FreeBSD in Japan

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Topics At A Glance

- **How has FreeBSD been used in the Japanese market, and how the market looks like?**
  - History and background
  - The current state of affairs
- **Conversations with enterprise FreeBSD users**
  - Challenge, success, and failure
  - What do we do?

Who Am I?

Who Am I?

- FreeBSD project member since 2000,
- Started as a member of JFUG (Japan FreeBSD User Group),
- Served as a core team member for 16 years,
- Assist. Prof. at TokyoTech

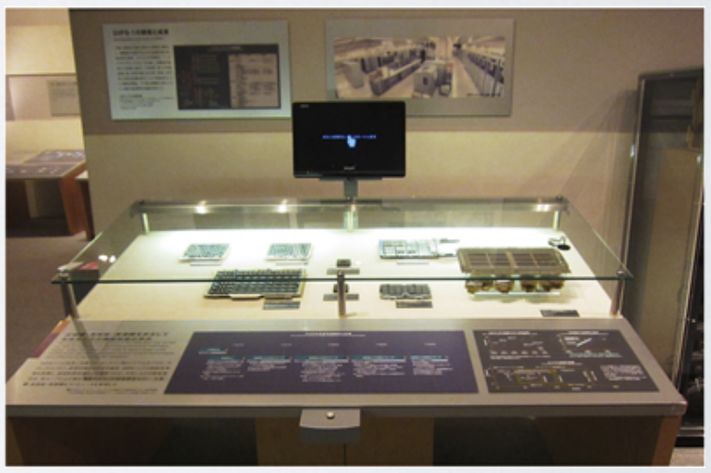
A Short History of FreeBSD in Japan

'60-70s: electronic calculator:

Japanese learned microprocessors and use them in consumer electronic devices

'70s-80s: domestic computer and OS:

A national project "DIPS" : 40-bit word arch, multiprocessor, 256MB virtual memory address, C-TRON OS written in PL/1



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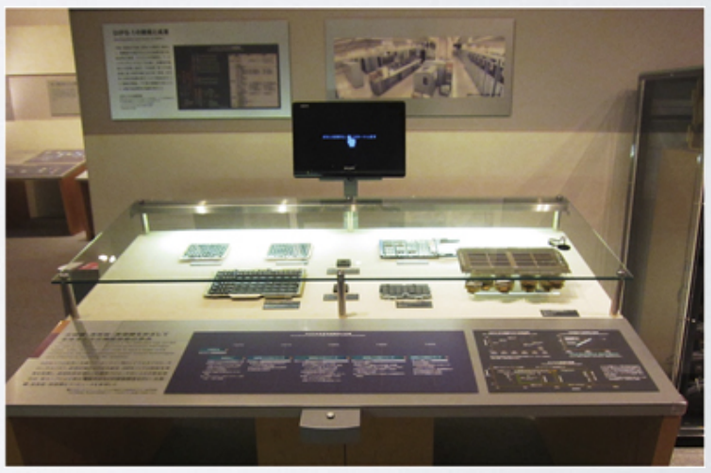

'80s-90s: workstations for office automation

WSes with SysV or 4.2BSD-based OS

Japanized UNIX OSes

NEC EWS4800/260
(MIPS R3000, SVR4, 1990)

Sony NEWS workstation
(68k and MIPS)
discontinued around 1998

late '90s: PC-UNIX emerged

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or were replaced with Intel boxes

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- There were a lot of Japanese developers who knew BSD well
- "Internet" became popular in Japan around 1995:
  - **FreeBSD was one of the most popular OS for ISP and other Internet business companies**

1998-2005:

The local community was pretty active:

