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Control of your applications

This application note gives an overview of how to monitor and identify problems directly related to your central applications using op5 Monitor and op5 Log Server.

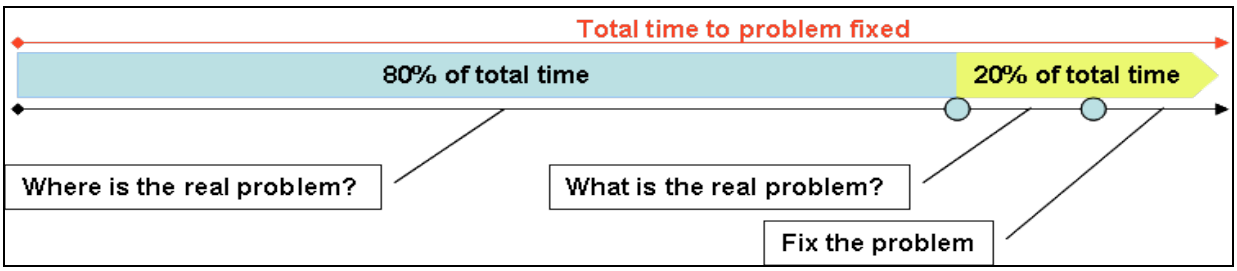
A basic understanding of the actual challenge is the key to successful and effective application monitoring and can be summarized in one question:

"Why is the application X not performing according to our business needs / the promised performance?" (this is a scale from a 100% down application to a situation with unacceptable response time or when incorrect data is produced).

Introduction

Trying to list the applications that cause the most problems is an impossible task and all organizations have their own lists of "key applications" to support their business needs. However, taking a pure quality uptime perspective makes this task greatly simpler. The core challenge of increasing uptime is to limit downtime. To limit downtime we need to look into the details:

The picture shows that at least 80% of the time fixing a problem is focused on identifying where the actual core problem is. Once we have identified where and what, then the solution is very often quite simple.



Modern IP based applications vs. old legacy system applications

In the old days applications were confined to one or multiple similar closed systems. This created a need for extremely detailed information on the particular single application. It was common practice to monitor hundreds or even thousands of highly specific data in each application and by that assuring 100% control of the single system.

Looking at today's IP based applications they are fundamentally different, both in there architecture and in the design in which they are implemented. The applications are built up by many sub applications and together they provide the organization with the IT systems needed.

To prove our claim is simple – take any modern system from any vendor today and install it on a single system without connecting it to anything. We can almost guarantee full uptime for many years to come! The problem is that you will have no use of such an "off line" system – it needs to be connected to many of your other systems - and connected with quality!

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Addressing the challenge from a two way approach

op5 Monitor uses multiple parallel monitoring to assure performance and functionality on your applications. They can be divided into four categories:

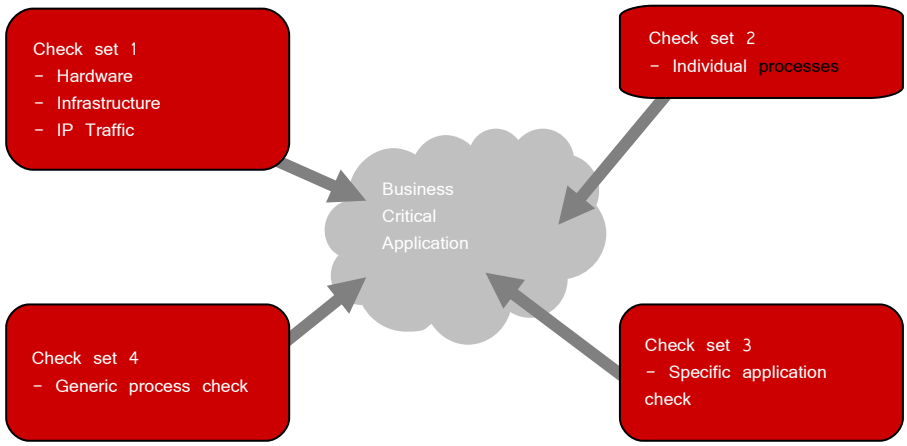
1. Check that the underlying hardware/infrastructure is in normal operational status.
2. Check that the included processes in the applications are functioning normally.
3. Do specific checks on the functional status of the different programs.
4. Do generic process checks that will show you the overall performance of a complete function.

