Eugene Zhao 赵方舟
SFC CE: BUC831
Tel: (86) 178 9848 1530
12 Jan 2026

环球富盛理财有限公司

CES 2026 后英伟达 Rubin 架构及供应链（存储/互联/液冷）变化解读

NVIDIA Rubin architecture and supply chain (memory/networking/cooling) review post CES 2026

点评:

- **概览：**英伟达 CEO 黄仁勋在 CES 2026 演讲主要聚焦 3 大块：Agent AI，Physical AI（机器人/智驾）和下一代 Rubin 平台。公布了 Rubin 平台 6 款芯片的参数，包括 Vera CPU，Rubin GPU，Connect-X 9 NIC，BF4 DPU，NVLink 6 Switch，以及 Spectrum-X CPO Switch。其中 Rubin GPU 的 FP4 推理和训练性能分别达到 50PF 和 35PF，分别是 Blackwell 的 5 倍和 3.5 倍。Rubin 机柜集群首次亮相，开创性加入 SSD 存储机柜直连 GPU，并且使用了 CPO scale-out 互联方案，使用 100%的 45°C 常温液冷方案无需冷水机。

- **存储机柜带动 SSD 需求暴增：** 因上下文产生的 KV cache 所需存储空间激增导致目前的 HBM 已经难以满足，英伟达在 Rubin 推出 BlueField-4 与 Context Memory 平台，用 BlueField-4 来管理机架内的“KV 缓存上下文内存存储”。每个 576 颗 GPU 集群对应 16 层 Context Memory 平台（SSD tray），每层 SSD tray 有 4 颗 BlueField-4 DPU 芯片，每颗 DPU 对应 150TB SSD，每层 SSD tray 共 600TB SSD。576 颗 GPU 集群共 16 层 SSD tray 对应一共 9,600TB SSD，即**单颗 GPU 对应额外 16.6TB SSD。**

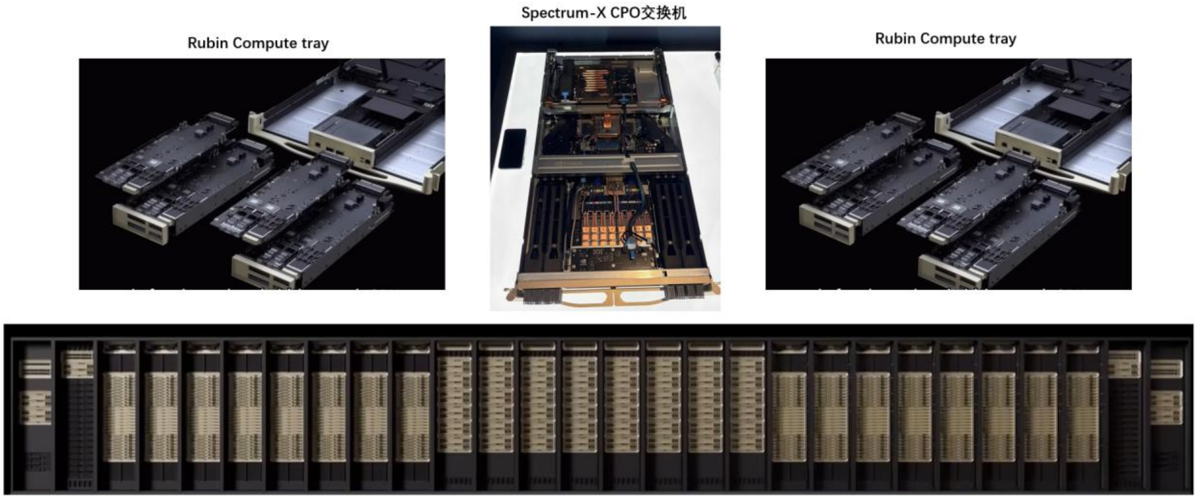
- **CPO 互联减少光模块配比：**英伟达在 CES 演讲中展示了典型的 Rubin 集群，包含 16 个 Vera Rubin rack 共 1152 颗 Rubin GPU，通过中间的 8 个以太网 Spectrum-X CPO switch rack 用于 scale-out 互联 16 个机架。传统可插拔光模块和交换机方案下，2 层组网的 Rubin GPU/1.6T 光模块配比 1:4，3 层组网配比为 1:6。每个 Rubin compute tray 4 颗 GPU 对应 8 颗 800G CX9 因此每颗 GPU 的 scale out 带宽为 1.6T。CPO 方案下，每个 Rubin GPU 在 CX9 网卡端同样对应 1.6T 带宽。相比传统 TOR/Leaf 交换机都需要光模块，CPO 方案下，通过 8 个 CPO Switch 机柜直接互联 16 个 GPU 机柜中每个 Compute tray 的 CX9 网口 1.6T 端口，从而大幅减少光模块用量，1.6T 光模块配比从 **1:4 降低到 1:1。**另外在机柜内 scale-up 互联仍然使用铜缆（非 AEC）连接 NVLink switch tray 达到 3.6TB/s 的 GPU all to all 互联双向带宽。

- **常温液冷无需冷水机：** Rubin 从 GB300 的 80%液冷转变为 100%液冷方案，使用常温 45°C 液冷水因此机柜无需水冷机，使用 L2A 风冷机将水降温至 30°C。Rubin 水冷板采用镀金/镀锌微通道冷板因此单价有较大提升，单板价格可能达到**$500** 以上，每个 Rubin 机柜的冷板价值量或超过 **3 万美金。**

