

WareLite Limited

Brief Introduction to WareLite Business Operating Support System Key Innovations

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Introducing WareLite Business Operating Support System (WL BOSS)

WareLite has developed the first single, unified platform supporting the Real Time Enterprise¹.

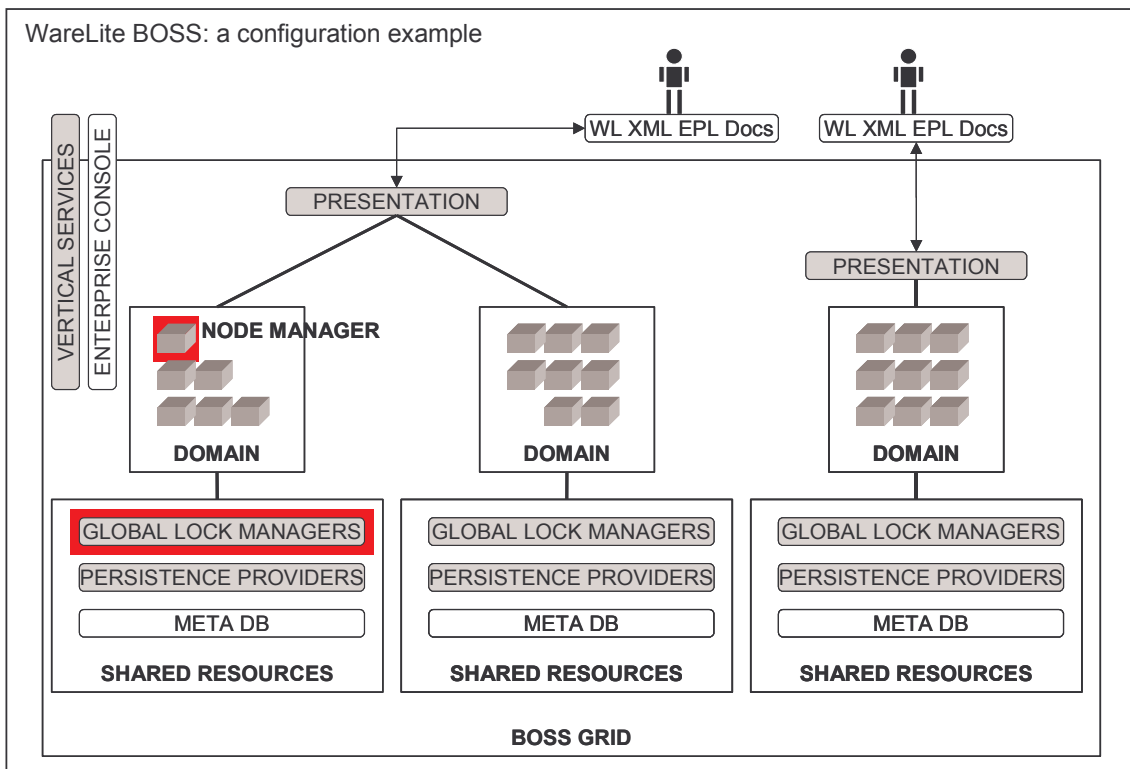
WareLite patent pending **Business Operating Support System (WL BOSS)** is a Design & Run Time environment for Event Driven, end-to-end Business Processes. WareLite goes beyond the concept of 'Business Event Management'², where the focus is on monitoring or routing data flows: WL BOSS executes the business logics that process events, thus zeroing the latency between an event's occurrence and the business response. In addition, WL BOSS enables the automated processing of every kind of events, whether 'usual' as customer orders or phone calls, or 'exceptional' as machinery breakdowns, thus eliminating manual exception management.

WL BOSS offers transaction management, persistence management, determinism and scalability as built-in services, thus implementing a strong separation between infrastructure and business logic.

Business Processes designed with WareLite RTPD² methodology (Real Time Process Design & Deployment) are logic sequences of reusable Business Rules, inexpensive to design, deploy and modify.

A WareLite Business Process is triggered by a single event – an XML frame - and participates in a single transaction. Business Rules – C++ bodies - can be designed to act as 'adaptors', co-ordinating external and 'legacy' systems within the same event driven, transactional logic: WL BOSS can be deployed as a true Exchange Hub.

Clearly, a system capable of processing single events must be highly scalable: WareLite BOSS platform is derived from grid computing and it runs on a 'collective' of inexpensive, PC-like computers, where the system's overall capacity is a near-linear function of the number of computers that compose it. WL BOSS 'grid' provides intrinsic load balancing and high availability.





