BroadWorks Feature Overview (Through Release 17.0)

Descriptions of the features up to and including Release 17.0 of BroadWorks are provided below in the following major categories: Features, Operations, Administration, Maintenance, and Provisioning (OAM&P), and System. To the extent possible, features are organized in alphabetic order in each section. However, in some cases, features follow logical groupings. The "Rel" column identifies which features became Release Complete (RC) in Releases 13, 14, 14.sp1, 14.sp2, 14.sp3, 14.sp4, 14.sp5, 14.sp6, 14.sp7, 14.sp8, 14.sp9, 16.0, and 17.0. Features identified as simply "RC" were introduced prior to Release 13.

Features

Personal Features

Features	Rel	Description
Add Selective Criteria to Simultaneous Ringing	17.0	This feature allows a user who has the Simultaneous Ringing Personal and/or Simultaneous Ringing Family service to define criteria that determine if the Simultaneous Ringing Personal/Family service is activated for the incoming call. The criteria are analogous to those for that can be defined for the Sequential Ringing service and include a schedule (time-of-day, day-of-week, holiday schedule) and one or more calling numbers for which the service is activated. If the criteria are met, the user's simultaneous ring locations are alerted. Otherwise, the call proceeds without alerting the locations. When the Simultaneous Ringing service is not enabled, the newly added criteria have no effect.
Alternate Numbers	RC	Enables users to have up to ten phone numbers and/or extensions assigned to them. The usual ringing is provided for incoming calls to the primary phone number and users have the option of enabling a distinctive ring for calls to their second and third phone numbers. For outgoing calls from the user, the user's primary phone number is the calling line identity.
Anonymous Call Rejection	RC	Enables a user to reject calls from anonymous parties who have explicitly restricted their Caller ID. By activating the service via a web interface, callers without available caller identification are informed that the user is not accepting calls at that time. The user's phone does not ring and the user sees or hears no indication of the attempted call. This service does not apply to calls from within the group.

Features	Rel	Description
Anonymous Call Rejection (ACR) Enhancements	17.0	According to 3GPP TS 24.411 v8.1.0, IP Anonymous Call Rejection (ACR), (Release 8) [1], the Anonymous Call Rejection service rejects all incoming communications where the incoming Session Initiation Protocol (SIP) request includes one of the following: ▪ P-Asserted-Identity header and Privacy header indicating the value "id", as specified in RFC 3325 ▪ P-Asserted-Identity header and Privacy header field indicating the value "user", as specified in RFC 3323 To comply with these standards, the Anonymous Call Rejection service is enhanced to key on the presence of the P-Asserted-Identity header. In certain markets, only local calls are rejected by the Anonymous Call Rejection service even if the Privacy header and P-Asserted-Identity header requirements are met. The Anonymous Call Rejection service is enhanced to reject calls only if the Country Code (CC) within the incoming P-Asserted-Identity header matches that of the terminating BroadWorks user. The new Anonymous Call Rejection service functionality is for IP Multimedia Subsystem (IMS) only.
Answer Confirmation on Forking Services Enhancements	14.sp4	Advanced Core Services: Enhances the Simultaneous Ringing and Sequential Ringing services by ensuring that the call is not answered by a far-end messaging system.
Assistant–Enterprise - Office 2007 Support	14.sp3	Desktop Productivity: Supports the Assistant–Enterprise toolbar in Microsoft Outlook version 2007, for Windows 2000, Windows XP, and Windows Vista.
Assistant–Enterprise - Support for Windows Vista	14.sp3	Desktop Productivity: Supports the Assistant–Enterprise toolbar in Microsoft Outlook and Internet Explorer for Windows Vista.
Authentication	RC	Authentication is performed upon the registration of an IP phone. This ensures that the user of the device is authorized to gain access to BroadWorks. SIP invites can also be authenticated on an ongoing basis at pre-defined intervals. Standard digest authentication is used. The authentication information is configured both in the phone and via the group web portal. All call originations from unregistered phones are denied.
Auto Callback	RC	Enables users who receive a busy condition to monitor the busy party and automatically establish a call when the busy party becomes available. This service can only be activated when calling within the same group.
Automatic Callback Enhancements	17.0	This activity adds two enhancements to the Automatic Callback Polling functionality: ▪ **Provisionable SIP Status Codes** – Prior to the delivery of this feature, the Automatic Callback (ACB) functionality triggered on status codes other than 486 (Busy Here) and 600 (Busy Everywhere). For instance, the 480 (Temporarily Unavailable) and 606 (Not Acceptable) status codes triggered the service. This feature changes this functionality to make the list of these status codes configurable. In this way, a customer can limit the Session Interface Protocol (SIP) status codes that trigger this feature. ▪ **Provisionable Activation Digit** – The initial implementation of this feature ensures ACB is only triggered by the subscriber entering a "1" when prompted to activate the Automatic Callback feature. This enhancement of this feature makes this digit (prompt and value entered) configurable.

Features	Rel	Description
Automatic Hold/Call	13	Enables users to automatically hold and retrieve incoming calls without requiring the use of feature access codes. This feature is especially useful for attendants managing a large volume of incoming calls by enabling them to hold calls by simply transferring them to dedicated parking stations. The feature is made active on that dedicated parking station. When an incoming call is directed to that station, the call is automatically put on hold and provided any media on hold. When the attendant wants to address the call, he/she simply retrieves the call from the held station. A timer exists that automatically returns the call to the attendant following expiration. This also allows for holding calls where the user customer premises equipment does not have a flash key.
Barge-In Exempt	RC	Users with this service assigned cannot have their calls barged in on by other users.
Barge-in FAC	14.sp7	Residential Telephony: Enhances the existing Directed Pickup with Barge-in service to optionally select the most recent active call in a group as the default barge-in target. The user does not have to enter the extension of the active call on which to barge in. This enhancement is used to support residential multi-line deployments when a user attempts to barge in on an existing call involving another user in the household. This feature is designed to emulate what can be done today with multiple analog phones connected to the same RJ-11 port. When the Directed Pickup with Barge-in feature access code is enabled, automatic target selection is possible if only one user is active in the Directed Pickup with Barge-in user's group at the time the Directed Call Pickup with Barge-in service is invoked. An "active" user means either one of these scenarios: ▪ A user from the same group as the Directed Pickup with Barge-in user (excluding the Directed Pickup with Barge-in user) is involved in one (or more) connected call(s) with another user. ▪ A user from the same group as the Directed Pickup with Barge-in user (excluding the Directed Pickup with Barge-in user) is the terminator of a call and is being alerted. If the target is ambiguous because multiple users meet the condition, the Directed Pickup with Barge-in user hears a stutter dial tone, and the target's extension must be entered.
Blind Call Transfer	RC	Enables a user to transfer a call unattended before or after the call is answered. Users can only execute blind call transfer from the CommPilot Call Manager.
BroadWorks Anywhere	14.sp4	Advanced Core Services: Facilitates the deployment of BroadWorks Anywhere in multi-vendor core networks.
Busy Camp On	14.sp4	Front Office: Enhances the camp-on facility of the Receptionist client. The Busy Camp On feature is activated automatically when the transferring party transfers a call to a busy party in the group or the enterprise.
Call Center - Message Waiting Indicator of ACD on Supervisor Client	14.sp3	Call Center: Provides the Call Center Supervisor client with a message waiting indication (MWI) as well as the number of new/unread messages when a customer leaves a voice message.
Call Center Client - Always on Top For Client Interface and Tabs	14.sp3	Call Center: Allows Call Center clients to enable the client or the presence of floating tabs on the user's desktop.
Call Center Client - Enhanced Supervisor Team Tab	14.sp3	Call Center: Allows supervisors to sort the Supervisor Team tab by campaign and view Calling Line ID (CLID) for an agent's active calls. The feature also provides supervisor status.

Features	Rel	Description
Call Center Client - Keyboard Shortcuts	14.sp3	Call Center: Allows Call Center clients to map client features to keyboard shortcuts.
Call Center Client - Transfer to Front and Back of Queue	14.sp3	Call Center: Allows agents to transfer calls to the back of the queue (primary option) or to the front of the queue (secondary option).
Call Forward Not Reachable	14.sp2	Allows for configuring a location (for example, a mobile) where a call should be redirected when the main device is unreachable (for example, landline).
Call Forwarding Always	RC	Enables a user to redirect all incoming calls to another phone number. Users have the option to activate and deactivate the service by dialing a feature access code or configuring the service via their web interface. If activated, a user must specify the forwarding number. A status indicator on the CommPilot Call Manager identifies whether this service is enabled.
Call Forwarding Busy	RC	Enables a user to redirect calls to another destination when an incoming call encounters a busy condition. Users have the option to activate and deactivate the service by dialing a feature access code or configuring the service via their web interface. If activated, a user must specify the forwarding number.
Call Forwarding No Answer	RC	Enables a user to redirect calls to another destination when an incoming call is not answered within a specified number of rings. Users have the option to activate and deactivate the service by dialing a feature access code or configuring the service via their web interface. If activated, a user must specify the forwarding number and the number of rings before forwarding.
Call Forwarding Remote Access	RC	Enables users to activate, deactivate, and program their Call Forwarding Always service from any phone via their voice portal.
Call Forwarding Selective	RC	Enables a user to define criteria that causes certain incoming calls to be redirected to another destination. If an incoming call meets user-specified criteria, the call is redirected to the user-specified destination. The user controls the service via a web interface, which provides the ability to set the forwarding destination address and the criteria sets for determining which calls require forwarding. A criteria set is based on incoming calling line identity, time of day, and day of week. Multiple criteria sets can be defined.
Call Forwarding Selective Enhancement	RC	Enables users to apply different forward-to phone numbers for their various call forward entries. Previously, Call Forwarding Selective entries were restricted to use one common forward-to number.
Call Notify	RC	Enables a user to define criteria that cause certain incoming calls to trigger an e-mail notification. If an incoming call meets user-specified criteria, an e-mail (or short message to a cell phone) is sent to the notify address informing the user of the details of the incoming call attempt. The user controls the service via a web interface, which provides the ability to set the notify e-mail address and the criteria sets for determining which calls trigger a notification. A criteria set is based on incoming calling line identity, time of day, and day of week. Multiple criteria sets can be defined.
Call Return	RC	Enables a user to call the last party that called, whether or not the call was answered. To call back the last party that called, the user dials the Call Recall feature access code. The system stores the number of the last party to call, and connects the user to that party. Users can also execute call recall via the CommPilot Call Manager.
Call Return to Playback Number	16	Residential Services: Enhances the existing Call Return service to optionally configure a two-level activation procedure that supplies an audio prompt with an announcement of the last incoming number and a confirmation to proceed before returning the call. This feature also adds a FAC to delete the last incoming number and additional system parameters allowing the operator to customize the behavior of the Call Return service.

Features	Rel	Description
Call Screening by Digit Pattern	RC	Enables users to specify digit patterns instead of individual phone numbers on the following selective services: Selective Call Forwarding, Selective Call Acceptance, Selective Call Rejection, Call Notification, and Priority Alert. Digit patterns consist of a sequence of digits followed by the * wildcard. For example, 240* would apply to any calls from phone numbers starting with 240. Users can also use the "?" wildcard character in specifying digit patterns. The "?" wildcard character represents any single digit (0 through 9) and can be used multiple times anywhere within a digit string. The "?" wildcard can be used with or without the "*" wildcard at the end of the digit string.
Call Trace	RC	Enables users to request that a call they have received to be automatically traced by dialing a feature access code after the call.
Call Transfer Recall	14.sp2	Allows for rolling back a transferred call to the transferring party when the call is not answered by the destination party. This feature also prevents further redirections from the destination party.
Call Transfer with Third-Party Consultation	RC	Enables a user to consult with the add-on party before transferring the caller. To initiate call transfer with consultation, the user presses the flash hook and dials the add-on party. When the call is answered, the user can consult with the add-on party. To transfer, the user hangs up causing the caller to be connected to the add-on party. Users can also execute call transfer with consultation via the CommPilot Call Manager.
Call Transfer with Three-Way Consultation	RC	Enables a user to make a three-way call with the caller and add-on party before transferring the caller. To initiate call transfer with three-way consultation, the user presses the flash hook and dials the add-on party. When the call is answered, the user presses the flash hook and forms a three-way call with the add-on party and caller. To transfer, the user hangs up, causing the caller to be connected to the add-on party. Users can also execute call transfer with three-way consultation via the CommPilot Call Manager.
Call Waiting	RC	Enables a user to answer a call while already engaged in another call. When a second call is received while a user is engaged in a call, the user is informed via a call waiting tone. To answer the waiting call, the user presses the flash hook. The user connects with the waiting party and holds the original party. By pressing the flash hook, the user reconnects to the original party and holds the waiting party. The feature completes when any party hangs up. Users can also execute call waiting via the CommPilot Call Manager. Users can activate/deactivate the Call Waiting service for all incoming calls via their web interface. Users also have the option of canceling their Call Waiting on a per-call basis by dialing the respective feature access code for Cancel Call Waiting per Call before making the call, or after a switch-hook flash during the call. Once the call is over, Calling Waiting is restored.
Call Waiting Enhancement	RC	Enables a service provider to control whether or not Call Waiting is assigned to a user, rather than being a default capability. Thus, the service provider has the option to charge for this service.
Calling Line ID Blocking	RC	Enables a user to block delivery of his/her identity to the called party. The user controls the service via a web interface, which provides the ability to activate and deactivate the service. If activated, all calls made by the user have the user's identity blocked. If this service is activated, users can still choose to allow the delivery of their Calling Line ID on a specific call by entering the respective feature access code (*65 is the default) for Calling Line ID Delivery per Call. Once the call is over, Calling Line ID Blocking is restored.
Calling Line ID Blocking Override	RC	Enables users with this service assigned to always receive the calling line ID if available, regardless of whether or not it is blocked by the calling party. For example, this capability could be used by law enforcement agencies in certain countries.
Calling Line ID Blocking per Call	RC	Enables users to block their outgoing caller ID on a per-call basis by dialing a feature access code before making the call.

Features	Rel	Description
Calling Line ID Delivery	RC	Enables the delivery of a caller's identity to a user via the CommPilot Call Manager and phone (if capable). Delivered information includes the caller's phone number and name. The information is delivered to the web interface and the phone (if capable) only if the information is available and has not been blocked by the caller.
Calling Line ID Delivery Enhancement	RC	Enables a service provider to control whether or not the two services below are assigned to a user, rather than being a default capability. Once this service is assigned, users have the ability to enable or disable the service. ▪ Internal Calling Line ID Delivery ▪ External Calling Line ID Delivery
Calling Name Delivery	RC	Provides the calling name for incoming calls by querying an external database for the information if it is not received in the call set-up messaging. Although the BroadWorks standard Calling Line ID Delivery provides the calling number and name for all calls within BroadWorks, calling name information is typically not passed with calls received from external parties (for example, PSTN-originated calls).
Clear Call History	14.sp2	Improves the user experience by allowing them to delete all their call histories.
Client Support for User Managed Privacy Service	14.sp3	Front Office: Allows users of this service to limit the display of their name, status, or name and status in group or enterprise directories. This feature is specific to government organizations such as the police where special undercover agents are not displayed in the directories. A special privacy icon appears in the Receptionist contact directory in this situation indicating that the user does not wish to display their Busy Lamp Field (BLF) status.
CommPilot Call Manager	RC	Provides a web-based tool for users to invoke their services, as an alternative to using feature access codes or pressing the flash hook. The following features are included with the CommPilot Call Manager: ▪ Click-to-Dial – enables a user to enter and dial a number, dial directly from a drop-down Phone List (Personal, Group or Call Log) or Outlook tab, or click the Redial button. ▪ Answer Call – enables a user who is already engaged in a call to answer another waiting call. When available, the calling line ID is displayed with the caller's name and number. ▪ Call Hold/Retrieve – enables a user to place an existing call on hold for an extended period of time, and then retrieve the call to resume conversation. While the calling party is held, the user can choose to make a consultation call to another party. ▪ Call Transfer – enables user to redirect a ringing, active, or held call to another number or directly to voice mail. Before transferring the caller, the user can choose to consult with the third party first or establish a three-way consultation. ▪ Conference – enables a user to establish a three-way call involving two other parties. ▪ Release Call – enables a user to disconnect a call that has been answered. ▪ Configure Services – buttons are provided to enable a user to turn on or off frequently used services such as Call Forwarding Always and Do Not Disturb. Alternatively, if CommPilot Express has been configured, the user can change their CommPilot Express status (for example, Available, Busy, or Unavailable) by choosing from a drop-down list.

Features	Rel	Description
CommPilot Express	RC	Enables users to pre-configure multiple profiles for managing incoming calls differently based on the user's status: ▪ Available – In the Office ▪ Available – Out of the Office ▪ Busy ▪ Unavailable Each profile includes preferences for managing the relevant incoming call functions, for example, Call Forwarding (Busy, No Answer, Always, and Selective), Voice Messaging, Simultaneous Ringing, and Call Notify, which can be configured through a single easy-to-use web page. Users can also select their active profile via their CommPilot Call Manager, and/or an IVR menu. If a user elects to use CommPilot Express, it takes preference over all other service settings associated with processing incoming calls.
CommPilot Personal	RC	Web portal that allows end users to activate and customize services.
Configurable Time Format	14	Allows the web portal to display time values using either a 24-hour or 12-hour clock, depending on the locale setting saved for the user's account.
Connected Line Presentation (COLP)/Connected Line Restriction (COLR)	14.sp3	ISDN Migration: Provides BroadWorks users with connected line information for the calling party. The called party can also block the delivery of the connected line on a per-call or permanent basis.
Consultation Hold	RC	Enables a user to put the caller on hold, and make a consultation call to another party. To initiate consultation hold, the user presses the flash hook and dials the add-on party. When the call is answered, the user can consult with the add-on party. To drop the add-on party and reconnect to the original party, the user presses the flash hook twice. Users can also execute consultation hold from the CommPilot Call Manager.
Custom Ringback	13	Enables a user to specify custom audio media files such as music or corporate greetings for ringback tones versus a standard system ring tone. Users can specify multiple profiles where each profile is associated with a set of incoming call criteria (that is, phone numbers, time of day, and so on) and a custom media file. If criteria are not met, then the group's custom media file is used. If the group service is not provisioned or configured, the system ringback is provided. This feature is also called "color ringback" in certain markets.
Customer Ringback - Video	13	Enables a user to specify custom audio and video media files for ringback tones versus a standard system ring tone. Users can specify multiple profiles where each profile is associated with a set of incoming call criteria (that is, phone numbers, time of day, and so on) and a custom media (audio and video) file. If criteria are not met, then the group's custom media file is used. If the group service is not provisioned or configured, the system ringback is provided. If the caller does not have a video client or video phone, only the audio media file is played.
Device Feature Key Synchronization	14.sp2	Allows users to activate BroadWorks services (for example, Do Not Disturb and Call Forwarding Always) by using device feature keys rather than using the web portal.
Direct Inward/Outward Dialing	RC	Users are assigned a ten-digit directory number that can be used to place or receive calls directly to this phone, without forcing access via a central number. Incoming and outgoing calls can be placed/received via the phone or the CommPilot Call Manager (except an initial incoming call, for which the phone must be taken off hook).
Directed Call Pickup	RC	Enables a user to answer a call directed to another phone in their group by dialing the respective feature access code followed by the extension of the ringing phone.

Features	Rel	Description
Directed Call Pick-Up with Barge-In	RC	In addition to the ability to pick up a call directed to another user in the same customer group, this version of the Directed Call Pick-Up service (listed below under group services) also enables the user to barge-in on the call if already answered, thereby creating a three-way call. Administrators can configure whether or not a warning tone is played when a barge-in occurs.
Distinct Call Waiting Ringback	14	Enhances the Call Waiting service to provide a distinctive ringback to the caller when the called party is busy and alerted with a call waiting tone. Different ringback audio files can be used depending on the country code of the called party. This is configured through a system-level parameter.
Distinctive Alert/Ringing	RC	Provides a different call waiting tone (that is, alert) or a different ringing cadence for intra-group calls versus calls received from outside of the group. This service is provisioned as part of the Priority Alert/Ringing service, so users must choose to enable either Distinctive Alert/Ringing or Priority Alert/Ringing (different tone/ring for user-specified phone numbers) at any given time.
Distinctive Alert/Ringing Enhancement	RC	This service is enhanced to also recognize calls from another group within the same multi-group enterprise as internal calls.
Diversion Inhibitor	13	Provides the option to prevent calls that are redirected by a user to be redirected again by the called party to their voice mail. It is especially useful for service such as Simultaneous Ring and Sequential Ring. If Simultaneous Ring is engaged, and one of the lines has voice mail pickup set for two rings, this feature continues to ring all the lines past the two rings and not transfer the call to voice mail.
Do Not Disturb	RC	Allows users to set their station as unavailable so that incoming calls are given a busy treatment. Users have the option to activate and deactivate the service by dialing a feature access code or configuring the service via their web interface. A status indicator on the CommPilot Call Manager identifies whether this service is enabled.
Enhanced Privacy on Hold	13	Enables users to designate a held call as "privately held". A privately held call cannot be retrieved from another station. In Shared Call Appearance applications that require several steps to transfer a call, this feature keeps others in a common call group from retrieving the held call.
ETSI FAC Support	14	Introduces additional feature access codes on BroadWorks to meet ETSI specifications, providing increased transparency in countries where these feature access codes are being used (for example, France). New feature access codes are introduced for sending callers to voice mail, setting the number of rings required for no-answer handling, changing the default Calling Line ID Blocking and Call Waiting settings, and accessing the voice portal.
Expensive Call Notification	14.sp4	Advanced Core Services: Allows callers to choose whether or not to proceed with calls identified in the system as being expensive.
Extension Dialing	RC	Enables users to dial extensions via their CommPilot Call Manager or phone to call other members of their business group.

Features	Rel	Description
Feature Activation Codes for Status Enquiry	16	Business Telephony: Introduces three new Feature Access Codes (FACs): ▪ Call Forwarding Always (CFA) interrogation FAC ▪ Call Forwarding Busy (CFB) interrogation FAC ▪ Call Forwarding No Answer (CFNA) interrogation FAC The subscriber can dial these FACs to get the current status and destination of the Call Forwarding services listed above. The status is returned as *active* or *inactive* and the destination is reported as "voice mail" or the current forwarded number. The default FACs for each status query are as follows: ▪ CFA Interrogation FAC = *21* ▪ CFB Interrogation FAC = *67* ▪ CFNA Interrogation FAC = *61* The FACs are configurable on a *group* basis.
Flash Call Hold	RC	Enables users to hold a call for any length of time by flashing the switch-hook on their phone and dialing the respective feature access code. Parties are reconnected again when the switch-hook is flashed and the feature access code is dialed again.
H.264 Video Support	14	Extends the Video Add-On feature to include support for the H.264 video codec.
Hidden Call Forwarding Option Support	17.0	This feature implements a Session Initiation Protocol (SIP) 181 response to the originator when a call is redirected. In addition, BroadWorks users can now control the types of calls that receive this response.
Hoteling	RC	Companies often reserve a set of cubicles and phones for mobile workers who come into the office from time to time. "Hoteling" enables mobile users to share office space and phones on an as-needed basis, like a hotel room. The Hoteling service supports this activity by enabling users with guest privileges to log in to a host account via their web portal or voice portal. This enables the employee to use the host phone to make and receive their calls as usual, while retaining their own BroadWorks user profile.
Hoteling Guest Provisioning Enhancements	14.sp2	Enhances Hoteling Guest behavior by providing additional essential information while provisioning the feature.
Hoteling Host and Guest on One User	14.sp9	Currently, the Hoteling Host and Hoteling Guest services are not permitted to be active on the same user account. BroadWorks gives the Hoteling Guest service precedence, thus preventing the account from simultaneously being associated with a Hoteling Host. This feature eliminates this restriction and allows the two services to operate simultaneously on the same user account.
Hoteling Timer Enhancement	14.sp4	Advanced Core Services: Enhances the Hoteling Host and Hoteling Guest services by making the disassociation timer configurable (enabled with or without a time limit or disabled).
Icelandic Localization Requirements for Announcements	14.sp8	Localization: Currently, the Auto Attendant service uses the Calling Line ID (CLID) name for name dialing and for name spelling. Unfortunately, the CLID name is a U.S. ASCII string, which cannot contain Unicode characters. In some languages, such as Icelandic, user names can contain Unicode characters. In addition, the Icelandic phone keypad allows the dialing of these Unicode characters. This feature enhances the Name Dialing feature by allowing Icelandic Unicode characters in the name dialing and in the name spelling.

Features	Rel	Description
ICSA Enhancements for Call Transfer	17.0	The In-Call Service Activation (ICSA) enhancement for the Call Transfer feature is an extension of the existing In-Call Service Activation feature. The present feature enhances the existing In-Call Service Activation service to monitor for DTMF events from the In-Call Service Activation user's intelligent access device for a specific Explicit Call Transfer (ECT) digit sequence and perform the call transfer upon detection of the Explicit Call Transfer digit sequence.
IP Phone Support	RC	SIP-based IP phones are supported by BroadWorks, in addition to basic analog phones or soft clients. Users with IP phones and the CommPilot Call Manager can use either means of managing their calls in real time (for example, call hold, conference).
Last Number Redial	RC	Enables users to redial the last number they called by clicking the Redial button on their CommPilot Call Manager or by dialing a feature access code (for example, *66).
LDAP Directory Integration	RC	Enables users to access contact names and phone numbers from an external lightweight directory access protocol (LDAP) directory using an additional tab on their CommPilot Call Manager. The LDAP tab enables users to click-to-dial a contact and perform searches by contact name. This service can be integrated with an enterprise's own private directory or a public directory provided by the service provider.
Legacy Automatic Callback	17.0	This activity introduces a new service called Legacy Automatic Callback (ACB). Similar to the MMTel Automatic Callback already available in BroadWorks, this service allows a BroadWorks subscriber to reach another busy subscriber shortly after that busy subscriber becomes available. When active, the service monitors the busy subscriber. When that subscriber is available, it recalls the original caller, places a call back to the original busy subscriber, and connects the two parties.
		Though similar to the MMTel Automatic Callback in purpose, the Legacy Automatic Callback service is different in important ways. Foremost, Legacy Automatic Callback is different in its basic operation. For Legacy Automatic Callback, a subscriber dials a Feature Access Code (FAC) to invoke Automatic Callback toward the last dialed number. This is different from MMTel Automatic Callback, which does not have a FAC, but allows the subscriber to invoke Automatic Callback when a call attempt toward the other subscriber results in a busy indication. Legacy Automatic Callback is also substantially different in its implementation. By design, it interworks with the same service implemented in the Nortel CS 2000 softswitch.
		BroadWorks implements both the originating and terminating switch behavior. Thus, a subscriber hosted on BroadWorks can use the Automatic Callback service to reach a subscriber hosted on a Nortel CS 2000 softswitch, and vice versa. A caller on BroadWorks can also use Automatic Callback to reach another subscriber hosted on BroadWorks.
		Because the Nortel CS 2000 Automatic Callback facility is based on SS7 signaling that is unsupported in BroadWorks, the implementation also involves a GENBAND C3 softswitch, which facilitates the interworking between the SIP signaling used in BroadWorks and the SS7 signaling used in the Nortel CS 2000.

