Lotus Notes Technical Overview

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Level: Beginner
Works with: Notes 5.0
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*[Editor's Note: This article is a technical overview of the features in version 5.0, the initial gold release of Notes R5. To read about enhancements since 5.0 was first released, read our companion article, **Enhancements in 5.0.1 through 5.05**. To check out the features for yourself, **download a trial of Notes R5** now!]*

Introduction

The Lotus Notes R5 client gives you easy access to all the information that is important to you—whether that information is personal (like your e-mail and calendar) or public (like your favorite Web sites and Internet newsgroups). The client includes a new browser-like user interface with a customizable Welcome page for tracking your important daily information. It also includes improvements to the applications you use in your daily work, such as mail, calendar and scheduling, Web browsing, and discussions.

The Notes R5 client is server independent—that is, you can use it with Domino R5 as well as other Internet-standard servers, such as the ones your Internet Service Provider (ISP) may use. For example, you can read and send messages to any Internet mail server, read and post topics to any Internet newsgroup, search any Internet directory, view HTML from any Web server, and use X.509 certificates for security. The best part is that you can do all these things from within one, consistent interface, without needing to know about the Internet standards involved. You simply do your work within the Notes interface, and Notes handles the rest for you.

Taking a closer look

The new look-and-feel of Notes R5 focuses on creating an environment that makes it easy for both new and existing users to access all of their information. This involved adding features that help new users, such as cc:Mail and Internet mail users, feel comfortable within the Notes mail interface, as well as making other existing features, such as calendar and scheduling, easier to use. Underlying both of these areas is the client's total embrace of Internet standards, so you can work with the information that matters to you, regardless of where that data is stored or what protocol is used to deliver it.

"Our main goal is that the Notes client should allow you to organize your life," says Blair Hankins, Notes client product manager. "You have one place to go that combines all the information that is most important to you, and brings it together in one easy-to-use, consistent interface. It doesn't matter if this information is from your corporate intranet or from the Internet. Both worlds are there, and there's no distinction with how you work with the information."

Specific Notes R5 features include:

- **The new user interface**
  –Use the new Welcome page for instant access to your mail, calendar, and more; and personalize it to track your important information
  –Create bookmarks for anything that you want to return to later, whether it's from Notes or the Internet

–Navigate through open "pages" of information with new task buttons and Web-like navigation buttons

- **Improved applications**
  –Use new mail features, such as cc:Mail-like address headers, mail rules, easier mail archiving, and more
  –Get organized with enhanced Calendar and Scheduling features, such as tasks that follow you, improved calendar management, a Group calendar, and more

- **Native support of Internet standards**
  –View Internet mail messages, Web pages, and newsgroups with full fidelity (because of MIME and HTML support) and security (using SSL, S/MIME, and X.509 certificates)
  –Read and send messages from Internet mail servers (using POP3 or IMAP)
  –Search any Internet directory (using LDAP)
  –Read and post articles to any Internet newsgroup discussion (using NNTP)

The following sections give you a closer look at the new key features. Keep in mind that this article is only an overview of these features. For more information on Notes R5, see our **interview with Robby Shaver**, the designer of the new UI; our **interview with Ryan Jansen**, developer of the new Calendar & Scheduling features; our **interview with Dave Delay**, developer of the Internet newsgroup features; and the **R5 Reviewer's Guide**.

The new interface – one place for all your needs

Notes R5 marks the unification of Notes and the Web, and the first place this is apparent is in the new user interface. "Anyone can sit down and browse the Web," explains Hankins, "so with R5, we're employing the simplicity of the browser interface and combining it with the power of Notes."

The new client UI provides a Web-like model of navigation, and a seamless way to access information from Notes, the Web, Internet newsgroups, and your corporate intranet. In fact, the Welcome page, new bookmarks, and expanded search capabilities all point to new ways to enhance knowledge management in your organization. To learn more about how knowledge management is more than a buzzword when it comes to Notes R5, see "**Knowledge Management in R5**."

In addition, R5 makes more Notes elements accessible to blind and visually impaired users. Notes R5 includes expanded keyboard accessibility and new screen reader accessibility features. For more information on accessibility in Notes R5, see "**Notes R5: Accessibility**."

