



WHITE PAPER • MARCH 2018



Learn How to Make Oracle Utilities Run Faster

Table of Contents

Section 1	3
Introduction	
Section 2	3
Limitations of Oracle Utilities Scheduling Facilities	
Multiple islands of execution	3
No event detection capabilities	4
Limited audit and compliance facilities	4
No dynamic thread management	5
Increased implementation and integration efforts	5
Inability to check for business outcome	5
Limited visibility of processing state	5
Section 3	6
Applying Automation to Oracle Utilities	
Single control point for Oracle Utilities and the wider landscape	6
Event detection and automation	6
Audit and compliance facilities	7
Dynamic thread pool management	7
Reduced implementation and integration costs	7
Execute when the business is ready	7
Determining business outcome is critical to success	7
360-degree visibility providing control	8
Section 4	8
Conclusion	

SECTION 1

Introduction

Oracle provides to the utilities sector a complete set of applications and technologies to handle the entire customer lifecycle and related business processes. These speed up delivery of utility-specific services, increase corporate administration efficiency and turn business data into business intelligence.

Although Oracle delivers exceptional functionality for utility companies, as is often the case with technology, it also creates challenges that operations have to overcome in day-to-day work. These problems, if not dealt with correctly, will impact the throughput of work, the quality of delivered results and ultimately customer satisfaction levels and cash flow management. Most of these problems revolve around the difference between reactive and proactive operational management, but to enable this change in ethos we need to provide external assistance to the scheduling facilities of Oracle Utilities.

Oracle itself recommends the use of external third-party automation solutions in its best practice guide (Batch Best Practices: Oracle Utilities Application Framework, Oracle doc 836362.1).

The area of focus is broader than just the Oracle Utilities implementation; it starts with how we generate and ingest data, how we manage and react to abnormal behavior, and the need to detect business success during processing to ultimately improve the quality and fidelity of the results delivered to the organization—and ultimately to our customers.

This white paper highlights some of these major challenges and the impact on Oracle Utilities clients. It then discusses resolution strategies available through automation, which provide day-to-day operational excellence in Oracle Utilities environments, increase the quality of service, speed the delivery of results and provide a consistent, predictable and manageable operational environment to drive profitability across the organization.

SECTION 2

Limitations of Oracle Utilities Scheduling Facilities

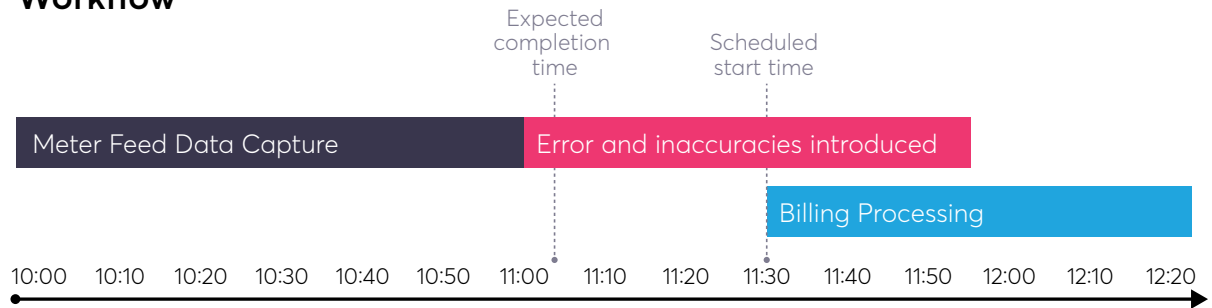
Oracle Utilities is an excellent solution, but like many of the solutions from Oracle, it is supplied with very basic capabilities to cause execution of processing. This limited control of the operations world causes many of our challenges. The following are some of the major areas that cause operational and data fidelity concerns that impact the business.

Multiple islands of execution

A drawback to Oracle Utilities scheduling is the limited facilities supplied to cause execution; however, successful Oracle Utilities processing is reliant on integrated flows of processing that span all the companies' applications.

Utilities processing requires the successful acquisition of meter readings, payments, timesheets and other data feeds before processing can occur. Any disconnect produces inaccuracies in the final results, which may be inaccurate bill generation or incorrect disconnect notifications, reducing customer satisfaction and ultimately impacting cash flow. To help mitigate this we often implement a high level of human activity in an attempt to make the system more successful.

