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Ecosystem Integration for the Internet of Things

Integrating operational data with enterprise systems is a critical step to achieving digital transformation

Consolidates and extracts data insights from numerous structured and unstructured sources

Ingests and publishes data to and from third-party data stores and enterprise systems

Extends **IoT-sourced data**

Harnesses the power of the digital twin

The benefits gained from the Internet of Things (IoT) are easily and widely recognized. In a recent McKinsey survey, 60 percent of executives stated that IoT provided significant insights.[1] Realizing these benefits requires integrating and extending data beyond its original systems. Interoperability and secure information sharing between all people, systems and things creates competitive advantages across all aspects of business, from customer experience and supply chain to distribution and internal operations.

The OpenText Internet of Things Platform has evolved since its inception as the world's largest B2B marketplace. It has enabled companies, such as General Motors, to operate a global data exchange at massive scale, providing an efficient and reliable "electronic supply chain" with lower cycle times and reduced costs. Today, this Platform-as-a-Service (PaaS) combines all the foundational technologies required for seamlessly integrating disparate systems and enterprise data.

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Ecosystem
Integration for IoT

Integrate and deliver
seamless information flow
across industrial
enterprise systems

## Consolidates and extracts data insights from numerous structured and unstructured sources

Delivered as an open, infrastructure-agnostic platform, the OpenText Internet of Things' Ecosystem Integration solution provides the messaging and orchestration needed for transporting IoT-sourced data and integrating it across devices and systems. This eliminates the complexity of creating and syndicating integrations for machine-to-machine, machine-to-people or machine-to-application scenarios.

Ingests and publishes data to and from third-party data stores and enterprise systems

The Ecosystem Integration solution standardizes how data is identified and represented, ensuring that the highest level of security and integrity can be maintained at scale. OpenText Internet of Things was purpose-built with security and an identity-centric approach to deliver reliability, massive scalability and operational agility. Through this Platform-as-a-Service and Ecosystem Integration, the enterprise can easily enable internal or partner led development and innovate quickly in the application layer.

Extends IoT-sourced data

Performs rapid, secure and flexible integration of data. This eliminates the cost and complexity of changing document types, data formats, protocols or creating and syndicating integrations for machine-to-machine and application-to-application scenarios. Through its identity-centric approach to Secure Device Management, it creates composite applications and manages provisioning, authentication and authorization for nearly all system integration demands. The platform can create customized business logic based on events, process sequences or analytic thresholds to deliver notifications or to make other informed actions.
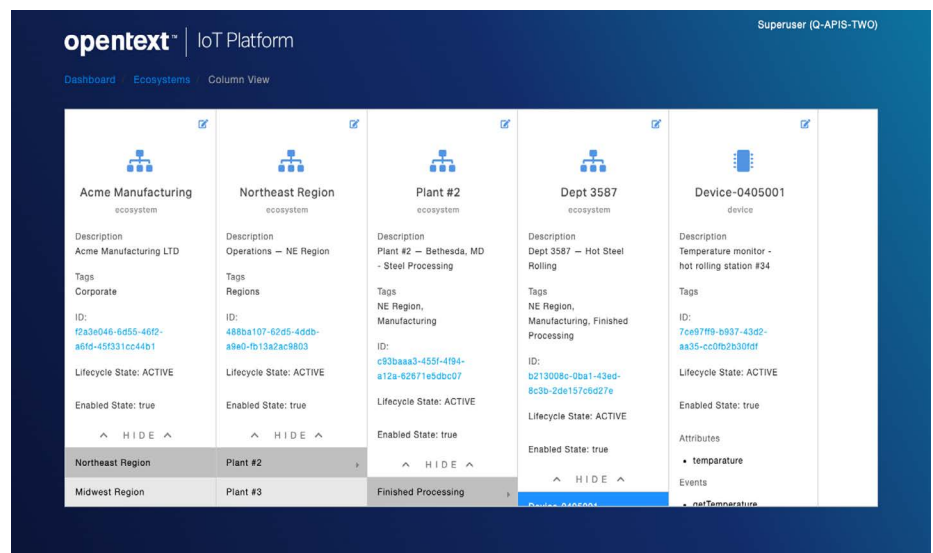
Visualize complex composite digital twins which are modeled as ecosystems in the IoT Platform. Provides intuitive visual organization of complex interrelationships enabling the design, modeling and management of large complex ecosystems.

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Harnesses the power of the digital twin

A digital twin is a digital representation that mirrors a unique physical object's characteristics and state and is one of the best examples of truly harnessing the power of IoT. Forbes states that Industry 4.0 needs digital twins to push it forward.[2] The demand is exploding as practical applications grow. Enabling process or operation simulations or analyzing device or machine data for actionable insights requires extending data beyond the operating technology that creates the digital twin. Ecosystem Integration provides a seamless and secure path for digital twin data to interact with enterprise applications.

