Distro : Ubuntu
Wikipedia : https://en.wikipedia.org/wiki/Ubuntu
Website : https://ubuntu.com/
Twitter : @ubuntu
Status : 31 May 2021
Author : summertime tech
CPU : Tested on x86 & ARM

Installable complete .iso:
- Ubuntu 20.04.2 desktop.iso
- Desktop is GNOME – Including latest update
- Report about: see below Telemetry Checklist

Conclusion:
- Because of the built-in telemetry this distro is only suitable for use in DEV- & TEST environments. At this moment there is no .iso without telemetry.
- To limit outgoing internet traffic user can execute below described commands – doing so at your own risk.
- For long-term solution ask distro to remove telemetry from desktop and Repo.
- Distro is not "Privacy by Design" – info: <read here>

Cat.0 Telemetry
- See Cat.1 & 2 & 3

Cat.1 Telemetry
- During Installation "Do you want to send your Location? Default is: <yes>. User must type <no>; see annex-1 Img8 ; not clear via which App or setting to revoke or change initial answer.
- Apport crash report installed; default not active; see annex-1 Img10
  <to stop completely do next>
  ~ sudo systemctl stop apport.service
  ~ sudo systemctl disable apport.service
  ~ sudo systemctl mask apport.service
  ~ sudo apt remove apport
  ~ sudo apt purge apport
  ~ sudo apt-mark hold apport
- Avahi publish & discover services outside user computer; in /etc/avahi/avahi-daemon.conf default value enable-wide-erea=yes; user change to: =no ; see annex-1 Img15 & 16
  <to stop completely do next>
  ~ sudo systemctl stop avahi-daemon
  ~ sudo systemctl stop avahi-daemon.socket
  ~ sudo systemctl disable avahi-daemon

~ sudo systemctl disable avahi-daemon.socket
~ sudo apt remove avahi-utils
~ sudo apt purge avahi-utils
~ systemctl mask avahi-daemon
~ systemctl mask avahi-daemon.socket
~ sudo apt-mark hold avahi-utils

- Colord Sane default active scanning LAN; not connecting to internet; see annex-1 Img24
  <to stop completely do next>
  ~ sudo systemctl stop colord.service
  ~ sudo systemctl disable colord-service
  ~ sudo systemctl mask colord.service
  ~ sudo apt remove colord
  ~ sudo apt purge colord
  ~ sudo apt-mark hold colord
- cups browsed default <on>; and active scanning LAN & connecting to internet WAN; see annex-1 Img21 & 22
  <to stop completely do next>
  ~ sudo systemctl stop cups-browsed
  ~ sudo systemctl disable cups-browsed
  ~ sudo systemctl mask cups-browsed
  ~ sudo apt remove cups-browsed
  ~ sudo apt purge cups-browsed
  ~ sudo apt-mark hold cups-browsed
- IGMP communication to LAN; saves bandwith; used by ethernet & wifi; devices like enp01 & wlp01
  <first view devices>
  ~ ip addr show
  <suggest not to stop>
- Snapd & snap (store) default active; during test the Snapstore was not used but nevertheless frequent connect to servers; see annex-1 Img19
  <to stop completely do next>
  ~ sudo systemctl stop snapd.service
  ~ sudo systemctl stop snapd.socket
  ~ sudo systemctl stop snapd.seeded.service
  ~ sudo systemctl stop snapd.autoimport.service
  ~ sudo systemctl stop snapd.apparmor.service
  ~ sudo systemctl disable snapd.service
  ~ sudo systemctl disable snapd.socket
  ~ sudo systemctl disable snapd.seeded.service
  ~ sudo systemctl disable snapd.autoimport.service
  ~ sudo systemctl disable snapd.apparmor.service
  ~ sudo systemctl mask snapd.service
  ~ sudo systemctl mask snapd.socket
  ~ sudo systemctl mask snapd.seeded.service
  ~ sudo systemctl mask snapd.autoimport.service

~ sudo systemctl mask snapd.apparmor.service
~ sudo apt remove snapd
~ sudo apt purge snapd
~ sudo apt-mark hold snapd

