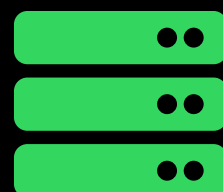# Spotify®

USING THE OSI MODEL

Spotify is a music streaming application that can be used with a smart phone, tablet or desktop. We will be looking at the 7 layers of the OSI model and how it can apply to use of the application.

1 The Physical Layer

While most users take advantage of the mobile app version, Spotify can be used on a desktop as well. The ordinary user would need a wifi or cellular data connection to take advantage of the service. If the user pays for a premium membership they are given the perk of downloading the music, allowing the user to listen without use of the wifi or cellular data. Users have the ability to search for music, create personalized playlists, follow pre-made playlists and follow friends and artists.

In order to make use of the wifi, user's would have to connect to a router or their cell phone provider's data connection.

2 The Data Link Layer

This layer provides error-free transmission from one node to the next over the physical media. This layer is divided into two sub layers, the MAC and the LLC. The MAC (Media Access Control) deals with how devices ont the network gain access to the data and permission to transmit it . The LLC (Logical Link Control) checks for errors.

If the user was searching a song and then wanted to download it, this information would be broken down into bits (1's and 0's) and then encoded. This prepares the data for transfer.

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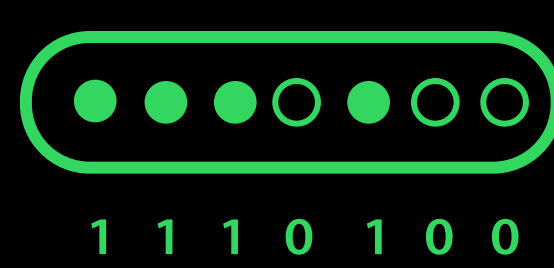
3 The Network Layer

During this layer, the best route of travel is searched for. Once the most efficient path is chosen, the data packets are then transferred from one device to the other.

When users download songs so that they can be played offline, Spotify needs to be able to connect with your devices to make these transfers. Spotify packs up the songs data and sends it to your device with the help of your IP address, which helps to indentify your device.

4 The Transport Layer

This is when the data is actually sent to the device. The Transmission Control Protocol (TCP) moves the information from one network to another.

The song data is sent to your phone and the connection between your phone and Spotify is established. If the user is a premium subscriber they can choose to have the information stored on their phone in a more permanant state. If not or if they choose not to download, then it can only be accessed if connected to a wifi or cellular data.

5 The Session Layer

Establishes and keeps open the line of communication between the two networks. Allows Spotify to send notifications, emails and store personal information.

Spotify will send notifications and alerts catered to the user. These are based on listening patterns and artists followed. Users may receive notifications about upcoming concerts, new music and song suggestions. This open line of communication is managed by the sessions layer of the OSI model.
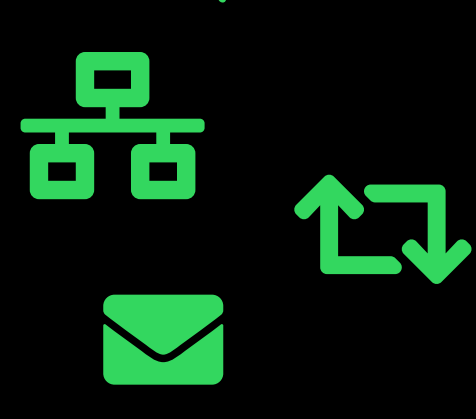
6 The Presentation Layer

Once the information has been sent and arrives, this layer is responsible for translating the data into something understandable for the receiving system. It acts as the translator, giving everything a common format. Doing this ensures that it can be recognized by application layers across a variety of networks and systems.

This way when the song data is recevied it is translated into a format that is able to be played on all sorts of devices, browsers and networks.

7 The Application Layer

The translated song data is received and presented in a way that the user can interact with. Meaning they can play it, share it with other listeners, add it to other playlists they may have and a variety of other things.

Cassy Waung - Web Architecture, Winter 2020