An identity-centric platform, designed with security for scalability and integration

OpenText's identity-centric approach to IoT is what makes its Internet of Things unique and ready for integration with enterprise applications. The platform includes advanced, out-of-the-box Identity and Access Management functionality, which would otherwise have to be built from scratch, consuming development time and taxing already strained IT budgets. This approach is realized through relationship and lifecycle management. Register, authenticate and authorize all interactions across the entire lifecycle of people, systems and things. The ability to manage the identity of a device, sensor or machine throughout its lifecycle is critical to security across the entire ecosystem. Managing the relationship that an IoT data source or operator has with anyone or anything that it interacts with is what makes this platform uniquely capable to handle IoT initiatives requiring the highest level of security.

The Identity of Things Explained

Identity of Things (IDoT) assigns unique identifiers and metadata to things, devices and objects.

Get the *Identity of Things Explained* guide to learn about the identity problem with IoT and how a strong IDoT foundation identifies and manages IoT connections to solve it.

The Identity of Things (IDoT) extends traditional identity and access management (IAM) for the internet era. It identifies all IoT infrastructure components to ensure secure connectivity and data trust from IoT devices.
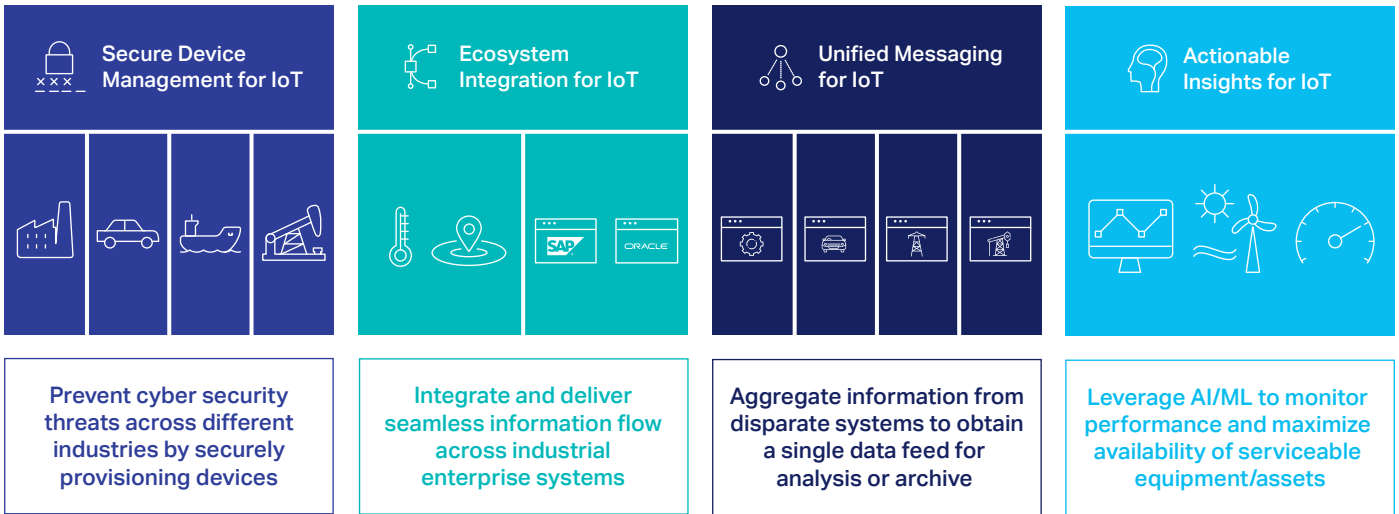
The guide introduces IDoT and reveals how to add identity to IoT with chapters on:

