



MoreVRP (Virtual Resource Partitioning)

**Taking Virtualization
to the Transaction Level**

White Paper

Current Application and Database Needs

Most of the databases in the world have performance issues due to load peaks. Heavy I/O or CPU bound transactions in the database cause all transactions to suffer from longer response times, sometimes even causing the system to crash due to overloads. In most database applications and especially ERP/CRM (like Oracle Applications, SAP, Peoplesoft, Siebel and others), the administrator cannot modify the query or the application and cannot change the performance of the SQL significantly.

Billions of dollars are also spent on HW, SW, scheduling solutions, and redundant BI/DW machines to separate the load on the DB environments. That does not include the extra time, money and energy spent on maintaining them nor the extra power required to operate them and the floor space on which to install them.

One of the biggest problems is unstable QoS. Running a few simple transactions on a relatively unloaded machine will yield good response times, while running those same transactions on a loaded machine will yield far worse results. This causes a ripple effect that passes down through the enterprise. Employees and customers are forced to slow down losing work time and reducing the company's income.

Today the world is using a profusion of software to measure the QoS and SLA, but this only shows the need for additional computing power, it does not provide a solution. You cannot add more resources every time the system slows down due to a transitory shortage of computing power or the lack of computing power to run them.

Is there a PERFECT, SAFE and SIMPLE Solution?

YES. The answer is a definite **YES.**

MORE enables you to deal with this complex problem by simply distributing your resources more efficiently, using either pre-defined or ad-hoc rules, stabilizing your system and getting more out of your hardware.

What is MORE-VRP?

MORE is a unique and revolutionary software solution that enables your organization to supply Virtual Resource Partitioning of HW resources (CPU, memory, I/O) to your IT transactions, in real-time, based on your business priorities and needs. By building this VRP we separate the load of one transaction from the others, providing a better QoS and response time to the transaction we want.

MORE-VRP software boosts performance and availability of Database dependent applications in real-time. MORE is applicable to a wide spectrum of DB-based enterprise environments, in particular database infrastructure supporting ERP, CRM, DW, in house applications and other mission critical applications.

MORE utilizes and controls the hardware to increase your important business transactions by 23-88% (5 to 8 times faster in some cases), with savings of 20-50% on your hardware and software costs.



Business Value, Simple IT

What MORE Can Do For You

Real-Time:

- Create a real-time immediate improvement in your IT systems.
- Real-time capability to cope and solve unexpected heavy loads in full production systems.
- Real-time** and **historical** monitoring of your databases.
- There is no longer any need to **kill** transactions as you can now control their resources or manage the **rollback** without creating another unwanted load.

Management:

- Improved Performance, Availability and Stability and QoS throughout the day.
- Define computing resources (CPU, I/O) for specific **transactions**.
- The ability to run BI, batches, backups and other heavy transactions together in the middle of the day by simply limiting their resources instead of delaying them.
- Application is shipped with pre-defined rules and modules for **ERP, CRM, DBA tools, BI** and **Data Warehouse** that you can fine-tune to your specific needs and add MORE when required.
- Total transparency to your users and applications.
- Building custom rules in only a matter of minutes.
- Help you use less power and datacenter space.

Performance:

- Allocating resources so that the most important transactions have the lowest response times and get the most resources.
- Receive alerts anywhere.
- You can speedup the transactions, modules or users you want to run faster in accordance with your business needs.

How MORE-VRP Works

MORE communicates with the database and the operating system and then displays the results on a Dashboard. Armed with this information you are then able to define specific rules for those exceptional transactions that could cripple the system.

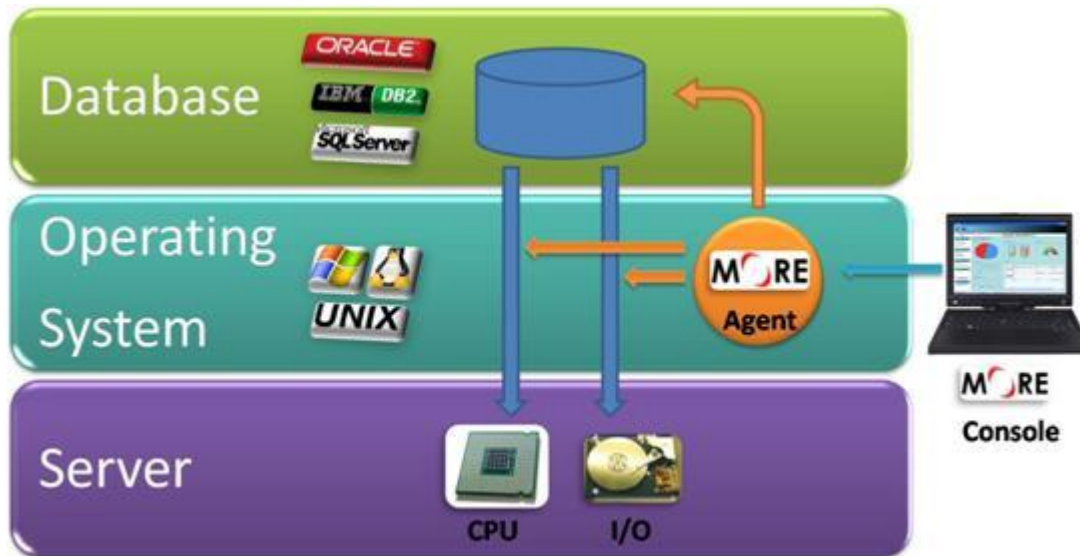
MORE creates virtual lanes of resources, so each managed transaction is redirected to the relevant lane and consumes resources according to the lane definitions.

