

Product Assessment: **GENBAND - A2 Converged Application Server**


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Service: **Hot Topics** , **Service Provider Infrastructure** 

Market: **Unified Communications & Collaboration**, **IP Services Infrastructure** 

Class: Hosted Multimedia Application Servers

Current Perspective: 

Summary

Current Perspective



The GENBAND A2 Converged Application Server is threatening to competitors in the hosted multimedia application server sector of the market. The GENBAND A2 pushes the openness envelope, as the platform employs a “hardware freedom” model that enables operators to port the software to dozens of RedHat/Linux certified servers, as well as GENBAND’s own GENiUS ATCA platform. The A2 is capable of multiple configurations, including deployment as a standalone SIP application server, in conjunction with a softswitch, and as an IMS-based application server. The A2 enjoys a rich legacy of multimedia support, as the application server was original introduced to provide enterprise environments with an effective mix of communications and collaboration capabilities that predated by several years the delivery of so-called unified communications (UC) platforms. Despite numerous name changes while the product was part of Nortel’s carrier VoIP portfolio and a change of ownership with GENBAND’s 2010 purchase of Nortel’s CVAS business unit, the A2 has remained popular with carriers for both enterprise- and consumer-related deployments. More than 13 million A2 subscriber licenses have been issued and the platform is deployed in at least one environment (LG Telecom in Korea) that exceeds 1 million subscribers. With the A2 now a central element in GENBAND’s VoIP and multimedia portfolio, newfound stability is likely to accelerate the platform’s deployment success.

With the porting of the A2 to the GENiUS platform, GENBAND has dramatically upgraded the platform’s subscriber capacity – formerly 1 million per node. A single instance of the A2 on the GENiUS ATCA platform now scales to handle 10 million subscribers, which roughly equals the capacity of products from BroadSoft, Ericsson and Huawei. A potential shortcoming of the A2 is that it was designed for hybrid TDM and IP environments. While the product’s pre-IMS nature provides some advantages in terms of deployment flexibility, it could also be portrayed as a disadvantage by competitors, such as Alcatel-Lucent, Ericsson and Huawei, which are promoting their respective hosted application servers as “purpose built” for IMS, claiming that pre-IMS designed products cannot be retrofitted to provide optimal functionality in an IMS setting. While the A2’s deployment in multiple IMS environments provides a compelling counter argument to these claims, some operators see advantages to deploying purpose-built IMS application servers.

The A2 is also among market leaders in terms of support for FMC capabilities. When combined with GENBAND’s wireless mobility manager, the A2 is able to interface with MSC server equipment, which enables mobile operators to leverage the features of the A2 for mobile devices, especially smartphones. The A2 trumps all competitors in terms of openness – at multiple levels. In addition to being hardware and OS agnostic, the platform has been deployed with third-party core IMS session control equipment (Ericsson) in at least one live deployment (Telefonica Spain), and has completed interoperability tests with IMS cores from Alcatel-Lucent, Ericsson, NSN and NEC. In addition, GENBAND has opened up the platform to third parties through its GENApps initiative and GENFuzion initiatives.

The GENBAND A2, along with BroadSoft’s BroadWorks occupy a unique position in the hosted multimedia application server competitive landscape, as it is not bundled with core IMS session control technology. While

standards, such as the ISC interface, have theoretically eliminated any proprietary linkage between the control and application layers, operators may in the future see advantages to purchasing control and application layer equipment from a single vendor, especially as advanced service continuity specifications, such as SR VCC and IMS centralized services, are adopted by operators. GENBAND's participation in VoLTE interoperability exercises, however, will help to dispel operator concerns about the A2's ability to function in a VoLTE environment. The A2's customer roster includes Bell Canada, Clearwire (US), Telefonica (Spain), Timico (UK) and Puerto Rico Telephone, Optus, LG Telecom, Swisscom, Vimpelcom and Sasktel.

Strengths and Weaknesses

Strengths

- The A2 is one of the richest communications, collaboration and conferencing platforms available in a hosted delivery model. Competitors that approach the level of integration and multimedia performance offered by the A2 do so with a customer premise-based platform or through third-party collaborations for UC capabilities.
- The A2 offers a variety of clients and extensive support for Web services APIs, enabling operators to provide subscribers with multiple services that enable voice and multimedia capabilities to be accessed through a variety of devices or integrated into Web pages. GENBAND enables operators to expose the A2 features and assets to third parties through a Web application manager and the GENApps showcase and GENFuzion developer program.
- The A2 exceeds all competitive products in terms of openness, both from a hardware and client/softphone perspective, but also in terms of interoperability. The A2 has been deployed as an IMS application server in a commercial deployment with Telefonica, where the platform is controlled by Ericsson's CSCF technology. GENBAND has also conducted interoperability events with core IMS session control technology from Alcatel-Lucent, NSN and NEC. Only BroadSoft can claim a larger scope of third-party integration capabilities.
- The GENBAND A2 offers strong support for mobile environments. An integrated wireless mobility manager allows operators to integrate the A2 with MSCs and MSC servers via IN, CAMEL or IS-41 for seamless call handoff, mobile extension and other fixed mobile convergence features, such as GENBAND's Call Grabber and Mobile Office. The A2 also features clients for smartphones that enable mobile users to access the A2 mobile Web server to customize services.
- The GENBAND A2 is among the most

