

# Softswitch Architecture for VoIP

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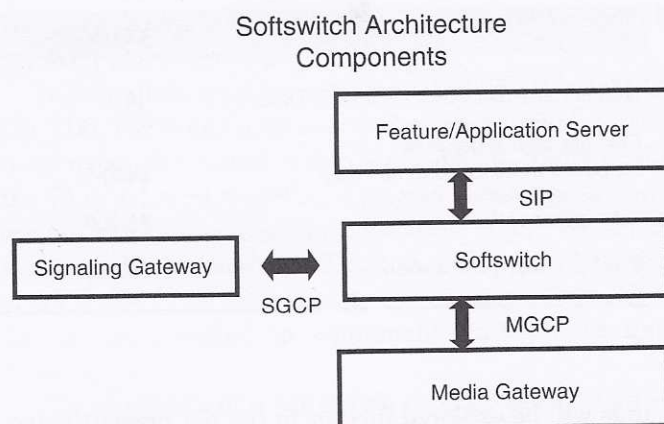
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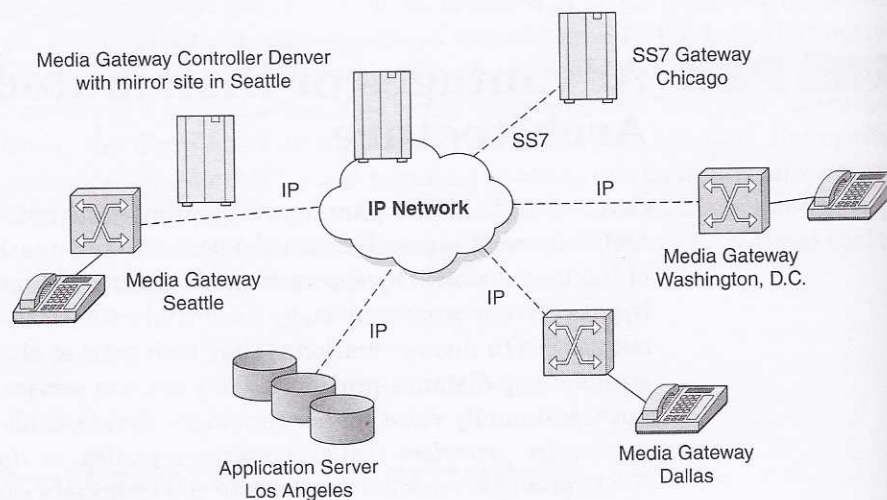
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**Figure 11-5**  
The components of softswitch are distributed.



**Figure 11-6**  
A distributed architecture enables the dispersal of softswitch solution components that can lower real estate costs.



## Economic and Regulatory Issues Concerning Softswitch

In its April 10, 1998 Report to Congress, the FCC determined that phone-to-phone IP telephony is an enhanced service and is not a telecommunications service. The important distinction here is that telecommunications service providers are liable for access charges to local service providers both at the originating and terminating ends of a long-distance call. A telecommunications service provider must also pay into the Universal Service

Fund. Long-distance providers using VoIP (and by inference, softswitch) avoid paying access and Universal Service fees. Given thin margins on domestic long distance, this poses a significant advantage for phone-to-phone IP telephony service providers.<sup>13</sup>

The possibility that the FCC may rule differently in the future cannot be discounted. Having to pay access fees to local carriers to originate and terminate a call coupled with having to pay into the Universal Service Fund would pose a significant financial risk to the business plan of a softswitch-equipped, VoIP, long-distance service provider. Just as international long-distance bypass providers used VoIP to bypass international accounting rates and make themselves more competitive than circuit-switched carriers, softswitch-equipped VoIP carriers can make themselves more competitive in the domestic market by bypassing access charges and avoiding paying into the Universal Service Fund. The service provision model set forth in this chapter is strongly affected by the possibility of the FCC reversing itself on phone-to-phone IP telephony.

Access fees in North American markets run from about \$.01 per minute for origination and termination fees to upwards of \$.05 per minute in some rural areas. That is, a call originating in Chicago, for example, would generate an origination fee of \$.01 per minute. If the call terminated in Plentywood, Montana, it may generate a \$.05 per minute termination fee. This call would generate a total of \$.06 per minute in access fees. If the carrier can only charge \$.10 per minute, it will reap only \$.04 per minute for this call after paying access fees to the generating and terminating local phone service providers.

Table 11-4 illustrates the impact on profits and losses for a long-distance service provider that must pay access fees. The impact of the access fees on the net present value of VoIP carriers who are exempt from access fees and non-VoIP carriers is addressed later in this chapter where a service provider generates 25 percent more revenue by virtue of not paying access fees to other carriers. It is possible that the FCC at some point could reverse this ruling and make VoIP carriers pay access fees.

## Net Present Value of Softswitch

The net present value is an engineering economics term for determining when the benefit of investing in a new technology outweighs the cost of

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<sup>13</sup>"Federal Communications Commission Report to Congress," April 10, 1998, paragraphs 88-93.