AOL Time Warner

Steven Teplitz
Vice President and
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January 17, 2002

Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, DC 20554

Re: Second Progress Report on Instant Messaging Interoperability

Dear Ms. Salas:

Pursuant to the FCC's *Memorandum Opinion and Order* approving the transfer of control of licenses and Section 214 authorizations from America Online, Inc. ("AOL") and Time Warner Inc. ("Time Warner") to AOL Time Warner Inc. ("AOL Time Warner"),[1] AOL Time Warner hereby submits this progress report to update the Commission on AOL's efforts to develop a server-to-server instant messaging ("IM") interoperability approach to the exchange of text-based messages between a user of an AOL IM service and a user of an unaffiliated IM service.

In its first progress report, AOL Time Warner: described the technical challenges involved in creating an effective server-to-server IM interoperability solution that adequately

[1] *Applications for Consent to the Transfer of Control of Licenses and Section 214 Authorizations by Time Warner Inc. and America Online, Inc., Transferors, to AOL Time Warner Inc., Transferee*, Memorandum Opinion and Order, CS Docket No. 00-30, FCC 01-12, ¶ 327 (rel. Jan. 22, 2001).

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protects IM network performance, privacy, and security; detailed the progress that AOL had made internally up to that point; and outlined AOL's plans going forward.[2]

In the intervening six months, AOL has continued to make progress in this area. As discussed more fully below, AOL completed development and testing of an initial prototype gateway server designed to translate basic text-based IMs and presence information between the internal protocol used by AOL Instant Messenger ("AIM") and one that is based on the protocol that the Internet Engineering Task Force's ("IETF") SIP for Instant Messaging and Presence Leverage ("SIMPLE") Working Group is designing. Then, AOL conducted a server-to-server interoperability trial with Lotus Development Corporation ("Lotus").

The Interoperability Gateway Server

In a competitive environment like the IM marketplace, rival providers differentiate their offerings on the basis of the unique set of features that they incorporate into their products. In the IM context, such features—which include privacy controls, file and image transfer, voice-based chat, and offline messages—dictate that the protocol used internally by each IM service will be unique. Thus, in order to exchange messages between different services, there must be a way to translate messages between the various protocols. In the server-to-server interoperability

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[2] AOL Time Warner Inc. Progress Report on Instant Messaging Interoperability, CS Docket No. 00-30 (filed July 23, 2001) ("*First Progress Report*").

approach being pursued by both AOL and the IETF,[3] the way that will be done is by converting IM and presence data—*e.g.*, presence state changes (when a user signs on or off the service) and subscription requests (when a user adds or removes another user to or from his or her contact list)—from the internal protocol used by the IM sender's service into a common protocol, exchanging that information between gateway servers, and then converting it from the common protocol into the internal protocol of the IM service used by the recipient.[4]

To that end, AOL designed a prototype gateway server to translate between basic text-based messages and presence information using the internal AIM protocol and a protocol based on the efforts of the IETF's SIMPLE Working Group,[5] while at the same time maintaining the integrity of AIM's privacy and security features (*e.g.*, the "knock-knock" feature, rate limits, and

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[3] There are currently three IETF Working Groups—APEX, PRIM, and SIMPLE—pursuing divergent approaches to server-to-server interoperability. *See* First Progress Report at 7-8; *see generally* "Application Exchange (apex) Charter," *at* <http://www.ietf.org/html.charters/apex-charter.html>; "Presence and Instant Messaging Protocol (prim) Charter," *at* <http://www.ietf.org/html.charters/prim-charter.html>; and "SIP for Instant Messaging and Presence Leveraging (simple) Charter," *at* <http://www.ietf.org/html.charters/simple-charter.html>.

[4] While the goal of the SIMPLE Working Group is to create a common protocol around which an IM service could be built, none of the major IM providers to date has announced plans to do so. Instead, it is expected that most IM providers will continue to use their own protocols internally as well as a server-to-server protocol to facilitate the exchange of messages across services.

[5] As discussed in the *First Progress Report*, AOL's server-to-server interoperability framework uses the protocol being developed by the SIMPLE Working Group, which is working on an IM-specific implementation of the IETF's telephony-oriented Session Initiation Protocol ("SIP"). *See First Progress Report* at 8-9; *see also* "SIP Extensions for Instant Messaging" and "SIP Extensions for Presence," attached thereto.

user warnings), at least within AOL's IM network.[6] In addition, AOL also created a test version of AIM for Windows designed to work with this gateway server.

Once that work was completed, AOL then conducted two phases of internal testing. During the first phase, a single gateway server was configured to test message processing within a single server. During the second phase, two separate gateway servers were deployed in the AIM test environment, one configured to respond to addresses in one test domain and another configured to respond to addresses in a separate test domain.[7] Users participating in this test logged into one of the two domains using the test AIM client and added users from both domains to their buddy lists. The purpose of this second test was to determine whether the gateway servers were able to properly identify users as being online or offline and to propagate necessary updates due to presence changes, both within the domain to which each gateway server was assigned and within the domain of the gateway server to which it was connected. Both rounds of internal testing produced satisfactory results, and AOL therefore concluded that its gateway server was ready for an initial trial with an unaffiliated IM service.