Weaknesses

- Though GENBAND continues to enhance the functionality and feature set of its application server, the A2 does not offer the same comprehensive set of PBX replacement features and services as some competitive products, such as BroadSoft's BroadWorks platform. As a standalone hosted VoIP server (not deployed with a C2 or third-party softswitch) the A2, for example, is not yet at par with the PRI equivalency in a SIP business trunking environment, capabilities that are required by some enterprise customers.
- Although the A2 has been deployed in conjunction with third-party IMS session control technology, GENBAND's decision not to deliver an IMS core product portfolio could reduce the opportunity to bundle the A2 with a session control solution from GENBAND. Competitors claim that operators are increasingly looking for a single company to supply application servers that are bundled with session control equipment. If this trend is significant and gains prominence in the market, GENBAND, without core session control equipment, will be at a disadvantage to those that offer an IMS core portfolio.
- Though the A2's ability to offer a SIP application server for pre-IMS environments is currently an advantage, the competitive landscape is increasingly occupied with products that claims to be purpose-built for IMS environments, a status, equipment makers such as Alcatel-Lucent, Ericsson and Huawei purport, that makes them better optimized for IMS environments than hybrid platforms. If this line of thinking gains traction with operators, GENBAND could in the future be required to defend the A2's ability to do IMS-specific tasks, such as optimally isolate subscriber profile data from the application server.

adaptable hosted application servers on the market. In addition to being compatible with both IMS and pre-IMS environments, as well as fixed, mobile and cable networks, the product is designed for both enterprise- and consumer-oriented deployments. This flexibility provides operators with investment protection and the ability to repurpose existing assets for new applications.

- Despite a history of vendor-backing instability – in terms of name changes and prior ownership by a financially distressed equipment supplier (Nortel) – the A2 has maintained a steady deployment and development record. In addition to several high-profile deployments, the A2 is able to boast of a subscriber universe that exceeds 13 million and at least one deployment in which the platform is controlling more than a million subscribers, proving its ability to scale. Given that the A2 is freshly entering a period of corporate stability, deployment activity is likely to accelerate in the near future.

Metrics

Metrics

Applications The A2 Converged Application Server delivers VoIP telephony and multimedia services. The A2 is available in multiple configurations: 1.) A standalone SIP Application Server, 2.) a SIP engine for the C20 softswitch, 3.) an IMS-compliant Application Server. Through a desktop, web portal or mobile device, enterprises and consumers can seamlessly combine IM, presence, voice, video and collaboration via IP, TDM, IMS or a hybrid deployment model. Subscribers can also be provisioned with personal Meet-Me conferencing and collaboration facilities that support audio, video and data sharing.

Feature Packages The A2 Converged Application Server supports Basic and Enhanced Consumer Voice, Basic and Enhanced Business Voice and Unified Communications. The A2 has several bundled packages but also supports some a la carte pricing.

Voice VPNs The A2 supports Voice VPN in the standalone application server configuration and when paired with the C20 softswitch.

Softphone The A2 offers a variety of clients with integrated softphones, allowing end users to determine which client most fits personal style and need. All clients listed offer network-based address lists, voice and video calling, presence, instant messaging, portal

integration, conferencing integration, email integration, and voicemail integration.

- PC Client
- Mobile UC Client
- Mobile Web Portal
- Microsoft Office Client
- Lotus Notes Client
- Web Client
- Bria Client
- Console Operator ClientThe A2 supports several Theme Developer Kits for easy customization of the user interface including colors, logos, services, features and applications. For more detailed customization the A2 Application Programming Interfaces (APIs) can be used.

Mobility

The A2 product provides an integrated wireless mobility manager that allows service providers to integrate with their MSCs via IN, CAMEL, or IS-41 for seamless call handoff, mobile extension and other fixed mobile convergence features like GENBAND's Call Grabber and Mobile Office. Mobile phones equipped with mobile browsers can access the A2 mobile web portal to make changes to the routing, access the company directory or make calls using their office facilities. A2 also supports an integrated mobile client for smartphones to access the same features they use on their desktop via their mobile phone such as instant messaging, network-based address book, conferencing, voice/video calling, web portal, voicemail and Call Grabber. The A2 also supports 3rd party SIP-enabled mobile applications.