Instant access with the new Welcome page

The Welcome page in Notes R5 is a new way for you to be immediately productive. The "Basics" Welcome page provides instant access to the applications that you use in your daily work, from your mail and calendar, to your address book and to do list. You can also search both Notes databases and the Web from here. In addition, you can take a guided tour, see what's new in R5, and try out Lotus QuickPlace or Sametime. The following screen shows the Welcome page:

You can select from different Welcome page styles and personalize them, or you can create your own. This way, you can create your own "home" page that contains links to all your important information, such as your mail, calendar entries, databases you use in your daily work, corporate announcements, and public information from the Internet (such as stock quotes or local weather). For example, the following page style includes the personalized "My News" service by Lotus and America Online, as well as your Inbox and calendar:
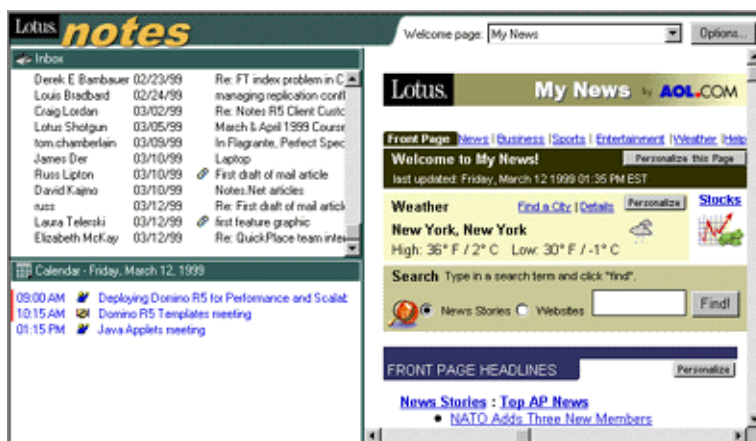
In fact, you can easily modify the Welcome page to fit your own needs. As a user, you can personalize the number of frames that appear on the Welcome page, and specify what information appears in those frames by "subscribing" to the topics that are important to you. For example, you might set up a subscription for mail messages that contain the word "Paycheck" or for topics in a discussion database that contain the word "JavaScript." In addition, administrators can completely customize how the Welcome page should appear for all users in their organization, including the company-specific databases and links that should appear on the page.

According to Robby Shaver, Notes R5 UI designer, the first step toward the Welcome page was the Portfolio database introduced in R4.6, where you could create personal portfolios for yourself, or public portfolios for your group or organization. (For more information on Portfolio databases, see the article "**Contact management in Notes 4.6**.") In Notes R5, the Welcome page gathers your personal and public information, and pulls it all into one place so you can easily access it.

Bookmarking the things that matter to you
Another way to quickly access things is with the new bookmarks, which allow you to create links to information or the places that are important to

you. You can create a bookmark, just like you would in a browser, but this bookmark can point to both Notes and Internet elements, including databases, views, documents, Web pages, and newsgroups. Creating a bookmark can be as easy as dragging and dropping a doclink, for example, over to the bookmark icon.

"The idea behind bookmarks is that Notes lets you get at more than databases—you can access Web pages, newsgroups, databases, and so on," says Shaver. "We really had three motivations—first, we wanted to make the UI like the current workspace, but let you bookmark the things that are important to you, so you can get back to them easily. We also wanted to figure out the best way for you to get at the stuff. Finally, we also wanted to allow you to share things." Bookmarks are the result—they replace the R4 workspace, building off of the concept of Portfolio databases introduced in R4.6. They make it easier for you to quickly get to the things that are important to you, while giving developers programmable access to the UI for the very first time.

