FUJITSU-MONAKA
SoC System Specification

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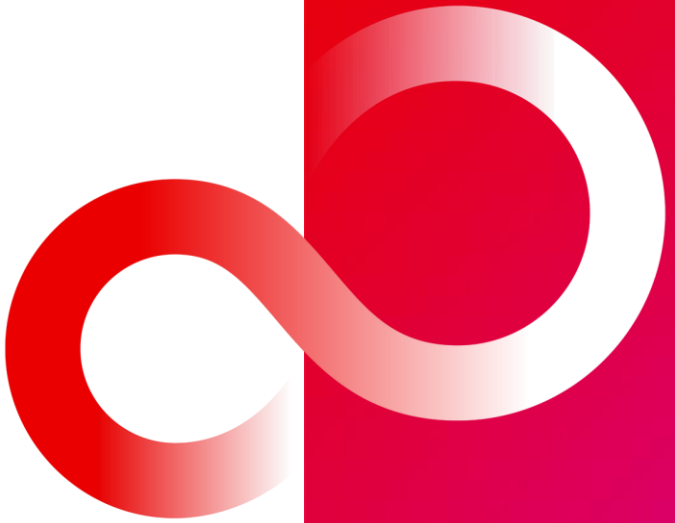

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Preface

- This document describes the overview and Arm-compliant specifications of the FUJITSU-MONAKA SoC system. It also covers related ACPI/SMBIOS support and I/O interfaces.

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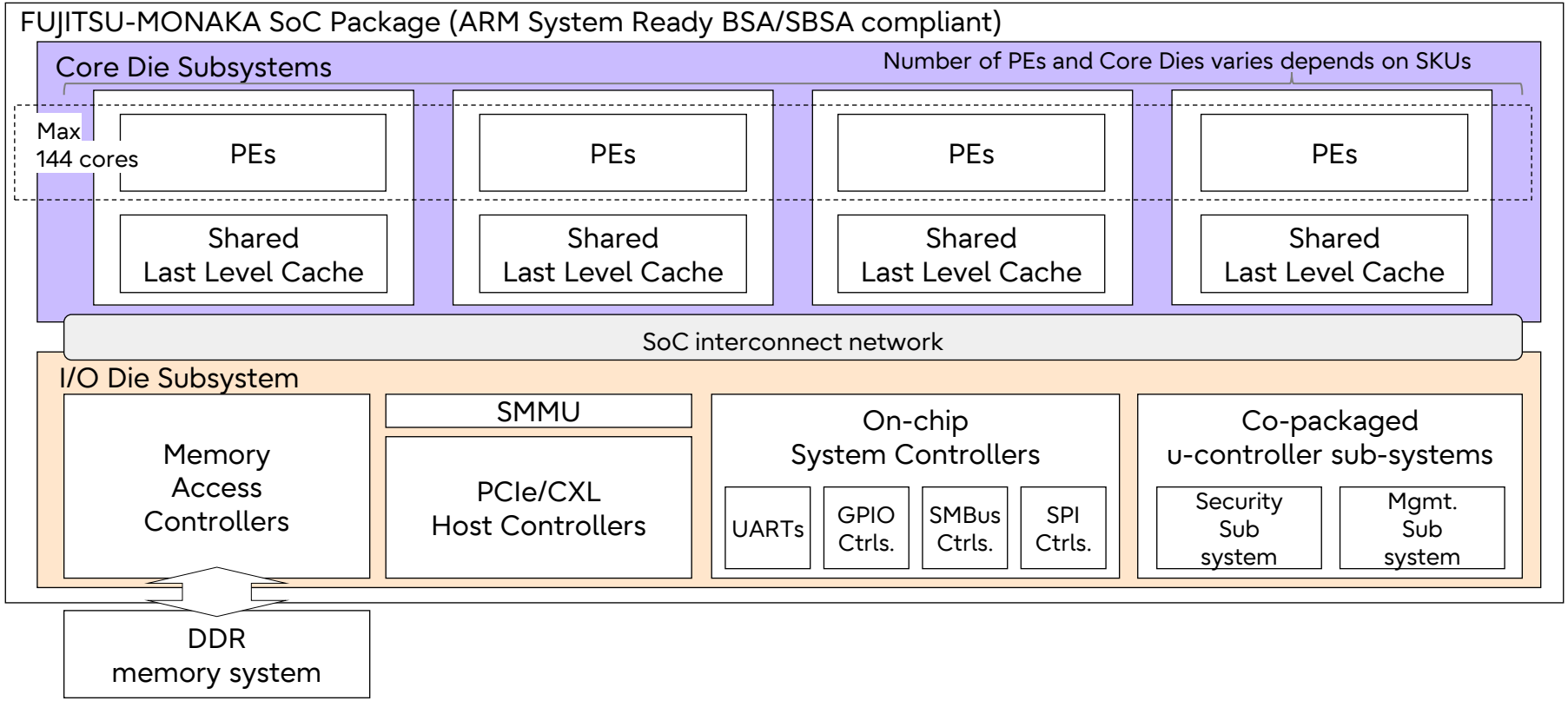
FUJITSU-MONAKA SoC System Architecture



