



红帽在RISC-V软硬件生态的 最新进展和趋势



Wei Fu <wefu@redhat.com>

Tekkaman Ninja <tekkamanninja@163.com>

RISC-V国际基金会 RISC-V大使

红帽软件（北京）有限公司 首席软件工程师

2025年07月18日 星期五 第五届RISC-V中国峰会 软件与生态系统分论坛 @张江科学会堂 张江厅



AGENDA



Status

The RISC-V Hardware overview



OpenSource
Community

Fedora on RISC-V



RedHat

CentOS Stream 10 & RHEL Developer Preview for RISC-V



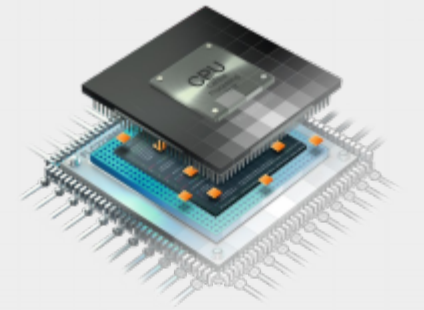
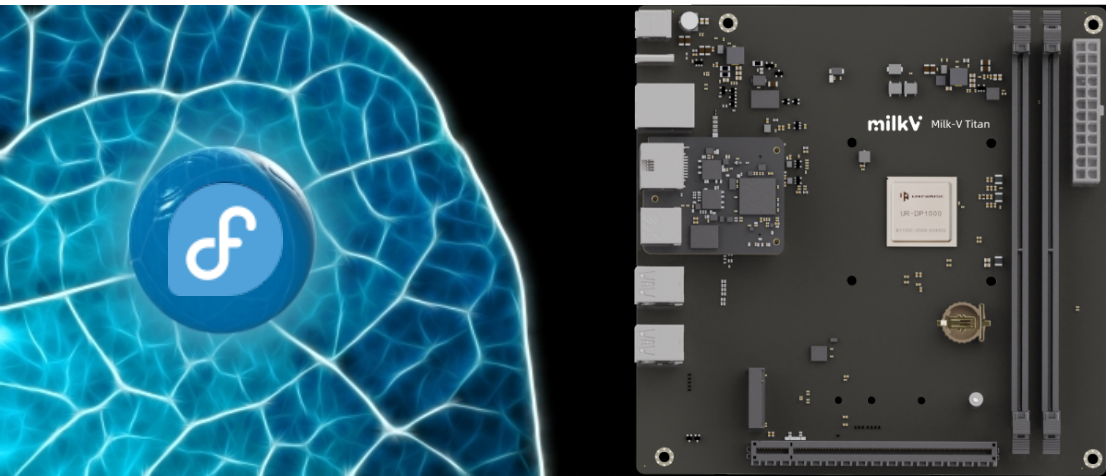
Vision