- Systemd Timesyncd default is <true> connecting to Canonical server; see annex-1 Img12 & 13 ; user change to A and/or B:
  <A:to stop NTP do next>
  ~ sudo timedatectl set-ntp false {no outgoing connection}
  <B:change to NTP serverspool "general": https://www.ntppool.org>
  ~ sudo nano /etc/systemd/timesyncd.conf
  <add to end of file & change europe to your area>
  NTP=0.europe.pool.ntp.org 1.europe.pool.ntp.org 2.etc & 3.etc
  FallbackNTP=0.pool.ntp.org 1.pool.ntp.org 2.etc & 3.etc
  ServerName=0.pool.ntps.org
  ServerAddress=<leave empty>
  <NTP default 32sec "hello I'am alive"-beacon to internet>
  <If time is not of the essence: reduce exposure with next 2x values>
  PollIntervalMinSec=3600 {every 1 hour}
  PollIntervalMaxSec=43200 {every 12 hours}
  <ctrl-O and ctrl-X>
  ~ sudo timedatectl set-ntp true
  <to view result do next>
  ~ sudo timedatectl timesync-status
- Whoopsie frequent connect to Ubuntu server even if crash report is not activated; see annex-1 Img20
  <to stop completely do next>
  ~ sudo systemctl stop whoopsie
  ~ sudo systemctl disable whoopsie
  ~ sudo systemctl mask whoopsie
  ~ sudo apt remove whoopsie
  ~ sudo apt purge whoopsie
  ~ sudo apt-mark hold whoopsie
- xbrlapi scanning LAN (was?) used for braille peripheral
  <to stop completely do next>
  ~ sudo apt remove xbrlapi
  ~ sudo apt purge xbrlapi
  ~ sudo apt-mark hold xbrlapi

Cat.2 Telemetry

- During Installation "Do you want to send Ubuntu your configuration specs? Default is: <yes>. User must type <no>; see Img9 ; not clear via which App or setting to revoke or change initial answer. Maybe see next telemetry setting about "connectivity checking"
- Via Menu; in App Settings; option "Privacy"; option Connectivity; parameter "connectivity checking" default is set to <on> with explanation "it could be used to gather technical information about this

computer. User must change to <off> ; see annex-1 Img6

- "popularity-contest" telemetry installed and active in background; see annex-1 Img3
  <to stop completely do next>
  ~ sudo apt remove popularity-contest
  ~ sudo apt purge popularity-contest
  ~ sudo apt-mark hold popularity-contest
  ~ sudo rm /etc/cron.daily/popularity-contest
  <if not active then msg>
  rm: cannot remove '/etc/cron.daily/popularity-contest': No such file or directory
- Http process frequent connect to Ubuntu servers; see annex-1 Img17; This is due to default <on> unattended upgrades. Although, if user set UpdateManager to <never> this Http process will nevertheless continue.
  <to view info>
  ~ apt list unattended-upgrades -a
  ~ systemctl status unattended-upgrades
  ~ systemctl list-timers
  <to stop completely do next>
  ~ sudo systemctl stop apt-daily-upgrade.timer
  ~ sudo systemctl stop apt-daily.timer
  ~ sudo systemctl disable apt-daily-upgrade.timer
  ~ sudo systemctl disable apt-daily.timer
  ~ sudo apt remove unattended-upgrades
  ~ sudo apt purge unattended-upgrades
  ~ sudo apt-mark hold unattended-upgrades
  ~ sudo systemctl mask apt-daily-upgrade.timer
  ~ sudo systemctl mask apt-daily.timer
  <to stop also>
  ~ sudo nano /etc/apt/apt.conf.d/10periodic
  <change value from>
  APT::Periodic::Update-Package-Lists "1";
  <change value to>
  APT::Periodic::Update-Package-Lists "0";
  <ctrl-O and ctrl-X>
  sudo nano /usr/lib/apt/apt.systemd.daily
  <change value from>
  # APT::Periodic::Enable "1";
  <change value to>
  # APT::Periodic::Enable "0";
  <ctrl-O and ctrl-X>
- Update Manager frequent connect to Ubuntu server due to default <active>; see annex-1 Img18; User set to <never>
  IMPORTANT updates are IMPORTANT:
  → instead do collect periodically manual updates!
  When manual update/upgrade the system will connect to Ubuntu

servers for retrieving packages; see annex-1 Img23
<to update the system>
~ sudo apt update
~ sudo apt upgrade
<optional cleanup>
~ sudo apt autoremove
Manual update upgrade activate ongoing outgoing Http process (see earlier above) connecting system to Ubuntu servers. Also while installing a new software package the previous stopped Http process be will actived and continue connecting to Ubuntu servers. Removing package via sudo apt remove will not activate previous stopped Http process.
<if Http process was already permanently stopped (see above) the manual update will nevertheless make Http active & running; in this case to stop Http process – simple approach>
~ sudo reboot

