Twinalytica™ Technical Datasheet

Overview

Twinalytica™ is a digital twin analytics platform designed to deliver dynamic, real-time, and predictive insights across complex systems and enterprise operations. Built for scalability, speed, and security, Twinalytica™ empowers organizations to simulate, optimize, and act with data-driven confidence.

System Requirements

- **Operating Systems**: Ubuntu 22.04, RHEL 9+, Windows Server 2019+, macOS 13+
- **CPU**: Minimum 8-core, 2.6GHz (x86_64 or ARM64)
- **RAM**: Minimum 32 GB
- **Storage**: Minimum 500 GB SSD (NVMe preferred)
- **GPU Support**: NVIDIA A100 or equivalent (for AI model acceleration)
- **Containerization**: Docker & Kubernetes (v1.26+)

Architecture

- Microservice-based container architecture
- Real-time data pipeline using Apache Kafka, MQTT, and RESTful APIs
- AI/ML layer powered by TensorFlow, PyTorch, and ONNX runtime
- Visualization and dashboards built with React, D3.js, WebGL

Integration & Interoperability

- Supports integration with:
    - AWS, Azure, GCP cloud environments
    - SAP, Oracle ERP systems
    - SCADA/ICS systems via OPC UA & MQTT
    - PostgreSQL, MongoDB, Snowflake, and other data lakes
- API-first design for CI/CD pipelines
- Custom SDKs for Python, JavaScript, and Go

Security & Compliance

- AES-256 encryption for data at rest and TLS 1.3 for in transit
- Role-Based Access Control (RBAC) with LDAP/SAML support
- SOC 2 Type II and ISO 27001-aligned practices
- Compliant with GDPR, HIPAA, and CCPA frameworks
- Regular penetration testing and audit logging

Performance Metrics

- Real-time simulation refresh rate: 50ms latency per input
- Predictive model update frequency: up to 1000 simulations/minute
- Concurrent digital twins supported per node: up to 250
- Model accuracy (benchmark): 92–98% depending on use case
- Data ingestion capacity: 5M records/sec on enterprise-grade clusters

Support & Deployment Options

- **Deployment**: On-premise | Cloud-native | Hybrid
- **Support Plans**: Standard (8x5) | Premium (24x7)
- **SLA**: 99.95% uptime with 4-hour critical incident response
- Managed Services and Training Programs available