

# Emergency Troubleshooting Service

## Customer Challenges

Your IT infrastructure is experiencing a serious outage, degradation of service or an unpredictable anomaly that is disrupting the level of service required by the business, the application, and/or the customer. High profile IT infrastructure failures are increasingly common with a significant number of documented major outages at government agencies, airlines, e-commerce sites and communications service providers. Beyond these highly public examples, there are dozens of undisclosed global 2000 IT departments having serious performance or availability problems related to their mission-critical storage networks at any given time. Failures are occurring during a period when IT staffing resources have remained flat or even decreased, compounding the problem. Most affected companies have engaged with their storage and switch component vendors to help solve these problems. But these vendors often struggle with the same issues, in part because they lack the granular instrumentation necessary to troubleshoot the root-cause across the entire datacenter infrastructure. This often results in weeks or months of delay to resolve problems.

## Emergency Troubleshooting Service (ETS)

VI responds immediately to the event by working with you to assess the situation, provide the necessary equipment, and rapidly deliver the expert staff and tools required to discover the issues that are affecting your service delivery levels. Designed for large enterprises running mission-critical applications struggling with infrastructure performance or availability issues, the Customer Success ETS relies on the award-winning Virtual Instruments VirtualWisdom analytics platform operated by Virtual Instrument's experts - the worlds most experienced infrastructure performance analysts. Included in the service, Virtual Instruments Professional Services personnel initially undertake remote assessment of the situation and then dispatch to the customer's site to install instrumentation software and hardware (Performance Assessment Kit) for data collection and analysis. These tools are the most advanced monitoring and analysis tools available. They are the same sophisticated tools used by leading SAN/NAS storage and switch vendors to develop and support their devices., and by 40 of the Fortune 100.

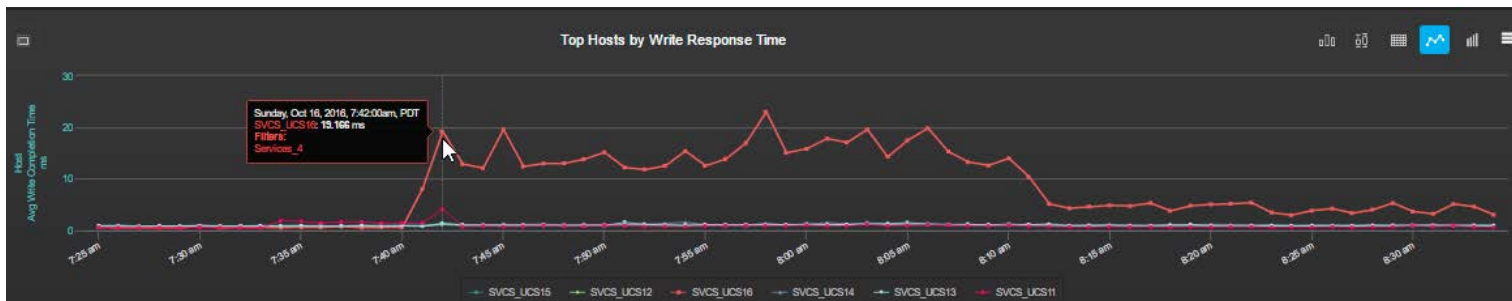
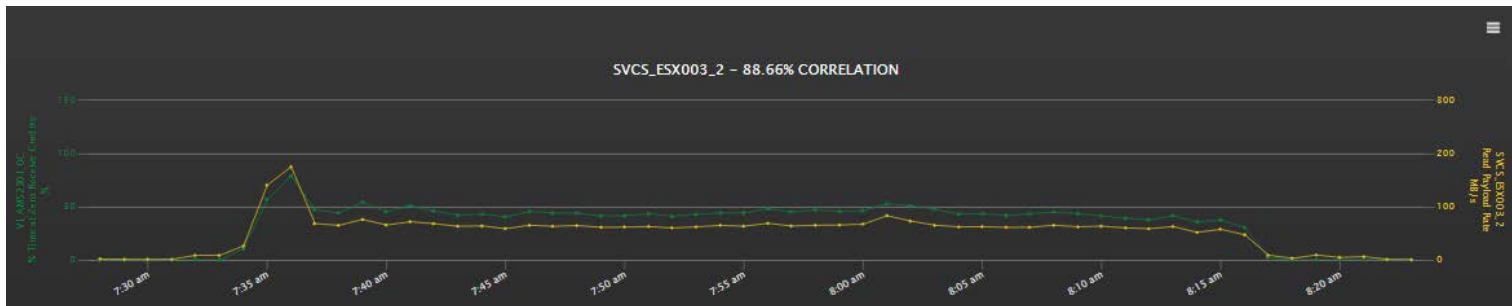
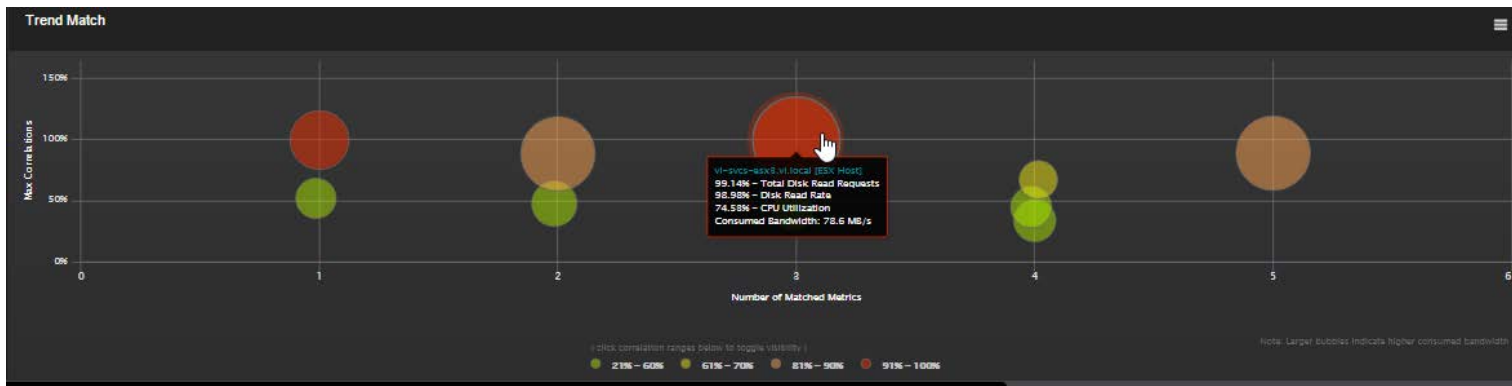
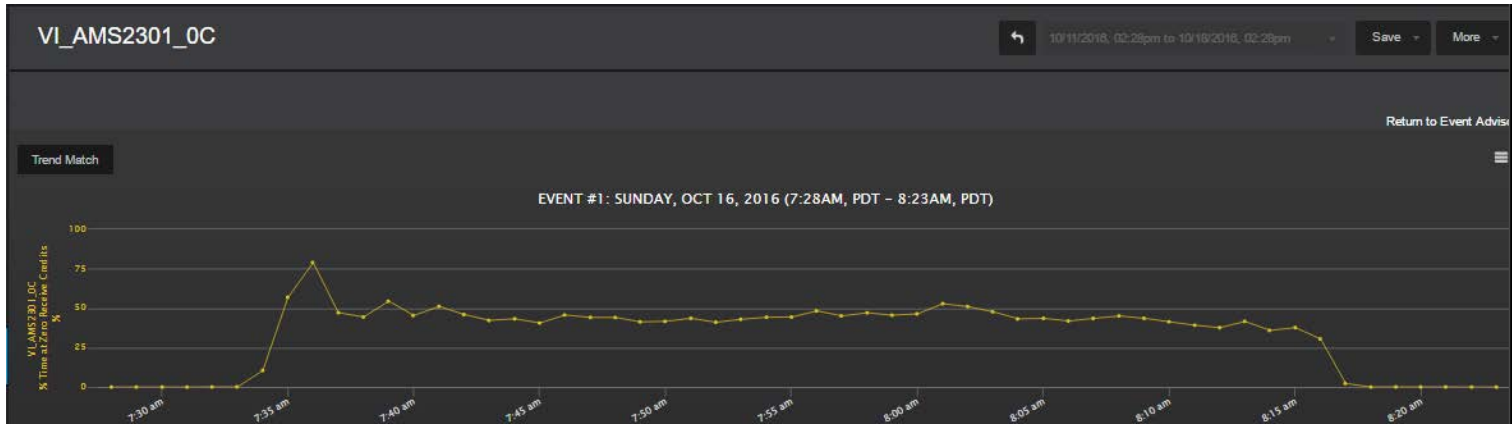
### Features

