

TANDBERG Border Controller Q2 Software Release Document

TANDBERG

D50361, Rev 1.3

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1. Document Revision History

- Rev 1.3 - Removed Known Limitations issue between Microsoft NetMeeting and Polycom PVX
- Rev 1.2 - Release of Q2.2, Minor Release
 - Updated Interoperability Testing
 - Updated List of Known Limitations of Q2.0 and Q2.1 Releases
- Rev 1.1 - Release of Q2.1, Minor Release
- Rev 1.0 - Release of Q2.0, Initial Version

2. Release Notes for TANDBERG Border Controller SW Version Q2.2

2.1 Introduction

These release notes describe the features and capabilities included in the TANDBERG Border Controller software version Q2.2 released on 18 October 2005.

2.2 New Feature Overview

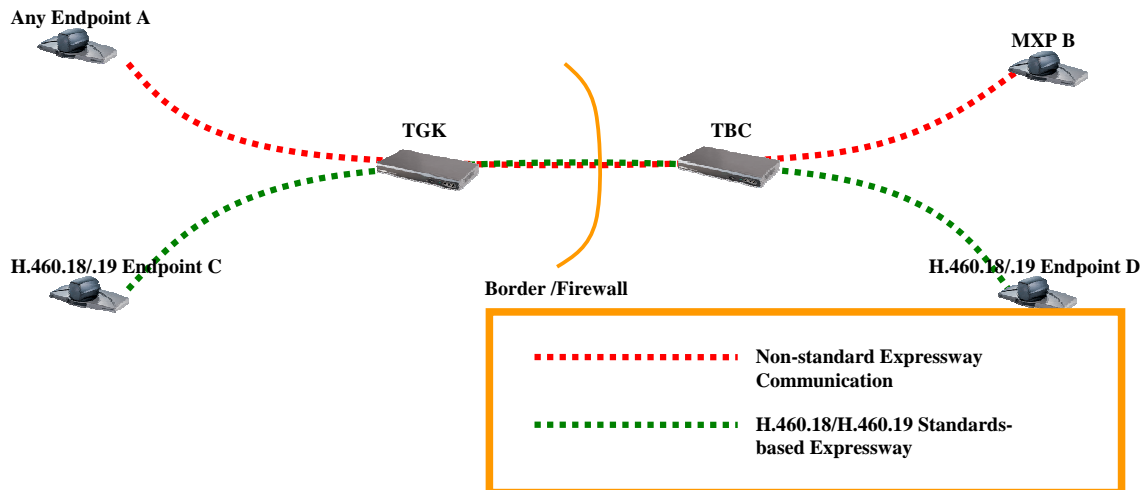
2.2.1 Standards-based Firewall Traversal (H.460.18 and H.460.19)

On 13 Sept 2005, the ITU-T ratified a pair of recommendations, H.460.18 and H.460.19, which are aimed at standardizing the communication between two H.323 components to achieve the goal of secure firewall traversal. Based on TANDBERG Expressway, these standards will give multi-vendor environments the opportunity to take advantage of a technology that TANDBERG customers have benefited from since its inception.

In conjunction with the TANDBERG Gatekeeper or an H.460.18/H.460.19 enabled endpoint, the TANDBERG Border Controller now supports the firewall traversal using the H.460.18 and H.460.19 standards-based firewall traversal, giving multi-vendor environments the ability to take full advantage of the secure firewall traversal methodology that has been proven successful by TANDBERG customer deployments.

The standard is divided up into two distinct functions: signaling (H.460.18) and media (H.460.19). H.460.18, edited by Giles Chamberlin of TANDBERG, controls the process by which all call setup signaling and capabilities exchange occur within a traversal call. Media communication is governed by H.460.19, edited by Sasha Ruditsky of RADVISION.

For more information on H.460.18 and H.460.19, please reference document D50305, TANDBERG and H.323.



2.3 Changes and Improvements since previous release

2.3.1 RAS Bandwidth Signaling

The TANDBERG Border Controller now recognizes bandwidth in 100bps increments instead of 1000bps increments, thereby increasing the flexibility of the H.323 network.

2.3.2 DNS SRV Record Lookup

When the Border Controller performs a DNS service record lookup for an outbound URI call, it stores the results internally. The stored results are then used for subsequent calls to the same DNS suffix in order to speed up call connectivity. There was an issue within this mechanism that would store multiple entries for the same resolution which, upon recall, could create an issue within the Border Controller that would cause a system restart. This issue has been resolved.