The new bookmarks run down the left side of the Notes window. The first set of bookmarks provide direct links to your Notes applications—your mail, calendar, address book, to do list, and Replicator page. The last two bookmarks open the Domino Administrator and Domino Designer, if available. The following screen shows this first set of bookmarks:

The next set of bookmarks help you quickly get to the other databases that you visit frequently. These bookmarks include Favorites (for your favorite bookmarks), Databases (for databases that were on your R4 workspace *and access to your R4 workspace!)*, More Bookmarks (for links to Lotus Web sites and Internet Search sites); and your Internet Explorer and Netscape bookmarks.
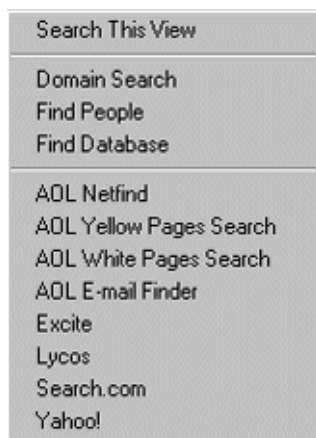
Navigating with task buttons and Web-like navigation buttons
In Notes R5, task buttons are the new way for you to easily navigate among your open "pages"—whether those pages are a new mail message, a view of a database, a Web page, or a newsgroup article. The task buttons replace the R4 Window menu. Whenever you open a new page, you get a new task button at the top of the main Notes window. You then move among the open pages by simply clicking on the task buttons, or close the pages by clicking on the "X" in the right corner of the button. Existing R4 users will appreciate that you can have up to 20 pages open at the same time, so the old nine-window limit goes away. The following screen shows the new task buttons:
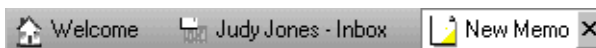
In addition, you can navigate among the open pages by using the new navigation buttons (Back, Forward, Stop, Refresh, Search, and Open URL). These buttons appear at the top-right corner of the main Notes window. They work just as you would expect them to work in a typical Web browser, with a few extras thrown in. The Search button allows you

to easily access all of the Notes R5 search features, including a new Web-like interface and support for searches that can range across all the documents in a single database (such as your mail), to searches across multiple databases, to searches across Notes databases, shared file systems, *and* the Internet. The Open URL button shows the text address of the active page, whether it's the URL of a Web page, newsgroup article, or a Notes element. (Documents that you can't get to through the Web begin with *Notes://* instead of *http://*) Of course, you can also type a URL in the Open URL text box to open a new page. The following screen shows the new navigation buttons, with the new Search menu:

Search This View

Domain Search
Find People
Find Database

AOL Netfind
AOL Yellow Pages Search
AOL White Pages Search
AOL E-mail Finder
Excite
Lycos
Search.com
Yahoo!

Improved applications for your daily work

Behind the new "face" of Notes, you get enhanced applications for improving your productivity in your daily work. These applications include mail, calendar and scheduling, and more—all of which you can use from the best mobile client around. "In every manner that we can, we're trying to make things consistent between Notes and the Web," says Teresa Deane, Notes R5 template developer. This includes modifying the look-and-feel of the applications to take advantage of the new UI and Domino Designer features, such as outlines, framesets, pages, and so on. (For more information on the look-and-feel of R5, see "**R5 Template Graphics: The High Resolution Revolution**.")

The Notes applications are also tightly integrated with other applications, so you can use Notes as your default mail client for sending mail from your desktop or browser; use Notes as your default Internet newsgroup reader; use the new Notes Minder to display new mail icons in the Windows 95/98/NT system tray; use the new Actioneer utility to capture data and pull it into a calendar entry or to do; browse the Web with the integrated Internet Explorer 4.x; and continue to use Microsoft Word or Lotus Word Pro as alternate editors.

You can create professional-looking documents within Notes by using new editor features, such as new types of lists (squares, circles, checkmarks, alphabetical, and Roman), text-wrapping around graphics, new table formatting features, a Highlighter feature (to highlight text as if you were using a highlighter pen), and Print Preview (to preview documents before you print them). In addition, you can synchronize your mail, contacts, and so on, with your Personal Digital Assistants (PDAs) by using Lotus EasySync for Notes or other third-party products.