- Uses VirtualWisdom to measure & analyze infrastructure
- Operated by Virtual Instruments infrastructure performance analysts.
- Rapid deployment of service, typically within 24 hours
- Identifies performance and behavior anomalies and potential trouble spots
- Characterizes existing and potential SAN/NAS and Virtualized infrastructure issues by comparison to best practices
- Heterogeneous and vendor agnostic; provided unbiased view from the virtual machine to the LUN/filesystem to find performance issues

### Benefits

- Quickly identifies any SAN/ NAS or virtual infrastructure performance or availability issues; reduces typical troubleshooting time from weeks and months to hours or days
- Reduces risk by identifying evolving issues before they become problems that impact the infrastructure or application
- Immediate results — applications are back online at optimal performance levels
- Protects against revenue loss
- Ensure higher customer satisfaction

## Example of Determination of Root Cause:



The VirtualWisdom screenshots above show extracts of various performance findings that ultimately reveal the root cause - a "Flow Control" issue in the environment. Virtual Instruments performance experts leverage VirtualWisdom analytics to discover the correlation between Array AM2301 % Time at Zero Receive Buffer Credit metric and Host ESX002 Payload Rate metric. ESX002, a slow drain device, was causing the flow control issue impacting Host UCS16 write performance which was part of a completely different cluster.

The Virtual Instruments portable Performance Assessment Kit (PAK) is an integrated mobile unit that includes everything required to identify the root causes of Storage NAS or SAN performance and availability problems. This mobile unit can be easily moved from Virtual Instruments and between data centers due to its rugged, integrated design.



## Complementary Service - Critical Infrastructure Audit (CIA)

Acquiring the necessary visibility into the health, utilization, and performance of IT infrastructures—and guaranteeing overall performance and availability to support mission-critical applications—creates a complex set of challenges. It's extremely challenging to obtain a clear unbiased view by using vendor-specific tools. VI's CIA service delivers an accurate, unbiased view of the current state of your infrastructure for capacity planning, utilization, baselines and areas of potential optimization. The CIA offers:

- Highly accurate visibility into system-wide infrastructure
- Discovery and analysis of emergent problems
- Real-time performance information from the virtual machine to the LUN
- Quick identification of performance and behavior anomalies
- Recommendations for future actions
- ROI validation
- Infrastructure balancing and utilization
- Infrastructure consolidation based on capacity planning
- Application I/O profiling



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