# ThinkPads

## History and nerd culture

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# whoami

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- Blogger (cstan.io 📖)
- Podcaster 🎙️
  - FOCUS ON: Linux 🐧
  - Faxinformatiker 📠
  - ThinkPad-Museum 💻

# Agenda

1. Motivation
2. History
3. Important series, models and curiosities
4. Pop and nerd culture

# Motivation

- frequently encountered in business and hacker circles
- have shaped the notebook market since their introduction **1992**
- Brand has always changed, but the roots are still recognizable
- still stand for **robust** and durable devices

- saw a salesman's case with T23 and **printer** in the early 2000s
- **timeless** design and practicality inspired me
- used ThinkPads as daily driver since then
- started collecting ThinkPads in a corona lockdown

# Timeless design that is still recognizable today

IBM ThinkPad T23 (2001)

Lenovo ThinkPad T470p (2017)

# ThinkPad museum

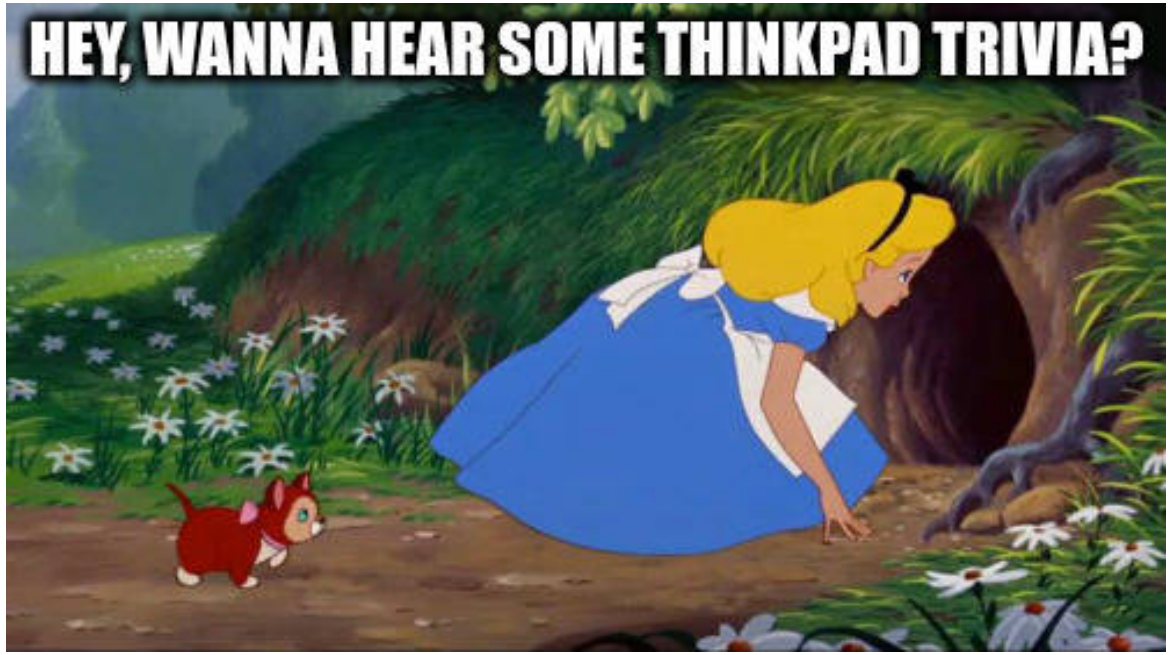
- Online museum as **blog**
- lists collection details
  - **54** different notebooks
  - **3** PDAs
  - **7** Docking stations
- **WIP**: photo galleries and additional post series
- monthly **podcast** (🇩🇪)
- 🔴 thinkpad-museum.com

