

CS-349 Networks Lab

Assignment 2: Analysing network packets using Wireshark

Submission Deadline: 11:55 PM on Wednesday, 21 February, 2018 (Hard Deadline)

Wireshark is a packet sniffer and network protocol analyzer tool. It helps to capture network packets and understands the structure of different networking protocols.

Instructions:

- ⇒ Install Wireshark (www.wireshark.org) and learn how to capture packets and filter the required content.
- ⇒ Specific application is assigned to each student (refer Table I below). Each student needs to collect the traces for the assigned application using Wireshark.
- ⇒ You should carry out your experiments across different network conditions including different time(s) of the day and locations (e.g., lab or hostel etc).
- ⇒ It is advisable to provide only trace based description while answering the questions. While answering, provide snapshots of the traces in the report and highlight the content as and when required.
- ⇒ If something is missing/incorrect in a problem description, clearly mention the assumption with your answer.
- ⇒ Be precise with your answers; there is no credit for being unnecessarily verbose (may award you negative marks for the same). Unless specified otherwise, do not describe about the tool or application or protocol in general.

Questions:

1. List out all the protocols used by the application at different layers (only those which you can figure out from traces). Study and briefly describe their packet formats.
2. Highlight and explain the observed values for various fields of the protocols. Example, Source or destination IP address and port no., Ethernet address, protocol number, etc.
3. Explain the sequence of messages exchanged by the application for using the available functionalities in the application. For example: upload, download, play, pause, etc. Check whether there are any handshaking sequences in the application. Briefly explain the handshaking message sequence, if any.
4. Explain how the particular protocol(s) used by the application is relevant for functioning of the application.
5. Calculate the following statistics from your traces while performing experiments at different time of the day: Throughput, RTT, Packet size, No. of packets lost, number of UDP & TCP packets, number of responses received with respect to one request sent. Report the observed values in your answer, preferably using tables.
6. Check whether the whole content is being sent from same location/source. List out the IP addresses of content providers, if multiple sources exist and explain the reason behind this.

Submit a soft copy of the report, preferably PDF, together with your collected traces in a zipped form on Moodle. The name of the zip file should be like “Your_Rollno.zip” (example 130101002.zip). Files submitted without proper naming format will not be evaluated. If your trace file size is larger than 2MB (as you won't be able to upload the file in Moodle), you are advised to provide the Drive/Dropbox link of the traces in your report.



Note: Report should not contain more than 6-7 pages. Copy cases will be strictly punished by awarding "ZERO" Marks.

Table – I: Applications assigned to each student (Updated Table)

‡ - uploading and downloading videos | Ψ - use Remote desktop software like Team Viewer | ♣ - uploading and downloading large files

Application Assigned	Student Roll Number	Student Name
Dailymotion ‡	150101001	ABHAY KUMAR
	150101012	AYUSH JAIN
	150101024	GOURAV
	150101034	MAYANK YADAV
	150101044	PARUCHURU SRIKAR
	150101057	SARTHAK TRIPATHI
	150101068	SHIVAM GUPTA
	150101078	SURABHI GUPTA
	150123001	ABHINAV GUPTA
	150123011	DEEPANSH GARG
	150123022	MAYANK KAGLIWAL
	150123035	SAI VARDHAN REDDY GOURAVARAM
	150123045	VAIBHAV MOTWANI
DC++ ♣	150101002	ABHISHEK GOYAL
	150101013	AYUSH SINGH
	150101025	GOURIKA BANG
	150101035	MOHIT KUMAR
	150101045	PATOLIYA MEETKUMAR KRUSHNADAS
	150101058	SASWATA DE
	150101069	SHIVRAM N GOWTHAM
	150101079	TAMILSELVAN S
	150123002	ACHINTYA SINGH
	150123012	DIVIJ CHOPRA
	150123023	MD IMTIYAZ
	150123036	SAMAR SHIVKUMAR DESHMUKH
	150123046	AYUSH SHARMA
Dropbox ♣	150101003	ABHISHEK KUMAR
	150101014	AYUSH SONI
	150101026	HARSHIT BANSAL
	150101036	MUDDADA NITESH KAMAL
	150101046	PIYUSH JAIN
	150101059	SATTI SAI CHANDAN REDDY
	150101070	SHRADHA PRUTHI
	150101080	VADLAMUDI SONY VENKATESH
	150123003	ADITYA SINGH RATHORE
	150123013	HARSHMEET SINGH
	150123024	MOHAMMED BILAL GIRACH
	150123037	SANGEET CHANDALIYA
	150123047	SHASHANK OBEROI
	150101004	ABOTHULA RAKESH
	150101015	BHAVYA BANSAL
	150101027	I NARASIMHA REDDY DILIP KUMAR
	150101037	MUKKOTI ANIL KUMAR
	150101047	PRASHANSI KAMDAR
	150101060	SATYA PRAKASH

