## Azure Logic Apps

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## Problem Statement

Crude oil and natural gas continue to play dominant roles in global and regional energy markets. As with any trade commodity, prices are influenced by supply and demand but that only scratches the surface of the detailed factors that determine the price. An analysis of crude oil and natural gas prices and their possible influences on one each other can serve as a suitable study for the novice energy market investor. This project provides a streamlined means for capturing time series energy data from the U.S. Energy Information Administration (EIA) on a frequency of choice with Azure Logic Apps. We’ll start an exploration of the price data, aligning what we can visualize with assertions that have been put forth by industry experts.

## Technology Overview

Azure Logic Apps is an integration platform as a service (iPaaS) that supports the development and execution of simple to complex workflow applications in the cloud. Providing an easy-to-use visual designer, workflow applications are constructed with a wide variety of Microsoft, 3rd party and custom-built connectors. Running Logic Apps is aided with all the benefits of the Azure serverless cloud ecosystem.

## Technical Solution

Hardware: Windows 7 64-bit, Dell Precision 7710, Intel Core i7, 16 GB Ram

Software: Azure Logic Apps, Azure Function Apps, Microsoft SQL Server, RStudio

Datasets: <http://api.eia.gov/series/?api_key=YOUR_API_KEY_HERE&series_id=PET.RBRTE.D>

<http://api.eia.gov/series/?api_key=YOUR_API_KEY_HERE&series_id=NG.RNGWHHD.D>

Methodology: Develop Logics Apps that automate the process of (1) capturing energy data once a day (2) transforming JSON representation for easier consumption and (3) importing data into SQL server database. Use RStudio to retrieve data for visualization and analysis.

Lessons: You can cobble together Logic Apps with relative ease but consider all the design, cost and benefit alternatives for achieving the same results. Applying correlation analysis to time series data is a dubious task, beware the trend!

YouTube: 2 Min: <https://youtu.be/9aivyGOm4HY>

15 Min: <https://youtu.be/b_1saRulwvU>

GitHub: <https://github.com/jamespadair/deep_azure_final>