

## **SARS RFP 16-2020**

# **PROCUREMENT OF AN APPLICATION PERFORMANCE MONITORING SOLUTION INCLUDING MAINTENANCE AND SUPPORT SERVICES**

## **BUSINESS REQUIREMENTS SPECIFICATION**

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**Business Requirements Specification****PROCUREMENT OF APM SOLUTION**

This document forms part of the APM (Application Performance Monitoring) Solution RFP pack. The document sets out the business requirements that SARS has for the procurement of an APM Solution.

This document and any appendices must be read in conjunction with all other documents in the RFP pack. Such documents may contain further requirements that must be considered by the Bidder in compiling a proposal. The Bidder is referred, in particular, but without limitation to the following documents in the RFP pack:

- *RFP Main Document*
- *Application Performance Management Agreement*

The *Application Performance Management Agreement* sets out the provisions of the agreement under which SARS intends contracting with the successful Bidder(s).

**1 USAGE OF TERMS IN THIS DOCUMENT****1.1 References to Other Documents in the RFP pack**

Underlined and italicised names are references (or short names) to other documents in the RFP pack. The Bidder is referred to the *RFP Main Document* for the table of documents and their short names.

**1.2 Glossary Table**

The terms in this document appearing in the glossary table below will have their corresponding meanings. The Bidder is referred to the *RFP Main Document* for the use and meaning of capitalised terms generally in the RFP pack.

<b>Term</b>	<b>Meaning</b>
AD	Active Directory
ADTD	Application discovery, tracing and diagnostics
AI	Artificial intelligence
AIOPS	Artificial intelligence for IT operations
API	Application Programming Interface
APM	Application performance management
AWS	Amazon Web Services
Azure	Microsoft's public cloud computing platform
Bidder	Prospective Service Provider who submits a proposal in response to this RFP
Business Days	All days that are not Saturdays, Sundays or public holidays.
Business Hours	8:00-17:00 on Business Days.
CD	Continuous Delivery
CI	Continuous Integration
CICS	Customer Information Control System
CPU	Central Processing Unit

DevOps	Practices and tools that combines software development (Dev) and IT operations (Ops).
IBM MQ	IBM Message Queue or IBM Integration Bus (IIB)
ITOC	Information Technology Operations Centre
LPAR	Logical partition
ML	Machine language
OEM	Original Equipment Manufacturer
SARS PPS&G	SARS Policies, Procedures, Standards and Guidelines
SP	Service Provider
UI	User Interface

### 1.3 Mandatory and Directory Requirements

Bidders are advised to read the business requirements as set out in this document with care. Where SARS has specified a mandatory requirement, (i.e. where the business requirement, by the context; presence of verbs such as 'must'; 'will'; 'shall' etc.; or explicit instruction indicates that it is mandatory) the Bidder must build and price its solution accordingly. If a proposal fails to meet or does not address a mandatory requirement, the proposal may, at SARS's discretion, be disqualified at any stage of the evaluation process as being non-responsive.

Directory requirements (i.e. where the business requirement, by the context; presence of verbs such as 'may'; 'should'; 'can' etc.; or explicit instructions indicate that it is directory) are requirements that SARS does not regard as mandatory.

## 2 BACKGROUND

SARS's mandate under the South African Revenue Service Act 34 of 1997 includes the collection of all revenues that are due, ensuring maximum compliance with revenue legislation and providing a customs service that will maximise revenue collection, facilitate trade and protect the borders of South Africa. SARS's vision is to be an innovative revenue and customs agency that enhances economic growth and social development and supports South Africa's integration into the global economy in a way that benefits all citizens. SARS strives to exercise its mandate in an efficient and cost-effective manner.

SARS has made investments in various infrastructure monitoring and management solutions and it is possible to identify whenever a network device is no longer available on the SARS network.

These however do not provide a real-time end-to-end map based view of the entire landscape (Network, Operating System, Middleware, Database or even bad code) that enables the organisation to determine the health of its ICT infrastructure at any point in time, nor does it assist to effectively identify the root cause of degraded performance due to underlying errors. The most significant lack in SARS is the inability to baseline and understand end user experience and the associated business impact.