- The core capabilities of an identity-driven IoT platform

- The Top 10 tips to consider when deploying identity management in IoT

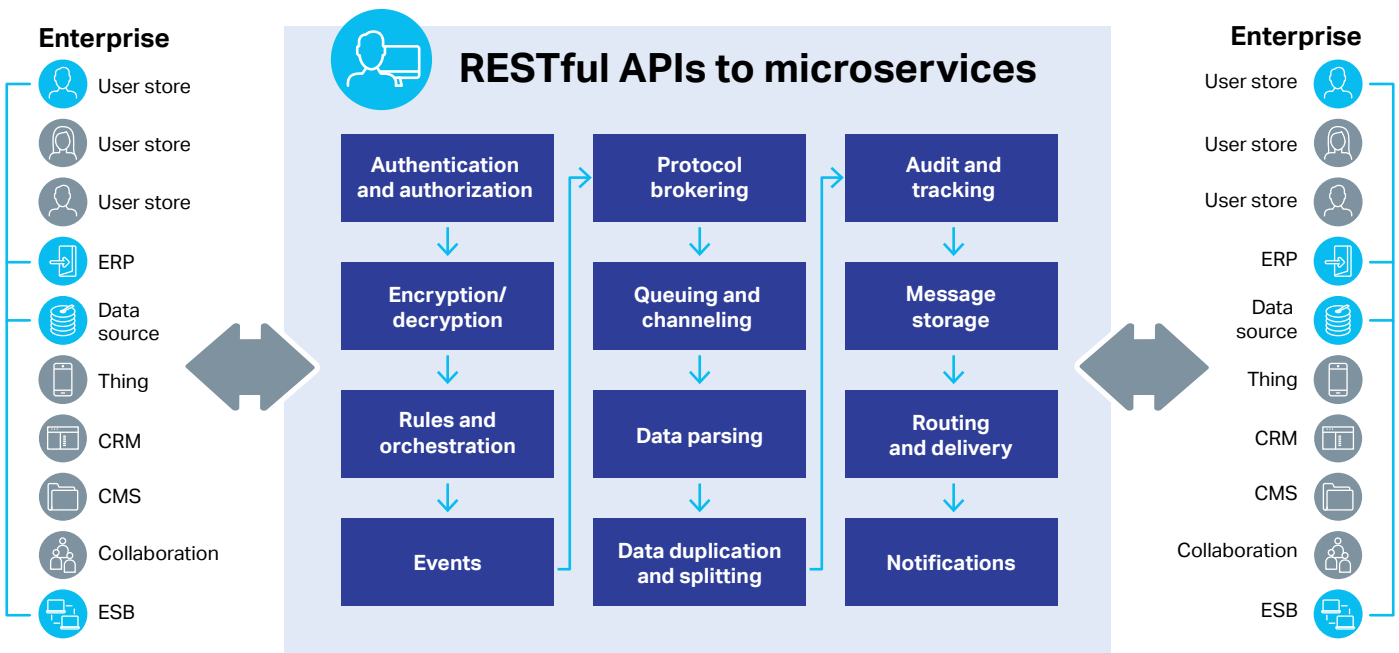- Selecting the right provider for IDoT

Get the guide today

2. Marr, Bernard. Forbes, What is Industry 4.0?, September 2018.

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Secure Device Management for IoT	Ecosystem Integration for IoT	Unified Messaging for IoT	Actionable Insights for IoT
Prevent cyber security threats across different industries by securely provisioning devices	Integrate and deliver seamless information flow across industrial enterprise systems	Aggregate information from disparate systems to obtain a single data feed for analysis or archive	Leverage AI/ML to monitor performance and maximize availability of serviceable equipment/assets

In addition to Ecosystem Integration for IoT, the OpenText IoT Platform can also deliver Secure Device Management, Unified Messaging and Actionable Insights

Enterprise

- User store
- User store
- User store
- ERP
- Data source
- Thing
- CRM
- CMS
- Collaboration
- ESB

RESTful APIs to microservices

Authentication and authorization	Protocol brokering	Audit and tracking
Encryption/ decryption	Queuing and channeling	Message storage
Rules and orchestration	Data parsing	Routing and delivery
Events	Data duplication and splitting	Notifications

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The above diagram highlights a simple enterprise integration use case and sample capabilities. Once the integration endpoint is set up, customers can manage integrations and track messages and failures.

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Ecosystem Integration components	
Messaging and orchestration services offers a robust and scalable way to manage enterprise integrations:	
Enterprise adapters	Ingests and publishes data to and from third-party data stores and enterprise systems and integrates with third-party web services
Pub-sub engine	Realtime messaging service for publishing and subscribing to events, as well as exchanging messages
Trading partner management	Configures and manages collaborating entities, with the ability to logically separate message traffc and establish messaging privileges
File management	Manage files with SCOUT for agent-based file transfers with external sites, API-based file transfers, Messaging Hub (up to 10 MB) and Enterprise Message Bus (for EDI files)
Audit and traceability	View messages, metadata, routing and control information, before and after transformations, command acknowledgements, detailed timestamps for all processing steps and trace failed messages
Monitoring, metering and throttling	Configure failure monitoring, with policies based on message type and priority

Ecosystem Integration components	
Synchronize and consolidate information across applications and sources:	
Event source hub	Pub-sub model for app-to-app data synchronization, where a change triggers an event and subscribers receive the latest data
Authorization policy framework	This security layer acts as the gatekeeper for access to protected resources
Provisioning	Syndicates user, application and device profiles, as well as authorizations across the digital ecosystem
Composite service creation	Custom App Protocol Service (CAPS), along-with an orchestration engine, enables the creation of composite services
API security and syndication	Allows enterprises to create and manage APIs once and then syndicates them into various internal and external developer communities, each with their own branding, licensing, security and other localized attributes

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About OpenText

OpenText, The Information Company, enables organizations to gain insight through market leading information management solutions, on-premises or in the cloud. For more information about OpenText (NASDAQ: OTEX, TSX: OTEX) visit: **opentext.com**.

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