Finally, Notes R5 can run existing Domino applications, and new R5 applications that feature Java, JavaScript, or HTML (as well as Web pages that use these technologies). Notes is also a great eSuite application container, and includes support for ActiveDoc/ActiveX.
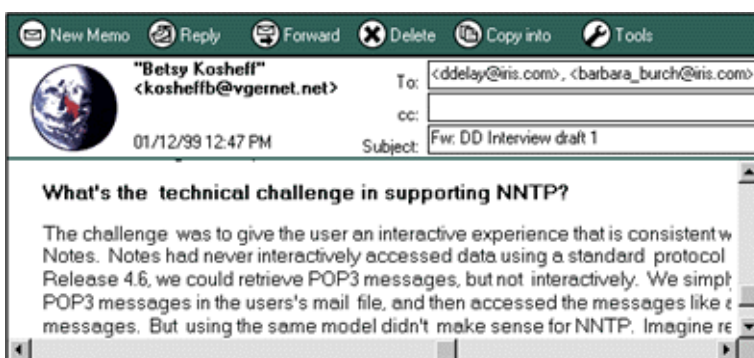
Mail
Your first stop for communicating with the rest of the world is your mail,

and Notes R5 makes your mail even easier to use. First off, your mail is now tightly integrated with your calendar. You can now view your calendar and your mail side-by-side, use pop-up action buttons to create new memos and calendar entries, and drag-and-drop entries between the two applications. In addition, the bottom-left corner of each application includes the following toolbar for easily switching between your mail, calendar, and to do list:

Notes R5 mail also incorporates the best features from cc:Mail, including separate address headers (in a non-scrollable region at the top of each message); faster *type-down* addressing (where type-ahead allows the use of the Up and Down arrows to cycle through possible names); an Inbox that displays new messages at the top; and mail rules for filtering new messages as they arrive. The following screen shows the new non-scrollable region that appears at the top of each message:

For mail rules, you can specify that Notes watch for messages from a certain sender (such as your boss), or messages that contain a certain subject, and then select what to do when those messages arrive (copy or move them to a folder, delete them, or change the importance of the message). All of the message checking occurs on the server, so it's fast and does not affect the performance of the client. The following screen shows a mail rule where Notes checks for messages from *Lou Gerstner* or from the Internet domain *acme.com*, and when a message arrives with these characteristics, it changes the importance of the message to *High*:
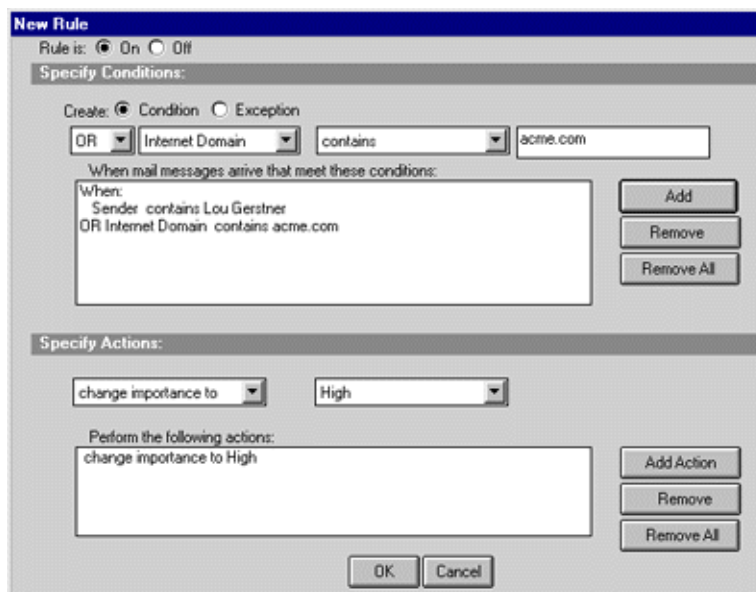
The mail application also includes some exciting improvements to existing mail features, such as easier mail archiving and new user preferences. Mail archiving now runs on the server and allows you to retain your current folders in your archived database. In your mail preferences, you can select to automatically spell-check messages when you send them; browse through updated letterhead designs; and select to automatically append a signature to outgoing messages.