Features	Rel	Description
Location Based Calling Restrictions	17.0	This feature introduces the capability to define calling restrictions based on the location of a mobile user. Location information is obtained by inspecting Customized Applications for Mobile Network Enhanced Logic (CAMEL) headers in the SIP INVITE message. By inspecting Mobile Switching Center (MSC) address information carried in CAMEL headers, BroadWorks can detect whether a user is located in their home network or whether they are roaming. In addition, the introduction of roaming network system data allows BroadWorks to determine whether roaming is occurring in a network with a roaming agreement. (The roaming status can be used as criterion for Communication Barring.) For mobile users, further inspection of the CAMEL or P Access Network Info (PANI) headers is used to refine the location by the cell identifier. The physical location of cells can be organized into zones, and zones can be organized into office zones. When users are associated with office zones, the zone information is formatted in accounting records, and can be used as criteria for network translations and Communication Barring. A single zone within the user's office zone may be identified as the primary zone. Similar to the office zone, primary zone information is formatted in accounting records, and it can be used as criteria for Communication Barring. Users can also configure their profile to redirect calls to voice mail when they are outside their primary zone. Finally, this feature adds the concept of a network translation index on the Network Server, which allows an operator to specify the enterprise and public translations used for roaming calls and for certain network classes of service. Network translation indices can be associated with MSC addresses on the Application Server, and they are automatically used by the Network Server to perform translations for roaming callers.
Make Calling Name Delivery a Separate Assignable Service	17.0	Many operators, notably in the mobile space, offer a Calling Line ID Delivery capability as two separate services, namely Calling Number Delivery and Calling Name Delivery. This activity adds two new BroadWorks services: Calling Number Delivery and Calling Name Delivery, which allow the delivery of the calling number and calling name to be managed independently. The existing BroadWorks services External Calling Line ID Delivery and Internal Calling Line ID Delivery remain unchanged and have precedence over the new services. This activity also adds a new Call Processing policy that may cause the Application Server to block the sending of the calling name when a BroadWorks user places a call that terminates to a destination outside the user's enterprise or group.
Multi-Path Forwarding	RC	Enables a user to have more than one forwarded call active at a time. There are no limitations on the number of simultaneous calls a user can forward. Calls are specified for forwarding via the web portal interface.
MWI Synchronization Enhancements	14.sp1	Restores the message waiting indicator (MWI) status of a device following a reboot.
N-Way Calling	14	Allows users to add any number of other parties to a call, up to a maximum number configurable at the system level (maximum 15, including the originator). This is similar to the Three-Way Calling feature.
Outlook Integration	RC	This service enables users to integrate their personal contacts in Microsoft Outlook with their CommPilot Call Manager. Using the Outlook Contacts tab in the Call Manager, users can perform a search of their personal Outlook contacts by name or company. Once the desired contact is located, users can click-to-dial one of the contact's phone numbers or the user can choose to display the contact's v-card by clicking their name. When receiving a call, the user's Microsoft Outlook contact database is searched for a match of the caller's phone number. If a number is matched, the user is given the option of clicking the icon next to the incoming calling name in their Call Manager window to open the caller's v-card. Users can also choose to have new Outlook journal entries automatically opened for incoming and/or outgoing calls.

Features	Rel	Description
Personalized Name Recording	RC	Enables users to record their name to be played back to incoming callers in conjunction with multiple services, including Voice Messaging and Auto Attendant. A .wav file is recorded and uploaded via a phone and respective CommPilot Personal web page.
Phone List – Call Log	RC	The Call Log enables users to view and dial from the following lists of stored numbers: missed, received, and dialed. The call log is accessed through the CommPilot Call Manager and includes the most recent numbers registered for each category, as well as the respective call times and dates.
Phone List – Group	RC	This phone list enables users to dial any other member of their business group by selecting from a list of names on their CommPilot Call Manager. The list also serves as a searchable company directory, listing names, numbers, and e-mail addresses. Each user added to the group is automatically added to this list. Also included are the extensions for reaching the Auto Attendant(s), Hunt Group(s), and the voice portal, when applicable. Group administrators can add additional phone numbers to the Group Phone List by either adding them individually via their web portal or by importing them from a file.
Phone List – Personal	RC	Enables users to dial frequently called numbers by selecting from a searchable list of names on their CommPilot Call Manager. Each user can add, delete, edit, and re-order numbers in their Personal Phone List, which serves as a personal speed dial list. Users can add multiple numbers to this list by uploading them from a flat file.
Polycom Phone Services – Phone Directory Integration	14.sp6	Device Management: This feature adds a new user service to BroadWorks called Polycom Phone Services. When assigned and configured, it introduces a set of services that integrates BroadWorks services with features and capabilities on the Polycom family of phones. Specifically, it introduces the concept of a "Polycom Phone Directory", which allows an end user to add, delete, and synchronize a set of contacts onto their Polycom phone. This feature will continue to be enhanced in future releases of BroadWorks to support additional levels of integration and personalization with Polycom phones.
Pre-Alerting Announcement	17.0	A new BroadWorks service, Pre-Alerting Announcement, allows users to provide a customizable announcement to be played to the calling party before alerting the user's device. The announcement can be configured to be interruptible by the calling party via a configurable dual-tone multi-frequency (DTMF) sequence.
Printable Group Directory	RC	Enables users to view and print a directory listing of all the business group members and their respective contact information (for example, extension, mobile phone number, e-mail address). The information is displayed in one of two formats: summary or detailed. The Group Directory is accessible from the CommPilot group portal or via each user's CommPilot Call Manager.
Priority Alert/Ringing	RC	Enables a user to define criteria to have certain incoming calls trigger a different call waiting tone (that is, alert) or a different ringing cadence than normal calls. The user sets the criteria (for example, incoming calling number, time of day and day of week) for determining which calls require priority notification via their CommPilot Personal web interface. Multiple criteria sets, or profiles, can be defined.
Privacy Service	14	Allows users to exclude themselves from the group and directory listings visible to other users.
Push to Talk (Intercom)	RC	Enables user-to-user intercom service across an enterprise. When a user dials the respective feature access code followed by the called party's extension, the system requests that the called station answer automatically. Users and administrators can define accept and reject lists, which can include wildcards.

Features	Rel	Description
Remote Office	RC	Enables users to access and use their BroadWorks service from any end point, on-net, or off-net (for example, home office, mobile phone). This service is especially useful for teleworkers and mobile workers, as it enables them to use all of their CommPilot features while working remotely (for example, extension dialing, transfers, conference calls, Outlook integration, directories, and so on). In addition, since calls are still originated from BroadWorks, the service provides an easy mechanism for separating personal and business phone expenses, as well as keeping alternate phone numbers private. This service must be set up by the group administrator.
Residential Call Restrictions	13	Enables an administrator to specify the maximum call time in minutes for answered (and unanswered) calls. Maximum call time can be specified on a system, service provider/enterprise, group, and user basis. If an answered call exceeds the maximum call time allowed, then the call is released by the system. This helps to prevent fraud and also provides a mechanism to cut off calls that have accidentally been left off-hook.
Residential Voice Portal	13	Enables providers to set up a new level of voice portal than spans all groups in a service provider without requiring a public phone number for each group voice portal. In addition, a user can be configured to use the service provider voice portal or the group voice portal. If a carrier is using the service provider voice portal, a user is assigned a service provider voice mail box, which is unique for the service provider.
Ring Splash	RC	Enables users to have a short ring burst played on their phone when the following services are triggered: Call Forwarding Always, Call Forwarding Selective, and Do Not Disturb. Ring Splash can be enabled for each of these services individually and serves as a reminder that the respective service is active.
SCA Call Location and SCA Call Retrieve	14.sp2	Allows for migrating (retrieving) an active call from one Shared Call Appearance (SCA) location (for example, a mobile) to another (for example, landline).
Selective Call Acceptance	RC	Enables a user to define criteria that causes certain incoming calls to be allowed. If an incoming call meets user-specified criteria, the call is allowed to complete to the user. All other calls are blocked and the caller is informed that the user does not wish to receive the call. The user controls the service via a web interface, which provides the ability to establish the criteria sets for determining which calls are allowed to complete. A criteria set is based on incoming calling line identity, time of day, and day of week. Multiple criteria sets can be defined.
Selective Call Forwarding Enhancements	16	Residential Services: Enhances the existing Selective Call Forwarding service by adding the following enhancements: ▪ Support for "blacklists" ▪ Support for calendaring ▪ Support for activation and deactivation of FACs In addition, the feature extends the enhancements for "blacklists" and calendaring to the following services: ▪ BroadWorks Anywhere ▪ Call Notify ▪ Custom Ringback ▪ Selective Call Acceptance ▪ Selective Call Rejection ▪ Sequential Ringing

Features	Rel	Description
Selective Call Rejection	RC	Enables a user to define criteria that cause certain incoming calls to be blocked. If an incoming call meets user-specified criteria, the call is blocked and the caller is informed that the user is not accepting calls. The user controls the service via a web interface, which provides the ability to establish the criteria sets for determining which calls require blocking. A criteria set is based on incoming calling line identity, time of day, and day of week. Multiple criteria sets can be defined.
Selective Services Enhancements	13	Enables users to specify call treatments based on the added criteria of a private or unavailable incoming calls.
Sequential Ring	RC	Enables users to define a "find-me" list of phone numbers that are alerted sequentially for incoming calls that match specified criteria. While the service searches for the user, the calling party is provided with a greeting followed by periodic comfort announcements. The caller can also interrupt the search to leave a message by pressing a DTMF key.
Service Scripts Configuration Enhancements	14	Streamlines the configuration of the Service Scripts feature, making separate services for the group and user levels. When a group has the group-level Service Scripts service assigned, all users in that group use the script provided. However, if a user in a group has the user-level Service Scripts service assigned, that script overrides any script currently in use by the group.
Shared Call Appearance	RC	Allows for incoming calls to ring on up to 35 additional phones simultaneously, connecting the first phone to be answered. If one of the phones is already hosting an active call under the line ID, incoming calls are delivered to the active phone and any outgoing calls from another phone using the same line ID are blocked. Certain IP phones can present the following states across their lamps: idle, progressing, alerting, active, and held. Certain IP phones can also support the hold/retrieve function, whereby calls on shared lines can be held on one device and retrieved from another registered device. Example applications of this service include setting up a second line for an executive assistant or creating a hosted key system solution with multiple lines being shared across multiple phones in an office.
Shared Call Appearance Bridging	14	The Shared Call Appearance (SCA) service provides an attribute that is used to allow or disallow bridging between the SCA locations. This allows for bridging calls between shared call appearance locations to facilitate manager/administrative assistant interactions.
Simultaneous Ring	RC	Enables users to have multiple phones ring simultaneously when any calls are received on their BroadWorks phone number. The first phone to be answered is connected. For example, calls to a user's desk phone could also ring the user's mobile phone, in case the user is not at his/her desk.
Soft Client Support	RC	The Microsoft Messenger soft client can be used as an alternative to analog or IP phones for making and receiving calls, while still having access to all of the features of BroadWorks.
Speed Dial 100	RC	Enables users to dial two-digit codes to call up to 100 frequently-called numbers. Entry of the two-digit code is preceded by a configurable prefix: 0-9, A-D, *, or # (default). Users can program the numbers in their directory via the Speed Dial 100 web page in their CommPilot Personal web portal, or directly through their phone using the respective feature access code (*75 default).
Speed Dial 8	RC	Enables users to dial single digit codes to call up to eight different numbers, such as frequently-dialed numbers or long strings of digits that are hard to remember.

Features	Rel	Description
Three-Way Calling	RC	Enables a user to make a three-way call with two parties, in which all parties can communicate with each other. To initiate a three-way call while engaged in a regular two-party call, the user presses the flash hook and dials the third party. Before or after the third party answers, the user presses the flash hook and forms a three-way call with the two parties. To drop the third party, the user presses the flash hook and is reconnected with the original party in a regular two-party call. If the user hangs up, all parties are released. Users also have the ability to execute three-way calls using the CommPilot Call Manager.
Two-Stage Dialing	14.sp1	Allows users to leverage enterprise dialing and other BroadWorks services from their cell phones or PSTN landlines.
User Managed Privacy Service	14.sp2	Allows users to manage their privacy by restricting access to their call status by directories, Auto Attendants, Receptionist, Busy Line Field, and Attendant Console.
Vertical Service Code (VSC) *77 and *87 for Anonymous Call Rejection (ACR) to Indicate Blocking of Caller ID	14.sp6	Business Telephony: This feature adds Vertical Service Code (also known as Feature Access Code, or FAC) support for Anonymous Call Rejection (ACR) service. A user subscribed to Anonymous Call Rejection service can activate or deactivate the service using FACs. The two new FACs are configurable on a per-group basis, with the system defaults being *77 for Anonymous Call Rejection activation and *87 for Anonymous Call Rejection deactivation. To activate Anonymous Call Rejection, the user dials the activation FAC. The Application Server then plays an announcement to inform the user that the Anonymous Call Rejection service has been successfully activated. If the Anonymous Call Rejection service was already active, the user still receives the announcement. To deactivate Anonymous Call Rejection, the user dials the deactivation FAC. The Application Server then plays an announcement to inform the user that the Anonymous Call Rejection service has been successfully deactivated, even if the Anonymous Call Rejection service was never activated in the first place.
Video Add-On	RC	Enables the use of video media in conjunction with regular audio media. If a user's primary device does not support video, this service can be used to configure a video-capable device to deliver the video portion of their call. BroadWorks "splits" the multimedia call, directing the audio portion to the primary device and the video portion to the video add-on device. All services continue to operate as they would for a regular audio call.
Voice Portal Calling	RC	Enables users to make calls from the voice portal, as if making calls from their desk. Calls are still made on the user's account but can be made from any phone.
Web Portal Call Logs	RC	A page in the CommPilot Personal Portal provides users with call logs for received, missed, and placed calls. This service is deployed in conjunction with the BroadWorks Call Detail Server.

Features	Rel	Description
Wireless and Residential Dialing	13	Enables an administrator to force all calls to query the Network Server on a system, service provider/enterprise, or group basis. With this feature engaged, all calls from a group are directed to the Network Server (usually, only inter-group calls query the Network Server). Furthermore, to support residential and enterprise users on the same system, it is important to be able to designate groups to have calling line identity restrictions enabled or disabled. For enterprise groups, they should be disabled (default) and for residential groups, they should be enabled. This feature allows an administrator to specify if calling line identity restrictions are enabled or disabled for a group on a system, service provider/enterprise, or group basis. When incoming calls are received, this feature is checked to determine if calling line identity restrictions are enforced or not. All of the configuration parameters are provided in a hierarchical manner. There are identical parameters at the system, service provider/enterprise, group and user (if applicable) layers. The user has the highest precedence, and the system has the lowest precedence. On a per-call basis, the system selects the parameter to use based on the precedence. Thus, the user parameter is used if it is configured, otherwise the group parameter is used if it is configured, otherwise the service provider/enterprise parameter is used if it is configured, and lastly the system parameter is used if all other layers are not configured.

Group Features

Features	Rel	Description
Account Codes	RC	Enables the tracking of calls made to outside of the group by prompting users for an account code. This service does not validate the codes entered (see Authorization Codes), so calls are not blocked. Account codes are managed by the group administrator and can be two to 14 digits long. Note that groups cannot have this service and the Authorization Codes service enabled at the same time. Account Codes can also be implemented on a per-call basis in which users have the option to enter an account code by dialing a feature access code before the call, or by flashing the switch-hook during a call and then dialing the feature access code (for example, to register an incoming call from a client).
Agent Hold and Retrieve Enhancements	17.0	This feature implements the capability to prevent agents from putting a Call Center call on hold indefinitely. After a configurable timer expires, either the agent is forced to take the call or the call is returned to the queue.
Agent Whisper	17.0	This new call treatment allows announcements to be played to the agent when a call comes from a call center. This feature is only available in Premium call centers.

Features	Rel	Description
Attendant Console	RC	The web-based Attendant Console enables a user (for example, receptionist) to monitor a configurable set of users within their business group. The Attendant Console window is also integrated with the CommPilot Call Manager, thereby enabling the attendant to perform functions such as click-to-transfer or click-to-dial.
		The Attendant Console graphically displays users' status (busy, idle, or do not disturb), as well as detailed call information. A variety of options are provided for managing the display, including: sort list of monitored users by name, department or title; filter user list by these categories; enter multiple letters of name to be displayed via automatic scrolling; select which column should appear, and in which order (for example, name, title, department, number, extension, mobile, pager, status, e-mail); and option to view duration of monitored users' calls, as well as name and number of parties they are talking to.
Audit Log Enhancements	17.0	The audit log is enhanced to provide support for a centralized audit log application for BroadWorks.
Authorization Codes	RC	Performs an authorization of calls made outside of the group by prompting users for an authorization code. Calls are not connected unless a valid code is entered. Authorization codes are managed by the group administrator and can be of two to 14 digits in length. Note that groups cannot have this service and the Account Codes service enabled at the same time.
Auto Attendant	RC	The Auto Attendant serves as an automated receptionist that answers the phone and provides a personalized message to callers with options for connecting to the operator, dialing by name or extension, or connecting to up to nine configurable extensions (for example, 1 = Marketing, 2 = Sales, and so on). Configuration via the CommPilot group web interface also allows for hours of operation to be modified, with different options available for hours that the company is open or closed. Group administrators use their voice portal to record auto attendant greetings. For example, a message can be left remotely to indicate that the office has been closed due to inclement weather. In addition, users have the ability to record their name for playback when a caller dials by name or extension.
		A group can have multiple Auto Attendants configured, either individually (for example, customer service with separate business hours) or integrated into a multi-level Auto Attendant (for example, enterprise's main Auto Attendant is configured to seamlessly route to the Auto Attendant of a particular department or location).
Auto Attendant Enhancements	RC	The following enhancements have been added to the Auto Attendant service:
		▪ Immediate Extension Dialing – enables callers to dial an extension through the first level of the Auto Attendant without having to first select the extension dialing option
		▪ Dial by First Name – name dialing is enhanced to consider both the first and last name, instead of only the last name
		▪ Holiday Schedule – enables administrators to set the after-hours menu for selected dates (for example, recurring holidays)
		▪ Business Hours Support – enhancement enables administrator to set different business hours for different days of the week
Auto Attendant Loop Detection	14.sp9	This feature introduces a new system parameter to prevent the infinite Auto Attendant redirection loop. The parameter controls the number of redirections allowed for a call to an Auto Attendant (from one Auto Attendant to another). The count of answered redirections is conveyed over Session Initiation Protocol (SIP) in the *Diversion* or *History-info* header, in a proprietary parameter named *answered-redirection*.

Features	Rel	Description
Barge-In Enhancements	17.0	This feature implements the following enhancements: ▪ Agent Escalation – Allows the agent to escalate a call to a supervisor. ▪ Emergency Calls – The supervisor is immediately placed into a conference with the agent and the user/caller. ▪ Silent Monitoring – Allows the supervisor to listen into calls being handled by their agents. An optional tone allows agents to know that they are being monitored. ▪ Customer Originated Trace – Permits an agent to issue a trace on any call presented to them. The trace can be issued mid-call by pressing a key.
Business Trunking Licensing	13	Enables service providers to define a maximum number of simultaneous calls that can be handled by a selected group of users who are behind premises-based equipment such as PBXs, IP PBXs, and key telephone systems (KTS). These users are referred to as trunk group users. This new framework provides better support for network connectivity services for intelligent CPE while still allowing BroadWorks services to be offered as an overlay for end users. Trunk group users are enabled for individual and group features
Busy Camp On	14.sp4	Advanced Core Services: Enhances the BroadWorks Call Transfer service by allowing the transferring party to camp on a call against a busy destination in the group or enterprise.
Busy Lamp Field Support for Attendant Console	13	Enables a user to receive the call state information on monitored users. This information supports busy lamp field operation for IP attendant console phones and devices. The list of monitored users is managed by the group administrator level and above.
Call Center Agent and Supervisor Client Support for Deployment Studio Localization Enhancements	14.sp6	Call Center Agent and Supervisor: This feature enhances BroadWorks Call Center Agent and Supervisor client to support the Release 14.sp6 Deployment Studio updates for localization.
Call Center Call Treatment Enhancements	16	BroadWorks Call Center: This activity provides the following call treatment enhancements: Mandatory Entrance Announcement – This is an optional queue entrance message. The administrator has the option to enable or disable the entrance message. The message can be flagged as *mandatory,* which forces the entrance message to be played to completion. The entrance message is available to all queue types (*Basic, Standard*, and *Premium*). External Music Source – The administrator can specify an external music source for Music On Hold (MoH). The Music On Hold option is available to all queue types (*Basic, Standard*, and *Premium*). Centralized File Location Addressable by HTTP – The BroadWorks Media Server is used to play media files to the caller when needed. For each announcement, the administrator can upload an alternate audio/video announcement file or specify a uniform resource locator (URL) to a file located on a centralized file repository. In the latter case, the Media Server retrieves the file using the URL via the Hypertext Transfer Protocol (HTTP). Comfort Message Bypass – Introduces a policy that permits calls that are expected to be answered quickly to be provided with alternate comfort messages instead of the usual comfort/Music-On-Hold treatments. This policy applies after the entrance message has finished playing (if applicable), and is only available to *Premium* call queues.
Call Center Creation Wizard	17.0	This feature introduces the call center creation wizard to assist in the creation of all types of call centers (Basic, Standard, and Premium).

Features	Rel	Description
Call Center DNIS Enhancements	17.0	With this feature calls in a single queue can be prioritized so that more important calls are distributed to agents first.
Call Center Entrance Message Enhancement	17.0	This feature enhances the Call Center entrance message functionality. After the initial entrance message is played, an optional message announces to callers their position in the queue or an estimated waiting time.
Call Center Forced Agent Unavailability	16	BroadWorks Call Center: Introduces a policy that permits the forced transition of a Call Center agent from available/wrap-up to unavailable status. The transition occurs under the following conditions: ▪ The agent is making or receiving a personal call ▪ The agent is enabling the Do Not Disturb (DND) service ▪ The agent is not answering an incoming ACD call (bounced call) Forced agent unavailability default settings are configured at the system level or group/enterprise level. These settings can be overridden at the agent level. The triggers described above apply for both *Standard* and *Premium* type agents, except for the personal call trigger that applies only for *Premium* type agents.
Call Center Forced Delivery of Calls	16	BroadWorks Call Center: Introduces a Queue policy configuration option that allows calls to Call Center agents to be automatically answered and rendered over the device's speaker and microphone. This Queue policy is only available to queues of type *Premium*. It is important to note that the agent's device must support the remote control talk event package.
Call Center Forced Forwarding of Calls	16	BroadWorks Call Center: Introduces a policy allowing a Call Center to temporarily divert new incoming calls to a new route defined by the customer. This feature is independent of the Night service route. Forced forwarding of calls does not affect calls already in the Call Center's call queue. These calls are routed to and presented to the Call Center agents in the usual way. This feature is typically invoked when a change in business conditions dictates calls to be redirected to another Automatic Call Distribution (ACD) other than Night service of overflow routes.

Features	Rel	Description
Call Center Licensing Enhancements	16	BroadWorks Call Center: This activity updates the BroadWorks Call Center licensing scheme.
		▪ Three new user services have been added to BroadWorks Call Center licensing:
		Call Center Basic:
		– License Type = User
		– Service Quantity Type = User Service
		Call Center Standard:
		– License Type = User
		– Service Quantity Type = User Service
		Call Center Premium:
		– License Type = User
		– Service Quantity Type = User Service
		▪ The following existing group licenses have been removed from BroadWorks Call Center:
		– Call Center
		– Call Center Video
		Call Center instances can be created if one of the new user services is authorized to the group. The video license is no longer required to enable video on Call Center instances.
		▪ The following existing user licenses have been removed from BroadWorks Call Center:
		– Call Center Supervisor Reporting
		– Call Center Enhanced
		– Call Center Express Agent
Call Center Night/Holiday Service	16	BroadWorks Call Center: Introduces two features: Night Service and Holiday Service.
		Night Service – This BroadWorks Call Center feature provides a policy to perform different routing during hours that the queue is not in service (generally after business hours). The service is invoked via a schedule that defines the business hours of the queue.
		Holiday Service – This activity introduces a policy that permits calls to be processed differently during holiday periods. The holiday schedule is defined at the group level. The Queue policy allows the configuration of a specific routing action when a call is received during a holiday period. If no holiday schedule is defined for the queue, then all incoming calls to the queue are processed as if they were received during a non-holiday period.
Call Center Outgoing Calls	17.0	Call Center Outgoing Calls allows agents to initiate calls against a queue rather than their personal phone number. It also permits the called party to see the Calling Line ID (CLID) of the call center or DNIS instead of the agent's CLID.

Features	Rel	Description
Call Center Priority Routing	16	BroadWorks Call Center: Introduces a policy that determines which call in the queue, based on priority, should be delivered to an agent when this agent becomes available. The Priority Routing policy offers two settings: ▪ Longest Wait – When this setting is selected, the wait times of the next call in line from each queue where the agent is staffing are compared. The longest waiting call is selected and delivered to the agent. ▪ Fixed Queue Priority – When this setting is selected, a list of precedence is configured among the queue of the group/enterprise. The call from the highest precedence queue that the agent is staffing is selected and delivered to the agent. For either setting, bounced calls always have priority over non-bounced calls. If there is more than one candidate-bounced call, then they are prioritized based on the original time at which the call was offered to an agent. This policy is configured at the group/enterprise level.
Call Center Routing Policy Enhancements	16	BroadWorks Call Center: Enhances the handling of the following routing conditions: ▪ Stranded calls ▪ Bounced calls ▪ Overflow The following describes each enhancement in additional detail: Stranded calls – A policy is provided that allows a queue to be configured to determine what to do with a stranded call. A stranded call is defined as a call already queued in an ACD with no agents logged in. The current *Enable Call Queuing when Call Center is Not Staffed* is replaced with this function. Bounced calls – A policy is provided that allows a queue to be configured to determine what to do with a bounced call. A bounced call is defined as a call that is being routed to the agent but for some reason the call is not answered. This feature enhances the current *Skip to Next Agent After X Rings* function. Overflow – A policy is provided to perform overflow processing. Overflow processing permits calls to be processed when a large number of calls have been received or calls have been waiting longer than a configured threshold. This enhances existing queue functionality and is configured in the *Forward Call After Waiting X Seconds* option in the *No Answer Settings* configuration.

Features	Rel	Description
Call Center Statistics Enhancements (Web-based Statistics)	14.sp9	This feature enhances the Call Center statistics provided through the BroadWorks web portal. Specifically, this feature enhances the BroadWorks Call Center statistics by: ▪ Harmonizing the definitions of the statistics accumulated on the BroadWorks Application Server with the definitions of the statistics accumulated on the BroadWorks Call Center Reporting Server. ▪ Providing configuration options to the administrator to turn off the accumulation of Call Center statistics on the BroadWorks Application Server and allow the web portal interface and daily e-mail report functions to retrieve the statistics from the BroadWorks Call Center Reporting Server (if available and configured), which enhances scalability and performance of the BroadWorks Application Server. ▪ Enhancing the web-based presentation to allow a web user to configure a specific period for which statistics are requested. ▪ Changing the retention period of statistics accumulated on the BroadWorks Application Server to 48 hours. Maintaining statistics even if an agent is removed from the Call Center queue, or if the agent's user profile is removed from the BroadWorks Application Server cluster.
Call Center Status Events Package	17.0	This feature provides the Call Center agent a visual indicator of a call center status allowing them to modify call handling behavior as appropriate.
Call Center Work Flow Enhancements	17.0	This feature improves the usability of assigning agents to supervisors and to call centers.
Call Centers	RC	Enables business groups to set up a basic Call Center with incoming calls received by a single phone number distributed among a group of users, or agents. The following functionality is supported: ▪ Agent log in and log out ▪ Uniform distribution of incoming call to the available agents ▪ Queuing of the incoming calls that cannot be answered immediately ▪ Overflow to a given destination when the group is unable to accept calls ▪ No-answer policy to redirect call to the next agent if not answered in a specific number of rings by the previous agent ▪ Deflection to a given destination outside of business hours ▪ Music on hold A variety of statistics are provided to monitor the performance of Call Centers, such as *Average Number Agents Busy* and *Average Hold Time Before Call Loss*. Statistics are also provided to track individual agent performance, such as *Average Time Agent Spends on Calls* and *Amount of Time Each Agent Logged On and Idle*. A statistics report is generated at the end of each day and sent to one or two e-mail addresses.