# ThinkPad museum

Part of the collection

Transporting the collection

# Ready?

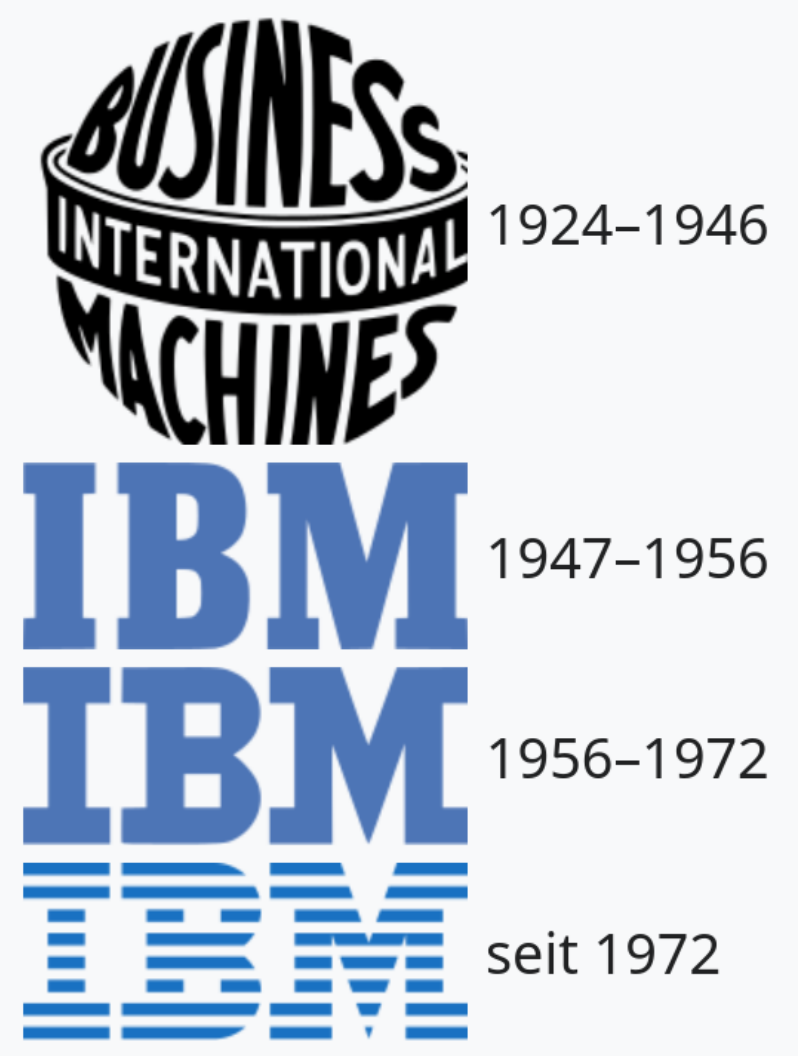


# IBM - a brief profile

- goes back to **Tabulating Machine Company**
  - founded in **1886** by **Herman Hollerith**
  - inventor of the Hollerith **punch card process**
  - specially developed for the 1890 USA census
- **Founded in 1911** as **Computing-Tabulating-Recording Company (CTR)**
- combined three companies
  - **C**omputing Scale Corporation
  - **T**abulating Machine Company (Hollerith)
  - International Time **R**recording

# IBM - a brief profile

- CTR employed **1,300 people** and specialized in punched cards, scales and clocks
- **1924** CTR was renamed **International Business Machines**
- Focus on companies
  - Punch card sorters/punchers and tabulating machines
  - Punch card **monopoly**




[1].

# Thomas J. Watson Sr.

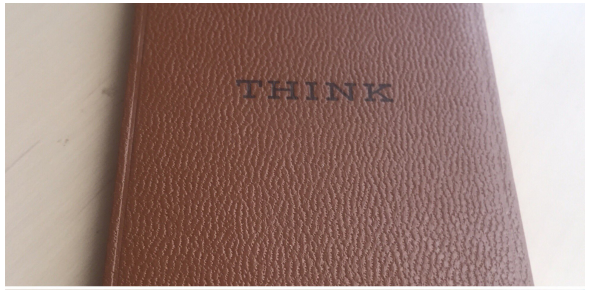
- headed CTR and IBM between 1914 and 1955
- was often called *the world's best salesman*
- spoke of "*systematically eliminating the competition*"

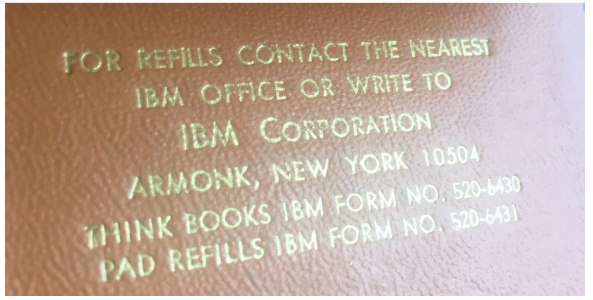
- shaped the IBM **culture**
  - Strong focus on sales and **loyalty**
  - Rewards for sales and ideas for improvement
  - Dress code, strict ban on alcohol (*also in private*)
  - **Company anthem** and songbook

[2].

# Trivia: THINK

- In 1911, Watson used the slogan for the first time
- Meaning deliberately kept vague, wanted to motivate **proactive action**
- Internal magazine was renamed **THINK**, employees receive **notebook** on joining the company
- later adorned offices and mainframes
- Became a **brand**: *ThinkPad*, *ThinkCentre*, *ThinkVision*,...
- IBM's business conference (https://www.ibm.com/events/think) is also



[IBM's business conference]

- The trouble with everyone of us is that we don't think enough. We don't get paid for working with our feet - we get paid for working with our heads.

[3], [4]

# IBM - a brief profile

Original model of the IBM PC
(1981, Model 5150)

First portable computer
(1984, Model 5155)

[5].