Cat.3 Telemetry

- Via Menu; in App Settings; option "Privacy"; option Diagnostics; parameter "send error reports to Canonical" with explanation "Reports are sent anonymously and are scrubbed of personal data". User must change to <never>; see annex-1 Img7; Img10 "Apport" installed.

Cat.4 Telemetry

- N/A

Remarks:

- During Installation: Question: Do you want to install proprietry software? User reply: <no>
- https://ubuntu.com/legal/data-privacy text is troublesome. "we don't share/store "unless!!" etc. This "unless" is bad! Better don't collect user data in the first place. Also bad "we will use personal information that you provide to us etc".
- Because some telemetry settings in downloadable .iso are default <yes> and user can only change them after installation, which takes time, it must be asumed that during that period (from default <yes> to manual <no>) installation sends data to Canonical / Ubuntu.
- Instructed by KDE-org all distros desktops have to create forced dependencies with cat.4 KUserFeedback telemetry if user is to install KDE software like Kate, Dolphin and more. And Ubuntu did not comply and made no forced dependency. See annex below.

Telemetry Checklist

Implementation of Telemetry and "Spying on User"-software within Linux desktop domain is expanding and as suchs a moving target. Therefore investigation results can vary. Occurrence of known software situation as listed below are checked at date: see "Status" in header this document.

Apps in Repository via Synacptic Package Manager

- KUserFeedback Telemetry package (KUFB) report to KDE
- Dolphin: target KUFB track& trace report to KDE
- Kate: target KUFB track&trace report to KDE
- Discover Software Store KDE Plasma: target KUFB track&trace
- popularity-contest: reporting to Distro HQ
- Crash Report App Apport: report to Distro HQ
- Bug Report: report to Distro HQ
- Connectivity Checking: report to Distro HQ
- Info Update: report to Distro HQ
- User Location: report to Distro HQ
- OS Settings: Cookies & browserID report to Browser HQ

Apps in Operating System not accessible via GUI

- apport: crash report connect to distro HQ https://wiki.ubuntu.com/Apport
- avahi: snap package enables programs to publish and discover services and hosts running on LAN – can be outgoing to WAN https://en.wikipedia.org/wiki/Avahi_(software)
- colord sane: install and generate color profiles to accurately color manage input and output devices like XRandR (monitors), SANE (scanners), UDEV (cameras), CUPS (printers), Virtual (scanners, cameras, printers)
- cups-browsed: for using peripherals (printer) on LAN – can be outgoing to WAN in this case to https://www.iana.org/domains/arpa https://en.wikipedia.org/wiki/CUPS
- IGMP "Multicast": enables device on network to address single source data to multiple devices; user device signals to LAN its presents; https://en.wikipedia.org/wiki/Internet_Group_Management_Protocol
- popularity-contest: report to Distro HQ https://popcon.debian.org
- Snapd & snap: connect to Canonical Snapcraft Store and various sites https://en.wikipedia.org/wiki/Snap_(package_manager)
- unattended-upgrades: connect to distro HQ https://wiki.debian.org/UnattendedUpgrades
- update-manager: connect to distro HQ
- upgrade-manager: connect to Distro HQ
- systemd timesyncd: connect to distro HQ