Furthermore, the current tools do not speedily pinpoint application problems that result in service degradation. This led to expanded technical and human resource deployments in order to maintain expected service levels.

## 3 GENERAL REQUIREMENTS FOR THE SOLUTION

The solution proposed by the Bidder must at least meet the following requirements.

The APM solution must:

- support Front-end monitoring, Application discovery, tracing and diagnostics (ADTD) as well as have Domain-centric AI and ML capabilities
- be provided as an on-premise solution or as a private cloud solution for the full duration of the term
- be managed via a user interface that is rich, fast, versatile, and intuitive, with drill-down capabilities. If multiple UI options exist (such as browser and thick client), the same must apply to both. Where a user needs to configure any part of the system (for example to configure an agent on a particular host), either during installation or maintenance of the monitored host, then such configuration changes must also be achievable through an intuitive UI rather than the editing of configuration files
- be almost maintenance-free, with automated routine activities and capabilities to automatically apply patches and upgrades
- provide solid automation capabilities during implementation, to provide results from day one. Such auto-instrumentation capabilities must be available for both on premise hosts as well as cloud computing platforms such as AWS and Azure. It must furthermore include the automatic instrumentation of the host and the application processes (including for JAVA/.NET programs).

### 3.1 Product Positioning

Bidders are invited to offer their perspectives on the future evolution of the APM and AIOPS and should seek to inform SARS of their current and future research and development interests. These perspectives must be provided in the format requested in the Technical Template

Bidders should demonstrate their approach followed to provide support services related to the proposed solution as well as their plans to advance the support services during the term of the agreement

Bidders should also provide SARS with information on any vendor provided or independent forums that exists for knowledge sharing amongst its customers for the proposed solution

Bidders must have a clear, shared product vision which align with expected industry, local and international, market and technology trends

Bidders should have the required industry accreditations and conform to the industry standards for the proposed solution offering

### 3.2 Support and Services

The SP should be able to provide local support for the proposed solution

The SP should have certified support engineers that are proficient in supporting the proposed solution. Additional certified support engineers may be contracted by the SP from other local vendors, suppliers, distributors and/or service partners

The OEM should be able to provide online and telephonic support

The Bidder must be able to demonstrate its ability to provide support for the proposed solution for a company of similar size to SARS based on the number of hosts monitored for the company. Please see Section 4 (Technical Solution Requirements) for an overview of the technical landscape.

### 3.3 License models

The Bidder must provide the solution on a subscription license model basis for the full duration of the contract term

The contract will be paid on an annual basis irrespective of the contract term

The price provided must clearly indicate the specific costs associated with each component of the solution

### 3.4 Implementation services

The following implementation services must be provided as part of the solution:

- The SP must implement the solution and obtain SARS sign-off to confirm the solution was implemented in accordance with and meet the SARS tender requirements
- The implementation will be for 20 monitored hosts of SARS choosing, where each of the hosts will be required to be fully monitored
- Additionally, the implementation will include log file monitoring for at least one host. Real user monitoring must be included for each host that is a Web Server
- The implementation will also require demonstrating synthetic user monitoring for at least one synthetic agent
- SARS could request the SP to provide additional implementation services on a time and material basis
- The SP must provide SARS with detailed design and installation procedures documentation and obtain SARS sign-off on the documentation as part of the implementation services
- The Bidder must as part of the tender response provide SARS with a detailed project plan on how they will go about to install and implement the solution, including an indication of the timelines and resource allocations
- The SP must upskill identified SARS resources as part of the implementation services to enable SARS to implement the solution for other SARS business processes thereafter with minimal support from the SP.

### 3.5 Maintenance and Support services

The SP must provide world class local support backed by OEM support as can reasonably be expected for a monitoring solution of this nature. It is SARS' expectation that the SP at all times act in the best interest of SARS. The following maintenance and support services must be provided:

- **Standard Services**

The below listed services are the minimum Support Services required by SARS.

- The Bidder must include 100 hours onsite support services per year in the base price.
- The OEM must provide for unlimited online support (e.g. chatbotz, online chat) on a 24X7, 365 days basis in the base price.