Features	Rel	Description
Call Centers Enhancements	RC	Option to append Caller ID prefix for calls distributed by Call Center service, thereby enabling Call Center agents to distinguish from direct incoming calls, for example, "Support – John Smith". Enables the Priority Alert/Ringing service (listed above) to be assigned to a Call Center, rather than assign the service to each agent individually. The following new call distribution policy is available for Call Centers: Weighted Call Distribution – enables calls to be distributed to agents according to a pre-defined weighting. Each agent is assigned a weight corresponding to the percentage of incoming calls they should receive.
Call Intercept	RC	Enables group administrators to intercept calls routed to a non-working internal line with informative announcements and alternate routing options. The service can be assigned to an individual user's phone number (for example, when they have left the company) or it can be assigned to all the members of the group.
Call Park	RC	Enables a user to hold a call and to retrieve it from another station within the group. To park a call, a user presses the flash hook and dials the call park feature access code. The call is parked and the caller is held. To retrieve the call, the user goes to any phone in the group and dials the call retrieve feature access code, followed by the user's extension. The call is retrieved and connected to the retrieving user. Users can also execute call park via the CommPilot Call Manager.
Call Pickup	RC	Enables a user to answer any ringing line within their pick-up group. A pick-up group is a group administrator-defined set of users within the group, to which the Call Pickup feature applies. To pick up a ringing call, a user dials the Call Pickup feature access code. The user is then connected to the caller. If more than one line in the pick-up group is ringing, the call that has been ringing the longest is answered. Users can also execute Call Pickup via a web interface.
Call Treatment Chaining	17.0	This enhancement provides the capability to chain multiple files during playback.
Calling Group ID Delivery	RC	Provides the name and number of the group (or company) for outgoing calls from users in the group, rather than providing the user's own name and number. The group number can be defined on a per-user basis, which is often appropriate for multi-location groups.
Calling Line Identity Security	17.0	This feature enhances CLID security to restrict access to modification of group and user CLID numbers on the web portal by non-system or provisioning administrators.
Calling Line Identity Security	17.0	This feature enhances CLID security to restrict access to modification of group and user CLID numbers on the web portal by non-system or provisioning administrators.
Calling Plan – Forwarded/Transferred	RC	Enables administrators to prevent specified users from forwarding or transferring calls to certain types of numbers, such as long distance, toll, or premium numbers. This capability is especially useful for preventing fraudulent calling, such as company employees calling their office number at night or on the weekend to make personal calls to international destinations. Calling plans are configured via the CommPilot group web interface. If a profile has not been configured for a particular user, the default set of incoming call privileges for the department or group is applied.

Features	Rel	Description
Calling Plan – Incoming	RC	Enables administrators to block specified incoming calls to their company, department, and/or individual users. For example, some users can be prevented from receiving calls from outside the company, or collect calls. The Incoming Calling Plan is configured via the CommPilot group web interface. In addition to being able to configure which types of calls each user is restricted from receiving (for example, intra-group), group administrators can regulate incoming calling by restricting specific digit patterns. For example, users can be prevented from receiving calls from a competitor's number or a particular area code or country code. If a profile has not been configured for a particular user, the default set of incoming call privileges for the department or group is applied.
Calling Plan – Incoming Enhancements	RC	Additional call types added to Incoming Calling Plan: ▪ Calls From Within Group – allows calls to be received from other users within the group ▪ Restricted Calls From Within Group – similar to *Calls From Within Group* call type, but does not allow another user from within the group to transfer or forward a call to the user
Calling Plan – Outgoing	RC	Enables administrators to block users from making certain types of outgoing calls, such as long distance, toll, or premium. The Outgoing Calling Plan is configured via the CommPilot group web interface. In addition to being able to configure which types of calls each user is restricted from making, group administrators can regulate outgoing calling by restricting specific digit patterns. For example, users can be prevented from calling a competitor's number or a particular area code or country code. If a profile has not been configured for a particular user, the default set of outgoing call privileges for the department or group is applied.
Calling Plan – Outgoing (EOCP)	RC	Enhanced version of the basic Outgoing Calling Plan provides administrators with a greater degree of control over outgoing calls made from within their group. In addition to "blocking" or "allowing" given call types and digit strings, administrators have the following options for configuring the outgoing calling profile of their group, department, and individual users: ▪ Authorization Codes – selected users can be prompted for an authorization code to allow specified call types or digit strings. Administrators can pre-configure one or multiple authorization codes to be entered by users. Use of this feature within the Enhanced Outgoing Calling Plan takes precedence over the standalone Authorization Code service. ▪ Sustained Authorization Codes – users have the option to enter a sustained authorization code to unlock calling from their phone. When the feature is enabled, users cannot be prompted for an authorization code every time they make a call that requires an authorization code, as defined by the Enhanced Outgoing Calling Plan. Separate feature access codes are used to turn this feature on and off. ▪ Call Transfer – specified outgoing call types and digit strings can be automatically transferred to one of up to three transfer destinations that administrators can pre-configure. For example, international calls made from a conference room can be transferred to a company operator who validates the user's identity and their purpose for making an international call. Existing configurations are retained when Enhanced Outgoing Calling Plan is assigned to replace the basic version of the service.
Calling Plan – Outgoing Enhancement	RC	Additional call type is added to Outgoing Calling Plan: Restricted Group – allows calls to other users in group, but (unlike *Group* call type) does not allow a called user within the group to transfer or forward the user's call
Charge Number Service	14	Enables administrators to specify a Charge Number that is recorded for selected users. When assigned, the charge number is included in the call detail records (CDRs) generated for the user's originating calls and included in the SIP INVITEs of the calls originated by the user. For call originations, the Application Server populates the calling number as the user's phone number as usual, and includes the new charge number configured for the user's Charge Number service in the outgoing invitation.

Features	Rel	Description
CommPilot Group	RC	Web portal that empowers a business group administrator to provision services to users and manage group-related activities.
Communication Barring – Fixed	16	Residential Services: The Communication Barring services enables restriction, for specified users, of originated or redirected calls that match specific criteria. This feature adds support for Communication Barring – Fixed (CBF) service. This service uses the concepts of network class of service (NCOS) and barring profile. A NCOS allows for mapping a subscriber to an active barring profile. A barring profile specifies the barring criteria and actions. The Communication Barring – Fixed service is invoked when a call is explicitly or implicitly originated by the end user, specifically: ▪ Call Origination ▪ Call Forwarding (all variants) ▪ Call Transfer Upon call origination, the service analyzes the call and compares it against the communication barring profile associated with the user's NCOS. If the call is allowed, it is processed as usual. If the call matches any of the criteria defined by the service, it is treated according to the proper option such as block, send to treatment, allow timed, and so on. It is important to note that the Communication Barring – Fixed service cannot be activated or deactivated under the control of the end user.
Configurable Calling Line ID	RC	Enables the group administrator to configure each of the displayed user names and calling numbers. This information is visible to users in their profiles as read only.
Configurable Calling Line ID Enhancement	RC	Option to select whether configurable calling line ID should be used for regular (non-emergency) calls, emergency calls, all calls, or no calls.
Configurable Extension Dialing	RC	Provides the ability to map directory numbers (DNs) within a group to unique extensions. The extensions can be of any length (two to six digits) as defined by the group administrator and dialed via a web interface or by phone. All extensions within a group must be of the same length.
Configurable Feature Access Codes	RC	Provides each group administrator with the option to specify the feature access codes (also known as star codes) associated with their services (for example, Last Number Redial, Call Return) via the CommPilot group web portal. Users can see, but not edit, the feature access code associated with each service at any time by referencing their CommPilot personal web portal. Group administrators have the option configure two different feature access codes for the same service. For example, *69 and #81 could both be used to enable Call Return.
Configurable Feature Code Prefix	RC	Enables each business group to define up to two different prefixes to precede their feature access codes. Each prefix can include one to two characters, with the default being a single star (*).
Configurable Time Zones	RC	A default time zone is specified for each business group. The respective time zone is used for all services requiring date/time stamps, such as Voice Messaging, Auto Attendant, and Selective Call Forwarding. Users have the option of individually changing their own effective time zone in cases where it differs from the group's default.
Custom Contact Directories	14.sp4	Front Office: Allows a Receptionist user to access custom contact directories that represent a subset of the enterprise/group list.

Features	Rel	Description
Custom Ringback – Group	13	Enables a group to specify custom audio media files such as music or corporate greetings for ringback tones versus a standard system ring tone. Administrators can specify multiple profiles where each profile is associated with a set of incoming call criteria (that is, phone numbers, time of day, and so on) and a custom media file. If criteria are not met, then the system ringback is provided.
Customer Ringback Video – Group	13	Enables a group to specify custom audio and video media files for ringback tones versus a standard system ring tone. Administrators can specify multiple profiles where each profile is associated with a set of incoming call criteria (that is, phone numbers, time of day, and so on) and a custom media (audio and video) file. If criteria are not met, then the network/standard ringback tone file is provided. If the caller does not have a video client or video phone, only the audio media file is played.
Delete Single Call Entry Logs from Receptionist	14.sp4	Front Office: Allows Receptionist to conform to privacy regulations required by some governments.
Department Support	RC	Provides group administrators with the option of establishing an additional department layer of administration (for example, Sales, Engineering) to which users would be associated. This capability is especially useful for larger enterprises that want to distribute responsibilities for day-to-day administration. Group administrators have the option of establishing default calling plans (incoming, outgoing) for each department. In addition, name dialing within an Auto Attendant can be restricted to the users within a department. Department administrators can be created to manage the following tasks within their respective departments: ▪ Add, modify, and delete users within a department ▪ Assign, modify, and remove personal services for users within a department ▪ Configure the following group services, if they have been assigned to the department: Call Centers, Hunt Groups, Account Codes, Authorization Codes, Series Completion, Call Pick-Up, and Attendant Console Users can sort and search their group phone list in the CommPilot Call Manager by department.
Department Support Enhancement	RC	Music On Hold audio source can be configured at the department level. If an audio source has not been specified for the department, the group-defined audio source is used by default.

Features	Rel	Description
Deployment Studio Localization Enhancements	14.sp6	Clients: Deployment Studio is a tool that performs customizations of several BroadWorks client applications. This feature enhances Deployment Studio to: ▪ Improve support for localization ▪ Make improvements to expose default values for settings ▪ Change the "look and feel" slightly ▪ Support Vista Release 14.sp6 of Deployment Studio offers support for localization enhancements to the following client applications: ▪ Assistant–Enterprise Toolbar Release 14.sp6 ▪ Receptionist Release 14.sp6 ▪ Call Center Agent/Supervisor Release 14.sp6 The Deployment Studio Image (DSI) for each supporting client supports the following pre-bundled languages: ▪ English-U.S. (Default) ▪ French ▪ German ▪ Italian ▪ Spanish (Spain) ▪ Spanish Central America and Latin America (CALA) ▪ Simplified Chinese In addition to the pre-bundled language support, the Deployment Studio Image for the supporting client application provides a custom language choice from a list of modern world languages where the network administrator must provide their own translations.
Device Inventory	RC	Enables group administrators to inventory their integrated access devices (IAD), trunking gateways, and IP phones via their CommPilot group web interface. Devices can be easily added, deleted, and modified. In addition, group administrators can assign users directly to a device and/or a port on a device. The location and default aliases for a user are automatically generated.
Directed Call Park	RC	Enables a user to hold a call against a specific extension and to retrieve it from another station within the group. To park a call, a user presses the flash hook and dials the directed call park feature access code followed by the extension to park against. The call is parked and the caller hears silence. To retrieve the call, the user goes to any other phone in the group and dials the call retrieve feature access code, followed by the extension to which the call was parked. The call is retrieved and connected to the retrieving user.
Display Call Forwarding Always Monitoring Status in User Status Information in Receptionist	14.sp4	Front Office: Extends the states of monitored users by showing the Call Forwarding Always service state for a monitored contact.

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Disposition Codes	17.0	Additional attributes, called disposition codes, can be applied to call center calls during the call and at wrap-up. This allows calls to be tagged with promotions, topics, and so on.
Enhanced Busy Lamp Field to Include Direction Attribute	14.sp5	Advanced Core Services: This feature is an enhancement to the BroadWorks Busy Lamp Field service, allowing the external device (the device with the busy lamp field) to show whether the monitored user is busy on an incoming call (recipient) or on an outgoing call (initiator).
Enterprise Trunking Enhancements	14.sp9	This feature provides a set of significant enhancements to BroadSoft's Business Trunking offering. At the basic level, it offers parity with legacy Primary Rate Interface (PRI) trunking offerings while leveraging the advanced services offered by BroadWorks for sophisticated, large enterprise deployments. The enhancements to BroadSoft's Business Trunking offering include: ▪ More explicit trunk group identification, allowing calls to be processed over the trunk group without having to explicitly provision a user profile for each phone number provisioned behind the private branch exchange (PBX) on the other end of the trunk group. ▪ A trunk group attribute, which overrides the calling line identity with the trunk group pilot identity for all calls originated over the trunk group. ▪ The ability to unconditionally redirect all calls destined for the trunk group to another destination. ▪ The capability to associate a specific translation's profile with a trunk group, allowing service provider customers to retain their existing phone numbers when moving from one geographical location to any other location within the same local access transport area (LATA). This permits a user to move geographic locations keeping their existing phone number, without requiring a change of their rate center and/or local calling area. ▪ Additional support for routing calls over multiple trunk groups, and enhancing redundancy and survivability deployment configurations. ▪ Decoupling of business trunking licenses from individual trunk group capacity management.
Extend Enterprise Framework to Off-Net Users/Integration of Off-Net DNs	17.0	This feature adds support or a new user service: Virtual On-Net Enterprise Extensions. It integrates the virtual private network (VPN) destinations with the BroadWorks enterprise framework by explicitly defining off-net destinations in the enterprise directory on the Application Server. The off-net destinations are associated with extension numbers. BroadWorks users with the Virtual On-Net Enterprise Extensions service enabled can place extension dialing calls to these off-net destinations. The off-net destinations are also associated with first and last names. When presenting BroadWorks users with the calling party or connected party identities of the off-net destinations, the Virtual On-Net Enterprise Extensions service overrides the public presentation of these destinations with their Virtual On-Net (VON) representations provisioned for this service. The off-net destinations are tagged with configurable Virtual On-Net types for the purpose of differentiated billing. This feature also enhances the Communication Barring service to allow imposing restrictions on calls to Virtual On-Net destinations.

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External Source for Music On Hold	RC	Enables enterprises to play live audio to held parties directly from an external audio source that is controlled by the enterprise and is typically located on their premises. The external audio source is comprised of a gateway with an analog audio line-in jack. A radio, CD player, or any other audio device connects into the audio line-in jack. Music from an external audio source can be used for calls that are put on hold by Call Waiting, Call Hold, or Call Park, but not calls waiting on a Call Center queue.
Group Call Park	14.sp4	Front Office: Adds functionality the Call Park service for Receptionist clients. Advanced Core Services: Extends the functionality of the Call Park service.
Group Resource Inventory Reporting	RC	Enables group administrators to generate reports on the resources used in their group and, if applicable, in each of their departments. Information includes phone numbers, devices, services, users, and departments. The reports are generated on a web page in the comma-separated value (CSV) format, so they can be easily imported into a spreadsheet for sorting and archiving.
Holiday Schedule Enhancements	17.0	This feature enhances the Holiday Schedule function to allow the definition of full, multiple, partial, and custom holiday schedules.
Hoteling Enhancements	17.0	Hoteling Host and Guest services are enhanced to provide host devices to synchronize with the Application Server when host and device association status is modified. This enhancement also allows the SIP phone user to use keys on the phone as an alternative to associating a guest with the host device.

Features	Rel	Description
Hunt Groups	RC	Allows users within a group to be included in a specified sub-group to handle incoming calls received by an assigned Hunt Group's phone number. Group administrators can choose from any of the following "hunt" schemes, each of which rings the specified phones in a different manner: ▪ Circular – sends calls in a fixed order. The call is sent to the first available person on the list, beginning where the last call left off ▪ Regular – sends calls to users in the order listed by an administrator. Incoming calls go to the first available person on the list, always starting with the first person on the list ▪ Simultaneous – rings all of the users in the group simultaneously; the first user to pick up the ringing phone is connected ▪ Uniform – as a call is completed, the user moves to the bottom of the call queue in a shuffling fashion. The next incoming call goes to the user who has been idle the longest. If a user receives a call that was not directed to them through the Hunt Group, the call is not included in the receiving order for uniform calls Group administrators can also establish a No Answer Policy to redirect calls to the next agent if not answered in a specific number of rings by the previous agent. If all idle phones have been visited once without answer, there are two options for handling the call: forward call to an external number, or give the call a *Temporarily Unavailable* treatment, which can trigger a service such as voice mail.
Hunt Groups Enhancements	RC	Option to append caller ID prefix for calls distributed by the Hunt Group service, thereby enabling users to distinguish from direct incoming calls, for example, "Support – John Smith". The following services can be assigned to Hunt Groups: ▪ Priority Alert/Ringing – assign service to entire Hunt Group, rather than to each individual line ▪ SMDI Message Desk – send redirecting information for calls received by the Hunt Group to legacy voice mail system over an analog SMDI interface. This information (calling number, called number, redirection information) can be used by the voice mail system to redirect the calling party to the user's mailbox and provide the correct greeting The following new call distribution policy is available for Hunt Groups: ▪ Weighted Call Distribution – enables calls to be distributed to agents according to a pre-defined weighting. Each agent is assigned a weight corresponding to the percentage of incoming calls they should receive
Instant Group Call	13	Enables a user to call a number that provides a group of members with an instant conference bridge. When the user dials the specific group call number, the system alerts all members in the group and, as the members answer, they are joined into a multi-way conference. If the originating user uses the Push to Talk feature, then the attributes of the Push to Talk feature are used (one-way or two-way broadcast, auto-answer, access control list). This use of Push to Talk added to Instant Group Call equates to "group intercom" functionality. The Push to Talk or forced-off-hook functionality is engaged are when a member receives a Push to Talk group call. An administrator defines a virtual group composed of a list of member users. These members can be part of the same group or enterprise (specified by user name, extension or location code + extension) or can be external users (specified by a phone number or SIP URI).
Loudspeaker Paging	RC	Enables users to access an intercom paging system by dialing an extension within the group. The paging system is simply configured in BroadWorks as a user and interconnected via a standard two-wire interface.

Features	Rel	Description
Multiple Call Arrangement	13	Enables a user to make and receive multiple calls simultaneously on their different shared call appearance (SCA) locations. This feature provides improved support for the manager/administrative assistant scenario by presenting incoming calls to all locations, regardless of ongoing call activity. Also, enables all end-point locations to originate a call even if another location is busy. This feature is an overlay to the Shared Call Appearance feature.
Music On Hold	RC	Enables group administrators to upload an audio file (.wav file containing music, advertising, and so on) onto the system to be broadcast to held parties. This service can be used in conjunction with the following services: Call Centers, Call Hold, and Call Park.
Music On Hold Dependent on whether Call is Internal or External	14.sp6	Business Telephony: This feature enhances the existing BroadWorks Music On Hold (MoH) service and Call Center Music On Hold service to allow supporting different audio sources and audio codecs for internal (intra-group or intra-enterprise) calls and external calls. The objective of this enhancement is to better manage the quality of service (QoS) and bandwidth used to provide Music On Hold to internal and external users. This is accomplished by: ▪ Allowing the system administrator to select the alternate media source and preferred codec to play back the Music On Hold service. ▪ Optionally, allowing the group administrator to select an alternate media source and codec for internal calls to play back the Music On Hold service. By default, the same Music On Hold source and audio codec are used for both internal and external calls.
Music On Hold Enhancements	RC	Music On Hold audio source can be configured at the department level. If an audio source has not been specified for the department, the group-defined audio source is used by default. Enables users to enable/disable Music On Hold on a per call or persistent basis by either using the respective feature access code or their web portal. This service is especially useful for users are participating in a conference call.
Music/Video On Hold Timer	14	Enhances the Music/Video On Hold service to add a configurable time interval that must elapse on a held call before the system plays music or video to a caller. This can prevent the service from triggering in common call transfer scenarios.
Outside Access Code Support (Application Server)	14.sp6	Business Telephony: This feature enhances BroadWorks support for Outside Access Codes (OAC) by introducing a Dial Plan policy. Prior to the implementation of this feature, BroadWorks processed Outside Access Codes through the Digit Collection policy on the Application Server and the Voice Virtual Private Network (VPN) policy on the Network Server. The two policies were not integrated, which led to inconsistent OAC handling in certain types of call originations. The Dial Plan policy is implemented on the Application Server and replaces the Digit Collection policy. The Dial Plan policy addresses the limitations described above by ensuring that OACs are processed consistently regardless of the origination method (client or device) or Media Gateway Control Protocol (MGCP) or Session Initiation Protocol (SIP]). The Application Server Dial Plan policy provides a complete OAC function, enabling the application of the Outgoing Calling Plan/Outgoing Digit Plan to be transparent with the OAC. The Network Server Voice VPN policy remains unchanged and can still be used as an overlay to the Application Server Dial Plan policy when more complex dial plan configuration is required for an enterprise.

Features	Rel	Description
Overload Control Enhancement – Aggregated Queue Control	17.0	The BroadWorks overload control algorithm uses queue delay information to detect when a server is overloaded. Currently this delay information is monitored separately for each individual processing queue. This is not optimal on new computing platforms with many queues since the controls are too sensitive. A single slow queue can trigger a server-wide overload condition. This feature provides a mechanism for the overload control algorithm to combine the data used for overload detection across multiple queues, which desensitizes the detection algorithm and provides a better view into the overall server status.
Premium ACD Enhancements – Idle Time Calculation (Multiple Queues)	17.0	An agent's "idle" time can now be calculated across all queues to which they are assigned.
Priority Alerting	17.0	This feature introduces a policy providing a distinctive ring to agents when calls are routed from a call center.
Receptionist – Ability to Change the Size of the Call Control and Call Options Panels	14.sp3	Front Office: Makes the Call Control and Call Options button size configurable (and smaller) at the end-user level from within the Receptionist application interface. This feature allows more room on the interface for elements such as the Contact directory.
Receptionist - Ability to Customize the BLF Status Color Mapping in Receptionist	14.sp3	Front Office: Allows the end user to change the color of the Busy Lamp Field (BLF) status icons in the Receptionist contact directory. Today, these icons are preset. This feature provides the ability to alter these on a per-user basis or by the service provider prior to mass deployment. This feature also caters to the introduction of a privacy icon and the ability to configure the color of these in line with the existing status icons.
Receptionist – Ability to Hide Company Notes and Company Profile Components	14.sp4	Front Office: This feature provides more space for Receptionist Enterprise users to view the switchboard and Call Center queue panels simultaneously by allowing users to hide the panel for Company Profile and Company Notes.
Receptionist – Ability to Hide Icons from the Call Options Window	14.sp3	Front Office: Allows service providers and systems integrators to remove icons and therefore the corresponding functionality from the BroadWorks Receptionist Call Options and Call Control interface panel prior to deployment. This functionality enables the service provider to hide specific functionality from the end user due to service restrictions or specific target market requirements.
Receptionist – Accept Calls with the Space Key	14.sp3	Front Office: Provides four main areas of functionality that improve the workflow so that a user can now answer a call with the space key, type the destination number, and press the Enter key to transfer the call. ▪ The ability to now accept calls with the space key. The Function keys from F1 to F10 answer the call for each respective switchboard line where F1 corresponds to the first line in the switchboard; F2 corresponds to line 2 on the switchboard and so on. ▪ The ability to use the space key as a toggle to answer the next incoming call in subsequent instances when the user presses the space key. ▪ A better customization workflow and process within Deployment Studio results in a more intuitive, dynamic selection system to make the customization process easier and simpler. ▪ The ability to transfer calls with the Enter key.
Receptionist – Allow Blind Transfer in Conjunction with Camp On	14.sp3	Front Office: Allows the Receptionist to transfer a call to a user with Call Waiting enabled.
Receptionist – Application Server Licenses and Lists	14.sp2	Changes the original BroadWorks Receptionist to become BroadWorks Receptionist - Enterprise and introduces smaller scale Receptionist clients targeted at the small and medium enterprise market.

Features	Rel	Description
Receptionist – Automatic Linking of Any Two Calls on the Switchboard	14.sp3	Front Office: Automatically links the last incoming call with the next outgoing call when two calls are present on the Receptionist switchboard. This feature is an enhancement of an existing feature that provided the same functionality but only automatically linked the first outgoing call. This enhancement links consecutive outgoing calls if the first outgoing call is not successful.
Receptionist – Call Log Enhancements	14.sp3	Front Office: Allows users to delete all their call history information including dialed, received, and missed calls whenever they leave their station to go on break, lunch, log in or log out, or leave for the day. This feature is intended to comply with German law and improve employee security.
Receptionist – Fonts and Sizes in Receptionist	14.sp3	Front Office: Allows configuration of the font size, font type, and the font color of all main interface components within the Receptionist interface. The extent of this configuration broadly incorporates the login UN and PW labels, contact directory headers, text buttons, icon labels, and panel headers. This does not include the Options dialog.
Receptionist – Forward Calls to Receptionist Should Display "Transferred" + "Weiterleitung von"	14.sp3	Front Office: Allows the BroadWorks Receptionist to indicate when a call is transferred to the Receptionist. Today, the name and number of the transferring party as well as the transferred call is displayed to the Receptionist user. This functionality is called "last redirected" support. This feature clearly indicates transferred calls. The interface displays the text "transferred" in the *Switchboard Status* column for transferred calls.
Receptionist – LDAP Tab in Reception Build	14.sp3	Front Office: Provides the configuration of the client for Lightweight Directory Access Protocol (LDAP) directories at a user level within the Receptionist application through the Options dialog as provided through the Assistant–Enterprise and Call Center clients.
Receptionist – Outlook Integration for Receptionist	14.sp3	Front Office: Allows access to the local PC Outlook directory from within the Receptionist Interface from the Contact Directory panel in the interface.
Receptionist 14.0 – Office and SMB Clients	14.sp3	Front Office: Provides two new versions of the Receptionist application: a small business 30-user version and an 8-user version.
Receptionist Client Support for Deployment Studio Localization Enhancements	14.sp6	This feature enhances BroadWorks Receptionist client to support the Release 14.sp6 Deployment Studio updates for localization.
Revised Attendant Console	14.sp6	Provides a technical refresh of the Attendant Console end-user application.
Series Completion	RC	The Series Completion service can be assigned to a selected series of lines to forward calls on a busy condition. It is a form of "hunting" in which the next line in the group is tried in a prearranged order, without any limit on the number of sequential forwards. This service is used to support key system functionality. Key systems typically ring all available lines in a specified order for incoming calls, regardless of the number dialed to reach the company. For example, when calling a technical support hotline, the user dials 1-800-555-HELP. That number attempts to ring line 1 of the company. If line 1 is busy, it attempts to ring line 2. If line 2 is busy … and so on. If all lines are busy, the call can be sent to Voice Messaging or another assigned service of the group. Similarly, if all lines or users of this company were assigned to a Series Completion group, BroadWorks acts just like a key system.
Service Scripts Configuration Enhancements	14	Streamlines the configuration of the Service Scripts feature, making separate services for the group and user levels. When a group has the group-level Service Scripts service assigned, all users in that group use the script provided. However, if a user in a group has the user-level Service Scripts service assigned, that script overrides any script currently in use by the group.