# IBM - a brief profile

First notebook
(1991, PS/2 Model L40 SX)

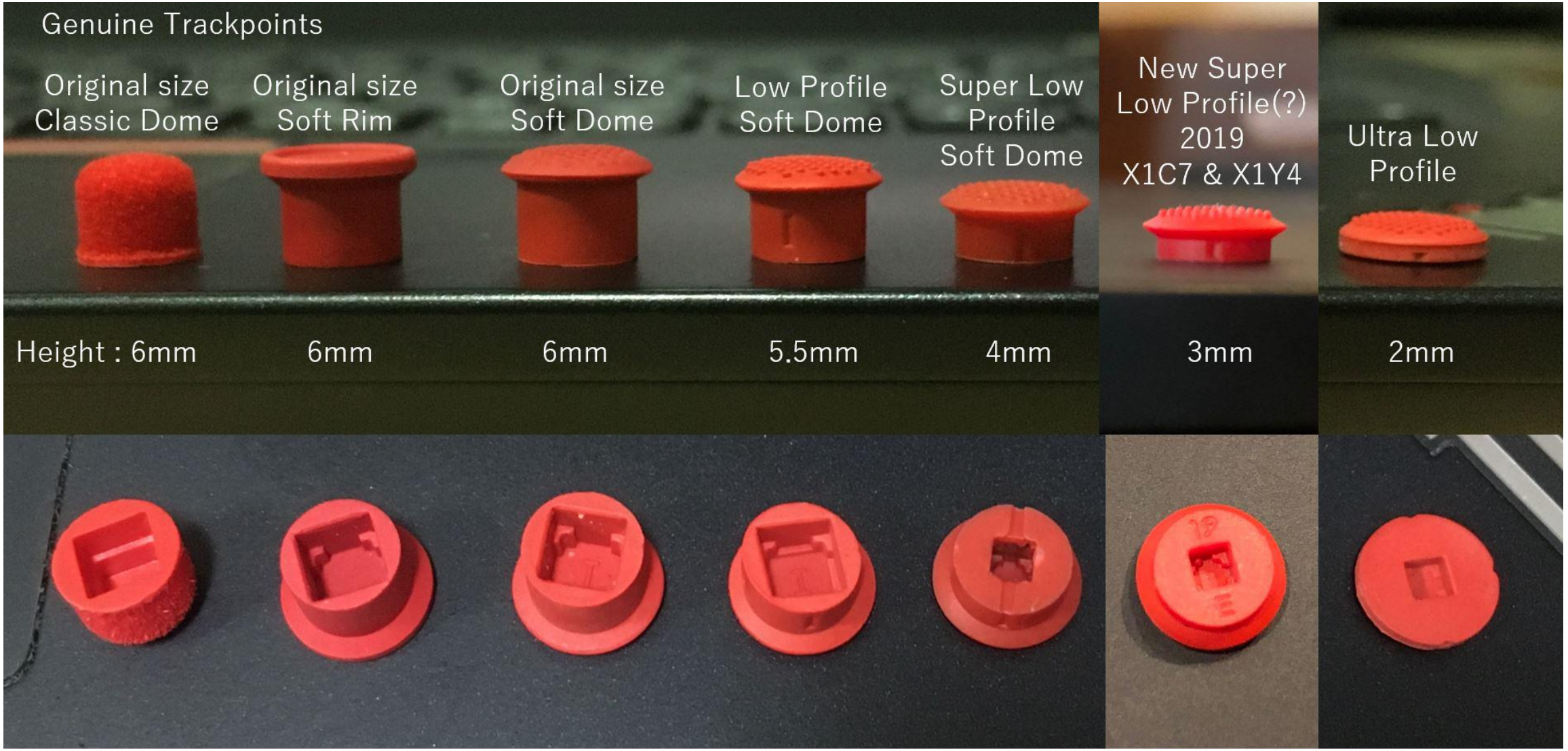
First ThinkPad
(1992, ThinkPad 700)

[6], [7]

# Important people in the ThinkPad cosmos

- Arimasa Naitoh
  - Father of ThinkPad
  - Japanese Engineer
- **Richard Sapper**
  - since 1979 senior design consultant at IBM
- David Hill
  - ThinkPad-Designchef
- **Dr. Ted Selker**
  - **TrackPoins** inventor
- Tom Hardy
  - IBM industrial designer
- George Karidis
  - **TrackWrite Keyboard** designer
  - also known as **Butterfly Keyboard**
- **Mark Pearson**
  - maintaines Linux support

# Trivia: Different TrackPoint types




[8].

# Richard Sapper

- German industrial designer (1932 - 2015 † )
- grew up in Guatemala and Germany, emigrated to **Milan**
- one of the most important product designers of the second half of the 20th century
- known for numerous innovative designs, including
  - Artemide Tizio table lamp
  - Lorenz Static table clock
  - Alessi kitchen appliances
  - …

[9].

# Richard Sapper

Artemide Tizio and Lorenz Static

[10], [11]

[12].

# Richard Sapper

- from 1979 **leading design consultant** at IBM
- shaped and standardized IBM designs:
  - **Personality Study** defined empty cases into which computers could be built, among other things
  - **black** color for ThinkPads
  - **red** TrackPoint

[9].

# IBM PC Convertible Model 5140 (1986)

- produced in Boca Raton (Florida)
- there is an alligator plague there
- Design picks up on this
  - Keyboard = teeth
  - opening button = eye
  - printer = tail
- requires lateral viewing...