AI on RISC-V and Predictions



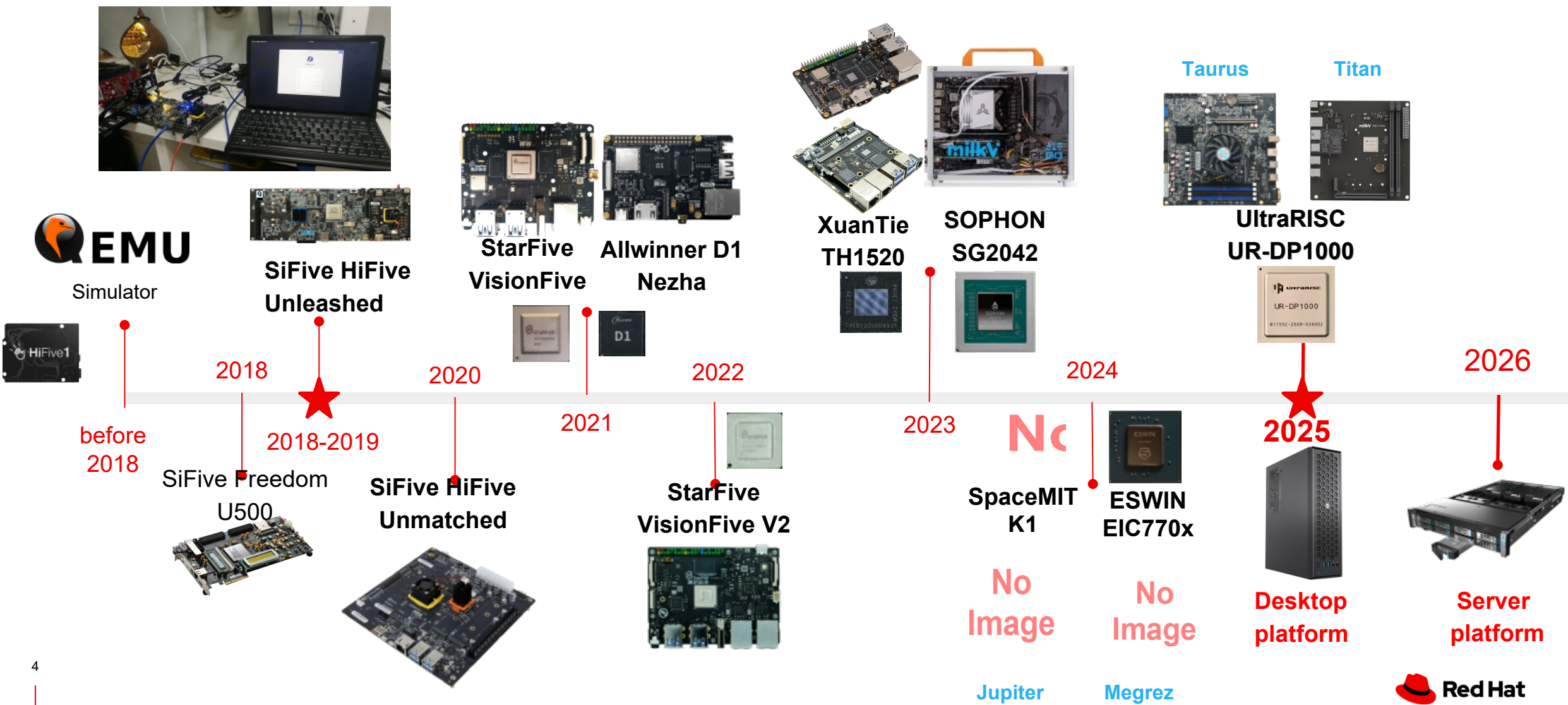
Part I

The RISC-V Hardware overview



RISC-V的硬件发展一瞥

RISC-V Hardware History



RISC-V Server platform



EuroHPC
Joint Undertaking



VENTANAMICRO

Veyron V1



VOS



XIANGSHAN



超睿科技
ultraRISC



SPACEMIT
进迭时空

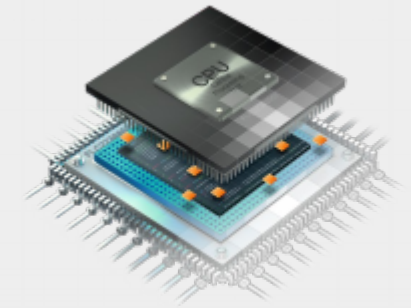
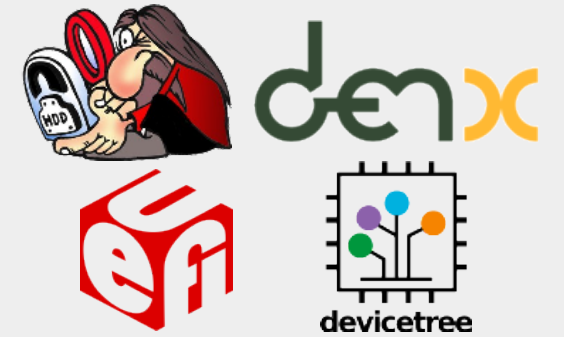
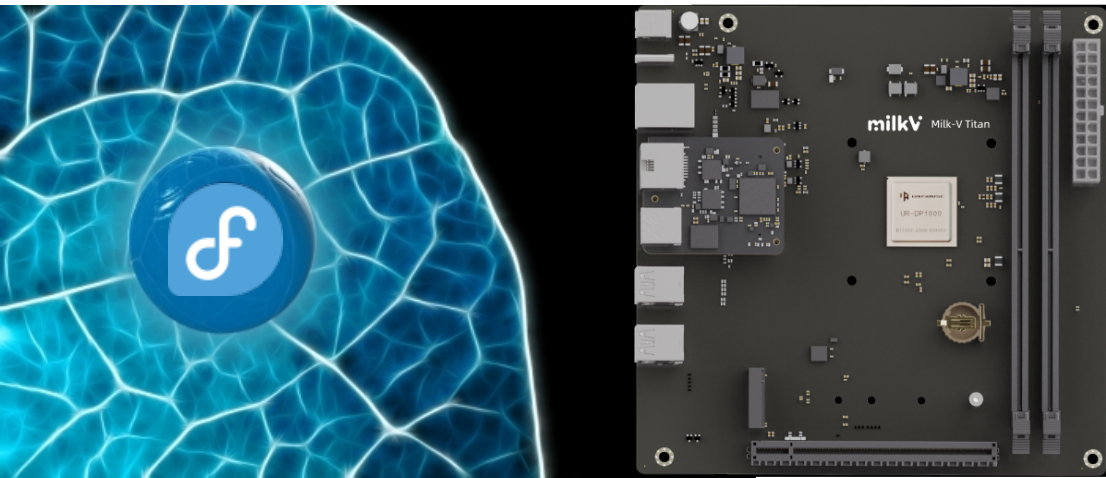


知合计算
ZHIHE COMPUTING



Part II

Fedora on RISC-V



Linux distros are everywhere



End devices



Gateway



Cloud platform & Edge computing

Cross Compilation

Cross Compilation



基于 RISC-V 的 Linux 发行版和软件生态百花齐放



U-Boot



No
Image



openKYLin

Hardware & Software development info for RISC-V



ISCAS

中国科学院软件研究所
Institute of Software Chinese Academy of Sciences

`./ PLCT Lab`

Compilers, Runtimes, and Emulators.

RISC-V East Asia Biweekly Sync [中文]



RISC-V Open Hours [English]

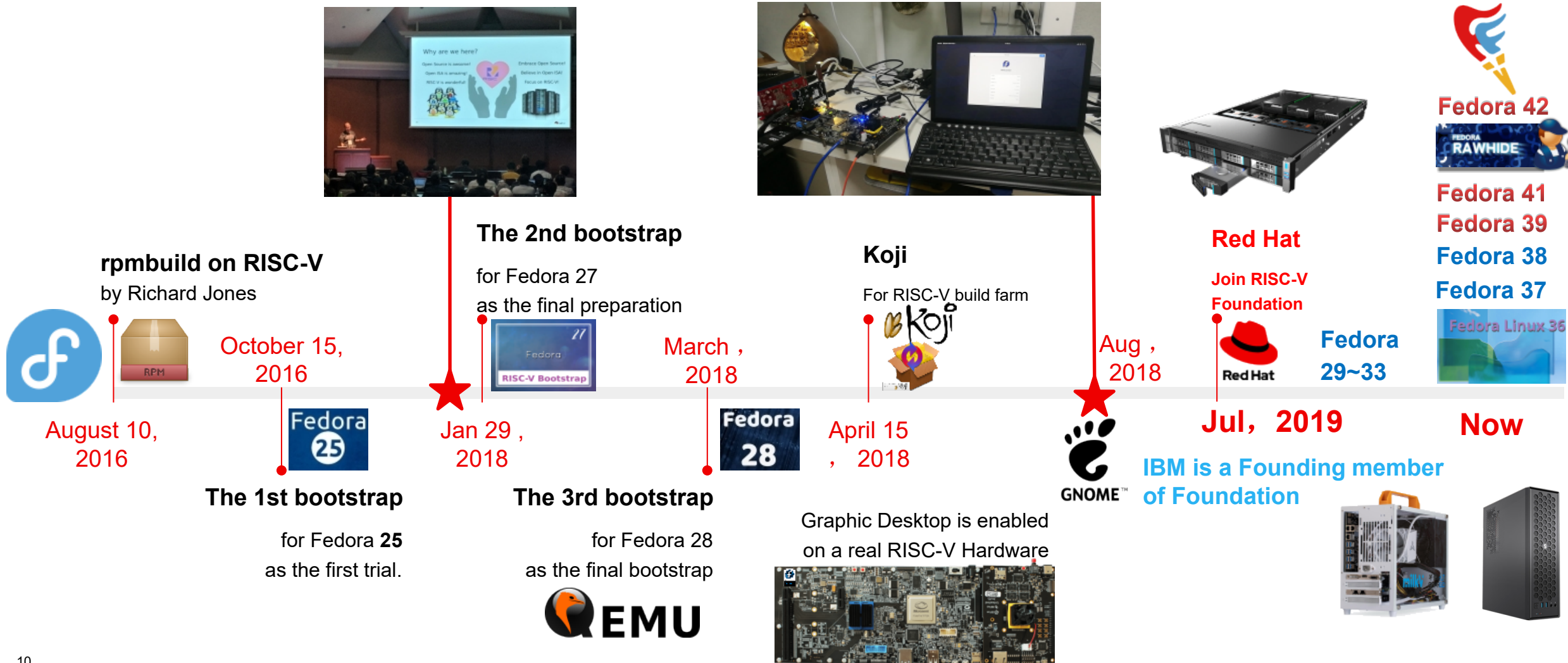
Info Source:

