High Speed Computing / Storage for AI

2017 Cloud Computing Day

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日本市場統括
AIC Inc.

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Agenda

- AIC 会社紹介
- The hardware solution for AI/ML
  - All Flash Array : SB122A, SB127-LX, J2024-03 JBOF
  - Rack Scale solution – MicroRack with GPGPU Server
- The Total Solution for Cloud
  - ARMOR
  - OpenStack & SDS (Gemini + BigTera)

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AIC 会社紹介

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グローバル事業を展開

海外現地対応 営業が地元の顧客と直接に会話し、ビジネスニーズを収集
専用サービス 専用デザイン＆エンジニアリングサービスがプロジェクトのスケジュールを短縮
柔軟性 大切なお客様の多様なニーズを満たすのため、生産力向上

Region	HQ	USA	EU	RU	China	Japan	Total
営業事務所	1	3	1	1	1	1	8
製造センター	3	1	-	-	-	-	4
研究開発センター	1	1	-	-	-	-	2
倉庫	1	2	1	-	-	-	1
従業員数	409	60	10	3	5	1	489

Updated at Mar. 2017

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完全な製品ラインが様々な市場に対応

ストレージソリューション
JBOD

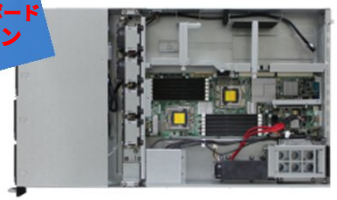
スマートラック

ストレージコントロール
デザイン

ラックマウント エンクロージャー

サーバーベアボーン

サーバーボード
デザイン



TARGET VERTICAL MARKETS

クラウドデータセンター

ネットワーク　セキュリティ

放送

工業用　PC

AIC

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Cloud Data Center | Networking Security | Broadcasting | Industrial PC

overland storage
AEON COMPUTING
Tintri
STACK VELOCITY
Akamai
Potevio 中国普天
KINGSOFT
同有 TOYOU
Yandex
Aisino 航天联志
amazon

BLUE COAT
SafeNet
Patriot
CISCO
SOURCEfire

EditShare
AVID
PLAYBOX TECHNOLOGY
harmonic
EVS
inspur
ROHDE&SCHWARZ
ZTE中兴
DATAPATH
EXCELLENCE BY DESIGN
LANSAT
uit United Information Technology
MOMA
MOMA Technology Limited

SIEMENS
kontron
ADVANTECH
SYNECTICS
элерон
СИСТЕМЫ БЕЗОПАСНОСТИ
ПРЕДПРИЯТИЕ ГОСКОРПОРАЦИИ «РОСАТОМ»
Сбербанк России
SBERBANK
evigilo
DEDICATED COMPUTING
AIC

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ミッションとビジョン

ミッション

競争上の優位性を維持のため、品質駆動、高効率動作を維持しながら、最新の技術を利用して、優れたサービスとサポートを提供

ビジョン

中小ロット向けのOEM/ODMソリューションのトッププロバイダを目指せ

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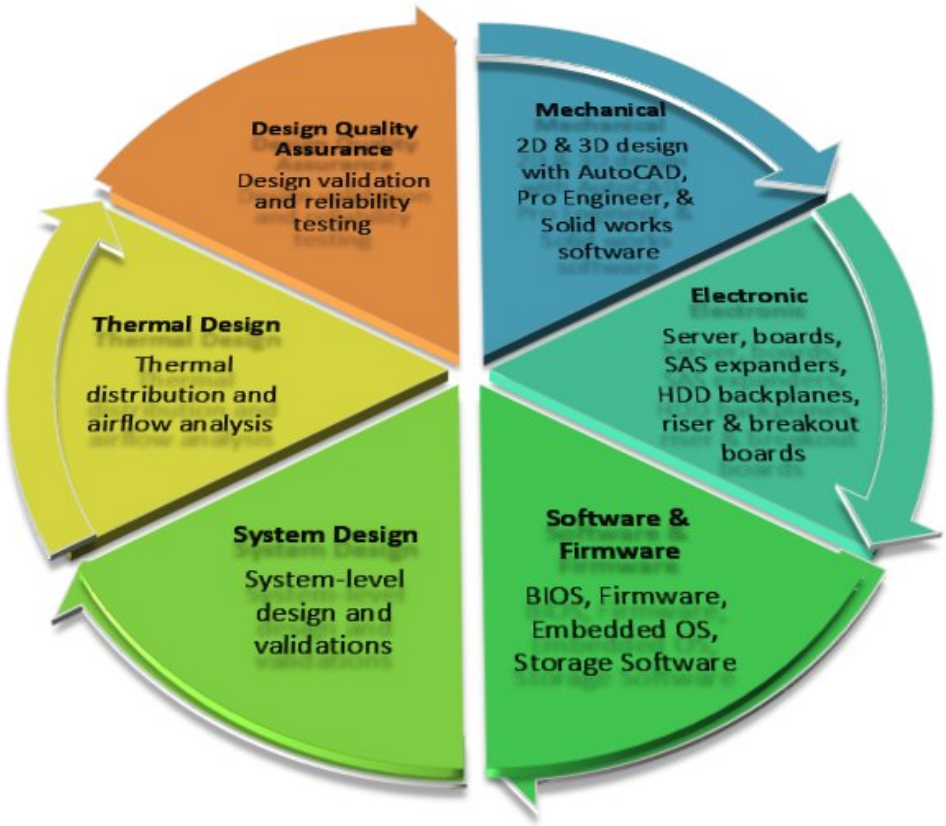
完全なデザイン能力