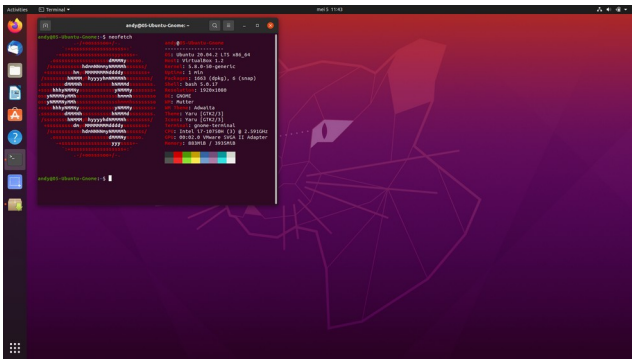
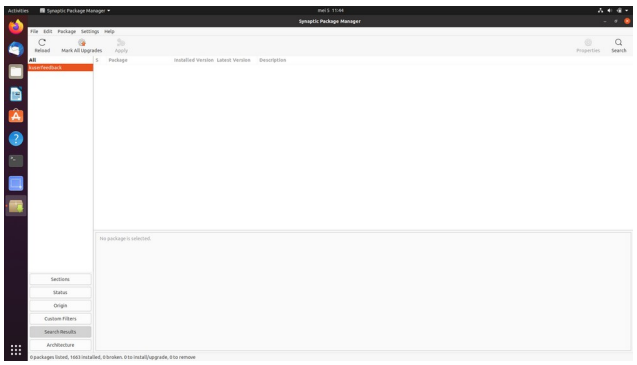
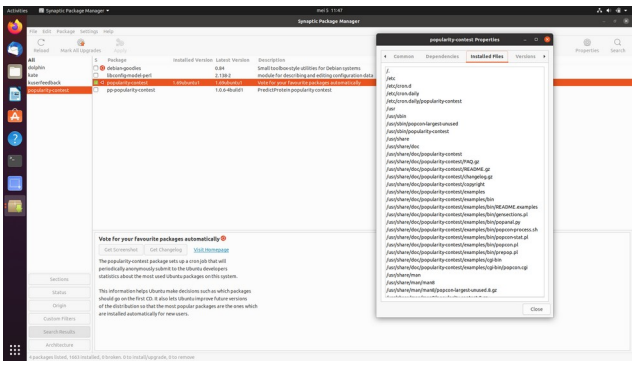
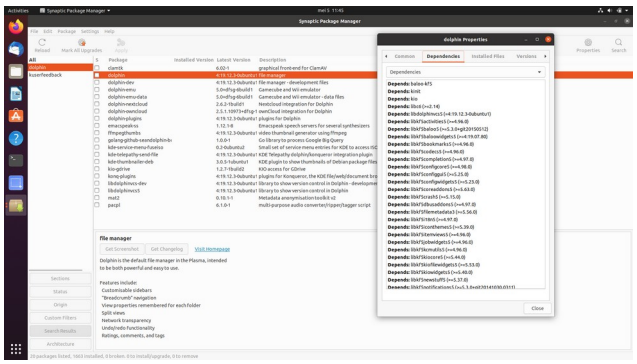
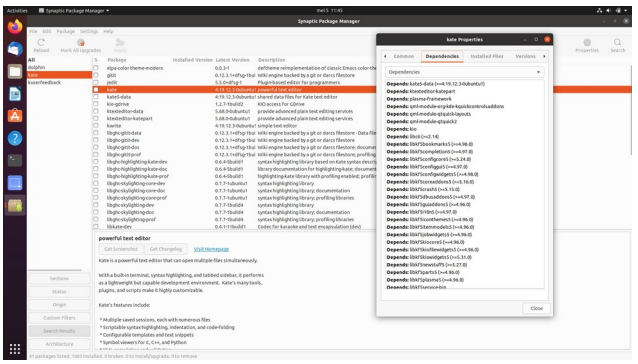
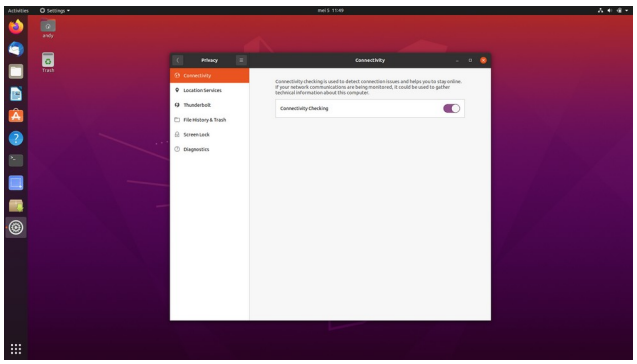
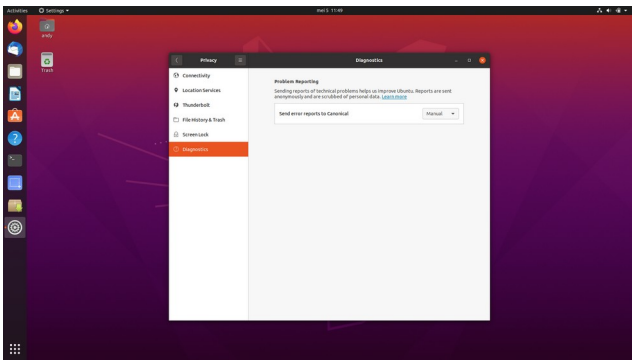
https://linuxreviews.org/Systemd-timesyncd

