دائرة اللوازم والمشتريات

RFP23-2021.22

Database Activity Monitoring (DAM) Solution and Oracle database vault solution

2021-2022

إعلان طرح عرض رقم RFP23-2021.22

Database Activity Monitoring (DAM) Solution and Oracle database vault solution

تدعو الجامعة العربية الأمريكية الشركات المختصة الى المشاركة في العرض المذكور أعلاه.
يمكن الاستفسار أو الحصول على وثائق العرض من دائرة اللوازم والمشتريات في الجامعة/ مبنى الدوائر الإدارية الطابق الثاني، هاتف- 2418888 04- تحويلة 1488 فاكس 2510972 04 بريد الكتروني pnp@aaup.edu
يوم (الاحد) الموافق 2022/2/13

ملاحظات :

1. تقديم عرضين: فني ومالي، وسيتم دراسة العروض فنياً ومالياً لاختيار العرض المناسب.
2. آخر موعد لتسليم العروض هو في تمام الساعة الثانية من يوم(الاحد) 27/2/2022 ولنفس المكان.
3. الأسعار (دولار) وتشمل جميع الضرائب بما فيها ضريبة القيمة المضافة وعلى المورد تقديم الفواتير الضريبية وشهادة خصم المصدر.
4. بإمكانكم الاطلاع على النظام الداخلي لدائرة اللوازم والمشتريات من خلال زيارة صفحة الجامعة العربية الامريكية على الانترنت. www.aaup.edu

الشروط والتعليمات التنظيمية للعرض

1. على جميع المشاركين في العرض الالتزام التام بهذه الشروط والتعليمات، وهي تعتبر جزءاً لا يتجزأ من أي أمر شراء أو عقد يبرم مع المشارك الفائز ما لم ينص صراحة على خلاف ذلك في أمر الشراء أو العقد.
2. في هذه الشروط والتعليمات يرمز إلى "الجامعة العربية الامريكية بالاختصار (AAUP).
3. يجب أن تكون الشركة المتقدمة للعرض مسجلة رسمياً ومشتغلاً مرخصاً.
4. تقدم الأسعار (دولار) شاملة لجميع الضرائب بما في ذلك ضريبة القيمة المضافة (VAT).
5. يجب أن تشتمل الأسعار على جميع المصاريف المطلوبة من النقل والتركيب والتشغيل والفحص والصيانة والتدريب في المواقع المحددة في جدول المواصفات والكميات المرفق.
6. يجب أن تكون الأسعار المقدمة سارية المفعول لمدة لا تقل عن (90) يوماً من تاريخ تقديم العرض.
7. على المشاركين في العرض ارفاق كتالوجات عن المنتج.
8. يحق لـ (AAUP) إلغاء العرض دون إبداء الأسباب. ولها أن ترفض كل أو بعض العروض المقدمة لها دون أن يكون لأي من المشاركين الحق في الرجوع إليها بأي خسارة أو ضرر ناجم عن تقديم عرضه ولا يترتب على (AAUP) أي التزامات مادية أو غير مادية مقابل ذلك، كما يحق ل (AAUP) تجزئة العرض بما تراه مناسبا ودون ابداء أسباب.
9. على المشارك في العرض التقدم على أساس المواصفات الفنية االمبينة في وثائق العرض.
10. لا يجوز للمشارك في العرض أن يتنازل لأي طرف آخر عن كل أو جزء من العرض المقدم دون الحصول على إذن خطي من (AAUP) مع الاحتفاظ بكامل حقوق (AAUP).
11. عند دراسة العروض يؤخذ بعين الاعتبار كفاءة الجهة المتقدمة من الناحيتين المالية والفنية وقدرتها على الوفاء بالتزامات العرض وخبرتها في تقديم اللوازم المطلوبة والسمعة التجارية والتسهيلات التي يقدمها ويجوز استبعاد عرضها لنقص كل أو بعض هذه المتطلبات.
12. لا تقبل العروض أو التعديلات التي ترد بعد التاريخ والموعد المحدد كآخر موعد لتقديم العروض.
13. ويسمح بتقديم عرضين اثنين فقط كحد اقصى لكل بند.
14. يجب تقديم عرضي الاسعار الفني والمالي بنسختين: الأولى ورقية، والأخرى الكترونية (محوسبة).
15. تقديم العرضين المالي والفني الورقيين بالظرف المختوم، مع ضرورة وضع ختم الشركة والتوقيع على كل الصفحات (للعرض المالي بالذات).

