ANTICIPATE

IT issues before they impact your business.

HP Service Health Analyzer

Brochure

What if you could forecast IT problems before they occurred?

Having complete visibility into the health of your business is a priority in today's world. It is necessary to help you adapt, even survive, in today's cloud and virtualized IT environments. To manage a dynamic infrastructure with innumerable applications, your business must do more than just react to service problems, maintain separate domain monitoring tools, or manually update static thresholds that are difficult to set and maintain. It needs advanced notification of problems, better visibility into the correlation of applications with business services to enable anomaly tracking, and an easier way of determining acceptable thresholds and real anomalies.

IT organizations such as yours have the means to collect all the relevant data to address issues of visibility, anomaly tracking, and setting thresholds; the immediate need is an analytic tool set and automated intelligence to help anticipate IT problems and take care of them before they negatively impact the business. IT managers are looking into the world of predictive analytics, one of the notable business intelligence trends of 2011[1], for these solutions.

HP Service Health Analyzer (SHA), a predictive analytics tool built on top of a real-time, dynamic service model, can help you anticipate IT problems before they occur, prevent business impact, and remediate them quickly.

HP Service Health Analyzer—a smarter way to manage your IT in a dynamic world

HP SHA is a part of the Service Intelligence (SI) offering under the HP Business Service Management (BSM) 9.1 portfolio. SI provides the analytic tools to enhance virtualized environments, report business service and trends across multiple domains, gauge the health of a business in context of business goals, and comprehensively monitor all aspects of IT. While all this is important, businesses should also be able to convert all the monitored and collected data into actionable knowledge. And that's where HP SHA comes in.

[1] Source: "Notable business intelligence trends for 2011 and beyond," William Laurent, Dashboard Insight, January 24, 2011, available at http://www.dashboardinsight.com/articles/new-concepts-in-business-intelligence/notable-business-intelligence-trends-for-2011-and-beyond.aspx.

Our customers speak.

"SHA predicted that we would have a performance issue 30 minutes before it was detected. That 30-minute head start makes a huge difference in preventing user impacts.The fact that SHA can detect a problem on its own, without the need to maintain thresholds, is a huge selling point. SHA will now be my preferred way for handling performance thresholds."

SHA is an analytics engine that works on the principles of "anticipate, prevent, and remediate." Using advanced statistics and sophisticated algorithms, it analyzes current metrics and historical trends to find abnormalities. It then alerts your IT department of real service degradation before it happens, and initiates a set of automated workflows and remediation steps to fix the potential issue. With SHA, your IT department can:

Anticipate real IT incidents before they occur: Analyze current and historical data to get advanced notification of future events with SHA. Built upon the HP BSM 9.0 Run-time Service Model (RTSM), it provides the analytic tool set to correlate disparate application and topology metrics to help you anticipate potential problems before they occur.

Prevent business impact: SHA makes your life easier by automatically learning the real thresholds in your environment. It looks at historical trends and seasonality patterns over time, to establish a baseline of what normal behavior should be. With real thresholds in place, you can then filter out alert noises and only be notified of issues that deviate from the acceptable baselines. If you have abnormalities related to a specific service, you can see the service-level agreements and know the impact that anomaly could cause. This way, you can prioritize effort toward the issues that are most important.

Additionally, SHA uses a patented technique known as Anomaly DNA Technology to analyze the structural makeup of an anomaly and compare that with the known DNA of other anomalies. This anomaly DNA matching provides two benefits:

- Reducing mean time to repair by immediately providing information about how a specific problem was solved previously
- Reducing operations effort by matching known DNA to anomalies marked as noise

Remediate events by fusing analytics and automation: SHA helps you to quickly identify the root cause through an advanced user interface. It also helps you take action before the service is impaired, through an automated event-to-ticket closure remediation. This quick remediation simplifies the complexities of virtualization, cloud, and mobile computing environments.

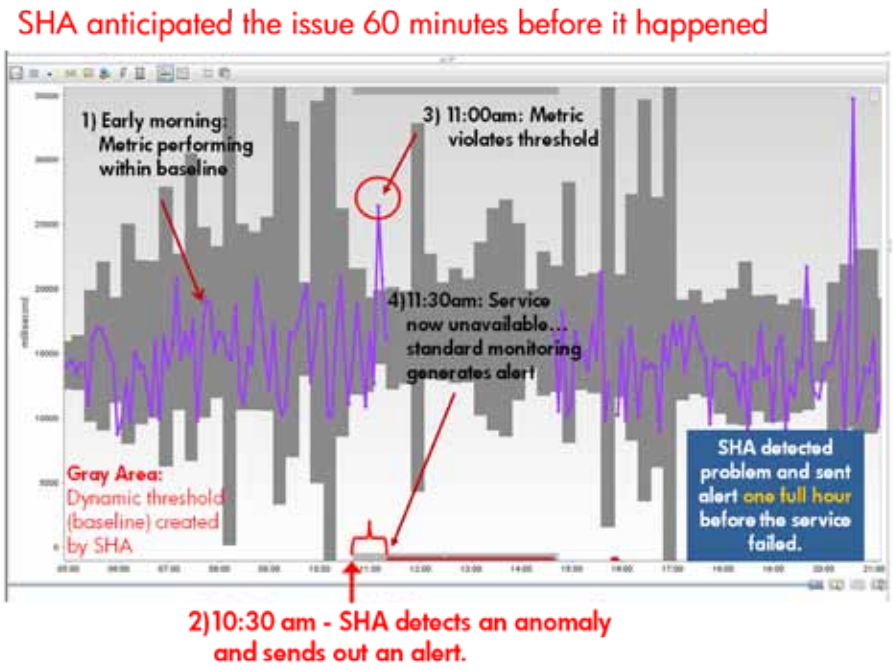

Figure 1: A representation of SHA predictive analytics at work for an early-adopter customer.

