

Natural 5 for Windows

Natural has always stood for efficient development, a smooth evolution path, and above all, protection of investment. Loyal to this tradition, Natural Version 5 for Windows hides complexity and facilitates the transition of your legacy applications to the Internet era.

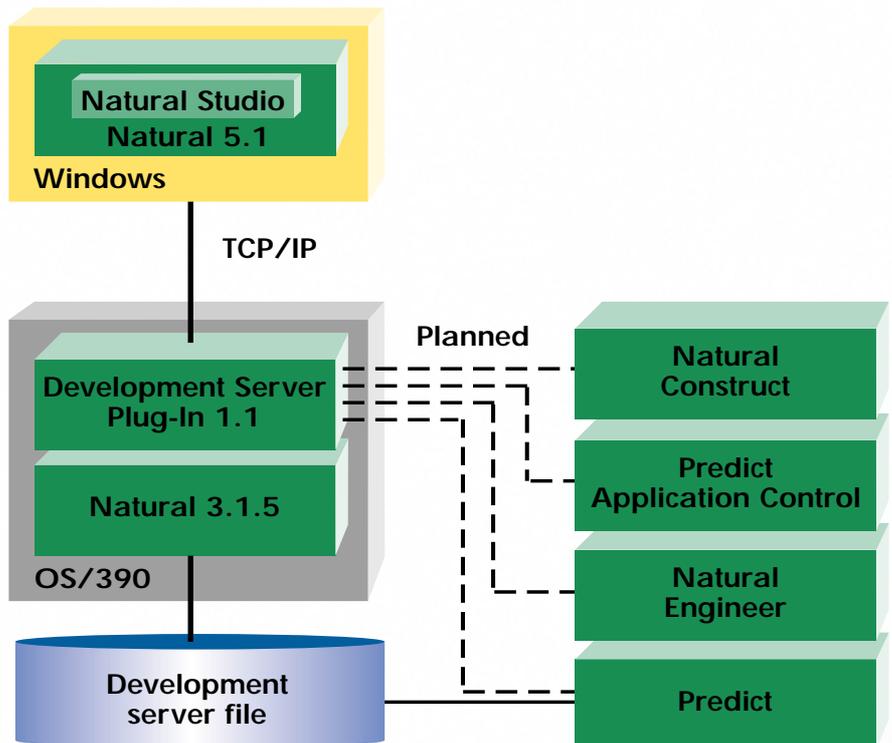
The highlights

- New statement for easy access to any resource on the Web
- XML document processing from Natural
- Single Point of Development concept
- Instant switching between platforms
- Dialog Wizard for creating sophisticated user interfaces in Windows
- Cost-effective development of Tamino server extensions in Natural

ACCESS TO ANY RESOURCE ON THE INTERNET

The new HTTP Request Document statement gives Natural applications potential access to any resource on the Internet, and enables them to reach any communication partner that uses the HTTP protocol.

The statement can also be employed to implement direct access from Natural applications to Software AG's Tamino XML Server. This is achieved by using the URL of a Tamino server followed by an XPath (XML Path Language) query expression. XPath is a language used for navigating through the hierarchical structure of an XML document. Tamino recognizes the



query as an instruction, and returns a list of XML documents that fulfill the query condition.

In the future, access to data on Tamino XML Server will come even more "naturally" – through the planned new add-on product, Natural for Tamino. It will retrieve and update XML data using Natural's native data manipulation language, including the powerful Find statement.

AN EXAMPLE REQUEST DOCUMENT STATEMENT

```
Request document from "http://..."
With
  User #user PASSWORD #password
  Data
  Name 'XMLData' value #Queryxml
  Name 'repServerName' value 'NT2'
Return
  Page #ResultXML
Response #rc
```

PROCESSING XML DOCUMENTS

The new **XML Toolkit** provides Natural with XML document processing capabilities. The toolkit includes a Wizard that generates Natural source code. This code can be integrated into customer applications to provide access to XML data or generate XML documents from Natural.

With the XML Toolkit, a Natural data definition can be generated from an XML Document Type Definition (DTD), and vice versa. The content of a Natural variable can be serialized into an XML document. And an XML document can be parsed into a Natural variable. The XML Toolkit enables communication between an application and a browser, and presentation on the browser, to be handled using nothing but standard functionality.

COMPLEMENTING SERVER POWER WITH DESKTOP PRODUCTIVITY

Natural 5 for Windows provides a Single Point of Development for Natural applications across all platforms. Without leaving Windows, software engineers can now develop Natural applications that span multiple, especially non-Windows platforms. A separately charged **Natural Development Server Plug-In** connects the developer's desktop to a Natural development server residing on a different platform. Source code is edited in the Natural Studio and transparently retrieved from and saved in the target environment. Compilation is initiated from the Natural Studio by transparently submitting commands to the target environment. Debugging is controlled from the

Natural Studio, with the application executed in the target environment. The XRef GUI Client is used to navigate hierarchies of referenced and referencing Natural objects.

The first Natural Development Server Plug-In will be made available for Natural on OS/390. Other platforms will follow. The Natural Studio will later incorporate further development services, some of which are currently part of separate add-on products – such as Predict and Natural Construct.

INSTANT SWITCHING BETWEEN PLATFORMS

A common format for generated code and a single virtual machine (Natural runtime system) is now used on all open systems platforms. Natural code generated on Windows, Unix or OpenVMS can be processed on any of the others without re-compilation. This is especially beneficial for distributed applications spanning multiple hardware and operating system platforms. For performance reasons, there is a second code format and virtual machine for all main-frame platforms.

RAPID DEVELOPMENT OF WINDOWS USER INTERFACES

The Dialog Wizard is a highly interactive generation tool designed to create dialogs for specific purposes. It is perfect for creating sophisticated, high-quality user interfaces for Windows easily and at low cost. Three dialog types can be generated using the wizard. Frame Dialogs are intended for application frames. Selection Dialogs are typically employed for reading, saving or open-

ing objects. Tab Dialogs are useful for help dialogs and option settings. Once generated, dialogs can be modified in Natural Studio's dialog editor.

COMPLEMENTING TAMINO WITH NATURAL BUSINESS LOGIC

Not every data element referred to in an XML document, managed by a Tamino XML Server, needs to be stored in Tamino itself. While Tamino holds the tags that bear the meaning, the actual data can be supplied by a different DBMS such as Adabas, or by a Tamino server extension. This is an application component with an open COM or Java interface to Tamino. This means that tried and trusted business logic can be used to supply content to XML-based documents. And with Natural, server extensions can be developed and maintained more economically than with most other languages.

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