デザインから製造まで
オールインワンのサービス
を提供



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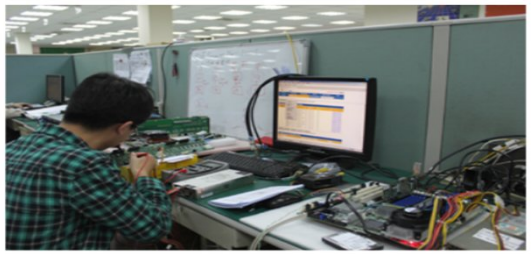
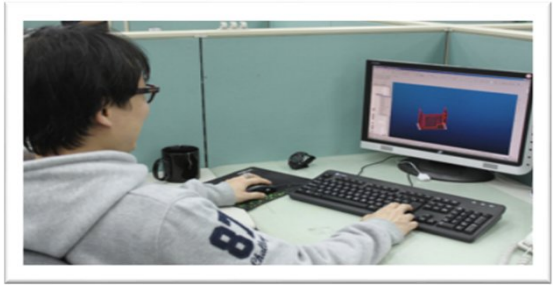
研究開発能力

機能	マンパワー	能力
電子エンジニア	32	ベアボーンアプライアンスとストレージ・ハードウェアの設計、新技術導入
メカニカルエンジニア	38	筐体& ID デザイン、CAD/CAE
ソフトウェアエンジニア	38	Bios、firmware、embedded OS、storage S/W
応用エンジニア	8	互換性ガイドのサポート、顧客アプリケーションのコンサルティング、FAQ
システムエンジニア	16	システムインテグレーションと検証、サーマルとアコースティック設計
品質エンジニア	22	DVT、QE、FCC、CE、信頼性の認定

150＋
開発エンジニアです。





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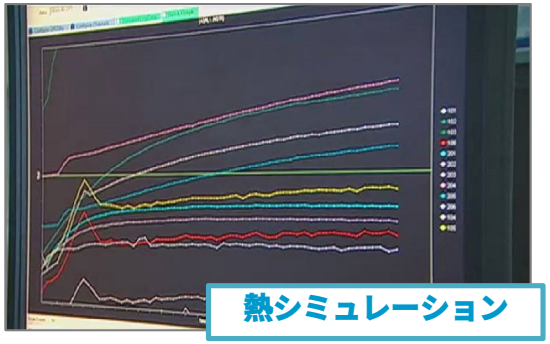
試験設備

オシロスコープ

シグナル・インテグリティのテスト

温度/湿度



熱シミュレーション

落下試験

振動試験

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生産能力

- **柔軟性** 生産能力と組み立てライン
- **機台**生産、エンジニアリング、デザイン
- **専用バーンイン ルーム** (150セットのフルロード)
- **RoHS** – 6/6 2006年6月より
- **UL** 生産設備認証を取得

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The hardware solution for AI/ML

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SB122A-PH NVMe Storage Server

High Performance Storage

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Basic specification

- Supports 10 U.2 NVMe SSD in a 1U system
- Dual E5 CPU, up to 1536GB DDR4 RAM
- Supports 2 x SFP+ 10GbE and 2 x RJ45 GbE
- Supports 1 x16 and 1 x8 PCIe 3.0 slots

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Benefit of SB122A

- Low cost, High performance 1U NVMe SSD server
- All SSD connecting to CPU directly to get the best performance
- Supporting 10G SFP+ High bandwidth, low latency network

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J2024-03 Dual-port JBOF

High Performance JBOF Storage

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Basic specification

- Supports 24 U.2 NVMe SSD in a 2U system
- Dual PCIe switch module, hot-swappable design
- Uplink supports 8x PCIe x4 Gen.3/module
- Supports NVMe over Fabric (NVMeoF)
- On-board BMC for remote management

