Computer networks

Curs 14

Incheiere
Las aici cateva materiale despre retele autonome, privacy, peer2peer, software alternativ

- PrivChat #4 - 25th Anniversary of Onion Routing
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- https://git.autonomic.zone/coop-cloud
- https://datprotocol.github.io/how-dat-works/
- https://scuttlebutt.nz/
- https://the-local-gossip-index.hashbase.io/
- https://yunohost.org/#/
- https://www.manyver.se/
- https://en.wikipedia.org/wiki/PeerTube

Curs 13

Data Link Layer
Videos: https://github.com/senisioi/computer-networks/tree/2021/curs#datalink_a
https://github.com/senisioi/computer-networks/tree/2021/curs#datalink_b
Introducere in ethernet: https://book.systemsapproach.org/direct/ethernet.html
CRC: https://book.systemsapproach.org/direct/error.html#cyclic-redundancy-check
Framing: https://book.systemsapproach.org/direct/framing.html
Address Resolution Protocol: https://medium.com/@ismailakkila/black-hat-python-arp-cache-poisoning-with-scapy-7cb1d8b9d242
Exemple de cod: https://github.com/senisioi/computer-networks/tree/2021/capitolul5

Curs 12

Network Layer (cont.)
Recording:
Videos: https://github.com/senisioi/computer-networks/tree/2021/curs#routing
Recap: DV and LS Routing https://book.systemsapproach.org/internetworking/routing.html#link-state-ospf
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Inter-Domain vs. Intra-Domain: https://book.systemsapproach.org/scaling/global.html
Autonomous Systems: https://www.cidr-report.org/as2.0/
BGP Looking Glasses: https://www.bgp4.as/looking-glasses
Tutorial: https://witestlab.poly.edu/blog/a-peek-into-internet-routing/

Curs 11

Network Layer (cont.)
Recording:
https://unibucro0.sharepoint.com/sites/Reteledecalculatoare2021/Shared%20Documents/Curs/Curs11/

curs11.mp4
Videos: https://github.com/senisioi/computer-networks/tree/2021/curs#routing
Tutorial on subnets: https://witestlab.poly.edu/blog/designing-subnets/
Basics on routing: https://book.systemsapproach.org/internetworking/routing.html
Distance Vector Routing Example: https://en.wikipedia.org/wiki/Distance-vector_routing_protocol#Example
Poison Reverse si Split Horizon: https://en.wikipedia.org/wiki/Split_horizon_route_advertisement
RIP: https://tools.ietf.org/html/rfc1058
Link State Routing Example: https://book.systemsapproach.org/internetworking/routing.html#link-state-ospf (mai multe data viitoare)

Curs 10

Network Layer (cont.)
Videos: https://github.com/senisioi/computer-networks/tree/2021/curs#forwarding
NAT: https://en.wikipedia.org/wiki/Network_address_translation#Methods_of_translation
Reading: https://book.systemsapproach.org/internetworking/basic-ip.html#datagram-forwarding-in-ip
Recording:
https://unibucro0.sharepoint.com/sites/Reteledecalculatoare2021/Shared%20Documents/Curs/Curs10/curs10.mp4

Curs 9

Videos: https://github.com/senisioi/computer-networks/tree/2021/curs#forwarding
Path MTU Discovery: https://en.wikipedia.org/wiki/Path_MTU_Discovery
ICMP: http://mediaplayer.pearsoncmg.com/_ph_cc_ecs_set.title.4-8_IP_Errors_with_ICMP__/ph/streaming/esm/tanenbaum5e_videonotes/4_8_ip_errors_cn5e.m4v
Fragmentation: http://mediaplayer.pearsoncmg.com/_ph_cc_ecs_set.title.4-7_Packet_Fragmentation__/ph/streaming/esm/tanenbaum5e_videonotes/4_7_fragmentation_cn5e.m4v
Traceroute: https://www.slashroot.in/how-does-traceroute-work-and-examples-using-traceroute-command
DSCP: https://mediaplayer.pearsoncmg.com/_ph_cc_ecs_set.title.9-6_Differentiated_Services__/ph/streaming/esm/tanenbaum5e_videonotes/9_6_diffserv_cn5e.m4v
Recording:
https://unibucro0.sharepoint.com/sites/Reteledecalculatoare2021/Shared%20Documents/Curs/Curs9/curs9.mp4

Curs 8

Transport / TCP /Congestion Control
Tutorial: https://witestlab.poly.edu/blog/tcp-congestion-control-basics/
Recording:
https://unibucro0.sharepoint.com/sites/Reteledecalculatoare2021/Shared%20Documents/Curs/Curs8/curs8.mp4

Curs 7

Transport Layer TCP:
Congestion Control: https://github.com/senisioi/computer-networks/tree/2021/curs#congestion
TCP Reno in linux: https://github.com/torvalds/linux/blob/master/net/ipv4/tcp_cong.c
TCP Reno explained: http://intronetworks.cs.luc.edu/1/html/reno.html
Sliding window: http://intronetworks.cs.luc.edu/1/html/slidingwindows.html#bandwidth-delay
Congestion control RFC: https://tools.ietf.org/html/rfc2581
Demo: https://squidarth.com/demonstrating-congestion-control.html

Curs 6

Transport Layer TCP:
Sliding window: https://www2.tkn.tu-berlin.de/teaching/rn/animations/gbn_sr/
TCP Selective Acks: https://packetlife.net/blog/2010/jun/17/tcp-selective-acknowledgments-sack/
Selective ACK RFC: https://tools.ietf.org/html/rfc2018

Curs 5

Transport Layer TCP: https://github.com/senisioi/computer-networks/tree/2021/curs#trans

Recording:
https://unibucro0.sharepoint.com/sites/Reteledecalculatoare2021/Shared%20Documents/Curs/Curs5/curs5.mp4

Curs 4

Transport Layer, Intro UDP, TCP: https://github.com/senisioi/computer-networks/tree/2021/curs#trans
Recording:
https://unibucro0.sharepoint.com/sites/Reteledecalculatoare2021/Shared%20Documents/Curs/Curs4/curs4.mp4

Curs 3

Invitat: Gabriel Majeri, SSL/TLS criptarea mesajelor
SSL/TLS: https://www.cloudflare.com/learning/ssl/what-happens-in-a-tls-handshake/
Materiale despre securitate: https://github.com/senisioi/computer-networks/tree/2021/curs#security
Recording:
https://unibucro0.sharepoint.com/sites/Reteledecalculatoare2021/Shared%20Documents/Curs/Curs3/curs3.mp4

Curs 2

Materiale: https://github.com/senisioi/computer-networks/tree/2021/curs#web
Note de curs: https://github.com/senisioi/computer-networks/tree/2021/capitolul2#dns
Recording:
https://unibucro0.sharepoint.com/sites/Reteledecalculatoare2021/Shared%20Documents/Curs/Curs2/

Curs 1

Evaluare:

- 60% lab
- 40% examen de curs

Materiale: https://github.com/senisioi/computer-networks/

Puneti cat mai multe intrebari, va rog sa ma intrerupeti de cate ori nu intelegeti ceva sau daca vreti pauza.
Mai mult legat de lab: activitatea poate sa conteze

Materiale: https://github.com/senisioi/computer-networks/tree/2021/curs#intro
Recording: https://teams.microsoft.com/_#/school/files/Curs?threadId=19%3Af16f8eaff3e74424926540192bb0e055%40thread.tacv2&ctx=channel&context=Curs1&rootfolder=%252Fsites%252FReteledecalculatoare2021%252FShared%2520Documents%252FCurs%252FCurs1