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THE OPTANIX PLATFORM: DELIVERING **SMART ANALYTICS**

IT USED TO BE EASY TO USE STATIC THRESHOLDS TO GET MEANINGFUL ALARMS SHOWING WHEN YOU WERE HEADED FOR NETWORK, SYSTEM OR APPLICATION PROBLEMS.

For example, sustained utilization over 75% was typically considered bad whether it was bandwidth, memory or CPU utilization, or a host of other things. However, with improvements in technology, today's devices and systems are capable of running at much higher capacities.

Nowadays, static thresholds often result in false alarms when set too low and missed problems when set too high. Both threshold issues create inefficiencies, and excessively high thresholds typically detect issues only after critical business services have already been impacted – and more widespread issues have occurred.

Manually determining which thresholds to set is no easy task either. You must track various metrics over time to figure out what normal looks like. Then there is the challenge of where to set the actual threshold. Let's use link utilization on link A-B as an example:

> *Link utilization on A-B typically peaks at 45% during normal business hours Monday-Friday but only 10% at night when the business has a reduced staff, except on Friday night when it spikes to 85% during scheduled data processing. What is the proper threshold for an alarm?*
>
> *Let's say it is set at 55%, which is 10% higher than typical peaks during business hours. Such a threshold will create false alarms every Friday evening during the weekly data processing, yet if something is wrong during the overnight shift and utilization spikes to 50%, no alarm is generated. Depending on what the issue is, utilization could spike even higher when more employees arrive in the morning, causing performance issues or outages. Then IT is under pressure to quickly solve a business service problem that could have been avoided had they just known about it the night before and addressed it then.*

Such an example illustrates that static thresholds are no longer a viable option. Rather, the best way to handle thresholds in today's IT environments is to take advantage of machine learning to find baselines and set dynamic thresholds based on time of day, day of week and other timeframes. This allows the management system to detect abnormalities instead of simply detecting specific levels on the metrics being monitored. For an even more effective approach, a platform that monitors rates of change could also do predictive analysis to give warning of impending problems, providing even more time for the operations staff to avert problems altogether.

Understanding what's "normal" and monitoring rates of change allows a modern platform to use predictive analysis to warn of impending problems, allowing the operations staff to avert problems altogether.

THE OPTANIX PLATFORM

The Optanix Platform provides predictive and proactive business service assurance across hybrid infrastructures, with actionable intelligence for prioritizing and addressing problems before they impact critical business services to protect revenue, improve customer experience and reduce IT costs. Smart Analytics determines what's "normal" then detects and alerts on deviations, enabling the IT team to proactively address problems before more widespread issues are created.

Smart Analytics looks at data over time to automatically create dynamic baselines that account for time of day and day of week. In addition to presenting these baselines in dashboards and reports, Smart Analytics also creates thresholds based on both deviation from normal and rate of change to drive accurate alerts for abnormalities. And building on top of those baselines and thresholds, Smart Analytics analyzes trends for predictive analysis and capacity management to warn of impending problems and capacity requirements. This predictive analysis is key to averting problems and providing uninterrupted, high-performing IT services.

HOW DOES SMART ANALYTICS WORK?

Smart Analytics determines what's "normal" then detects and alerts on deviations, enabling the IT team to proactively address problems before more widespread issues are created.

PREDICTIVE ANALYSIS

Predictive Analysis takes advantage of dynamic baselining and deviations from these baselines, plus abnormal rates of change, to make projections determining Mean Time to Threshold. If potential issues are impending, proactive alerts are created that allow IT to take steps to avert problems such as outages, performance degradations or loss of resiliency before critical business services are impacted.

- Predict impending problems and time to threshold, allowing issues to be remediated before business impact
- Predict impending loss of resiliency and remediate to ensure smooth business operation

CAPACITY MANAGEMENT

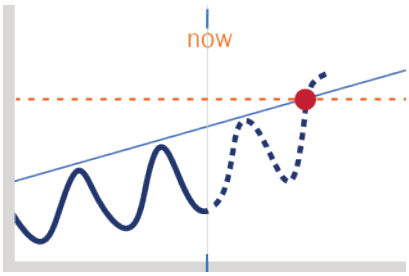
Capacity Management applies predictive analysis to capacity and also offers the ability to provide multi-part thresholds – such as reaching a specified capacity AND being a certain % above normal or increasing greater than the normal rate – to predict future capacity usage. Capacity planning information is available in dashboards and reports with predictive alerting for impending thresholds.

- Automatically predict future capacity usage based on normal baseline and rate of change, allowing for upgrades or changes to be made before problems occur

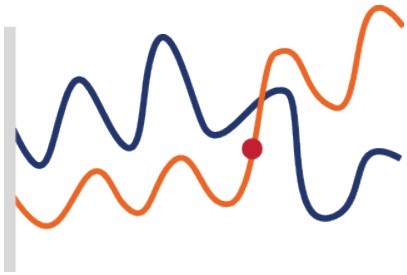
AUTOMATIC/DYNAMIC BASELINING

As the foundation for Smart Analytics, Automatic/Dynamic Baselining monitors statistics over time and automatically creates dynamic baselines that are always up to date, accounting for time of day and day of week. In addition to being viewable in dashboards and reports, the baselines are used to detect deviations from normal and abnormal rate changes (slope detection).

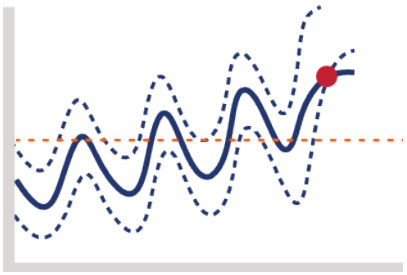
- Provide proactive service degradation alerts based on business services defined in BIM
- Detect deviations from normal vs. crossing static (often outdated) thresholds
- Visualize baselines and trends over time to see deviations from normal and mean time to threshold



Predictive analysis extrapolates the current trend over time and calculates the mean time to threshold – which is included in the predictive alert – providing more time for operations to avert a potential problem



Rate of change detection triggers an alert when the slope of the trend is abnormal, indicating a problem even though it has not yet crossed a threshold



Machine learning creates dynamic baselines over time, providing the foundation for alerts on deviation from normal or predicted deviation from normal

OPTANIX'S SMART ANALYTICS PREDICTS AND DETECTS ABNORMALITIES THROUGHOUT THE IT ENVIRONMENT

Smart Analytics detects deviations from normal and provides proactive and predictive alerts, enabling the IT team to address problems before they impact critical business services and cause more widespread issues. Smart Analytics provides the ability to:

- Predict business process degradations and failures to give IT operations time to rectify the situation before a service is impacted
- Predict loss of service resiliency to allow time to make modifications to avoid a single point of failure situation
- Predict future capacity requirements based on data and trends to ensure timely upgrades can be made to maintain service performance or to conserve and reallocate resources if usage is decreasing
- Detect deviations from normal and alert IT operations immediately instead of waiting for static thresholds to be crossed, at which point the service may already be impacted
- Eliminate reliance on outdated manual thresholds with dynamic thresholds discovered through machine learning to alert when true anomalies arise and avoid false positives
- Visualize baselines and trends in dashboards and reports for planning or troubleshooting purposes

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