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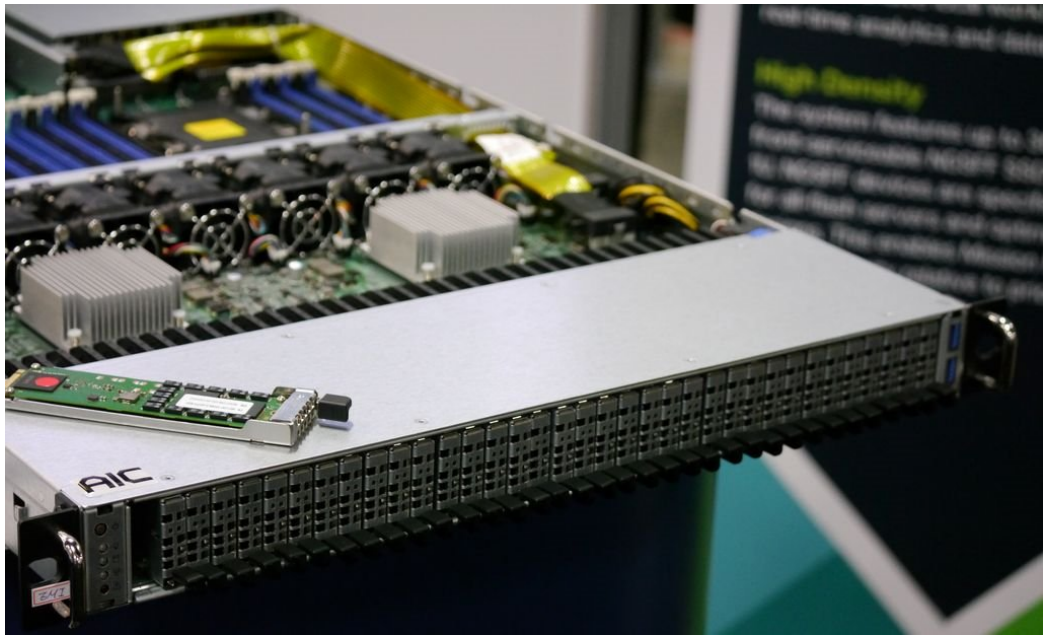
SB127-LX 1U36B NVMe Server



High Performance Storage Server

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Basic Specification

- Supporting Intel Purley Platform
- 1U 36 Bays NGSFF NVMe SSD, hot-swappable design
- Support up to 2 NIC Cards and 2 OCP Mezzanine Cards v2.0

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Benefit of SB127-LX

- Ultra high density and high performance NVMe SSD solution
- Supports up to 500T+ NVMe capacity (36x16T) and 10M IOPS in a 1U system, Balanced storage Network architecture with 300Gbps NIC throughputs

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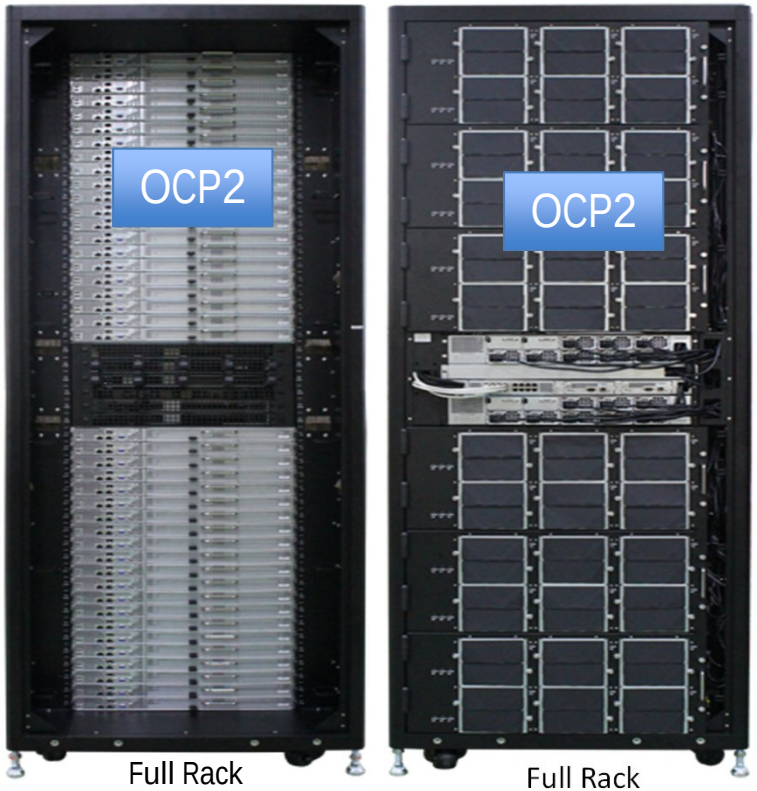
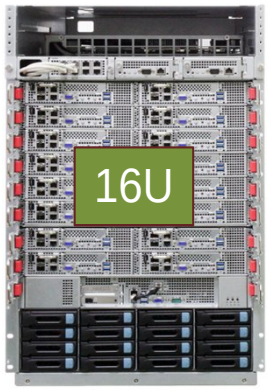
AIC Rack Family

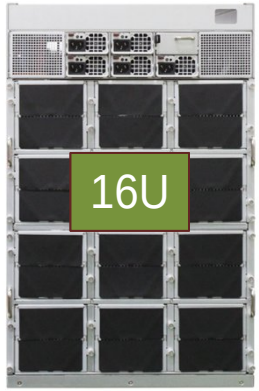


Full Rack

Full Rack



Micro Rack



Micro Rack

Highly integration server & storage solution

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Complete Server Nodes

1U 2Nodes
Computing Node

1U 8SSD/HDD
Storage Node

1U 2GPGPU
GPGPU Node

2U 30B 3.5”
JBOD

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Benefits of AIC Rack

- Efficiency
  - Central PSU & Cooling Fan
- Manageability
  - RMC & ARMOR*
- Flexible
  - Multiple node selection
  - Supporting HVDC*

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The Total Solution for Cloud

