LibRIST TUN

Who Needs Exciting When It Just Works?

Sergio Ammirata, Ph.D.
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libRIST

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Boring Is Beautiful

- We present a new use of a new feature: TUN support.
  - Security camera feed and PTZ (point-tilt-zoom) software commands via RIST.
  - Demonstrates RIST can now be applied to every day production tasks.

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udp/TS (sends from camera), and PTZ service listens for camera manipulation commands.

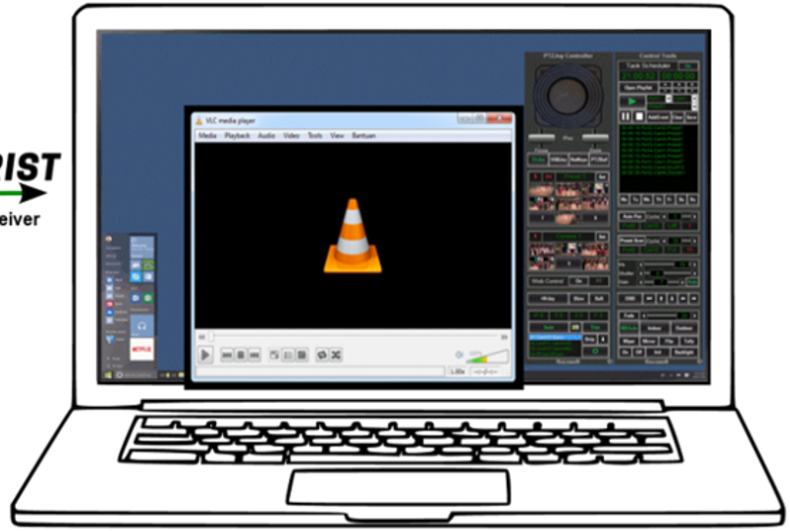
RIST sender

libRIST

libRIST

RIST receiver

libRIST exposes a TUN network bridge for PTZ control



VLC plays video from rist receiver
PTZ software controls camera.

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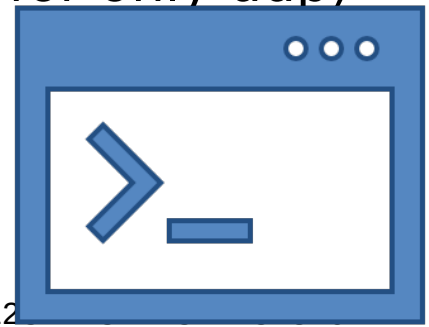
Just Two Command Line Options to Add

- -t tun# (your previously defined TUN device, as in –t tun11)
- -m # (0 for all protocols, 1 for all but udp, 2 for only udp)
- Example with TUN creation and proxy arp:
  - `ip tuntap add mode tun dev tun11`
  - `ip addr add 192.168.101.102/24 dev tun11`
  - `ip link set dev tun11 up`
  - `(setup proxy arp)`



```
ristsender -t tun11 -m 0 -i 'udp://127.0.0.1:12345' -o 'rist://@12
cname=SENDER&bandwidth=10000&buffer-min=1000&buffer-max=1000&rtt-min=25&rtt-
max=105&reorder-buffer=25&virt-dst-port=1968&weight=0&congestion-control=1&aes-
type=128&secret=blarg&username=user01&password=RuXprE3d' -p 1 -v 6
```