[13]

# IBM PC Convertible Model 5140 (1986)

[13]

# Trivia: Beige and black ThinkPads

- earlier IBM devices had a **beige** color
  - e.g. IBM PC, Convertible, PS/2 Model L40 SX,...
  - easy and inexpensive to produce
- Sapper hated design and color
  - *"ugly, stupid, boring box "*
- some early devices were available in both beige and **black**
  - beige for *retail*, black for *business customers*
- Rumors about a German **workplace standard** in the 70s
  - prescribed contrast and **lighting values** for office computers
  - was adopted by other EU countries

# Trivia: Beige and black ThinkPads

- IBM Germany therefore spoke out against black
- They thought about **pebble gray** devices, but rejected the idea
- The regulation was later relaxed, as long as there was a note in the manual
  - *"This product is not intended for office use "*
- Sapper wanted black housings
  - Difference to the competition, **mystical** appearance
  - better **contrast** of the early color displays
- skillfully ended debate
  - made IBM Chairman **John Akers** choose between two designs
  - he chose black, Sapper made himself unpopular in Boca Raton

# Trivia: Red contrast color

- Sapper likes to use red as a contrasting color
  - **Interaction areas** can be recognized more easily
  - emotional connotation
- argued with IBM's corporate identity department for a long time
  - stated that red was reserved for the **emergency shutdown** of the mainframes
  - did not want any other use
- Sappers then designed a **magenta-colored** TrackPoint
  - iteratively adjusted the color without changing the color code (**TP333**)
  - IBM did not notice the changes before production
  - Color was well received, was compared to luxury sports cars

# Ready for the next layer?

# Model series from 1991 to 1999

| Series | Description |
|---|---|
| 200 | Particularly compact subnotebooks, up to 10.4" |
| 300 | Entry-level models, exactly **DIN A4** size |
| 500 | Ultraportable devices without floppy/CD |
| 600 / 700 | Upper class, high quality and stable |
| 800 | Models with IBM PowerPC CPU |
| 1000 | **i Series**, prosumer devices produced by **Acer** |

- three-digit number, based on BMW models
- Production sequence is **not** apparent from the numbering
  - e.g. 345 appeared after 350

# Model series from 1991 to 1999

ThinkPad 240

[14]

ThinkPad 550BJ with integrated printer

# 760EL details (1996)

Modular design

Keyboard is lifted when opened

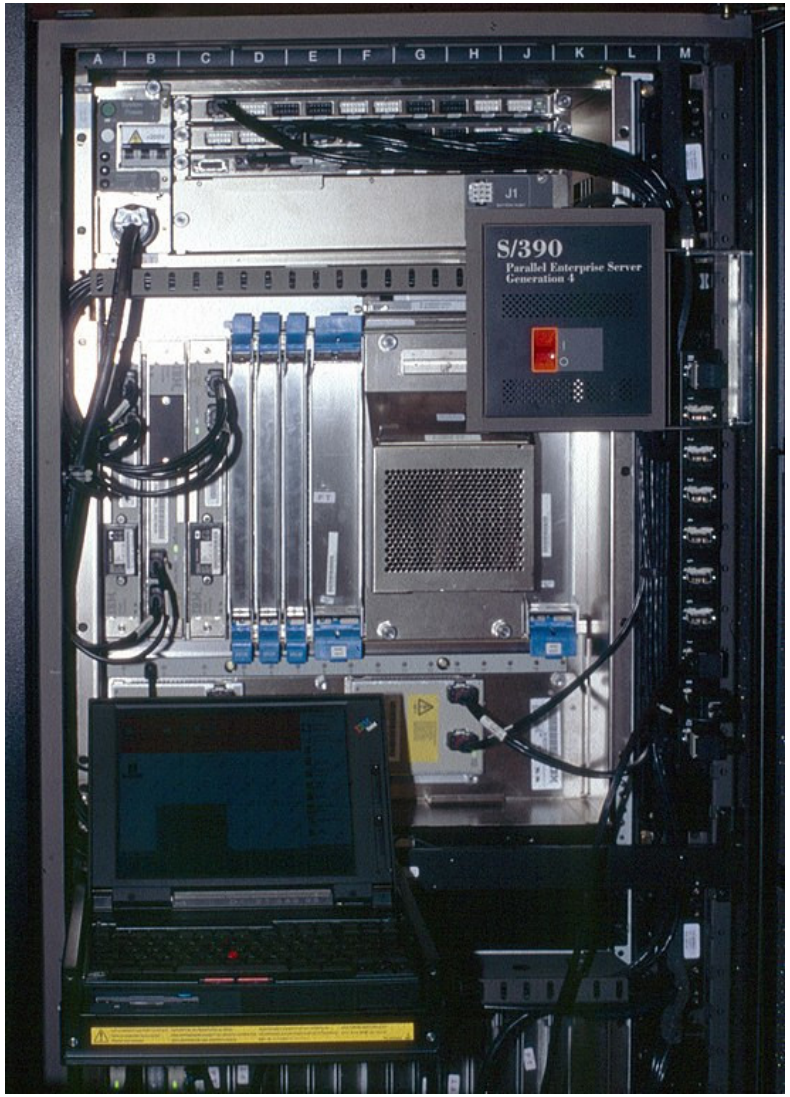
# Model series from 1991 to 1999

TrackWrite keyboard [15]

