



# Fedora Nest 2022 - Lenovo Linux



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## ► Introduction

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- Technical Lead Lenovo Linux PC
- 20(ish) years working with Linux
- Huge eyebrows (according to my children)



# ► Breaking News!

Build Your ThinkPad X1 Carbon Gen 10  
Intel (14") with Linux

1 Configuration    2 Service    3 Accessories    Next: Add Service

Step 1 of 3  
**Configuration**

**Processor**  
12th Generation Intel® Core™ i5-1240P Processor (E-Core Max 3.30 GHz, P-Core Max 4.40 GHz with Turbo Boost, 12 Cores, 16 Threads, 12 MB Cache)  
5 options ▾

**Operating System**  
2 options ▾

**Fedora 36** ✓  
Included

**Ubuntu 20.04**  
+\$0.00

**Operating System Language**  
1 option ▾

**Linux Fedora World Wide Multiple Language** ✓  
Included

**Collapse All Categories**

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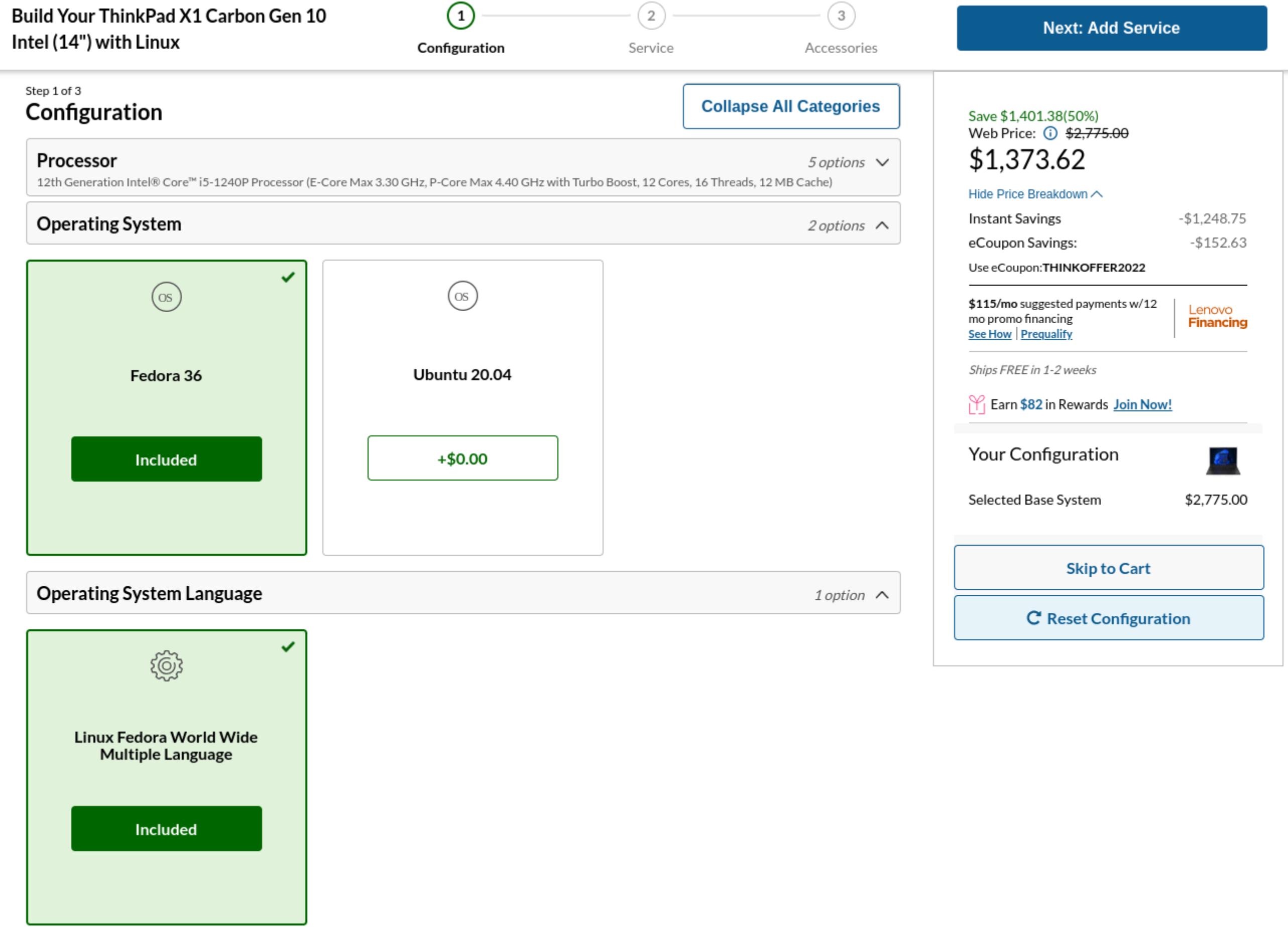
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\* Note: Internal test site and pricing has not been set yet