2.3.3 Link Bandwidth Limitation

Corrected an issue where a Pipe configured for 'Unlimited' bandwidth would not allow an unlimited amount of bandwidth through.

2.3.4 Link Naming

Resolved issue that would cause a link to fail if it was renamed after it was initially created.

2.3.5 Heavy LRQ Traffic

Q2.2 has resolved an issue that may cause the Border Controller to restart under a heavy LRQ stress caused by LRQ loops. LRQ loops within a network should be avoided within an H.323 network as they increase the LRQ traffic on the Border Controller and may slow the speed in which a call will connect.

2.4 Known Limitations

Equipment	Limitations
TANDBERG Border Controller ver Q2.2	The Border Controller may show the Start and End times within the Call and Registration Histories as 'Not Set'.
TANDBERG Border Controller ver Q2.2	If the Border Controller is configured with an Alternate list, does not have an Internal Gatekeeper registered, is configured to not forward LRQs to neighboring Gatekeepers/Border Controllers and it receives an LRQ for an endpoint that is not registered directly or with any of the configured alternates, the Border Controller may reset.
Cisco PIX Firewall ver 6.2 and previous	An Expressway-enabled endpoint (e.g. TANDBERG Gatekeeper or TANDBERG MXP Endpoint), cannot register to the TANDBERG Border Controller through a PIX firewall running software

	<p>version 6.2 or prior. This particular version of software is only H.323 version 1 aware and, therefore, strips information from the Registration Request that identifies the endpoint as Expressway-enabled. This can be resolved either by upgrading the PIX firewall to a later version of software or turning off H.323 Fixup within the configuration of the firewall.</p>
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3. Release Notes for TANDBERG Border Controller SW Version Q2.1

3.1 Introduction

These release notes describe the features and capabilities included in the TANDBERG Border Controller software version Q2.1 released on 18 July 2005.

3.2 New Feature Overview

Q2.1 is a maintenance only release. No new features or functionality are included within this version over the previous release, Q2.0.

3.3 Changes and Improvements since previous version

3.3.1 H.225 RAS Signaling

Improved the method used to generate the Endpoint Identifier field within the endpoint registration. The new method will prevent duplicate Endpoint Identifiers from being generated.

Improved Bandwidth Confirmation signaling in order to confirm the absolute bandwidth as presented by the endpoint instead of a rounded value to the nearest 64 kbps. This issue presented itself when connecting to a Polycom MGC.

3.3.2 Software Upgrade

Resolved issue that would not transfer prefix-less remote zones in the upgrade for Q1.x to Q2.

Resolved issue that would not create the default links within the Border Controller upon upgrading to Q2.

3.3.3 External Management

Resolved issue that could cause an unexpected system restart upon continuous XML queries.

3.3.4 Links

Resolved issue that would not allow an administrator to rename a link once created.

3.4 Known Limitations

Equipment	Limitations
TANDBERG Border Controller ver Q2.1	The Border Controller may show the Start and End times within the Call and Registration Histories as 'Not Set'.
Cisco PIX Firewall ver 6.2 and previous	An Expressway-enabled endpoint (e.g. TANDBERG Gatekeeper or TANDBERG MXP Endpoint), cannot register to the TANDBERG Border Controller through a PIX firewall running software version 6.2 or prior. This particular version of software is

	<p>only H.323 version 1 aware and, therefore, strips information from the Registration Request that identifies the endpoint as Expressway-enabled. This can be resolved either by upgrading the PIX firewall to a later version of software or turning off H.323 Fixup within the configuration of the firewall.</p>
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4. Release Notes for TANDBERG Border Controller SW Version Q2.0

4.1 Introduction

These release notes describe the features and capabilities included in the TANDBERG Border Controller software version Q2.0 released on 18 July 2005.

