

Linux or Windows NT operating system. Each server module will run on one or more physical computers. The server modules and their functions are listed below:

[0387] Web Server (Presentation Layer)

[0388] This will be an industry standard WEB server (likely Apache) which will handle the user interface. The front-end will be coded using industry-standard technologies such as HTML, Java, and ActiveX. It will have a direct connection to the Internet.

[0389] The Web server will handle both the end-user interface and the station interface.

[0390] Map Server (Application Logic)

[0391] This server will dynamically generate maps requested by users. Given a location in either SonicIsland.com's virtual world (Map Tab) or the world map (World Tab), it will generate a graphical map to be displayed by the Web Server. As described later in this document, there will be several different formats which the Map Server will render the data.

[0392] Monitoring Server (Application Layer)

[0393] This server will send requests to all known stations at predefined intervals to determine their status, including currently playing song, number of available listener slots, etc. Whenever a station's status changes (including current song, number of users, etc.), the Monitoring server will update the station's entry in the Database Server. It will have a direct connection to the Internet. This will be a custom application.

[0394] Database Server (Data)

[0395] This will be an industry standard database such as Oracle, DB2, or SQL server, which will be scalable as SonicIsland.com's requirements increase. The database will store all SonicIsland.com's data.

[0396] The data stored by the database will include the following table(s):

[0397] Station tables. This includes all relevant station information, including Name, URL, Map location, physical location (if applicable), WEB address, current song, uptime history, current status, network affiliation.

[0398] Song, Artist, and Album tables. This will contain all known songs, albums, and artists, and music purchase information (the appropriate URL to launch if a user wants to purchase this CD).

[0399] User table. This will contain all SonicIsland.com users (whether registered or not) and include their cookie, user id, e-mail address, preferences, etc.

[0400] User Favorites table. This will store the user's favorites.

[0401] User History table. This will map Users to Stations and will store all stations that users have listened.

[0402] Station Song History Table. This will maintain a historical record of what each station has played over the past x weeks.

[0403] The actual tables, indices, predefined queries, and other parameters of the database will be defined at implementation time.

[0404] Data mining (queries) can deliver interesting information from the database, including:

[0405] Given Station X, what other stations do users like to hear?

[0406] What are the most popular stations in a given genre?

[0407] What stations play artist X most often (ranked by popularity)?

[0408] What are the most reliable stations?

[0409] What stations are most often shown in user's favorites.

[0410] Map Interface

[0411] The map interface is a unique display paradigm used in the Map and World Tabs. The design goal is to allow the user quick navigation to stations by balancing display space with the large number of possible stations. Because different users use different technologies to connect to the WEB—different browsers, different levels of security, different connection speeds, etc.—there really isn't a "one interface suits all" approach. Therefore, SonicIsland.com's map interface will be a hierarchy of technologies, which will be enabled based on the capabilities and desire of the end user. The interface will automatically detect the user's browser capabilities and "gracefully degrade" to give the user the best possible experience.

[0412] Basic Interface (aka Least Common Denominator Interface). For users who don't like, don't want to use, or whose browsers are incompatible with Java. The map will not be live and information displayed will only be updated when the user clicks "Refresh". This will be implemented using a combination of standard HTML and basic graphics (GIF & JPEG). Navigating throughout the Map will reload the appropriate GIF file from the Web Server.

[0413] Advanced Interface. This interface will use advanced technologies such as Java, DHTML, and Active X to create a "live" interface with station statistics changing on the user's screen in real-time and live icons on the map. This will be limited to NS 4+ and IE 4+ browsers (which are approximately 80% of all installed browsers).

[0414] ActiveX Interface. Users who want the best SonicIsland.com experience can download the ActiveX interface. Since ActiveX components run locally and natively on a user's PC, they can be extremely fast. The ActiveX interface will give the user very rapid map navigation. When the user clicks on the Navigation Bar to scroll, instead of waiting for the new map to download from SonicIsland.com, the map information will display immediately, because the component will cache map data on the user's PC and only download station state information. It can also have tighter integration with Media players. ActiveX controls are only be compatible with Win32 PCs running IE 4+, however these users constitute