Features	Rel	Description
Sort Order in List View	14.sp4	Front Office: Allows all editions of Receptionist to conform to industry standards for name displays in directories by changing the sort view to "last name first".
Support Account and Authorization Codes for Main Trunk User	14.sp4	Business Trunking: Enables Account/Authorization codes for the main Trunk Group virtual user.
Support Separate Call Duration Timer for 0900 Dialed Calls	16	Residential Services: Enhances Communication Barring-Fixed (CBF) service by adding call duration timer support. Originating Call Duration Timer – In scenarios where *Allow Timed* or *Authorization Code Timed* action applies, the Application Server starts the call duration timer when the call is answered. Once the timer expires, the Application Server releases the call. Before the call is released, the Application Service checks whether the user is in a call state to receive an audio stream. If the user is in such a state, the Application Server plays the *CBFMaxDurationExceeded.wav* announcement to the user to indicate that the maximum allowed duration is reached. Redirecting Call Timer – In the scenarios in which *Allow Timed* action applies, the Application Server starts the call duration timer when the redirected call is answered. Once the timer expires, the Application Server disconnects the call.
Transfer Calls via Drag and Drop in Receptionist	14.sp4	Front Office: Facilitates the ability of users to transfer calls.
Trunk Group – Allow Hosted Users to be Included in Capacity Group of a Trunk	14.sp5	Business Trunking: This feature provides the capability for the Trunk Group to manage call capacity not only among the users using the Trunk Group, but also among the regular hosted users. In a typical application, a device (such as a fax machine) can be configured as a hosted user. This feature allows the hosted user to share the capacity of the Trunk Group.
Trunk Group Pilot User	14.sp4	Advanced Core Services: This feature decouples the service profile for the main trunk user from the Trunk Group, allowing the main trunk user to have the same service assignment capability as any other user in the system.
Unavailability Codes	17.0	Agents can select a "reason code" for changing their ACD state to "Unavailable". If needed, agents may be forced to provide a code, and codes can be automatically assigned to agents when their ACD state becomes "Unavailable".
User Profile Enhancements	14.sp4	Advanced Core Services: Provides the user's country code and national prefix for the user's primary directory number (DN).
Variable, Longer Extensions	17.0	Currently, BroadWorks allows a group administrator to configure extension dialing within the group to be a fixed length that is between two and six digits. This feature increases the maximum allowed extension length to 20 digits and also allows the length of subscriber extensions to vary within the limits (minimum and maximum) configured for each group.
Video Auto Attendant	RC	BroadWorks Auto Attendant can be configured to support uploading and playback of video greetings. All other functions of Auto Attendant remain the same.
Video Call Center	RC	BroadWorks Call Center can be configured support uploading and playback of video to be played for greeting and queued calls. All the other functions of Call Center remain the same.
Video Call Intercept	RC	BroadWorks Call Intercept (user and group) can be configured to support uploading and playback of video announcements. All the other functions of Call Center remain the same.
Video On Hold	RC	Enables uploading and playback of video for held and parked calls. All the other functions remain same as for Music On Hold.

Features	Rel	Description
Voice Portal	RC	The Voice Portal provides an entry point for end users to access, use, and configure the following services via any phone interface: Voice Messaging, Call Forwarding Remote Access, CommPilot Express, and Personalized Name Recording. The Voice Portal can also be used to record Auto Attendant greetings remotely. The Voice Portal can be reached from any phone. Each party uses their own configurable passcode to access their respective menu of services. Service providers and/or group administrators can customize (or "brand") the voice portal entry greeting heard by users who are logging into the Voice Portal. When both a service provider message and a group message are provisioned, the group message is played. Business groups also have the option of enabling a Voice Portal wizard to run the first time users log in to their Voice Portal. The wizard guides users through the following steps: change default passcode to a personalized passcode, and record personalized name.
Voice Portal External Routing	14	Provides an optional system configuration parameter that allows users to transfer from the voice portal to another configured external phone number. This feature is useful for integration with external voice components like text-to-speech devices.
Voice Portal Support for German	14	Adds support for date format customization specific to the German language. In addition, the order in which day-month-year are voiced when playing the envelope of a voice mail is made dependant on the language selected, rather than defaulting to English.
Web Conferencing Enhancement	RC	The Out Dialing capability, which enables calling of participants to be added to a conference, is added to the conferencing service:

Enterprise Features

Features	Rel	Description
Additional Enterprise Administrator Policies	14	Introduces a new type of administrative account at the enterprise level, termed the "customer administrator". The customer administrator has access only to group-management and user-management features. The customer administrator does not have access to any enterprise-level configuration, call capacity, or call processing features.
Assistant–Enterprise Toolbar Support for Deployment Studio Localization Enhancements	14.sp6	Assistant–Enterprise: This feature enhances BroadWorks Assistant–Enterprise Toolbar client to support the Release 14.sp6 Deployment Studio updates for localization.
Double Byte-byte Language Support (OCI and Application Strings)	14.sp6	Assistant–Enterprise: This feature enhances BroadWorks Assistant–Enterprise to provide support for double-byte languages used in Far East Asian countries such as Chinese (Simplified), Korean, and Japanese.

Features	Rel	Description
Enterprise Layer of Administration	RC	Provides an option for additional layer of administration above the group layer to facilitate the management of large enterprises spanning multiple groups and sites. This enterprise layer is parallel to the service provider layer. Thus, system administrators have the option to create service providers and/or enterprises, each of which is administered separately. Enterprise administrators can use this administrative layer to create a private dialing plan shared across multiple groups and sites, thereby enabling users to call one another using location codes and extensions instead of full phone numbers.
Enterprise List Filtering	14.sp4	Advanced Core Services: Improves the ability of customers to search large numbers of service providers or enterprises (more than 1,000).
Enterprise Network Gateway Routing	RC	This policy enables enterprises to use PSTN gateways that are located on their own premises. Enterprises can use the policy to define which off-net calls should be sent to the PSTN through the enterprise-hosted network gateway for specified users. Thus, one application of this service would allow service providers to serve customers in service areas where the service provider does not have local PSTN connections. In this case, all off-net calls originating from users at such sites would be routed to the PSTN through an enterprise-based network gateway.
Enterprise-Wide Department	RC	Enables departments to span across multiple groups within an enterprise to reflect the organizational structure. Enterprise-wide departments can be used for bulk provisioning of directories and enterprise-wide services, thereby streamlining the management of large volumes of users. Departments can be configured in a multi-level hierarchy (for example Engineering – Montreal, Engineering – Washington).
Enterprise-Wide Directory	RC	Directories can be configured to span across multiple groups within an enterprise. Users would continue to access their directories via their CommPilot Call Manager or third-party client, and administrators could continue to supplement the directory with frequently dialed numbers. The web portal also includes a search mechanism that enables users and administrators to search by name.
Enterprise-Wide Group Services	RC	Enables the following group-based services and policies to be deployed across multiple groups within an enterprise: ▪ Hunt Groups ▪ Call Centers ▪ Voice Portal ▪ Messaging ▪ Push to Talk ▪ Hoteling Rules for defining extension dialing, passwords, digit collection, feature access codes, LDAP configuration
Enterprise-Wide Voice Portal	RC	Multi-group enterprises have the option of creating an enterprise voice portal to enable all users within their enterprise to call into a common directory number to access their voice portal. The called voice portal automatically redirects each user to the voice portal of their business group to begin the login process.
Enterprise-Wide Voice Portal Enhancement	RC	Voice portal enhanced to enable users who were identified by their extension to also be identified by their location code plus extension for such activities as logging in to the voice portal. Messaging capabilities also enhanced to allow users to employ compose/forward/reply functions and distribution lists across multiple groups within their enterprise.

Features	Rel	Description
Far-End Hop-Off	RC	Enables enterprises to carry PSTN-destined calls on-net and drop them off through private gateways that are local to the call destination. For example, an enterprise with many locations throughout the country can carry originating calls over the service provider's packet telephony network to the enterprise location closest to the destination, and have the call "hop-off" to the PSTN from that location. As backup, the service provider's public routes are also identified, should an enterprise's private routes be unavailable. This capability enables a beneficial business arrangement between a service provider and an enterprise that shares the cost of transporting and terminating PSTN-destined calls.
Feature Access Code Service Chaining	13	Enhances the validation performed on the phone number entered on the configuration page of various BroadWorks services to allow for entering feature access codes and speed codes in addition to phone numbers and extensions. For instance, this allows configuration of the Auto Attendant to go directly to a user's voice mail by prefixing the destination number by the "Direct Voice Mail Transfer" feature access code.
Force Use of Uncompressed Codec	13	Enables an administrator to force the use of an uncompressed codec on a system, service provider/enterprise, group, or user basis. For all calls to or from a user with this feature enabled, the codec is forced to G.711, and all appropriate features are disabled. This is required for some customer premises equipment where it is not possible to configure ports to use different codecs. This feature is helpful for setting up ports for fax machines or modems that require the use of a clear channel and an uncompressed codec.
PBX Dialing Transparency	RC	System providers or group administrators can enable users to dial a digit to access an outside line (for example, 9+ dialing), thereby standardizing dialing practices across a company that is using a combination of BroadWorks and a PBX.
SIM Ring Sync between Portal and Toolbar Assistant (BroadWorks Assistant–Enterprise)	14.sp6	Assistant–Enterprise: Currently the Simultaneous Ringing (SimRing) button on the toolbar of the BroadWorks Assistant–Enterprise product is not synchronized with the web portal Simultaneous Ringing Personal configuration. This feature provides the ability for BroadWorks Assistant–Enterprise to support service status notifications for the SimRing feature in BroadWorks Server Release14.sp5. In addition to the SimRing feature support, BroadWorks Assistant–Enterprise buttons that do not receive service status notifications are hidden by default. The affected buttons are: ▪ Call Forwarding No Answer (CFNA) ▪ Call Forwarding Busy (CFB)
Support Call Park and Call Retrieve and Directed Call Pickup Across Enterprise Groups	14.sp7	Business Telephony: Enhances BroadWorks group features allowing them to be supported across enterprise groups. Specifically, the following group features are enhanced to work across different groups within an enterprise: ▪ Call Park and Call Retrieve ▪ Directed Call Pickup ▪ Directed Call Pickup with Barge-in This enhancement allows the BroadWorks Hosted Business solution to support group-based features across BroadWorks groups within the enterprise, permitting enterprises to route incoming calls through a central location to geographically distributed remote offices, and still take advantage of the group features.

Features	Rel	Description
Voice VPN	RC	Enables multi-location enterprises to configure their private dial plans for on-net call routing. Using simplified dial patterns, users within an enterprise can call each other by dialing the appropriate location code and extension. Thus, Voice VPN integrates the "islands" of user groups across an enterprise into one unified private dial plan. Multi-location enterprises with non-homogeneous equipment can be easily supported, including any combination of BroadWorks Application Servers, PBXs, and even PSTN switches. Access to specified third parties (for example, partners, customers, and so on) can also be integrated within the dial plan, thereby providing an "extranet" type of functionality. The Voice VPN service is configured directly by the enterprise through the CommPilot enterprise web portal.

Network Features

Features	Rel	Description
Access Code Header in SIP Interface	14.sp5	Advanced Core Services: The SIP *Access Code* header is introduced to address the issue of service interaction between Internet Protocol (IP) Centrex services and non-IP Centrex services in next generation network (NGN) deployments in China and other Asian markets.
AoC-D and AoC-E	16	Business Connectivity Enhancements: This feature implements the Advice of Charge Integrated Services Digital Network (ISDN) supplementary services. Advice of Charge (AoC) allows a subscriber to receive charging information for telecommunications services. Advice of Charge-D (AoC-D) presents charging information to the calling party during the call (presentation can be via display on the phone, audible tone, or announcement). Advice of Charge-E (AoC-E) presents charging information to the calling party at the end of the call (presentation is in the form of a displayed message on the phone). The BroadWorks platform implements the appropriate 3GPP specification for sending AoC information to the access device in the form of eXtensible Markup Language (XML) embedded within a SIP message BroadWorks derives the AoC rate information in one of three ways: ▪ From upstream network elements that send tariff information in the originating direction during a call. ▪ From an Online Charging System (OCS) over the Ro interface. ▪ From the BroadWorks Rating Function (RFN) over the Ro interface. This process is provided by BroadSoft. It is the responsibility of the access device to decode and process the resulting AoC body included in the SIP message container.
Business Trunking Enhancements	14.sp1	Enhances business trunking by temporarily allowing a higher call capacity, specifying alternate routing rules for busy or unreachable trunk groups, and sending alerts for capacity exceeded conditions and unreachable trunks groups.
Business Trunking for IMS Networks	14.sp2	Allows for the bulk provisioning of ranges of numbers for a business trunk in IP Multimedia Subsystem (IMS) architecture.

Features	Rel	Description
Call Throttling Based on Media Type	14	Extends the current call processing controls for users, groups, service providers, and enterprises to include the ability to limit the number of simultaneous calls for each user depending on the media type of the calls.
Calling Line ID Rules for Intra-Enterprise Network Server Calls	14.sp4	Advanced Core Services: Enhances translation and routing by the Application Server.
Centralized Translations and Routing	RC	Enables service providers to centrally manage all translations and routing within their network. This alleviates the service provider from having to manage similar data in distributed network elements. Any changes are instantly made available to all network elements requiring call routing functions. The default Network Server policy routes calls through the network elements closest to the call originator and destination. Call typing and North American screening are also performed.
CIC/PIC-based Routing	14.sp2	Adds a capability to the Network Server that allows a system provider to use the sourceid (also known as Originating Trunk Group [OTG]) as a trunk group selection mechanism for equal access (EA) calls.
Codec-based Routing	14	Introduces the ability for the network to route calls based on an optional list of supported codecs configured for BroadWorks routing, resource, and hosting network elements (NEs). The system dynamically assesses which NEs should be served based on the signaled media type within the body of a Session Initiation Protocol (SIP) message via the media description section of a Session Definition Protocol (SDP) message. Codec-based routing is not a routing policy; it is a utility that a policy can invoke to reorder or screen out SIP contacts.
Configurable Routing Policy Precedence	RC	Allows operators to configure the precedence of their routing policies on the Network Server.
Configurable Support for Q.850 on Network Server	14.sp2	Adds support for the Reason Header defined in *RFC 3326* and includes the ability to accept, send, and capture Q.850 ISDN release causes in the call detail record.
E911 Support	RC	Enables routing of emergency calls to the correct tandem switch based on the caller's phone number. The system ignores user disconnects and disallows features to be used when an emergency number (that is, 911) is dialed.
Emergency Call Number SOAP Translation Interface	14	Enhances the Application Server emergency calling support by optionally allowing the Application Server to obtain a routable address to use for emergency calls from an emergency number server. Based on the geographical location of the caller, the emergency number server can provide the Application Server with a routing number local to the user's calling area.
EMS – Add Network Element	14.sp2	Enhances the Element Management System (EMS) by allowing nodes (BroadWorks network elements or NEs) to be added manually to the system.
EMS Maintenance Centralization	14	Centralizes the maintenance tasks for BroadWorks servers on the Element Management System (EMS). Administrators can perform maintenance tasks remotely, and automate the execution of tasks for any or all servers from the EMS, reducing administrative time and error.
Enterprise and SP Migration Phase II	14.sp2	Enhances the feature Enterprise and Service Provider Migration (Feature ID 31767) by migrating additional servers.
Equal Access Policy	RC	Enables service providers to determine how long distance calls are routed. After determining the type of long distance call and the caller's preferred inter-exchange carrier, this service determines, for example, whether the call is to be carried on-net through least-cost routing or if the call is to be handed off to a preferred carrier as close as possible to the originator.

Features	Rel	Description
Equal Access Policy Enhancements	RC	Allows for the assignment of preferred inter-exchange carriers (PICs) to service providers, enterprises, groups, and users. Precedence is given to the lowest entity in the hierarchy that has a PIC assigned to it. For example, a PIC is assigned to an individual user would override PICs assigned to the group and service provider.
Extended Digit Map	14	Extends the BroadWorks digit map from 256 characters to 2,048 characters, to facilitate foreign deployments and permit the handling of more complex dialing plans.
Extended Maximum Directory Number Length	14.sp4	System and OAM: Allows the routing of numbers of more than 15 digits at the local, national, and international levels across the Application Server.
External Emergency Routing Enhancements	14.sp1	Introduces the support of SRV records on the Emergency Number Simple Object Access Protocol (SOAP) Translation Interface and provides more flexibility for the external server to modify routing parameters.
Forwarding and Forking Call Processing Policies	14.sp1	Introduces new call processing policies to limit the forwarding and forking of calls to improve system robustness.
Generic Conference URI for N-Way Calling	14.sp4	Advanced Core Services: Allows customers to use a unique conference uniform resource identifier (URI) across multiple Application Server clusters.
IMS Location Server	14	Introduces the Location Server, which is essentially a Network Server without call processing capabilities, for use in IP Multimedia Subsystem (IMS) deployments. The Location Server provides Web Servers and the Element Management System (EMS) with the Application Server cluster pair associated with a given user account, and with the specific Application Server for that user. This facilitates scalability and is central to the Web Server farm concept. The Location Server also collects and provides the software version and patch level of the Web Servers and Application Servers under its monitoring scope.
IMS Public Identities	14	Improves the suitability of BroadWorks for IMS deployments by introducing the concept of an identity profile that can be assigned to a user accounts. The identity profile replaces the concept of the device used in stand-alone deployments. Each user can have a SIP-URI, a TEL-URI, or both associated with his or her identity. The term line/port, which refers to the SIP-URI public user identity of the user, is renamed to public identity when using the Application Server in an IMS deployment.
IMS to PSTN Interworking – 3GPP Compliance to TS 29.163	14.sp5	Advanced Core Services: This is an enhancement to BroadWorks ability to inter-work between IP Multimedia Subsystem (IMS) networks and the Public Switched Telephone Network (PSTN).
Incoming Trunk Group	RC	Supports the use of an enterprise ID, or incoming trunk group (ITG), to map incoming calls to an enterprise, group, or site. Use of ITG avoids having to perform phone number-based validation.
Inter-LATA Screening	RC	Allows service providers to restrict selected groups from making inter-LATA calls.
International Call Screening Enhancement	RC	Call screening decoupled from the North American model to make it entirely flexible. Enhancements include easier management of rate centers and extended capability to dial without a national prefix.
Intra-enterprise Caller ID Processing with Network Server VPN	14.sp3	Advanced Services: Allows for the consistent management of the caller ID for intra-enterprise calls while making use of the Network Server Voice VPN capabilities.

Features	Rel	Description
IP Phone FTP Timeout	14	Adds a configurable timeout for IP phones when attempting to connect to an FTP server or when performing a file transfer, to prevent IP phone configuration threads from becoming unresponsive.
Large Voice VPN Table Web Support	14.sp2	Allows the Web Portal on the Application Server to be used efficiently to view and manage Voice Virtual Private Network (VPN) routing entries.
Least-Cost Routing	RC	Enables system providers to specify which routes are most advantageous to use for various types of calls. By stipulating cost and weighting factors, system providers can more accurately control routing of calls within their network.
Line/Port Synchronization with the Network Server	14.sp2	Synchronizes the user line/port information on the Network Server automatically with that information on the Application Server to allow the Network Server to redirect Register methods received from session border controllers.
Local Number Portability	RC	Routing policy supports the porting of users onto and out of BroadWorks. Note that this policy only supports local number portability (LNP) in markets where the SCP query method is not mandatory, because the policy does not rely on SS7 or SCP queries.
Make Physical Location Enforcement Optional on Emergency Calls	14.sp1	Allows emergency calls to bypass enforcement of physical location screening.
Media Server Selection Policy	RC	Enables system providers to decouple their Media Servers from specific Application Servers, thereby deploying their media resources as a large pool that can be shared among Application Servers. This practice results in improved utilization and lower deployment requirements for Media Servers. In addition, the Media Servers can be geographically deployed, which can optimize call latency and bandwidth utilization.
Multi-Country Code Support per Application Server	RC	Ability to support multiple country codes simultaneously on Application Server. Thus, single Application Server pair can serve multiple countries
Multimedia Class of Service	14	Extends the current call processing controls for users, groups, service providers, and enterprises to include the ability to limit the codecs allowed for users to any one of a set of predefined codec lists. The BroadWorks system administrator can create multiple codec lists, each with a unique descriptive name, that define classes of service (for example, a set defined as "Mobile Media" could contain the codecs "H.263, H.264, and G.711"). Administrators can then restrict users to any of these predefined lists.
Network Diversion Inhibitor	14.sp1	Extends the Diversion Inhibitor service to also apply to remote parties that are not hosted on BroadWorks.
Network Server Local Calling Area-Based Normalization Support	14.sp4	System and OAM: Enhances North American called number normalizations.
Network Translation Enhancements	14.sp2	Allows originating services such as Outgoing Calling Plan (OCP) to make use of Network Server data earlier in the call set-up process. The feature also enables new services to make use of the more accurate call typing information available from the Network Server.
Network URL Dialing	RC	Allows for the routing of calls to BroadWorks subscribers using SIP URLs. All subscribers within a system provider's network can have up to three URL aliases to receive calls.
OCI Reporting Enhancements for Public User Identity Details	14.sp1	Enhances the current Open Client Interface-Reporting (OCI-R) implementation by modifying the OCI-R to return all of the information associated with Public Identities (PI) that were added, deleted, or modified by an OCI request.

Features	Rel	Description
Outgoing Trunk Group	RC	Supports the use of an enterprise ID or outgoing trunk group (OTG). The OTG is populated by BroadWorks and is based on the originator's enterprise, group, or site, and is sent to other network elements, thereby avoiding phone number-based validation.
Per Enterprise Local Calling Areas	RC	Enables service providers to offer customized local calling zones to their customers by supporting multiple local calling areas (LCA) files concurrently.
Physical Location Service	14	Enhances BroadWorks call routing and processing to support non-geographical phone numbers and to allow for dynamically updated user locations. These enhancements are necessary for proper support of emergency calling in countries and regions where the location of a user cannot be derived from a user's phone number. In addition, these enhancements are required so that the physical location information can be proxied for IP Multimedia Subsystem (IMS) deployments. These enhancements comprise a new attribute added to the device profile to denote the physical location of the device, a new Physical Location service added to the Application Server, and a new Physical Location Routing policy added to the Network Server.
Policy-Based Routing	RC	The routing engine itself is driven through a completely flexible policy approach. Everything from dial plans, call typing, route selection, and network services implementation is policy-driven and updateable "on-the-fly", including the introduction of new policies within the network.
Pre-Typing Policy	RC	Enhanced translations provide a leading call typing policy instance that can be applied to certain translation profiles. This facilitates the adoption of call typing rules per profile and makes dial plans easier to manage and customize.
Priority Header Support	14.sp1	Enhances the Application Server in IP Multimedia Subsystem (IMS) mode to proxy the Session Initiation Protocol (SIP) Priority header (and optionally add/modify it for emergency calls) in SIP INVITE messages.
Query Conference URI	14.sp1	Enhances the Open Client Interface-Provisioning (OCI-P) to expose the service provider network-based conferencing Uniform Resource Identifier (URI) and the system-specified maximum number of parties allowed in an n-way network-based conference (to the user).
Rate Center Routing	RC	Routing policy enables service providers to select a destination based on the call originator's rate center and call type. The rate center identification can either be based on the Telcordia NNACL file or based on zones assigned directly against national destination codes.
Relative URLs in Web Server	14	Modifies the Web Server to ease the integration with a proxy by providing relative URLs to clients. It removes the protocol (HTTP or HTTPS) and the host from most of its servlets and its HTML pages, in favor of the protocol and host provided in the Apache HTTP server configuration.
Service Code Support	14.sp4	Advanced Core Services: Improves translation and routing by BroadWorks.
Subscriber Location Overflow Routing	RC	Provides service providers with a mechanism to complete a list of contacts returned by the Network Server with overflow routes. The overflow option is configured on a per DN/URL basis and allows the Subscriber Location policy to continue processing even though a hosting NE is identified for a call.
Subscriber Location Service	RC	Provides service providers with a single-point-of-contact for all subscribers in their network. Provisioning new subscribers is made easy with automatic synchronization of the group and user data between Application Servers and the Network Server. Call routing to subscribers is simplified with the Network Server serving as the central ingress point to the BroadWorks network.
Support for GSM-AMR Codec on Media Server/MRF	14.sp1	Adds support for the adaptive multi-rate (AMR) codec for Interactive Voice Response (IVR) and Conferencing services on the Media Server.

Features	Rel	Description
Support for Long Dialing Scheme in Enterprise Subscriber Location Policy	14.sp2	Adds a mechanism to the Network Server to allow Enterprise Subscriber Location and Subscriber Location policies to bypass call routing for some specific hosting network elements. This mechanism allows carriers to route calls properly using their public translations while allowing the category to be marked as private (for intra-enterprise calls).
Support for P-Early-Media Header	14.sp1	Adds a header to control the flow of media before answer. By manipulating this header, proxies are able to restrict the flow of media; the actual media blocking is delegated to a trusted network element further downstream.
TDM Switch Access	14	Adds support for using a Class 5 switch as an access device for BroadWorks. The diversion header counter parameter in the terminating INVITE is set to the maximum forwarding allowed by the local exchange switch when the subscriber is assigned the new device type: "Local Exchange – Max Forwarding".