Note) Some of components are not depicted in this slide.

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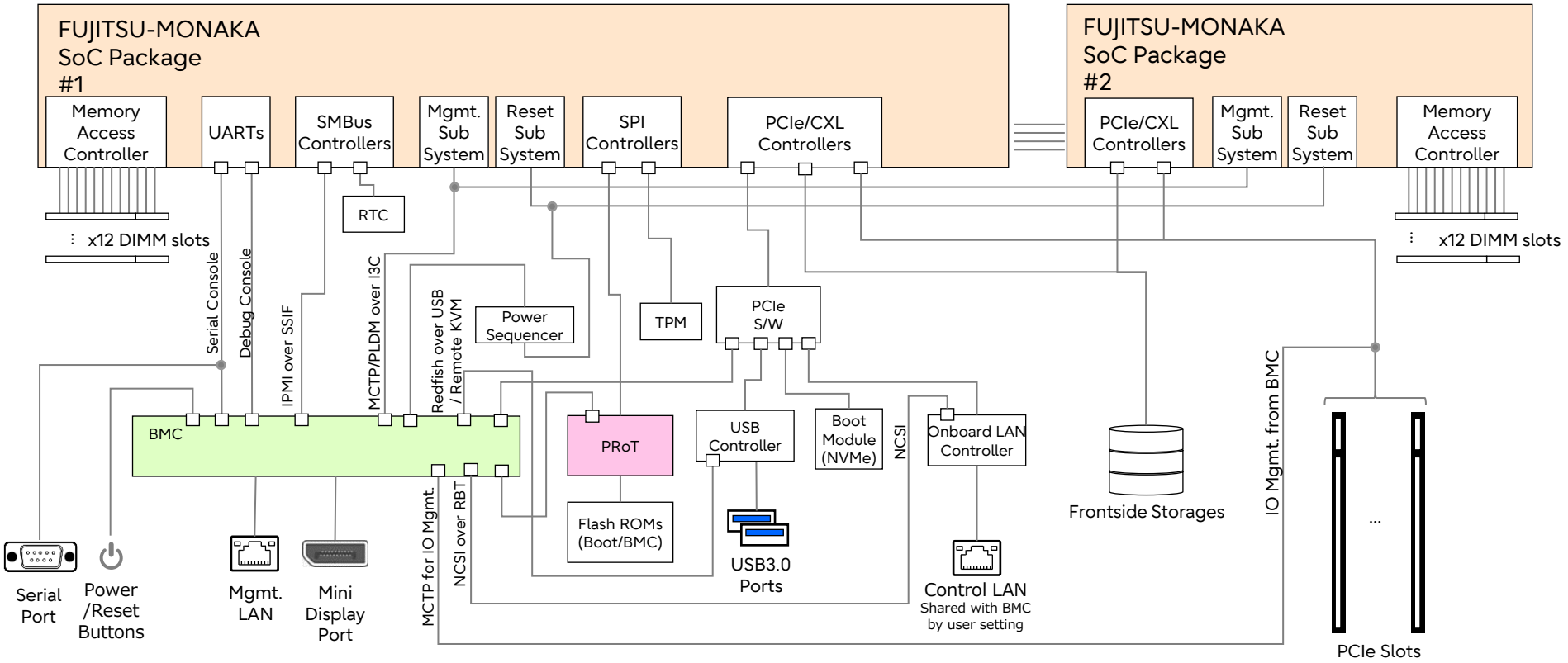
FUJITSU-MONAKA Reference Platform design