<https://github.com/cnrv/RISCV-East-Asia-Biweekly-Sync>

<https://community.riscv.org/risc-v-open-hours/>

基于RISC-V的Fedora开发历程

Fedora on riscv64 History



基于riscv64的Fedora开发状态

The Status of Fedora on RISC-V



ISCAS

中国科学院软件研究所
Institute of Software Chinese Academy of Sciences

Fedora

Bootloader: FW+OpenSBI + (UEFI + ACPI) + GRUB

BuildSystem: Koji + Mock + RISC-V Server

Status: **Updating Fedora 42 (95%)** 

Repo : **Fedora 41 distrepo 98% srpm**
Focus on Fedora 42 REPO now

Koji Build system

Openkoji : <https://openkoji.iscas.ac.cn/>



RISC-V Build Server
with real Hardware

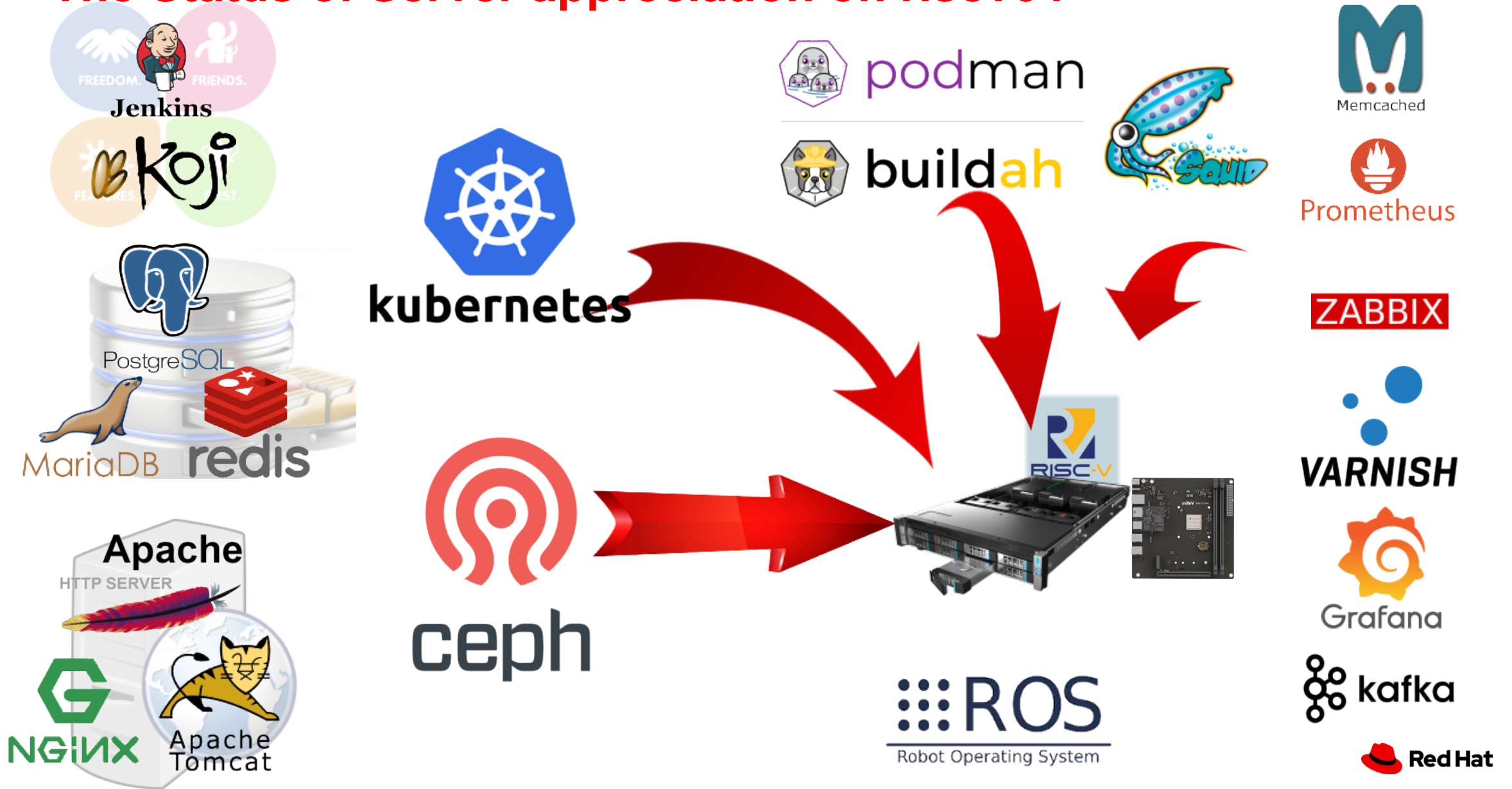
基于riscv64的桌面应用支持 (Fedora Remix)

