- ▶ Wireshark
- ▶ tcpdump
- ▶ netstat
- ▶ ifconfig / ipconfig

Debugging and Endian Example

- ▶ csit/acad → little-endian
- ▶ harry → big-endian

Discussion

- ▶ Timing system calls
- ▶ Using tcpdump