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Overview : Firmware Components for FUJITSU-MONAKA Reference platform

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Core Die Subsystems

Boot Firmware
running on Non-secure EL2

- UEFI v2.10+
- ACPI v6.10+
- SMBIOS v3.7.0+
- UEFI Secure Boot
- UEFI Auth Variable
- TPM Measured Boot

Monitor Firmware
running on Root EL3

- SMCC, PSCI, SDEI
- TPM Measured Boot
- CCA Verified Boot

Co-packaged u-controller sub-systems

Security Firmware

- CCA Verified Boot
- CCA Delegated Attestation

Management Firmware

- MCTP/PLDM for Sensor, RAS

BMC Firmware

- Redfish
- IPMI
- Web UI

PRoT Firmware

- NIST SP800-193

Note) Some of components are not depicted in this slide.

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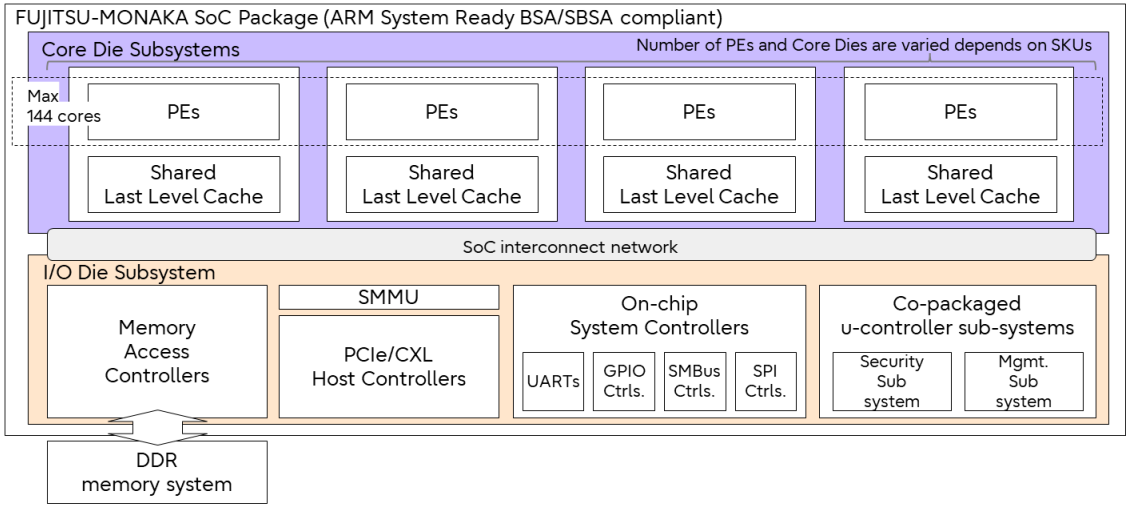
FUJITSU-MONAKA: BSA/SBSA Compliance

- Target Level: BSA 1.2+, SBSA 7.2+

- PE Architecture
  - A-profile v9+
  - GICv4+
  - SMMUv3+
- ARM CCA Support
  - FEAT_RME
  - CCA Security Model
  - RME System Architecture
- IO support
  - PCI Express Gen 6
  - CXL 3.0