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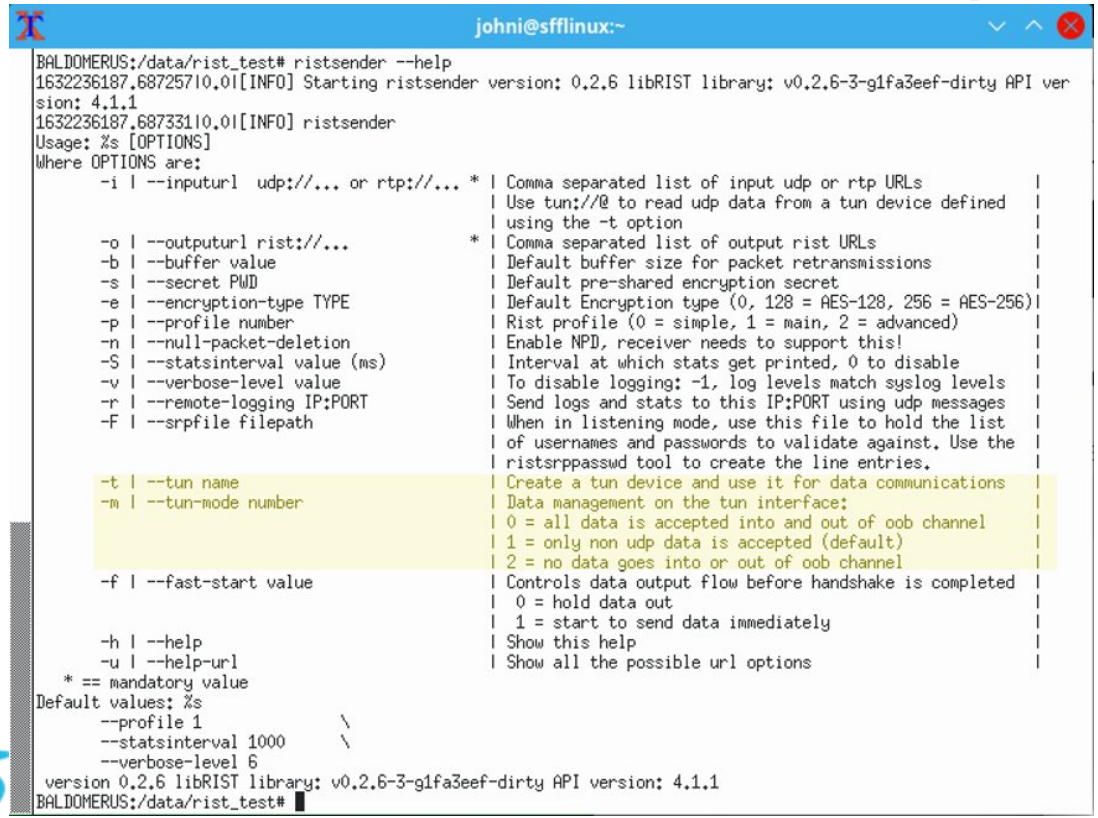
Command Line Help



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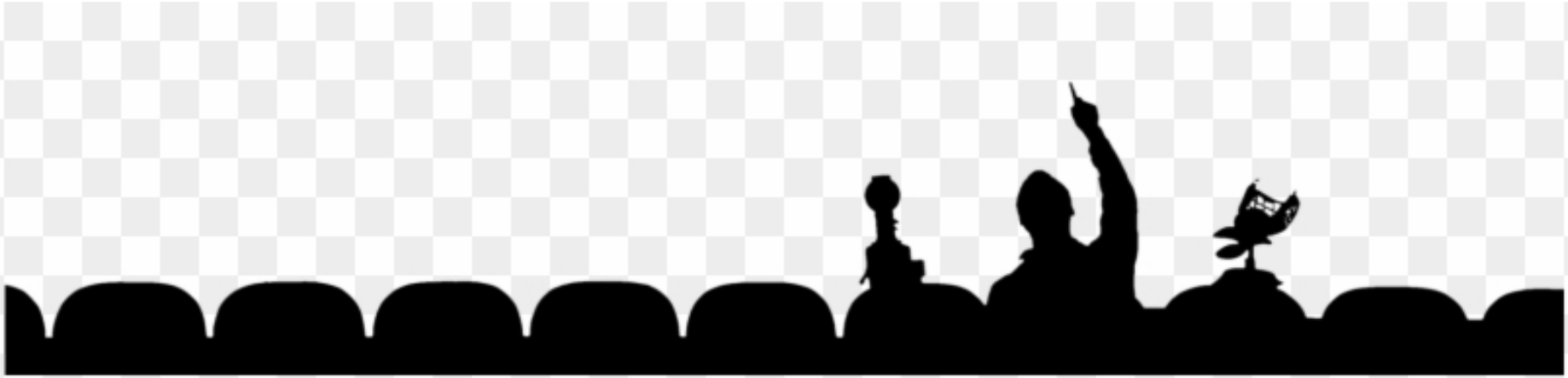
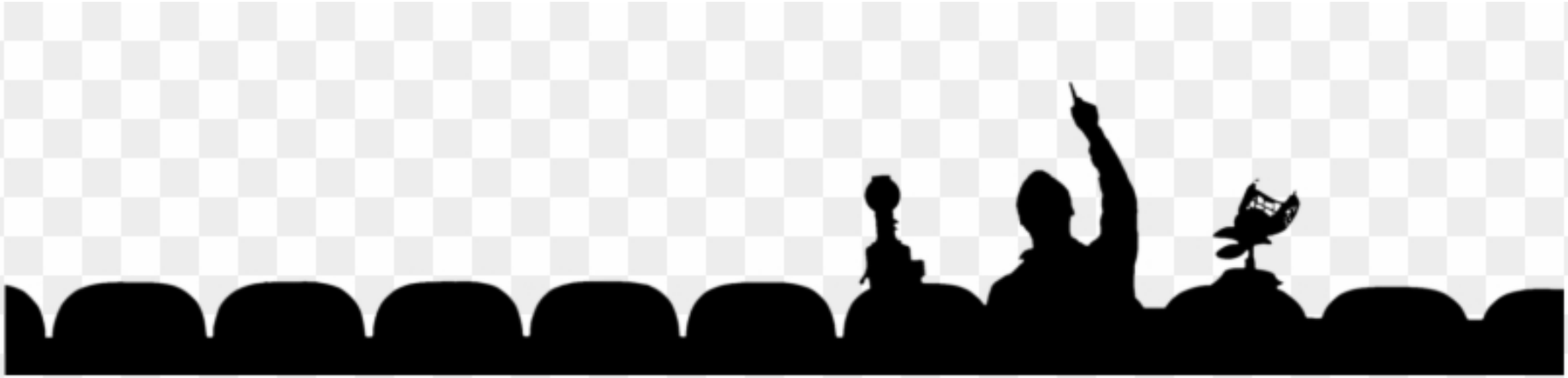
Demo