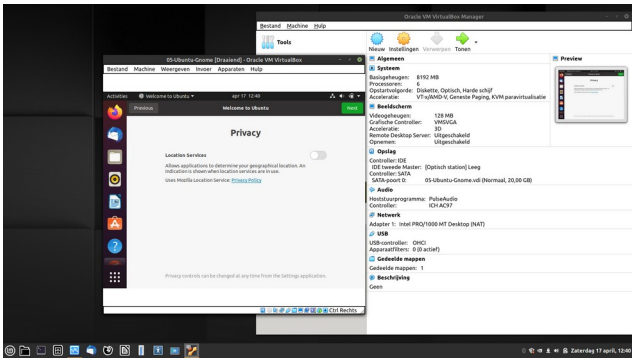
- whoopsie collects crash report by Apport & can send to Ubuntu/Canonical: https://daisy.ubuntu.com in BSON)
- xbrlapi connect to LAN: process seems to be parent from accessibility software (braille terminal support)

Tooling

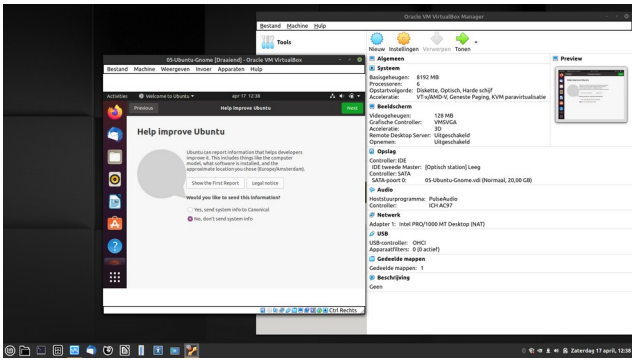
- Virtualization via Oracle Virtualbox https://www.virtualbox.org/
- Network processes safing.io tool “Portmaster” https://safing.io/portmaster/
- netstat-utils https://en.wikipedia.org/wiki/Netstat

Annex-1

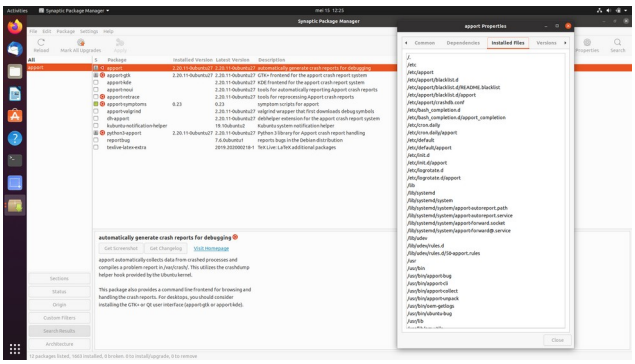
Ubuntu Desktop is Gnome 2021-05	 Img1 neofetch
 Img2 KUserFeedback telemetry package not in Repo	 Img3 popularity-contest telemetry installed
 Img4 dolphin in Repo – no KUserFeedback dependency	 Img5 kate in Repo – no KUserFeedback dependency
 Img6 Connectivity Checking telemetry installed and default <on>	 Img7 Diagnostics telemetry