- **Service Level and Service Coverage Period based Services**

The SP or the OEM (facilitated by SP) must provide maintenance and support services for incidents and problems during the support services hours in line with the then contracted Service Coverage Period and severity of the incident and problem logged.

- Service Coverage Period

The Bidder must provide SARS with the flexibility to contract on support service hours base on SARS support requirements during the term.

The support service hours will be defined by the Service Coverage Period contracted by SARS for a specific period during the term. SARS may change the Service Coverage Period during the Term with 30 (thirty) days' notice.

The Service Coverage Period could either be Basic, Standard or Extended and will always have the meaning set out in the following table:

Service Coverage Period	Period Covered
Basic	8:00 to 17:00 on weekdays regardless of whether the weekday falls on a public holiday or not.
Standard	8:00 to 17:00 on all days, including Saturdays, Sundays.
Extended	24x7x365 (at all times).

- Service Levels

Incidents and problems logged with the SP will be classified into the following service level categories that will require the SP to respond within the below stipulated timeframes:

Severity Level	Description	Response Time	Resolution Time
Severity Level 1 (Extensive / Widespread)	An incident or problem has occurred where (i) the SARS' production monitoring server are down; or (ii) SARS' business operations have been severely disrupted; or (iii) an issue in which the product causes the customer's network or system to fail catastrophically or that compromises overall system or data integrity when the product is installed or when it is in operation, and in each of the foregoing situations (i) through (iii), no Workaround is immediately available.	30 min	2 Business Hours
Severity Level 2 (Significant / Large)	An incident or problem has occurred where a major functionality is severely impaired. SARS' operations can continue in a restricted fashion, although long-term productivity monitoring might be adversely affected.	4 Business Hours	6 Business Hours
Severity Level 3 (Moderate / Limited)	An incident or problem has occurred where there has been a limited adverse effect on SARS' business operations.	8 Business Hours	16 Business Hours

The Service Provider will classify an incident or problem in accordance with the SARS' then-current impact and urgency classifications. The classifications which are applicable at the Effective Date are set out below. If there is a disagreement between the parties as to the severity level that should be assigned to an Incident, the severity level will be determined by the SARS.

### 3.6 Accountability

SARS requires a single, accountable SP to deliver the desired solution. The SP is allowed to partner with other service providers and/or the OEM, however such arrangements will be regarded by SARS as the internal operations of the SP and the SP will remain fully accountable for all aspects of the solution, including meeting the Service Levels.

### 3.7 Variation

SARS will retain the right to vary the number of licenses to be renewed before and during the term of the contract. Including the reduction of licenses as and when needed.

### 3.8 Procurement

Due to envisaged growth and expansion in the future, SARS requires the option to procure new licenses or to reinstate licenses (procured previously) as part of this scope of service.

### 3.9 Non-Exclusivity

SARS will retain the right to source any part of the scope of services from other service providers during the term or to provide a part of the scope of services itself.

### 3.10 Training

The SP must be able to provide formal classroom and/or online training to SARS user and technical staff (Specialists). As and when required by SARS, the SP may be required to provide ad hoc user and/or technical training, for example, as part of a project.

A minimum of 15 days per annum training for SARS User/Operational and specialist staff must be included in the base price.

### 3.11 Consulting

The SP must provide SARS with ad hoc advisory services related to the services, including advising and recommending on software updates, continuous improvements and possible technological enhancements at no additional cost to SARS.

Formal consulting assignments may be engaged on a paid-for basis. Formal paid-for consulting assignments will only be provided on written authorisation by SARS to the SP. The Bidder must provide rates for all levels of skills, which may be required on a consulting basis during the term of the contract. Consulting services will be provided in line with the rates as provided in the Bidder response.

### 3.12 Processes, Procedures, Schedules, Work Practices

The SP is required to comply with the SARS processes, procedures, schedules and work practices provided to the SP by SARS.

### 3.13 Service Level Requirements



It is of critical importance to SARS that the SP provides the services in a way that meets or exceeds the Service Levels. The services to be rendered are categorised as services relating to the APM Solution licenses renewal, maintenance and support.

