Gartner

This research note is restricted to the personal use of tbone@xsnet.com

G00289873

IT Infrastructure Monitoring Tools: Best of Breed or a Suite?

Published: 27 October 2015

Analyst(s): Pankaj Prasad

IT infrastructure monitoring suites have broad, integrated functionality, and best-of-breed monitoring tools have deep, nonintegrated functionality. Choose an IT infrastructure monitoring suite to monitor a heterogeneous enterprise environment; use complementary functionality and tools where needed.

Key Challenges

- IT operations using legacy monitoring solutions are stuck with an array of tools, adding complexity to maintaining and managing data from these various tools.
- Most IT operations teams fail to get a holistic view of their IT infrastructure and end up working in silos.

Recommendations

I&O leaders should:

- Select IT infrastructure monitoring tools based on IT operations objectives and architectural goals rather than vendor hype.
- Increase awareness of best-of-breed tool challenges.
- Choose an infrastructure monitoring suite for a heterogeneous IT infrastructure environment, but be prepared to fill functionality gaps with best-of-breed products.

Table of Contents

This research note is restricted to the personal use of tbone@xsnet.com

This research note is restricted to the personal use of tbone@xsnet.com

Introduction

There is no universal IT infrastructure monitoring approach catering to all the requirements of an IT environment today. Infrastructure and operations (I&O) leaders need to understand when to invest in an IT infrastructure monitoring suite and when to build a portfolio of best-of-breed tools. This can only be done by understanding the strengths and weaknesses of both approaches in facilitating the desired outcome.

A best-of-breed monitoring capability involves an approach to monitoring where domain-specific monitoring tools are deployed with deep functionality, such as specific tools deployed for servers, networks and storage monitoring. A monitoring suite is essentially an IT infrastructure monitoring tool (see "Assess the IT Infrastructure Monitoring Tools That Are a Must-Have for Your Environment"), typically procured from a single vendor with broad and integrated functionality for monitoring the infrastructure as a whole. It can simplify vendor management and be commercially attractive; I&O leaders can look at this as a favorable option.

I&O leaders need to also consider the dynamics of the tool market. As technologies mature and the practices of monitoring are proven over time, features get consolidated in a single toolset. This provides better value when compared to a similarly priced individual product, since multiple features are now part of one offering. However, I&O leaders need to be prepared to compromise on some of the deep functionality that best-of-breed tools have. This trend can be seen in IT infrastructure monitoring tools with the capability of holistic monitoring across the IT infrastructure, including event correlation and analysis (ECA) capabilities.

Analysis

Select Your IT Infrastructure Monitoring Tools Based on IT Operations Objectives and Architectural Goals, Rather Than Vendor Hype

I&O leaders should consider holistic infrastructure availability and performance as the key goal. Long-term organizational plans are an important consideration when selecting monitoring tools (see Note 1 for a list of infrastructure monitoring tools). Other key considerations are the run-grow-transform categories of business and how IT is positioned in the larger scheme of things (see "Consider Fear-, Fact- and Faith-Based Investment Portfolios for Stakeholder Design of Digital Business"). I&O leaders should focus on an infrastructure monitoring architecture that places a high value on flexibility and is responsive to evolving technology trends. This will ensure they can meet future business demands with the best available technology, for the lowest price.

This research note is restricted to the personal use of tbone@xsnet.com

This research note is restricted to the personal use of tbone@xsnet.com

Given every approach will have pros and cons, there will be a tendency by vendors to focus on their positives and sway decisions based on their tool architecture, rather than on the organization's objectives and the overall infrastructure monitoring architecture. With IT infrastructure becoming modularized, a siloed organizational structure will cause the I&O organization to have siloed tools with overlapping functionality. The organization will face the challenge of integrating these tools for an end-to-end view of availability and performance.

With multiple siloed tools having overlapping capabilities, I&O leaders should ask: If a feature is not being used, why hold on to the tool? Is it for the comfort of having a capability that is used only once or twice a year, or probably not used at all? These questions can help drive tool consolidation.

I&O leaders need to weigh the pros and cons of each approach before deciding on the best fit for their organization:

- Best-of-breed tools provide deeper insight into particular IT infrastructure domains (such as network, servers, etc.) and take preventative measures for specific infrastructure components. However, lack of breadth can lead to challenges with, for example, integration and configuration.
- An integrated infrastructure monitoring suite may provide the breadth needed to monitor a heterogeneous environment, but may need to be complemented with best-of-breed tools in specific areas to enhance its value.
- With a suite, there is a possibility that vendors have built a solution through acquisitions. This can lead to integration challenges. Over time, the vendor may integrate the acquired solutions, rationalize their functionalities and enhance them with new functionalities. In some cases, vendors may have bought a platform that performs multiple functions in a more or less integrated way. Some of these products become complex over time, and IT organizations have difficulty managing and getting support for such tools.