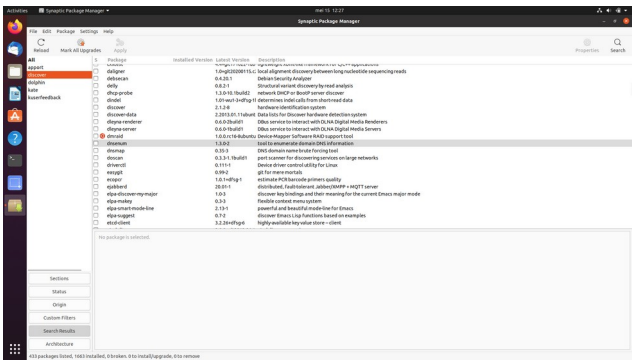
Img8 During installation “Send Location to Canonical”



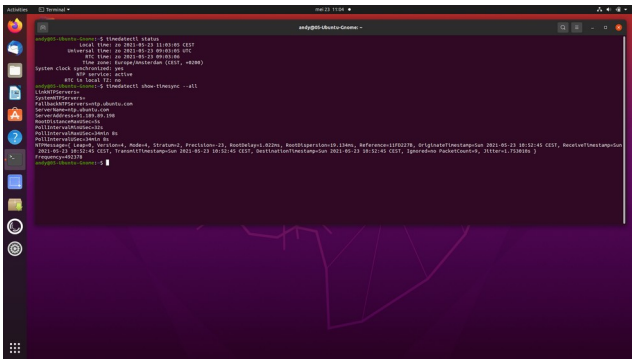
Img9 During installation “Send data to Canonical”



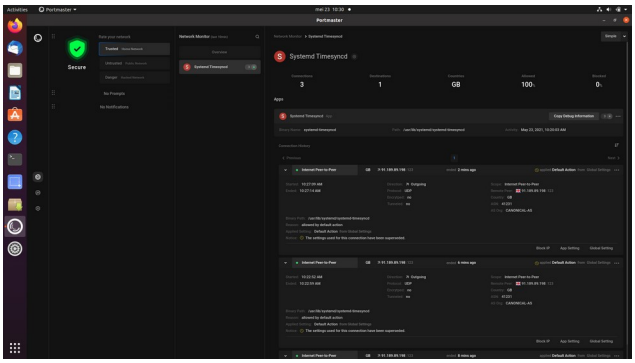
Img10 Crash Report Apport telemetry installed and active



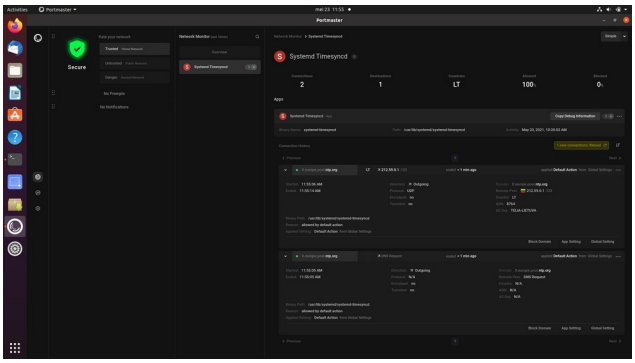
Img11 Discover App Store not in Repo



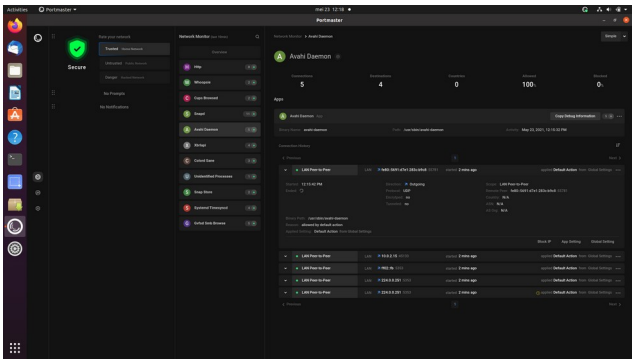
Img12 systemd timesyncd default to Canoncical



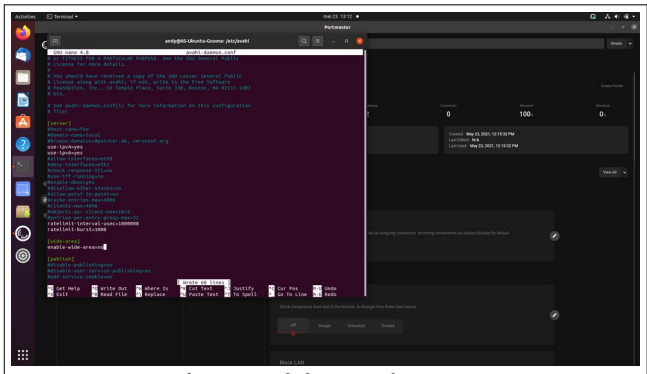
Img13 timesyncd telemetry default to Canonical