- KAME IPv6
- PAO (ACPI/mobile device support)
- etc

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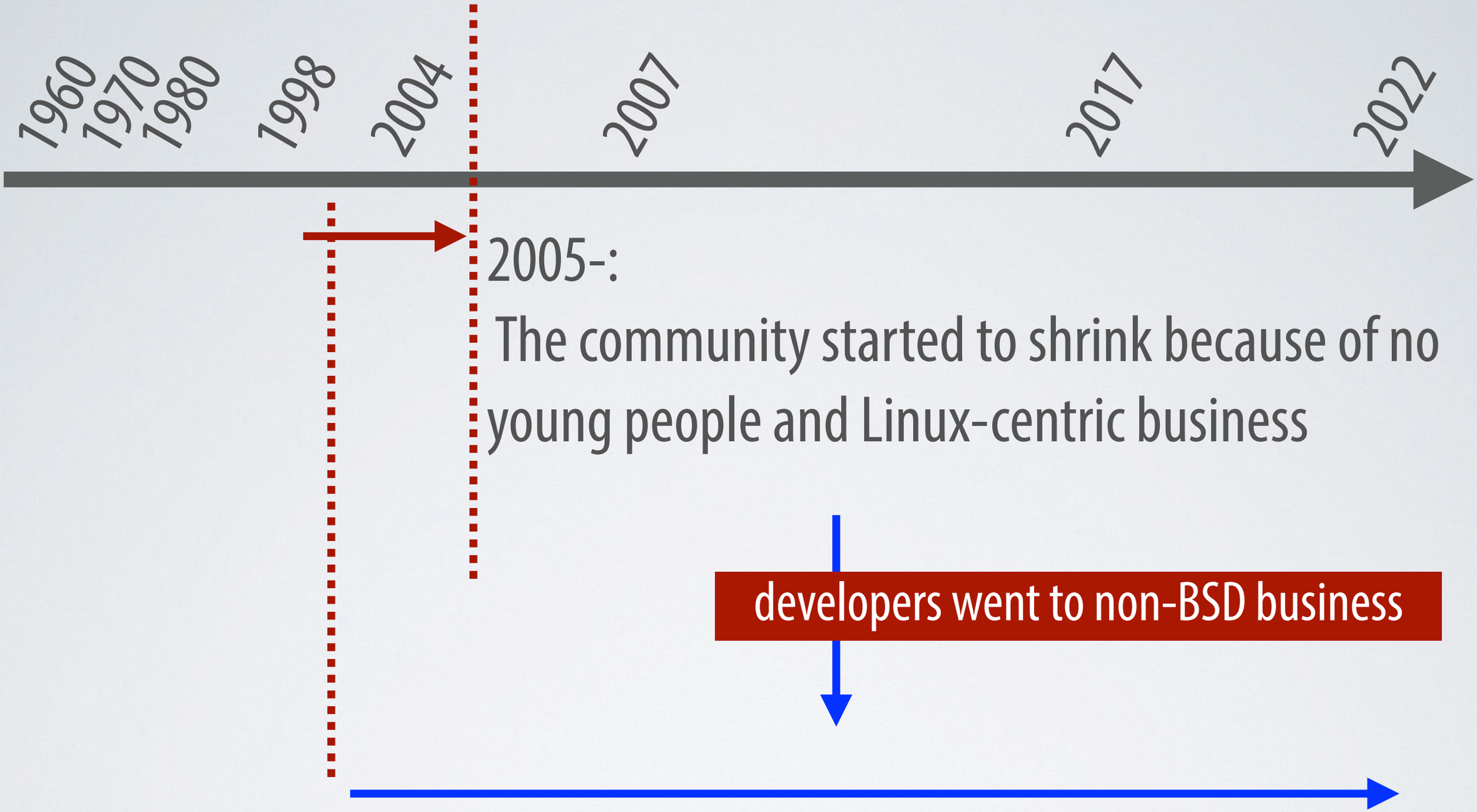
2000: Toshiba, Hitachi, Fujitsu, and IBM Japan made an announcement that "**they would support Linux as their business foundation**" in 2000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2005-:
The community started to shrink because of no young people and Linux-centric business
developers went to non-BSD business
Education for new recruits (>1,000 people /year) based on Linux in big companies who involved in the workstation business

Current Status of Affairs

- **Big companies drive their adoption of Linux**
  - People who know BSD are doing non-BSD business
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- **To get more people in the community:**
  - AsiaBSDCon (since 2004, 2007-19, 2023... 14 times)
  - "FreeBSD Workshop," a monthly meet-up (since 2014, 91 times)
  - Forums in social media (Facebook, Twitter, Slack, mailing-list)
    - ~1k people in social media, ~100 in group chats/at conferences, ~20 at monthly meet-ups

Conversations with Japanese Enterprise FreeBSD Users

Who is still using BSD in Japan?