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REQUEST FOR PROPOSAL (RFP)

For

"Supply, Deploy, Implementing, Testing, Commissioning and Maintenance of Database Activity Monitoring (DAM) Solution Oracle database vault solution at AAUP on primes datacenter

1. AAUP IT infrastructure Overview

The AAUP has its own primary Data Centre, this Datacenter located in Jenin, AAUP disaster recovery site located in Oracle Cloud services. The Data Center servers located either in Main AAUP branch in Jenin, or in second branches in Ramallah. The server's environment is a heterogeneous mix of Debian Linux, Red hat Linux, Oracle Linux, and Windows platforms with databases like Oracle 19c, Microsoft SQL 2012 and 2016, My SQL, And application servers like Oracle WebLogic Server 12c, Java applications with class fish web servers, legacy application with PHP, .Net, Drupal, and other platforms. AAUP Also implements its oracle database DR on the oracle cloud infrastructure using Oracle Data guard technology and a second data guard instance on the on premise data center. As databases are the repositories of electronic information for any organization, and following the trend of success, AAUP is looking forward to adopted a proper solutions and protection of the contents of its databases.

2. General Objective

AAUP invites bids from Bidders for Supply, Deploy, Implement, Testing, Commissioning, and Maintenance of

1- Database Activity Monitoring (DAM) solution **Oracle Audit vault and database Firewall, to collect and analyze audit trial data from the Oracle database servers (2 Production oracle database servers V 9c and 2 Testing oracle database V19c) as well as** supports common enterprise-class databases **non-oracle database(At least 6 Servers) like** MySQL, Microsoft SQL Server included custom connectors

framework which collects data via JDBC or RESTful API and support Before and after value collection.

2- And Deploy and Implement **Oracle Database vault on existing** Oracle's 19c single database instance (2 servers) and two identical testing database Servers.

3. Background

Deliberating on the adaptation of relational databases and related products for the management of enterprise data and information within the AAUP, the Implementation of the "Oracle Data Vault and Database Firewall" and "Oracle Database vault" Solutions **is vital to creating a platform for monitoring the traffic to/from the databases and related IT components to detect and block data security threats including improving compliance reporting by consolidating audit data from** different databases, operating systems, directories, and other IT components**. The need to secure AAUP's valuable data and information is driven by the expansion of privacy and regulatory environment coupled with the rapid growth of access to sensitive Academic and financial data of the AAUP by the internal software development outsourcing development and staff and student's online services, and support team, the Internet, increasingly dangerous world of hackers, insider threats, organized crime, groups with intentions of stealing valuable data. In addition, there is a drive towards achieving greater efficiencies through emerging technologies, cloud computing, and service-oriented technologies. Therefore, the data security and compliance of the AAUP requires a defense-in-depth, multi-layered security model that must include** preventive, detective, and administrative **controls aligned with the sensitivity of the data, location, environment, and applicable regulations. In response to increased threats to the data and information of the AAUP database sources, AAUP has acquired an "**Oracle Audit Vault and Database Firewall" and "Oracle database Vault" Solutions **towards addressing the data and information security needs and is now ready to receive a suitable Oracle partner to assist in implementing the solutions,** Training the internal staff **and supporting the internal team with the pre and post-implementation activities. The solution is intended**

to allow the AAUP to detect timely questionable user errors or fraudulent intentions. In addition, it will enable auditors and IS Security officers to perform audits, queries and extract audited information that they need (ability to produce their reports).