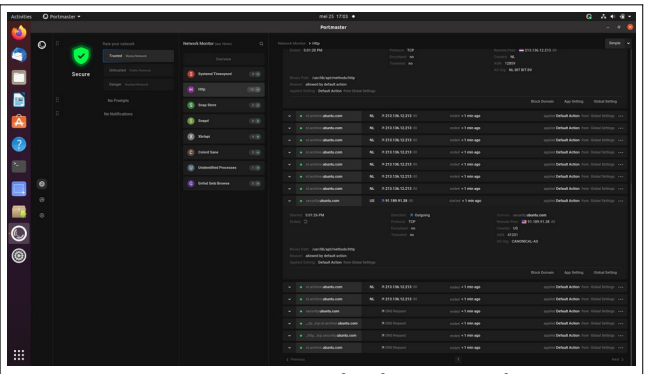
Img14 timesyncd telemetry changed to The Pool Project



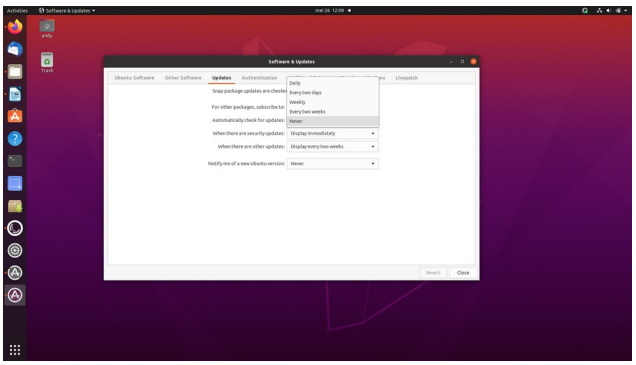
Img15 avahi-utils installed and active



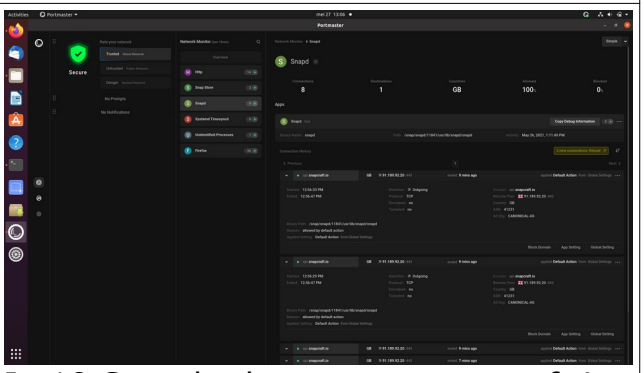
Img16 avahi enable wide area user set to <no>



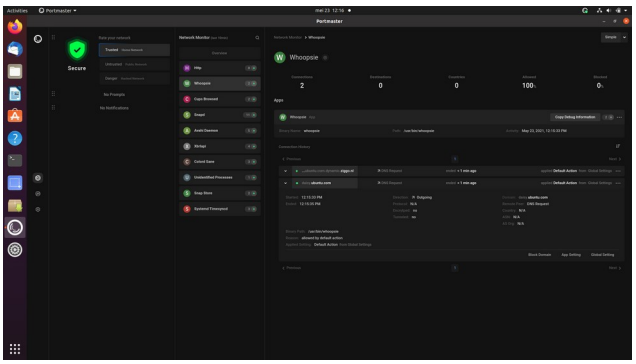
Img17 Http unattended upgrades default <on> connect to Ubuntu servers



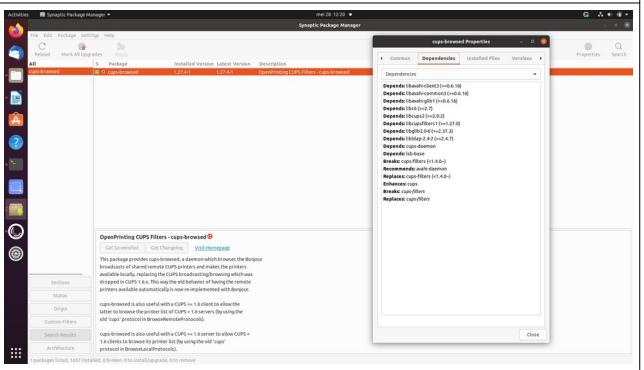
Img18 Update Manager user set to <never> – instead do manual updates