The other challenges an IT organization has to deal with come with rapid changes in IT, where constant advances in technology are the norm. Infrastructure often expands beyond the capabilities of existing monitoring tools. Given this, the need for additional capabilities in existing tools or for totally new tools is not farfetched. Under these circumstances, the difficulties with a best-of-breed approach are more relevant, especially when building a business case for any additional tool, or during any tool-related planning exercise.

I&O leaders will need to address and think through the following:

- Justifying investment in any additional tools when necessary, especially due to an existing tool sprawl and to the possibility of basic functionality already existing in existing tools.
- Additional efforts to be accounted for in any planning exercise, since along with objectives, there is overhead in achieving compatibility with existing tools.
- Dealing with the trade-offs when replacing existing toolsets, which includes the budget needed to go through the entire exercise of scoping, shortlisting, procurement, planning, installing, testing and rollout for production use.

This research note is restricted to the personal use of tbone@xsnet.com

This research note is restricted to the personal use of tbone@xsnet.com

Organizations that already have a wide range of tools, or that are already working with these complexities, can fall behind in the effective and timely uptake of new and upcoming technologies, and lose their momentum.

Challenges With a Best-of-Breed Approach

Best-of-breed, siloed tools often tout deep infrastructure monitoring functionality as a key strength. System administrators, in some instances, may favor these tools due to this strength.

A few reasons why some I&O leaders prefer best-of-breed include:

- Fear of missing out on cutting-edge technology by not investing in best-of-breed tools
- Preventing vendor lock-in
- Benefiting from a particular feature not available in existing tools
- The attraction of a low-cost alternative when selecting a single tool, versus all tools at once

However, I&O leaders need to be mindful of using this approach across the enterprise. It can leave them with many challenges. Challenges with a best-of-breed approach include:

- Integrating multiple tools to provide end-to-end monitoring functionality across the infrastructure landscape; for example, integrating displays and user interfaces to provide a "single pane of glass" view.
- Having to deal with version compatibilities across various toolsets.
- Normalizing data across tools.
- Managing complex correlation rules across various tools.
- Dealing with the impact of a configuration change across various tools.
- Managing upgrades and/or procuring new tools from multiple vendors, leading to vendor management challenges.
- Maintaining the interfaces across various tools, which leads to additional overhead.
- Ending up with tool sprawl with overlapping capabilities.
- Assessing overlapping data from disparate tools and determining which one to use as a source of truth.
- Maintaining documentation, which leads to additional overhead. Dealing with issues involving multiple infrastructure domains will increase troubleshooting time, as well as delay and increase the difficulties in arriving at root cause analysis (RCA).

Most vendors change the architecture of the tools over a span of two to four years. This brings on additional complexities with upgrades, configurations and interfaces with other tools. This scenario is comparable to rolling out a new tool.

This research note is restricted to the personal use of tbone@xsnet.com

This research note is restricted to the personal use of tbone@xsnet.com

Choose an Infrastructure Monitoring Suite for a Heterogeneous IT Infrastructure Environment, but Be Prepared to Fill Functionality Gaps With Best-of-Breed Products

Assume a case where all servers are virtualized and hosting one type of operating system. In this case, deploying a monitoring solution specific to the OS and virtual system will be beneficial. However, a homogenized IT infrastructure is a rare scenario. Given that most organizations have a heterogeneous IT infrastructure with diverse hardware and operating systems, I&O leaders must look at an IT infrastructure monitoring suite for availability and performance monitoring.

An IT infrastructure monitoring solution that consists of separate tools for servers, networks, storage, database and further segregation into OS-specific monitoring tools will be an administrative nightmare for the I&O leader, especially with the grow-and-transform initiatives of the organization. A tool sprawl due to multiple segregated tools will slow down the IT operations in an organization. This will inhibit the organization from being a differentiator, especially with digitalization and agility being adopted across IT organizations.

The other factor is modularization of IT, as opposed to 10 years ago when a single, monolithic system hosted the database and application. Performance of the server in this scenario was a good indicator of the overall health of an application or service. That is no longer the case; in many instances, an n-tier application is hosted on n different infrastructure components. A holistic view better serves the organization by providing a single view across all these infrastructure components. Thus, checking for availability and performance issues will need monitoring and correlation across all those components.

While an IT infrastructure suite is beneficial, I&O leaders should also plan to complement it with end-user experience monitoring (EUEM; see note "Survey Analysis: End-User Experience Monitoring Is the Critical Dimension for Enterprise APM Consumers"). Though not all infrastructure monitoring tools offer the insight into EUEM, it is key to understand that infrastructure monitoring tools are needed for troubleshooting, in case any end-user issues are identified or performance improvements are planned. These tools also provide the granular metrics that will provide I&O leaders the visibility regarding changes in the IT environment, and whether these changes have a positive or negative outcome.

To fulfill the needs of EUEM or for deeper insight into network monitoring — especially communications — specialized tools are needed. Application performance monitoring (APM), network performance monitoring and diagnostics (NPMD) or unified communications (UC) monitoring tools are a good fit (see "IT Market Clock for IT Infrastructure Availability and Performance Management, 2015," and see Note 1 for a sample list of vendors). I&O leaders should look at best-of-breed products under APM, NPMD or UC monitoring tools for filling in the gaps. With advances in analytics, IT operations analytics (ITOA) tools (see Note 1) are providing the capability of correlating data and providing a single view across various monitoring tools.

