ORACLE® CONFIGURATION AND PERFORMANCE REVIEW (ORACLE-CPR)

OUR ORACLE® EXPERTS CAN HELP YOU BREATHE NEW LIFE INTO YOUR DATABASES

The Oracle Configuration and Performance Review (Oracle-CPR) is targeted at assessing the performance, stability and availability of your Oracle based systems. This health check analysis can be focused on performance, security, migration, upgrade, or availability issues or concerns. If the main role of your environment is on-line transactional processing (OLTP) or decision support system (DSS), or some hybrid, the review can focus on what is important to you and your business needs. An independent or impartial review of your Oracle environment can sometimes help when teams may be set in their ways or need a little guidance. The goal is to help you save time, money and avoid headaches.

The Oracle-CPR results are documented recommendations relating to performance, stability, availability, or the specific focus you requested, of your Oracle database. Our team will go over the report and recommendations with you to address any questions or concerns you may have. The XTIVIA Oracle team is then available to assist you with the implementation of any of the recommendations once you approve those efforts. We help clients achieve Increased performance, maximized availability, boosted productivity and peace of mind with their Oracle systems.

Oracle-CPR is a carefully crafted program designed to review the efficiency as well as effectiveness of Oracle's database technologies in business environments. The efficiency of your Oracle-based system is evaluated by determining the deployment and usage of Oracle's products; essentially, is the system "firing on all cylinders" and capitalizing on the deployed products?

The efficiency of a system takes into consideration issues such as:

- Is the database and operating system properly tuned?
- Are there sufficient resources (physical or virtual) for the database tasks?
- Is database engine performance tuning or query performance tuning needed?
- Have schemas been normalized or denormalized where appropriate?
- Have the proper indexes been created?
- Are critical administrative utilities run regularly?
- Does the staff have the requisite skills needed to maintain an efficient system?

In a complex computing environment, the extent to which these and other issues are addressed will affect the overall efficiency and effectiveness of the systems in place. This review addresses these issues of efficiency and effectiveness by having a skilled Oracle DBA assess your Oracle Database environment over a one to five day period. The environment includes the database server, application servers, Oracle clients and round-trip network traffic to and from the database.

KEY CONCEPTS

IDEAL SYSTEM PERFORMANCE

To achieve the optimal performance for a given system one must ensure the optimal performance of each component of the system. The components addressed in this performance analysis are:

- Hardware utilization including CPU, I/O bottlenecks, memory in both physical and virtual environments
- Operating System and Storage configuration
- Oracle Database's Physical and Logical design
- Client authentication and connection resolution
- Application Implementation
- Operations and Maintenance including backup, recovery, consistency checks, system housekeeping and others

Each of these components is critically important to the optimal performance of the overall system.

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THE FOLLOWING ARE SOME OF THE ISSUES RELATED TO EACH SYSTEM COMPONENT.

HARDWARE RESOURCES

The server hosting your Oracle database relies primarily on three hardware subsystems for efficient performance – CPU, Memory, and I/O. From the database perspective, this is true in physical servers as well as virtual environments.

A well-architected system will allow for ample distribution of workload across spindles, controllers and CPUs. The I/O subsystem may be direct-attached storage (DAS), network-attached storage (NAS) or storage area networks (SAN) and within each there there are various flavors available of RAID, iSCSI, SATA, SAS, SSD, etc. Depending on what is being used on-site, this will be analyzed for its effect on the database and applications. I/O configuration is the most flexible of the resources. Database and System Administrators can work jointly to balance the I/O load across all available resources.

The objective is to eliminate bottlenecks and sustain throughput for the life of the data-base server.

A large server may contain many gigabytes of main memory. The use of that memory has to be carefully divided among the functions of the server – applications, database, and operating system. The goal is to allocate sufficient free memory to meet the peak demands of the workload, optimally tune Unix kernel memory-specific parameters where applicable, and dedicate a tunable chunk to the Oracle database and its many memory structures.

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OPERATING SYSTEM

When Oracle is deployed on a Microsoft Windows platform, it behaves differently than one deployed in a Unix environment. Both operating systems must be closely examined and tuned to optimally support an Oracle database deployment. In both situations, the memory options and other Oracle database parameters must be tuned within the context of the respective operating system.

ORACLE DATABASE SERVER

There are numerous items that relate to database performance. However, key elements of this score will reflect the use of indexes, table fragmentation and I/O balance, optimizer statistics, parameter settings, transaction logging, database layout, session activity, cache utilizations, and others. These areas will be investigated extensively based on the overall behavior of the database. Each component of the analysis will be detailed in the report that is delivered at the completion of the service.

CLIENT COMMUNICATIONS

There are several optimizations available for clients connecting to your Oracle-based database management system. These will be evaluated for appropriateness in the environment. Additionally, if clients are connecting to an Oracle database with older versions of the client software, there is tremendous opportunity for performance improvement through client library upgrades.

APPLICATION IMPLEMENTATION

Database applications can often be enhanced through techniques that have been introduced since the application was originally designed. A discussion with the application developers will aid the DBA in making recommendations for improving the application.

While the above analysis strives to leverage hardware and software to its fullest potential, this area of the assessment strives to provide operational stability to the environment. Looking at batch jobs, backup and recovery strategies, logging strategies, upgrade strategies, and test platform capability will enable the DBA to provide recommendations for improving uptime of the environment.

Very often users report application slowness or problems which are attributed to the database, XTIVIA has worked with many clients to determine exactly where the issue lies, is it really a database performance issue or an issue with the application request to the database. Working with clients to provide constructive feedback to application vendors produces a better and more efficient user experience.

During the Performance Analysis, clients will provide access to pertinent systems and key personnel to ensure a thorough and productive assessment. Key individuals within the environment will be the DBA, the System Administrator, the Application Team Leader, and others identified as subject matter experts.

XTIVIA OVERVIEW

Since 1992, XTIVIA has established a proven, global reputation as a company delivering cutting-edge professional solutions to our clients' specific requirements, regardless of the complexity of the projects. XTIVIA's success has stemmed from a proven ability to deliver quality professional services, allowing the client to leverage technology successfully, competitively, and profitably. XTIVIA has received additional awards this year from Liferay, CIO Review and Inc. 5000. XTIVIA has offices in Colorado, New York, New Jersey, Missouri and Texas.

DATABASE OVERVIEW

XTIVIA is at the forefront of a new generation of information technology services companies focused on value, speed of delivery and high-performance technology solutions. We combine people, business process and advanced technology in a comprehensive set of IT services.

Our database management team is comprised of seasoned professionals who possess the business background, project management experience and technology expertise to deliver business-critical technology solutions. These solutions include a variety of platforms, devices and networks, including integration with legacy systems, development of business applications and web-based functionality.

XTIVIA's database services can be customized to meet the unique needs of your business. Our knowledgeable staff of database experts is available for long-term or short-term assignments to meet your database needs.