

Infrastructure Trends and Strategies: Artificial Intelligence and Analytics Workloads

AN IDC CONTINUOUS INTELLIGENCE SERVICE

IDC's *Infrastructure Trends and Strategies: Artificial Intelligence and Analytics Workloads* service looks at the impact of artificial intelligence (AI), machine learning (ML), deep learning, and analytics workloads and workflows on the infrastructure hardware and software markets. Specific focus is put on the infrastructure needs of newer technologies (e.g., SAP HANA and S/4 HANA, Oracle Exadata, and Oracle Advanced Analytics), nonrelational analytic data stores (e.g., Hadoop, Spark, MongoDB, and Cassandra), continuous analytics tools (e.g., Amazon Kinesis, Splunk Universal Forwarder, and Microsoft Azure Data Factory), relational data warehouses, analytics and performance management applications, and business intelligence and analytics tools and platforms (including AI software platforms). Also included are the infrastructure needs for AI data preparation, AI model training using AI frameworks, and AI inferencing solutions across edge, core, and cloud. The impact to infrastructure is examined across compute and processor architectures, storage interfaces and system types, data organization, storage capacity, and revenue for the primary, secondary, and archive tiers. These data points will be used for segmentation and forecasting.

Markets and Subjects Analyzed

- Infrastructure (and infrastructure-as-a-service) trends, strategies, and market outlook for artificial intelligence, machine learning, and deep learning workloads and use cases.
- Infrastructure (and infrastructure-as-a-service) trends, strategies, and market outlook for big data and analytics workloads and use cases.

Core Research

- Performance-Intensive Computing Taxonomy
- AI and Analytics Server and Storage Market Size and Forecast
- AI and Analytics Infrastructure-Related Best Practices and End-User Adoption Trends
- AI and Analytics Infrastructure Use Cases and Evolving Applications Requirements
- Adoption Trends in Shared and Dedicated Cloud Infrastructure for AI and Analytics Workloads
- Hardware Accelerators Used for Compressed Time-to-Value from Datasets Used in AI and Analytics Workloads
- Storage Systems Trends for AI and Analytics Workloads

In addition to the insight provided in this service, IDC may conduct research on specific topics or emerging market segments via research offerings that require additional IDC funding and client investment. To learn more about the analysts and published research, please visit: [Infrastructure Trends and Strategies: Artificial Intelligence and Analytics Workloads](#).

Key Questions Answered

1. What is the build and services revenue from infrastructure used for AI/ML and analytics workloads?
2. What are the infrastructure hardware and software requirements imposed by performance-intensive computing workloads?
3. What are some of the data life-cycle challenges associated with performance-intensive computing workloads?
4. What are the optimal compute and storage configurations for performance-intensive computing workloads?
5. What is the role of accelerated computing (GPUs, FPGAs, ASICs, manycore processors, and emerging acceleration technologies), NVMe, tiering, deduplication, and compression as they are related to AI and analytics infrastructure?
6. How is quantum computing influencing AI and analytics? What are the trends associated with the shifting classical computing-based AI and analytics workloads to quantum computing?

Companies Analyzed

This service reviews the strategies, market positioning, and future direction of several providers in the *Infrastructure Trends and Strategies: Artificial Intelligence and Analytics Workloads* market, including:

Alibaba, AMD, AWS, Baidu, Broadcom, Cisco, Cloudera, Cloudian, DataDirect Networks, Dell, Google, Hewlett Packard Enterprise, Hortonworks, Huawei, IBM, Inspur, Intel, Juniper, Lenovo, MapR Technologies, Meta Platforms, Microsoft, NetApp, Nexenta Systems,

Nexsan, Nimble Storage, Nimbus Data Systems, NVIDIA, Oracle, Pure Storage, Red Hat, SAP, SAS, SuperMicro, Symantec, Tencent, and Xilinx.