1 - Hardware/infrastructure checks
A slow fan, an almost full disk, a broken RAM, a congested LAN or WAN connection will all greatly impact on any applications' performance and function.

2 – Included processes
Simply checking that IMAP process, the POP3 process, the NDS Process etc. are operational and running is a must to know that the general application will work properly. This applies to both the system and user perspectives.

3 – Specific Checks
op5 Monitor has a rich set of specific application checks for different purposes. In general they all have a common purpose of initiating an action/query>check the response>measure the overall transaction time. Examples of these specific checks are for Databases (MSSQL, MYSQL, Oracle etc), Citrix, Email /Exchange etc. For a complete list please contact us.

4 – End to end service/application checks
As a complementary way to assure full quality we can also create complete standard based scripts for a fixed process containing multiple steps. As an example: testing an extranet order application the op5 Monitor can access the extranet with a username and password, get confirmation that the authentication system is operational, place a dummy order, get the order acknowledgment back, read the order to see that it is OK and finally time the complete transaction. This test is executed every 3 minutes and will tell you that the application is functional from a 100% end user perspective.



Many too many checks

The "Business critical application" is on purpose drawn as a cloud as it is a mesh of different objects that together builds the overall application.

The key point in our solution for monitoring applications is the need to check and measure the overall performance from all four angels to assure quality uptime.

In order to reduce downtime it is imperative see this complete picture. This enables you to directly identify the root problem when a service / application is malfunctioning.

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op5 Service group view of the generic “Mail service”

In order to secure quality on this Email service the op5 system checks from all angles:

- The necessary infrastructure
- The servers
- The necessary DNS
- The WAN & LAN
  - The IMAP, POP3 and SNMP service

Status Grid For All Service Groups

Services related to Email (Email-servicegroup)

Host	Services	Actions
qbg-dsl	PING	
qbg-router1	Ethernet0 - Mot Song DSL Errors Ethernet0 - Mot Song DSL Status Ethernet0 - Mot Song DSL Traffic PING	
ns.op5.se	DNS	
ns2.op5.se	DNS	
pop3-gw1	Disk usage / Disk usage /var IMAP POP3 System Load	
smtp-gw1	Disk usage / Disk usage /var Email Loop SMTP System Load	
sth-dsl	PING	
sth-router1	Ethernet0 Errors Ethernet0 State Ethernet0 Traffic PING	

Any errors or quality degradation will automatically generate an alarm and clearly show if it affects the general application Email.

Automatic SLA follow up and reports

A direct control of your application performance in a specific SLA/uptime fashion is directly available over a simple web access. These reports can further be configured to be automatically generated as weekly or monthly, and distributed directly from the op5 system via email keeping all resources informed.

Adding op5 LogServer to application monitoring

Logs in general are often considered to be the most granule source of detailed data. The best part is that it is already there and in your IT systems today. The worst part is that it contains so much data and is distributed out over a wide range of devices to make it almost impossible to use for day to day application monitoring.

Applying op5 LogServer addresses key challenges:

- Centralizes all logs from all environments into one central storage
- Enables smart and easy to use filter management
- Takes huge amounts of data and quickly turn it in to usable and valuable input for your application monitoring.

The op5 LogServer handles all logs from applications, hardware and traffic devices. By that it gives an extremely detailed view of an incident from all angles.

Using smart filters that can determine specific events on this very detailed level triggers automatic alarm notification to the op5 Monitor system. The op5 Monitor system then notifies the responsible person or group about the incident based upon the logs.

Another key value point of using logs to trace and monitor applications is that you will never be “out of date” as the log information (i.e. the actual information sent in the logs) is always automatically upgraded when your system is upgraded as the logs are created by the application vendor.

Summary

op5 Monitor adds the most important part of monitoring today to modern applications – the overall view. Adding op5 LogServer enables quick and very granule data to the source of quick and accurate proactive monitoring. It is all done using open and standard based formats and tools.

For further information please contact us on +46-8-23 02 25 or info@op5.com, www.op5.com