Workflow



In this example, “time fence scheduling” is used to execute steps in the different components; you have to guess how long each step will take and leave buffers between them to handle any issues or overruns. So if you schedule step 1 to start at 10 p.m. and think it will take one hour to complete, you may need to schedule step 2 to start at 11:30 p.m., leaving a 30-minute buffer to handle any overrun or issues in the first step.

Such an approach is not only inefficient but will also generate unpredictable results if the buffer was not long enough. The steps themselves complete, it is just the result that is wrong, which means we create many more sanity checkpoints using people in an attempt to overcome the limitations of scheduling. Alternatively, we may ask operations to manually execute activities once the preconditions are met, which not only results in a higher cost of operation but also a more fragile environment, as people are the cause of most avoidable errors.

No event detection capabilities

We ingest significant amounts of data into Oracle Utilities from external locations and other applications. In traditional environments these are generated, independently transferred and then processed separately. This can create opportunities for data to be mislaid; if a file was not created or failed to transfer, then it is not available to be loaded, and often it seems impossible to be told when something did not happen, so it goes undetected.

To overcome these shortcomings, companies often fall back onto manual operations, relying on a human workforce to glue the systems together—but this is a weak solution to critical processing.

This human-robot methodology automatically builds latency into our process and increases the potential for human error, impacting the fidelity of outcomes. The subsequent reprocessing causes long delays in publication, which will impair both quality of customer care and cash flow.

Limited audit and compliance facilities

We have to be able to prove how we came by the results produced. With information stored in multiple locations, it can take days to assemble the information to determine that the business process executed in the correct order with the correct source information.

The storage of this information is also in a changeable format—logs can be edited unless external software is used to safeguard critical operating system information. This further adds to the complexity of being able to prove how and what was used to produce the results for any activity during the year.

No dynamic thread management

The Oracle Utilities system depends heavily on the management of the thread pool, as this directly impacts the throughput of workload within Oracle Utilities. However, it provides none to very limited facilities to manage this. This means lower-priority workload will affect high-value activities throughout the business cycle, consequently delaying production of critical outputs or, more dangerously, representing incorrect results.

Relying on users instigating workloads, as well as scheduled activities, creates the potential for clashes of resources to occur. Oracle Utilities does not provide intelligent queue and process management that would ensure urgent work at core business milestones (such as billing cycle) is not impacted adversely by the day-to-day workload required by other users.

When something goes wrong and some of the threads terminate unusually, we rely on operational experience to get them to an acceptable state and then continue processing. This activity is complicated, time-consuming and error-prone, resulting in significant delays in processing.

This means we impact service delivery and breach agreed SLAs, but again, we have no facilities to manage that SLA and move to a proactive environment.

The management is not just a simple aspect of execution volume or types of jobs, but also the impact on the compute resources available to execute the workload; without control, we have the potential to overwhelm the available resources and delay all processing and results delivery.

Increased implementation and integration efforts

The successful operation of Oracle Utilities depends on the strength of integration of all the feeder sources to the platform. The limited number of facilities provided causes significant cost to the business, both during implementation and day-to-day operations.

The design and implementation of processing flows through Oracle Utilities can take months of effort and are typically designed around successful outcome; little thought is given to the operational exceptions that occur. These exceptions are where all our business impacting problems originate—more thought must be applied to the operating environment, not just the movement of data.

Little thought is given to enabling proactive service level management, providing alerts and information with sufficient time to react before the problem becomes a business-impacting issue. The reason is that there is nothing supplied to assist. Any solution would need to be built from the ground up and therefore is often not considered or is believed to be impossible.

Another area that often impacts us is when manual instigation is necessary; this occurs when we are firefighting an issue. At this time we want it to be as fail-safe as possible, but the operations staff have to manually identify the parameters required for each command to be issued and each thread to be re-executed. This dramatically raises the stress levels, increasing error rates to the business and ultimately to the customer.

Inability to check for business outcome

Successful execution of jobs is not sufficient, because frequently jobs will complete successfully but will fail at the business level. For example, the bill print extract file has been created, but the data is incomplete/incorrect due to lack of initial data or a bad transfer.

In Oracle Utilities you check the return code of the bill print job, see that it is successful and allow the next job to begin executing. The business process completes technically, but the result is undesirable: an incomplete bill.