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Tool for Management, Remotely, Deployment & Setting

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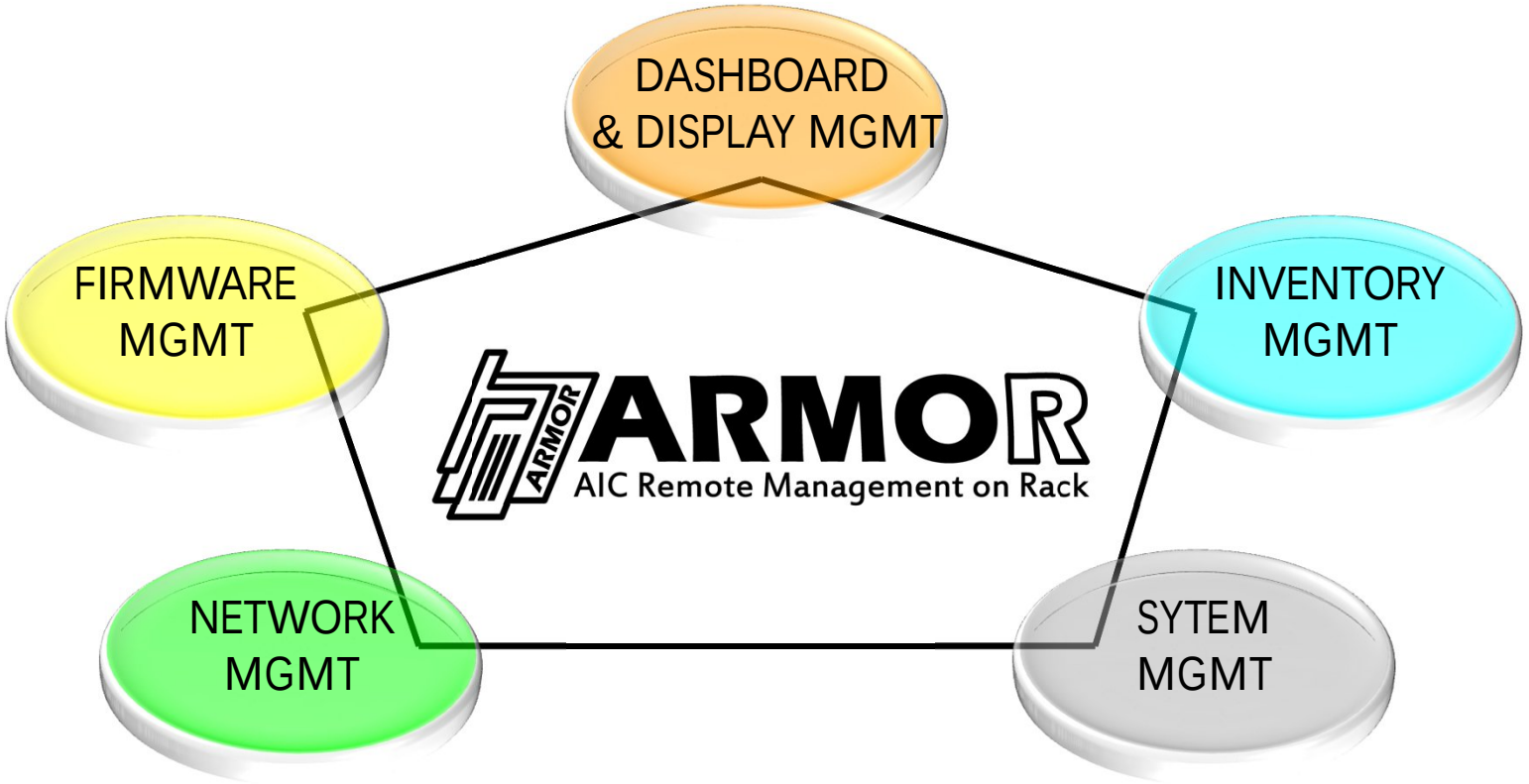
5 Major functions on ARMOR