In addition, you can now have Notes as your default mail client, which means that the Notes mail UI appears when you select mail commands or URLs from the desktop or from a browser. You can use Notes for mail from within Internet Explorer (3.x and 4.x), Active Desktop, and Netscape Navigator/Communicator (4.x). (The functionality was available in R4.6 for Netscape Navigator 3.x.) Another example of integration is the new *Notes Minder* utility, which displays an icon in the Windows 95/98/NT system tray to notify you of new mail and calendar reminders. It notifies you *without* you needing to have the Notes client running. The following screen shows how the Notes Minder icon appears in the Windows NT system tray:
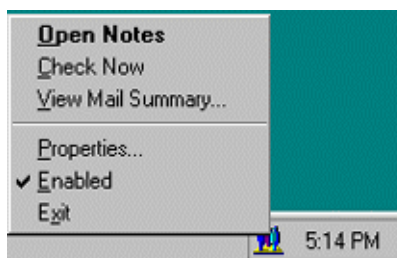

Calendar and Scheduling
The Notes R5 calendar makes it even easier to organize the things you need to do in your daily life. As we just mentioned, the calendar is now tightly integrated with your mail. You can view the applications side-by-side, and use drag-and-drop or new pop-up action buttons to create new entries. Or, you can click on the toolbar in the bottom-left corner to easily switch between your mail, calendar, and to do list. "We're making the calendar more intuitive and easier to use," says Ryan Jansen, developer of the calendar and scheduling features. "For example, you can create any type of calendar entry directly from your Inbox view." Your calendar preferences are also now combined with your mail preferences, so you can now specify your free time, delegation information, task

management defaults, Calendar view defaults, alarm defaults, and more from within one dialog box. (For a more in-depth look at the calendar and scheduling features, see our **interview with Ryan Jansen**.)

The Calendar view itself has a new look-and-feel, with a monthly layout shown in the top-left corner and new pop-up action buttons for managing calendar entries. Previously, you managed calendar entries by opening the individual documents and then selecting options. Now, you can simply select an entry in your Calendar and click either the new Owner Actions or Participant Actions buttons to choose the action you want to take. For example, you can reschedule a meeting by selecting the entry, clicking Owner Actions and choosing Reschedule, as shown in the following screen:
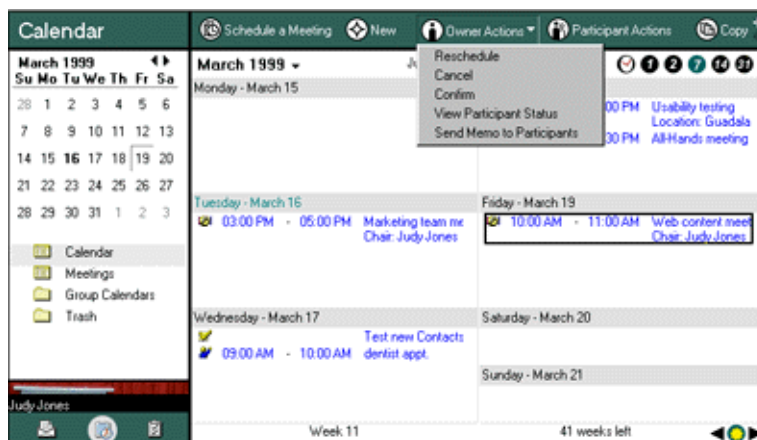
Individual calendar entries also have a new look. You can easily change a calendar entry by selecting an entry type (appointment, meeting, event, anniversary, or reminder). When you create a meeting invitation, you can specify invitees as Required, Optional, or FYI only. (The purpose of the FYI option is to notify the invitee that things are progressing, without requiring the invitee to attend the meeting.) You can also now specify delivery options, including "Prevent Delegation" and "Prevent counter proposal" options.

To reserve a resource for your meeting, R5 introduces the concept of a "resource owner," or a person who handles reservations for a particular resource. All requests for a resource are sent directly to the resource owner. The owner has new ways to restrict *who* may reserve a resource, and *how* the resource is reserved. You can also now reserve resources from other domains, and create repeating reservations.

The following screen shows the new look of meeting invitations:

If the invitation is for a repeating meeting, Notes now creates a single document that contains all the meeting dates. (Previously, a repeating meeting invitation created a separate document for each date.) When

receiving an invitation, you can add comments when declining or rescheduling the meeting, and continue to receive meeting updates if you decline the meeting.