Oracle Utilities scheduling facilities lack the ability to check the business outcome, which creates far greater potential for an undetected issue to impact us downstream. We become reactive to the problem being detected later, which causes significant delays while reprocessing. Alternatively, it goes undetected, which means more billing issues to be resolved or incorrect disconnect notices being issued.

We will often use staff to try and detect something unusual, creating far more manual steps within our process to trap the potential errors and causing latency in delivering results, increasing the cost of operation and producing a much higher error rate.

Limited visibility of processing state

From an operational perspective, we need to be able to see where we are, what has happened and what will occur next. On top of that, we need to be able to determine whether we are meeting the agreed service delivery with the business and, importantly, predict failure with enough time to enact resolution before the breach, enabling the implementation of proactive management of service delivery instead of the incumbent reactive environment where users report issues.

Islands of execution, the inability to determine business outcome and a lack of prioritization to efficiently use the thread pool culminate in an inability to effectively manage the system—we are always in a reactive state. From a day-to-day operations perspective, best practice determines that we have a level of control that enables us to proactively manage the critical service deliveries and get ahead of the curve on issues current or predicted. And this is where we can move from scheduling to automation.

SECTION 3

Applying Automation to Oracle Utilities

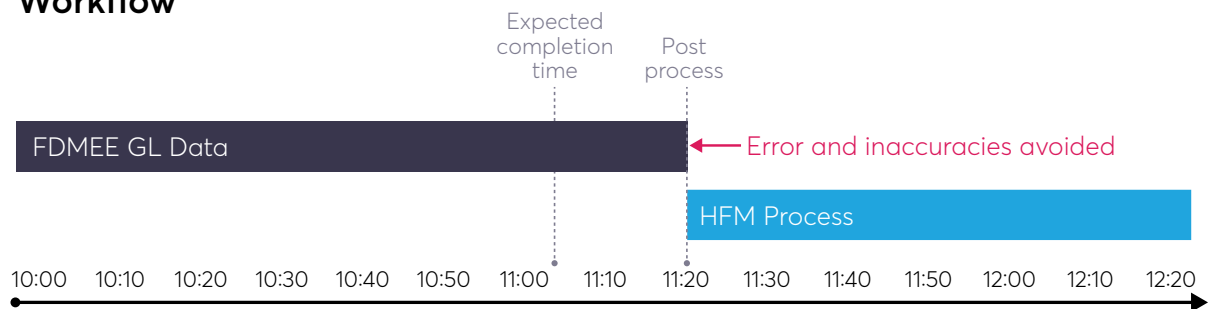
Many challenges must be overcome to provide a successful operating experience for utility companies. Nearly all of these revolve around the move from scheduling activities to the automation of processing. The major differences in this concept are to control entire business process flows, be able to determine the true outcome of execution, make intelligent decisions, validate throughout the process and proactively manage service levels and operational agreements.

Co-developed with Oracle, the CA Technologies solution uniquely provides deep integration into all the components of Oracle Utilities. Combined with over 40 years of experience with operational excellence and unparalleled integration to a broad set of applications, this provides the level of automation utility organizations require to deliver results to the business.

Single control point for Oracle Utilities and the wider landscape

CA Automic Workload Automation enables all aspects of processing for Oracle Utilities to be controlled from a single location. It provides the ability to define activities that need to have succeeded before execution and allows them to be modeled as a flow of activities, i.e., as an end-to-end business process. This includes generating data in downstream applications, managing the transfer and collection of data, and processing within the Oracle Utilities application stack. Enabling the results to be checked before distribution to external print agencies provides confidence in the result being correct the first time—reducing billing inquiries and disputed disconnect notices to improve customer quality scores.

Workflow



Eliminating any concept of “time fence scheduling” guarantees processing occurs when the business requires it. The result shortens delivery timeframes, removing many of the manual sanity checks while also increasing the quality of results. CA Automic Workload Automation then allows you to define your service level requirements and actively monitor the system for any breach, providing time for operations staff to effect resolution before a problem impacts the business.

Event detection and automation

CA Automic Workload Automation is fully event driven, allowing customers to cause execution when the business milestones have occurred—this could be the generation of a meter reading or canceling disconnect notices after successful payment loads have occurred.

This is achieved by removing the need for users to determine when the activity should run, saving them time, eliminating the potential for human error and enabling processing of this information earlier and often outside core business hours.