The Status of desktop appreciation on riscv64

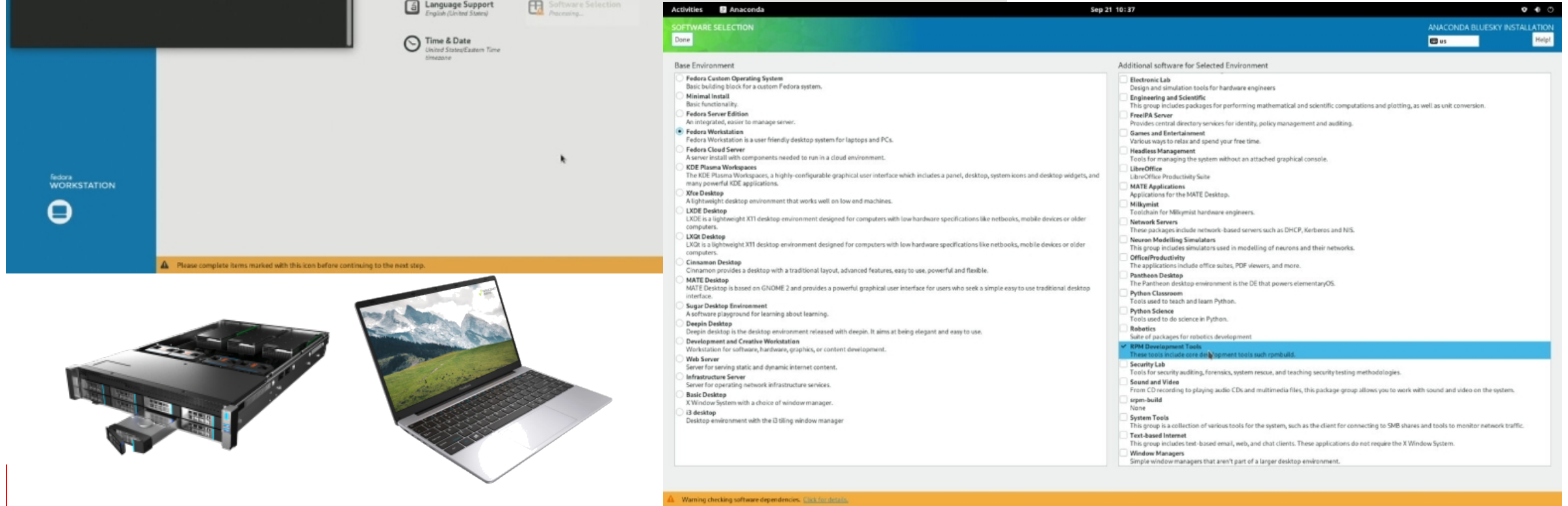
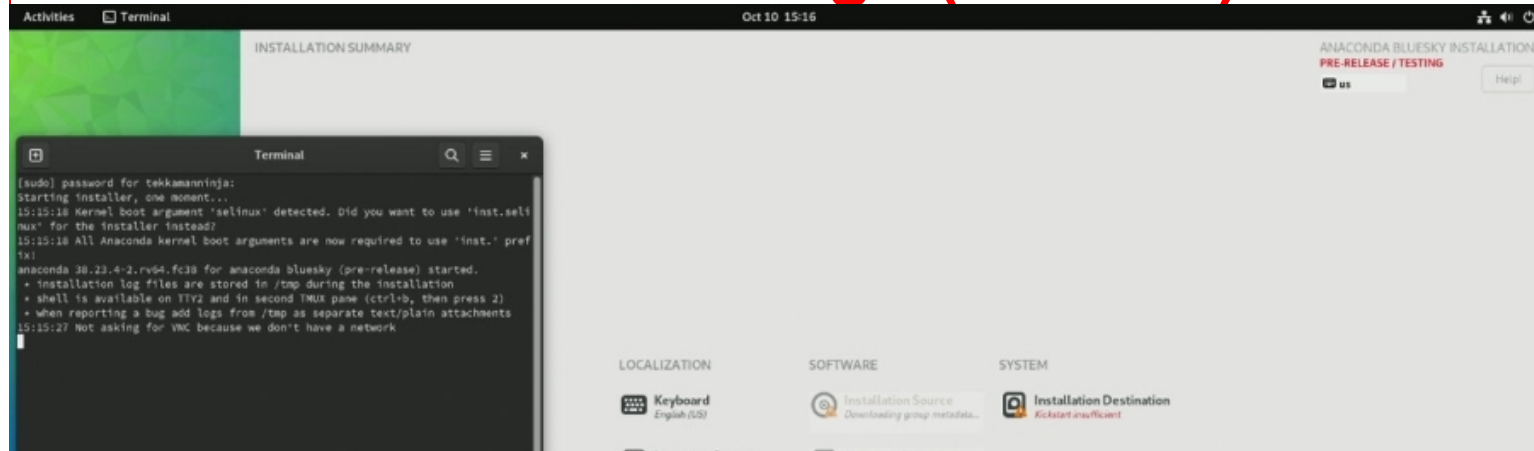


基于riscv64的服务器应用支持 (Fedora Remix)

