



Let's Reach For Excellence!

TAN DUC INFORMATION TECHNOLOGY SCHOOL JSC

Address: 103 Pasteur, Dist.1, HCMC

Tel: 08 38245819; 38239761

Email: traincert@tdt-tanduc.com

Website: www.tdt-tanduc.com; www.tanducits.com

Microsoft Cloud Workshop: IoT for Business

Duration: 01 day

In this workshop you will use the unique benefits of Internet of Things (IoT) to build a smart city solution to help improve traffic and public transportation in New York City. Use a combination of the power of the cloud, along with IoT Edge devices to provide anomaly detection of city buses, engine anomalies and aggressive driving detection, location broadcasting to update bus route status, and to send traffic information to help inform the timing of traffic lights. Traffic lights will also receive new IoT devices that can help detect maintenance and performance issues, such as voltage irregularities. Easily view all this information through a centralized reporting dashboard provided by Azure Time Series Insights. Use the IoT Remote Monitoring starter solution to manage and simulate IoT devices, set alerts, and view data on a map.

About This Course

In this workshop you will use the unique benefits of Internet of Things (IoT) to build a smart city solution to help improve traffic and public transportation in New York City. Use a combination of the power of the cloud, along with IoT Edge devices to provide anomaly detection of city buses, engine anomalies and aggressive driving detection, location broadcasting to update bus route status, and to send traffic information to help inform the timing of traffic lights. Traffic lights will also receive new IoT devices that can help detect maintenance and performance issues, such as voltage irregularities. Easily view all this information through a centralized reporting dashboard provided by Azure Time Series Insights. Use the IoT Remote Monitoring starter solution to manage and simulate IoT devices, set alerts, and view data on a map.

Audience Profile

This workshop is intended for Cloud Architects and IT professionals who have architectural expertise of infrastructure and solutions design in cloud technologies and want to learn more about Azure and Azure services as described in the 'About this Course' and 'At Course Completion' areas. Those attending this workshop should also be experienced in other non-Microsoft cloud technologies, meet the course prerequisites, and want to cross-train on Azure.

At Course Completion

By the end of this workshop, you will learn to use IoT Hub to manage IoT devices, configure and run the IoT Remote Monitoring starter solution to provision, manage, and simulate telemetry for IoT devices via IoT Hub SDKs, use Azure IoT Edge to collect vehicle telemetry data, detect anomalies, and send the summarized data to Azure IoT Hub as needed. In addition, you'll create a custom endpoint in IoT Hub to route critical alerts to a Service Bus Queue, create an Azure function that extracts critical alerts from the Service Bus Queue and stores them in Cosmos DB, as well as use Azure Time Series Insights to store, visualize, and query the large amounts of time series data generated by various IoT devices and conduct root-cause analysis and anomaly detection.

Course Outline

Module 1: Whiteboard Design Session - IoT and the Smart City

Lessons

- Review the customer case study
- Design a proof of concept solution
- Present the solution

Module 2: Hands-on Lab - IoT and the Smart City

Lessons

- Set up IoT Remote Monitoring solution environment
- Provision additional Azure services
- Create bus and traffic light simulated devices, and add alerts and filters
- Create IoT Edge device and custom modules
- Create an Azure Function to add critical engine alerts to the Service Bus Queue
- Run a console app to view critical engine alerts from the Service Bus Queue
- Create an Azure Function to ingest critical engine alerts and store them in Cosmos DB
- View critical engine alerts in the IoT Remote Monitoring web interface
- Add a tag to IoT Edge Device Twin
- View all data in Azure Time Series Insights