### 3.14 Service Provider Management Personnel

The SP should provide an account manager for the management of the SARS account. The account manager is not required to maintain a presence at a SARS site. SARS will neither provide office space for the account manager, nor for any other SP staff.

SARS may also require the presence of the account manager at ad hoc meetings at SARS's premises with reasonable notice. Reasonable notice will be determined considering the urgency with which the subject matter of a meeting is to be addressed. No separate charge is to be levied by the SP for the account manager and/or for any time spent by the account manager servicing the SARS account.

### 3.15 Ad hoc services

Any ad hoc services, amongst others such as formal consulting services listed in sections 3.11 will be formally agreed upon by SARS and the SP as required. The rates provided by the Bidder will be used as a basis to cost these services.

### 3.16 OEM Relationship

The Service Provider must have a back-to-back agreement(s) in place with the applicable OEM (or their official representatives) in support of the equipment/licenses for which the Service Provider is contracted to provide services to SARS.

The Service Provider must ensure that the back-to-back agreement(s) remains effective throughout the Term of the contract.

During the Term of the agreement, SARS may elect to change the equipment/licenses currently used within SARS or introduce new equipment/licenses from a new supplier.

## 4 TECHNICAL SOLUTION REQUIREMENTS

### 4.1 Solution Architecture

The solution must be built on a robust architecture, that is easily scalable, extensible through plugins and other mechanisms, support high availability (clustering) and not be reliant on 3rd party hardware/software. Therefore:

- The Bidder should propose a single vendor, single product solution that can cover all the requirements specified within this Business Requirement Specification. In support of the requirement the Bidder should provide an indication of all products that make up the solution as well as online references to the products stated
- The Bidder should also provide details of any open source technologies and/or components being used in or by the proposed solution
- The Bidder must provide a conceptual solution architecture including a brief overview and description of the various components required within the solution to provide an optimal Unified Enterprise Application Performance Management solution aligned to SARS requirements and industry best

practices. This should provide SARS with a holistic view and understanding of the SP's proposed solution, its components, the role and fit of each component and internal workings.

- The solution architecture must clearly indicate the deployment options of the on-premise solution as well as the sizing and storage requirements needed to function optimally within the SARS environment. The hardware required to implement the proposed solution will be provided by SARS.
- The Bidder should also provide details if its proposed solution uses agent-less technology and for what purposes
- The Bidder should provide an overview and explanation of its agent / agentless technology used, how it fits into the overall architecture, types of agents, agent deployment method, agents upgrade and maintenance process, the typical footprint and overhead on the respective hosts and network as well as the various connection types used to communicate back to the management console
- The proposed solution should be non-intrusive, with all agents on any given host having a combined average CPU overhead of no more than 2% and a maximum overhead of 5%. This needs to be achievable under full monitoring conditions of the host metrics as well as deep-dive diagnostics of .NET and/or JAVA processes on such a host with no sampling of analysed data
- The Bidder's proposed solution must be implemented in a high availability configuration (H/A)
- The Bidder should propose a solution that will also facilitate multi-tenancy
- The proposed solution must provide API integration for 3rd Party systems to integrate to the solution and for the solution to pull data from 3rd Party systems via API's
- The proposed solution should also have APIs that provide external access to the following information:
  - Log Monitoring information
  - Audit logs
  - Metric data in timeseries and point in time format
  - Topology information
  - Entity monitored
- The proposed solution should integrate with BMC Remedy to enable automatic ticket logging for problems identified in the APM solution
- The proposed solution should offer bi-directional integration to the Remedy change management tool for the intelligent analysis of metrics against specific changes in infrastructure or application code
- The proposed APM solution should integrate with IBM Netcool for event correlation

#### 4.2 Security

- The solution must provide AD integration for role-based security and capable of handling fine-grained access through SARS Security Policies
- The solution should provide the option to segregate data from different systems where some systems may contain SARS internal data and others may contain taxpayer information
- The Bidder is to provide information that shows the various connectivity between agents and other APM solution components and confirm that all data in transit over such connections is encrypted
- The APM solution must be able to secure sensitive data discovered by the solution for the entire data lifecycle. This must comply with the minimum requirements in all applicable regulations and industry standards