The Status of Server appreciation on riscv64



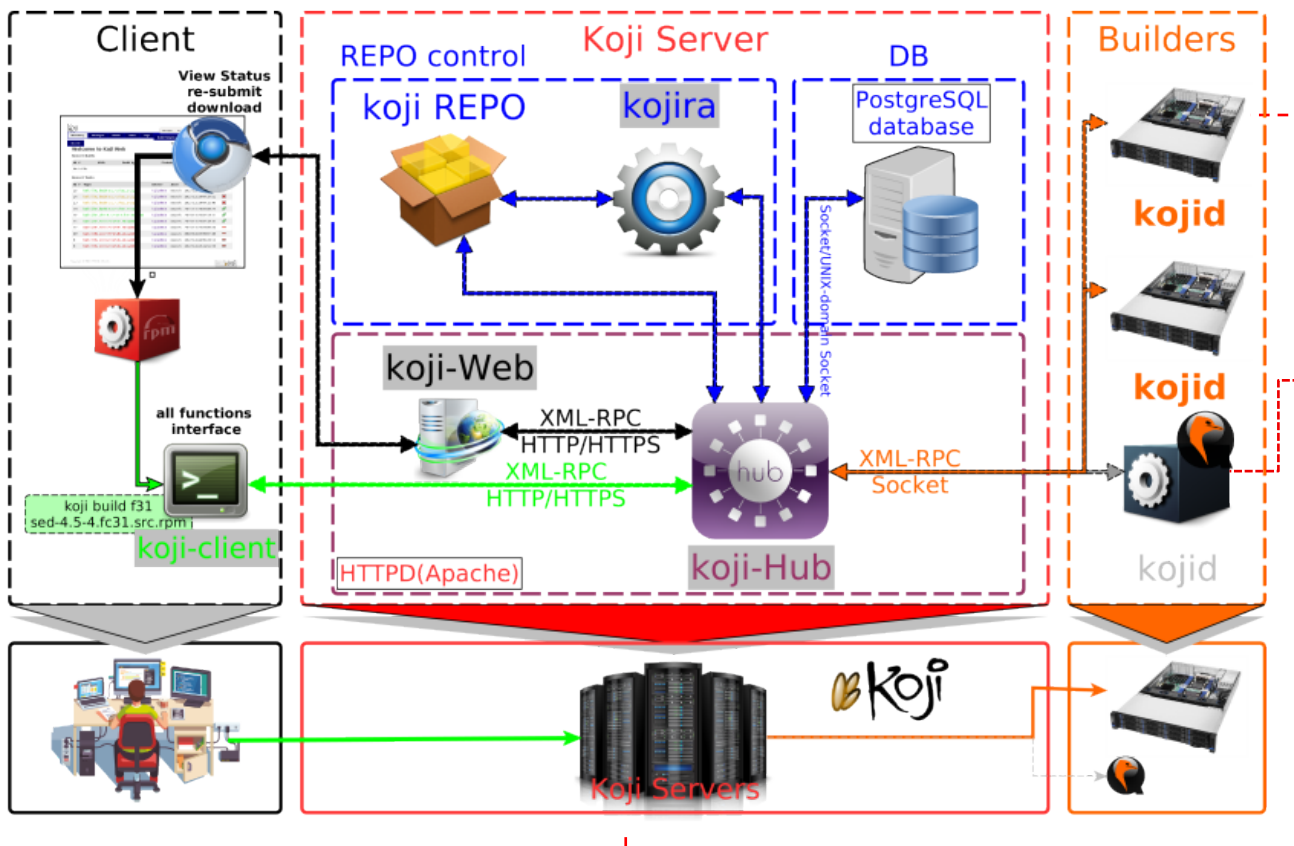
基于riscv64的Fedora安装盘 Fedora Installer Image (LiveCD)



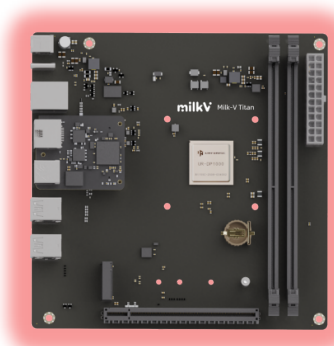
使用Koji编译系统构建RPM和Image

Koji Build System for RPMs & Image

针对RPM系操作系统的Koji编译系统。



RISC-V编译服务器



QEMU 虚拟机
用于测试



koji服务器
用于中心控制和管理
主服务器, 仓库创建和管理。



15 在国内，我们使用Openkoji系统为riscv64构建Fedora:

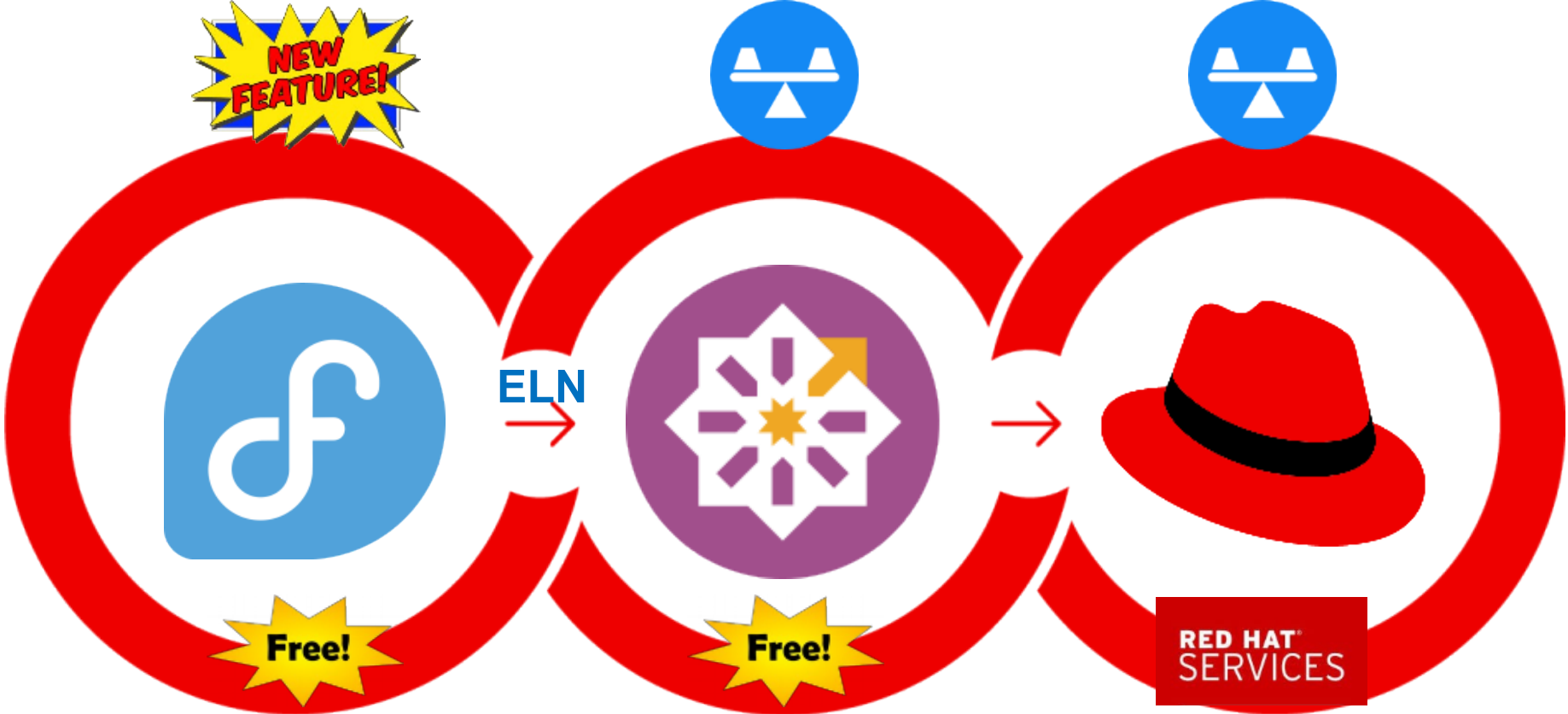
感谢中科院软件所的支持: <https://openkoji.iscas.ac.cn/>

