



CLABBY ANALYTICS

Research Report

CA Workload Automation iDash – Predictive Analytics for the Dynamic Data Center

Introduction

Today's applications and workloads span distributed, mainframe and cloud environments – increasing information technology (IT) complexity and posing major management challenges for IT administrators. In these heterogeneous environments, many workloads have become “composite” applications that are comprised of multiple jobs and services drawn from several sources that span IT infrastructure. The complex nature of these workloads can lead to inefficient resource usage if workloads aren't run in the right place at the right time. Resources can be scheduled manually but this is time-consuming and can be error-prone.

Today's dynamic data center requires a flexible on-demand approach to scheduling workloads and a level of automation that can increase efficiency and reduce cost. From a single point of control, IT managers need to consistently deliver applications and business services across the enterprise with fewer outages and improved service levels. This requires proactive management and an ability to respond to problems before they impact business.

One of the ways that IT organizations have been responding to this increased complexity is by using operational and predictive analytics. By collecting historical data as well as data in real-time, problems can be anticipated and corrected before service levels are breached. By analyzing historical data, patterns can be identified, helping administrators determine what metrics are normal in a given situation and what are abnormal and require attention. Meaningful thresholds can be set, and alerts can be created to signal these thresholds have been exceeded or are close to being exceeded. Some predictive analytics are “self-learning”, collecting data, discerning patterns, and setting thresholds automatically based on those patterns.

Clabby Analytics looks for the following features in predictive analytics tools:

- The ability to analyze historical as well as real-time data;
- Correlation between IT events and business impact;
- Self-learning using historical data to define normal behavior;
- Proactive problem resolution;
- The ability to collect events and performance data from a wide range of sources;
- Single dashboard GUI across enterprise applications and workloads;
- Automation of tasks such as recovery actions and alerts;
- Policy-based workload placement; and,
- Service Level Agreement (SLA) management.

CA Workload Automation iDash –Predictive Analytics for the Dynamic Data Center

In this *Research Report*, *Clabby Analytics* examines CA Workload Automation iDash (CA WA iDash), a predictive workload analytics solution that unifies workload services across the enterprise including System z, distributed and cloud environments. CA WA iDash collects historical and real-time data to visualize, monitor, analyze, and predict performance of critical workloads.

CA Workload Automation iDash- A Closer Look

CA Technologies acquired Paragon Global Technology in September 2012 – the products acquired as part of the agreement include CA Workload Automation iDash (formerly PGTI iDash) and CA Workload Automation iXp (formerly PGTI iXp). This acquisition enabled CA Technologies to add predictive analytics, critical-path monitoring, SLA management, reporting, and unified cross-platform management to the company’s workload automation portfolio. CA WA iDash monitors CA Workload Automation AE (AutoSys Edition) and CA Workload Automation CA 7 Edition environments.

CA WA iDash helps monitor the health of workload performance, and manage and report on service levels, trends and predictions. From a single point of control across mainframe, distributed systems and cloud environments, CA WA iDash enables an intelligent, cross-enterprise workload automation solution. Automated, proactive monitoring of workloads identifies problems, forecasts the impact of real-time events on business processes, and takes corrective action before problems cause business interruption.

Major Features:

- Applies predictive analytics in order to provide empirical evidence that can help determine what types of workloads should be run when and where based on business priorities;
- Provides real-time forecasting based on historical job run durations and workload model; overrides can be assigned for certain forecasting parameters to support what-if simulation;
- For any job flow, desired start and end deadlines can be specified based on business requirements. If any part of the job flow fails, impacting the business deliverable, an alert is automatically generated or an automated recovery action will take place;
- Adapts to changing conditions based on historical trends and patterns, real-time events and changes in workload model. For example, conditions may consistently be different at the end-of-the-month, or conditions may change in real-time based on a unique event. In either case, iDash “learns” and adjusts dynamically to ensure service levels are maintained and business deliverables are met; and,
- Users can create reports to retrieve advanced workload predictive analytics as well as generate detailed reports on audit trails, events and job runs, as well as performance predictions

iDash Dashboard

The main dashboard of CA WA iDash (See [*Figure 1*](#) next page) enables administrators to do self-service monitoring of SLA health related to a particular line of business or application, as well as look at the critical path of jobs that are impacting SLAs. An

CA Workload Automation iDash – Predictive Analytics for the Dynamic Data Center

aggregated status is available for each application of line of business such as ERP or data warehouse.