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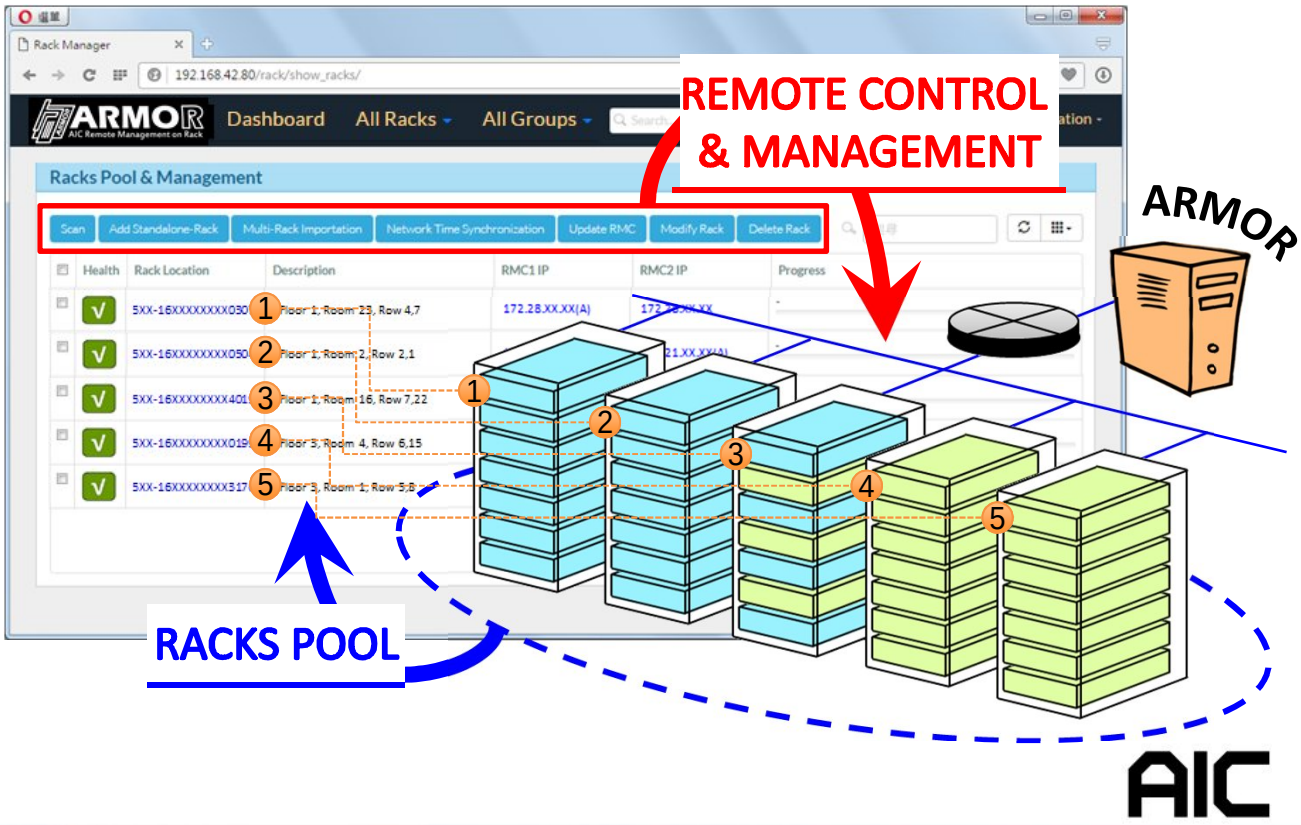
Dashboard and GUI

ARMOR provides lots of cabinet information which display in racks pool, like health status, firmware version and etc.

Additionally, users could remotely manage for each rack through the buttons on racks pool.



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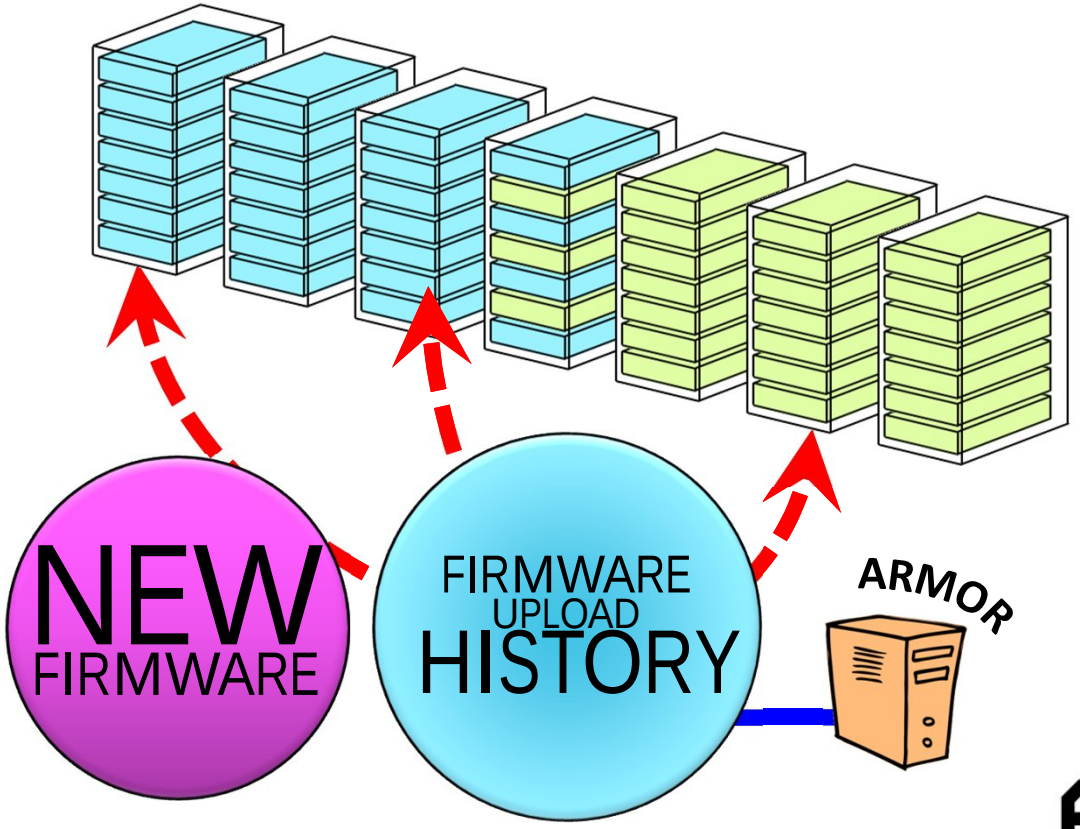
Multi-Racks Firmware Management

No matter BIOS, RMC, BMC or JBOD, users could directly upgrade the firmware on different racks at the same time through the simple interface from ARMOR.