# ► Platforms 2022

- 36+ platforms with Linux support this year.
- More Fedora platforms added
- New platforms added - L-series AMD, E-series, Z-series
- Continue to provide support upstream. Linux preloads (Ubuntu & Fedora).
- Intel Alderlake (S, P & H), AMD Rembrandt and Barcelo
- ThinkCentre & ThinkEdge
- Platforms going online now...

Intel Thinkpad	AMD Thinkpad	Workstation
X1 Carbon G10 (F)	Z16 (F)	P1 G5 (F)
X1 Yoga G7	Z13 (F)	P14s G3
X13 G3	X13 AMD G3	P14s AMD G3
X13 Yoga G3	X13 AMD G3	P360 Tower
T14 G3	T14 AMD G3	P360 Ultra
T14s G3	T14s AMD G3	P360 Tiny
T16 G3	T16 AMD G3	P16 G1 (F)
L13 G3	L13 AMD G3	P16s AMD G1 (F)
L14 G3	L14 AMD G3	P15v G3
L15 G3	L15 AMD G3	P15v AMD G3
X1 Extreme G5		
X1 Nano G2		
T15p G3		
E14 G4		
E15 G4		

## ► X13s ARM based platform

- POC project with ARM & Linaro
- Linux up and running
- Still lots to do!
- Snapdragon® 8cx Gen 3
- [https://www.lenovo.com/ca/en/p/laptops/thin-kpad/thinkpadx/thinkpad-x13s-\(13-inch-snapdragon\)/len101t0019](https://www.lenovo.com/ca/en/p/laptops/thin-kpad/thinkpadx/thinkpad-x13s-(13-inch-snapdragon)/len101t0019)



# ► Platforms 2021 review

## 💔 Very challenging year:

- Panel refresh issue
- Wifi component changes
- Intel Networking driver issues
- AMD power issues
- Nvidia driver issues for energy certification (and supply)
- General shortages impacted web offerings

## 🌟 But some highlights:

- Linux delivered on all our planned platforms
- Some platforms up in North America, Europe, India, Australasia
- Lenovo support staff internal training completed
- Much closer ties with the HW vendors - able to directly drive improvements
- New portfolio (ThinkEdge)
- More support for lower end platforms (and even some non-certified platforms)

## ► Secured Core PCs and the 3rd party certificate

- Requirement from Microsoft for secured-core certified PCs that 3rd party UEFI certificate is disabled by default
- This means that Linux with secure boot won't boot by default.
- Option in BIOS to enable certificate (or you can disable secure boot)