Part III

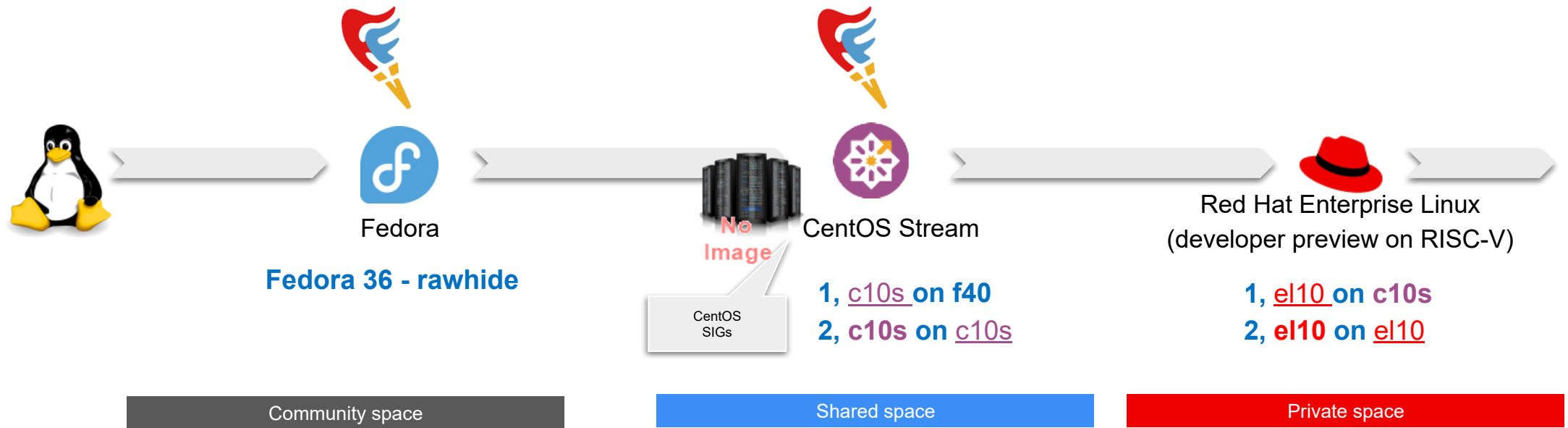
CentOS Stream 10 & RHEL Developer Preview for RISC-V



Fedora/CentOS stream/RHEL



Fedora/CentOS stream/RHEL



We are excited to announce that work is underway on CentOS Stream 10 for the RISC-V architecture within the CentOS ISA SIG.



The Fedora-V Force team is helping to jumpstart the effort.

Fedora-V Force Team

<https://www.fedoravforce.org/>



The Fedora-V Force (FVF, 多唯V组) is a technical team focused on porting and building the Linux kernel and Fedora distribution based on the RISC-V architecture, as well as firmware development. The team is dedicated to creating a more perfect Fedora distribution and promoting the Linux open-source software ecosystem on RISC-V. Members of the team come from the Fedora community and RISC-V open-source enthusiasts. They have years of technical expertise in firmware, U-Boot, the Linux kernel, Fedora, and other foundational software domains. They are also highly engaged in the RISC-V open architecture and its open-source ecosystem. Under the guidance of RISC-V ambassador Wei Fu, the team maintains the largest Fedora on RISC-V compilation system in China, independently compiling multiple versions from Fedora 36 to rawhide, and adapting all mainstream RISC-V development boards on the market, significantly advancing the process of making RISC-V a major architecture for Fedora. Additionally, the team actively participates in upstreaming open source code, practicing Fedora's "upstream first" policy.

Our Websites



Fedora-V Force



Wei Fu

Red Hat
Principal Software Engineer
@tskkamanninja
LinkedIn



Guoguo

PLCT Lab
@imguoguo



Milkice

PLCT Lab
@milkice233



U2FsdGVkX1

PLCT Lab
@U2FsdGVkX1



Scarlett

PLCT Lab



Ahei

@aahai



catme0w


PLCT Lab
@CatMe0w



Fedora image support list

Images for RISC-V dev board <https://images.fedoravforce.org/>



Fedora-V Force Images 

[Help](#)
How to burn images to SD cards

UltraRISC [↗](#)

- UR-DP1000 [^](#)
- Titan
- Taurus
- UR-DP1000-EVB

BOSC [↗](#)

- Nanhu [v](#)


ESWIN [↗](#)

- EIC7700 [^](#)
- EIC7700-EVB
- Megrez
- HiFive Premier P550

SpaceMIT [↗](#)

- K1/M1 [^](#)
- Jupiter
- LicheePi 3A
- Muse book
- MUSE N1
- Banana Pi BPI-F3

Megrez [↗](#)



Vendor: [Milk-V](#) [↗](#)
SoC: [EIC7700](#) [↗](#)
Status: GA

Additional Information:

- [▶ ESWIN Board GRUB Boot Tutorial](#)
- [▶ ESWIN 开发板GRUB启动教程](#)
- [▶ 在ESWIN板上启动Fedora \(旧版\)](#)

Spins:

- [Fedora Minimal42](#) [↓](#)