As an example, a hardware infrastructure worth about €8,000 (5 PCs + accessories) processes 140 rating events per second in a deterministic way. If determinism is not necessary the same infrastructure processes over 400 events per second. Adding more inexpensive computers to such infrastructure would increase the processing capacity almost linearly.

WareLite BOSS main components are:

- **Node Managers** – Partitioned in domains, they are responsible for the execution of event-triggered Business Processes. Each Node Manager is hosted by an inexpensive, PC like computer.
- **Global Lock Managers** – As resources shared by a domain, they co-ordinate the internal transactions initiated by the Node Managers

WareLite BOSS represents a fundamental evolutionary step from the concepts of Service Oriented Architecture and Grid Computing.

WL BOSS and Grid Computing

IBM, Oracle and other players have a grid computing offer. However, their definition of grid computing is purely based on the capacity increase the grid provides to self-contained computing tasks and virtualisation. There is no mention of how their highly distributed and parallel architecture can cope with the kind of determinism needed by 95% of enterprise applications. Of course the remaining 5% of tasks, made of high-volume scientific calculations, rendering farms etc., is a perfect fit – but most enterprises do not usually need these tasks.

The reality is that almost all business processes modify data: the enterprise needs an infrastructure that is both process centric AND data centric.

WL BOSS infrastructure offers incremental, linear scalability without loss of determinism.

WL BOSS grid capacity is a function of the number of inexpensive computers that compose it. Determinism is ensured by the Global Lock Manager components within the grid infrastructure.

WL BOSS vs. the Service Oriented Architecture

Many players have marketing messages around the Service Oriented Architecture, an architecture of interfaces where applications modules available as ‘services’ can be assembled in ‘composite’ applications.

WL BOSS competitive advantages over the SOA concept lie in four main areas:

- WL BOSS offers a new definition of ‘service’
- WL BOSS does not expose proprietary interfaces – only XML
- WL BOSS is a single platform rather than a collection of separate technologies
- WL BOSS provides Real Time, Event driven processing – with complete client-server decoupling even when a reply is needed

Services in WL BOSS

Services in the SOA concepts are application modules, e.g. ‘Update customer account balance’. Such modules contain the business logic they outwardly express plus a number of hidden operations, such as:



- 'If the update is successful, commit it to the database; if not, roll it back'
- 'Lock the account object to make sure no concurrent operation accesses it while you are updating it'
- 'Make sure that the updated account object has persistence'
- 'Make sure that you can update x accounts objects per minute'

These logic operations guarantee transaction management, determinism, persistence, and specify the module's processing capacity; such capabilities are needed by most business logic and implementing them is usually the responsibility of software developers.

WL BOSS infrastructure offers such capabilities as a service to the whole enterprise business logic. These 'services' – transaction management, persistence, partitioning, determinism, scalability - are encapsulated in WL BOSS system infrastructure, while the business logic is implemented in WL Business Processes. This means that software developers need only focusing on the business logic of events processing, not on its mechanics.

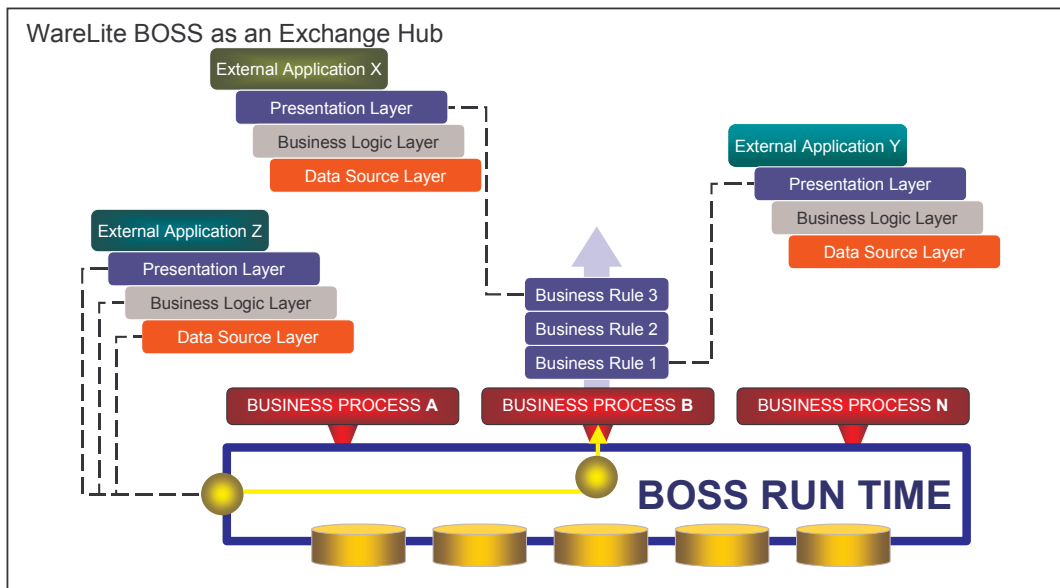
WL BOSS unified platform

The Service Oriented Architecture is made of different, independent components and tools – application server, integration broker, exchange hub, business process management...

