

Monitoring Application Service Performance – Classification and Analysis of Existing Approaches

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Abstract

Besides agreements about Quality of Service, one of the major prerequisites for successful application service provision are means to monitor the fulfillment of those agreements. This paper presents a classification and a criteria-based rating of existing approaches in the area of application performance monitoring.

A typical scenario covering all important roles and entities is used for a top down analysis of the requirements for service and application performance monitoring. The most prominent requirements are measurement of service-oriented parameters as actually perceived by the user, availability of in-depth information to identify the root causes of malfunctions, minimal effort and performance impact as well as real-time monitoring and general applicability.

In recent years a number of approaches to application performance monitoring have evolved. To alleviate evaluation of specific techniques, a classification gained from a survey of currently existing solutions is introduced. The measurement of performance parameters can either take place at the application itself or in the infrastructure (both at the network and the systems). When measuring the application itself, approaches that solely focus on the client-side of the application can be distinguished from those taking into account the application as a whole.

Evaluating these techniques using the requirements derived before leads to the overall result that current techniques are not sufficient to solve today's service management problems. Most approaches simply cannot deliver the data needed for a service- and thus customer-oriented supervision. The more suitable techniques suffer from high complexity and therefore are hardly used. In our opinion, means to deal with the complexity and efforts of application instrumentation are the reasonable way to effectively improve today's situation.

Keywords: Application Performance Monitoring, Service Performance, Application Service, Quality of Service

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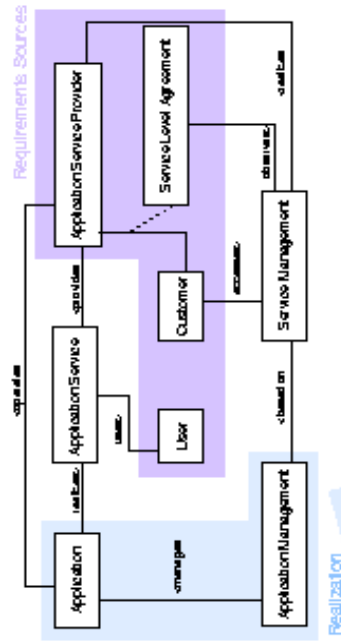
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Scenario: Application Service Provision



Requirements

- ▷ Service-oriented parameters
- ▷ Actual user experience
- ▷ In-depth information
- ▷ Minimal effort
- ▷ Minimal performance impact
- ▷ Real-time monitoring
- ▷ General applicability

Requirements Analysis (Top Down)

Rating

Techniques	Requirements	Service-oriented parameters	Actual user experience	In-depth information	Minimal effort	Minimal performance impact	Real-time monitoring	General applicability
Application-wide monitoring	Application instrumentation	++	++	—	+	++	o	++
Client-based application monitoring	Application description	o	o	—	++	++	++	++
	Synthetic Transactions	+	—	+/+	—	++	++	++
	GUI-based Monitoring	++	—	—	++	++	—	++
	Monitoring of system parameters	—	o	o	++	++	++	++
	Monitoring of network traffic	-o	—	—	o+	—	—	++

Examples:
ARM, AC
AMS
GW-TB, Intra-XS, Jysa In-Site
Candle ETBWach
HP PerfView
CompuWare EasSCOPE, Applude Meter Flow