Conferencing

Feature	Rel	Description
Accounting for Conference Recording	13	Enables the Application Server to record, in a call detail record, the total duration of a recording made during a Conferencing Server conference call.
Administrator Restrictions for Ongoing Conferences	13	Provides new functionality on the Conferencing Server to check whether a conference is ongoing before allowing an edit. If ongoing, the conference is not allowed to be edited and an error indication is returned to the user.
Allow Conferencing Users to Download and Save Presentation Files	13	Provides the option for conference participants to download a file attached to a conference.
Auto-delete "Expired" Conferences	13	Provides new functionality on the Conferencing Server that allows a system-wide expiration time for conferences to be set via the Conferencing Server administrative interface. On a pre-defined interval, the system purges all expired conferences older than the specified time (for example, 30 days).
Auto-delete Expired (or Aged) Recording	13	Provides a new policy on the Conferencing Server that allows a system-wide expiration time for recording files to be set via the Conferencing Server administrative interface. On a pre-defined interval, the system purges all recording files older than this time (for example, 30 days). This feature clears old media files server storage.
Check Document Types Before Upload	13	Adds functionality to check the validity of a file extension before uploading it to the Conferencing Server for sharing or presenting.
Conferencing Server Virtual Domain Aliasing	14	Enhances the virtual domain support offered by the Web Server when accessing conference management pages on the Conferencing Server. The Web Server now derives the host address for Conferencing Server web services from the IP address (or FQDN) used to reach the Web Server when presenting the conference application URLs. It is no longer necessary to pass the publicClusterFQDN from the provisioning server to the Web Server to build the conference application URLs.
Cr Reference Point: msc-mixer Package	16	Media Resources: The Cr reference point defined by 3GPP formalizes the protocol between an Application Server and a Media Server/Media Resource Function. The Cr reference point currently provides IVR and Conferencing services; however, it can be extended to provide other services, for example Fax service. This feature implements the Cr reference point on the BroadWorks Media Server for Conferencing services. The following BroadWorks Media Server features are exposed through the Cr reference point: 150-way conferencing per mixer - Ability to put mixers in a daisy chain to support hundreds of participants - Dual-Tone Multi-Frequency (DTMF) clamping - Sidebar conference - Muting and unmuting individual conference participants - Prime-speaker mode

Feature	Rel	Description
Enhanced Outside Dialing from the Conferencing Application	13	Enables a Conferencing Server cluster to act as a pooled resource for multiple Application Server pairs. With this enhancement, Conferencing Server resources are deployed more efficiently, supporting an entire BroadWorks deployment. This feature changes the Conferencing Server so that dialed digits are sent to the Application Server "as is" and that the Application Server does not apply any translations to the digits.
Prevent Deletion of Ongoing or Expired Conferences	13	Provides new functionality on the Conferencing Server to check whether a conference is ongoing or already expired before deletion. If ongoing or already expired, the conference is not deleted and an error indication is returned to the user.
Web Conferencing	RC	Enables the set up, use, and monitoring of *n*-way conferences via a web interface. Both internal and external participants can use a conference bridge once it has been set up. The Conferencing service includes the following features: ▪ Audio and web conferencing ▪ Scheduled, recurring, reservation-less, and ad-hoc ▪ Meet-me dial-in numbers ▪ Web collaboration ▪ Share Microsoft PowerPoint, Excel, and Word files ▪ Secure SSL and password protection ▪ Web browser viewable, no client is required ▪ Moderator control ▪ Dial-out capability ▪ Mute, hold, drop, and add participants ▪ DTMF and web portal interfaces ▪ In-call functions ▪ Roll call, hand raising, optional leader ▪ PIM integration ▪ Automated e-mail invitations and Outlook calendar entries ▪ Reporting ▪ Web-based reporting ▪ Department and project codes ▪ Recording ▪ Recording and playback of individual conferences ▪ Access code generation ▪ Automatic, pre-assigned, or user-defined

Messaging

Feature	Rel	Description
E-mail Server Redundancy	14	Enhances the mail server redundancy scheme, adding support for SRV DNS record types to identify the list of mail servers to be used. Further, the system now honors the criteria intended for ordering records (for example, SRVs are ordered according to the *priority* field). A configurable timeout value controls the maximum time interval before the system stops attempting to connect to an unresponsive mail server, and moves on to the next server in the priority list.
Fax Mailbox	14	Extends the BroadWorks Messaging service to offer users the ability to receive, store, review, and manage fax messages. Users are notified of new fax messages in the same way that they are notified of new voice messages. Fax messages can be retrieved by e-mail, or can be printed by sending the message to another fax number using the telephone voice portal.
IMAP Mailbox Cleanup	13	This feature replaces the IMAP LOGOUT with an IMAP CLOSE and IMAP LOGOUT. This added step provides an automated mechanism to expunge messages marked for deletion.
Immediate Voice Mail	13	Provides an "always on" voice mailbox. For the designated user account, the "number of rings before greeting" parameter is set to 0, immediately providing the user's no-answer greeting and the user's device is not alerted. The feature itself changes the "number of rings before greeting" range from 2 through 6 to 0 through 6.
Increased Parameter Ranges	13	Increases the maximum message length from five minutes to 10 minutes, increases the maximum mailbox limit from 100 minutes to 900 minutes, and increases the number of distribution lists from 10 to 15.
Message Configuration per Service Provider	13	Enables the "from" header to be configurable on a service provider basis instead of a system basis when sending an e-mail for message deposit and message notification.
Message Waiting Indication Delivery to Mobile End Point	14.sp2	Delivers a Message Waiting Indicator (MWI) to a mobile end point using a dedicated Short Message System (SMS) message.
Outgoing Message Waiting Indication (MWI)	RC	Enables BroadWorks to control the MWI status of users with BroadWorks voice mail who have their access lines on a PBX, a Class 5 switch, or another IP-based application server. BroadWorks supports this service through an outgoing SIP NOTIFY MWI. For legacy-based users on a PBX or Class 5 switch, an MWI converter and terminal server are required to convert the SIP NOTIFY MWI message to SMDI TCP MWI and SMDI RS-232 MWI messages, respectively.
SMPP MWI Notification with External Voice Mail	16	Unified Messaging: BroadWorks currently supports the delivery of a message waiting indicator (MWI) via Short Message Peer-to-Peer Protocol (SMPP) to a mobile device. However, the MWI notification is not transmitted to the mobile device if the user does not have the BroadWorks Voice Messaging service.

This activity enhances the MWI Delivery to Mobile Endpoint services by delivering the MWI notification if the user has the Third Party Voice Mail service. |

Feature	Rel	Description
Third Party Voice Mail MWI	RC	Third-Party Voice Mail Message Waiting Indication (MWI) enables the receipt of MWI status for users whose voice mail service is hosted on a third-party system. Thus, even without using BroadWorks' own integrated voice mail, users can still be notified of messages via their phone lamp and stutter dial tone. This feature supports the receipt of SMDI-based message waiting indication (MWI) from TDM-based voice mail systems (terminal server required), as well as SIP-based MWI notification from other IP-based voice mail systems (no terminal server required).
Third-Party Voice Mail Support	RC	Facilitates the integration of a third-party voice mail platform with BroadWorks and its services. Busy and unanswered calls can be forwarded to a phone number or URL configured at the group level by the service provider. The number of rings before considering a call unanswered is defined at the user level. The Send to VM button on the CommPilot Call Manager is still visible and enabled for users with Third-Party Voice Mail.
Third-Party Voice Mail Support Enhancement	RC	Option to deploy CommPilot Express with an external voice mail system other than BroadWorks voice mail.
Video Messaging	RC	BroadWorks Messaging can support video greetings, message recording, and message playback. All the other functions of Voice Messaging remain the same.
Voice Mailbox Integration	RC	Enables users to configure their single BroadWorks voice mail box to also support a secondary non-BroadWorks line (for example, mobile phone or PBX), in addition to their primary BroadWorks line. Thus, a BroadWorks user can eliminate the need for maintaining and possibly paying for separate voice mail service (for example, for their mobile phone) by also having those unanswered calls routed to their BroadWorks voice mailbox. To enable this service, a user must simply register their secondary phone number via the CommPilot personal web portal and configure their secondary phone service with Call Forward Busy and Call Forward No Answer to route to the respective BroadWorks voice portal. Calls received by the group voice portal from this secondary number are automatically recognized and prompted with the user's voice mailbox greeting.
Voice Message Callback	RC	Enables users to automatically call back the person who left them a message by hitting an option during or after listening to the message. This feature works if the caller's line ID is available; otherwise, the call back is denied.
Voice Message Callback Enhancement	RC	Enables user to revert back to voice mail menu within voice portal after calling back party who left message.
Voice Message Waiting Indication	RC	A stutter tone is provided via the telephone when new messages reside in the user's voice mailbox. A visual indicator on the phone is also provided.

Feature	Rel	Description
Voice Messaging	RC	Enables users to record messages for incoming calls that are not answered within a specified number of rings, receive busy treatment, or are transferred directly to voice mail. Incoming callers are given the options to review and change their message and get a warning tone if their message is about to reach the maximum configured length. Users can configure the service via their personal web portal or by calling into their voice portal from any phone. The personal web portal enables users to control whether their voice mail messages are to be delivered to their e-mail account as .wav attachments and/or to the voice messaging system repository for retrieval from a phone. Users can also set their password and elect to give callers the option of connecting to an attendant by pressing 0. By accessing the voice portal from any phone, users can listen to, save, and delete each message, as well as move to the previous or next message. During the playback of a message, users have the option of skipping forward, skipping back, or pausing. Replies to message senders can be sent, and messages can be forwarded with an introductory message to one or more group members, or to the entire group. Messages can also be composed and sent to one or more users in the group, or the entire group. Users have the option of marking a message as urgent or confidential. Users can also pre-configure lists of users to whom voice messages can be sent. The voice portal also enables users to record their name and multiple personal greetings for busy and unavailable. Users also have the option to enter a feature access code on their phone to clear their message waiting indicator (MWI).
Voice Messaging Configuration	RC	System providers have the following capabilities in configuring Voice Messaging service for individual groups: ▪ Message Aging – enables service providers to set a maximum duration for the storage of saved messages by each group ▪ Multiple Mail Servers – enables service providers to specify a different POP3 mail server or IMAP (including Exchange 2000) mail server for each group or user ▪ Variable Mailbox Sizes – enables service providers to set a different maximum mail box size for each group or user
Voice Messaging Enhancement	RC	New feature access code enables user to send incoming calls directly their mailbox or voice mail of any other user within group.
Voice Messaging Notification	RC	Enables a user to be informed of new voice messages. The notification is in the form of an e-mail (or short message to a cell phone) or an indication on the user's station. The user controls the service via a web interface, which provides the ability to activate and deactivate e-mail notification as well as the e-mail notification address.
Voice Messaging to E-mail	RC	Enables users to have their voice messages delivered to a specified e-mail address in the form of an e-mail message with a .wav file attachment. If available, the caller's name and number are also included in the e-mail subject line.
Voice Portal Auto-login	13	Enables the user an option to "auto login to voice portal if calling from the user's own phone". If set to "yes" then when a user calls in to the voice portal from the user's own phone, the user is not prompted for a passcode but immediately given access the voice portal menu. If set to "no" then the existing functionality is used and the user is prompted for the passcode.
Voice Portal Customization	RC	Enables system providers to customize the keys and prompts that are used to navigate through the voice portal menus and submenus. A key is either 1 digit (0 through 9), *, or #. Administrators can choose from a list of valid keys that are free to use. If no key is chosen for an optional menu selection, the menu option is disabled. The association of keys to actions (choices of each menu) is configurable for most menus and submenus. The system introduces one announcement per menu option and one announcement per key value. Typically, prompts are automatically constructed to list the options and their matching keys.

Accounting Management

Feature	Rel	Description
Accounting	RC	BroadWorks provides the capability to generate call detail event records to a file using XML. These records contain call-related information such as start time, stop time, duration, originator, terminator, and so on. They also contain usage information that indicates which services were invoked, in addition to any pertinent service-related information.
Accounting Event Interface Removal	16	Charging: This activity removes the obsolete Accounting Event interface and all implementation referring to it. The interface was introduced in BroadWorks Release 3.0 and has not been used since BroadWorks Release 8.0. The accounting interface currently in use is the BroadWorks Call Detail Record (CDR) Accounting interface. **NOTE**: This activity has no impact on the BroadWorks CDR Accounting Interface.
Call Detail Record Buffer Control	RC	Enables system administrator to control the size of the internal CDR buffer to allow for generation of CDRs in real time, if required.
Call Detail Record Enhancements	RC	Call detail records are enhanced to identify which feature a user invoked as a result of dialing a feature access code. Since feature access codes are configurable per group, this enhancement simplifies the billing of usage-sensitive services. Access-side correlation ID added to the CDR for the originating portion of the call to allow it to be correlated with the CDR for the terminating portion of the call in the IMS Third-Generation Partnership Project (3GPP) architecture.
Call Detail Record to Reflect Route as per Last 302 Response	14.sp4	System and OAM: Allows configuration of the call detail record (CDR) *route* field.
Call Detail Records	RC	Captures accounting details into call detail records (CDRs). These records contain information about the call including the following: called party, calling party, call origination time, billable call duration, call type, dialed digits, IP address of access device, and forced release indicator. CDRs can be used to generate AMA billing records.
Call Detail Server	RC	The BroadWorks Call Detail Server (CDS) is an optional server for storing and retrieving call log information that is forwarded from the Application Server. With this server, service providers can store more call log information per phone line than is allowed by the Application Server, and for extended periods of time. The Call Detail Server also enables service providers to offer the Web Portal Call Logs service to their enterprise and residential users. This service adds a web page to users' CommPilot personal portal that provides call logs for all received, missed, and placed calls. Note that the information received and stored by the Call Detail Server is only a subset of the information provided by the interface for real-time call detail records (see above). For example, there is only one record per call.

Feature	Rel	Description

Call Type in CDR	16	Charging: Enhances the call detail record (CDR) by adding a new field *AS Call Type* to all originating and terminating CDRs.
		
		The possible values for the reported call type in the CDR are:
		
		▪ Group – When translations of the dialed address on the Application Server can identify the target user and this user is in the same group as the originator.
		▪ Enterprise – When translations of the dialed address on the Application Server can identify the target user and this user is in the same enterprise but not the same group as the originator.
		▪ Emergency – When translations of the dialed address on the Application Server find a match with the digit patterns defined as an emergency call type.
		▪ Repair – When translations of the dialed address on the Application Server find a match with the digit patterns defined as a repair call type.
		▪ Internal – When translations of the dialed address on the Application Server find a match with an FAC and:
		  – The feature access code is a programming FAC
		  – Per-call FAC without destination digit allows a user to activate the feature for a given call.
		▪ Network – When translations of the dialed address on the Application Server do not yield a specific result, the address is sent to the Network Server for further translations. In such a case and when the address is made of *digits*, the Application Server call type is set to "Network".
		  NOTE: The result of Network Server translations is reported in a distinct CDR field named *networkCallType*.
		
		▪ Network URL – When translations of the dialed address on the Application Server do not yield a specific result, the address is sent to the Network Server for further translations. In such a case and when the address is made of a *SIP-URI*, the Application Server call type is set to "Network URL".
		  NOTE: The result of Network Server translations is reported in a distinct CDR field named *networkCallType*.

CDR Time Stamps	16	System Management (FCAPS): The call detail record (CDR) time stamps are currently captured when the applicable event is processed. This may be subject to errors due to queue and/or other processing delays. With the implementation of this feature, the Application Server records the time stamps as soon as the packets are received on the socket. As a result, there is virtually no delay (under one microsecond processing time to receive the packet from the socket and record the time stamp) in the recorded time stamp for the packet. Decode and call processing queue delays have no impact on the recorded time stamps. Therefore, the Application Server time stamps used to determine the call duration are well within the 500 microsecond accuracy limit required by the regulations of some countries. Note that the definition of "call duration" is the computed difference between the release time and the answer time.
Codec Change Reporting in CDR	14	Records the details of mid-call codec changes in call detail records, allowing carriers to charge appropriately for multimedia calls, even when those calls were not originated using specially charged media types.
Conference Info Reporting in CDR	14	Records additional details for conference calls, such as the duration and the number of parties involved, allowing carriers more flexibility in charging conference calls.
Configurable CDR External IDs/ Rf Interface Modification	17.0	This feature introduces the ability for administrators to define custom mappings for the RADIUS/Diameter AVP codes referenced in accounting interfaces. This capability also supports sparse mappings, thus allowing selected fields to be omitted from call detail records (CDRs).

Feature	Rel	Description
Enable CDR Schema Version 14.sp4 for Activatable Features	14.sp4	System and OAM: Controls the CDR schema for Release 14.sp4.
Generation of an AVP Group Containing P-CAMEL Headers Information	17.0	This feature provides the ability to pass location information for mobile subscribers to the IP Multimedia Subsystem (IMS) core through a series of three headers known as the P-CAMEL headers. This activity aims to capture the contents of these headers in BroadWorks call detail records (CDRs).
IMS Accounting Ro Interface	16	Charging: Introduces support for prepaid subscribers on the BroadWorks platform. This entails requesting credits from an Online Charging System (OCS) before allowing a call to proceed, reporting used credits to the OCS, and terminating a call should credits eventually run out during the call.
		Communication between the Application Server and the OCS is done using the Diameter interface. In IP Multimedia System (IMS) terminology, this Diameter interface between the Application Server and the OCS is known as the Ro reference point. However, this feature can equally be used in stand-alone mode and in IMS mode.
		This feature implements the *core Ro interface*, which includes charging by time and disconnecting when credit is exhausted (as well as failover support).
		Session Charging with Unit Reservation (SCUR) is the implemented mechanism, where units (of time) are reserved and debited once used.
		A new user feature is introduced. Users must be assigned the Prepaid feature to enable online billing. No per-user configuration is necessary apart from assigning and enabling the Prepaid feature itself.
Long Duration Call Accounting Events	RC	Provides the ability to generate a separate billing record for calls of a specified duration (for example, one day).
Long Duration Call Accounting Events Service Cleanup	14.sp1	Consolidates all long duration call accounting events (LDCAE) properties.
Malicious Call Trace Accounting Enhancements	14.sp3	ISDN Migration: Enhances the Customer Originated Trace and Malicious Call Trace features to report the activation explicitly in the BroadWorks call detail records (CDR). This enhancement provides compliance with the TISPAN ISDN MCID requirements.
No Charge Treatments	14.sp2	Used to provide an audio treatment without answering the call (200 OK) to avoid toll charges.
P P-Charging Vector Accounting Enhancements	14.sp9	This feature provides enhanced interoperability between legacy networks and 3G mobile carriers without requiring an upgrade to an IP Multimedia Subsystem (IMS) solution by recording the *PCV* header content when the header is present in the 200 response to an INVITE. This feature does not proxy the *PCV* header.
		BroadWorks captures the contents of the *PCV* header in the call detail record (CDR) for the call. This feature also adds a new *CDR* field for non-standard parameters called *otherInfoInPCV*. The contents of this field contain the additional parameters and their unparsed values, which do not match the standard parameters defined for the *PCV* header.
		The originating CDR is populated with the *otherInfoInPCV* field when the call does not involve redirection. In the case of call redirection, the redirecting party's originating CDR is populated when the call involves redirection.
Packet Cable CDR Support	RC	Support of an additional CDR format that is aligned with the data contained in *PacketCable* accounting events.

Feature	Rel	Description
Radius Packet Queuing	14	Introduces a file-based queue for packets addressed to an unavailable Radius accounting server. The messages in the queue are processed in order when the connection to the Radius endpoint becomes available once again.
Radius Server Selection	14	Allows the system to select the Radius accounting server used for a given message based on the *P-Charging-Function-Address*es header received from the IMS core (*RFC 3455*). This feature also adds a new attribute in the BroadWorks call detail record (CDR) to record the *P-Charging-Function-Addresses* header. It also changes the real-time accounting method to use a pool of Radius servers, accessed using a round-robin addressing for load sharing.
Real-Time Call Detail Record	RC	BroadWorks can support a Radius accounting interface to provide call detail records in real time. Multiple records are provided for each call (for example, start, answer, and stop). This capability enables service providers to support applications like prepaid, hospitality and a real-time accounting portal.
Related Call ID Recording in CDR	14	Aids in correlating the CDRs generated when services create multiple call legs (and hence, multiple CDRs). New fields called *relatedCallId* and *relatedCallIdReason* are added to provide the identity of the call leg responsible for or caused by the service activation, and the reason for adding the *relatedCallId*. In addition, a new service extension is added to the CDR to capture the activation of call transfer services.
Support Import and Export of Device Types	17.0	This feature introduces the capability to export a Device Type Archive File (DTAF) to the user's computer. A DTAF is the dump of an existing device type. The intent is to allow the administrator to import the file to another Application Server. This eliminates the need for the administrator to repeat the configuration steps involved in creating the same device types on different clusters.
Transaction Logging	RC	Enables service providers to record call information for calls coming into the Network Server on a per enterprise basis.

Configuration Management

Feature	Rel	Description
Ability to Remove the Splash Screen for Receptionist	14.sp3	Front Office: Enables service providers (using Deployment Studio) to remove the splash screen in the Receptionist application in Citrix environments, thus minimizing any unnecessary interface movement and conserving bandwidth. The splash screen is displayed at the startup of the application and provides version details and branding opportunities.
Ability to Remove the Time Stamp on the Receptionist Interface	14.sp3	Front Office: Enables service providers (using Deployment Studio) to remove the time stamp on the Receptionist interface in Citrix environments, thus minimizing any unnecessary interface movement and conserving bandwidth.
Allow Users to be Created on Application Server with External Authentication Enabled	14	Allows administrators to create new users without set passwords. These users are allowed to log in to the web portal only when External Authentication is enabled. This feature also provides a method for individual service providers to enable External Authentication when the system-level External Authentication is turned off. If the system-level External Authentication is turned on, however, service providers cannot disable it.
Answered Calls Maximum Call Time	16	System: Currently the Maximum Call Time for Answered Calls feature allows an administrator to specify 5 thorough 2880 minutes for the maximum call time in minutes for answered calls on a service provider/enterprise, group, and/or user basis. This feature changes the configurable range from 3 through 2880 minutes instead of the current configurable range from 5 through 2880 minutes.
Application Server Upload Enhancements	16	Configuration and Provisioning: The Application Server upload feature of the Network Server allows for importing the provisioning data of a BroadWorks Application Server into the Network Server database. This is particularly useful for resynchronizing a Network Server with all managed Application Servers upon reinstallation or database reinitialization. This feature enhances the Application Server upload process by improving the performance of the command with respect to speed and consumed resources.
Blinking Cursor Customization for Citrix Environments	14.sp3	Front Office: Enables service providers (using Deployment Studio) to make the cursor static (that is, to not blink) within any text fields in Citrix environments, thus minimizing any unnecessary interface movement and conserving bandwidth.
BroadWorks Software Management for Intel Platform	13	Provides support for Linux-based operating systems.
Call Capacity Management	RC	The Call Capacity Management feature enables service providers to limit the call traffic associated with individual groups by limiting the number of simultaneous calls that can be made to or from customer premises. A maximum number of simultaneous incoming/outgoing calls can be set for any specified set of users within a group. Service providers can leverage this capability as a means of achieving network engineering and/or pricing objectives.
Call Capacity Management Enhancement	RC	Enhanced capability to manage incoming and outgoing calls separately, thereby providing greater granularity and better utilization of network resources.
Calling Line ID Delivery Enhancement	RC	Option to include a prefix to the calling line ID to identify calls received from operators, pay phones, international callers, and transferred calls. The feature only applies to calls from outside the group and is enabled or disabled on a system-wide basis.

Feature	Rel	Description
Calling Line ID Enhancements	14.sp7	Calling Line Identity Enhancements significantly enhances the current configurable calling line identity (CLID) policy by: ▪ Separating the emergency and non-emergency CLID policy configuration ▪ Consolidating the current CLID configuration at the system level and placing it under system call processing policies ▪ Adding the new CLID policy configuration at the service provider level ▪ Consolidating the existing CLID configuration at the group level under the new CLID policy ▪ Adding a new CLID policy at the user level ▪ Adding a new call processing policy at all administrative levels to enable the sending of an alternate number as the redirecting identity in the redirection information This feature is significant with regards to emergency call originations in that it allows the carrier to purchase fewer numbers in the Automatic Location Identification (ALI) database, which significantly lowers their cost of offering services. This enhancement has been requested by, and will be welcomed by many customers.
Client Call Control	RC	Enables custom call client applications to be used through a public interface with BroadWorks. For example, an alternative Attendant Console solution from a third-party developer may be better suited to meet the needs of a particular market segment.
Command Line Interface	RC	Provides a command line interface (CLI) that provides access to system provisioning and monitoring. The following functionality is accessible through the CLI: ▪ Alarms – access to generated alarms and events (SNMP traps). The display is real-time ▪ Audit Trails – provides access to all changes made by the service provider, including, adds, changes and deletions. Provides the ability to view and reset data ▪ Configuration – provides a command line interface for configuration performed by the system provider ▪ Service Performance Measurements – provides access to service-level performance measurements ▪ System Performance Measurements – access to service-level performance measurements

Feature	Rel	Description
CommPilot Enhancements	RC	The various levels of the CommPilot web portals have been enhanced to improve navigation and usability. The enhancements were based on usability studies conducted by multiple large carriers. In most cases the body content has not been changed, only the appearances (for example, colors, font sizes, and so on), header content, and navigation content have been changed. Specifically, the following enhancements have been made to the CommPilot web portal: ▪ Left navigation modified to provide more intuitive navigation ▪ Error messages are more visible ▪ Web pages and menus have more text explaining use of services ▪ Read-only pages provided for assignable user services that have no configuration data (for example, Flash Call Transfer) ▪ Web pages designed to be easily modified (if necessary) to work with other browsers and content ▪ Support provided for browsers (other than Internet Explorer) ▪ Screens support 800 x 600 resolution ▪ All text has font size of at least 12 points ▪ Can use "Back" button on browser to navigate in the application ▪ Style sheet modified to make it easier for system or service providers to customize
CommPilot Service Provider	RC	Web portal that allows a service provider access to all service provider, group, and user functions.
CommPilot System Provider	RC	Web portal that allows a system provider access to all system monitoring, maintenance, and configuration functions of BroadWorks, as well access to service provider, group, and user functions.
Configurable Default Feature Access Codes	RC	Enables each service provider to specify a default set of feature access codes. New groups created by the service provider start with this default set of codes.
Configurable Time Zones	RC	Configurable time zones are supported for all services needing date/time stamps (such as, Voice Messaging, Auto Attendant, or Selective Call Forwarding). When a group is added to the system, the time zone is specified by the administrator. When a user is added to the group, the group time zone is the default, but the time zone can be modified. For example, a group in New York City can be added as Eastern Standard Time, but a per-user time zone can be configured to reflect a user in Los Angeles.
Configurable User ID	RC	Enables service providers to change a user's identity without having to delete and then create that user on BroadWorks. Thus, the user's profile is maintained.
Configuration Audit Trails	RC	Provides a log or audit trail of all changes made by the service provider, including, adds, changes, and deletions.
Custom Web Content	RC	Provides a predefined link for users and group administrators to view customized web content. System providers can elect to use this capability to show the default BroadWorks tutorial, or they can choose to use content of their own. In addition to tutorials and training, this feature could also be used for the purposes of providing reference information, up selling specials, and so on.

Feature	Rel	Description
Defining Application Server (AS) Media Interface to be other than "Public"	14.sp8	System: Currently, the Application Server uses the Application Server *publicIPAddress* in the HTTP URL when signaling the Media Server for playing media files and not the address defined for the media file. The solution is to introduce the media Internet Protocol (IP) address to the *appserver.properties* file.
		By defining the media interface IP address, the Application Server uses the specified media IP address when asking the Media Server to play a media file. If the media IP address is not defined in the *properties* file, the Application Server uses the Application Server *publicIPAddress*. The *appserver.properties* file supports a new property named *bw.http.mediaif*.
		Note that adding or changing this property requires a restart of the Application Server.
Device Management File Type Enhancements	14.sp8	System: Device Management was introduced in BroadWorks Release 14.sp6. This feature enhancement corrects confusion associated with how the files are created. When new files are created, only one file of a given file type can be created within a given device type.
		The text box input may confuse end users because there is no feedback on existing file types and no visual cue as to what value should be inserted.
		These two issues are addressed by this enhancement.
DMS – Enhanced Configuration Tags	14.sp6	Device Management: This feature enhances BroadWorks IP device configuration management by adding a richer set of configuration tags and capabilities. This enhancement introduces the concept of "dynamic" versus "static" configuration tags.
		Dynamic tags are tags that are replaced with contextual values based on the line profiles associated with the device.
		Static tags are tags that are created and set to an explicit value by the administrator. Static tags make it easy to administer a set of configuration attributes that are common across two or more device types.
		This feature also adds the concept of a "Configuration Tag Set", making it easy to group static tags together and apply them to a device.
E.164 Number Support	RC	Complete E.164 support is provided on all BroadWorks servers. This provides everything required for support of international dialing plans.
Emergency Intercept	14	Provides an optional system configuration setting that alters the behavior of the Intercept User service to also block emergency and repair calls made by intercepted users. Allows carriers to temporarily suspend service for users who are roaming outside of their geographical service area, as that can result in limited emergency services.