Call Center Support

GENBAND offers both Unified Call Distribution and Automated Call Distribution in addition to Hunt Groups to IP-based subscribers. The A2 combined with the C20 can provide UCD/ACD and Hunt Group services to TDM or IP users. A2 also supports 3rd party call center applications such as Genesys, T-Metrixs and others.

Web Services

The A2 provides an integrated Web Application Manager that provides a single point of contact for all web services and access for 3rd party applications and developers. The Web Application Manager provides support for SIP, SOAP, XML, SIMPLE, ParlayX, WSDL and REST interfaces.

IMS Architecture

The A2 Converged Application Server is an IMS-compliant Telephony Application Server (TAS) and has been deployed and in service with 3rd party session control from Ericsson at Telefonica Espana.

The A2 IMS AS has been tested with the following IMS cores: Ericsson, Alcatel-Lucent, NSN and NEC. The A2 is also participating in the IMS MSF testing in 2011. The A2 is also installed at the AT&T Innovation lab in Atlanta connecting to an Alcatel-Lucent CSCF and HSS,

RCS and MMTel Support	The A2 supports RCS and MultiMedia Telephony via MMTel.
Simultaneous Ringing	The A2 supports an unlimited number of endpoints per subscriber and allows call screening and routing and allows users to personalize their call handling to allow several devices to ring simultaneously, ring in a specified order, send the caller a pre-defined instant message or send them a web page. A2 not only supports time of day, day of week routing and routing based upon incoming caller ID but also presence-based routing and call management allowing even more user personalization.
Protocol Support	A2 supports SIP signaling to gateways, 3rd party applications, IP phones, analog terminal adapters and soft clients. Additionally, A2 supports HTML and Unified Network IP Stimulus (UNISim) to certain IP Phones. A2 supports IMAP, SMDI and SIP for Voicemail. A2 supports IN, CAMEL and IS-41 for wireless MSC integration. For backoffice integration the A2 supports SNMP, SOAP, XML.
Unified Communications Strategy	A2 provides a complete unified communications experience for the end user that includes voice/video calling, instant messaging, presence, conferencing, network-based address book, voicemail, email, and SMS. GENBAND positions its Unified Communications portfolio as a hosted IP Telephony service via Carriers and Channels to SMB Businesses or Large enterprises.
Scalability	A full A2 can scale up to 10M subscribers in a single domain utilizing the A2 on GENiUS ATCA hardware. A2 has several customers with over 1M subscribers. One example is LG Telecom (Korea) that has deployed over 1.6M live SIP subscribers on A2.
Calls per Second	A single A2 can support up to 35 million sessions per minute and 240K BHCA per call processing server assuming a 180 second average hold time.
Simultaneous Calls	A2 can support up to 150,000 simultaneous SIP to SIP calls.
Geographic Redundancy	A2 supports geographic redundancy using Layer 2 and/or Layer 3 this configuration has been deployed in several carrier customer networks.
Software Redundancy	The A2 supports automatic failover using an active/standby server configuration checking the status of the other servers in the network to ensure they are still active. When a failure is detected the standby server enables the necessary

interfaces and begins servicing new requests. When the failed server is restored, it assumes a role of active or standby. Additionally, the A2 utilizes a replicated database where multiple servers have an instance of the database in the event of a failure.

Call State Replication	The A2 supports call state replication across call processing servers to ensure that there is no service impact.
Product Design	The A2 software can be deployed on rack-mounted commercial computing equipment.
Server Brand/Type	A2 supported configurations include NEBs compliant, Linux servers or the GENBAND GENiUS ATCA platform.
Operating System	The A2 utilizes Redhat Linux operating system.
Licenses Sold	More than 13 million A2 licenses have been sold to date.
Key Customers	GENBAND A2 key customers are: <ul style="list-style-type: none">• Bell Alliant (Canada)• Clearwire (USA)• Telefonica (Spain)• Timico (UK)• Puerto Rico Telephone• Telus (Canada)• Cypress/BroadVox (USA)• British Telecom (Spain, UK)• Sasktel (Canada)• OPTUS (Australia)• LG Telecom (Korea)• CHT (Taiwan)• UPC (Belgium)• Vimplecom (Russia)• Videotron (Canada)• GVT (Brazil)• Swisscom (Switzerland)• Telenet (NV)
Resellers	GENBAND A2 is sold directly to carrier customers

and Partners as well as select channel partners and resellers worldwide.

Product First Available The A2 in its current form has been available since 2008. The successor to the A2 was the AS/MCS 5200 and the Adaptive Application Engine.

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