

SBX Nodes and Program Configurations; Revision 2

SBX is an extremely versatile call processing and management tool. Each SBX unit can be programmed to perform a broad range of activities. SBX program configurations are composed of commands, nodes, messages, and music that are executed when a call is received.

You can develop and build your own program configurations from either the XMUCOM+ application (recommended, and most intuitive method) or from the Front Panel of the SBX (only recommended for very simple configurations).

The remainder of this guide provides a brief overview of each of these components, and how they fit together. You can learn how to apply and integrate these concepts into an SBX program configuration in any of the Application Guides on the CD supplied with your SBX unit.

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About Basic SBX Commands

SBX Commands are the most basic elements required to direct the actions and results of an SBX program configuration. All commands in SBX are numbered sequentially in the order that they were created. For example, you could have Play1, Play2, Play3.

Basic commands include:

This basic command...	Is used to...
PLAY	Play the message number specified by the program configuration.
PAUSE	Introduce a pause for a specified number of seconds. This command is typically used to provide the caller with time to make a decision.
BEEP	Generate a short beep tone.
NOOP (No Operation)	Move the user to the next step without pauses, beeps, or other messages.

About SBX Nodes

SBX Nodes comprise the second category of SBX commands and are a fundamental component of all SBX program configurations.

A node consists of a group of commands or SBX settings. Nodes are building blocks that are linked together to create a program configuration (or program) to control the actions that SBX performs. The actions performed by each node are based on specific commands and parameters that are coded within that node.

Nodes are used as steps within a call flow, to add menu choices, play additional messages, add time/date screening, provide user interaction and responses, transfer calls, or allow branching to new actions.

SBX program configuration design and implementation requires a good understanding of the nodes that can be used, and the best way in which to interlink and apply them.

Typically, during the design of your program configuration, you will develop a call flow diagram that details the types of nodes to be used, and the parameters that must be applied to each.

Types of nodes

SBX provides a number of different types of nodes that can be used to develop program configurations and applications for your organization.

The following table provides a summary of the types of nodes available for use in your program configurations.

This type of node...	Is used to...
Auto Nodes	<p>Develop Auto-Attendant program configurations. It lets you provide a <i>menu</i> that allows callers to select the target or extension to which they want to be transferred.</p> <p>Example: <i>“If you know the extension of the party you are trying to reach dial it now, or press 0 to be transferred to the Operator.”</i></p>
CMD (command) Nodes	<p>Contain other commands and nodes to group a related set of commands. It is typically used to execute a series of commands that can send the caller to various destinations.</p> <p>Example: Command Node is often used for Time/Date filtering before presenting the caller with the appropriate auto-attendant menu.</p> <p>Command nodes can call AUTO, CMD, DATE, DBN, DTMF, LIST, MOH, PAAS, MSG, TIME, VOX, TABLE and XFER nodes and the PAUSE command.</p>
Date Nodes	<p>Execute a set of commands on a specific date or day, or within a range of dates. Typically, Date Nodes are used to play different messages on different days or to transfer calls to a different extension for weekends and holidays.</p> <p>Calls arriving outside of the specified ranges are ignored by the Date Node, allowing the call flow to move on to the next command.</p> <p>DATE and TIME nodes can be combined together.</p>