1- the Database Activity Monitoring (DAM) Oracle **Audit Vault and Database Firewall** solution should guarantee to implement at least the following use cases

- Collect and analyze audit data

Track data access and modification

Collect audit data, including user access to sensitive data. Analyze audit data for abnormal behavior. Create policies for auditing and retention.

- **Block SQL injection**

Defend against attacks

The multi-stage firewall uses policy-based SQL grammar analysis to detect SQL injection attempts and prevent attackers from accessing the database.

- **Enforce trusted path access**

Prevent unauthorized data access

Define and enforce allow-lists and deny-lists for accessing sensitive data based on specific clients, IP addresses, SQL categories, and more.

- **Track user entitlements and changes**

Detect overprivileged users

Monitor individual user privileges and help ensure access privileges match their role. Quickly identify changes to privileges and stored procedures.

- **Simplify and accelerate compliance**

  GDPR, PCI-DSS, HIPAA, SOX, and more

Quickly generate and review out-of-the-box reports for dozens of compliance regulations or customize reports for specific requirements.

- **Support forensic analysis**

  Investigate and learn

Use built-in filters to quickly search audit records and network logs to identify suspicious activities that could result in a data breach.

- **Receive customized alerts**

  Automate monitoring

Get alerts on suspicious activities. Use the built-in wizard to create policy-based alerting for conditions that are deemed critical.

- **Broad databases platform support**

  Almost any database or operating system target

Extend auditing and monitoring with out-of-the-box support for most enterprise relational databases and a custom collection framework for other targets.

2- **Oracle Database Vault** solution should guarantee to implement at least the following use cases.

- **Protect sensitive data**

  Block attackers from accessing sensitive data with stolen privileged user credentials—the most common attack vector today.

- **Prevent inadvertent access**

Block accidental access by database administrators to sensitive data without compromising their ability to perform necessary tasks.

- **Prevent unauthorized database changes**

  Block accidental or malicious changes to production databases and restrict authorized changes to defined maintenance periods.

- **Enforce policy-based access control**

  Prevent misuse of privileged credentials outside allowed IP address, Time of day, client programs, and more.

- **Separation of duties**

  Define and separate roles for security and administration so administrators Can't modify security policies or access sensitive data.

4. Conceptual Design

The high-level configuration and implementation strategy of the AAUP **Oracle Data Vault and Firewall** solution **and Database vault** Solutions should adopt Oracle's standardized conceptual design and architecture (Figure 1). In addition, the Implementation should be deployed in a manner such that the solution can monitor the traffic from all core databases and IT components of the AAUP and should be able to consolidate activity logs from both the production and testing sites into a central repository.