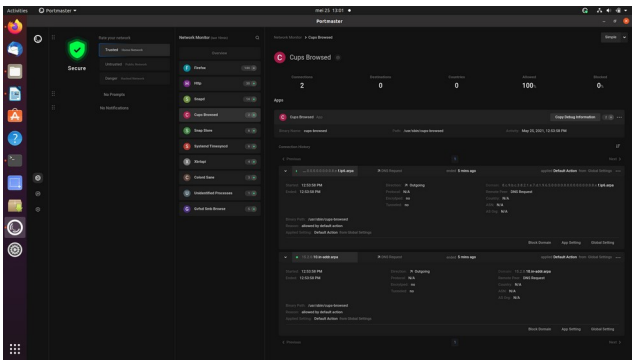
Im19 Snapd telemetry to snapcraft.io & Ubuntu servers



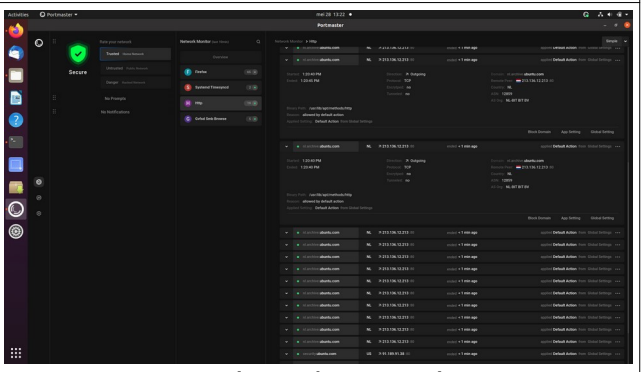
Img20 Whoopsie crash report collector for Apport- telemetry to Ubuntu



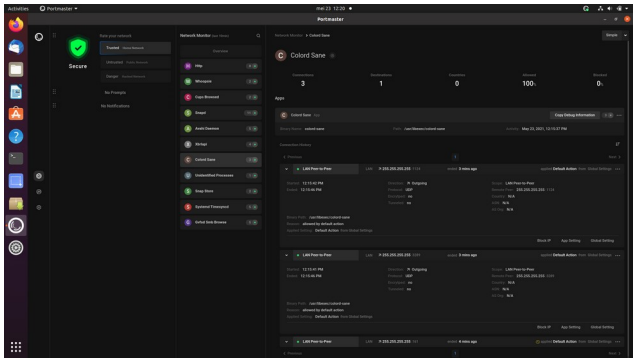
Img21 cups-browsed installed and active



Img22 cups-browsed connect to internet domain .arp



Img23 apt update / upgrade connect to Ubuntu server retrieving data


Img24 colord sane connect to LAN

Linux distros categorized:

– Cat.0 is having no telemetry

Zero telemetry is the reason for companies, governments, organisations and users all over the world to adopt & migrate to "Privacy by Design" Linux.

– Cat.1 software for location telemetry built-in

As is downloadable .iso has Usage statistics telemetry and is not suitable for Production Environments & Personal use. Installation need change of settings or Command Line Interface CLI & privacy health check after Updates.

– Cat.2 is Cat.1 & user survey telemetry built-in

As is downloadable .iso has Survey telemetry and is not suitable for Production Environments & Personal use. Installation need change of settings or Command Line Interface CLI & privacy health check after Updates.

– Cat.3 is Cat.2 & QI collect & analyze user data telemetry built-in

Quality Improvement (QI) via collect & analyze user data built-in downloadable .iso is not suitable for Production environment & Personal use. Installation need change of settings or Command Line Interface CLI & privacy health check after Updates.

– Cat.4 above & track/trace user activity & content telemetry built-in

Distro downloadable .iso not suitable for Production Environments & Personal use. Installation has sophisticated non deleteable non stoppable "spy on user" engine. Either built-in (KDE) or in repo's.