

Utilities: Establishing a Simulation and Validation Environment for Partner Certification

To establish the infrastructure needed to efficiently transact in a recently-deregulated energy market, this leading energy organization created a new message format and API to streamline communications related to energy delivery and administration. Since the project was on a very strict deadline, partners had to develop and test their integration with this new API at the same time that it was being developed. Parasoft Virtualize helped them achieve this goal by emulating the anticipated API behavior as “virtual assets.” Moreover, Parasoft Virtualize also automated the validation process, lending objectivity and traceability to the partner certification process.

The Challenge: Orchestrating Early Access to an Environment for Partner Certification

Upon deregulation of a European country’s energy market, this energy organization needed to implement a new method to centralize communications among the numerous market parties involved in delivering gas and electricity to approximately 15 million customers. For instance, the interface needed to support communications regarding how much gas one partner pumped into the pipe, how much gas another partner removed from the pipe, and so forth. It also had to support administrative functions, such as allowing customers to change suppliers without any service disruption.

To enable the shift to the new decentralized market model, the organization had to define a new XML-based dialect for message exchange, as well as develop an API to support the necessary communications using this dialect. They also had to orchestrate the rollout of this new dialect to the 120 involved partners and provide an infrastructure that these partners could use to ensure that their applications were properly sending and receiving messages with this dialect.

To accelerate time to market, the partners were expected to integrate their applications with the energy-exchange API at the same time that it was being developed. This parallel development was critical since a missed deadline could impact winter energy delivery in one of the world’s most frigid environments. And since meeting the deadline with flawlessly-functioning integration among partners was so critical to the project’s success, the organization needed a way to certify that each partner’s application could correctly send and respond to messages through the new interface.

Service Virtualization Enables Early Partner Integration and Automates Validation

Using Parasoft Virtualize, the organization rapidly modeled virtual assets that emulated the functionality of the API being developed. This enabled the market parties to start developing and testing against the API months before it was scheduled to be completed. Parasoft Virtualize also added a layer of validation to automatically confirm whether partners were correctly interacting with the API.

At a more technical level, Parasoft Virtualize emulated and validated secure communications using XML messages through the AS2 standard. Virtual assets were designed to receive 8 different types of "notification" messages and respond to the appropriate business partner with the corresponding acknowledgment. In addition, virtual assets had to initiate the sending of a "notification" message and check that the business partner responded with the correct acknowledgment.

Approximately 80 different test scenarios must be successfully completed before a partner is certified to participate in the new platform. The necessary multi-level validation is performed by having Virtualize check the contents and sequence of the XML payloads. Virtualize also logs validated messages in order to establish an audit trail for certification purposes. By integrating validation into the emulated test environment in this way, Parasoft Virtualize adds objectivity and traceability to the partner certification process.

Thanks to Parasoft Virtualize, the project is on track to meet its deadline. Building upon this success, the organization plans to use service virtualization to facilitate partner certification on future projects.

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