Another important part of your calendar is your tasks, or "to do's," as they are called in Notes R5. The to do items now behave just like other calendar entries. You can automatically add to do's to your calendar, create alarms for to do's, and specify if incomplete to do's should follow you from day-to-day (previously, you needed to manually move them on your calendar). Finally, R5 adds full workflow capabilities for to do's. For example, the to do owners can now reschedule or cancel tasks, and to do assignees can either accept, delegate, or request modifications to the task.

Other usability improvements for the calendar include new printing options (with support for printing daily, weekly, and monthly calendar views), a Group Calendar (a calendar that displays a group of users and their calendar entries, for a particular day, week or month), and support for adding holidays to your calendar. (Administrators can customize the holidays for their own organization).

One final enhancement is behind-the-scenes, but improves both the performance of your mail and calendar. By moving much of the application code into the core product, Jansen was able to keep the size of the mail template in check. "The Calendar features originated as mostly LotusScript code included within the template," explains Jansen. "Now, we've ported that code into C, and moved it into the core product. The new size of the template will be only slightly larger than for R4.5, but with two to three-times more features included."

Native support of Internet standards

The native support for different Internet standards in Notes R5 is what makes the new UI and enhanced applications work together seamlessly. *Native support* means that Notes displays information in its original format, without any conversions. "R5 opens up the client to the rest of the world," says Mike Kudla, manager of the Notes client team. "You're able to work with any data source, whether it's the Web, NNTP newsgroups, Internet mail or other application servers. The way the data is stored doesn't matter to the user, because the new interface makes it all transparent to the user. It just seems like Notes to them."

Setup for the various Internet standards is handled during your initial installation of Notes R5. A client configuration wizard walks you through the process of creating Internet accounts for outgoing mail, incoming mail, remote directories, and newsgroup discussions. You can also modify these account documents later. (For more information on the R5 support for Internet standards, see the article "**Notes R5: Into the future with Internet standards.**")

Content – Full fidelity and security

Because of the client's native support of HTML, MIME, Java, and JavaScript, the distinction between Notes and Web content is no more. Notes R5 allows you to view all data with full fidelity—for Web pages, newsgroups, Internet mail, and applications. When using the Notes to browse the Web, you now have support for frames, native formats for things like animated GIFs and JPEG images, better tables support, and the ability to view the HTML source code. Also, pages that use Java or JavaScript can now come alive in the Notes client. The following screen shows our frames-based "History of Notes and Domino" page from within Notes R5:
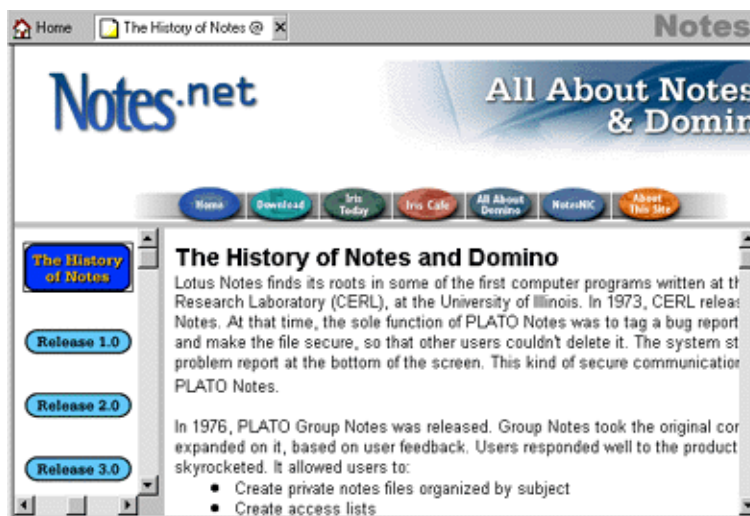
Mail messages look the same in Notes whether they came from an Outlook client, an Internet mail client, or another Notes client. To allow messages to be more than just text, Notes supports the Multipurpose Internet Mail Extensions (MIME). The MIME standard "extends" the format of messages to allow for audio, video, international character sets, and multi-part messages. When you receive a message, you can see the exact formatting of the original MIME message. When you send a message, the Notes client itself creates the MIME message with the appropriate attachments. (In R4.6, the server converted the message to MIME.) Notes also supports international MIME settings, such as character sets and fonts. You can create an International MIME Settings document in your address book, and then view international Web pages and Internet mail with full fidelity.