Feature	Rel	Description
EMS Centralized Configuration	16	Element Management: Introduces a new configuration-management framework that provides centralized control of BroadWorks network-element configuration from the Element Management System (EMS). The framework introduces new components that are part of the BroadWorks server platform and others that are hosted on the EMS. The framework is based on management of XML configuration data formalized using XML Schema.
		The EMS hosts the graphical management application that allows the operator to view and edit the configuration of the BroadWorks network elements it manages. Configuration data is version-controlled on the EMS where updates are staged and validated before being downloaded onto the selected network elements. Configuration changes are done without the need for interactions with the network elements.
		The EMS provides the means to manage configuration settings common to pools of same-type network elements, thereby simplifying the management of server farms.
		When the EMS is not used to manage network elements, configuration through the local CLI is supported. Otherwise, the CLI can always be used to read the configuration settings.
		In this release, the configuration framework is only integrated with the Xtended Services Platform servers and Profile Servers and does not affect any other server type.
Enhance the Application Server (AS) to Allow Direct Communications of DGC Calls Between Application Servers	14.sp6	Platform and System Enhancements: This feature provides the ability to configure the SIP interface address of both the local and redundant Application Servers (in a cluster of two Application Servers) to route distributed group calls (DGCs) in a non-IP Multimedia Subsystem (IMS) environment.
		Currently, in a non-IMS environment, DGCs are routed to the Network Server to obtain the SIP signaling address of the other Application Server in redundancy mode. This has proven to be problematic for system configurations that do not have a Network Server as part of the BroadWorks deployment. In such cases, the SIP INVITE cannot be routed properly to the other Application Server in the cluster.
		It is important to note that this functionality is provided regardless whether or not the deployment contains a routing component (Network Server). If the configuration properties are empty, the current behavior of BroadWorks is not affected.
Enhancements to Multimedia Call Processing Policy	14.sp8	System: Extends the Multimedia Call Processing Policy feature to support a new media type known as "image". One predefined media type of image is included, called "T38". With this feature, BroadWorks recognizes fax codecs as T38, thereby allowing the administrator to prevent negotiation of a fax codec by assigning a set of codecs excluding T38 to the subscriber's Multimedia policy.
Enterprise and Service Provider Migration	14.sp1	Adds an EMS process along with tools to migrate enterprises and service providers from one Application Server cluster to another. By combining automatic steps with a small number of manual steps, this feature reduces the errors and decreases the time required for such migrations.
Extended Address Support	RC	Enables BroadWorks call processing services (for example, Call Forwarding Always, Simultaneous Ring) to be configured with SIP URLs, in addition to phone numbers.
Extended No-Answer Timer	14.sp2	Extends the range of the no-answer timer for several BroadWorks services to accommodate shorter ring cycles.
Extent Authentication Password Length	16	Security: This feature extends the authentication password length for the User Authentication feature and trunk groups from 20 characters to a maximum of 60 characters.
ExtraView Document Upload from a BroadWorks Server	14.sp4	System and OAM: Allows an operator to upload a document directly from a BroadWorks server to an open ticket in ExtraView.

Feature	Rel	Description
Fade in/out After Login Must be Removed for Citrix Support	14.sp3	Front Office: Enables service providers (using Deployment Studio) to remove the fading in and out between the login screen and the main Receptionist interface in Citrix environments, thus minimizing any unnecessary interface movement and conserving bandwidth.
File System Scalability Enhancements	14	Enhances the BroadWorks file replication scheme between redundant servers to increase performance, and introduces support for remote file servers.
Group or User Delete Confirmation	14.sp4	System and OAM: Prevents the deletion of groups or users by introducing a confirmation dialog for "Group Delete" and "User Delete" web provisioning commands. The purpose of the confirmation dialog is to minimize the risk of deleting these entities and associated users by mistake.
Group Phone List Enhancements	RC	Provides the option to remove Group Phone List tab from the CommPilot Call Manager, thereby making it more suitable for the residential user. An additional option is to display the group tab, but have only the search field appear in the group tab. Thus, all group contact information is not retrieved every time the CommPilot Call Manager is opened, thereby improving performance for very large groups with many contacts. The group directory is also now available via the CommPilot Personal web portal.
GUI-based Configuration Files Administration on EMS	14	Integrates all configuration parameters for the Element Management System into the user interface. When parameters are modified, the configuration files are updated accordingly, so that after a restart of the EMS, the latest parameter values always take effect. To propagate the parameter changes from one server to another in a redundant configuration, the configuration files are added to the file replication.
Home Zones	RC	Enables service providers to configure home zones on a group basis. Each home zone is comprised of a list of acceptable IP addresses or IP address ranges from which SIP registrations and call originations are accepted. Service providers can also configure this service to only deny emergency calls made when a user is roaming outside of group's home zone, to avoid sending invalid locations to emergency response teams. An optional e-mail with detailed call information can be sent to a specified address when an emergency call is made, regardless of whether it is permitted or denied.
HTTP and HTTPS Transport Support for Device Configuration	14.sp6	Device Management: This feature enhances BroadWorks device configuration management by adding native HTTP and HTTPS transport, allowing devices to download configuration firmware and other resource files directly from BroadWorks.
Installation and Upgrade Improvements	14	Enhances the BroadWorks installation utility to allow patching of the installation file, validating the installation, and to provide enhanced reporting, error detection and error handling schemes.

Feature	Rel	Description
Integrate Apache Comet to Provide HTTP Support for Xsi Events on the Client or Comet Service Events	17.0	This feature enables HTTP(S)-based clients to create a persistent connection using Comet semantics and to receive streaming events delivered over one HTTP(S) connection. Streaming HTTP/HTTP Comet functionality also enables the BroadWorks CTI interface's communication mechanisms into BroadWorks. To support persistent connection semantics, new concepts are introduced via Xsi-Events, which allow a logical representation of connections and events between a client and BroadWorks. Existing Xsi-Events concepts are also modified. The following is a list of these concepts: ▪ Event Channel and Event Channel Set – An event channel is a logical path between the remote application and the BroadWorks core (Application Server). This logical path is established and maintained via the Xsi-Events web application. This is a new concept in Xsi-Events 3.0. An event channel set is a set of multiple event channels owned by one remote application. ▪ Event Subscription – A subscription is a request for event notifications based on an event package. An event subscription is used by the remote application to subscribe to specific event triggers in the BroadWorks core. A client makes a subscription against a target BroadWorks subscriber and identifies either a contact URL or a channel set over which events should be delivered. When an event is triggered on BroadWorks that matches the event subscription, the event is sent to the remote application over an event channel selected from that set. ▪ Event Packages and Events – An event package is a named entity that can be subscribed to, representing a collection of events that can be triggered by BroadWorks. An event is a notification about a specific action that occurred in BroadWorks. Events are sent to clients based on subscriptions they made against event packages.
Internationalization	RC	Enables service providers to easily change the text contained in the CommPilot web portals to a non-English language. Display of double-byte language characters (for example, Japanese, Chinese) is supported. Dates and times are also displayed in the proper format corresponding with the language type.
Internationalization Enhancement	RC	The BroadWorks web portal is enhanced to support languages that are written from right to left, such as Arabic and Hebrew.
LDAP Enhancements	RC	LDAP interface and query capabilities enhanced to increase security, add more configuration options, extend various parameters, and support *RFC 2254*.
Limit Number of Simultaneous Calls per User	13	Enables an administrator to specify the maximum number of simultaneous calls supported on a system, service provider/enterprise, group, and/or user basis. If a user exceeds the maximum number of simultaneous calls allowed, then the call is treated in a manner similar to the Call Capacity Management feature. This function only applies to users who are not in a trunk group.
Line/Port Domain Scoping	RC	Allows the "host" portion of the address of record (AoR) for access-side devices to be selected from a list of available domains defined within BroadWorks. Line/ports must only be unique within a selected domain, as opposed to across an entire Application Server. For example, user1@yourdomain.com and user2@yourdomain2.com are allowed.
Media Server Audio Line-in Port	RC	Allows the Media Server to act as a music-on-hold server and receive audio from the analog line-in jack available on Sun servers.
Multi-language Support per Application Server	RC	Allows different languages to be supported simultaneously by different users and administrators on a single Application Server pair. Thus, users and administrators can select which language they prefer and all the prompts, announcements, and language used on the web portal are presented in their preferred language.
Multiple BroadWorks System Administrators	RC	Allows multiple instances of the system administrator on the command line interface.

Feature	Rel	Description
Network Server Allows Non-numerical Characters	13	Enables the Network Server to pass non-numerical characters like * and # to the network to trigger functionality in other network elements.
Network Server Disable Dynamic Routing Flag	14.sp2	Introduces a signaling attribute for routing network elements (NE) to disable dynamic routing independently of all other attributes.
Network Server Properties CLI Provisioning	14.sp2	Enhances the configuration of system parameters through the CLI on the Network Server.
Network Server Web Portal	RC	The web portal is being enhanced to expose additional service provider pages, primarily covering the management of devices and enterprises.
Network-wide Messaging	14	Provides an optional system configuration setting that allows users to compose, forward, or reply to messages across multiple Application Server clusters (subject to the scope configured for the Voice Portal service).
OCS on Xsp	16	Configuration and Provisioning: This feature adapts the Open Client Server (OCS) to run on the Xtended Services Platform (Xsp). On the Xtended Services Platform, the OCS runs on top of the Java Container Application Framework as a BroadWorks application. From an external perspective, this feature affects the configuration (command line interface, configuration agent), but preserves the same behavior and interaction for the clients and servers in the BroadWorks solution. Third-party applications communicating through the OCS will not require modifications. On the Element Management System (EMS), Web Server, and Application Server, the OCS continues to operate without change. In other words, it runs as a stand-alone process on those servers without affecting configuration. For the EMS, Application Server, Network Server, and for an external web authentication server, the interaction with the OCS remains unchanged as well.
Open Client Server/ Interface Enhancements	RC	The Open Client Interface (OCI) is enhanced to support the following: - Media File Upload – third-party applications can support the uploading of media files to the system. The features that allow the use of a custom sound file are: Auto Attendant, Call Center, Intercept Group, Intercept User, Music On Hold, Voice Messaging, and User's Personalized Name - Message Waiting Indicator – MWI information can be sent over the OCI. Thus, third-party clients can indicate whether message(s) are waiting on BroadWorks or third-party voice messaging system - Call Details – redirection number, country code, name, and reason are added to the callUpdate message The Open Client Server (part of the BroadWorks Web Server) and interface have been enhanced as follows: - Subscriber Location – OCS queries the Network Server location register to support multiple Application Servers simultaneously - SOAP Interface – OCS supports a HTTP/SOAP interface - Additional Information – OCI enhanced with additional information for third-party clients, including users' mobile number and department

Feature	Rel	Description
Open Client Server/Interface	RC	This server/interface has been added to the Web Server to serve as a central proxy for third-party call clients. The BroadWorks Open Client Server (OCS) resides on the Web Server and enables a more simplified and scalable approach to support service creation by eliminating the need for third-party call clients to have their own proxy servers. The Open Client Interface (OCI) comprises two separate interfaces for call control and provisioning. The Call Control (also known as CAP) interface enables third-party applications to leverage BroadWorks' call control functions (for example call transfer, call hold). The provisioning interface uses a CORBA interface to receive allocated phone numbers, allocated access resources, and authorized services from an external provisioning system. The provisioning interface also enables service providers to track user, group, and service data. SNMP event notifications are generated when users, groups, or service providers are added to the system.
Password Rules - History	16	Configuration and Provisioning: Enhances the current BroadWorks Call Center password rules to: - Store a history of the ten most recently used passwords - Validate the selected new password against the password history The system administrator can configure the option and the depth of the password history at the following levels: - System - Enterprise - Service provider - Group This is configured along with all other password rule options.
Phone Status Monitoring	RC	Ability to monitor the phone status of users within group (for example, busy, idle, do not disturb). This capability is assignable to users independently of the BroadWorks Attendant Console and can be leveraged by third-party clients (for example, other attendant console applications).
Phone Status Monitoring Enhancement	RC	Open Client Interface (OCI) enhanced to enable attendant console applications to support a query-based model, rather than pushing the state of monitored users to clients. This enhancement is especially useful in supporting large enterprises with many large corporate directories.
Policy to Deny Originations from Users from a Location Different From Registered Location	13	Ensures that the location in a received call origination matches the registered location. If not then the system returns an appropriate error return code. This feature augments system functionality that denies originations from unregistered users.

Feature	Rel	Description
Port SOAP from External Web Server (EWS) to Xtended Services Platform (Xsp)	17.0	This feature adapts the Application Server portal and the Application Server Simple Object Access Protocol (SOAP) web applications to run on the Xtended Services Platform (Xsp). The Application Server portal allows provisioning through a web browser and the Application Server SOAP is a web service allowing Open Client Interface-Provisioning (OCI-P) provisioning and Client Application Protocol (CAP) messaging. On the Xtended Services Platform, both of these web applications run on top of the web container and both have the ability to be centrally configured by the Element Management System (EMS). From an external perspective, this feature affects the configuration but preserves the same behavior and interactions for the clients and servers in the BroadWorks solution. Third-party applications communicating through the SOAP interface do not need any modification and administrators' and users' experience on the Application Server portal is not changed. With this feature the Web Server (WS) no longer exists and is replaced by an Xtended Services Platform. The Web Server is transformed automatically to an Xtended Services Platform during the upgrade.
Portal Support	RC	Provides an API that allows the BroadWorks web interface to be integrated into a portal. Users redirected to the BroadWorks web interface do not require re-authorization.
Pre-Voice Mail Announcement	RC	Optional feature enables service providers to play a pre-announcement for calls redirected to voice mail. The pre-announcement is followed by a set of tones (or grace period) to allow the caller to release the call and avoid applicable toll charges.
Remove Deprecated Release 13 OCI	16	Configuration and Provisioning: This activity removes the deprecated BroadWorks Release 13.0 Open Client Interface (OCI) commands in BroadWorks Release 16.0. The BroadWorks Application Server supports the deprecated OCI commands in the current release and the previous two releases of BroadWorks (N-2 support policy). With the Release Complete milestone of BroadWorks Release 16.0, the deprecated BroadWorks Release 13.0 OCI commands are no longer supported in BroadWorks Release 16.0 and forward. As such, the commands are being removed.
Reseller Support	RC	Enables system providers to act as wholesalers by partitioning their BroadWorks system into multiple virtual systems. Each virtual system can be owned and managed by a separate service provider (or "reseller"), with the flexibility to implement customized web branding. Resellers are able to create and manage business groups within their own virtual system via their CommPilot service provider web interface or CLI. The system provider retains a higher level of access via CommPilot system provider, which also allows them to create and manage service providers, as well as manage the overall system. System providers are able to distinguish their alarms, counters, and billing information by service provider.
Restricted Administrative Access	RC	Enables system and service providers to define what level of control is granted to administrators and users through their CommPilot web portals. Access rights are defined as "read only" or "read and write". Read-only access makes functions viewable, but not modifiable. For example, a group administrator can be created without the ability to add or remove users.
Ring Period	RC	Provides a group-configurable time period to indicate how long the current localized ringback tone should be. This time is used to calculate the total ring time (for example, 4 rings x ring period = total ring time) for services that use the No Answer Timer (for example, Call Forwarding or Voice Mail).
Ring Timer	RC	Provides a configurable ring timer to prevent phones from ringing continually. Upon exhaustion of the timer, call is released and user is played a treatment.

Feature	Rel	Description
Schedulable Recurrence Support	17.0	This feature enhances the time schedule and holiday schedule capabilities on BroadWorks by adding recurrence patterns, such as the fifteenth of every month, or every two weeks, or every first Monday of September. This enhancement allows daily, weekly, monthly, and yearly recurrences. A new schedule is introduced and the existing holiday and time schedules are modified to use the new schedule. The new schedule provides the flexibility to configure recurrence patterns based on the day of the month, the day of the week, the day of the week in the month, or the month. The new schedule is based on events. Events are equivalent to a holiday in the existing holiday schedule and a time interval (time range) in the existing time schedule. Events support daily, weekly, monthly, and yearly recurrences.
Security Enhancements	RC	The following enhancements have been made: ▪ Voice Portal Passcode Rules – allow service providers to configure rules to harden the passcode selected by users and administrators (for example, trivial patterns, repeated passcodes, and so on) ▪ Login Password Wizard – forces users to change their password upon initial login; also forces users to change expired passwords
Separate Call Restriction Rules for Forwarded and Transferred Calls	14	Provides an optional system configuration setting that allows group administrators to define different call processing policies for forwarded calls and transferred calls.
Service Pack Migration Tool	RC	Provides tools to automate the process of migrating to BroadWorks service packs. Individual services can be converted to service packs for a large group of users all at once. In addition, service providers who are already using service packs can use the tool to repackage services into different service packs.
Service Packs	RC	Enables service providers to create packs of user services that can be authorized and assigned according to the service provider's marketing strategy. Service packs are authorized and assigned by service providers and do not impact the manner in which system providers authorize services to service providers. Rather than assign individual services to each user, this capability provides an option to streamline the process by assigning a pack of services all at once.
Service Quantities	RC	Enables system providers to set a maximum number of instances for each assigned service to be used by a particular group.
Shared Device Support	RC	Enables certain devices and/or network elements to be shared across groups of users. Shared devices can be configured by the service provider and would be accessible by group administrators when service is assigned to a user. For example, a service provider can deploy a single 24-port access device in an office building to support multiple customers. In another example, if BroadWorks is being used to provide voice mail only, a service provider could configure the "host" system as a shared access device for the purpose of delivering MWI notifications.
SSL Support	RC	Provides a secure link for login pages and password configuration pages, via SSL support on the web server. Service providers do have the option to turn this functionality off.
Stale Account Warnings	14.sp1	Adds the Stale Account Monitoring policy that validates all EMS user accounts and deactivates those accounts that have not been used for a specified period.
Support for Originating ID Mapping	14.sp3	Operations, Administration, Maintenance: Allows mapping of ranges of originating phone numbers to specific identifiers that are passed to the trunking network element to select the appropriate outbound trunk, thus minimizing network provisioning.
Support for Solaris 10	14	Adds support for the latest version of the Solaris operating system on BroadWorks servers.

Feature	Rel	Description
Support of Destination Trunk Group for Outbound Calls	14.sp3	Operations, Administration, Maintenance: Allows for mapping called NPA-NXXs to a special identifier known as a Destination Trunk Group (DTG) for selected call types. The DTG is passed to other network elements so they can use it to route calls without having to perform translations themselves, which greatly simplifies network provisioning.
System Configurable Default FAC Codes	14.sp8	System: Many BroadWorks customers are using feature access codes (FACs) that are different from the default codes provided by BroadWorks on the system. This causes them to have to reset the default codes each time a new service provider or enterprise is created. For those customers who are required to create a number of enterprises, this becomes an operational burden. This feature creates configurable default FAC codes at the system level. These codes are used as the defaults when a service provider or enterprise is created. Prior to this feature, the default FAC codes were hard-coded, and as a result, they were not configurable. The feature also creates a configurable default Speed Dial 100 prefix at the system level, which is used as a default for authorization of Speed Dial 100 service to groups.
System Image Dump Enhancements	14.sp1	Enhances the asdump command so that it is equivalent to the run-time synchronization that occurs with the Network Server syncAPI.
Telephone Number Inventory	14.sp3	Operations, Administration, Maintenance: Allows for pre-provisioning phone number inventories on BroadWorks while keeping them inactive, that is, unreachable from the network. This facilitates user migration from a donor system to BroadWorks by allowing the administrator to create and test BroadWorks accounts prior to cutover.
Third-Party Authentication Server Support	RC	Enables BroadWorks to be integrated with an external authentication server that prompts users for their credentials and performs login authentication. Once an external server has authenticated a user, BroadWorks' own internal authentication system is bypassed and the user's web session can be launched using BroadWorks.
Third-Party Call Center Integration	RC	BroadWorks can integrate with third-party call center applications. External call center applications can receive calls, monitor agents, transfer calls, queue calls, track calls, and gather statistics on call center performance.
Tiered System Provider Privileges	RC	Provides system providers with two levels of access privileges for different levels of service. The CommPilot provisioning administrator web interface allows access to a subset of the functionality enabled by the CommPilot system provider web interface. Specifically, the provisioning administrator level has full functionality with regard to users and groups, but does not have access to system-level service or interface parameters, profiles of other administrators, or access device or server configuration information.
Unified Provisioning Interface and Reporting	13	Consolidates BroadWorks provisioning interfaces (CLI/OSS/CommPilot) into a common framework that enables reporting of all configuration and provisioning changes to an external system (for example, IMS HSS).
Unregistered Endpoint Announcement	RC	Option to provide an announcement to all endpoints attempting to register against an unknown user, thereby enhancing system security.
Upgrade to Times Ten 6.0	14	Introduces support for the newest version of the BroadWorks database, improves installation performance using the built-in Times Ten installer in silent mode, and improves database import performance.

Feature	Rel	Description
User Quantities	RC	Enables system providers to set a maximum number of users that a group, or service provider, may have. Service providers also have the ability to place a limit on the number of users in each of their groups.
Using REFER to Initiate Three-Way Conference	13	Extends BroadWorks support of the REFER method so it can be used to initiate a three-way conference.
Virtual Domain Hosting	RC	Enables service providers to configure virtual domain names on a per-enterprise basis. This eliminates the risk of users selecting a user ID that is already being used by another enterprise within the BroadWorks system.
Voice Messaging Performance Enhancements	14	Improves the performance of the BroadWorks voice messaging system by reducing the number of threads used for voice mail retrieval. This feature also introduces new performance counters and gauges for measuring the operation of the voice messaging system, and adds a new alarm and threshold reports when the configured maximum number of threads is too low to service the active requests.
Voice Portal Branding	RC	Enables service providers and/or groups to customize the voice portal entry greeting heard by users who are logging into the voice portal. When both a service provider message and a group message are provisioned, the group message is played.
Voice Portal Enhancement	RC	The voice portals automated prompts and announcements have been enhanced to support the Russian language.
Web Branding	RC	Enables service providers (including resellers) to design their own unique web branding to create a custom look (or "skin") for their respective CommPilot web pages (for example, Personal, Group), including color schemes, corporate logos, banners, and home buttons. Each service provider can also customize headers, screen titles, and the left navigation menu.
Web Conferencing Enhancements	RC	The following OAM enhancements have been made to the Web Conferencing service: ▪ Conference Management – additional call control capabilities for bridge administrators and participants ▪ Accounting – incorporation of conferencing-specific information in the BroadWorks call detail records ▪ Administration – bridge administrators "own" the conferences they create and only view and modify their own conferences. Administrators can designate another bridge administrator as a delegate to view and modify their individual conferences
Web Screen Pop-up	RC	Provides the capability to have a new browser window open up on the user's PC when incoming/outgoing calls are received/placed. The HTTP URL is configurable and would include the following information: user ID, user last name, user first name, group ID, user phone number, and phone number of other party.
Web Server	RC	Enables system providers to use an external web server, instead of a web server co-located on the Application Server. Using an external web server for end-user and group administrator access allows security to be better managed as compared to a single, co-located web server allowing access to all administrators.
Web Server Enhancements	RC	The BroadWorks Web Server has been enhanced as follows: ▪ Web Server Farm Model – the Web Sever has been fully decoupled from the Application Server, thereby allowing the deployment of web server "farms" and providing increased scalability ▪ Web Server Partitioning – Application Server partitioning has been extended to the Web Server, thereby enabling users hosted by different service providers on the same Application Server to use distinct FQDNs to navigate to their web portal

Feature	Rel	Description
Xsp Support of Wildcard and Chain Certificates	16	Configuration and Provisioning: Enhances the Xtended Services Platform (Xsp) and Profile Server command line interface (CLI) by allowing the manipulation of chain file and wildcard certificates

Fault and Performance Management

Feature	Rel	Description
Alarm Suppression and Thresholds by Type	14	Provides the ability to prevent triggered alarms of the specified types from being sent out by SNMP, while continuing to log the alarms and to make them available through the BroadWorks CLI. This feature also provides the ability to set thresholds by alarm type for alarms sent over the SNMP interface. These thresholds limit the number of alarms that can be sent within a given period of time.
Application ID Enhancement	14.sp1	Improves the performance of the Open Client Server (OCS) by adding the Application ID field to all relevant Client Application Protocol (CAP) messages. Adding this field allows the Application Server or a proxy server to uniquely identify the user connection on behalf of which a CAP message is sent.
Audible Alarms on Element Management System	14	Provides the ability for administrators to associate an audio file with each alarm severity level. The EMS plays the configured audio file when it receives an alarm of the selected type.
Call Capture and Trace Utility	RC	Troubleshooting tool that facilitates the extraction of call-related information from log files for the purpose of providing information to the Technical Assistance Center (TAC) for the next level of debugging. The tool can be used to filter information based on a variety of variables, including from/to phone number, IP address, subscriber, time of day range, and so on.
CLI Startup Time Improvement Under Heavy Load	14.sp1	Allows the command line interface (CLI) for the Application Server to be more easily usable when the interface is operating under a heavy load.
Database Performance Management Counters	14.sp1	Adds performance management counters to the database subsystem on the Provisioning Server, Execution Server, Application Server, and Network Server. These counters improve the diagnosis of database problems.
Default-Specific Statistic Reports on the EMS	14	Automates and centralizes SNMP monitoring on the Element Management System. A default set of polling objects are provided, which administrators can add to. Each polling object comprises an SNMP node to monitor, and an interval at which to poll. Administrators can also set thresholds on polling objects, associated with a set of severity levels. When these thresholds are exceeded, alarms of the specified severity level are generated.
Diagnostics	RC	Enables system administrators to diagnose system and network problems, using the following troubleshooting tools: ▪ Protocol monitor tool ▪ Query user tool ▪ Accounting record viewing tool ▪ CallP diagnostics ▪ Connectivity test for access and network devices
Diagnostics Enhancement	RC	The *Query Service Usage Tool* provides the ability to dump a service from a group level and see all users that have that service assigned.

Feature	Rel	Description
Element Management System	RC	The BroadWorks Element Management System (EMS) is an optional server that provides a single point of entry into BroadWorks for the system provider's OAM systems. The EMS provides visibility to all BroadWorks servers for provisioning, network management, and maintenance. The following functionality is provided: ▪ Auto discovery ▪ Administrator and password management ▪ Web cut-through to network elements ▪ Performance management reporting ▪ Alarm consolidation and reporting ▪ Command line interface (CLI) cut-through to network elements
Element Management System Enhancements	RC	The EMS is enhanced to support alarms auto-clearing/correlation, which reduces the manual intervention required for an administrator to clear alarms. This enhancement also improves the meaning of alarm flow received from the BroadWorks servers. The various tools and utilities available from the EMS have also been aligned with the tools and utilities of the other BroadWorks servers. The EMS has been enhanced as follows: ▪ Centralized Software Management – images centralized on EMS; auto download to servers; remote server upgrade; and status reporting ▪ Centralized Management of Administrator Accounts – allows operator to manage the following from the EMS: "bwadmin" account password, administrator password, and SNMP access control lists ▪ Open Client Server (OCS) Support – OCS functionality ported to the EMS
EMS Centralized System Data Pooling	14.sp1	Increases the ability of the EMS administrator to perform continuous monitoring, prevent unexpected failures, and keep the system in a healthy state.
EMS Geographic Redundancy Support	13	Enables the EMS to be deployed in a geographically redundant manner.
EMS Usability Enhancements/Threshold Modifiers	16	Element Management: Enhances the existing Element Management System (EMS) functionality in the performance management area, refining the following items: ▪ Eases maintenance of platform-dependant thresholds. ▪ Allows better encapsulation of health status monitoring from threshold data definitions. ▪ Allows the delegating of the evolution of threshold data definitions (including platform-dependant conditions) to the BroadSoft system engineering group. ▪ Provides EMS administrators with better control for managing health status changes and threshold definitions. ▪ Supports group health status definitions for clusters of more than two Network Servers. It is important to note that this feature applies to all BroadWorks server types managed as network elements by the Element Management System (EMS). It does not apply to the BroadWorks Conferencing Server.