ThinkPad 820 (1995)

# Trivia: ThinkPad as Mainframe console

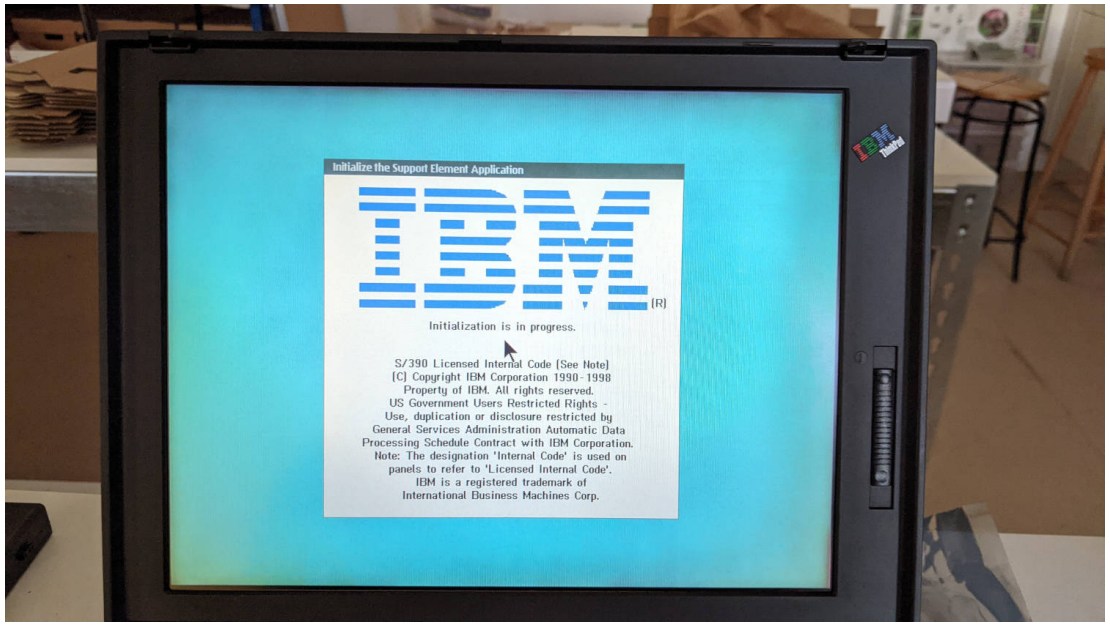
- Mainframes have several **HMCs**
  - are used for starting and controlling
- are generally rarely used
  - debugging, troubleshooting
- For a long time, **ThinkPads** served as HMC
- popular collector's items
  - Optical top condition
  - usually missing WLAN and modem




[16], HMC = **H**ardware **M**anagement **C**onsole

# Trivia: ThinkPad as Mainframe console

ThinkPad 380E (1998)




IBM OS/2 with management application

[17].

# Model series from 1999 to 2008

| Series | Description |
|---|---|
| T | Best known series, emerged from 600/700 |
| A | Heavy desktop replacements, evolved from 300 |
| R | Cheaper than T series, plastic instead of rubber coating |
| G | Inexpensive desktop replacements, manufactured by **Acer** |
| Z | Short-produced multimedia series, widescreen tests |
| X | ultraportables and convertibles, emerged from 200/500 |
| S | particularly small ultraportables with 10.4", **Asia-only** |