图 1: NVIDIA BlueField-4 和 Context Memory Storage 平台

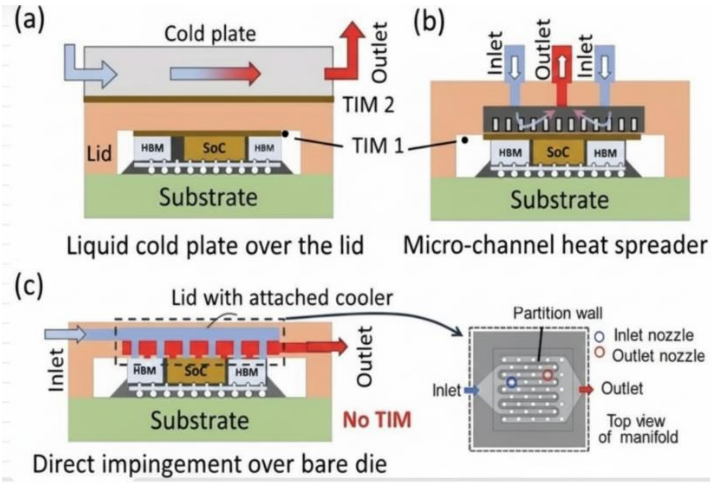
来源: NVIDIA

图 2: NVIDIA Rubin CPO 交换机方案



来源: NVIDIA

图 3: 微通道盖示意图



来源: 互联网

分析师介绍

分析师赵方舟，香港大学学士学位，主要覆盖海外硬科技行业，包括 AI GPU/ASIC 及 AI 互联架构等。

该分析师 2022-2025 年曾任职于海通国际研究部，2025 年加入环球富盛理财有限公司，继续覆盖海外硬科技行业。环球富盛理财有限公司是一家香港的持牌券商机构，成立于 2014 年。

邮箱:eugene.zhao@gpf.com.hk
电话:(852) 6082 5609; (86) 178 9848 1530

COMPANY RATING DEFINITION

The Benchmark: Hong Kong Hang Seng Index

Time Horizon: 6 to 18 months

Rating		Definition
Buy	买入	Relative Performance>15%; or the fundamental outlook of the Company or sector is favorable.
Accumulate	收集	Relative Performance is 5% to 15%; or the fundamental outlook of the Company or sector is favorable.
Neutral	中性	Relative Performance is -5% to 5%; or the fundamental outlook of the Company or sector is neutral.
Reduce	减持	Relative Performance is -5% to -15%; or the fundamental outlook of the Company or sector is unfavorable.
Sell	卖出	Relative Performance < -15%; or the fundamental outlook of the Company or sector is unfavorable.

SECTOR RATING DEFINITION

The Benchmark: Hong Kong Hang Seng Index

Time Horizon: 6 to 18 months

Rating		Definition
Outperform	跑赢大市	Relative Performance>5%; or the fundamental outlook of the sector is favorable.
Neutral	中性	Relative Performance is -5% to 5%; or the fundamental outlook of the sector is neutral.
Underperform	跑输大市	Relative Performance<-5%; Or the fundamental outlook of the sector is unfavorable.

DISCLOSURE OF INTERESTS

(1) The Analysts and their associates do not serve as an officer of the issuer mentioned in this Research Report.

(2) The Analysts and their associates do not have any financial interests in relation to the issuer mentioned in this Research Report.

(3) Global Prosperity Financial Company Limited and/or its subsidiaries do not hold equal to or more than 1% of the market capitalization of the issuer mentioned in this Research Report.

(4) Global Prosperity Financial Company Limited and/or its subsidiaries have not had investment banking relationships with the issuer mentioned in this Research Report within the preceding 12 months.

(5) Global Prosperity Financial Company Limited and/or its subsidiaries are not making a market in the securities in respect of the issuer mentioned in this Research Report.

(6) Global Prosperity Financial Company Limitedand/or its subsidiaries have not employed an individual serving as an officer of the issuer mentioned in this Research Report. There is no officer of the issuer mentioned in this Research Report associated with Global Prosperity Financial Company Limited and/or its subsidiaries.

DISCLAIMER

This Research Report does not constitute an invitation or offer to acquire, purchase or subscribe for securities by Global Prosperity Financial Company Limited. Global Prosperity Financial Company Limited and its group companies may do business that relates to companies covered in research reports, including investment banking, investment services, etc. (for example, the placing agent, lead manager, sponsor, underwriter or invest proprietarily).

Any opinions expressed in this report may differ or be contrary to opinions or investment strategies expressed orally or in written form by sales persons, dealers and other professional executives of Global Prosperity Financial Company Limited group of companies. Any opinions expressed in this report may differ or be contrary to opinions or investment decisions made by the asset management and investment banking groups of Global Prosperity Financial Company Limited.

Though best effort has been made to ensure the accuracy of the information and data contained in this Research Report, Global Prosperity Financial Company Limited does not guarantee the accuracy and completeness of the information and data herein. This Research Report may contain some forward-looking estimates and forecasts derived from the assumptions of the future political and economic conditions with inherently unpredictable and mutable situation, so uncertainty may contain. Investors should understand and comprehend the investment objectives and its related risks, and where necessary consult their own financial advisers prior to any investment decision.

This Research Report is not directed at, or intended for distribution to or use by, any person or entity who is a citizen or resident of or located in any jurisdiction where such distribution, publication, availability or use would be contrary to applicable law or regulation or which would subject Global Prosperity Financial Company Limited and its group companies to any registration or licensing requirement within such jurisdiction.

Unit 2301, 23/F., 308 Central Des Voeux, 308 Des Voeux Road Central, Sheung Wan, Hong Kong