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IdeaBlade DevForce™ Business Object Server

Business Object Server Introduction

The DevForce Business Object Server (BOS) is a high-performance, scalable application server that provides a database broker layer for channeling data transactions between clients and networked data sources. Providing functionality that parallels a J2EE Application Server in a thin-client architecture, the BOS acts as a mediator among multiple remote smart clients and requested services. This stateless middle-tier capability delivers significant advantages to enterprise applications:

- Security
- Scalability
- Performance over WANs
- Connectivity over the Web
- Secure access to hosted services
- SOA
- Server Push

Need	Business Object Server Capabilities
Security	♦ Ensures confidentiality of transmitted data ♦ Authenticates each communication ♦ Imposes application-specific authorization logic ♦ Creates a consolidated security layer for all requests to databases and Web Services
Performance for WAN and HTTP access	♦ Improves performance over WAN and VPN connections ♦ Supports trusted business partners in connecting over port 80, 443
Central monitoring, especially for HIPPA or SOX	♦ Audits server and client application activity ♦ Tracks and audits data source operations such as queries
Web Services/ SOA	♦ Controls client access to web services centrally ♦ Enables publishing of business object model as a web service to .NET and non-.NET clients
Server Push	♦ Automatically publishes data updates to subscribing clients

Build Rich, Productive .NET Applications

Most developers would like to insulate their client code from the storage and access details of the data source(s) whenever possible. The DevForce
Business Object Server provides this insulation, by enabling a five-layer architecture that separates data store, data access, business object model, presentation view, and presentation controller functions for clean code design, generation, testing, and maintenance. This enables clients to operate without having to know anything about server connections, and servers can operate in a stateless,
session-unaware mode for enhanced performance, scalability, and security. Moreover, with the BOS, this separation of client and server layers can be achieved independently from the network's physical configuration. The result is a functional client-side data access layer that reduces the complexities of data transport, connection security, and client support.

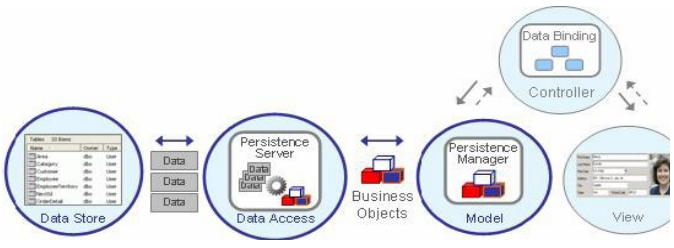
"The Business Object Server has enabled us to build a highly secure and scalable .NET application in an amazingly short period of time, without getting bogged down in the depths of WCF or .NET remoting."

- Joey Gurango, Gurango Software

Within the BOS, a DevForce Persistence Server is responsible for interacting with data stores and other host processes. The business object state and logic execute primarily within the business object model, where they engage with the rest of the application as it is experienced by the end user, so the Model layer never interacts directly with data stores.

Q: What's a BOS?

A: An application server that adds n-tier capability, security and scalability in the Devforce Enterprise framework.



The BOS features a Persistence Server that helps enable a five-layer application architecture.

Performance & Scalability

The Devforce Business Object Server delivers improved performance and scalability for enterprise applications through a combination of features.

1. Data compression. The DevForce BOS dramatically reduces the amount of database data that must be transported, because it translates data into business objects, compresses those objects by as much as a 10:1 compression ratio, then passes only references to those business objects over the wire.
2. Connection pooling. This minimizes the number of connections the application must open with the database, thereby delivering higher performance and scalability.
3. Span queries. The BOS Span Query function groups small queries together and fetches them in a single trip to the server.
4. Stateless server maintenance. DevForce BOS delivers better overall performance by enabling load balancers to distribute client tasks to whichever server is available, and by isolating servers that go down.

Security & Control

A distributed application that uses the DevForce BOS can be more secure than a client/server application. Clients have no direct database connection information, and every exchange between the BOS and client is secured by an encrypted "session bundle" that identifies and authenticates client and server.

The Business Object Server can be deployed behind a firewall. XML configuration files can require clients to use selected addresses and ports.

Beyond security, a DevForce BOS application can monitor and audit every trip to he server to conform to HIPPA or Sarbanes-Oxley (SOX) regulations. The BOS can capture all activity in centralized logs for diagnosis and troubleshooting. Both client and server publish the logs as they write them; listener programs, such as the included DevForce TraceViewer, can filter and redirect log messages.

These security and control features enable the development of smart-client, n-tier applications that meet the demanding requirements of real-world enterprise applications.

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Flexibility for Complex Applications

The DevForce BOS addresses many of the complex requirements of enterprise applications:

- Server-side application logic — Client applications can invoke proprietary, data intensive logic on the server via the secure BOS "RPC".
- Low-bandwidth connections. DevForce BOS caching and data compression ensure a responsive user experience even over low-bandwidth and cellular connections.
- WCF or Remoting. DevForce BOS can use either WCF or .NET remoting for client-to-server communications, over any network transport layer.
- SOA support. DevForce BOS developers can rapidly generate (and regenerate) web service access to the business model.
- Simultaneous support for remote and LAN-only users. DevForce BOS supports local (two-tier) and remote (n-tier) users with the same application executable.
- Server Push. The DevForce BOS delivers just-in-time data updates to subscribing clients, eliminating constant "pings" to the server.

"We use the DevForce Business Object Server for a wide variety of important tasks, from mediating client and server relations to building in advanced security functions. It's definitely a core part of our architecture and it gives us the flexibility we need to deliver high-performance applications quickly in the future."
Michael Stoyanovich
Benesys, Inc.

Microsoft GOLD CERTIFIED Partner