Great Thanks to Our Partners



Fedora-V Force



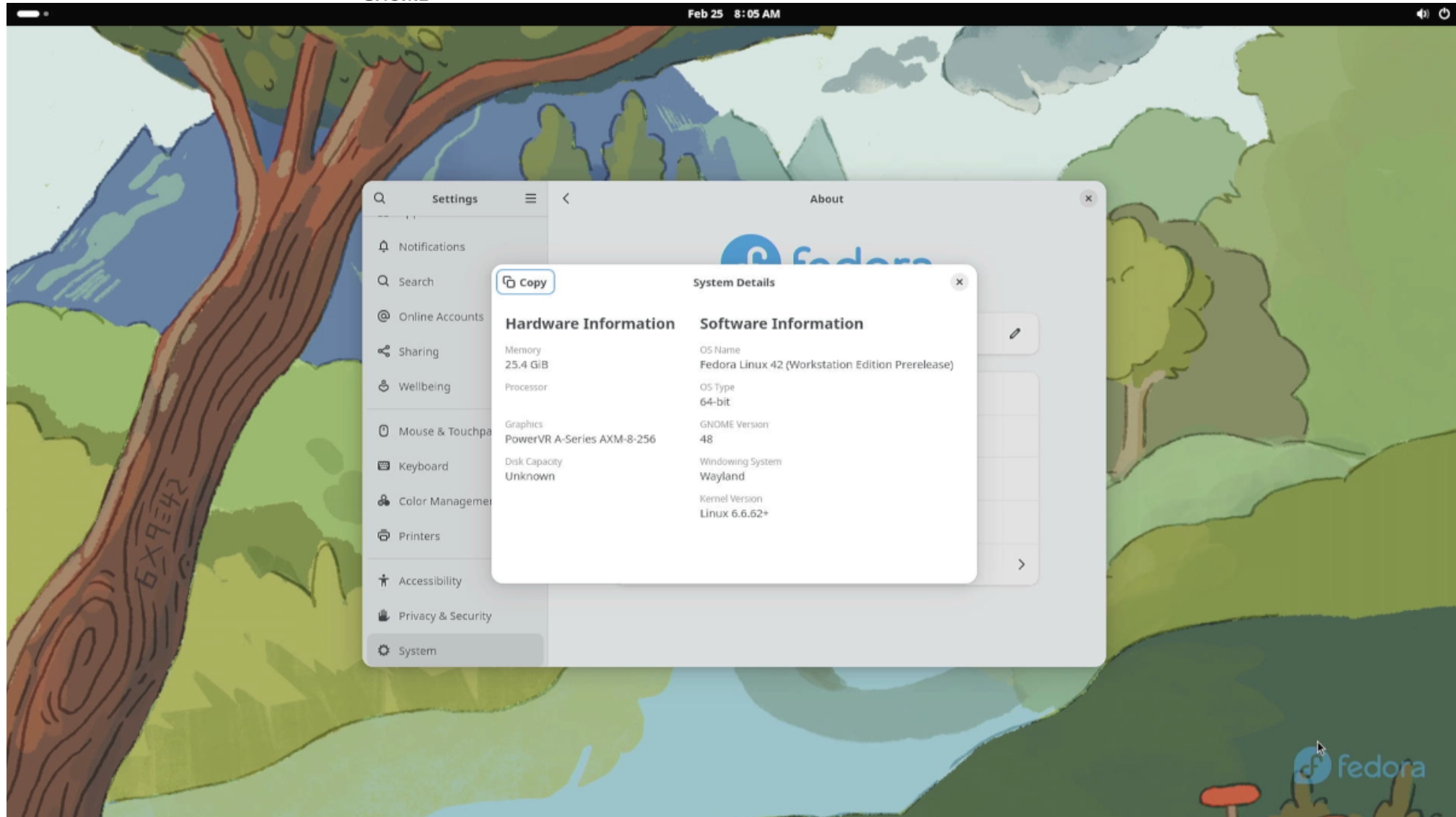
中國科學院軟件研究所
Institute of Software Chinese Academy of Sciences

Our Partners



苦芽 KUBUDS





CentOS stream 10 with GNOME

[CentOS for RISC-V Now Available](#)

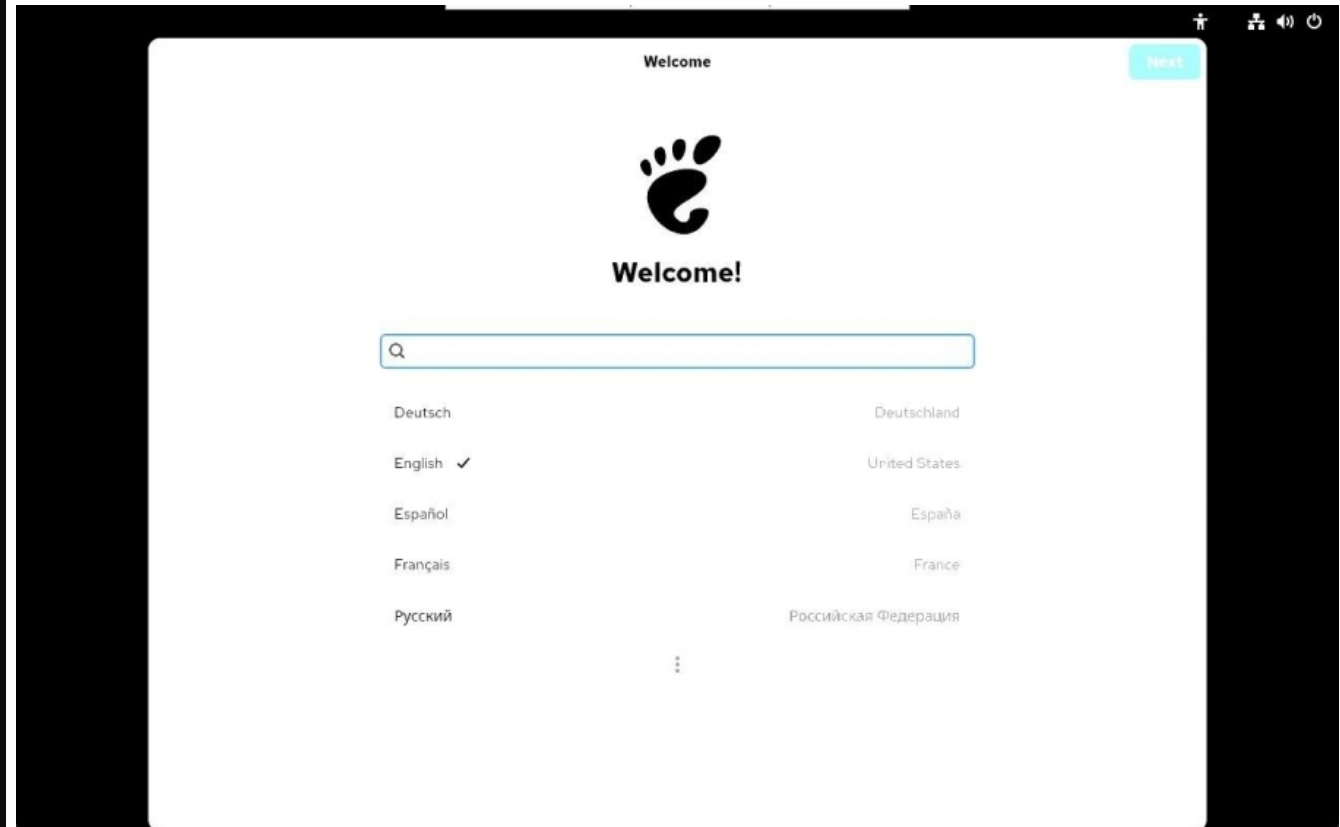
<https://images.fedoravforce.org/>



```
GRUB version 2.12

*CentOS Stream 10 (Coughlan)
CentOS Stream 10 (Coughlan) - Rescue Image
UEFI Firmware Settings

Use the ^ and v keys to select which entry is highlighted.
Press enter to boot the selected OS, 'e' to edit the commands
before booting or 'c' for a command-line. ESC to return previous
menu.
The highlighted entry will be executed automatically in 4s.
```