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This type of node...	Is used to...
Time Nodes	<p>Execute a group of commands when a call is received within a specified time range. If the call arrives outside of this time range, SBX ignores the Time Node and moves the call flow to the next command.</p> <p>Use Time Nodes to play different messages at different times of the day or to transfer calls to a different extension after hours.</p> <p>Date and Time nodes can be combined together.</p>
DTMF Nodes	<p>Present menu selection prompts to a caller, and to execute specific actions depending on the digits the caller entered. Each action has pre-defined targets such as messages, transfers to specific extensions or telephone numbers, or to sub-menus.</p> <p>Example: <i>“Press 1 for directions to our office, press 2 to reach customer service, press 3 to reach Mary Hill in Accounting or press 4 for additional options.”</i></p> <p>DTMF nodes can call AUTO, CMD, DATE, DBN, DTMF, LIST, MSG, PAAS, TIME, VOX, TABLE and XFER nodes.</p>
List Nodes	<p>Insert a series of messages into an SBX program configuration. List nodes are typically used to:</p> <ul style="list-style-type: none"> ◆ Play a list of different advertising messages. By applying the <i>Rotate</i> mode of operation, the next message in the list is played whenever a new call is received. ◆ Act as second ACD announcement for callers who are held in queue for extended periods of time. When the List Node is in <i>Rotate</i> mode, the caller will hear different messages while cycling to the same SBX port. ◆ Allow users to sequentially access all messages that have been configured at one time, rather than rotating through the list one at a time. The List Node must be placed in <i>ALL</i> Mode for this action. <p>List nodes can call MSG nodes to play a list of messages, and to set modes of operation (all, rotate, and skip).</p>

This type of node...	Is used to...
MOH Nodes	<p>Group instructions that configure the SBX into a Music on Hold source for delivering a combination of messages and music to callers on hold.</p> <p>The MOH program configuration lets you control the delivery of voice, music, volume, and fade time.</p> <p>MOH Nodes can call CMD, DATE, LIST, MSG, TABLE and TIME nodes and PAUSE, and NOOP commands.</p>
MSG Nodes	<p>Identify and store message file information. Each message node, with its associated message or music file, can be re-used in multiple locations within a single program configuration, or within a different program configuration.</p> <p>Message nodes are referenced using the PLAY command. The PLAY command is typically incorporated into the command structure of other nodes such as MOH, CMD, and LIST nodes.</p> <p>Message nodes cannot call other nodes.</p>
PAAS Nodes	<p>Group instructions that activate a message or a series of messages for a Public Address Announcement System (PAAS).</p> <p>PAAS nodes can call CMD, DATE, LIST, MSG, PAAS, TABLE and TIME nodes, and the NOOP and PAUSE commands.</p>
Starting Nodes	<p>Set the first action that SBX must perform when a call is received at a specific port. This is a one-step entry. Each SBX port must be assigned a Starting Node.</p> <p>The Starting Node indicates the beginning point of an XMUCOM+ program configuration.</p> <p>The same starting node can be applied to multiple ports. This is a useful feature when the same program configuration is run on multiple ports.</p>

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This type of node...	Is used to...
VOX Nodes	<p>Provide a menu node that responds to voice prompts instead of DTMF prompts. It allows rotary callers to use speech to select their option from the menu.</p> <p>The SBX listens for audio on the line after each prompt, but does <i>not</i> interpret the actual word the caller speaks.</p> <p>VOX nodes can call CMD, DATE, LIST, TIME, VOX, PAAS, TABLE and XFER nodes as well as the PLAY command.</p>
XFER Nodes (Transfer Node)	<p>Group settings and commands that allow the SBX to perform call transfers.</p> <p>XFER nodes carry out a call transfer based on user generated DTMF signals in a DTMF or Auto node, or with a voice signal in a VOX node.</p> <p>XFER nodes can call CMD, AUTO, DATE, DBN, DTMF, LIST, TIME, VOX, PAAS, TABLE and XFER nodes as well as the PLAY command</p> <p>All program configurations using XFER nodes must also include at least one XFER Style node.</p>
XFER Style Nodes (Transfer Style Node)	<p>Enter settings to ensure the SBX unit performs in a manner compatible with the PBX. This includes PBX specific information such as hookflash, timings, ring cadence, and supervised vs. non-supervised transfers.</p> <p>At least one XFER Style node must be included with all program configurations using XFER nodes.</p>
TABLE Nodes	<p>Carry out an action based on a user defined schedule. This schedule can be activated using the following modes: Time, Date, Month, Day, Weekly, Hourly, Monthly, Calendar, DBN range, NIS range/match, EWT.</p> <p>The table node contains a mode of operation, an 'invalid' instruction and a 'continue' instruction followed by a list of action table entries.</p>

This type of node...	Is used to...
NIS Nodes	Carry out an action, usually a transfer, based on DTMF digits received after going off hook, such as DNIS/ANI digits. Actions can be based on the whole DTMF string or sub sections within it.
DBN Nodes	Contain details used by the SBX to perform Dial By Name applications.
DIR Nodes	Contains the Directory of names and extensions used by the DBN node.