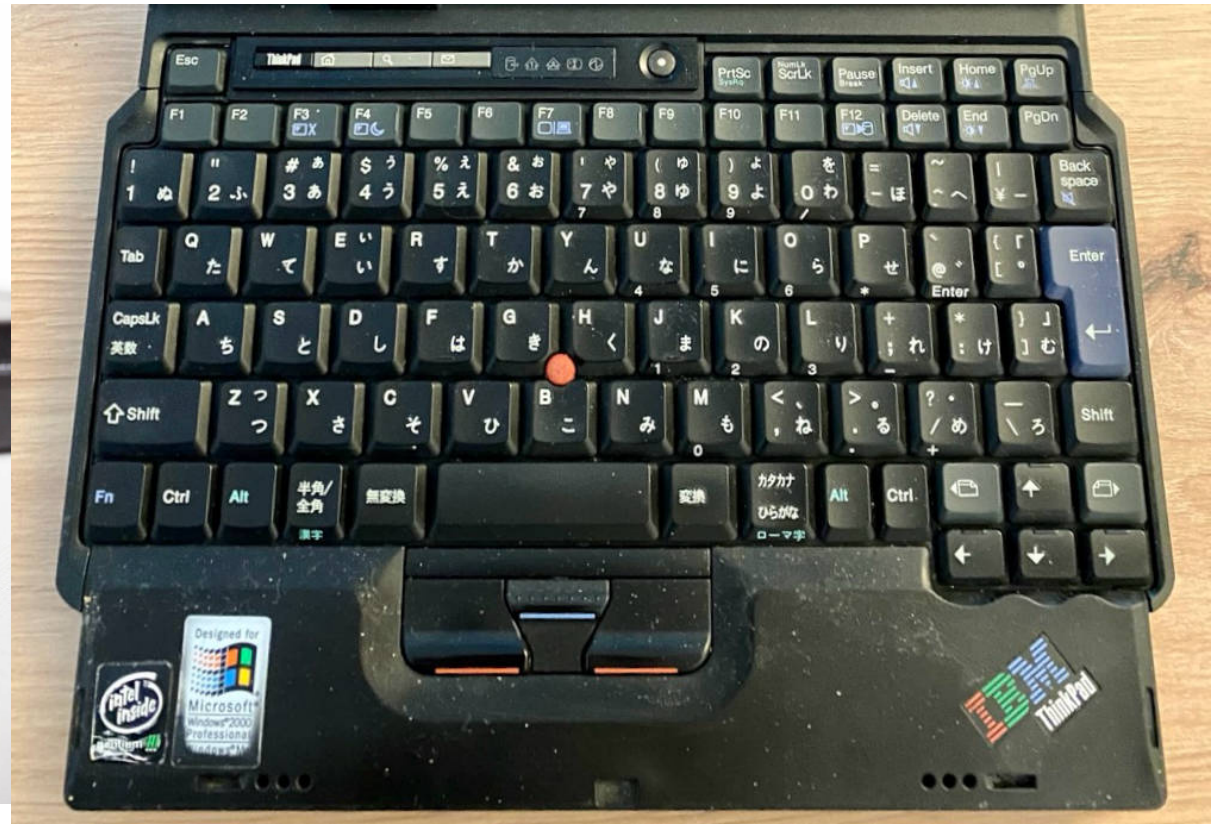
# Model series from 1999 to 2008

X40 in UltraBay (2004)

Z61m with Titanium cover (2006)

# Model series from 1999 to 2008

CD-Player in i-Series 1500



Japanese keyboard of a S30

# Model series from 1999 to 2008

Angled housing shape of the G40

# UltraBay

- Interchangeable drive bay
  - 1993 - 2014
- can usually be changed during operation
- for a variety of **modules**
  - floppy disks and LS/ZIP drives
  - optical drives
  - additional **accumulator**
  - additional hard disk
  - RS232/LPT adapter

R50 with UltraBay drive

[18]

# UltraBay

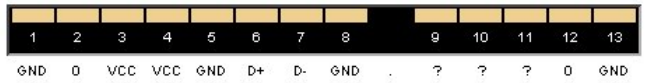
Numpad (22P7330)

Serial and Parallel Port Adapter (40Y8121)

[18], [19]

# Trivia: UltraPort

- Proprietary USB 1.1 port on the top of the screen
- upgraded optional **modules**
  - Bluetooth and infrared adapter
  - Webcam, microphone
  - CompactFlash card reader
- briefly installed between **2000** and **2003**
  - A2x and A3x
  - T2x
  - X2x

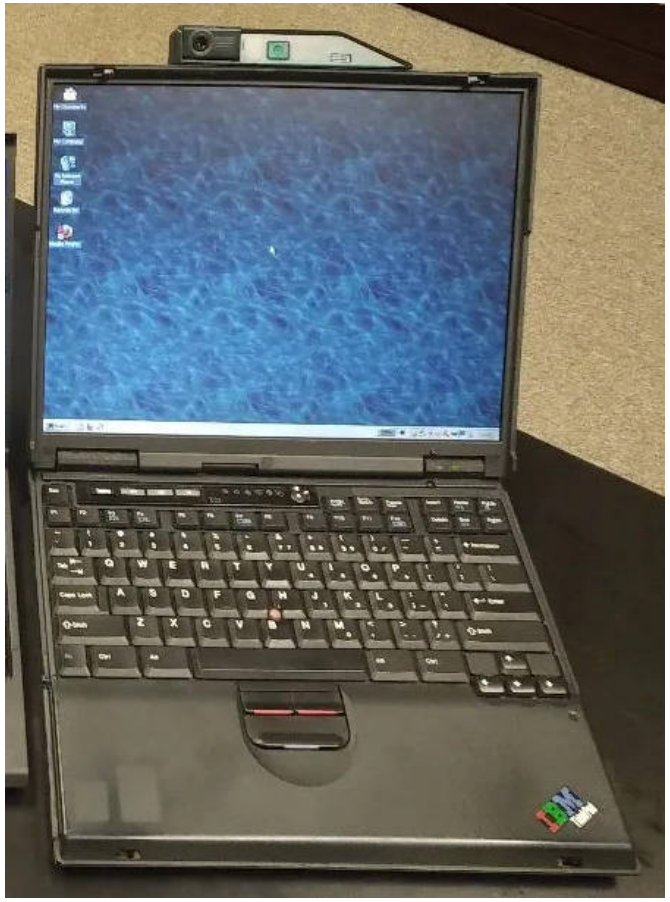



| Pin | Name | Description |
|---|---|---|
| 1,5,8,13 | GND | Ground |
| 2,12 | 0 | probably not connected |
| 3,4 | VCC | +5 V DC |
| 6 | D+ | Data + |
| 7 | D- | Data - |
| 9,10,11 | ? | unidentified |
| | . | it is fastener not a pin |

UltraPort on a X21

[20].