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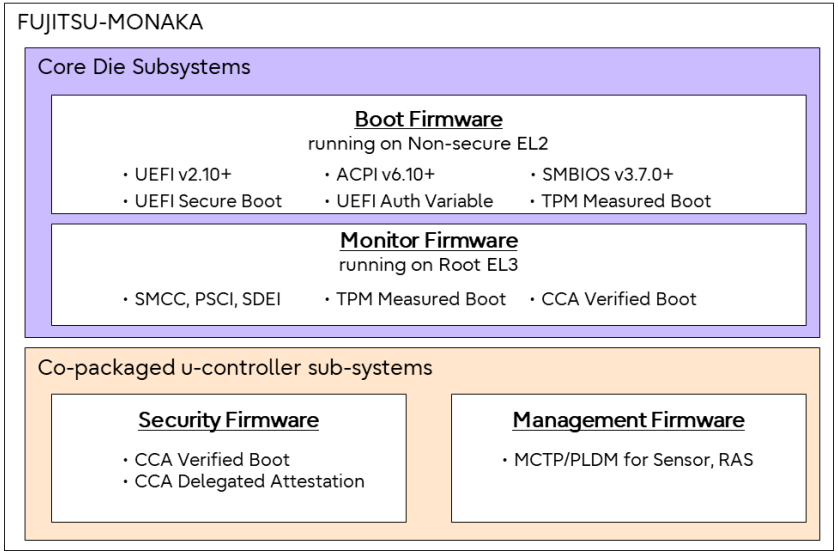
FUJITSU-MONAKA: BBR Compliance

- Target Level：SBBR recipe

- PSCI/SMCC
  - SMCC v1.4
  - PSCI v1.1
  - SDEI v1.1

- UEFI
  - v2.10 compliant
  - Boot at EL2 without EBC support



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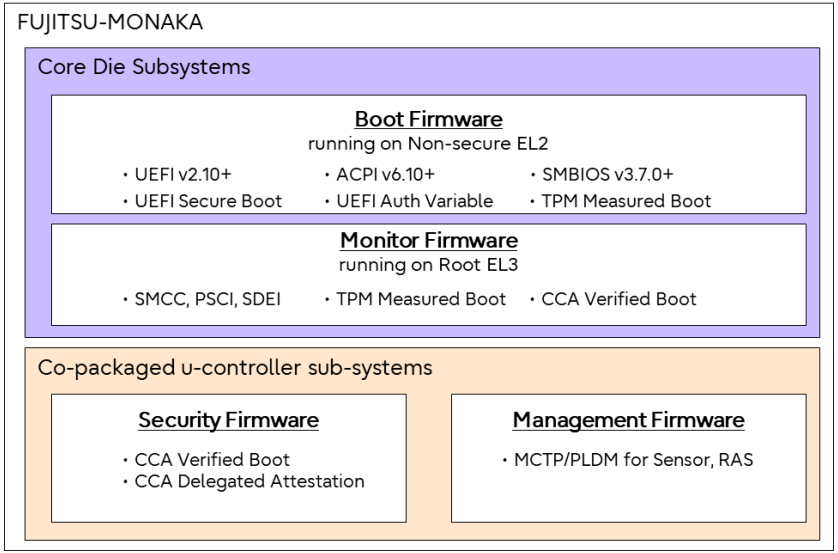
FUJITSU-MONAKA: BBR Compliance

