Tools for Monitoring Complex Applications across the Enterprise

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Customers demand consistent, quick response time. Unfortunately, physical assets like storage or networking can fail. And even when using best practices, software can be implemented with bugs. To minimize the impact of these issues, monitoring tools allow organizations to quickly identify and react to issues; the most prized capability being able to predict and prevent outages.

Choosing the right tools is imperative. Most layers in an enterprise stack (networking, middleware, server and database) have their own monitors. While these are adequate for a specific layer, it often requires people from many departments with their own monitoring tools working together to solve a problem. Another alternative is for a few people in a centralized team learn many disparate tools. These approaches are not optimal. Therefore, there has been a growth of tools that span across the enterprise. These advanced tools can not only pinpoint where an issue is, but also show how the transaction traversed various layers. Often it is hard to know if the items flagged by a monitoring tool are the cause of the issue or the result. Having this multi-layered capability shows how an issue on one layer can lead to issues on another, resulting in a quicker identification of the cause.

When choosing an enterprise monitoring tool it is important to know the tool's core approach, whether it is top down or bottom up. The top down approach takes events and relates them to business processes. One example is "logging in", or "clicking on an update button" in a particular application. Some tools make the user define these, resulting in extra time and the possibility of missing key steps. Others are more liberal, automatically pulling in everything and allowing you to group activity by the user's actions it detects. Tools that are good at this top down approach are useful in finding chronic issues, such as network latency, poorly designed SQL and improper architecture. A long history of events may be key in identifying the problem. Another benefit of this approach is that after an issue is complete determining the actual impact to the business is easier. Often internal and external stakeholders will ask for details around the scope and duration of any outage. Without a top down tool this can be difficult and time consuming.

The bottom up approach is useful for dealing with acute issues. The system can go from running smoothly to a halt in minutes. Examples would be a disk failure, a bad network card or backed up messages in a queue. Rarely is there time to drill down through business processes to determine the issue. Bottom up solutions will look at key measures like thread counts, memory thresholds and queue sizes and automatically warn of an issue. They can often let you know of an issue before the users are aware of it. As with the top down, some tools make you define these which can be time consuming. Tools that apply these rules automatically can save time and make sure items aren't missed.

Finally look at a tool's ability to export data into external data sources such as a Hadoop ecosystem that will allow you to run elastic type searches, mine data, find relationships and correlations that may not be seen with the naked eye.

Choosing the right tool is key in being able to predict, quickly react, identify business impact and prevent future issues. When working with vendors ask them how they would identify both chronic and acute issues. Also ask about the configuration time required when setting up the monitoring. Ask about exporting data and solutions they may have in looking for correlations. These steps will help you get the most out of the money you are spending and result in happier customers.