They love FreeBSD.
Be careful not to lose the relationship

Mutual benefits must be clear

Their Motivation

- **Four categories:**
  - **a) Passion:** "because we love FreeBSD"
  - **b) Inertia:** "because we have used FreeBSD and no reason to change"
  - **c) Superiority:** "because FreeBSD was the best after considering the others"
  - **d) Customer-driven:** "because we have a customer who wants it"

Their Use Cases and Needs

- **Two categories of use cases:**
  - **1) as a complete POSIX-compatible OS**
    ...runs middleware on it for their business
  - **2) as a component that they can reuse**
    ...kernel, kernel subsystem, userland library, utility, etc

- **Needs:**
  - 1) Information in Japanese: release, security advisory, etc
  - 1) Commercial support service
  - 2) Contact to ask a question or upstreaming

Who is still using BSD?

- **IIJ (Internet Initiative Japan), "passion-component"**
  - ISP since 1992
  - Using NetBSD for the router products
  - Using OpenBSD for the virtual routers
- Understand the open-source ecosystem
  - Hiring developers
  - Upstreaming their changes

Donating to AsiaBSDCon

SEIL/X4, NetBSD-based router

Who is still using BSD?

- **Sakura Internet, "passion-complete OS"**
  - Hosting provider since 1999 (was a startup)
  - Offering FreeBSD-based VPS (on KVM)
    - The founder loves FreeBSD
- Offering a 3rd-party mirror of our FTP contents for >20 years

Who is still using BSD?

- **S2 Factory "passion/inertia-complete OS"**
  - The company run by kuriyama@ and hanai@
  - Building websites in collaboration with a graphic design company
- Using FreeBSD (and open-source software) as the core technology

Donating to AsiaBSDCon

Who is still using BSD?

- **KDDI Web Communications, "inertia-completeOS"**
  - Hosting provider since 1999 (was a startup)
  - Offering FreeBSD-based VPS (bare-metal)

Donating machine/network resource for Tier-1 mirror in Japan

Who is still using BSD?

- **BroadBand Tower "passion"**
  - iDC service provider
  - No BSD is used, but the head of BBT Lab. is kind enough to offer machine/network resource to the FreeBSD project
  - Maybe possible to setup a collaboration
  - Tier-1 mirror (working) and testing lab (planning)

Donating machine/network resource for Tier-1 mirror in Japan

Who is still using BSD?

- **SIE (Sony Interactive Entertainment), "superiority-component"**
  - Gaming console (PlayStation series)

Lessons Learned

- **Asking donation or financial support never worked**
  - No business custom of donation in Asia
  - Only works for one that understands how open-source projects work

- **Mutual benefits**
  - Needs a good story assuming it is a normal business relationship
    - Know what they want
  - Easy if they love FreeBSD, but...

Promoting FreeBSD

- **α) As a complete, performant OS**
  - for companies like ISPs in '90s: KDDI WC

What middleware they are using? Does it run on FreeBSD flawlessly?

Promoting FreeBSD

- **α) As a complete, performant OS**
  - for companies like ISPs in '90s: KDDI WC
- **β) As toolkits, reusable software component collection**
  - for consumers who want specific functionality
- Needs more attention about "librarification" of FreeBSD

Investing in improving reusability if possible

- Notable examples:
  - Rump/Anykernel in NetBSD
  - OpenSSH in OpenBSD
  - OpenFastPath project (FreeBSD network stack in userland)

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Feature parity wherever possible

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- **All cases, we need working examples people can try easily:**
  - **"FreeBSD showcase"**