How run-time predictive analytics eases IT pain.

HP SHA provides the answers to the following pain points of IT organizations.

- **Pain:** There is no way to get early notification of service degradation.
- **Solution:** SHA provides advanced warnings of potential problems, often as early as 30 minutes before they occur.

- **Pain:** There is no way to correlate the current issue with similar issues seen in the past.
- **Solution:** SHA correlates irregular behavior to topology changes and past issues. You can leverage that knowledge to resolve the issue and prevent similar issues in the future.

- **Pain:** Metric thresholds are difficult to set and problematic to maintain.
- **Solution:** SHA is an automatic self-learning tool that analyzes metric behavior and defines the dynamic threshold. Baselines are created by detecting the metric trends, seasonality, and past deviations.

- **Pain:** It is difficult to automate responses to impending issues.
- **Solution:** SHA integrates with a closed-loop incident process solution to provide remediation before services are impacted.

Key features and benefits

SHA offers the following key features and benefits:

1

Automatic capture of real thresholds

It is important to create metric thresholds in your organization because they help you pinpoint operational events. These events can be triggered based on whether the metric breach goes above or below the set thresholds. The downside of setting thresholds, though, is that managing them involves manual labor that is tedious, time consuming, and error prone.

SHA simplifies this task for you by learning the dynamic threshold based on metric history. It uses patented algorithms to calculate baselines. SHA's algorithms use historic metric trends, seasonality (the repetitive behavioral pattern of metrics during the week, month, and season), and deviations. With the self-learned baseline, SHA is in a position to determine when a metric is behaving abnormally. When the abnormal behavior is detected, the Run-time Anomaly Detection (RAD) Engine comes into play.

2

The Run-time Anomaly Detection Engine

The RAD Engine is the core of SHA. The functionality of the RAD Engine kicks in when an abnormal metric behavior is detected. It correlates these abnormal metrics with the topology information from the RTSM to define an anomaly. SHA automatically combines hundreds of baseline breaches associated with a single service into one event for easy detection.

Typically, anomalies are represented by a topology of connected IT configuration items—such as servers, software elements, and applications—and the abnormal metrics on each. Once an anomaly is identified, an event is sent into the BSM 9.0 event subsystem, HP Operations Manager i[2], and the key performance indicator of performance analytics is set to critical.

[2]Read more about Operations Manager i (OMi) at http://www8.hp.com/us/en/software/software-product.html?compURI=tcm:245-936954

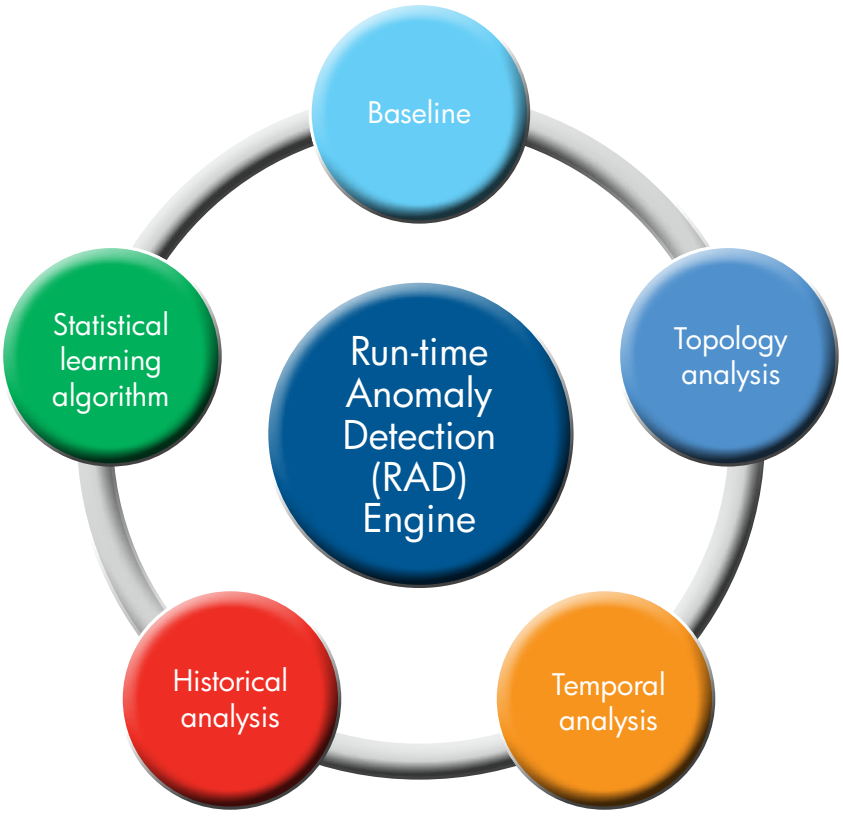

Figure 2: Automatic learning with SHA using the RAD Engine.