Feature	Rel	Description
External Systems Integration	RC	Integrates BroadWorks servers with the following third-party network management systems: Micromuse Netcool and HP OpenView. These systems collect events and alarms from a variety of components, and provide a user-friendly method of correlating and classifying network issues.
Failed Login Attempts Trap	16	System Management (FCAPS): This feature implements a new trap that triggers whenever a user or administrator reaches the maximum number of failed login attempts and the account is locked out. The notification identifying the user or administrator is sent to the SNMP server so any alarm subscribers are notified about the locked account. The system triggers a Simple Network Management Protocol (SNMP) notification whenever there is a failed Open Client Interface-Provisioning (OCI-P) login attempt and the number of failed login attempts has reached the maximum allowed number of failed login attempts. OCI-P commands that can generate this SNMP notification are the following: ▪ *SessionStartRequest* (Internal to BroadWorks) ▪ *AuthenticationVerifyRequest* ▪ *AuthenticationVerifyRequest14sp8* ▪ *LoginRequest14sp4* ▪ *LoginRequest13mp10* Note that there is already a system trap *bwMaximumFailedLoginAttempts* sent when the total number of login failures for all users in the system exceeds a configurable threshold. This feature adds a different trap to report login failures on a per-user basis and does not remove or replace the *bwMaximumFailedLoginAttempts* trap. This new notification is not sent if the password/passcode rules are configured to never disable the user login.
Integrated Syslog Reporting on EMS	14	Provides the ability for administrators to view in the EMS interface all log messages recorded by syslog services on Solaris and Linux platforms. The EMS reads the syslog data recorded on all BroadWorks server hosts, and converts messages to EMS events. Administrators can configure what log data the EMS should make available, and how it should be mapped to events. Administrators can thereby configure the system to raise an alarm when the EMS discovers a log message of a given type or severity level.
Network Server Location API Failure Alarm	14.sp2	Adds an alarm, which is generated when the *locationAPI* requests fail.
Network Server Location API Performance Monitoring	14.sp2	Adds performance monitoring counters to keep track of requests to the Network Server Location API.
Overload Control Enhancements	14.sp1	Enhances the current overload control algorithm to offer further protection and enhanced performance of the Application Server while under severe load conditions.

Feature	Rel	Description
Overload Debugging Tool for BroadWorks	16	System Management (FCAPS): This feature offers additional tools to debug overload and other performance-type issues. It is often necessary to characterize incoming and outgoing traffic patterns, so a script is provided to parse the BroadWorks debug log files for the following metrics: ▪ Number of incoming and outgoing messages broken down by SIP method ▪ IP address and port ▪ User directory number (DN) ▪ Session identification number High runner items are listed when the script is executed.
Performance Debugging Enhancements	RC	The following performance measurements have been added to help diagnose system performance: ▪ Average and maximum call setup delay ▪ Average and maximum internal cross-office delay ▪ Report system configuration (CPU, memory, swap space, drives) ▪ Memory usage
Performance Monitoring Enhancements	14.sp1	Enhances BroadWorks performance monitoring capabilities by using new performance monitoring tools for the Application Server and Network Server and enhancing the CPUMon performance tool.
Performance Monitoring Tool	14.sp2	Enhances Element Management System (EMS) functionality in the performance management area.
Periodic Measurement Reporting over External Interface	RC	Enables system administrator to configure BroadWorks to send periodic performance reports formatted in XML to one or more external network management systems via FTP.
Service Performance Measurements	RC	Provides a set of relevant measurements for each service, tracked on a system basis. Application Server performance counters can also be provided on a per-enterprise basis.
SNMP Agent Enhancements	14.sp2	Improves the performance and maintainability of all BroadWorks Simple Network Management Protocol (SNMP) agents.
Sun Hardware and Operating System MIB Integration	RC	Integrates the existing fault management MIB with the SUN MIB. This allows an external system to monitor the Sun hardware, operating system and BroadWorks application using the same SNMP access.
Support for Sun CoolThread (Niagara) Processors	14.sp2	Allows for deploying BroadWorks on the new Sun CoolThread hardware technology.
System Fault Management	RC	All BroadWorks hardware component events and alarms can be managed and monitored via SNMP traps. Using standard tools (for example, HP OpenView); all system components within the BroadWorks system can be monitored and managed. A remote BroadWorks generates alarms indicating protocol problems, system fail-over, and so on, which can be monitored on site or via paging systems.

Feature	Rel	Description
System Fault Management Enhancements	RC	The following enhancements have been made to BroadWorks: ▪ Faults Source Address Enhancements – allows traps and faults to be sent out of the BroadWorks administrative interface, instead of the signaling interface, to better interwork with external network management systems ▪ Enhanced Alarm Typing – introduces a new type field in the BroadWorks faults and alarms to facilitate screening and filtering by an external network management system
System Performance Management	RC	System performance can be managed and monitored via SNMP MIBs. All system components within the BroadWorks system can be monitored and managed using get commands. Thresholds on external systems can be set so that BroadWorks is polled and alarms are generated based on targeted operational devices and variables for capacity status and other critical performance measurements. Service providers are also able to use the CLI to query and display reports on performance measurements. Both real time and historical (for example, last day, month, and year) reporting is available, and information can be viewed from the screen or a file. Data polling and archiving intervals can also be configured via the CLI.

Feature	Rel	Description
Xtended Services Interface Phase II - Xsi	14.sp6	Server (Advanced Services): The first phase of the BroadWorks Xtended Services Interface (Xsi) exposed a small set of RESTful web services. Phase II builds on the initial implementation of the Xsi by adding many new services as well as support for services operating on calls and call control data via the newly introduced Open Client Interface-Client (OCI-C) on the BroadWorks Application Server.

Specific Release 14.sp6 Xsi updates include enhancements to the current overload control framework (to include Xsi-specific control available), which are configurable and can be turned on or off as desired.

Service control additions*, such as:

- Anonymous Call Rejection
- Call Forwarding Busy
- Call Transfer
- Calling Line ID (CLID) Blocking
- BroadWorks Anywhere
- CommPilot Express
- Sequential Ringing

Call List additions*, such as:

- Basic Call Logs
- BroadWorks Anywhere Portal

Call Status, such as:

- Retrieve All Calls
- Retrieve Single Call

Call Control Additions, such as:

- Dial
- Hold
- Talk
- Blind Transfer
- Transfer to Voice Mail
- Release

* For a comprehensive listing, see the BroadWorks Xtended Services Interface documentation.

Corresponding updates are made to the Xtended Services Platform (Xsp) to support updates to the Xsi. These updates are covered under feature ID 60316.

Regulatory

Feature	Rel	Description
CALEA – Calling Name to be Provided as Terminal Display in the Network Signal Message	16	Regulatory/Lawful Intercept – CALEA: Currently Lawful Intercept using the T1.678 Call Data Channel (CDC) sends the calling party name to the law enforcement agency (LEA) in the *TerminationAttempt* message on terminating calls when a user is configured as the intercept subject. The Lawful Intercept (LI) specifications provide guidance indicating that this information should be provided in the *NetworkSignal* message within the *TerminalDisplayInfo* parameter. The same applies to intercept subjects originating calls when the called party name is provided. This feature provides the capability to provide the calling party name or the called party name of intercept subjects in the *NetworkSignal* message within the *TerminalDisplayInfo* parameter.
CALEA – Incorrect Answering DN in the ANS MSG When Target Calls	16	Regulatory/Lawful Intercept – CALEA: To comply with Lawful Intercept specification, provide the calling name or the called name of intercept subjects in the NetworkSignal message within the TerminalDisplayInfo parameter.
Calling Line Identity and Connected Line Presentation Enhancements	16	Regulatory/Lawful Intercept – CALEA: Enhances BroadWorks Calling Line Identity (CLID) and Connected Line Identity Presentation (COLP) capabilities by adding further proprietary information in the SIP messages sent on the SIP network interface. CLID Enhancements – This feature enhances this functionality so that identity information from the redirect destination is passed back to the remote party even when the Connected Line Identification Privacy on Redirected Calls policy is in effect. This allows the redirect destination's identity information to be available for Call Processing services in both internal (including Distributed Group Calls [DGC]) and DNC scenarios when the Connected Line Identification Privacy on Redirected Calls policy is in use. COLP Enhancements – This feature enhances this functionality so that COLP/Connected Line Identification Restriction (COLR) information is now sent to and received from the Network in SIP Re-INVITE/UPDATE requests and their 200 OK responses for both DGC and DNC connections. With this enhancement, the BroadWorks Application Server can now report and process remote party changes for any DGC or DNC connection.
Configurable CLID in CDR Charging Enhancements	16	Regulatory/Lawful Intercept – CALEA: Currently, for users who have configurable CLID and calling line ID policy set to "use Configurable CLID", network calls made by the users do not have the user's phone number in the INVITE message. Rather, the INVITE message has the configurable CLID in the *FROM* and *P-ASSERTED-IDENTITY*. Also, BroadWorks Application Server currently generates CDR records with the user's phone number only and no configurable CLID. This creates an issue where the CDR generated in the BroadWorks Application Server uses the user's phone number as the originator ID and the public switched telephone network (PSTN) has to use the configurable CLID as the originator ID. As such, a correlation cannot be made using an originating calling number between the two CDR records. This enhancement takes two approaches to solve this issue: ▪ Introduction of the *P-CHARGE-INFO* header in the SIP INVITE message to deliver a charge number. Currently the only option is to use the BroadSoft proprietary *CHARGE* header, which is not understood by all SIP devices. The charge number can be configured to be the user's phone number. As such, BroadWorks delivers the originating phone number to the PSTN side. ▪ The CDR is updated to have the configurable CLID when one is configured. The introduction of these two approaches enables the service provider to match CDR records based on the user's phone number and/or the configurable CLID.

Feature	Rel	Description
DN-based Surveillance Enhancements	14.sp1	Removes the Lawful Intercept surveillance from a user when the primary number of this user is changed.
IP and UDP Headers Transmission to LEA Collection Function	14.sp2	Provides T1.678 support on the Media Server.
Lawful Intercept	RC	Enables the following necessary functions for lawful intercept (for example, CALEA event monitoring): ▪ Administration – enables a system provider or law agency to assign and configure surveillances against particular users. Up to five surveillances can be assigned to one user ▪ Event Monitoring – generates call events for users under surveillance and delivers to the law agencies requesting the surveillance ▪ Media Monitoring – mixes the media of all parties of a call under surveillance and delivers to the corresponding law agencies based on the delivery IP address BroadWorks can be customized to provide a compliant solution in countries that adhere to the European Telecommunications Standards Institute (ETSI) standard. Although BroadWorks itself is not Lawful Intercept ETSI-compliant, it can be deployed in conjunction with a mediation platform to provide an ETSI-compliant solution.
Lawful Intercept Enhancements	RC	The following capabilities have been added to the Lawful Intercept interface: ▪ Subject-Initiated Dialing and Signaling – enhances service to report signals initiated by the user. For example, a message is sent to the law enforcement agency when a user flashes to toggle between two calls ▪ Dialed Digit Extraction – enhances service to report digits dialed by user after call is connected Lawful Intercept interface has been enhanced with the following: ▪ Party Hold/Drop/Join – support of party hold/join/drop punch-list item enhanced to notify the law enforcement agency (LEA) of the parties involved in a subject-initiated conference call ▪ In-Band and Out-of-Band Signaling – support of in-band and out-of-band signaling punch-list item; informs LEA when a network message with call-identifying information (for example, busy, reorder, ringing, alerting, call waiting) is sent to a subject using the facilities under surveillance ▪ Address Registration/Deregistration Events – ServingSystem message introduced to report changes or attempted changes in the intercept subject's addressing information for personal mobility (for example, registration or deregistration) ▪ T1.678 Standard Compliance – documented compliance with the T1.678 lawful intercept standard
Lawful Intercept Enhancements	14	Enhances the BroadWorks Lawful Intercept service to comply with the European Telecommunications Standards Institute (ETSI) lawful intercept regulation and the Security and Integrity section of draft standard ANSI T1.678 v2. A new type of Call Content Link (CCLink) is introduced that includes correlation information in the Call Content Channel (CCC) that allows a law enforcement agency to correlate a CCC stream to a Call Data Channel stream in compliance with ETSI regulations. In addition, an optional calling line ID (CLID) can be configured for CCLinks. This satisfies the requirement of the ANSI T1.678.v2 specification that the signaling messages that establish the link between the Delivery and Collection Functions should not contain information identifying the intercept subject.

Feature	Rel	Description
Lawful Intercept Enhancements for Intra-site Calls	13	For Lawful Intercept, this feature provides the option to disables media intercept for calls for which both parties are collocated (on the same site).
Lawful Interception for Network Numbers (previously known as Russian LI Phase Two)	14.sp7	Phase one of Russian Lawful Interception, delivered in BroadWorks Release 14.sp5 added additional fields in the call data channel (CDC) making BroadWorks Lawful Intercept (LI) compatible with Russian Lawful Intercept, also known as SORM. Lawful Interception for Network Numbers augments the existing feature by adding the ability to monitor calls to and from public switched telephone network (PSTN) numbers (that is, non-BroadWorks users), monitor calls to and from a range of PSTN numbers, and monitor calls to and from network gateway addresses.
Malicious Call Trace	RC	Allows a system provider to trace any call terminating to a user that has been assigned this service. Incoming calls trigger the generation of a report (or trace) that is delivered to the system provider in an SNMP trap. The report contains information about the calling party (number and name), the time and date that the call was received and other relevant information (for example, redirection information).
Mixed Media for CALEA Phase One – J-STD-0125A (using VXML)	14.sp7	North American Lawful Interface specifications define two options for call content (audio) delivery. One option is to provide separate transmit and receive call content channels (CCC) when delivering intercepted content to a law enforcement agency. It is this option that is currently supported by BroadWorks. This works for law enforcement agencies that support dual CCCs; however, some law enforcement agencies only support the combined method of delivery. This feature enhances BroadWorks Communication Assistance for the Law Enforcement Act (CALEA) feature to support the second defined option of delivery. It combines the transmit and receive content (audio) on a single CCC. This feature is implemented in two phases: ▪ Phase one, to be delivered as part of BroadWorks Release 14.sp7, uses voice eXtensible markup language (VMXL)-based technology to combine the transmit and receive audio streams into a single CCC. ▪ Phase two is scheduled to be delivered in BroadWorks Release 14.sp9, which is targeted to be available in early January 2009. The Release 14.sp9 implementation will update the core BroadWorks CALEA function, taking the place of the VXML solution delivered as part of BroadWorks Release 14.sp7. BroadWorks will continue to support the delivery of transmit and receive audio on separate CCCs.
Mixed Media for Lawful Intercept Callout Function	14.sp9	Lawful Intercept interface specifications in North America define two options for call content (audio) delivery: ▪ The first option provides separate transmit and receive call content channels (CCC) when delivering intercepted audio content to the appointed law enforcement agency. ▪ The second option combines the transmitted and received audio content on a single CCC. While BroadWorks currently provides the first option, delivering audio content on separate CCCs is problematic for law enforcement agencies that only support combined CCC delivery. This feature augments BroadWorks Lawful Intercept capability allowing the delivery of audio content on a single CCC. It is important to note that BroadWorks still supports content delivery on separate transmit and receive CCCs.
NENA i2 Compliance	14	Introduces modifications to the To and From headers to meet National Emergency Number Association (NENA) standards for 911 calls.

Feature	Rel	Description
Removal of Repeater Messages from XS Logs	16	Regulatory/Lawful Intercept – CALEA: LI events and messages appear on the Execution Server, Media Server, and Network Server logs, which are used for internal purposes. This exposes the number of the intercepted person. This feature removes the events and messages for LI occurrences only.
Russian Lawful Intercept Enhancements	16	Regulatory/Lawful Intercept – CALEA: This enhancement to the current implementation of Russian Lawful Intercept provides additional information to the LEA for distributed multi-party calls invoking certain supplementary services. The additional information includes: ▪ Identity enhancements ▪ Redirection enhancements ▪ Conference enhancements These identity enhancements apply to all LI interfaces (BroadWorks, J-STD-025-A, and T1.678). The supplementary services affected by this enhancement include: ▪ Call Forwarding ▪ Chain Call Forwarding (multiple forward actions) ▪ Call Waiting ▪ Three-party Conference ▪ Call Transfer with Consultation ▪ Call Hold (including Call Switching using the *22 FAC) ▪ Call Transfer ▪ Call Pickup
Russian Regulatory Requirements for Calling Party Category (CPC)/Configurable Calling Party Category Values	16	Regulatory/Lawful Intercept – CALEA: This feature adds the ability to configure caller information that can be passed to outside networks. BroadWorks currently supports the Calling Party Category service; however, the category values are predefined and cannot be edited by the system administrator. This feature allows the system administrator: ▪ To configure the calling party category values relevant to the networks they are connecting to. ▪ To meet regulatory requirements for passing this information to outside networks. In some countries this is a regulatory requirement used to identify the carrier of choice for the end user (similar to equal access in the United States). The category assigned to the user maps to an inter-city or international carrier that is then selected for routing outside the BroadWorks system.
Russian Requirements for Lawful Interception (Phase One)	14.sp5	Russian Lawful Interception (LI) Phase One adds additional fields in the call data channel (CDC) making the BroadWorks LI compatible with Russian Lawful Intercept, also known as SORM. Specifically, it adds more fields in the CDC for Redirection, Transfer, and Three-Way/N-Way calling events.

Feature	Rel	Description
Single LI Media Stream for Callout ETSI Function	16	Regulatory/Lawful Intercept – CALEA: Lawful intercept (LI) interface specifications define two options for providing media streams toward the Law Enforcement Agency (LEA): ▪ The first option provides separate transmit and receive call content channels (CCC) when delivering intercepted audio content to the appointed law enforcement agency. However, some LEA equipment does not support separate CCCs. ▪ The second option combines the transmitted and received media content on a single CCC from all participants. This approach is known as the "Combined CCC". This feature augments BroadWorks Lawful Intercept capability to support Combined CCC for the CalloutETSI function. It is important to note that BroadWorks still supports content delivery on separate transmit and receive CCCs.
Support for T1.678v2	14.sp1	Enhances BroadWorks Lawful Intercept functionality to support the T1.678, Version 2 specification, which is the most recent standard for VoIP lawful intercept.
Symmetric RTP Support on Lawful Intercept and Media Server Repeaters	14.sp1	Adds symmetric real-time transport protocol (RTP) support to the Media Server repeaters to facilitate network address translation (NAT) traversal and minimize interoperability issues by providing symmetric RTP support for services such as Voice Portal Calling, Push To Talk, Group Calling, and Lawful Intercept.

Service Creation

Feature	Rel	Description
Service Scripts	RC	Supports the addition of custom enhancements to the BroadWorks feature set such as enhanced call routing, screening, or notification services. Scripts are written in the call processing language (CPL) and are uploaded by BroadWorks via the CommPilot web portal. The feature is authorized and assigned like all other services.

Feature	Rel	Description
Web-based/Web Services-based Receptionist and Call Center Client Applications	16	Portals and Clients: This activity moves the deployment of the BroadWorks Receptionist and BroadWorks Call Center client applications from a desktop-based install to a BroadWorks server-hosted install.

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These client applications are currently deployed to end users as a desktop-based installation executable. This feature moves the deployment and launch of these applications into the network by hosting them within BroadWorks and moving them to a software package as a Service (SaaS) model.

Additionally, this activity introduces the concept of localization/customization bundles. These bundles can be associated with a service provider/group within BroadWorks, and applied to clients when launched by users within the subscriber hierarchy.

In this new model, the application is not installed on the user's desktop. Rather, the application is downloaded on demand from BroadWorks and then executed locally on a PC.

The SaaS model offers customers many benefits such as:

- Zero install/browser-style cache: No formal installation process.
- Support and maintenance: Diagnosis and centralized patching
- Deployment: Centralized administration and self-upgrading
- Release alignment: Clients fully integrated with BroadWorks platform
- Customization: Subscriber hierarchy profiles and dynamic packaging
- Cross-platform support: Windows and Mac support (Only Windows support is offered in BroadWorks Release 16.0).

System

Networking

Feature	Rel	Description
Allow Config-Network Script to Bind to Any Given Interface	14	Modifies the BroadWorks network configuration script to support servers with any number of network interfaces.
Call Type Query Handling	16	Platform and System Enhancements: Provides basic pre-call translation to a mobile softswitch through a Session Initiation Protocol (SIP) INFO request with a Require options tag of *broadworkscalltypequery*. This allows the customer to determine a subsequent INVITE for a call with the same information as that in the INFO request, which should be routed to BroadWorks or another network switch using the contact information as a guide.
EMS – Centralized Patching Management	14.sp7	System: Provides centralized patching management to better integrate BroadWorks patches from the BroadSoft distribution portal, Boulevard, and the BroadWorks servers at customer sites. The aim is to allow BroadSoft customers to more easily manage their BroadWorks network elements (NEs) while providing proactive notification on the availability of critical fixes. The approach is to provide a Boulevard type of interface to operators from the BroadWorks Element Management System (EMS) where operators are provided with an integrated and centralized view between what is available on Boulevard and the patches already installed on the different nodes.
High Availability Geographic Redundancy	RC	Provides a solution for automatic geographic redundancy using redundant Application Server pairs. Load sharing of users across servers is supported, so that each server can back up the other in the event of a failure. Servers can be collocated or placed in separate locations in the network. The Network Server reflects the actual location of the user at any given point in time.
Managed Object Monitoring	RC	Enables operators to monitor the administrative state of all managed objects from the CLI and, when available, to control their administrative state. The administration of managed objects can be used to facilitate the installation of new software on BroadWorks servers from remote systems.
Network Device Access Control Lists	RC	Enables system providers to provision a discrete list of IP addresses via the CLI from which BroadWorks can accept network device originations.
Network Traffic Security	RC	Enables system providers to separate their private access-side traffic from the public network-side traffic by assigning two IP addresses on their Application Server(s) and Media Servers, thereby improving network connectivity and security.
Network Translation Verification Enhancements	14	Introduces a new utility to the BroadWorks Network Server CLI command, *vtri*, which takes a session initiation protocol (SIP) message as a parameter (specified as a file name or directly on the command line) and verifies its network translation.
No-charge Announcements	RC	Allows for selected error treatments to be provided without incurring charges to the calling party.
Open Client Server OCI Security Enhancements	14.sp4	System and OAM: The feature introduces the capability to define login levels on the Open Client Server permitted to establish OCI sessions on the Application Server.

Feature	Rel	Description
Save P-Access-Network-Info (PANI) in CDR	14.sp6	Platform and System Enhancements: Prior to the implementation of this feature, if the P-Access-Network-Info (PANI) header were present in an initial INVITE for a BroadWorks user origination, then the Application Server would capture the contents of the PANI in the accessNetworkInfo field of the originating call detail record (CDR). The Application Server proxies the PANI header in an initial INVITE request and an 18x/200 OK response to a trusted device. With the addition of this feature to BroadWorks, the Application Server captures the contents of the PANI in the accessNetworkInfo field of the terminating CDR if the PANI header is present in the 18x/200 OK response for the initial INVITE.
Service Provider Custom Routing Profile	14	Allows each service provider to have its own custom routing profile on the Network Server, as is the case with enterprises.
Stand-alone OCS	14.sp1	Selectively disables Apache/Tomcat on the Web Server/Open Client Server (OCS) for customers who want a standalone OCS server.
Support for P-CHARGE-INFO Header	16	Business Connectivity Enhancements: This feature implements support as defined in *draft-york-sipping-p-charge-info-01*. It allows the use of the *P-CHARGE-INFO* header in place of the *CHARGE* header. ▪ The *P-CHARGE-INFO* header passes the subscriber charge number in an outgoing INVITE to a routing network element (such as a softswitch). ▪ The *P-CHARGE-INFO* header is a system-wide option, which is set to "CHARGE" as the default so as to retain the current behavior for Charge Number service. There is no change in the support for the *CHARGE* header.

Protocols and Interoperability

Feature	Rel	Description
BCCT Replaces RMI for Web Server to Application Server Provisioning Server Communication	14	Reuses existing frameworks, eliminates potential performance problems inherent in the use of RMI, and offers a more adaptable and lightweight communication layer capable of handling network link failures and necessary reconnections gracefully and quickly.
BCCT Reverse Lookup Removal	14.sp2	Enhances the performance of the BroadSoft Common Communication Transport (BCCT) software.

Feature	Rel	Description
BroadWorks Digit Collection Access/Network Device Profile Option	16	Business Telephony: The time division multiplexing (TDM) overlay access device option was introduced in Release 14.sp3 as part of feature EV 48439 In-Call Service Activation (ICSA). The ICSA implementation uses this option to determine whether it needs to initiate Media Server relay and interactive voice response (IVR) sessions to extract digits from the media stream provided by the user's device. There is no equivalent option defined for the network-signaling profile, that is, there is no equivalent SIP interface parameter. For calls extended to BroadWorks Anywhere locations, the TDM Overlay option is always enabled and there is no option to turn it off. This creates issues for deployments that do not require BroadWorks digit detection, that is, when the network gateway sends digits in INFO requests. As a result, Media Server relay and IVR sessions are not required. To remedy this issue, this feature introduces the following changes: ▪ The access device option is renamed to "*Requires BroadWorks Digit Collection*". ▪ The SIP interface system parameter *requires BroadWorksDigitCollection* is added. The BroadWorks Anywhere service is modified to honor the new SIP interface system parameter.
Call Center State Synchronization with the Device	14.sp3	Call Center: Enhances the interoperability between BroadWorks and the access device by synchronizing the following Call Center Automatic Call Distribution (ACD) states between BroadWorks and the device: ▪ Sign in ▪ Sign out ▪ Available ▪ Unavailable ▪ Wrap up The user's web portal also has an option for these ACD states with appropriate licensing.
Call Client Hold Integration	RC	BroadWorks can detect call holds initiated by IP phones and other intelligent devices, which enables the CommPilot Call Manager to show the hold condition.
Call Control XML	14.sp2	Enhances the Media Server by making it compliant with the CCXML 1.0 draft specification dated June 2005 and with certain elements of the January 2007 draft.
Call Manager Enhancements	14.sp3	Advanced Services: Enhances the BroadWorks Call Manager by expanding its browser support.
Call State Control Function Integration	RC	Enables integration with a Third-Generation Partnership Project (3GPP) Call Session Control Function (CSCF). In the 3GPP architecture, the BroadWorks Application Server is just providing support of service applications. The CSCF fronts the CPE and proxies originations/terminations to the Application Server based on profile settings of the subscriber in the CSCF.
CAP Access Control List (ACL) Consistency in Command Line Interface	14	Removes the CAP access control list parameter userAuthRequired, formerly used to support the Call Manager using web sessions as authorization. With the extension of the external authentication mechanism to the OCS, this parameter is no longer required, and is removed to prevent confusion.

