TCS Connected Universe Platform (TCUP)

Overview

Internet of Things (IoT) is playing key role in providing capabilities for Real Time Monitoring, Data Analytics and Machine learning, helping organizations to uncover several new opportunities for growth, product & service customization, provide best-in-class customer service and reduce cost of operations.

TCS Connected Universe Platform (TCUP) provides an integrated approach to develop Industrial Internet Applications with partner ecosystem. It accelerates development and deployment of IoT enabled applications for organizations across industries. Flexible and Extensible TCUP Architecture provides flexibility to cater to your changing business priorities in an agile manner.

The platform is highly available and secure with in-built capabilities for data ingestion (Real-time / Batched), Data Persistence, Real-time Event Routing, Complex Event Processing, Batch Analytics, Visualizations as well as integration to enterprise applications.

Benefits

TCUP being infrastructure and cloud agnostics offers flexibility in deployment, and provides solid foundation to build services/ functionality with reduced time and effort in Rapid Application development allowing organizations to be future ready at a rapid pace yielding high return on investments. By using TCUP, manufacturers can:

Optimize Lifecycle cost of its customers through customized Mobile, Web Applications leveraging services built on top of captured telemetry data in TCUP

Improve Productivity and Efficiency of Assets by connecting and monitoring Smart Machines using **TCUP's Device Manager**, and analyzing the data for insights by applying prediction algorithms on the collected telemetry data of assets leveraging **Azure Machine Learning**

Reduce the cost of complying with stringent regulatory norms by making report generation easier using TCUP's Data Explorer and Advanced Analytics using Metrics captured

Realize Internal Productivity Gains through improvement in Overall Equipment Effectiveness (OEE) and hence reducing cost of operations

Perform Rapid Root Cause Analysis of Field Failures and avoid future occurrence by maintaining unified repository of data across the value chain from design till service using TCUP Assets Services, Data Explorer and Hadoop Data lake

Enable New Business Models using Servitization analytics across all business units by developing custom Applications (Mobile Apps, Web Apps hosted on cloud platform) leveraging services built on the top of captured telemetry data

Key Features

- "Always On" which devices and assets can utilize for communication and information exchange
- Managing device diversity and interoperability
- Configurable rule based Data stream processing and analytics
- Descriptive analytics and support for intuitive visualizations, drag and drop widgets and dashboard creation
- Flexible and Extensible pluggable architecture to inject custom components
- Rapid Application Development consuming Services and Infrastructure
- Self Service Capabilities for Data Scientist, Data Engineer, and Application Developer
- Integrated monitoring and management frame work that facilitates efficient operations support
- TCUP can integrate with your existing Enterprise systems by leveraging its own Microservices or Enterprise integration Middleware
- Supports Modern Software Engineering Practices

Key Services

- Sensor Data Management – Data insertion and retrieval
- Device Management – Live data source data integration and command control support
- Message Routing – Rule based real-time stream data processing and routing

- Complex Event Processing – Complex rule based processing on data windows
- Task Services - Batch execution of analytics program on persisted data
- Action Services – Rule based dispatch / action trigger for integration and actuation
- Self Service Capabilities for Data Scientist, Data Engineer, and Application Developer
- Data Explorer – User interface for descriptive analytics and support for rapid data visualizations

The TCUP Advantage

- Since TCUP is owned and managed by TCS, it can be easily adapted to cater to your changing business priorities in an agile manner
- Freedom from Lock-in constraints as TCUP can run on any cloud platform
- Provides unique feature of running TCUP in your Data center, Cloud or Field such as Ship or Train
- Provides higher level of abstraction required for development of any IoT Solution

Contact

For more information about TCS Connected Universe Platform, contact tcup.iot@tcs.com

About Tata Consultancy Services Ltd (TCS)

Tata Consultancy Services is an IT services, consulting and business solutions organization that delivers real results to global business, ensuring a level of certainty no other firm can match. TCS offers a consulting-led, integrated portfolio of IT and IT-enabled infrastructure, engineering and assurance services. This is delivered through its unique Global Network Delivery Model™, recognized as the benchmark of excellence in software development. A part of the Tata Group, India's largest industrial conglomerate, TCS has a global footprint and is listed on the National Stock Exchange and Bombay Stock Exchange in India.

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