Google Hangout	150101071	SHUBHAM JINDAL
	150101082	RITVEEKA VASHISTHA
	150123004	AKASH MAHALIK
	150123014	HEMANT KUMAR JANGIR
	150123025	MOTAPARTHY SAI KRISHNA PRATEEK
	150123038	SANJOG AGRAWAL
	150123048	OJASVIN SOOD
Live Sports Streaming	150101005	AMAN AGARWAL
	150101017	BISHWENDRA CHOUDHARY
	150101028	JIGNYASU RASESH CHASMAWALA
	150101038	MUKUL VERMA
	150101050	PULAK KULI
	150101061	SAURABH
	150101072	SHUBHAM SINGHAL
	150101083	JOY CHOPRA
	150123005	ARPAN GUPTA
	150123015	HITEN SETHIYA
	150123027	NIKITESH SONEJI
	150123039	SAVYA SINDHU GUPTA
NPTEL/ Coursera video lectures	150123049	ASHISH KUMAR PODDAR
	150101006	ANIRUDH SHARMA
	150101018	BOPPANA AKHILESH
	150101029	KATTA YATHEENDRA MOULI
	150101039	N ABHINAV REDDY
	150101051	REDDI HAREESH
	150101062	SAURABH
	150101073	SHUBHANSHU VERMA
	150101084	GAURAV NAKUM
	150123006	AYUSH GOYAL
	150123017	KODI DIGVIJAY YADAV
	150123028	NITESH KERKETTA
	150123040	SUNIL BENIWAL
Online games	150123050	YUGANSH BHATNAGAR
	150101008	ANKIT VYAS
	150101019	CHINMOY JYOTI KATHAR
	150101030	KRISHNA KUMAR
	150101040	NALABOLU RAJENDHAR REDDY
	150101052	ROHAN AGGARWAL
	150101063	SAURAV KUMAR KEJRIWAL
	150101074	SOUMIK ROY
	150101085	HUDDER SHASHANK ANIL
	150123007	BHISHAM BANSAL
	150123018	KULDEEP YADAV
	150123029	P RAMADOSS
	150123041	SYED IMRAN
	150123051	REMIDI NISHANTH REDDY
	150101009	ANUP AGARWAL
	150101020	CHINMOY KACHARI
	150101031	KUSHAL K S V S

P2P connectivity 	150101041	NAYANJYOTI KAKATI
	150101053	ROOPANSH BANSAL
	150101064	SHAHWAR FATIMA
	150101075	SOWDABOINA SAI HARSHA VARDHAN
	150101086	ANKIT KUMAR SINGH
	150123008	CHIRANJIV GOYAL
	150123019	MAMILLA RAJASEKHAR
	150123030	PARIDHI KOTHARI
	150123042	T VARSHNEYA BHUSHAN
	150123052	PRITHVI SRIRAM
Hotstar Streaming	150101010	ANURAG RAMTEKE
	150101021	DESHMUKH UDAYRAJ SHRIKANT
	150101032	LAKSHMIREDDY SESA SAI SHOBITH
	150101042	NEEL MITTAL
	150101054	SAKET SANJAY AGRAWAL
	150101066	SHANIGARAM BHARATH CHANDRA
	150101076	SUDHANSHU RANJAN
	150101087	SATYA PRAKASH
	150123009	DAKSH KUMAR
	150123020	MANAS DARUKA
	150123031	PUNEET KUMAR
	150123043	TARUN GENWA
	150123053	ARKADEEP DAS
Vimeo 	150101011	ASHUTOSH KUMAR
	150101022	DHARMESH CHOURASIYA
	150101033	MAYANK KUMAR AGRAWAL
	150101043	NIKUNJ MITTAL
	150101055	S N V S RATNA KRISHNA PRUDHVI
	150101067	SHASHANK GAREWAL
	150101077	SUHAS SHIVSHANKAR KANTEKAR
	150101088	PRIYANKAR JAIN
	150123010	DEEPAK KUMAR VERMA
	150123021	MATCHA NIKHIL
	150123032	RISHABH AGRAWAL
	150123044	TURKHADE HRUSHIKESH PRAMOD
	150205018	MAYANK PATIDAR