Users could configure the BIOS settings for the customized version, and then deploy into multi-nodes.



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Solution : Software Defined Storage

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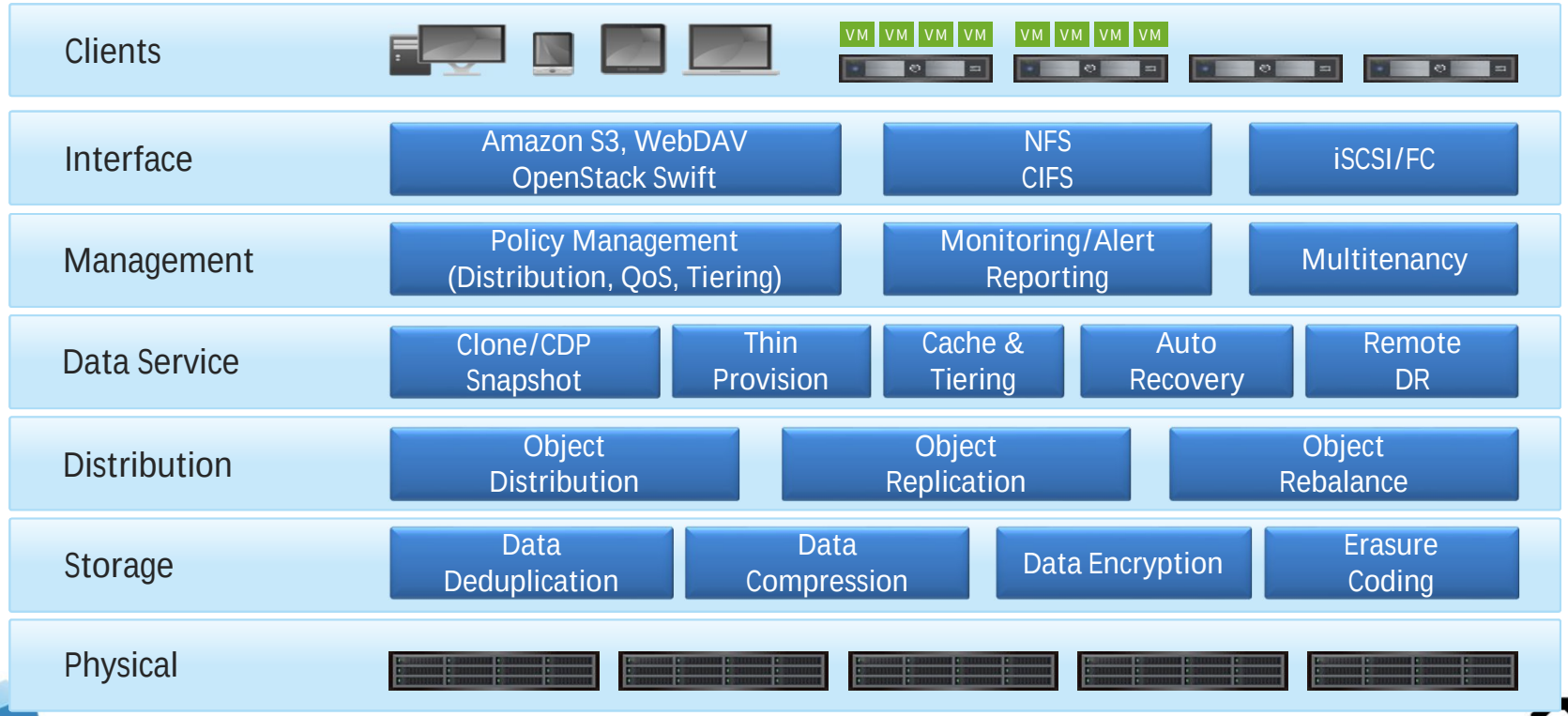
The Architectural Overview