2025 ~ 2026

fedora
remix

CentOS Stream
RHEL Developer
Preview 10

ELN on Fedora 41



Q1 of 2025

Q2 of 2025

CentOS Stream
RHEL Developer
Preview 10

Fedora 42

Q3 of 2025



Red Hat
Developer

Q4 of 2025

Fedora 43



Q1 of 2026

Fedora
44(rawhide)



Q2 of 2026

Fedora 44 (GA)



RHEL 10.x



RISE & RISC-V International working closely together

Two key elements for success RISC-V architecture

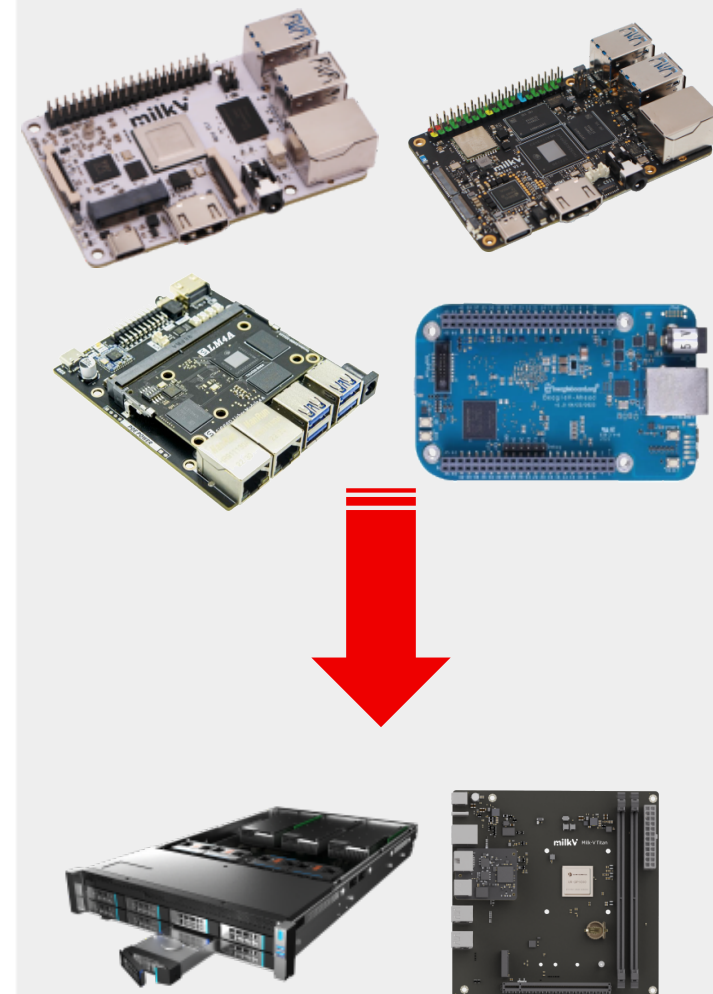
A standard hardware architecture with clear open standards



A thriving open source software ecosystem built on top of standardised hardware



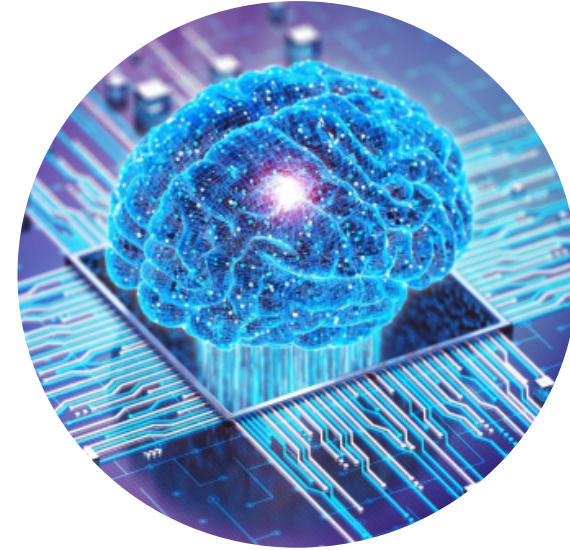
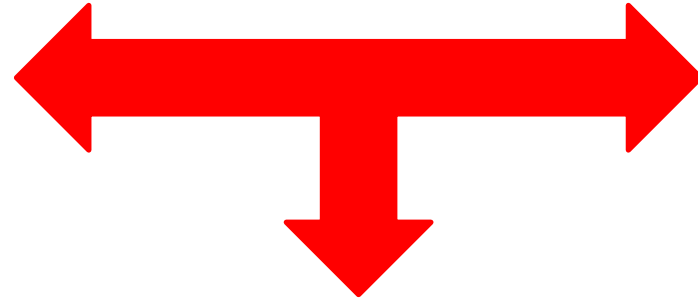
AI on RISC-V and Predictions



Future Trends



Edge(Vehicle
)



AI



PC & Server

Thank you

Red Hat is the world's leading provider of enterprise open source software solutions. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500.

 [linkedin.com/company/red-hat](https://www.linkedin.com/company/red-hat)

 [youtube.com/user/RedHatVideos](https://www.youtube.com/user/RedHatVideos)

 [facebook.com/redhatinc](https://www.facebook.com/redhatinc)

 twitter.com/RedHat