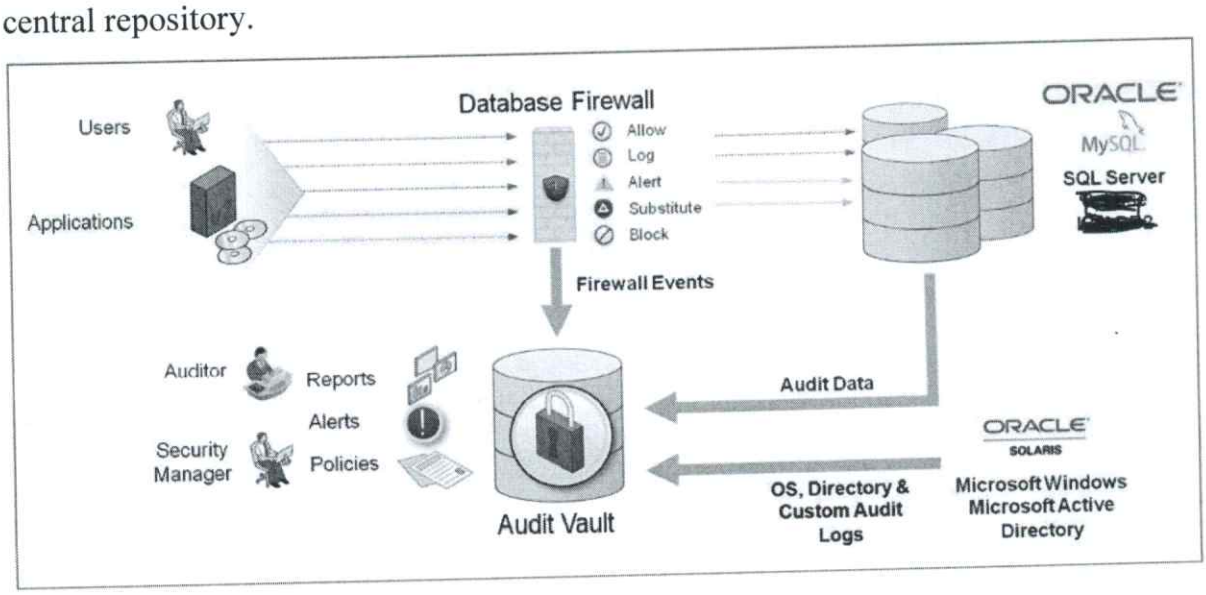

Figure 1: Conceptual design of the Oracle Audit Vault and Firewall Database solution

5. Technical specifications

The configuration and Implementation should include the following minimum analysis, documentation, and technical tasks:

5.1. Installation and configuration of the Database Firewall

5.2. Installation and activation of host monitoring

5.3. Installation and configuration of alerts and notifications

5.4. Development and configuration of custom collection add-ons

5.5. Deployment of Audit Vault Agents

5.6. Installation and configuration of the Audit Vault Server

5.7. Installation and configuration and Deployment of the Oracle Database vault on existing Oracle database servers (2 production Servers).

5.8. Customizing Oracle Database vault according to our requirements and security policies.

6. Training specifications

As part of the internal staff development and skills acquisition, AAUP requires the preferred service provider to facilitate, organize or provide training services to a minimum of ten (5) internal staff in the following domains areas related to **Oracle Audit Vault and Database Firewall** solution, **Oracle Database vault** solution in terms of development, configuration, Implementation and administration:

6.1. Implementing Oracle Audit Vault.

6.2. Oracle Audit Vault and Database Firewall: Install & Configure.

6.3. Oracle Audit Vault and Database Firewall: Policies & Reports.

6.4 Implementing Oracle Database Vault.

6.5 Oracle Database Vault Install & Configure.

7. Scope of work

The preferred Oracle partner is expected to conduct or provide the following services and tasks to the AAUP:

7.1. Collaborate with the internal software development, auditors, information security officer, and management in defining and documenting the security standards and specifications adopted during the Implementation.

7.2. Collaborate with the internal software development team (system developer, database administrator, business analyst, application administrator) in configuring and implementing the Oracle Audit Vault and Database Firewall solution as per the defined conceptual, technical, and training specifications.

7.3. Compile project documentation (project plan, activity plan, test plan, etc.)

7.4. Conduct training and transfer skills to the internal software development team.

8. Expected Deliverables and Outcomes

The preferred Oracle partner is expected to deliver the following minimum deliverables to the AUUP :

8.1. A documentation of the Oracle AVDF architecture and process flow implemented in the AAUP environment.

8.2. A documentation of the data security standards and procedures to be adopted by the AAUP.

8.3. Must deliver user and configuration manuals to be used by the internal team to support and maintain the solution.

8.4. All other deliverables required by this RFP

9 . General Terms and Conditions

All interested Oracle partners are expected to provide the following Project-related submissions:

9.1. A proposed implementation methodology, training schedule, and offered tasks during the pre and post-implementation phase.

