

Overview of Application Servers at PG&E**LAN Services Tutorial #7****Contents**

Background.....	1
SQL Server	1
The VINES Server:.....	4
The SQL Application Server:.....	4
The SQL server DOS or Windows client:	4
Lotus Notes.....	5
The VINES server:.....	5
The Notes server:.....	5
The Notes Windows client:	6

Background

Unlike a VINES server, which provides basic LAN connectivity in addition to file, print, and mail services, an *application server* usually provides just the services of client-server applications. The use of the word *server* in the context of PG&E's LAN/WAN causes some confusion because the application servers that this overview discusses -- SQL Servers and Lotus Notes -- are first and foremost VINES *clients*: they are not services running on a Banyan VINES server; rather, they are OS/2-based applications running on VINES OS/2 client workstations.

What this means is that application server hardware must be configured with the OS/2 operating system; the VINES client files for OS/2; and then lastly, the application itself. In addition, integrating the application server as part of a VINES LAN in the case of each of these applications requires some additional setup at the VINES server. Finally, VINES client workstations that want to access either or both of these application servers need to be configured with the appropriate software. In the case of SQL Server, workstation configuration may need to be modified. SQL Server applications can be accessed by software that runs on DOS or Windows workstations, while Lotus Notes client is strictly Windows-based.

This overview presents a high-level summary of the components involved and the short-list of steps that administrators will need to take to install and configure each of these products. Step-by-step instructions for installing and configuring each of these products at PG&E is available in their respective cookbooks. To order a copy of the *Office Database Products Guide*, which contains a *Microsoft SQL Server Cookbook*, or the *Notes Cookbook*, send an e-mail to Reprints@ItsPpd@CTS.

SQL Server

SQL Server is a client-server database product from Microsoft originally designed to run on Microsoft's LAN Manager network operating system. Since then, it has been certified by Microsoft to run on many other networks, including Banyan VINES. SQL Server is an OS/2-based application that uses a communications method known as *named pipes* to transfer data. (A *pipe* is a software mechanism that allows the output of one program to be used as the input for another; *named pipes* extends the feature to allow two-way traffic through the pipe, and to allow

the the pipe to be used over a network. The named pipes application programming interface (API) was originally designed as a component of the LAN Manager for OS/2 architecture, and is included in OS/2 versions 1.1 and later.)

Software that uses named pipes can be supported in a VINES environment by configuring the workstation to include named pipes support, and by installing the appropriate additional workstation files. In addition, the VINES server must be configured with a Netbios name service, which will provide the names for the two ends of the named pipe -- one at the VINES workstation, and one at the SQL Server application running on the OS/2 workstation. (Note that when you use the Netbios name service, you are not using Netbios: Named pipes and Netbios simply use the same naming conventions. Very few applications at PG&E use Netbios emulation, which is installed during workstation configuration.)

The technical details of APIs, Netbios, and Named Pipes are beyond the scope of this overview. Furthermore, Banyan and Microsoft have been working together to better integrate SQL Server and VINES, and the result of that effort, a Network Integration Kit (NIK) for VINES, will be implemented in the PG&E LAN/WAN during 1993, greatly simplifying the configuration process. Until then, here's a summary of the current implementation. Be sure to consult the SQL Server Cookbook for complete information.

THE VINES SERVER:

- Runs VINES version 4.10 or higher.
- Has a Netbios name service configured and running. A single Netbios name service can handle more than one SQL Server application. The Netbios name service is a standard VINES service, just like a file, print, or mail service, that is created using MSERVICE. The service should be named Netbios@Servername@Servers. For best performance, the Netbios name service should be located on the server in the same LAN segment as the largest number of SQL Server clients.
- Contains a group named Servername@PCServices on the same server as the Netbios name service.
- Holds a user ID for the SQL Server in the format SQLdddnn@Servername@PCServices, where ddd represents the department name and nn represents the number of the SQL server in this department.

THE SQL APPLICATION SERVER:

- Runs the OS/2 operating system, version 1.3 or higher. (Not OS/2 2.0 yet).
- Runs the VINES workstation software for OS/2 clients using the redirector with named pipes support.
- Has named pipes enabled by selecting Special Software Settings from PCCONFIG during workstation configuration.
- Executes a SETNETB command and registers the OS/2 workstation with the Netbios name service.
- Loads the named pipes software to make the OS/2 workstation become a Named Pipes service provider.
- Loads the SQL server application.

THE SQL SERVER DOS OR WINDOWS CLIENT:

- Runs the appropriate operating system software, either DOS or DOS and Windows.
- Runs the VINES workstation software for DOS clients using the redirector with named pipes support.
- Has named pipes enabled by selecting Special Software Settings from PCCONFIG during workstation configuration.

- Executes a SETNETB command and registers the workstation with the Netbios name service. Workstations may register with only one Netbios name service at a time; all workstations that need to interact with a particular SQL server must register with the same name service, but a name service need not be dedicated to a single application.
- Launches the SQL Server client software.

Lotus Notes

Lotus Notes is a communications product that allows workgroups to assemble, organize, and communicate information, such as text, graphics, charts. The Notes application provides four major types of templated database structures: tracking applications, broadcast applications, reference applications, and discussion applications. Notes runs on a dedicated OS/2 workstation on a variety of network operating systems, including Banyan VINES.

Lotus Development worked with PG&E to integrate Lotus Notes as seamlessly as possible into our LAN/WAN environment. The relationship between the Lotus Notes server and the Banyan VINES server is similar to the relationship between a PC-based print service and a VINES server; a PC-based service created on the VINES server acts as a pointer to the Lotus Notes server. Because PC-based services are integrated into StreetTalk, the Notes server is assigned a network address and will be able to respond to StreetTalk lookups.

Lotus Notes databases may need to be *replicated* on other Notes servers throughout the company, and configuring when and how this is to occur is explained in the Lotus Notes Cookbook. Here's a summary of installation tasks:

THE VINES SERVER:

- Contains a group named Servername@PCServices.
- Must be configured with a PC-based service with a name that includes the Notes server name and the VINES server name and is in the organization PCServices. For example, NtsCts03@CTS50@PCServices.
- Has a user ID for AdminLSC@Servername@Servers on the server's AdminList in order for LAN support to create the VINES ID and PC-based service on the VINES server.
- Holds a user ID for the Lotus Notes server in the format "Lotus Notes NotesServername@Servername@PCServices." For example, Lotus Notes NtsCts03@CTS50@PCServices. Note the spaces between the words in the item name.

THE NOTES SERVER:

- Runs the OS/2 operating system, version 1.3 or higher.
- Runs the VINES workstation software for OS/2 clients.
- Is configured to upload and download as needed to conform to PG&E's hub-and-spoke replication architecture.
- Loads the Lotus Notes server application.

THE NOTES WINDOWS CLIENT:

- Runs DOS and Windows software.
- Runs the VINES workstation software for DOS clients.
- Launches the Lotus Notes client software.