MOREVRP Business Value Simple IT

With **MORE** you can run all your transactions on one or more clustered nodes and manage their resources according to their importance, instead of delaying them or running them on a redundant machine. This gives your business a better bottom line and reduces the maintenance of your IT environment to a bare minimum.

MOREVRP Architecture and Technology

MORE Console is installed on a Windows PC/Server on the network.



The **MORE** agent footprint in an average database is **0.5% of a single CPU**. This means, for example, that in a machine with 4 CPUs, MoreVRP uses **~0.12%** of the total machine.

MORE collects various statistics, correlates them and then logs them into an internal repository. You can then monitor the system-defined rules and correct them if necessary.

When a rule is defined, the virtual partitioning of the server resources is done immediately. It is completely transparent to the database and therefore no special configuration needs to be made at the database level.

The information is displayed on the **MORE** Dashboard. The Dashboard enables you to identify problems in the SLA, and pin-point any heavy transaction that is causing a problem to the SLA. In addition, you can create rules and prioritize the resource usage directly from the Dashboard.

Supported databases :

- Oracle 7 to 11G Standard & Enterprise Editions
- IBM DB2 8-9.5
- Supported Operating Systems:
 - Red Hat Linux, SUSE, Oracle Enterprise Linux
 - Sun Solaris
 - HPUX
 - IBM AIX
 - Windows (2000 and above)
 - TRU64

Rules & Ad-Hoc Load Control:

Rules are a set of thresholds and limitations that are user-configured, directing **MORE** on how to allocate the system resources based on the transaction requirements.

Rules can be defined based on various factors, such as the database username, operating system user, hostname, specific SQL, the current resource consumption, and more...

MOREVRP for Multiple servers and Clusters (Oracle RAC)

MORE can operate in a clustered environment where several database instances serve the same database, as in Oracle **Real Application Cluster (RAC)**.

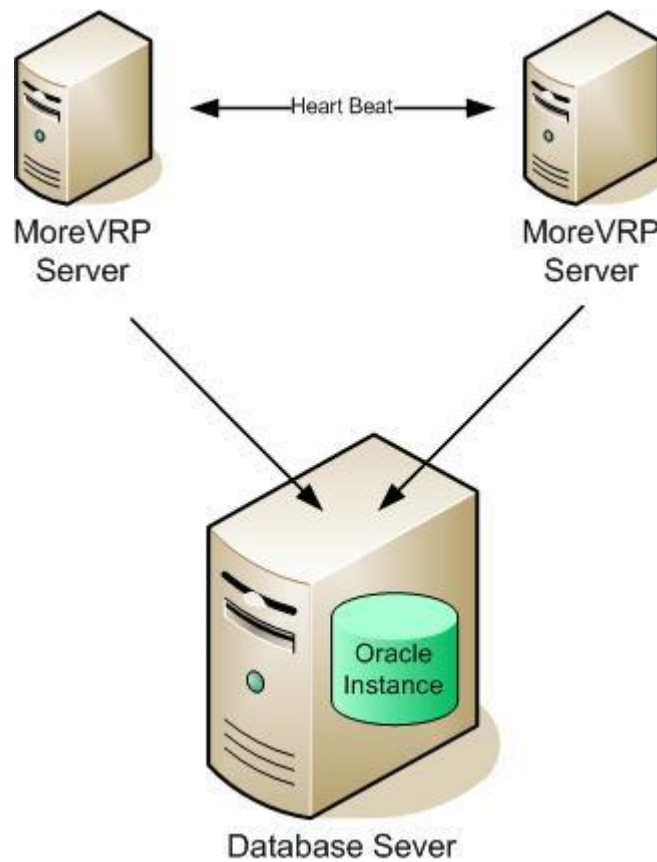
In such architecture, **MORE** can connect to multiple servers while applying the same set of rules to them all. This enables you to easily load balance all your transactions while **MORE** intercepts them wherever they are executed.

You can see the load on each of the servers in real-time, as well as the total load of your cluster.

MOREVRP High Availability Architecture

In enterprise organizations, where maximum availability is required for business continuity, an availability solution for **MORE** is absolutely crucial.

- ❑ **MORE** can be configured in a clustered environment in order to assure maximum availability for Load management, as well as during server failures.
- ❑ 2 or more **MORE** servers can be configured in a cluster.
- ❑ If one server fails, the secondary **MORE** server automatically takes control.





Business Value, Simple IT

MOREVRP Reporting & Alerting

MORE comes with built-in reporting capabilities, but you can easily convert the data to normal CSV/XML files and integrate the repository with any other 3rd party BI tools, such as BO, Cognos, Discoverer and others.

In order to better evaluate your database behavior and enable you to create efficient rules, **MORE** constantly logs the traffic into a repository. The repository can then be analyzed using the **MORE** reporting capabilities, enabling you to drill down into problematic peak periods and abnormal events.

MORE can also send daily reports to your email showing you the QoS, Top consumers, peaks analysis etc. **MORE** unique email configuration tool allows you to customize your own email with your report preferences.

MOREVRP Integration with other Monitoring Tools

MORE can integrate with other monitoring tools such as Tivoli CA, Grid control, using a built in API.

MOREVRP Implementation

The installation and configuration of **MORE** is very easy and takes approximately two hours. On completion, you will be able to completely control and manage the load in your database by yourself.

You will also have the ability to prioritize the transactions within your database based on your business needs and thereby improve your overall database performance.

A **MORE** integrator can logon from a remote location and walk you through the implementation process, if needed.

The **MORE** implementation process consists of three major steps:

1. Installing **MORE** and integrating it with your database.
2. Collecting statistics.
3. Creating a set of rules.

MOREVRP training can be done remotely as well. The trainings consist of architecture overview, **MORE** installation, management, tuning and Best Practices of rules creation.



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