# Trivia: UltraPort



T23 with Webcam

Microphone on a tripod

CF card reader

[20]

# Far away from notebooks: IBM WorkPad

- offered between **1997** and **2001
- 9 re-labeled **Palm** PDAs
- technically unchanged, only different housing color and logo
- **UltraBay** docking station
- discontinued due to lack of interest
- Shout-Out: In ♥ with PDA

IBM WorkPad (1997)

# Far away from notebooks: IBM WorkPad

IBM WorkPad and WorkPad 20X

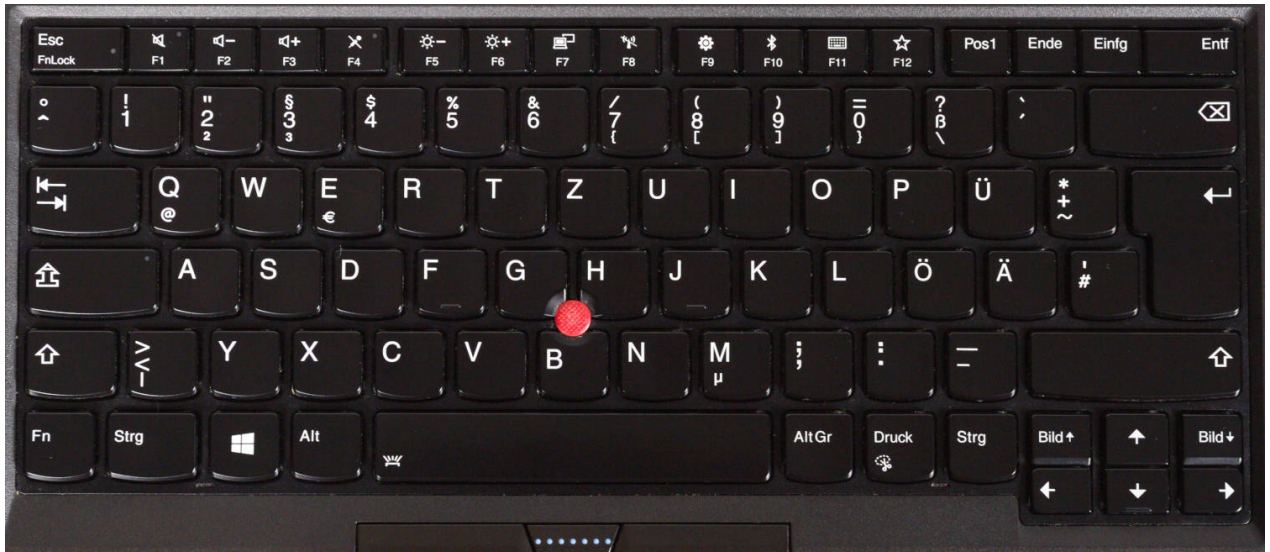
Ultrabay Plus WorkPad c500 Cradle (27P5738)

[21].

# Model series from 2008 to 2016

- Model name after the letter now three digits
- now also includes the **screen size** (*first digit after the letter*):
  - T400 = 14.1" inch
  - T500 = 15.4" inch
- the next two digits now stand for the **generation**:
  - T400, T410, T420,...
- first generation completely designed by Lenovo
- **Display hooks** are rationalized
- new **Precision Keyboard**

# Classic 7-Row (T400) and Precision Keyboard (T470p)



# Model series from 2008 to 2016

Changes compared to previous series:

| Series | Description |
|---|---|
| L | Replaces the R series, consumer BIOS |
| E | New cheapest series, quality below L-series |
| X | 12.1", 12.5" and 13.3", also convertible tablets |
| X1 | 14" UltraBooks and Convertible Tablets (**Yoga**) |
| W | Certified workstations, replaces Axxp and Txxp models |

# Model series from 2008 to 2016

X300 as "MacBook Air" killer

W701ds with 2 screens

[22], [23]

# Model series since 2016

| Series | Description |
|---|---|
| T | 14-16", optionally now also **AMD** and **ARM** (T14s G6) |
| X | Discontinued in favor of the X1 series |
| X1 | UltraBooks and a test ultraportable (X1 Nano) |
| X13 | 13" devices - **X13s** is the first ARM device |
| P | Workstations with new housings, replaces W series |
| Z | modern design, thin display bezels, **AMD-only** |

- simpler scheme from 2020
  - Digits stand for display size (*e.g. T14 -> 14"*)
  - followed by the generation as a separate word (*e.g. Gen 2*)