9.2. A proposed alternative Oracle database system deployment within AAUP and made appropriate recommendations.

9.3. Deliver documentation outlining the cost for the post-implementation support for 12 months.

9.4. CV/Resumes of all team members, highlighting experience relevant to this exercise.

9.5. A project plan outlining the schedule of the implementation milestones, including due dates for the Implementation of Oracle Audit Vault and Oracle Database Vault at AAUP. The project plan should indicate a project start date as of 01 May 2022.

9.6. A detailed explanation of how the Vendor proposes to meet the Project objectives and requirements set forth above, including descriptions of the methodology that will be used and the deliverables that will be produced;

9.7. Please describe, in brief terms, your organization's history and the history of provision of outsourcing services.

10. Security Questionnaire for AVDF and Database vault.

The following table gives detailed information about some IT resources in the AAUP environment that may help the bidders prepare their proposal.

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Question	Sample Answer	Client Answer
Environment Understanding		
How many environments (Production, Test, UAT)?	**Two environments: Production, Test**	**Two environments: Production, 1 Development , 1 Testing**

Question	Sample Answer	Client Answer
How many systems are in each environment?	Production: Two systems: 1. ERP 2. Custom application Test: one system: 1. ERP 2. Custom application	1. About 10 system in production (Registration +admission +E-exam +QA +other legacy systems) 2. And three systems in development 3. All systems in Testing .
A Brief Description of each system is required? (Application Type? Connection String Mode (JDBC, TNSNAMES...)	1. ERP: Oracle EBS and use TNSnames to connect to the database. 2. Custom Application: Java application deployed on WebLogic and used JDBC to connect to the database	1. Two Oracle application server (forms and reports 12c) 2. 3 Oracle forms 6i systems use TNSNAMES connection 3. Six web applications (Java portal's on glassfish webserver JDBC connection) 4. 4 outsourcing systems with MS-SQL servers database .

Question	Sample Answer	Client Answer
Application Level High availability (all environments)?	Production: 1. ERP: two-node application servers 2. Custom application: one application server Test: 1. ERP: one node application server 2. Custom application: one application server	1. All systems are single node architectures. 2. Oracle data guard configured on Two Production oracle server one -premise and the other on oracle Clouds service .
Applications OS and CPU architecture (all environments)	Production: 1. ERP app server: RedHat Linux 5.4 64bit 2. Custom Application: Solaris 5.10 Sparc Test: 1. ERP: RedHat Linux 5.4 64bit 2. Custom Application: Solaris 5.10 Sparc	1. 2 Oracle database servers on Oracle Linux v 7.6 64 bit 2. Six application servers on windows server latest version 64 bit 3. Testing environment Same as production

Question	Sample Answer	Client Answer
Database Product for each system (Oracle, SQL server…)?	All Oracle	2 Oracle servers, 6 MS-SQL server , 4 MySQL servers.
Database version for each system (all environments)?	Production: 1. ERP DB: 11.2.0.2 2. Custom Application DB: 11.2.0.4 Test: 1. ERP DB: 11.2.0.2 2. Custom Application DB: 11.2.0.4	1. Oracle 19c on Production and Testing 2. MS-SQL(2016 and 2012 3. MySQL (latest version)
Database High availability architecture (all environments)?	Production: 1. ERP DB: RAC two nodes 2. Custom application DB: single node Test: 1. ERP DB: single node 2. Custom application DB: single node	1. All servers and Database severs currently Single node ,we have a plane to upgrade to RAC for Oracle database servers Soon .

