

# Construct Spectrum

## Generate client/server and Web applications the easy way

With Construct Spectrum, you can generate all the components needed to implement client/server and Web applications that communicate seamlessly with your Natural applications and existing databases.

Construct Spectrum extends the reach of your Natural alphanumeric applications, enabling end users to query and maintain key business data on the mainframe from user-friendly GUI clients and standard Web browsers. As it handles the complex client-to-server communication functions involved, you will find it much easier to deploy and maintain your applications. Construct Spectrum leverages Natural Construct for powerful model-based code generation. It shields your developers and the applications they develop from the technical complexity of integrating different development environments: Natural transaction-based application servers and COM-enabled clients for networked and browser-based applications. And it supports a clean separation of data, business and presentation logic, making your applications highly flexible and maintenance-friendly.

### THE BENEFITS

Construct Spectrum:

- Automates the creation and ongoing support of client/server and Web-enabled solutions – delivering true Rapid Application Development
- Eliminates the complexity of developing and deploying distributed enterprise-class applications

- Provides the intuitive user interfaces your end users need to be productive
- Extends the Natural application development environment to the world of e-business and distributed components
- Reduces development, deployment and maintenance costs
- Provides added application value through optimized communication, security, data translation and compression

### CLIENT/SERVER APPLICATIONS WITH CONSTRUCT SPECTRUM

Construct Spectrum provides the infrastructure needed for direct access from COM-enabled (Visual Basic) clients to new or existing Natural servers through an encapsulated communication component. The Software Development Kit provides the framework components and Construct models required to automatically create a COM-enabled client. The tool also generates a Spectrum Dispatch Client (SDC) – the client layer – and a Spectrum Dispatch Server (SDS) – the server layer.

### A client/server application in action

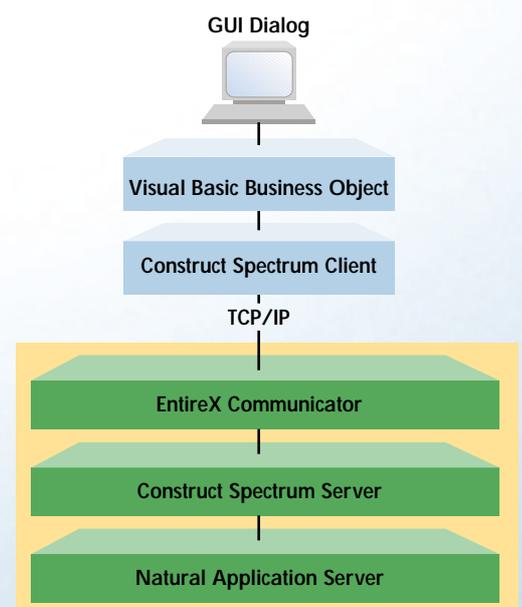
When the client makes a communication request, the SDC translates the request into a compact, secure message and transmits it to the server via EntireX Communicator.

On the server, the SDS converts the incoming request for processing by the server applications. A similar technique is used to return the processed result to the client.

### WEB APPLICATIONS WITH CONSTRUCT SPECTRUM

Web applications also feature SDC and SDS components, as described above. In this case, however, EntireX Communicator links the SDS to the SDC running on a Windows NT Web server (see graphic) instead of a client PC. This provides true thin-client access for end users. On the server, each Natural

### Architecture of a Construct Spectrum Client/Server Application

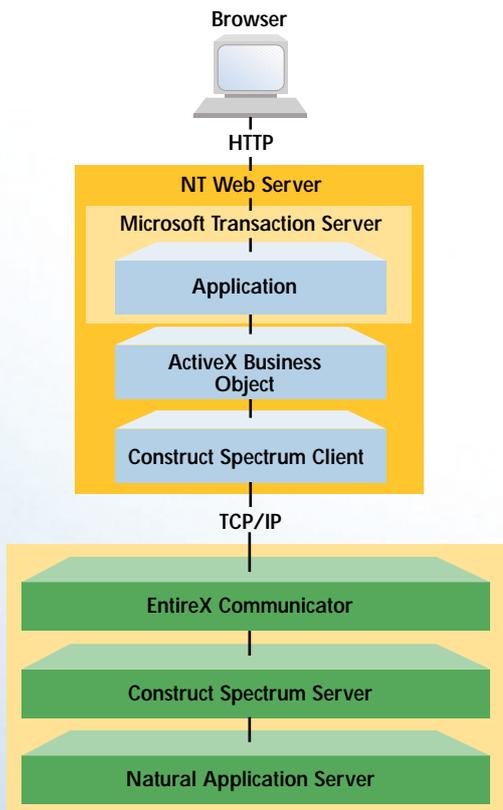


business object is represented by an ActiveX Business Object (ABO), which is a COM object generated by Construct Spectrum.

### Templates for flexibility and consistency

Web pages are assembled by combining a series of HTML templates at runtime. Templates let you easily tailor the look and feel of your website. They facilitate the re-use of common HTML elements such as logos and standard navigation bars. Any HTML editor can be used to customize the HTML templates. Applications run in both Internet Explorer and Netscape Navigator browsers, and they are browser-aware.

### Construct Spectrum in Action



### Replacement tags for dynamic content

Dynamic content is included in Web pages by embedding special replacement tags within the HTML templates. A tag triggers events in a Web page handler, which then creates dynamic content to replace the tag.

### Simplified debugging

Because Web applications are ActiveX DLLs built with Visual Basic, you can leverage Visual Basic's rich development environment and debugging features. Construct Spectrum also provides many debugging features to diagnose problems between the Windows platform and the mainframe.

### A Web application in action

When the user navigates to a Construct Spectrum application using a Web browser, an Active Server Page® running inside Microsoft Internet Information Server® routes the request to the Web application, which is a Microsoft Transaction Server® component. The Web application invokes Natural services on the mainframe to retrieve business data, assembles a series of HTML templates to build the Web page, and inserts the business data into the Web page before sending it back to the browser.

### Integrated wizards make development a breeze

Component generation is facilitated by easy-to-use wizards that are seamlessly integrated into the Visual Basic development environment.

All wizards use common repository data (stored in Predict) to ensure consistent and standardized code.

### In-house and Internet security features

With Spectrum, your client/server and Web applications have the same security services long associated with traditional mainframe-class applications.

For Web applications that require user authentication, Construct Spectrum supports the Internet security standard Secure Socket Layer (SSL) to encrypt messages between the Web browser and Web server. A login facility allows a user's ID and password to be transmitted securely to the Web server to control access to Natural business objects. On the mainframe side, a number of security options are supported, including Natural Security®, RACF®, ACF2®, and Spectrum Security.

### TECHNICAL SPECIFICATIONS

Spectrum Dispatch Server (SDS) runs on mainframe platforms including OS/390, VSE, BS2000; Spectrum Dispatch Client (SDC) and Development Kit runs on Windows NT and Windows 2000 Professional.

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