4.2 New Feature Overview

4.2.1 Increased Traversal Capacity

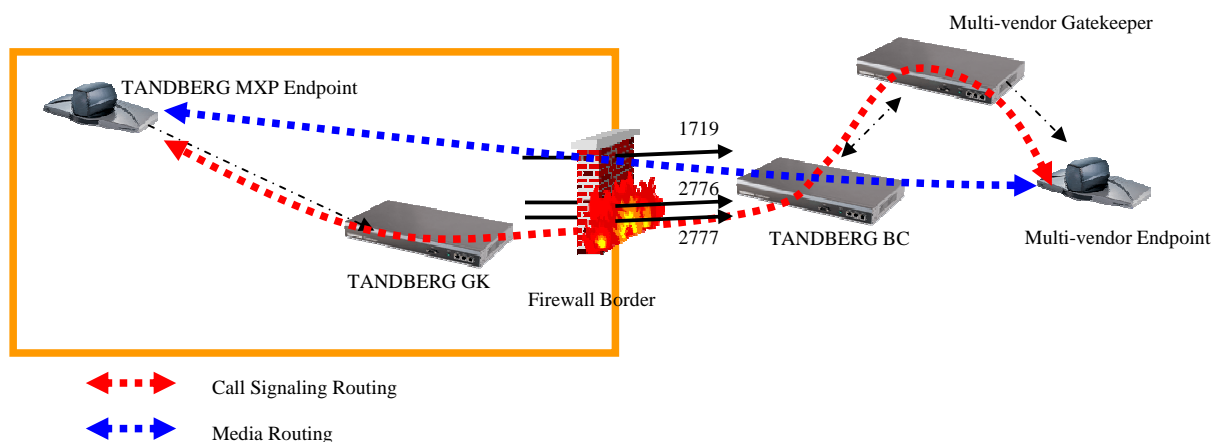
In conjunction with the TANDBERG Gatekeeper or TANDBERG MXP, the TANDBERG Border Controller can now support up to 100 simultaneous traversal calls at 384 kbps per call.

4.2.2 Alternate Gatekeeper

The TANDBERG Border Controller now supports alternate gatekeeper signaling, as defined within the H.225 standard. Up to five different alternates can be defined within the Border Controller and, upon registering, the five alternates will be forwarded to the endpoint that is registered. In the event that IP communication is lost with the Border Controller, the endpoint will failover and register to the first alternate that is assigned in the list. If the endpoint is not able to register to the backup Border Controller, it will then attempt to register to the tertiary Border Controller. This process will then continue until the endpoint properly registers to a Border Controller. Once registered with an alternate, the endpoint will then be able to function in a normal manner.

4.2.3 2.2.1 Improved Routing of Media

For traversal calls from an Expressway enabled endpoint, the Gatekeeper can now be configured to allow direct media routing to the TANDBERG Border Controller. In this mode, the call does not count against the traversal call options on the TANDBERG Gatekeeper, thereby increasing the functional capacity of the Gatekeeper.



4.2.4 Increased Security

The Border Controller now supports standards-based H.235 Annex D authentication. Once enabled, the Border Controller will require all endpoints to supply a username and password within all RAS messaging in order to authenticate for registration and call

admission. The Border Controller can be configured to use one of two different forms of authentication, Local Database and LDAP Authentication.

Within the registration request packet, the endpoint will provide the Border Controller with the username, timestamp of the registration and password in hashed format. The MD5 hashing of the password allows for a truly secure authentication.

4.2.4.1 Local Database Authentication

If Local Database Authentication is enabled, the endpoint credentials are stored internally within the Border Controller. The credentials, consisting of a username and password, are then verified locally when an endpoint registers to the Border Controller. If the credentials from the endpoint match the credentials stored within the internal database on the Border Controller, the endpoint is allowed to register. However, if the credentials do not match those that are stored within the internal database, the registration request will be rejected.

4.2.4.2 LDAP Authentication

The Border Controller can be configured for LDAP authentication. In this deployment, the endpoint credentials are stored within an external LDAP server. The LDAP server must have the H.235 Identity installed so the Border Controller can authenticate properly. LDAP Authentication will also enforce the E.164 alias and the H.323 ID of the endpoint. When configuring the LDAP entry, the fields are:

h235IdentityEndpointID (required)
h235IdentityPassword (required)
h323IdentityDialedDigits (required)
h323IdentityH323-ID (optional)

If an endpoint or Gatekeeper tries to register to the Border Controller, the Border Controller will query the LDAP server for the *h323IdentityDialedDigits* and for the *h323IdentityH323-ID* (if present) in addition to the authentication credentials. When those values are returned, the Border Controller will verify that all information from the LDAP server matches that of the Registration Request from the endpoint. If all entries match, the registration will be confirmed. However, if any of the information in the Registration Request does not match any of the information stored within the LDAP account, the registration will be rejected.

4.2.4.3 Encrypted LDAP Authentication

The Border Controller supports two different forms of LDAP Authentication: TLS and LDAPS. If TLS encryption is desired, a valid TLS certificate must be uploaded to both the Border Controller and to the LDAP server. The Border Controller will then use that TLS certificate to send the query information to the LDAP server in an encrypted form. The Border Controller supports RFC 2830 for the TLS encryption.

