IBM INFORMIX® CONFIGURATION & PERFORMANCE REVIEW (INFORMIX-CPR)

OUR INFORMIX EXPERTS CAN HELP YOU BREATHE NEW LIFE INTO YOUR DATABASES

The Informix® Configuration and Performance Review (Informix-CPR) is targeted at assessing the performance, stability and availability of your Informix systems. This health check analysis can be focused on performance, security, migration, upgrade, or availability issues or concerns. Whether the main role of your environment is on-line transactional processing (OLTP), decision support (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 Informix environment can sometimes help when teams need a little guidance or may be set in their ways. Our goal is to help you save time and money and to avoid headaches.

The result of Informix-CPR is a comprehensive report documenting our recommendations related to the performance, stability, and availability of your Informix instances, as well as any specific focus you requested. Our team will review the report with you to address any questions or concerns you may have. The XTIVIA Informix team is then available to assist you with the implementation of any of the recommendations upon your approval. We help clients achieve increased performance, maximized availability, boosted productivity and peace of mind with their IBM Informix systems.

Informix-CPR is a carefully crafted program designed to review the efficiency and effectiveness of an IBM Informix-based database management system. The efficiency of the system is evaluated by determining the extent to which the IBM Informix products have been utilized. Essentially, is the system "firing on all cylinders"?

THE EFFICIENCY OF A SYSTEM TAKES INTO CONSIDERATION ISSUES SUCH AS:

- Are the database and operating system properly tuned?
- Are the database and operating system properly configured?
- Are database engine performance tuning or query tuning needed?
- Are there sufficient resources (physical or virtual) for the database tasks?
- Is the physical design of the database instance 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 issues and others are addressed will affect the overall efficiency and effectiveness of the systems in place. Informix-CPR addresses these areas of concern by having a skilled Informix engineer assess the health of your Informix-based computing environment over a one-to-five day period.

KEY CONCEPTS

IDEAL SYSTEM PERFORMANCE

To achieve 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 include:

- Hardware utilization including CPU, I/O, memory in both physical and virtual environments
- Operating System Configuration
- Informix Database Server
- Client Communications
- Application Implementation
- Operations and Maintenance including indexing, backup, recovery, consistency checks 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 IBM Informix 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 show optimal CPU utilization without queues. A fully utilized CPU is ideal, but the additional check of the number of processes waiting for the CPU is required.

The I/O subsystem of the server hosting your Informix system is critical to the performance of the database and its applications. The subsystem may be direct-attached storage (DAS), network attached storage (NAS) or storage area networks (SAN) and within each there are various flavors available of RAID, iSCSI, SATA, SAS, SSD, etc. Ideally, the disks in the system will respond to requests quickly and there will be no queues forming. I/O configuration is the most flexible of the resources, since the database and system administrators can easily work together to balance the I/O load across all available resources.

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 have ample free-memory to meet the peak demands of the workload, while maintaining good cache hit rates in the database. Even within the database itself, there are memory trade-offs for buffer caches and large sort/join pools.

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DATA SHEET

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OPERATING SYSTEM:

Informix provides a list of kernel parameter recommendations for each platform. These will be analyzed and addressed. An important parameter is one that controls the size of virtual memory segments used extensively by the database. If the amount of memory allowed in a single segment is too small, the database may create many segments to get its memory. The use of multiple segments is more expensive than a few very large segments.

INFORMIX DATABASE SERVER:

There are an extensive number of 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 which is delivered at the completion of the service.

CLIENT COMMUNICATIONS:

There are several optimizations available for clients connecting to your IBM Informix system. These will be evaluated for appropriateness in the environment. Additionally, if clients are connecting to Informix with older versions of software, there is tremendous opportunity for performance improvements through client library upgrades.

APPLICATION IMPLEMENTATION:

Database applications can often be enhanced through techniques which may have been introduced after the application was originally designed. The use of prepared SQL statements, for example, is a common way to gain performance in applications. A discussion with the on-site application developers will lead the engineer to make recommendations for improving the application or to determine if the application is well written.

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 engineer to provide recommendations for improving availability of the environment.

Very often users report application slowness or problems which are attributed to the database. XTIVIA has assisted 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.

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During the Performance Analysis, you will need to provide access to your systems and key personnel in order for this evaluation is to be thorough and meaningful. Key individuals in your environment include the DBA, the System Administrator, the Application Team Leader, and others you identify as being able to provide insight to the design and workings of the current system.

GETTING STARTED:

Typically all it takes to get started is a conference call with our technical team to get an overview of your issues or needs and to gain some understanding of your environment. We will then provide you with a proposal and proceed when you are ready. Please contact us today for more information regarding Informix-CPR or our other Informix DBA services.

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.