🔗 <https://mjj59.dreamwidth.org/60248.html>

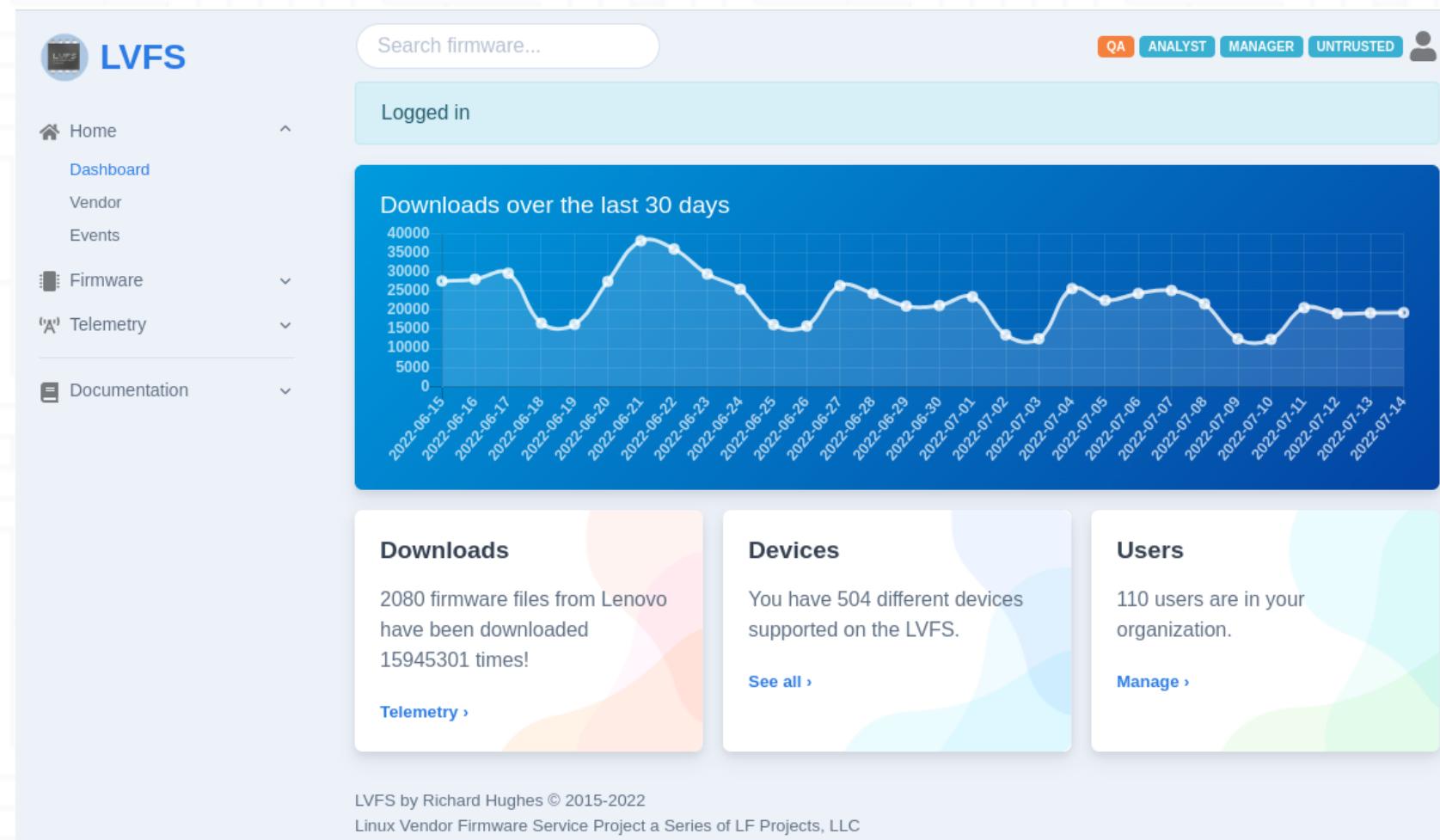
🔗 [https://download.lenovo.com/pccbbs/mobiles\\_pdf/Enable\\_Secure\\_Boot\\_for\\_Linux\\_Secured-core\\_PCs.pdf](https://download.lenovo.com/pccbbs/mobiles_pdf/Enable_Secure_Boot_for_Linux_Secured-core_PCs.pdf)

🔗 <https://docs.microsoft.com/en-us/windows/security/information-protection/secure-the-windows-10-boot-process>

## ⚙️ Progress!

- 2021 Quectel Modem (EM120/EM160) enabled and working well - FW on LVFS (under embargo)
- 2021 Foxconn 5G Modem (x55) enabled and almost working well (still some stability issues)
- Work on this years modems (L860R+ and FM350) progressing well
- 2020 Fibocom L860 ongoing - updated FW expected this month
- Much simpler delivery for non-US geographies.
- Progress on delivering in the US

# ► Open source contributions



## Still at the core of our program

- Multiple MR's into Fedora kernel-ark (thanks Justin!)
- ThinkLMI - upstream and now making it's way into distro's
- Upstream kernel patches - and from more members of the team
- platform profiles
- Mac passthru
- others
- Continue to contribute directly on multiple forums
- LVFS <----
  - More platforms
  - More devices (battery, camera, tbt controller)
  - Docks

## MIPI camera ('Computer Vision') support in Linux not ready

- MIPI camera's on X1 Carbon G10 , X1 yoga G7 and X1 Nano G2 don't work
- Working with Intel to provide a workaround solution using v4l2loopback
- Work is ongoing in the community - but still likely a couple of years away

## ► Fedora experiences/feedback

**tell me what you think!**

## ► Open Forum

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# THANK YOU

Lenovo