- ACPI
  - v6.10+
  - HW reduced ACPI model
  - Support all BBR mandatory ACPI tables
    - RSDP, XSDT, FADT, DSDT/SSDT, MADT, GTDT, DBG2, SPCR, MCFG, PPTT
  - In addition to above, MONAKA supports
    - IORT
    - APEI Tables, AEST
    - SLIT, SRAT, HMAT for NUMA support
    - PCCT for performance control
    - BGRT for Graphic
    - SPMI for IPMI support
    - CEDT for CXL support
    - MPAM
    - TPM2

etc



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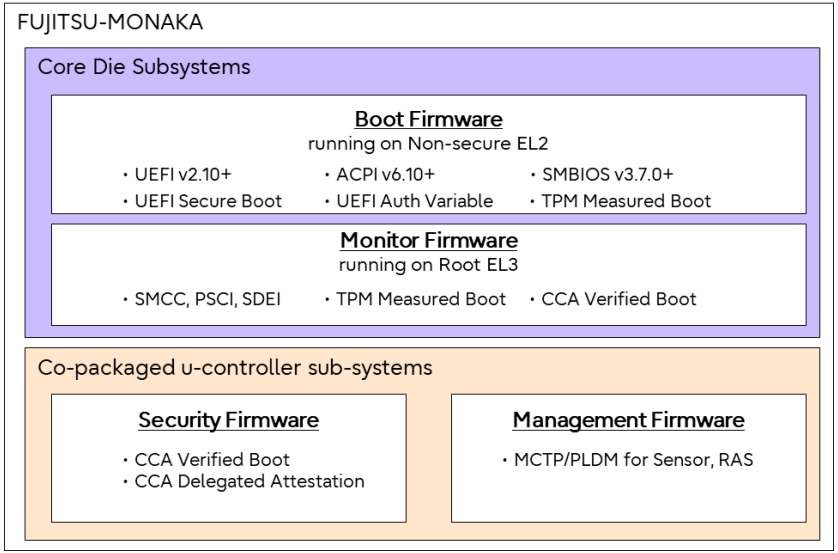
FUJITSU-MONAKA: BBR Compliance

- SMBIOS
  - v3.7.0+
  - Support all BBR mandatory SMBIOS Structure
    - Type00 (BIOS)
    - Type01 (System), Type02 (board)
      Type03 (Chassis)
    - Type04 (Processor), Type07 (Cache)
    - Type08 (Ports), Type09 (Slots)
    - Type13 (BIOS Lang.)
    - Type16/17/19 (Memory)
    - Type32 (Boot Info.)
    - Type38 (IPMI), Type42 (Redfish)
  - Further structure support is under consideration



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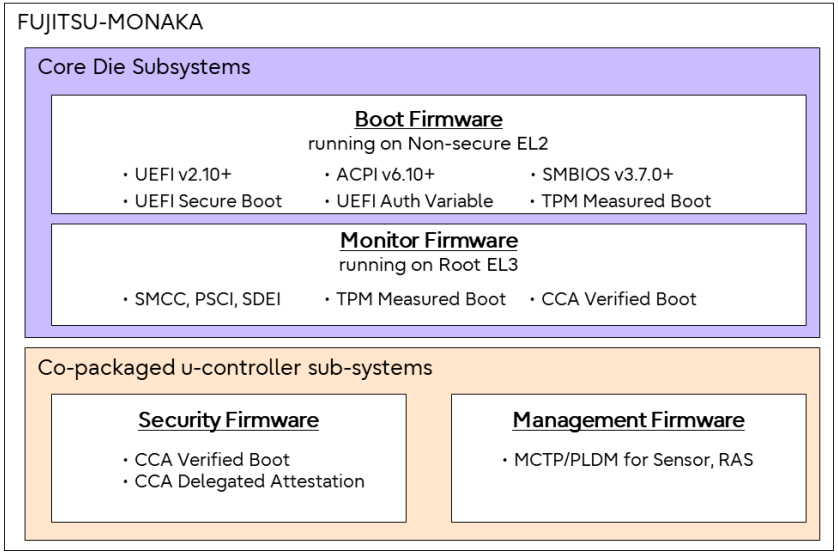
FUJITSU-MONAKA: BBSR Compliance