Feature	Rel	Description
Configurable Tone Upon Disconnect	RC	Provides a configurable "off-hook" timer for MGCP devices. The timer is started when the phone goes off-hook or is in a half-released sate. When the timer expires, a configurable tone is played.
Cr Reference Point: msc-ivr Package	16	Media Resources: The Cr reference point defined by 3GPP formalizes the protocol between an Application Server and a Media Server/Media Resource Function. The Cr reference point currently provides IVR and Conferencing services; however, it can be extended to provide other services, for example Fax service.
		This feature implements the Cr reference point on the BroadWorks Media Server for IVR services. Two new protocols are supported with this activity:
		▪ CFW, which is carried on top of Transmission Control Protocol (TCP). It provides the basic primitives required to exchange capabilities and commands between SIP entities. *RFC 4145* negotiation is used to set up and establish the MediaCtrl control channel.
		▪ msc-ivr/1.0, which provides the means to define and control IVR dialogs. Commands from msc-ivr/1.0 are carried over in a CFW control channel.
		These two protocols form the control channel used to manage the experience of SIP media dialogs.
Decoupled Protocol Interfaces	RC	Completely decouples the signaling interfaces (SIP and MGCP) from other BroadWorks interfaces.
Device Management TFTP Support	16	System: Enhances the BroadWorks Device Management functionality to support CISCO Skinny Client Control Protocol (SCCP) devices.
		This feature:
		▪ Adds the support of the Trivial File Transfer Protocol (TFTP) on the Xtended Services Platform.
		▪ Introduces dynamic tags required for the SCCP devices on the BroadWorks Application Server.
		Improves the device file Application Server location lookup on the Xtended Services Platform and Network Server.
Device Management: FTP through a Load Balancer	16	Device Management: This feature adds a new configuration parameter to control File Transfer Protocol (FTP) remote verification. The value of the parameter allows the administrator to disable the verification done at the IP level. By disabling FTP remote verification, data connections to different IP addresses are allowed. This is useful for scenarios where the original control connection goes through a load balancer that does not rewrite FTP commands.
Enable Network Server Dip in IMS Mode	14.sp3	System: Allows for leveraging the BroadWorks Network Server translation and routing capabilities within an IMS architecture.
External Authentication on OCS for Third-Party Clients using Web Authentication Server	14	Extends external authentication support to the Open Client Interface based on an external authentication authority. The OCS acts as an intermediate that can send a request to an external source to map customers' user IDs and passwords to BroadWorks' user IDs and passwords prior to performing the login to the target BroadWorks Application Server.
External Authentication on OCS through ACL	14	Allows external authentication for third-party clients through the Open Client Server using an access control list (ACL). The ACL can be configured with a set of trusted sources, from which a password is not required along with the registration request. The Application Server already supports external authentication through the use of a similar ACL; therefore, the address of the OCS must be added to the Application Server ACL for registration requests to be completed through the OCS.

Feature	Rel	Description
External Custom Ringback	14.sp3	Advanced Services: Provides custom ring-back through an external custom ring-back Media Server and content management system.
G.729 Codec Support	RC	Support for the G.729 codec is available on the Media Server for conferencing and IVR functions.
HTTPS for Communication between Access Server and Endpoint	14.sp2	Ensures the security of the information being transmitted between endpoints and the Access Server.
IMS ISC Interoperability Enhancements	14.sp2	Enhances the IP Multimedia Subsystem (IMS) Service Control (ISC) interface on the Application Server by providing additional interoperability with Serving - Call Session Control Function (S-CSCF) partners.
IMS ISC Interoperability Enhancements	14.sp1	Enhances the IP Multimedia Subsystem/IMS Service Control (IMS ISC) interface on the Application Server to provide additional interoperability with Serving-Call Session Control Function (S-CSCF) partners.
IMS ISC Interoperability Enhancements	14.sp7	Platform and System Enhancements: Enhances the BroadWorks Internet Protocol Multimedia Subsystem (IMS) Service Control (ISC) interface. This feature provides a configuration option to determine whether an Out-of-the-Blue (OOTB) request is generated for account/authorization code calls or whether the received route is reused for account/authorization code calls.
In-Call Service Activation	14.sp3	Advanced Services: Allows BroadWorks users hosted on a TDM switch to activate mid-call services using DTMF digits. This service complements the Two-Stage Dialing service to provide full service support to users in a TDM Overlay architecture.
INFO DTMF Enhancement	14.sp6	Platform and System Enhancements: This feature enhances the Session Initiation Protocol (SIP) proxy behavior of the Application Server by: • Transparently passing the Accept and Allow header when conveying the value "dtmf-relay". • Only applying the transparency behavior to the initial INVITE request and its responses (18x and 200). The transparency behavior only applies to end-to-end call scenarios (for example, a SIP INVITE request is received from an access or network device and a corresponding SIP INVITE request is sent out directly to the terminating access or network device).
LCS Call Control Integration	14	Supports uaCSTA (Computer Supported Telecommunications Applications for SIP Phone User Agents) and CAP interworking by providing a CAP extTrackingId in the first CAP callUpdate message when a click-to-dial is performed. The CAP extTrackingId in the callUpdate can be used to correlate all subsequent messages associated with the call.
LSSGR Line-side Compliance	RC	The MGCP line-side call processing code is enhanced to ensure that all functions comply with the guidelines set forth by the LSSGR. Functions to check include off-hook warning, disconnect timing, hook state filtering, and tone generation.

Feature	Rel	Description
Media Server IPv6 Support	16	Media Resources: Enhances the BroadWorks Media Server to support Internet Protocol Version 6-based (IPv6) Session Initiation Protocol/Session Description Protocol (SIP/SDP) signaling for both User Datagram Protocol (UDP) and TCP transports between the BroadWorks Application Server and the BroadWorks Media Server.
		The feature also supports the corresponding media over IPv6. In addition, the BroadWorks Media Server supports associated Hypertext Transfer Protocol (HTTP) media file transfer over IPv6 and associated sendmail over IPv6.
		IPv6 support applies to the following types of SIP sessions:
		▪ Announcement
		▪ Voice XML/Call Control XML (CCXML)
		▪ Media Server Control Markup Language (MSCML) IVR
		▪ MSCML Fax
		▪ Repeater
		NOTE: The BroadWorks Media Server supports IPv6 SIP signaling for MSCML repeater sessions. However, all repeaters and associated listeners within a SIP repeater session must be of the same address type.
		Enabling IPv6 support does not preclude calls conducted in IPv4. Calls conducted in IPv6 and calls conducted in IPv4 can coexist.
		For more information regarding IPv6 support on the BroadWorks Media Server, see the *Media Server IPv6 Support Feature Description* (available from BroadSoft upon request).
MGCP DTMF Generation	14.sp4	System and OAM: Extends the MGCP interface to support out of band dual-tone multi-frequency (DTMF) tone generation for specific Media Gateway Control Protocol (MGCP) devices.
MGCP DTMF Handling Enhancements	14.sp6	Platform and System Enhancements: This feature changes the behavior of dual-tone multi-frequency (DTMF) collection for D-Link 102 devices. For these devices, DTMF collection is out-of-band. BroadWorks requests notification of digit detection by the integrated access device (IAD) during normal call signaling. Once BroadWorks receives an NTFY for the detected digit, it proxies the information out-of-band to the remote endpoint.
		Out-of-band DTMF detection and handling is active during normal call processing and second call origination. For second call origination, the Media Server still provides dial tone; however, it receives each detected digit out-of-band in a SIP INFO message. All SIP INFO commands resulting from DTMF detection are encapsulated in a SIP message with dtmf-relay as the content type.
		Any negative responses to an INFO request or any other errors resulting from proxying a DTMF NTFY message from a D-Link 102 endpoint are not reported to the endpoint.
MRCP Interface (ASR/TTS)	14.sp2	Adds a Media Resource Control Protocol (MRCP) interface on the BroadWorks Media Server and a Media Resource Function to allow for the creation of advanced VoiceXML-based services that make use of external Automatic Speech Recognition (ASR) and Text-to-Speech (TTS) servers.

Feature	Rel	Description
Multimedia Call Processing Policy Support for Message Media Type	16	Protocols: This feature allows the creation of custom media types in the CLI for Media Call Processing policies. The feature specifically introduces a custom media type, *message*, to control use of the Message Session Relay Protocol (MSRP) codec (for Multimedia Telephony Service/MMTel session-based instant messaging and presence). Currently there are three media types: ▪ Audio ▪ Video ▪ Image This feature allows the addition of any number of unique media types with which any codec can be associated. The operator can create a custom media type or use a preprovisioned custom type called *message* associated with the MSRP codec. The operator can then use the new media type to control media use through Call Processing policies as can currently be done with the other supported media types.
Multiple Codec Support	RC	Enables service providers to choose from multiple codecs that are supported on the BroadWorks Media Servers. Service providers can opt for lower bit-rate codecs to increase the number of simultaneous calls that can be provided on an access link to end users.
NCS 1.0 Support	14	Adds support for PacketCable's NCS 1.5 specification for MGCP, through the introduction of a new device protocol associated with the new protocol header, new protocol options to characterize the protocol, and a new generic device supporting the protocol.
Network Server Support of *RFC 3966* - Phone-context Support Enhancements	14.sp3	System: Introduces support for *RFC 3966* on the Network Server, which requires that if the phone-context is present in the Request-URI, the SIP URI should not be prepended with the country code, and the phone-context is to be proxied back out to the Call Session Control Function (CSCF).
Network-side Video Offering Policy	14.sp1	Allows the resolution of potential interoperability issues with devices not tolerant of video offers in the Session Description Protocol (SDP) by preventing the sending of video towards the network.
OCI Directory Number Usage Reporting	14	Introduces a new OCI command, getDirectoryNumberUsage, which returns the status of a phone number.
OCI Reporting Enhancements	14	Introduces a queue of undeliverable OCI reporting messages, which are processed in order when the remote OCI reporting endpoint becomes available again for message traffic. Also provides administrators with the ability to restrict the OCI reporting messages sent by each server host, depending on the provisioning actions performed.
OCI Use on Execution Server	14	Enhances the Application Server execution server to use OCI commands to carry out provisioning tasks generated by the Voice Portal and Feature Activation Code dialing. This offers consistency with other provisioning tasks for ease of administration and consistent reporting and logging of provisioning actions.
OCI-C Interface	14.sp6	Adds the Open Client Interface – Call Control (OCI-C) interface to the BroadWorks Execution Server. The OCI-C interface exposes call control functions for use by applications such as the Xtended Service Interface (Xsi).
Optional BYE on Session Audit Failures and Session Timer Support	14.sp3	System: Enhances the Session Audit service by adding a configuration option to tear down both calls when the audit fails and an option to keep the existing functionality so as not to tear down the remote call.
OSS Interface Deprecation	14.sp2	Removes the operations support system (OSS) interface from the BroadWorks Application Server.

Feature	Rel	Description
Polarity Line Inversion (Reverse Polarity) for NCS Users/ XAL Package	14.sp8	Protocols: Provides two new Media Gateway Control Protocol (MGCP)/Network Control Protocol (NCS) device profiles, the Motorola SBV5220 Payphone and Arris TM402/TM502 NCS Payphone. It provides support for polarity line inversion on the device for originating calls. Upon answer, the customer premises equipment (CPE) is signaled to release coins into a pay phone coin box. Polarity inversion is controlled by requesting that the endpoint play the signal "rev" with parameter "+" to enable, or "-" to disable. Once BroadWorks applies polarity inversion, it remains enabled until the call ends. Polarity inversion is not enabled on a call that is not answered. Note that the application of treatment or early media by BroadWorks does not constitute an answered call.
Portal API on HTTP	14	Introduces an HTTP-based API to replace the previous XML interfaces over CORBA. This new interface offers the same functionality as the existing NSPORTAL XML interface over CORBA, but also makes the Application Server use the new HTTP-based NSPORTAL interface for portal queries to the Network Server, and introduces a portal access control list (ACL) on the Network Server to prevent unauthorized access. The CORBA XML interfaces continue to be supported in this release, but will be deprecated in upcoming releases.

Feature	Rel	Description
Preinstallation Validation Tool	16	System: Introduces a new preupgrade validation tool to assist with BroadWorks system upgrades. This tool is: ▪ Operating system (OS) independent ▪ Downloadable from Xchange with the BroadWorks software release There is one version of the preupgrade validation tool per major release of BroadWorks (for example, one for Release 14.0, one for Release 15.0, and so on). The tool's file, *bw-preUpgradeValidation.bin,* is a self-extractable command that runs all of the validation rules of the BroadWorks installer. The tool is self-extracted in the directory it is executed from and only performs validation. It is important to note that it is recommended to always download and use the latest version of this tool.
Provisioning Interface Support for EntSubLocation Private Policy	14	Enables the provisioning and configuration of policy instances for the EntSubLocation Enterprise Routing policy through the Network Server OSS interface. For that purpose, the document type definition (DTD) for the Network Server OSS XML requests and responses is expanded, and a number of OSS commands enhanced.
Proxy MSRN using P-Called-Party-ID (PCPI)	14.sp6	Platform and System Enhancements: Prior to the implementation of this feature, the Application Server proxied the Proxy MSRN using P-Called-Party-ID (PCPI) header in an initial INVITE request only in Internet Protocol (IP) Multimedia Subsystem (IMS) deployments. With the addition of this feature, the following behaviors apply: ▪ BroadWorks User Termination – The Application Server proxies the PCPI header in an initial INVITE in non-IMS deployments if the destination is the user's primary location. It is important to note that it does not proxy the PCPI header to the user's secondary or alternate locations. ▪ BroadWorks User Origination – The Application Server proxies the PCPI header in an initial INVITE in non-IMS deployments.
SIP Client Auto-provisioning	14.sp2	Adds configuration data to the BroadWorks Application Server to facilitate the simplified and automated provisioning of SIP desktop clients including the BroadWorks Communicator.

Feature	Rel	Description
SIP Enhancements	RC	BroadWorks SIP interface is enhanced to support new drafts, RFCs, and standards that enable new capabilities on access devices, network devices, and partner platforms. Enhancements include: ▪ *RFC 3311* support ▪ Reject calls with un-decodable SDP ▪ Enhanced hold handling ▪ Registration time extension ▪ Reliable provisional response ▪ SDP management BroadWorks SIP interface is enhanced to support new applications, to better interwork with network and access devices, and to comply with the most recent standards. Enhancements include: ▪ Proxy after answer INFO messages ▪ Application Server to check diversion header ▪ Symmetrical signaling ▪ Invite without SDP
SIP Enhancements	14	BroadWorks SIP interface is enhanced to support new applications, to better interwork with network and access devices, and to comply with the most recent standards. Enhancements include: ▪ IMS ISC Enhancements – enhances the way the Application Server interacts with an S-CSCF in an IMS deployment using the ISC interface ▪ Media Server SIP Enhancements – enhances the Media Server SIP stack to comply with IMS specifications TS 23.002 and TS 24.229 ▪ P-Charging Vector Enhancements – provides the ability to add new BroadWorks proprietary parameters to the P-Charging-Vector to assist BroadSoft IMS partners ▪ IMS Sh Interface – provides an interface between an IP Multimedia Subsystem (IMS) Application Server and a third-party IMS Home Subscriber Server (HSS) ▪ SIP Registration (Minimum Registration Time) – allows administrators to specify a minimum SIP registration period for the system. Registrations whose expiration is less than the configured minimum value are denied ▪ SIP TCP Enhancements – introduces a number of enhancements to improve SIP TCP socket management. SIP TCP connections are closed based upon expirations and reaching the maximum number of connections. Connections are also closed and prevented upon server state changes ▪ Support Offer Answer and Early Media (UPDATE Compliance) – modifies the BroadWorks call model and SIP interface to improve media services, scenarios that involve early media changes, and media clipping issues

Feature	Rel	Description
SIP Enhancements	16	Protocols: Enhances the forking proxy support on the BroadWorks Application Server. The enhancement allows multiple early dialogs for an INVITE to simultaneously exist according to *RFC 3261*. This allows the BroadWorks Application Server to support proxies (or proxy simulators) that perform forking services such as Simultaneous Ringing upon an INVITE sent by the Application Server. It is important to note that this feature does not add support of receiving such requests (multiple INVITE, SUBSCRIBE, and so on) from forking proxies.
SIP Interface Enhancements	14.sp2	Enhances the SIP interface configurable parameters.
SIP Interface on Media Server	RC	SIP introduced as the protocol between the Application Server and Media Server. Thus, the standard, open interface enables the support of third-party media servers.
SIP Protocol Support	RC	Provides the following capabilities for the SIP protocol stack: ▪ Network Route Reliability – used to ensure signaling paths between network devices. A keep-alive mechanism is provided for network device connections. Each connection has a state, reflecting the current connectivity status. This connectivity state is checked before routing a call to the associated network device. The route timeout process is tightened to ensure rapid rerouting in case of a network device outage or unavailability ▪ Privacy Drafts – used to properly pass calling line identity information over SIP ▪ Authentication – securely authenticate identities of end users
SIP Proxy Header Policies	16	Protocols: Enhances BroadWorks to allow unknown or unprocessed headers to be proxied through based on system-level policies. When the BroadWorks Application Server receives a SIP request or response that includes headers that have no semantic meaning for local services on the platform, BroadWorks applies a new system-level policy called *SIP Header Transparency* to determine whether the header should be proxied through to the remote party/parties or dropped. This allows operators to have greater control over which unknown headers are allowed to be proxied and how they are affected by service interactions. Headers *require* and *supported* contain option tags. Option tags that have no semantic meaning for local services on the BroadWorks platform may also be proxied using a mechanism similar to unknown SIP headers.
SIP Proxying Capabilities	14.sp1	Allows BroadWorks to proxy SIP messages to support QSIG tunneling and INFO messages.
SIP T.38 Support	RC	T.38 is a protocol for relaying facsimile transmissions over IP. SIP carries T.38 set-up information within the SDP. Changes are made to relay the set-up information from the originating end point to the terminating end point, and vice versa. Devices supporting T.38 are validated and tested.
SIP/TCP Support	RC	BroadWorks provides TCP support, thereby enabling wider interoperability and to increase *RFC 3261* compliance.
SNMPv3 Support	RC	Support of SNMPv3 for fault and performance management.
SOA – BEA Integration	14.sp2	This feature provides BroadWorks integration with the BEA WebLogic SIP Server converged Java EE-SIP-IMS Application Server.
Solaris 9 Support	RC	BroadWorks can be deployed with the Solaris 9.0 operating system, as well Solaris 8 or Solaris 9.

Feature	Rel	Description
Support .wma and .3gp Files	16	Media Resources: This feature allows the BroadWorks Application Server to accept *.3gp* and *.wma* file formats for all features where media files may be customized. While these file formats are currently supported on the BroadWorks Media Server, some customers do not have a BroadWorks Media Server in their network and as a result, must support these file formats on the BroadWorks Application Server to play announcements, perform IVR, or serve most other feature activities where an audio response is required. Windows Media Audio (.wma) files are based in advanced systems format (.asf) files and are the default audio format for Windows Vista. The .3gp is a multimedia container format defined by 3GPP for use on 3G mobile phones, and is a mandatory format for IMS-based networks. It is a simplified version of MPEG-4 Part 14 (MP4).
Support Core IMS Off-line Charging (Rf) Interface	16	IMS and Protocols: Enhances BroadWorks accounting interfaces by adding support for the 3GPP Rf interface. It is used to provide offline charging information to the billing servers. BroadWorks implements the Rf interface as defined in specifications 3GPP TS 32.260 V7.4.0 and 3GPP TS 32.299 V7.7.0. The Rf interface is based on the Diameter protocol (RFC 3588). BroadWorks uses the Condor's Diameter protocol stack introduced in Release 14.sp4. The accounting messages carried over Diameter contain standard Diameter attribute-value pairs (AVP), 3GPP AVP, and BroadSoft vendor-specific AVP.
Support for 503 Service Unavailable	14.sp3	System: Enhances BroadWorks congestion control to include support for the *Retry-after* header in a received 503 response, and allows the Application Server to handle an overload of connected nodes on a node basis by maintaining a suspicious address list for nodes returning a 503 response with or without a *Retry-after* header.
Support for MRCP for ASR and TTS	14.sp3	Advanced Services: Supports the Media Resource Control Protocol (MRCP) protocol on the BroadWorks Media Server. This protocol extends BroadWorks VoiceXML support to make use of external Text-to-Speech and Automatic Speech Recognition engines.
Support for Third Party Registration on ISC Interface	14.sp2	Enhances the BroadWorks IMS ISC interface to support Third Party Registration as defined in 3GPP TS 24.229 IP Multimedia Call Control Protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP) version 6.
Support HISTORY INFO Header	14.sp7	Platform and System Enhancements: BroadWorks currently accepts and transmits redirection call information via the *DIVERSION Session Initiation Protocol (SIP)* header within an INVITE request or 3xx response. This feature enhances the SIP interface to accept and transmit redirection call information via the *HISTORY INFO SIP* header as defined in *RFC 4244*. It is important to note that with the implementation of the *HISTORY INFO* header, BroadWorks supports the incoming redirection call information through both the *DIVERSION* header and the *HISTORY INFO* header. BroadWorks always prioritizes the *HISTORY INFO* header. Therefore, BroadWorks processes only the *HISTORY INFO* header and ignores the *DIVERSION* header if both headers are presented within the same incoming message (INVITE request or 3XX response message).
Support ISDN 64 K Clear Channel Calls per *RFC 4040*	14.sp3	ISDN Migration: Validates interoperability with access devices that allow for clear 64 K communication between endpoints.

Feature	Rel	Description
Support SUBSCRIBE for Event Message Summary Package	14.sp7	Platform and System Enhancements: Currently, BroadWorks does not support subscriptions for message-summary packages. In addition, the Application Server always sends NOTIFY requests when the message waiting indication (MWI) state changes. In some cases, especially in IP Multimedia Subsystem (IMS) deployments, this is problematic as no message-summary package subscriptions exist and the Serving-Call Session Control Function (S-CSCF) discards such NOTIFY requests. This feature enhances the message-summary package to support subscriptions as defined in *RFC 3265*.
Survivability Enhancements	RC	The survivable remote capability provides an on-premises backup SIP proxy server when access to the BroadWorks system is unavailable. This enhancement provides information in the 200 OK payload that enables the session border controller to work in standalone mode in such instances (for example, WAN connectivity is lost).
Transport Layer Security Support on OCS	14.sp4	System and OAM: Improves the overall BroadWorks security by adding Transport Layer Security (TLS) support on the Open Client Server (OCS).
VoiceXML Toolkit	14.sp2	This feature introduces a VoiceXML interpreter and toolkit to the BroadWorks Media Server and Media Resource Function.
Xsi – Actions: Implement Remaining End-user Services for Web-Based Clients and Network CTI	17.0	This feature delivers three enhancements to Xsi: ▪ BroadSoft Computer Telephone Interface – This interface allows external applications to connect to BroadWorks in a high-availability, fault-tolerant manner to perform call and service control commands, and be notified of call and service events. ▪ Client Application Evolution – As part of the continuing evolution of the BroadSoft client application suite, the BroadWorks Receptionist and BroadWorks Call Center Agent/Supervisor applications are changed from a desktop/thick client architecture to a web-based, Software as a Service (SaaS) architecture. Communication protocols between these clients and the BroadWorks servers are also being moved from the TCP/IP-based Open Client Interface – Provisioning (OCI-P) and Client Application Protocol (CAP) to the HTTP-based Xsi. This communication change requires the Xsi to support all messaging functionality present in OCI-P and CAP that the Receptionist and Call Center Agent/Supervisor applications require. Enhancements to the Xsi are done to provide this capability. ▪ Continuing Xsi-Actions Development – The primary mandate of the Xsi is to provide a simple, easy to use API into all BroadWorks features and services available to the end-users. These enhancements expose more end-user BroadWorks features and services.
Xsi – Actions: Include Remaining OCI-C Capabilities	17.0	This feature improved the call control capabilities of the Xtended Services Interface (Xsi) to allow Three-Way/N-Way Conferencing, as well as other call actions, such as Last Number Redial, Push To Talk, Directed Call Pickup, and so on. Additionally, the BroadWorks Anywhere service is enhanced to allow adding/modifying/deleting locations along with the associated configurations and criteria.

Feature	Rel	Description
Xsi – Events: Service Events	17.0	This feature adds events packages to support: Native Events for Execution, such as: ■ Advanced Call ■ Advanced Call II ■ Basic Call ■ Call Center Queue ■ Voice Mail Message Summary Service Configuration Events Packages, such as: ■ BroadWorks Anywhere ■ Call Forwarding Always ■ Call Forwarding Busy ■ Call Forwarding Do Not Answer ■ Do Not Disturb
Xtended Services Interface	14.sp5	Advanced Core Services: This feature introduces functionality required to support the new BroadWorks Xtended Services Interface, or Xsi. Specifically, this release includes: BroadWorks Xsp – In Release 14.sp5, a new server is introduced, the "BroadWorks Xtended Services Platform", or Xsp. The Xsp server provides a turn-key solution to deploy new BroadWorks web-based applications. Xsi – The introduction of the RESTful interface for BroadWorks includes the following default capabilities: ■ Session-less Transactions – Transactions are allowed without first creating a session using standard HTTP Authentication. ■ External Authentication – Support for external authentication in addition to BroadWorks Authentication. Initially, the services provided are: ■ Do Not Disturb ■ Call Forwarding Always ■ Simultaneous Ringing Personal
Xtended Services Interface - Actions - Directories	14.sp8	Advanced Services: Provides the ability to access enterprise and group directory entries over the BroadWorks Open Client Interface-Provisioning (OCI-P), in a "paged" manner. Instead of listing the entire directory in a response, a paged response to the contact list request is now possible. Since this enhancement affects the OCI-P interface, this functionality is available to any external OCI-P client application. This enhancement allows the Xtended Services Interface to present enterprise and group directory listings without adverse performance impacts to BroadWorks for large enterprise/group listings.

Feature	Rel	Description
Xtended Services Interface - Events	14.sp9	The Xtended Services Interface (Xsi) currently consists primarily of the Xsi-Actions web application. This web application supports the Service Management, Call Management, and Call Lists categories of commands (for example, querying for a user's service setting, placing a call, or retrieving a contact directory).
		This feature introduces a new web application called "Xsi-Events". Xsi-Events is designed to support the delivery of notifications to clients when various events occur in a BroadWorks system. This new application allows a client to subscribe to various events that may occur against a subscriber.
		The subscription triggers a notification back to the client when a corresponding event occurs. This implies, of course, that these applications have the capability to subscribe to events from BroadWorks using the Xtended Services Interface and are notified when such events occur.
		Xsi-Events (like Xsi-Actions) supports camel case and lower case uniform resource locators (URLs) when commands are issued, producing the same response.
Xtended Services Interface - VoiceXML Support	14.sp9	This feature enhances the BroadWorks Xsi-Actions web application. The primary purpose of this enhancement is to permit the VoiceXML capability already present on BroadWorks to use Xsi-based applications.
		VoiceXML scripts typically only have access (or can gain access) to a user's phone number and BroadWorks voice portal passcode. Using these credentials and being able to issue Xtended Services Interface commands from within a VoiceXML script greatly enhances the capability of BroadWorks in creating new voice applications.
		Specifically, this enhancement allows user authentication via any phone number belonging to a user and their BroadWorks voice portal passcode, as well as the current authentication credentials of a user ID and password.
Xtended Services Platform Enhancements	14.sp6	Introduces Xsp enhancements required by the Xtended Services Interface (Xsi) for Release 14 sp6.