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EXTOL Business Integrator
EBI Feature Highlight: Scalability, Concurrency, and Throughput Tuning

This is part of a series of feature highlight documents for EXTOL Business Integrator (EBI), a general-purpose business integration middleware solution from EXTOL. For more information about EBI features, visit www.extol.com, or contact us at info@extol.com.

Scalability, Concurrency, and Throughput Tuning Features – What They Are

Vertical scaling measures – adding CPU power, memory, or I/O bandwidth to a computer or virtual machine, for example – can improve overall integration capacity and throughput. But there are upper limits to vertical scalability. And in mixed workload environments, such measures are incapable of discriminating between high- and low-priority work inputs.

EXTOL Business Integrator (EBI) overcomes these limitations by offering mechanisms for tuning integration capacity, throughput, and response, both overall and for specific work inputs:

• **Queue priority and throughput** settings determine which work inputs get processed ahead of others, and what level of compute resource to assign to their processing.

• **Work node clustering** enables businesses with large workloads to scale horizontally by distributing integration processing across multiple physical or virtual machines.

• **Worker allocation** settings control the number of concurrent processes that execute at any one time, both in single-server configurations and across clustered EBI systems.

Mixed workload businesses with multiple trading partners, on-premise and SaaS applications, and/or enterprise data can use these mechanisms to prioritize processing of high-value or time-sensitive inputs and tune overall system performance, as business conditions and demands dictate.

Why They're Useful

EBI enables businesses to maintain system throughput and service levels in the face of changing business circumstances and priorities. Examples include:

• Prioritizing orders, invoices, and other high-value transactions that impact revenue and cash flow

• Prioritizing partner-specific work inputs according to Service Level Agreements (SLAs)

• Allocating additional workers to increase processing concurrency for high-volume, high-priority work inputs

• Reducing the concurrency impact of long-running, low-priority integration processes by setting a low maximum worker allocation for those processes

• Throttling process concurrency to avoid demand flooding by assigning workers to server nodes according to available capacity

• Tuning worker and work node allocations in response to changing demand profiles to ensure completion of daily and nightly processing within designated time windows

• Adding and removing work nodes in a cluster to handle seasonal, monthly, or other temporary increases in workload volume

How They Work

EXTOL Business Integrator supports system tuning to suit different business needs by controlling three resources: work queues, Work nodes, and workers (threads of execution):
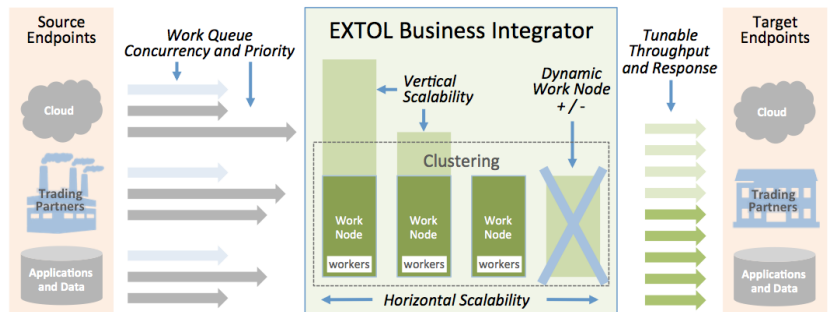
• **Work queues:** The EBI Priority and Throughput feature enables Administrators to specify a priority and maximum worker allocation for each work input. At runtime, EBI adapters post inputs from source endpoints (trading partners, files, web services, etc.) to individual event queues. EBI then dispatches integration processes to operate on inputs according to priority and concurrency limits specified by the Administrator.

• **Work nodes:** The EBI Clustering feature enables Administrators to configure EBI systems that distribute work over multiple physical or virtual machines (work nodes). Work nodes operate on Windows or Linux, and can have mixed hardware configurations. At runtime, Administrators can respond to workload demand variations by adding and removing work nodes without interrupting overall system operation.

• **Workers:** Workers are threads of execution that govern the concurrency and overall throughput of an EBI system. EBI Administrators allocate workers for both single server and cluster configurations from a licensed pool. At runtime, EBI dispatches work to one or more workers according to the concurrency and priority settings defined by the Administrator.

How You Use Them

Driven by inputs supplied by an Administrator, the EBI Installer program configures a single or multi-node EBI system, according to licensed entitlements.

After installation, Administrators can use the EBI Admin Console to monitor system performance, configure work queue priorities and concurrency, add and remove Work nodes, and allocate workers across the EBI system.

Conclusion

As integration workloads and service level requirements change, businesses need tools for monitoring performance impacts, scaling to meet increased demand, and tuning system behavior. The consequences of living without these capabilities run the gamut from SLA violations and unnecessary charge-backs to vendor score card markdowns and lost revenue opportunities.

The scalability, concurrency, and throughput features of EXTOL Business Integrator empower businesses to tune integration throughput and response, both overall and for specific inputs. Collectively, these features empower businesses to say "yes" to new business opportunities, with less concern for capacity limitations or service level compliance.

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Learn more about EXTOL's integration solutions at www.EXTOL.com