WL BOSS is a single, unified platform, offering transaction management, persistence, partitioning, determinism and scalability as services to the whole enterprise business logic.

Business processes running on WL BOSS are:

- Flexible: business processes are developed and configured as logic sequences of reusable, configurable business rules (C++ bodies); changing a process means adding/changing business rules
- Natively 'integrated': all business rules natively access all enterprise data
- Transactional: a business process always participates in a single transaction
- Inherently scalable: the same business process can run indifferently on one or one hundred computers
- Capable of interfacing with external systems: business rules can be developed to co-ordinate external systems within event driven, transactional, flexible business processes.





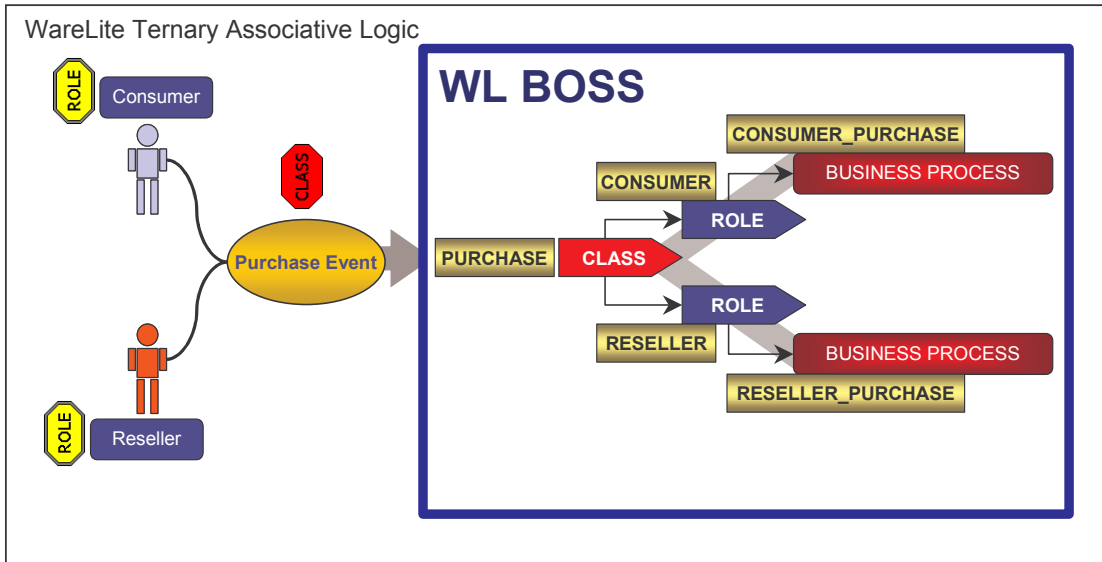
Real Time, Event Driven processing

For most players, real time is just about monitoring events as they happen, not about processing them. Batch processing is still the method of choice.

With WL BOSS, a single event of any kind, be it a phone call or a sudden breakdown, can trigger a specific, end-to-end business process. Rather than reacting to events after they have happened, business managers can proactively define processes to respond to every possible event: response delays and exception management are eliminated.

External agents (clients) present events as XML frames to WL BOSS through message queuing systems. Any agent (external systems, people using web browsers...) will have a different role; each event presented to WL BOSS will trigger a process that is specific for the agent's role and the event's class.

External agents are not aware of the process the event will trigger, even when they require a reply: WL BOSS implements total 'client-server' decoupling.



Conclusion

Thanks to innovative technologies managing Transactional Business Processes, Distribution, Partitioning, Determinism and Business Process Selection, WareLite Business Operating Support Systems provides enterprises of any size with the opportunity of deploying Real Time, Event Driven Business Processes that are modular, natively integrated, can scale up – or down – with no modification, can co-ordinate legacy and external systems in a transactional logic and are inexpensive to design, run and modify.

NOTES

1 – ‘Enterprises cannot purchase an RTE – there is no such product’ from ‘Architecting for Agility’, Gartner 30 September 2002

2 – see ‘Innovative Vendors in Business Event Management’, Gartner, 25 February 2004