



# Compuware's Topaz™ Runtime Visualizer – on the way to DevOps Nirvana!

Keeping their promise to deliver new functionality quarterly, Compuware announced new features for its Topaz for Program Analysis product. Agile processes, hard work and commitment allowed key component, Topaz Runtime Visualizer, to go from conception to product reality in just 84 days! It demonstrates mainframe agility, relevance and ability to move at the speed of a digitized market.



We've discussed the details of Compuware's rationale for the Topaz solution suite<sup>1</sup> before. It exists to help customers turn ideas into products faster. Compuware does so by focusing on products grounded in the reality of today's heterogeneous data center where the challenge is to facilitate cooperation and integration between "systems of record" and "systems of engagement". They also alleviate staff and skill shortages with products to aid those lacking deep mainframe expertise. To reduce the mystery and myths surrounding mainframe operations, Compuware is extending contemporary tools and processes for use on the mainframe. Here's what's going on and why.

## Understanding Applications

New coding techniques offer much to reduce the complexity of developing applications. Left unresolved are the challenges of existing applications. Support, let alone updating or revising applications for performance, efficiency or new technologies, remains a daunting task. Even experienced programmers are challenged when attempting to maintain code written by someone else even in the rare instances when documentation exists. Imagine the pressures on IT staff with little platform experience as they attempt to learn and support a program classified as critical to successful operations. Often, the decision is made to leave things as they are. In Topaz, Compuware offers a better alternative. We've discussed pieces the Topaz Solution Suite<sup>2</sup> since its introduction. Let's look at the newest features.

## Compuware's Topaz for Program Analysis

Topaz for Program Analysis helps developers and Dev/Ops discover, visualize and work in an intuitive manner with mainframe applications. As a result, developers and Dev/Ops staff can more quickly understand, manage and modify unfamiliar

<sup>1</sup> "Mainframe Software for the 21st Century", <http://www.ptakassociates.com/content/>

<sup>2</sup> "Compuware's Topaz for Java Performance enhances mainframe productivity", <http://www.ptakassociates.com/content/>



applications. It is built on the open-sourced Eclipse development environment which will appeal to millennial developers.

Figure 1 illustrates the major steps in understanding an application. The first step is to understand what the program is doing by identifying when and how many calls are made to data and files. This helps to identify likely problem areas in or with the application. The next step is to determine dependencies and interactions with other applications/programs. These may or may not be on the same mainframe. This allows discovery of programs which may be impacted by changes in the application. The final step is a detailed drill down into program code to identify flaws in coding, metrics, logic or data flows.

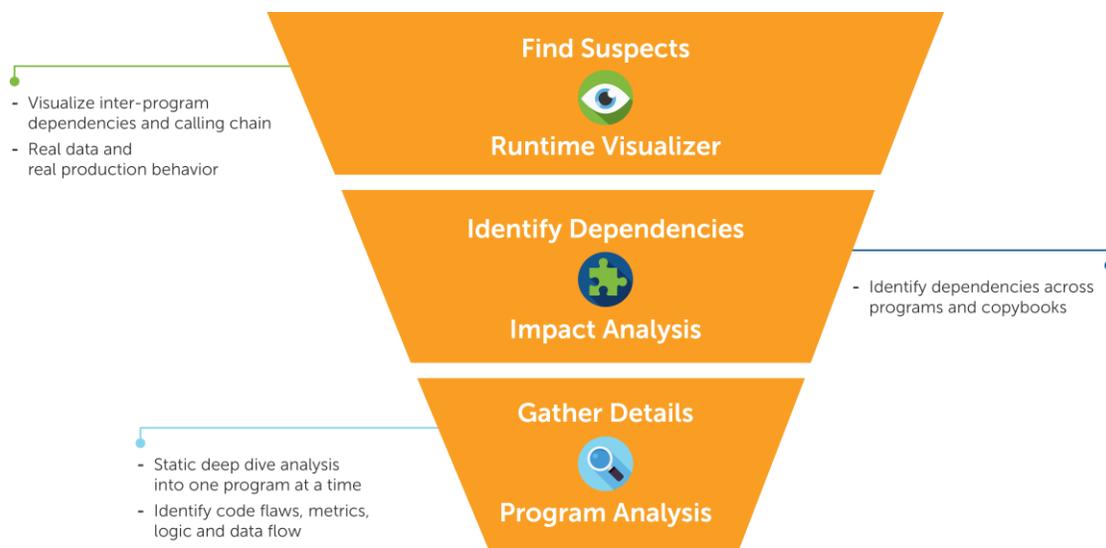


Figure 1 Understanding Applications

Accomplishing each step is a time-consuming, exhaustive and error-prone effort made more so by typically poor or non-existent documentation. The process is further complicated when undertaken by staff without in-depth understanding of the platform and programming environment. The latest enhancements to Topaz for Program Analysis (Topaz Runtime Visualizer, Online Projects and Impact Analysis) add to existing functions to make the task radically faster and easier for both experienced and novice staff. Let's take a quick look at each of these.