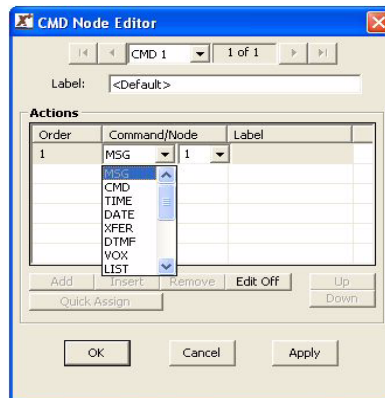
Field Descriptions For Nodes

The XMUCOM+ PC software offers various methods of configuring the different nodes that make up an SBX configuration. To avoid confusion, the various drop down menus and pop up windows only present the options that are available for each node. In this point and click environment, buttons, drop down menus and pop up windows are used to make selections and configure nodes. These conventions are similar to those used in many other Windows based programs. Double click on any node in your configuration to edit it.

Command Node.

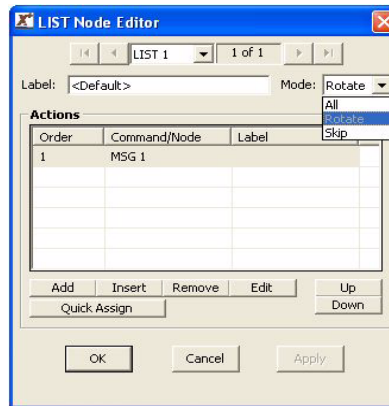
The Command node is used when an application requires multiple steps. A command node may be configured to play a series of messages, to screen for times and dates before playing a message or presenting a menu to callers. Any combination of nodes and commands may be programmed into a command node.

The user may set up the Command node pressing the CMD button in the Config Builder window to create a new entry, modify an existing entry (double click the current entry), delete or rename an entry by right clicking on it.



List Node

The All/Rotate boxes allow the user to program the SBX to play all messages to callers or to rotate messages to ensure all messages get equal play. The Skip option allows a caller to jump over a message by pressing a DTMF key on their phone. Clicking on the Edit box in the List node will display a window that will allow the user to Add/Update/Delete a play message.

