

GNU/Linux, software libre para la comunidad universitaria

# Redes privadas virtuales en GNU/Linux

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# Para qué sirve una VPN

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- Para unir las redes locales de dos sedes de una empresa, utilizando un canal inseguro como Internet en lugar de una costosa línea dedicada.
- Road warrior: trabajador desplazado, con portátil de soporte o teletrabajando se conecta a red de la empresa.
- No suele usarse para securizar conexiones red local.



# Cómo funciona

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- Túnel entre las dos máquinas; un programa crea dispositivo TUN/TAP o PPP para recoger los paquetes (IP, layer3 o layer2), establece conexión cifrada TCP o UDP con programa en la otra máquina y envía los datos encapsulados.
- IPsec va directamente en capa 3, no a nivel de aplicación y no necesita crear dispositivo de red, lo hace el kernel.



# ¿Es siempre la mejor solución?

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- Caso road warrior: el equipo del trabajador remoto es como si estuviera en la red de la empresa, salta el cortafuegos, pero puede ser inseguro.
- Para evitar problemas, se suele usar software que mientras VPN activa, máquina remota sin acceso a su red local o a conexión a Internet.
  - Poco práctico, uso conexión Internet empresa.
  - Usuario puede cambiarlo o equipo comprometido.



# Alternativas

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- Acceso escritorio remoto (X-Window, VNC, RDP, NX) con canal seguro o SSH. Usar remotamente nuestro PC de la oficina, en lugar de usar portátil y que virtualmente esté conectado a red oficina. Ayuda para ello wakeonlan.
- VPNSSL. Acceder a las webs de la empresa, transferir ficheros, manejar equipo, establecer túneles... Ejemplo: SSLExplorer.



# Soluciones VPN en GNU/Linux

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- IPsec: potente, estándar, problemático, complejo.
- PPTP: evitarlo.
- L2TP: Windows y MAC suelen convinarlo con IPsec.
- VPNC: propietario CISCO, si es lo que hay...
- OpenVPN: solución recomendada.
- Buscarse la vida con OpenSSH. Problema TCP.



# La versatilidad de SSH

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- Túneles. X-Window y NX. Multiplexa todo sobre conexión.
- Proxy SOCKS.
- VPN sobre TCP cifrado: solución clásica con PPP, hoy en día opción integrada con TUN/TAP.



# ¿Dónde va el software de la VPN?

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- Lo más lógico es en router o equivalente, para llegar a todas las máquinas.
  - Requiere autorización; implica tramo de router a PC no cifrado. Más controlado.
- Si VPN de casa a nuestro PC, problemas para llegar a resto de máquinas de la red local.
  - Usar NAT; pero entonces sólo conexiones salientes.
  - Usar bridge; pero entonces más tráfico.
  - Asignar IP y usar proxyarp.



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