**Topaz Runtime Visualizer** speeds and eases understanding program operations by building a visual representation of program activity in real-time. It works without using or needing access to any source code. For the first time ever, IT staff have access to an automatically generated, detailed, transportable, dynamic view of what happens when an application executes – showing what, when and how often programs are called and data is accessed. All calls, accesses, interactions and dependencies with files and databases are visualized and recorded along with detailed attribute data, including



language, compile date/time and load library. The entire visualization file along with the detailed data can be saved for re-running or reference outside of Topaz.

Consider the effort required to manually track what is happening in even a relatively simple program. Previous to this product, getting this data required a manual, static analysis. This was a much more difficult task even when accurate, well-maintained documentation is available. When documentation is missing or incomplete, the difficulty escalates. Automated, dynamic, visual analysis results in an enormous time savings to understand and troubleshoot complex programs. The savings apply to both novice and expert staff.

**Impact Analysis** allows staff to identify and investigate dependencies that extend across programs and copybooks. Discovery by static methods requires searching flow charts, diagrams and generally inadequate documentation. It is also a time-consuming task during which it is all too easy to miss a connection. This feature simplifies and speeds identifying all elements that may be affected by changes and updates to a program. Complementing this analysis is the newly introduced ability to create and run **Online Projects** on the mainframe. Online Projects are a technique much used by Java programmers to discover and investigate dependencies across programs and copybooks.

## Other Topaz Elements

Previously announced features of the Topaz solution suite include:

1. **Topaz for Program Analysis** with tools for static analysis to provide intuitive, accurate visibility into data flow within COBOL or PL/I applications. This includes showing how data gets into a field; how a field is used to set other fields; and how a field is used in comparisons. This information helps developers to design better, smarter applications.
2. **Topaz for Enterprise Data** allows developers to manipulate enterprise data and applications with its data editor acting as a single, intuitive interface for browsing and edits across multiple different data bases (DB2, SQL Server, etc.). It supports Host to Host copy for high-speed, compression-enabled, host-to-host data movement. It automatically discovers relationships and creates static visualization maps of relationships between data. These help delay or avoid expensive upgrades by reducing the burden on general purpose mainframe processors.



3. **Topaz for Java-on-M/F Performance Mgt.**<sup>3</sup> provides visibility into the performance and behavior of Java Batch programs and WebSphere transactions running on the mainframe. It aids identification of:
  - a. Spikes in CPU usage,
  - b. Java Class Methods using lots of CPU, identify
  - c. Inefficient garbage collection and cleanup.

Taken together, these help speed efforts to debug and resolve mainframe application performance problems. They improve performance while reducing wasted MIPS.

## The Final Word

Compuware has done it again. They have made and convincingly met their aggressive promise to deliver rapid, consistent, significant, new product enhancements quarter-by-quarter. They've documented the unheard of progression from concept to product in 84 days with **Topaz Runtime Visualizer**. They are demonstrably refuting naysayers and sceptics who keep insisting that the mainframe is no longer relevant and unable to deliver in today's increasingly digitized and mobile market.

They are not alone in demonstrating the important, cost-effective role played by the mainframe in today's world. They recognize the need for standards and standardization that benefits vendors and users. They realize the advantages of community efforts. To that end, they've made important alliances and partnerships that will lower real and perceived barriers to mainframe usage.

We've only touched on the highlights of their products and strategy in this and earlier [commentaries](#)<sup>4</sup>. We've seen these products in action and come away impressed. We suggest that you go to their [website](#)<sup>5</sup> for additional information into what Compuware is doing and delivering. We think you'll like what you find there. For us, we're already looking forward to hearing about next quarter's announcements.

---

<sup>3</sup> <http://ptakassociates.blogspot.com/2015/07/compuwares-topaz-for-java-performance.html>

<sup>4</sup> See our commentaries (<http://www.ptakassociates.com/content/>) and follow our blogs (<http://ptakassociates.blogspot.com/>) for more.

<sup>5</sup> <http://www.compuware.com/>



Publication Date: November 2, 2015

This document is subject to copyright. No part of this publication may be reproduced by any method whatsoever without the prior written consent of Ptak Associates LLC.

To obtain reprint rights contact [associates@ptakassociates.com](mailto:associates@ptakassociates.com)

All trademarks are the property of their respective owners.

While every care has been taken during the preparation of this document to ensure accurate information, the publishers cannot accept responsibility for any errors or omissions. Hyperlinks included in this paper were available at publication time.

#### **About Ptak Associates LLC**

Our analysts cover a breadth of areas to bring you a "complete picture" on technology trends across the industry. Whether it's Cloud, Mobile, Analytics, Big Data, DevOps, IT Operational Analytics, Workload Optimized systems or some other emerging trend, Ptak Associates analysts cover these trends with a unique perspective that is both deep and broad.

Our clients include both industry leaders and dynamic newcomers. We help IT organizations understand and prioritize their needs within the context of present and near-future IT trends, enabling them to use IT technology effectively in solving business problems. We help technology vendors refine their strategies, and provide them with both market insight and deliverables that communicate the business values of their products and services. We provide all clients with an understanding of how their competitors are playing in their market space, and deliver actionable recommendations.

[www.ptakassociates.com](http://www.ptakassociates.com)