Figure 1- CA Workload Automation iDash User Interface

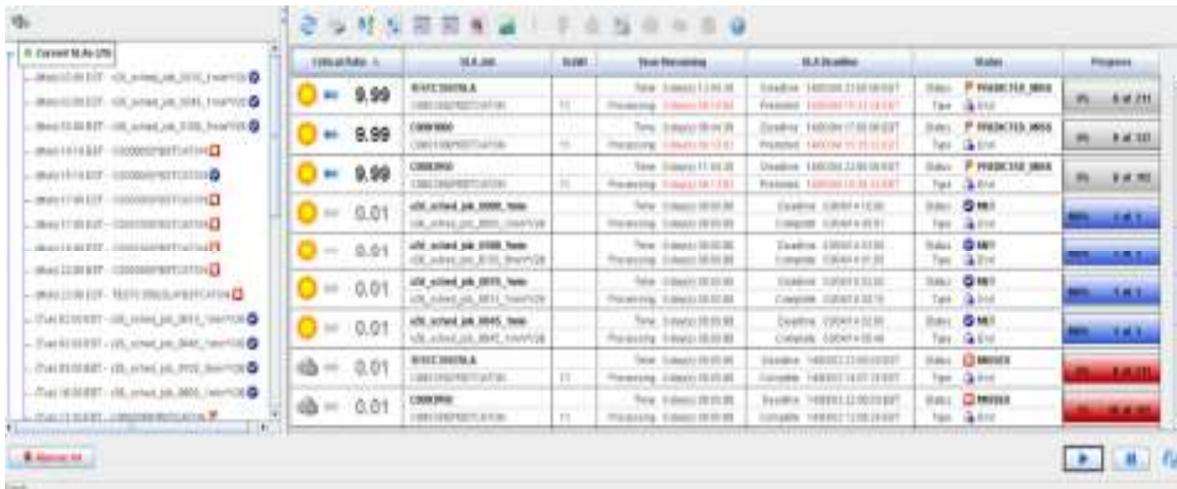


Source: CA Technologies - May 2014

SLA Health Monitoring

CA WA iDash automated workload monitoring allows administrators to manage service levels so that both internal and external requirements can be met consistently. An intuitive GUI (See **Figure 2**, below) shows SLA health trending, current job status, SLA history as well as predictive SLAs. In this way, it is easy to see if SLAs are at risk potential problems are flagged – and alerts are sent automatically or corrective action is taken before business impact. CA WA iDash can generate SLA performance charts as well as SLA trend reports.

Figure 2 – SLA Health Monitoring



Source: CA Technologies – May 2014

An Example- Payroll Processing

Let’s look at a specific example that will help us understand how iDash works. A payroll processing application is a good example of a “composite” workload that includes various business applications such as ERP, a database to deliver data back and forth, web services and even printing. It is also an example of an application with tight service levels since employees expect to be paid on a particular day at a specific time. Since this complex workload is actually comprised of many “sub-jobs”, CA WA iDash enables the administrator to select sub-jobs that represent key milestones in the entire payroll application process, setting thresholds within job flows as well as for the process as a whole. Each threshold is analyzed separately as well as in the context of the entire workload. Administrators see the impact of that sub-flow on the entire process and make adjustments in real-time to ensure completion of the entire workload within its SLA’s.

iDash Critical Path Monitoring

For any job flow, there are multiple paths that must be finished in order for the overall SLA of the business service to be met. CA WA iDash critical path monitoring illustrates the longest path for total job completion in terms of time (See **Figure 3**, below). For the job, iDash automatically generates the critical path needed to achieve the SLA.

In this way, the administrator can see the entire payroll processing application from end-to-end, as well as any bottlenecks, and a status of how the job flow is progressing. The critical path adjusts and adapts, as displayed in the dashboard-based GUI, based on real-time events so you can tell the status of the payroll job’s milestone as a whole as well as how each job is progressing toward its deliverables.

Analytics are applied in real-time to each sub-job in the critical path to provide visual clues that help administrators diagnose problems and make predictions about SLAs. This enables the administrator to take action if an issue with a particular sub-job will impact the overall payroll processing SLA. The administrator can actually take steps to improve the SLA of the business service (in this case, payroll) by monitoring the individual sub-jobs along the path and taking actions within those sub-jobs that will improve performance.

Figure 3 - CA WA Critical Path Monitoring



Source: CA Technologies – May 2014

Not every day is the same...

For any business service, iDash advanced analytics “self-learns” from patterns and trends found in historical data. For example, the last Friday of the month may be different than the other Fridays of the month with an average of 1200 jobs on the last Friday as compared to only 1000 jobs on the other Fridays of the month. This will impact a payroll application that runs every Friday. These differences are taken into account by iDash when making predictions, and are reflected in SLAs and the critical path analysis. And by factoring in known conditions and trends, administrators can perform simulations to project the impact of these trends on SLAs. With this kind of predictive information, actions can be taken in advance to meet and improve SLAs.

Summary Observations

Predictive analytics are becoming a requirement for application and workload management tools. With all the operational “big data” collected, analytics can easily correlate a wealth of information from a range of sources to make predictions about performance as well as identify bottlenecks that may affect performance and SLAs. These kinds of tools enable proactive management, eliminating issues before they impact users and also improve the efficiency and productivity of IT administrators in an increasingly complex enterprise.

From a single unified point-of-control across the enterprise, CA Workload Automation iDash collects and correlates workload information so workloads can be prioritized based on business needs and required SLAs. Historical information is collected to determine typical business trends and patterns that could affect workload performance, and CA WA iDash also correlates real-time events, accommodating any unexpected occurrences. Critical path analysis identifies those sub-jobs that have the potential to impact SLAs and enables administrators to proactively fix problems.

CA Technologies has other products in its portfolio that provide predictive analytics, including CA APM (Application Performance Management), for example, with its Application Behavior Analytics. A correlation engine learns relationships between applications and performance metrics to automatically identify, in advance, potential problems that would affect application performance.

According to CA Technologies, the next step is Business Process Optimization which will integrate and share analytics across workloads, applications, systems and storage combining operational data from these sources for a comprehensive end-to-end view of infrastructure, applications and workloads and their interdependencies. Resources, services and data will be provisioned as needed to support business needs. Integrated alerting and trouble ticketing will provide a closed loop for proactive problem identification and resolution. In the meantime, products such CA WA iDash and other predictive analytics tools from CA Technologies go a long way toward supporting proactive, automated management in the dynamic data center.

Clabby Analytics

<http://www.clabbyanalytics.com>

Telephone: 001 (207) 239-1177

© 2014 Clabby Analytics
All rights reserved
May 2014

Clabby Analytics is an independent technology research and analysis organization. Unlike many other research firms, we advocate certain positions – and encourage our readers to find counter opinions – then balance both points-of-view in order to decide on a course of action. Other research and analysis conducted by Clabby Analytics can be found at: www.ClabbyAnalytics.com.