Question	Sample Answer	Client Answer
Database size for each system	ERP DB: 300GB Custom application DB: 140G	Main Oracle database about 1 TB Second oracle database, about 1 TB Non oracle Database size (200 GB – 1TB)
Database Platform and OS version for each system and environment?	Production: 1. ERP DB server: Redhat 5.4 64Bit 2. Custom application DB server: Redhat 5.4 64Bit Test: 1. ERP DB server: Redhat 5.4 64Bit 2. Custom application DB server: Redhat 5.4 64Bit	- Oracle Database 19c on Oracle Linux v7.6 64bit - None Oracle databases(Windows 2012 , 2016 ,latest version)
System availability?	ERP: working days from 8:00 AM- 4:00 PM Custom application: 24*7	All systems 24/7

دائرة اللوازم والمشتريات
PROCUREMENT AND PURCHASING DEPARTMENT

Question	Sample Answer	Client Answer
Peak Hours?	ERP: 9:00AM – 11:AM Custom Application: 12:00PM – 4:00PM	working days from 8:00 AM-4:00 PM
Number of the transaction at peak Hour for each system	EPR: 2000 Transactions per hour Custom: 1000 Transaction per hour	500 transactions /hour on average for all systems
How many subnets where the target databases exist (all environments)?	One subnet for all databases exists at the production and test environments. One subnet for production databases and one subnet for testing databases	Two subnets
Database Firewall Scope Understanding		
Is the same DB firewall will be used for each environment?	Yes. No: each environment must have it is own firewall	Yes
HA Requirements for each environment	Production: One DB firewall, no HA Test: one DB firewall, no HA	Production: One DB firewall, no HA Test: one DB firewall, no HA

Question	Sample Answer	Client Answer
Database Firewall Deployment Mode?	**There are three modes:** **1. Inline (Block and monitor): require changing network topology** **Or: Inline (monitor): require changing network topology)** **2. Proxy: require changing the connection string** **3. Out of band: just for monitoring**	**Inline (monitor): require changing network topology)**
Firewall policy?	**Log unique** **Pass all** **…..** **Or the client will develop their policy**	**Log unique** **Pass all**
Audit Vault Scope Understanding		
Is the same Audit Vault Server will be used for each environment?	**Yes.** **No: each environment must have it is own Audit Vault**	**Yes : For Oracle Databases**

Question	Sample Answer	Client Answer
Audit Vault HA Requirements for each environment?	**Production: One Audit Vault, no HA** **Test: One Audit Vault, no HA**	**Production: One Audit Vault, no HA**
What target types does the audit vault need to capture audit data from? And how many targets for each environment?	**Only Databases:** - **two DBs for production** - **one DB for test** **Databases and OS:** - **two DB, two OS for production** - **one DB, one OS for test**	**Databases and OS:** - **two DB, two OS for production for Oracle Environment.** - **4 Database and 4 Servers for MS-Sql environment t.** - **4 Database and 4 Servers For MYSQL Environment .**

Database Vault

Question	Sample Answer	Client Answer
Environment Understanding		
How many environments (Production, Test, UAT)?	Two environments: Production, Test	Two environments: Production, 1 Development , 1 Testing
How many databases are in each environment?	Production: Two DB: 3. ERP 4. Custom DB Test: one system: 3. ERP 4. Custom DB	Production: Two DB: 1. 2 Oracle database in production 2. 1 Oracle Database in testing
Database version for each system (all environments)?	Production: 3. ERP DB: 11.2.0.2 4. Custom Application DB: 11.2.0.4 Test: 3. ERP DB: 11.2.0.2 4. Custom Application DB: 11.2.0.4	Production: Oracle 19c
Database size for each system	ERP DB: 300GB Custom application DB: 140G	1 TB And 1TB
Database Vault - Scope Understanding		

Question	Sample Answer	Client Answer
How many Oracle databases want to be protected by DVB	**Two databases**	**Two databases**
How many realms need to be created?	**Two realms**	**Two realms**
How many tables need to be protected by each realm	**Ten tables**	**About 1000 tables in 2 realm**
How many DB users per DB (excluding build-in users)	**Ten users**	**20 users per database**
Are there any special requirements for DVB, like protecting the database at weekends or non-working hours by creating command rules and rule sets? If so, what are the requirements?	**Yes**	**Yes, we need these policies.** **May later we can determine the requirements precisely.**

End of the RFP