To configure the Border Controller for LDAPS, configure the LDAP port to 636 instead of the default 389 (for unencrypted communication).

4.2.5 Call Processing Language

The Border Controller has the ability to support Call Processing Language (CPL), as described in RFC 3880. CPL will give the Border Controller the ability to restrict access to resources within the network, such as Gateways. The Border Controller supports the ability to accept calls, reject calls and forward calls to a different location. For more

detailed information on implementing CPL within the Border Controller, please see the Border Controller User Manual, document D13691.

4.2.6 Network Modeling

The Border Controller now supports the ability to model the H.323 network bandwidth. Using network modeling, the administrator of the H.323 network can restrict total and per call bandwidths on a connection-by-connection basis.

4.2.6.1 Subzones

The TANDBERG Border Controller now supports defining up to 100 different subzones/network segments. A subzone allows you to define an area within the Border Controller that will allow you to define bandwidth characteristics for the endpoints that are registered within. A subzone is not, however, an entirely different gatekeeper zone within the same physical box. Subzones are defined based on the IP subnet of the endpoints that will register into the Border Controller.

4.2.6.2 Links

Links are defined within the Border Controller in order to model how specific subzones within the same Border Controller work together as well as communicate with other zones outside that single Border Controller.

4.2.6.3 Pipes

Pipes are used in order to control the call-by-call and total bandwidth used in the different links within the Border Controller.

4.2.7 Improved Endpoint Communication

Q2.0 of the Border Controller software has been designed to improve the call disconnect messaging to all H.323 endpoints in order to provide more information on why calls disconnect, whether on purpose or for unexpected reasons.

4.2.8 Call Logging

The Border Controller will now provide call information about the calls that connect to and disconnect from the endpoints that are registered to the local Border Controller or routed through the Border Controller in a traversal mode. This information can be obtained through the web interface of the Border Controller under System Status or through the XML interface of the Border Controller.

4.2.9 External Manager

The Border Controller now supports external management via XML to an external management system, such as TANDBERG Management Suite. All call logging and event information will be transmitted to the external management system. The external management system can be configured via the API interface on the Border Controller by issuing the command: `xconfiguration externalmanager address: <IPAddress>`.

4.2.10 Improved Event Log

The event log for the Border Controller has been expanded to include all call processing information in addition to system events that might occur. The event log can also be viewed through the embedded web interface of the Border Controller by navigating to *System Status > Event Log*.

4.3 Supplemental Notes to Manuals

4.3.1 Software Versions

The base version of the Border Controller will include an option of 5 concurrent Traversal Calls and 25 Registrations.

These options can be expanded by adding traversal calls and registrations in increments of either of 5 Traversal Calls/25 Registrations or 10 Traversal Calls/50 Registrations. The number of traversal calls can be increased up to 100 concurrent traversal calls with this software release.

4.3.2 References/Related Documents

TANDBERG Website – <http://www.tandberg.net>

For all documentation, please see the TANDBERG Support Website at <http://www.tandberg.net/support/documentation.php>.

See the following documents for more information on the TANDBERG Border Controller:

D13691 TANDBERG Border Controller User Manual

D13380 TANDBERG Border Controller Installation Sheet

4.3.3 Network Support

The TANDBERG Border Controller is an H.323 device and is intended to be connected to an 802.3 IP network. Only the first 802.3 IP port is used, the other two are for future development. The 802.3 IP interface on the TANDBERG Border Controller supports auto speed and duplex detection as well as manually setting 100Mbit Full/Half Duplex or 10Mbit Full/Half Duplex.

4.3.4 Layer 4 Ports Used

Function	Port	Type	Direction
Gatekeeper RAS	1719	UDP	↔
Gatekeeper Discovery	1718	UDP	↔
SSH (Includes SCP)	22	TCP	↔
Telnet	23	TCP	↔
HTTP	80	TCP	↔
HTTPS	443	TCP	↔
SNMP (Queries)	161	UDP	↔
NTP	123	UDP	↔
Incoming H.323 Call	2776	TCP	↔
Incoming H.323 RTP	2776	UDP	↔
Incoming H.323 RTCP	2777	UDP	↔
LDAP Communication	389	TCP	↔
LDAPS Communication	636	TCP	↔

4.4 Changes and Improvements since previous version

4.4.1 802.3 Issues

Resolved an issue that did not properly force speed and duplex of the 802.3 interface when configured in the web interface or through the API commands.