# Model series since 2016

Z13 G2 (2024)

X1 Nano (2021)

[24], [25]

# Trivia: Anniversary models

Special models have been released for some of the anniversaries:

- ThinkPad Reserve Edition
  - for the 15th anniversary
  - X61s in leather case with exclusive service
  - Cost: **5,000 USD**
- ThinkPad X1 Carbon G10 30th Anniversary
  - special X1C G10 with OLED display
  - special logo with classic IBM colors
  - limited to 5,000
  - Cost: **2,500 EUR**

# Trivia: Anniversary models

Reserve Edition (2007)

X1C G10 30th (2022)

[26], [27]

# ThinkPad T25 Anniversary Edition

- Released in 2017 for the 25th anniversary
- based on the **T470**
- classic **7-row keyboard**
- glass touchpad
- Logo in classic IBM colors
- limited to approx. 1,000, 300 for Germany

# ThinkPad T25 Anniversary Edition

# Pop and nerd culture

- Popular in the business environment due to **quality**
  - Repairability has decreased somewhat due to thinner devices
  - many components can be maintained by the user (**CRU**)
    - Keyboard, SSD, RAM,...
    - new **LPCAMM2** RAM enables thin modules and high speed
  - maintenance manuals freely available (**HMM**)
- Popular with hackers mainly because of good **Linux support**
  - IBM saw the added value early on
  - applies above all to T, P and X devices
  - Presentation by **Mark Pearson** on Linux support (DebConf 22)

CRU = **C**ustomer **R**eplaceable **U**nit; HMM = **H**ardware **M**aintenance **M**anual

# Pop and nerd culture

- **Framework** notebooks are now also widespread
  - Criticism of soldered RAM in the meantime
  - Locks for some components (*e.g. WLAN*)
  - Keyboards unfortunately no longer a unique selling point as they used to be
- Sticker trend for notebook covers
  - see also DevLids
- **Memetic relevance**

# Memetic relevance

1st owner

current owner

# Memetic relevance

[28]

# ThinkPad mods from the maker scene

There are numerous community mods that extend the devices:

- USB-C PD mods, e.g. for T41/T43
- BIOS mods
  - e.g. to remove limitations
  - Libreboot and Coreboot
- NVMe BIOS Boot Option

- Frankenpads](https://thinkwiki.de/Frankenpad)
  - heavily customized ThinkPads, with newer components, etc.
- 51nb mods with completely revised mainboards
  - X62 (X61), X210 (X200/201), X330 (X230), T700 (T60/61)

# ThinkPads in movies and series

Eine Auswahl:

- The Matrix (1999)
- The Gentleman (2019)
- Knives Out (2019)
- Black Widow (2021)
- Homeland (Staffel 1 und 5)
- Law and Order: Special Victims Unit
- Law and Order: Criminal Intent

Quellen: Reddit und Product Placement Blog

# ThinkPad T61 in Knives Out (2019)

[29].

# ThinkPad 750 (1993) or 360 (1994) in Black Widow (2021)

[30].

# raise BufferOverflowException('Stahp')

# Links

- ThinkPad-Forum 🇩🇪
- ThinkPad-Wiki 🇩🇪
- International ThinkWiki
- Notebookcheck posts about ThinkPads 🇩🇪
- Laptop Retrospective 🎥📖
- HK003 - ThinkPads 🎙️🇩🇪
- BW099 - Ein denkwürdiges Notebook 🎙️🇩🇪
- ThinkPad-Museum
- ThinkPad-Museum Datenbank

# Books

There are suitable **books** on these topics:

- How the ThinkPad Changed the World - and Is Shaping the Future
  - Arimasa Naitoh, William J. Holstein
- The Race for Perfect
  - Steve Hamm, Story über das X300
- ThinkPad: A Different Shade of Blue
  - Deborah A. Dell, J. Gerry Purdy
- **Richard Sapper, Edited by Jonathan Olivares**
  - Hardcover book with a lot of photos

# ThinkPad museum podcast (🇩🇪)

- published every **~4 weeks**
- deals with the past and present
- News, models, techniques and personalities
- **interactive** format, guests welcome!
- available wherever you get your podcasts™
  - Feed, fyyd, Apple Podcasts, Spotify

# Image sources

- IBM-Logos
- Thomas J. Watson Sr.
- Think (Slogan)
- Think (Notizbuch)
- IBM PC und Portable
- IBM PS/2 Model L40 SX
- ThinkPad 700
- Richard Sapper
- Artemide Tizio
- Lorenz Static
- Tizio und T430
- IBM Model 5140
- ThinkPad 550BJ
- ThinkPad 820 (Sarah Mädel / manawyrm)
- ThinkPad HMC
- UltraBay
- UltraBay Serial/Parallel
- UltraPort
- UltraBay WorkPad Cradle
- X300
- W701ds
- Z13 G2
- X1 Nano
- Reserve Edition
- X1 Carbon G10 30th
- Lenowo BIOS logo
- Knives Out
- Black Widow

# Thank you for your attention