For security, Notes R5 supports Secure Sockets Layer (SSL) and X.509 certificates for secure Internet connections. Notes supports SSL versions 2.0 and 3.0 when using POP3, IMAP, LDAP, and NNTP. X.509 is the open standard certificate format for inter-application authentication. You can now use either traditional Notes certificates and/or X.509 certificates (which then allow interoperability with other certificate authorities and standards, such as S/MIME). Notes also supports S/MIME for sending and receiving encrypted Internet mail.

Mail
While the HTML and MIME support ensures the fidelity of mail message content, Notes also supports the necessary protocols for working with your Internet mail: POP3, IMAPv4, and SMTP. POP3 and IMAP are for accessing your Internet mail accounts, and SMTP is for sending Internet mail.

The widely used Post Office Protocol version 3 (POP3) allows clients to retrieve messages from a server, but doesn't provide for any manipulation of the mail on the server. POP3 clients can simply download their mail. In contrast, the Internet Message Access Protocol version 4 (IMAPv4) allows for clients to access and manipulate mail messages on a server. Among other things, IMAP includes operations for creating, deleting, and renaming remote message folders, called "mailboxes." Notes folders appear as IMAP mailboxes, and vice versa. To access either type of mail account from within Notes, you simply create an Account document in your address book specifying your Internet mail server, login name, protocol, and so on. Here's an Account document for a POP3 mail server:
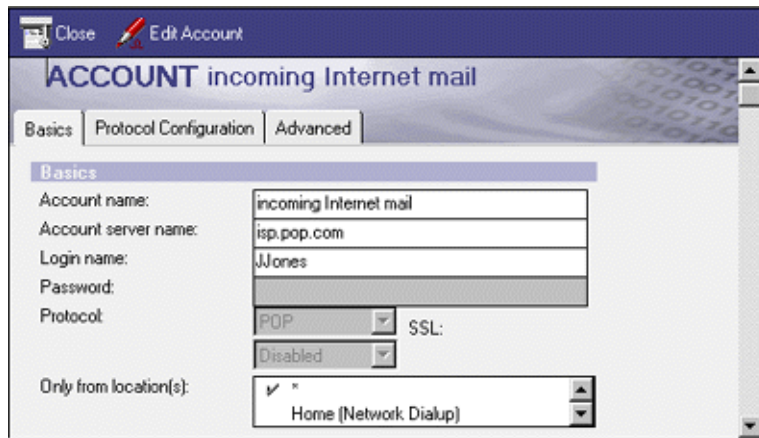
After you've accessed your mail, Notes includes support for the Simple Mail Transfer Protocol (SMTP) for sending mail back out to the Internet. You can either send your outgoing mail through a Domino server (which also supports SMTP), or send it directly to the Internet. If you select to send mail directly to the Internet, you must also create an Account document in your address book for the outgoing SMTP mail server. Again, you simply enter your login name, password, and account server.

Directories
Notes R5 also now supports the Lightweight Directory Access Protocol (LDAP) for searching directories for information, such as e-mail addresses, telephone and fax numbers, postal addresses, and so on. For example, you can look up the e-mail address for your vice president of marketing by simply searching on her first name. The key is that you get the feature-rich LDAP interface (with features like Boolean search queries), which you can use to search any LDAP directory, whether it's a public LDAP directory (such as BigFoot or InfoSpace), your company's Domino directory, or your own local address books. You simply create an Account document in your address book for each LDAP directory you want to access.