To select monitoring tools, I&O leaders should:

This research note is restricted to the personal use of tbone@xsnet.com

This research note is restricted to the personal use of tbone@xsnet.com

- Examine existing infrastructure monitoring architecture and implementation, and determine which areas need to be complemented by a best-of-breed tool. Ease of integration of this tool is one of the criteria that must be considered.
- Look at the option of the existing infrastructure monitoring suite vendor providing new integrated functionality in a desired time frame.
- Consider a best-of-breed tool selection as a one-off decision that needs to be made for agility — remember, avoiding tool sprawl is one of the main goals.
- Consider the option of migrating to a SaaS suite from a vendor that can provide existing capability and functionality, including industry best practices, and is also able to provide rapid provisioning of new functionality.

Acronym Key and Glossary Terms

APM	Application performance monitoring
ECA	Event correlation and analysis
EUEM	End-user experience monitoring
ITOA	IT operations analytics
NPMD	Network performance monitoring and diagnostics
RCA	Root cause analysis
UC	Unified communications

Gartner Recommended Reading

Some documents may not be available as part of your current Gartner subscription.

"Assess the IT Infrastructure Monitoring Tools That Are a Must-Have for Your Environment"

"Hype Cycle for IT Infrastructure Availability and Performance Management, 2015"

"IT Market Clock for IT Infrastructure Availability and Performance Management, 2015"

"IT Operations Leaders Must Use a Structured Approach When Deploying Server Monitoring Tools"

"When Should I&O Leaders Opt for Agent-Based and Agentless Monitoring?"

"How I&O Leaders Can Determine Whether SaaS-Based Infrastructure Monitoring Is Right for the Organization"

"Toolkit: RFP for IT Infrastructure Monitoring Tools"

This research note is restricted to the personal use of tbone@xsnet.com

This research note is restricted to the personal use of tbone@xsnet.com

"Data Growth Demands a Single, Architected IT Operations Analytics Platform"

Evidence

Client interactions related to infrastructure monitoring during the past two years have shown that approximately 40% of the interactions involve tool and vendor evaluations.

Note 1 Sample Lists of Vendors

IT Infrastructure Monitoring Suites:

AccelOps; AppFirst; BMC Software; CA Technologies; Centerity; Datadog; GroundWork; HP Enterprise; IBM; ManageEngine; Nagios; op5; Paessler; ScienceLogic; SolarWinds; Virtual Instruments; Vistara; Zenoss

NPMD Tool Vendors:

AppNeta; Automic (Orsyp); Cisco; Corvil; Fluke Networks; Genie Networks; InfoVista; JDSU (Network Instruments); NetScout Systems; Niksun; Riverbed Technology; SevOne

ITOA Vendors:

Elastic (Elasticsearch); Evolven; ExtraHop Networks; Jut; Moogsoft; Prelert; Splunk; Sumo Logic; XpoLog

APM Vendors:

AppDynamics; Dynatrace; JenniferSoft; Nastel Technologies; New Relic; Riverbed Technology; Tingyun

Unified Communications Monitoring Vendors:

7signal; AudioCodes; Empirix; Integrated Research; Ipanema; IR Prognosis; Nectar; NetIQ; Tone Software; Unify Square; Voipfuture

This research note is restricted to the personal use of tbone@xsnet.com

This research note is restricted to the personal use of tbone@xsnet.com

GARTNER HEADQUARTERS

Corporate Headquarters
56 Top Gallant Road
Stamford, CT 06902-7700
USA
+1 203 964 0096

Regional Headquarters
AUSTRALIA
BRAZIL
JAPAN
UNITED KINGDOM

For a complete list of worldwide locations,
visit http://www.gartner.com/technology/about.jsp

© 2015 Gartner, Inc. and/or its affiliates. All rights reserved. Gartner is a registered trademark of Gartner, Inc. or its affiliates. This publication may not be reproduced or distributed in any form without Gartner's prior written permission. If you are authorized to access this publication, your use of it is subject to the Usage Guidelines for Gartner Services posted on gartner.com. The information contained in this publication has been obtained from sources believed to be reliable. Gartner disclaims all warranties as to the accuracy, completeness or adequacy of such information and shall have no liability for errors, omissions or inadequacies in such information. This publication consists of the opinions of Gartner's research organization and should not be construed as statements of fact. The opinions expressed herein are subject to change without notice. Although Gartner research may include a discussion of related legal issues, Gartner does not provide legal advice or services and its research should not be construed or used as such. Gartner is a public company, and its shareholders may include firms and funds that have financial interests in entities covered in Gartner research. Gartner's Board of Directors may include senior managers of these firms or funds. Gartner research is produced independently by its research organization without input or influence from these firms, funds or their managers. For further information on the independence and integrity of Gartner research, see "Guiding Principles on Independence and Objectivity."

This research note is restricted to the personal use of tbone@xsnet.com