- Target Level : BBSR v1.2
- Secure Boot
  - CCA Verified Boot and UEFI Secure Boot with Silicon Root of Trust and TPM2.0
  - anti rollback support by using on-chip rollback counter
- TPM measured boot
  - TPM measured boot and CCA Attestation
  - AP firmware measurement is stored to PCR in accordance with BBSR requirements
  - co-packaged firmware measurement is reported in CCA Platform Attestation Token



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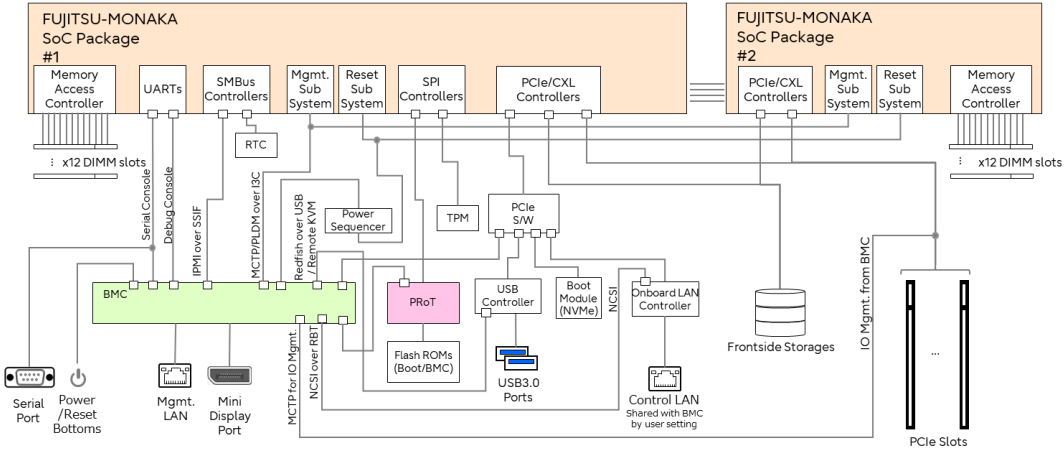
FUJITSU-MONAKA: SBMR Compliance

- Target Level: M4
- OoB Interface
  - Redfish and IPMI support
  - Web UI
- In-band Interface
  - PCIe: Video, MCTP over PCIe VDM
  - SMBus: IPMI over SSIF
  - USB: Redfish over USB network
    Remote KVM
  - JTAG: remote debug (not depict)
  - UARTx2 for OS console and debug



- Side-band Interface
  - MCTP/PLDM over I3C
    - Sensor Monitoring (Power and Thermal)
    - RAS reports
- BMC-IO Interface
  - MCTP/PLDM over I3C for add-on cards
  - NC-SI over RBT for on-board LAN controller

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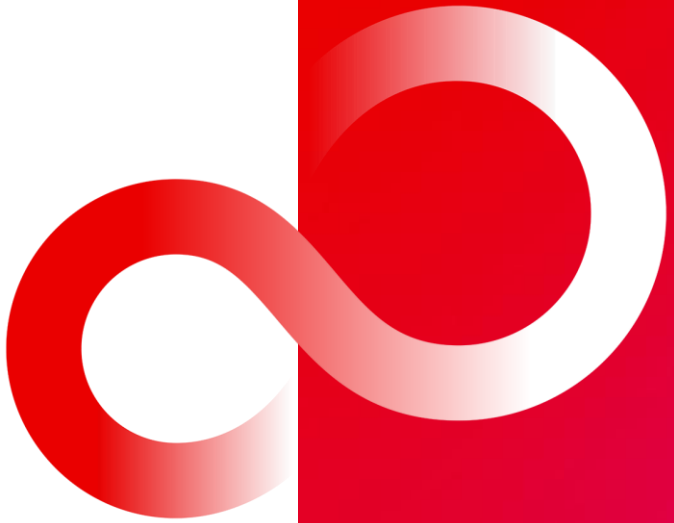
Thank you.



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