Events are detected from multiple systems, essential for timely, consistent and accurate billing processing.

Audit and compliance facilities

With automation causing execution, we instantly provide all the necessary information for auditory and regulatory compliance. We maintain a permanent history processing dependency, execution and results (including extracting logs), as well as any approval or manual activity associated with the process.

For all of our 2,800 customers, this enables proof of audit to be available at the click of a button or scheduled as a report.

Dynamic thread pool management

Critical to the safe operation of an Oracle Utilities environment is the management of the thread pool. Overcommitment of this defined resource will impact throughput and level of success.

CA Automic Workload Automation enables prioritization of workload and dynamic management of the Oracle Utilities thread pool to maximize workload performance and balances this against workload priorities for the business. This makes certain that critical workload is never impacted by lower-priority day-to-day batch activity and enables clients to maximize the available computing power for utilities processing.

CA also enables controlled access to physical resources dynamically, either reserving the resource or allowing access on a first-come, first-served basis. The ability to manage resources dynamically helps prevent collisions between processes and allows operations to run efficiently while maintaining the priorities of the business.

Reduced implementation and integration costs

CA Technologies provides an automation framework that is deeply integrated to Oracle Utilities, which simplifies the implementation timeframe and reduces project risks as well as the costs to integrate external systems into a cohesive automation policy.

The jobs defined within Oracle Utilities are imported in minutes; all parameter definitions provided and the processing can then simply be assembled. The CA integration reduces implementation time by a factor of four, completing in weeks instead of months.

Execute when the business is ready

CA Automic Workload Automation offers a broad variety of checks and conditional operations, from checking existence and content of generated files through reconciling results with database queries or extracts from other corporate systems. This significantly reduces the number of manual checks that need to be performed to give you confidence on fidelity and accuracy of the published results.

Where there is still a need for an expert to perform a check, you can model the human activity within the workflow. The relevant staff are informed of the required activity via your corporate systems; their response is monitored and escalated in the event of no action, and once confirmed, the process completes. Not only does this make for a seamlessly documented process, but the information is available for service level management and auditory compliance.

Determining business outcome is critical to success

CA Automic Workload Automation provides automated alerting to your monitoring solution as well as traditional email notifications. After processes have been executed, it enables you to check for the correct business outcome, asking whether the result of this process was as the business expected, whether the volume of information was within the desired range, and whether a process ran too quickly to have been business accurate.

It also provides the ability to reconcile across systems and data sources, making certain that the bill produced is accurate, relieving the burden of manual checks and speeding the delivery of high-quality results to the business.

360-degree visibility providing control

CA Automic Workload Automation provides complete visibility into the condition of all business processes, putting operations in control of the environment. Service level management, predicting when tasks will complete and giving operations sufficient time to resolve before breaching allows you move into a proactive mode of delivering services to the business.

This information can then be shared with the broader business in real time, using dashboards to automatically share the state of all automation policies with the users.

SECTION 4

Conclusion

Although Oracle Utilities customers can operate their systems without external automation, it is recommended by Oracle best practice to use an external third-party scheduler. CA Technologies supplies the premium solution for operational excellence. Developed in conjunction with Oracle, it improves quality of service, timeliness of results and billing accuracy.

The limitation within Oracle Utilities causes customers to direct significant high-value resources to basic activities to maintain the fidelity and precision of the results; they also tend to deliver the results to business later in the business cycle and have significantly more processing cycles to complete the consolidation effort.

The world of automation has undergone dramatic change over the past five years. Gone are the days of it simply being a case of causing execution. True workload automation now enables consumers of applications to maximize the value of these applications to their business.

Applying the CA Automic Workload Automation to Oracle Utilities streamlines all aspects of the business, eliminates much of the unnecessary manual activity to guarantee fidelity and accuracy of results, and interconnects Oracle Utilities with the broader enterprise landscape.

It enhances the quality of service by optimizing IT processing to ensure end users get the information they need to do their jobs, consistently and at the right time.

Establishing a unified workload automation solution at the heart of an IT operations environment will yield immediate returns by creating agility for the business, reducing costs and broadening automation policies deeper into the business. Longer term, it becomes the foundation for significant innovations within and beyond the Oracle Utilities system.

Connect with CA Technologies



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CS200-338904_0318