LDAP searching is available from three locations in Notes: the Search navigation button (under Find People), the address book, and the addressing dialog box in new messages. The following screen shows how you can search for *Julie* in the *Marketing department* from the new addresses dialog box:
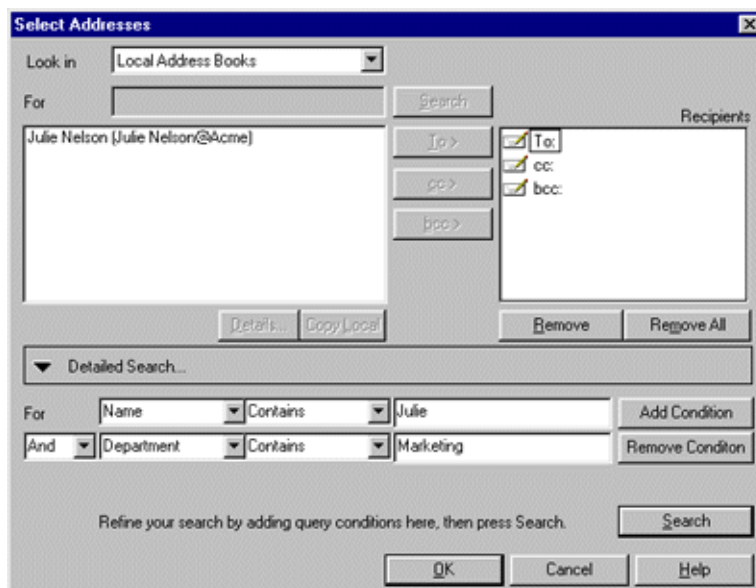
You can also use LDAP to search local address books, including the new *Mobile Directory Catalog*. The Mobile Directory Catalog is a compressed version of one or more Domino directories. By using this directory locally, you can quickly look up the mail address for anyone in your enterprise. (Previously, you needed to access your home server for this information.) In addition, mobile users can use the Mobile Directory Catalog for error-free mail addressing while disconnected from the network. To search local address books, you must include them in the "Local address books" field in your User Preferences for Mail. Local address books do not require accounts.

Newsgroups
In addition, Notes R5 now supports the Network News Transfer Protocol (NNTP) for reading and posting articles in Internet discussion groups, referred to as newsgroups. For example, you can participate in USENET news discussions related to your industry. The native support of HTML in Notes ensures the fidelity of the content in the news articles. (You may remember that in R4.6, you could read newsgroups that were hosted on the Domino server. Now, you can interact directly with the Internet newsgroups, removing the Domino "middle man.") For a more in-depth look at the newsgroup features, see our **interview with Dave Delay**.

To begin working with newsgroups, you create an Account document in your address book that specifies the name of your NNTP server. When you create the NNTP account, Notes automatically adds a bookmark to your bookmark pane. Click the bookmark and you connect to the NNTP server. To subscribe to one or more newsgroups, click the Newsgroups button and select from the list of newsgroups available on the NNTP server. The rest is just like Notes. Each subscribed newsgroup looks and feels just like a Notes discussion; each newsgroup message looks and feels just like a Notes document. The following screen shows the comp.groupware.lotus-notes.admin newsgroup discussion from within Notes R5:
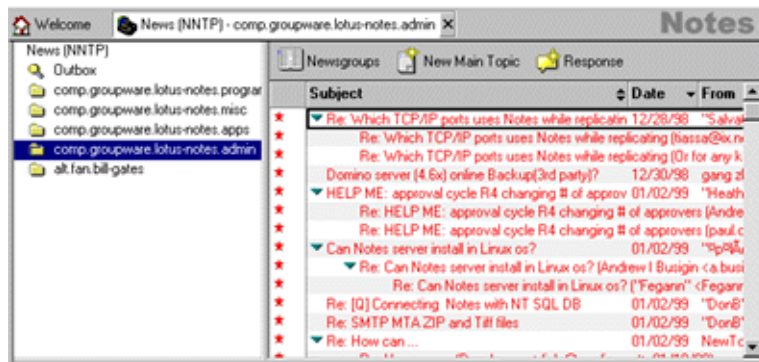
Conclusion

As you've seen, the new Notes R5 client extends your information scope beyond Domino and Notes databases. With its complete embrace of Internet standards, Notes information is now Internet information, and vice versa. You can access all the information you need in your daily work from within one, easy-to-use interface. Plus, the applications you need to use daily, such as your mail and calendar, are new-and-improved to make you more productive. Although, work is still "work"—Notes R5 is a way to make it easier and quicker to get the job done.