Demo



What We Just Demonstrated

- Private IP Network Tunneling Through the Internet Has Always Been a Part of RIST
- The New TUN Feature Simply Exposes the Functionality to Other Applications Without Affecting the RIST Stream
- To One or More Applications, the Other Side of the TUN is Just Another Host Accessible by IP Address

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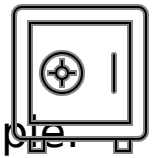
Why TUN is Important

- Userland Tunnel Across Internet Between Two Devices
- Secure, AES Encryption and libRIST Authorization Offers the Same Strong Security and Robust Error Correction to Communications Between Your Other Application(s).
  - Which is why we showed a security camera as a particular example.



- You Can Have Two-Way Communication Thru the TUN
  - Such as a chat app. There doesn't even have to be a relation between the media stream conveyed by RIST and applications using the TUN

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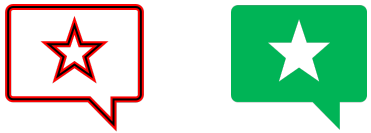

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Taking the Security Cam App Further

- Multiple Peer Support Could Add Geographic Flexibility
  - One TUN can support multiple cameras located at one remote
  - One PTZ app can support multiple sites via multiple peers
- EAP Authentication to peers combined with Robust AES Encryption With No Third Party Service Required

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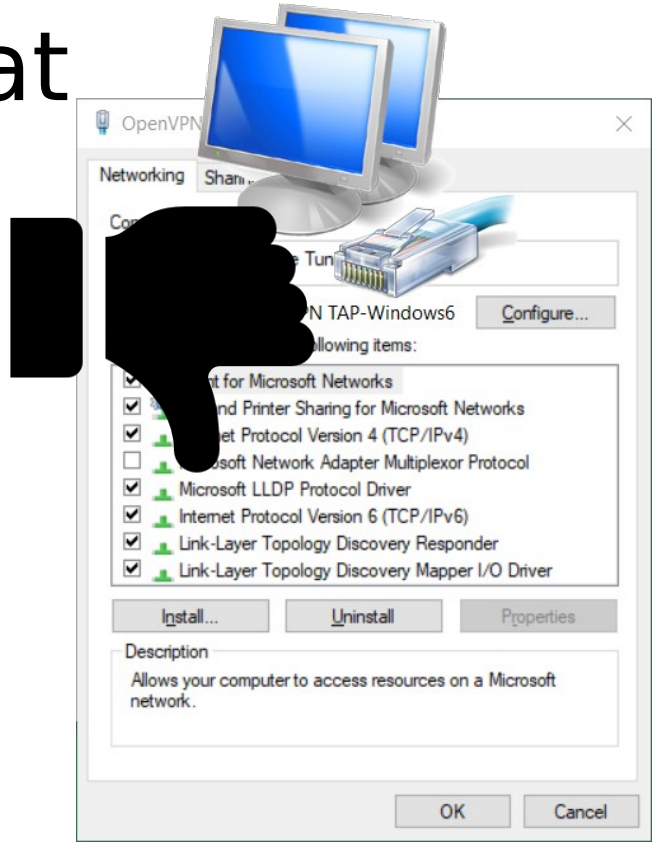
One Caveat

- Linux or Mac OS Only Right Now.
- Though there *is* a TAP/TUN adapter widely available for Windows, it doesn't do IP networking in TUN mode!
- Solution: use a linux machine running rist as a proxy-arp bridge to your windows client.



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Summary

- It Just Works
- Highly Secure
- *The Very Fact That a RIST Video Demo Can Be This Boring Is a Tribute to RIST Maturity!*

Thank you!

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