4.4.2 Allow/Deny List Issues

Increased the size of the “Allow” and “Deny” lists to 1000 entries.

If an endpoint is added to the deny list, the endpoint will now be unregistered from the Gatekeeper upon Time-To-Live expiration.

4.4.3 Call Routing Issues

It is now possible for an endpoint running version 2 or prior of the H.323 stack to call an endpoint running version 4 or later of the H.323 stack through the traversal link.

4.5 Known Limitations

Equipment	Limitations
TANDBERG Border Controller ver Q2.0	The Border Controller may show the Start and End times within the Call and Registration Histories as 'Not Set'. This issue will be resolved in the next release.
TANDBERG Border Controller ver Q2.0	Upgrading from Q1.1 to Q2.0 will not add the default links into the configuration for the Border Controller. In order to add these links, telnet or dataport into the Border Controller and issue the command 'xcommand defaultlinksadd'.
TANDBERG Border Controller ver Q2.0	Any remote zones that are configured without a remote zone prefix will not be transferred from the Border Controller on an upgrade from Q1.x to Q2.0. These remote zones will need to be manually entered into the configuration after upgrade.
Cisco PIX Firewall ver 6.2 and previous	An Expressway-enabled endpoint (e.g. TANDBERG Gatekeeper or TANDBERG MXP Endpoint), cannot register to the TANDBERG Border Controller through a PIX firewall running software version 6.2 or prior. This particular version of software is only H.323 version 1 aware and, therefore, strips information from the Registration Request that identifies the endpoint as Expressway-enabled. This can be resolved either by upgrading the PIX firewall to a later

	version of software or turning off H.323 Fixup within the configuration of the firewall.
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4.6 Interoperability Testing

The following systems have been tested and verified compatible with this software release.

4.6.1 Gatekeepers

Equipment	Software Revision
RADVision ECS	3.5.2.5
Cisco MCM	12.3(10a)
VCON MXM	4.12.M09.D01.Y04

4.6.2 Gateway Interoperability

Equipment	Software Revision
TANDBERG Gateway	G2.1, G3.0
RADVision gw-P20	3.0.0.12†
RADVision L2W GW	2.2.3.2.5
Polycom MGC 25/50/100	6.03.2, 7.0.1.11

4.6.3 MCU Interoperability

Equipment	Software Revision
TANDBERG MCU	D3.4, D3.5, D3.6
TANDBERG MPS	J1.1, J2.0, J2.1, J2.2
Polycom MGC 25/50/100	6.02.4, 7.0.1.11
RADVision ViaIP MCU	3.5.24•‡
RADVision OnLan MCU	2.2.1.0
Cisco IPVC 3540	3.2.224•‡

4.6.4 Endpoint Interoperability

Equipment	Software Revision
TANDBERG MXP	F1.4, F1.5, F2.5, F2.6, F3.0
TANDBERG 150	L1.1, L1.2
TANDBERG Classic Series	B1.2, B2.4, B3.4, B4.3, B5.1/B5.11, B6.2/E1.2, B7.4/E2.4, B8.4/E3.4, B9.1/E4.1, B10.0/E5.0
Polycom iPower 9000/970	6.1.0.511
Polycom iPower 680	5.3.0.1202
Polycom FX	6.03
Polycom ViewStation	7.5.2
Polycom VSX	7.01, 7.5
Polycom MP512	7.5.2
Polycom SP 384	7.5.2
Polycom ViaVideo	5.1.1.1009
Polycom PVX	6.01.1315
Sony 1600	3.33
Sony 6000	5.02
Sony PCS-1	2.44

VTEL Galaxy	2.2.0.070
Microsoft NetMeeting	3.01
VCON Vpoint	5.10.0160
Aethra VegaStar	5.1.35

4.6.5 Firewall Interoperability

Equipment	Software Revision
Checkpoint Firewall-1	NG with Application Intelligence (R54)
Cisco PIX	6.2(4), 6.3(1), 6.3(3), 6.3(4)
Sonicwall SOHO 3	6.6.0.2
Linksys BEFW11S4	1.44.2
Linksys WRT54G	1.30.7, 1.42.3, 3.01.3
Linksys BEFSR81	2.45.10
Linksys BEFSR41	1.05.00

† Must deselect “IVR Registers with gatekeeper”

• Must register MCU as a Gateway

‡ Must deselect “Register Conference ID”