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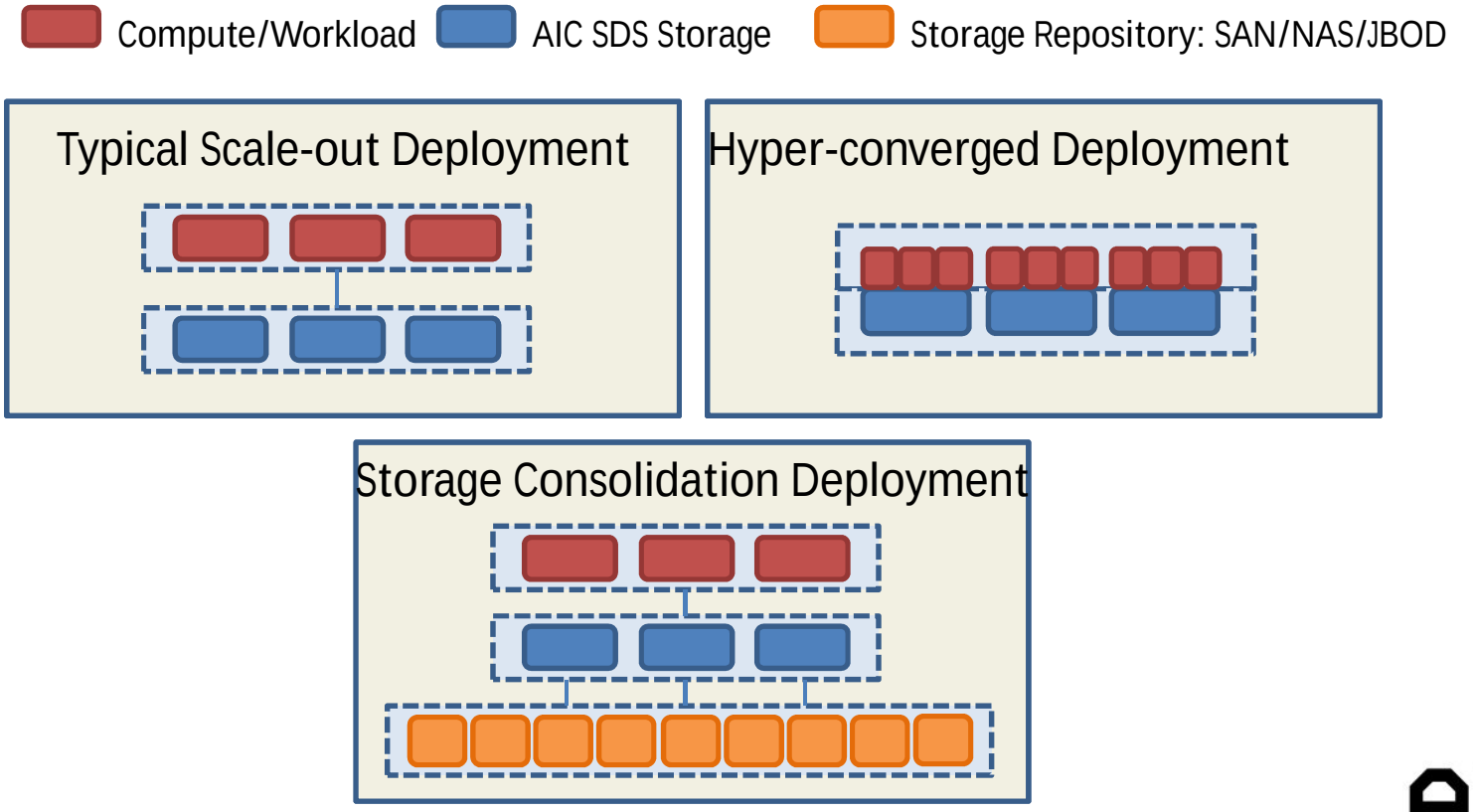
3 Different Types of Transformations



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Benefit

- Highly innovation & flexibility through Storage Virtualization to support multiple protocol and format
- High expendable capacity to connect more storage devices and nodes, save the building and maintain cost
- Complete data protection mechanism to enhance the system reliability and availability

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What AIC can offer?

A Hyper-converged Turnkey Cloud Solution (HW+IaaS+PaaS+SaaS)

- ✓ All-in-one, from one box to multi-racks scale
- ✓ Transferring legacy software into cloud service easily via GOC Solution Foundry
- ✓ Service life cycle management with simplified UI
- ✓ Integrated Solutions: BDaaS/VSaaS/DRaaS/ITaaS/Engineering tools
- ✓ Support both VM and container to optimize your cloud resource utilization

HW

- Hyper-converged Architecture (2U4N)
- Scale-out one node at a time

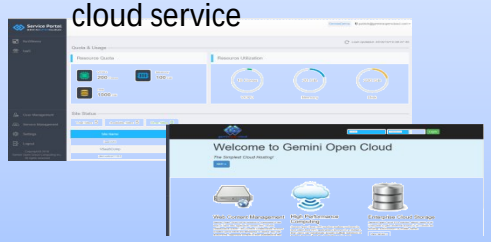
IaaS

Mainstream Open Source

openstack™

PaaS

- Cloud services life management
- Easy to self-provision a new cloud service



SaaS

Ready to use
any time, any where, any device

BDaaS
VSaaS
DRaaS
ITaaS
XaaS
... .