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[6] Some of the privacy and security features incorporated into the AIM service are not supported by the SIMPLE protocol upon which AOL's server-to-server protocol is based, and therefore do not function outside of AOL's IM network. For example, warnings cannot be sent to non-AIM users.

[7] In such an interoperable environment, users are identified by email-style addresses (*e.g.*, "user@domainone.com" and "user@domaintwo.com").

The Lotus Test and Its Results

In the First Progress Report, AOL Time Warner stated that AOL intended to conduct a server-to-server interoperability test with a leading technology company once it completed its internal testing. Since that report was filed, AOL has conducted a trial between AIM and the Lotus Sametime service. That preliminary test, while narrow in both scale and scope, provided valuable feedback that will guide AOL's subsequent efforts.

The Lotus trial took place over the course of several weeks. Its goal was to confirm whether it is possible, using a server-to-server protocol based upon the still-evolving SIMPLE protocol in a controlled and secure environment, to achieve basic server-to-server interoperability—*i.e.*, the exchange of basic text-based IMs and presence information—between two different IM services. One AIM gateway server and a corresponding Lotus Sametime gateway server were deployed and several test events were scheduled, with engineers from both AOL and Lotus performing and monitoring the tests. Lotus Sametime users were identified by the "@sametime.com" suffix; AIM users were identified by the "@aol.com" suffix. For the tests, users on both sides populated their contact lists with a mix of local and remote users.

The necessary firewall holes to allow communications between the Lotus Sametime gateway server and the AIM gateway server were opened, and access control lists on the AIM server were configured to allow traffic to and from the sametime.com domain. There were

several negotiated test events, where engineers from AOL and Lotus did live testing and coordinated through conference calls or IM.

Initially there were problems that were attributable to the fact that neither the Instant Messaging and Presence Protocol ("IMPP") Working Group, which is developing a number of standards that will define a common message format,[8] nor the SIMPLE Working Group have finalized their protocols. Once those issues were resolved and several other bugs in each system were identified and fixed, however, the engineers participating in the trial were able to send and receive text-only IMs and presence information across the two gateway servers.

This initial trial enabled text-only server-to-server interoperability between two different IM systems under tightly controlled circumstances, but this is only an interim step in an ongoing process which must still address key issues such as scale and the preservation of unique IM functionality. For example, the gateway server developed by AOL was solely designed in order to determine whether it could effectively exchange basic IMs and presence information with a compatible trusted partner gateway server on a one-to-one basis; it was not designed to be scalable in order to handle large amounts of traffic, nor was it designed to address security threats such as distributed denial-of-service attacks, data hijacking, identity spoofing, namespace

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[8] These standards include: a basic specification for IM and online presence detection formats ("Common Presence and Instant Messaging (CPIM)," *at* <http://search.ietf.org/internet-drafts/draft-ietf-impp-cpim-02.txt>); a message format ("Common Presence and Instant Messaging: Message Format," *at* <http://search.ietf.org/internet-drafts/draft-ietf-impp-cpim-msgfmt-05.txt>); a data format ("CPIM Presence Information Data Format," *at* <http://search.ietf.org/internet-drafts/draft-ietf-impp-cpim-pidf-01.txt>); and a date and time format ("Date and Time on the Internet: Timestamps," *at* <http://search.ietf.org/internet-drafts/draft-ietf-impp-datetime-05.txt>).

discovery, and spam. In addition, as noted above, the IETF Working Groups that are developing the underlying protocols upon which AOL's efforts are based have not yet completed their work,[9] and certain issues—for example, concerns regarding the bandwidth requirements of both the SIMPLE and the IMPP Working Groups' proposed message formats—need to be resolved before those standards are ready to be implemented on a wider scale.

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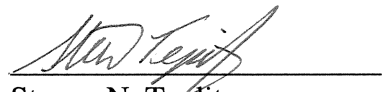
[9] There are two IETF Working Groups upon whose ongoing efforts AOL's server-to-server interoperability solution is based: the IMPP Working Group and the SIMPLE Working Group. The most recent versions of the IMPP Working Group's Internet-Drafts can be found at http://search.ietf.org/ids.by.wg/impp.html; the SIMPLE Working Group's Internet-Drafts are available at http://search.ietf.org/ids.by.wg/simple.html.

Since the First Progress Report, AOL has made continued progress in its efforts to develop a possible server-to-server interoperability solution, as described above. There remains, however, much work to be done. The results of AOL's initial test with Lotus will guide its ongoing development efforts.

Respectfully submitted,



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cc: Chairman Michael K. Powell
Commissioner Kathleen Q. Abernathy
Commissioner Michael J. Copps
Commissioner Kevin J. Martin
W. Kenneth Ferree, Chief, Cable Services Bureau