3

Anomaly DNA Technology

SHA has a unique capability to capture anomalies, store them in a database, and match new anomalies to those captured previously. This capability is known as Anomaly DNA Technology.

The DNA of an anomaly is characterized by:

- Multiple metric breaches: Metrics that have breached their baseline—this is also defined as "abnormal metric state"
- Temporal behavior: Information indicating that the abnormal behavior is not temporary
- Topology behavior: Information from the RTSM, connecting the configuration item (CI) relationships to the abnormal metrics

Anomaly DNA Technology correlates the abnormal metrics to the underlying infrastructure. Once the system defines an anomaly, it stores that information for later comparison by using the relationship information and abnormal metric state. If a match is found, the system can provide information on how to remediate the problem. Otherwise the event is suppressed and the original anomaly is marked as noise.

When an anomaly is detected, SHA automatically captures the current topology of the CIs involved in the event. This helps in understanding the topology as it was at the time of the anomaly—an especially valuable learning when reviewing anomalies that occurred overnight or when there were no on-call IT people to address the issues. SHA also collects and presents discovered changes for the relevant CIs so that the information can be used as a part of the root cause analysis.

SHA customer John McCarty from Sprint said, "The act of incorporating SHA was very simple. No configuration needed to get it up and running. That's unheard of in an enterprise solution, and it is hugely beneficial."

4

Run-time Service Model (RTSM)

SHA is built on an RTSM that empowers you with the knowledge of how your applications and infrastructure come together to deliver business services. Using the RAD Engine to identify real anomalies, SHA warns IT managers of potential service degradation before they affect the business. It analyzes the historical norms and trends of both your applications and infrastructure, and compares that data against real-time performance metrics.

Leveraging the RTSM is crucial for your dynamic environment, allowing you to:

- Identify lead suspects of the issue, so you can quickly determine the root cause, restore service, and reduce your mean time to repair
- Determine if the current anomaly you are seeing is a result of topology changes
- Compare the current anomaly to those seen in the past and leverage the knowledge used to resolve the issue to prevent similar issues in the future
- Understand the business impact of each issue and prioritize the resolution

5

Matching anomaly DNA

It is true that noise or false-alert investigations take up a good portion of your IT department's time. Anomaly DNA Technology is one of the key SHA components that helps warn your IT team of potential problems. With this patented technology, they can reduce the amount of noise or false alerts that come through.

Once the RAD Engine captures and stores the DNA of an anomaly, it makes the information available for matching, in order to do a proactive root cause analysis and help reduce noise.

The proactive anomaly DNA matching is essential because it reduces the mean time to repair IT events by presenting known solutions to a similar problem. It provides information on open tickets—which contain details on the root cause—and runs book information for immediate remediation, saving a complete investigation cycle. It also chalks an accurate and efficient method for determining the similarity between two IT anomalies, looks at an anomaly's structural DNA, and compares it with the known DNA of other anomalies. The matches provide known remediation actions without further investigation, while the matches that get marked as noise are suppressed.

Quick remediation of issues

When something does behave abnormally, SHA sends an event to an event management tool and initiates a set of automated workflows and remediation steps to fix the problem—for example, it may initiate automated workflows on a server or network device, or even redirect workload to a new provider. The workflow includes opening and closing of problem tickets, all in an automated fashion. SHA enables your IT department to automatically identify potential issues and solve them before they become a problem for end users.

Zero configuration, zero maintenance

As well as offering you the benefits of patented technologies that help anticipate, prevent, and remediate IT problems, SHA is a "plug and play" installation. There is no need for any configuration to set it up to begin obtaining valuable information. Most users can get SHA up and running quickly—an unusual feat for most large-scale deployments.

HP Services

Get the most from your software investment

HP provides high-quality software services that address all aspects of your software application lifecycle needs. With HP, you have access to standards-based, modular, multi-platform software coupled with global services and support. The wide range of HP service offerings—from online self-solve support to proactive mission-critical services—enables you to choose the services that best match your business needs.

For an overview of HP software services, visit www.managementsoftware.hp.com/service.

To access technical interactive support, visit Software Support Online at www.hp.com/managementsoftware/services.

To learn more about HP Software Customer Connection, a one-stop information and learning portal for software products and services, visit www.hp.com/go/swcustomerconnection.

Anticipate, prevent, and remediate with HP Service Health Analyzer today.

Knowing what IT problems you might be facing tomorrow helps you get them fixed today. To know what else HP Service Health Analyzer can do for your organization and its future, visit www.hp.com/go/sha.

Get connected

www.hp.com/go/getconnected

Get the insider view on tech trends, alerts, and HP solutions for better business outcomes

4AA3-7300ENW, Created October 2011