Pre-integrated Turnkey Solution

www.aicipc.com
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Value to customers

- AIC and Gemini Partnership
  A best-in-class hyper converged system with Gemini's industry-leading software preloaded on AIC server platforms
- Affordable with Scalability
  Starting with as few as three nodes HA configuration to keep your acquisition costs down
- Reduce Costs, Accelerate Time To Value
  Lower TCO and higher return on investment (ROI) are achieved through hardware and software highly integrated
- Simplify IT Infrastructure
  We aim to deliver simplified infrastructure that does not demand significant time and resource to maintain. This enables enterprises to focus on their core competencies and drive greater efficiency.
- Deliver Greater Reliability
  AIC guarantees a superior services experience from our high reliability, ease of use and high performance server platforms

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All for Your Cloud Needs

- Meet Industrial Standard: STABILITY + RELIABILITY + HIGH AVAILABILITY

STABILITY	RELIABILITY	HIGH AVAILABILITY
OpenStack IaaS, the main stream open source Cloud OS	Gemini Open Cloud professional service @ 7/24 level	SLA 99.995% Full HA Architecture

SIMPLICITY	INTEGRATED SOLUTION	SELF-PROVISIONING
Turning legacy IT into cloud service easily with simplified UI	Integrated Solutions like Hadoop, VSaaS, DR and ITaaS	Service Portal Solution Foundry System Portal

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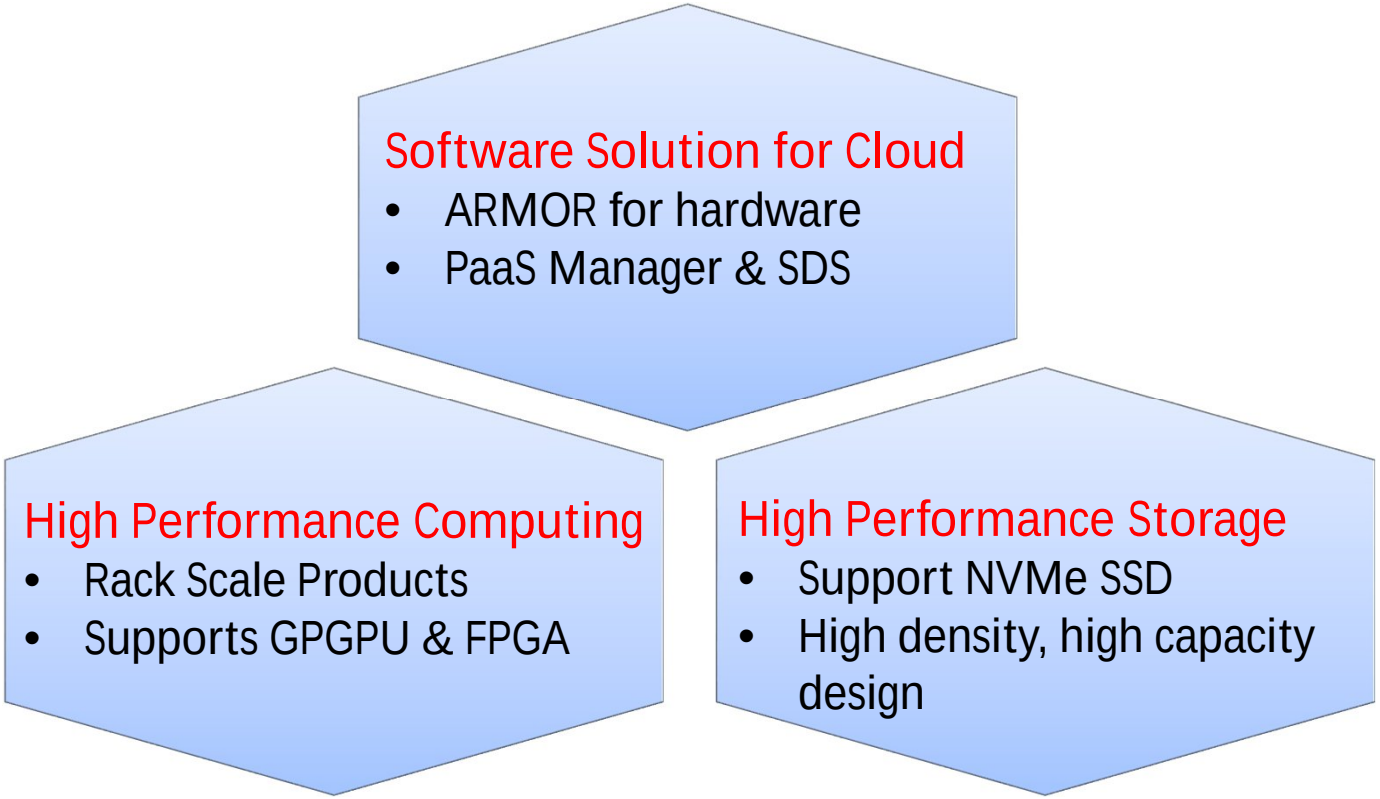
AIC solution for AI



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WHY AIC ?

- サーバー/HPC/冗長化/JBOD/ストレージに関連デザイン、生産など15年以上経験を持つ
- メカニカルに関してデザイン、生産など20年以上経験を持つ
- BIOS,BMC,エキスパンダーファームウェアなどをカスタマイズ可能
- 製品のサプリメント/ライフサイクル5年以上保証可能
- 回転振動指数試験も対応可能(RVI report)
- 完全な熱シミュレーションを提供可能 (LS-Dyna/ Flotherm)
- 中小ロットでカスタマイズ対応可能（スマートラック1台でも対応可能！）
- ハードウェアだけではなく、ソリューションプロバイダを目指せ

＊顧客の要件を満たすため、最適化されたソリューションを提供します！

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