- The proposed solution must be certified to comply with the Service Organisation Control 2 audit standard and General Data Protection Regulation
- The proposed APM solution should provide comprehensive auditing capabilities

#### 4.3 Functional Requirements

- The proposed APM solution should be able to monitor any SARS web-based application end-to-end
- The proposed APM solution should be able to monitor end-to-end real user experience as well as the creation and monitoring of synthetic end-user transactions
- The proposed solution must be able to monitor mobile devices
- The proposed solution should assist SARS to improve its system availability, stability and performance through rapid root cause identification, leveraging advanced analytics and automation with the objective to pro-actively diagnose performance problems and avoid negative impact of application/infrastructure outages
- The proposed solution should have the ability to enhance or replace analytic tasks with intelligent monitoring software that utilizes anomaly detection, big data analysis and artificial intelligence
- The proposed solution must assist SARS to improve its productivity across operations and development environments leveraging CI/CD pipeline and DevOps principles
- The proposed solution should have capabilities to baseline the metrics and automatically alert upon breached thresholds based on “learned” behaviour of the application
- The solution should have standard out-of-the-box interactive web-based dashboards, real-time user monitoring and reporting capability
- The solution’s built-in alerting capabilities should effectively utilise ML, AI and anomaly detection

#### 4.4 Additional Technical Requirements

- The proposed solution must be able to monitor at least 3000 application hosts
- The proposed solution should be able to monitor gapless data and provide full stack analysis
- The proposed solution must provide monitoring of VMWare, Azure and docker
- The proposed solution should have monitoring options available for VB5/VB6
- The proposed solution must also provide containerization monitoring capabilities
- The proposed solution should offer dependencies and topology mapping with the ability to access the topology data via API’s
- The proposed solution should offer network monitoring capabilities
- The proposed solution should provide log file analytics and such analytics should form part of the root cause analysis of a problem
- The proposed solution should be able to replay the evolution of problems that occurred

- The proposed solution should provide a view of the customer and environment impact when a problem occurs
- The proposed solution should be easy to use by providing dashboard drill-down, gapless data monitoring and simple root cause analysis flow capabilities
- The proposed solution should also be easy to maintain with seamless re-configuration when systems are upgraded or downgraded
- The proposed solution should use the least number of agents possible to instrument all tiers of a web application (example IIS Web Server/ .NET app on IIS app pool/ MSSQL DB) hosted on a single server including any instrumentation required for user experience monitoring
- The proposed solution should have an auto deployment option
- The proposed solution should be able to auto-discover applications, transactions and monitoring candidates
- The proposed solution should be able to monitor C/C++ based application including data centre transactions that are not user centric (e.g. windows services and batch jobs)
- The proposed solution should be able to report on its own license consumption
- The proposed solution should support monitoring of IBM Z systems (Mainframe) using CICS
- The proposed solution should provide host metrics of the IBM Z systems (Mainframe) host showing physical mainframe or logical partitions (LPARs)
- The proposed IBM Z systems (Mainframe) monitoring capability should be able to show the processes that represent the CICS regions themselves as well as each interaction with a region and how the related service calls are connected
- The proposed solution should have the capability of stitching together the transactions from non-mainframe systems that make mainframe transactions called. (e.g. a JAVA method call on an application server that calls a CICS transaction on the mainframe via the middleware layer)
- The proposed solution should also provision significant support for IBM MQ monitoring including the ability to visualise MQ information in the solution's topology view. Additionally, viewing the queues that a service sends messages to or receives messages from as well as identifying the origin of an IBM MQ message should also be supported.
- The proposed solution should include monitoring of IBM MQ messages to and from z/OS MQ queues for CICS mainframe systems.
- The IBM MQ monitoring capability of the proposed solution should include monitoring of the Queue Manager, channel, listener and the most important queue metrics. The proposed solution should support the monitoring of the SARS current version(s) of AIX on IBM System P technology (formerly known as RS/6000).