



Mindtree

Welcome to possible

Scalable Computing Labs (SCL).

Mindtree is one of the first IT service providers to invest in emerging technologies and has developed various technology assets. Customers in product engineering services benefit heavily from our domain expertise. Some of the technology assets developed include short-range wireless connectivity technologies such as Bluetooth and UWB, Video Analytic Algorithms, Acoustic Echo Cancellation, Audio Codecs, VoIP Stacks, etc. In addition, we have also developed numerous frameworks and automation tools. Many of these building blocks have been licensed to multiple customers and deployed in commercial products.

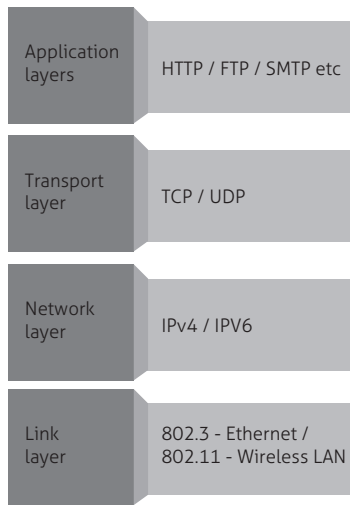
Mindtree Scalable Computing Labs (SCL) is currently conducting active research on two emerging areas. These are of extreme importance in smart energy and M2M applications: Internet of things and real time big data analytics. Our expertise in these areas along with domain knowledge has helped us deliver solutions for our customers.

Internet of things

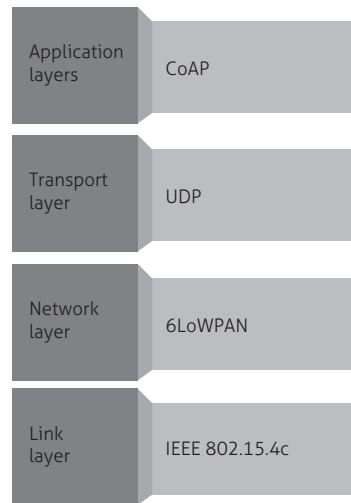
Interoperability and scalability issues plague the creation of next-generation smart home solutions. The interoperability of applications in "smart homes" and "smart objects" depends on correct implementation of the underlying standards-compliant protocols. The Constrained Application Protocol (CoAP) is a standardized web services layer protocol developed by the IETF CoRE workgroup. It is meant specifically for constrained nodes, Low-power and Lossy Networks (LLNs). This makes it an ideal solution for "smart homes" and M2M-related applications.

We are currently researching, understanding and implementing the latest advances in the development of protocols and open standards for smart devices. Reference designs are being developed for specific IOT domains, using CoAP Server implementation available in the Contiki and TinyOS platforms.

Internet protocol suite (TCP / IP)



IP smart object protocol suite



Real time big data analytics

Analyzing data streams in near-time continuous mode, before the data is stored, helps gain immediate insights. This is termed as real time stream processing. Mindtree Labs is currently creating a Streaming Data Management System (SDMS) reference implementation using open source technologies. This helps acquire and discover insights and patterns through real time analysis of operational data and environmental information. Obtained as part of business and user activities, this system finds numerous applications:

Energy and utilities: Energy trading platforms, smart meter data management

Telecom and mobility: CDR analysis, location awareness services, connected homes

IT networks: Intrusion detection such as DOS attacks, analysis of traffic flow patterns

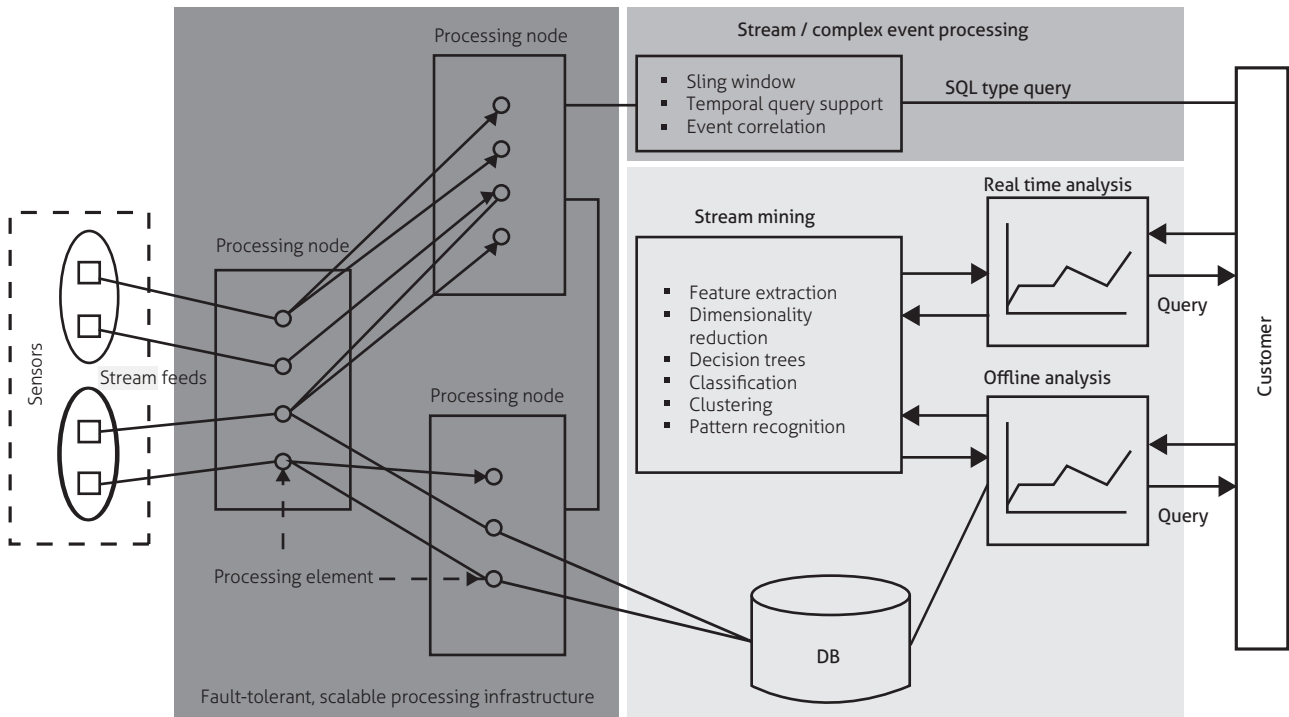
e-Commerce: Clickstream analysis, social media stream analysis, operational intelligence

Transportation: Intelligent traffic management, real time navigation

Healthcare: Early warning systems for epidemics; monitoring premature babies in NICU

Key features of SDMS

- Distributed and fault-tolerant stream processing infrastructure
- Horizontal scalability
- Machine learning, data mining and related intelligent algorithms adapted for online data streams
- Support for continuous query
- Approximate results for fast online analysis



About Mindtree

Mindtree is a global information technology solutions company with revenues of over USD 400 million. Our team of 11,000 experts engineer meaningful technology solutions to help businesses and societies flourish. We enable our customers achieve competitive advantage through flexible and global delivery models, agile methodologies and expert frameworks.