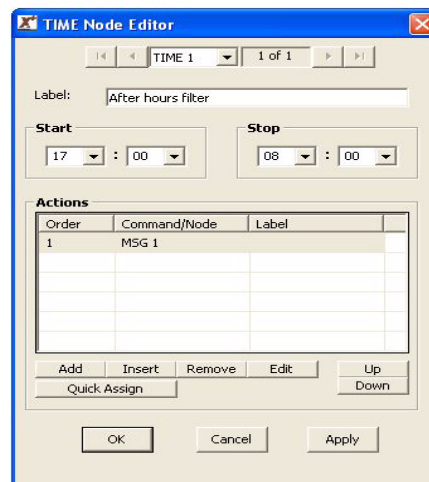


Time/Date nodes

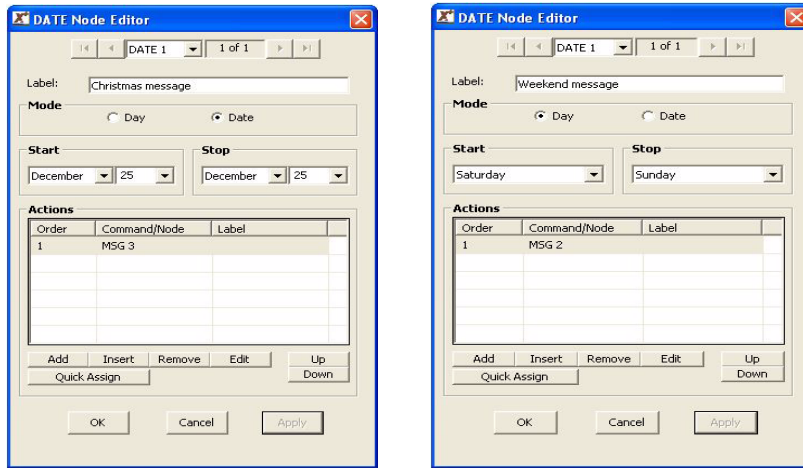
These two nodes instruct the SBX to play messages or execute actions on specified days, dates or times. These nodes are inserted into Command nodes as steps in a call process. Each call is screened to determine if the call is arriving during a specified time frame (Time node) or on a specific day or date (Date node). When the call makes a match, the Time or Date node takes control of the call. The SBX follows the commands configured in that particular node. Multiple Time and Date nodes may be configured in a call flow.

Time node

Configure the Start and Stop fields in Time node. Then configure the action by clicking on the Edit button. In this example message 1 will play between 5pm and 8am.



Date node (Day and Date configurations)



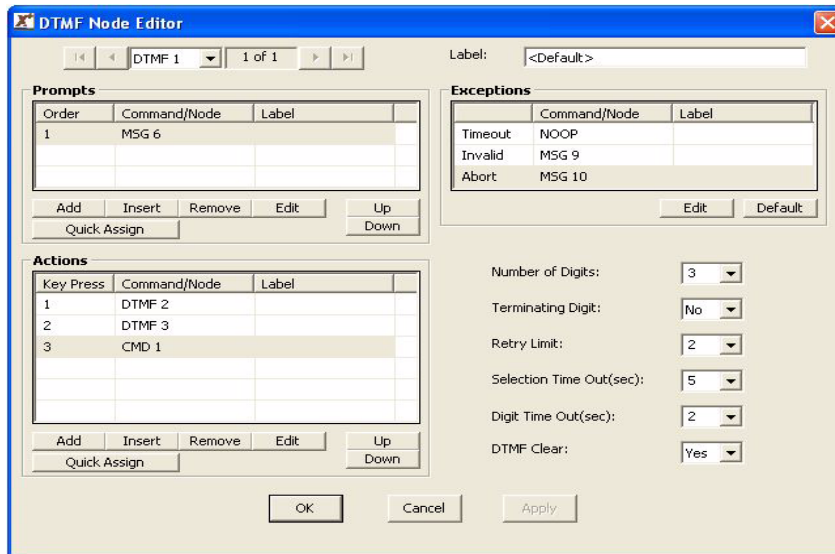
Select Day or Date mode, then configure the Start and Stop fields. Configure the action using the Edit button.

DTMF/AUTO nodes

DTMF Node: Specifies the action taken on the DTMF digit(s) collected.

AUTO Node: Specifies the action taken on the DTMF digit(s) collected. The action will only be executed if the DTMF digits collected match the programmed range of digits.

The range must have a beginning and an end.



Prompts

Order	Command/Node	Label
1	MSG 7	

Exceptions

Command/Node	Label
Timeout	MSG 4
Invalid	MSG 9
Abort	MSG 10
*	NOOP
#	NOOP

Actions

Entry	Command/Node	Label
100-400	XFER 1	

Number of Digits: 3
Terminating Digit: No
Retry Limit: 2
Selection Time Out(sec): 5
Digit Time Out(sec): 2

Field Name**Description****Prompts**

Specifies the prompts message(s) that are played to the caller.

Timeout

Specifies the action taken when the caller does not make a selection. Enter No Operation (NOOP) if the caller should return to the prompts message.

Invalid

Specifies the action taken when a selection is made that is not defined in the Action Table.

Abort

Specifies the action taken when the retry limit has been reached.

Action Table

The left side of the Action Table is made up of digits that can be entered by the caller. The right side of the table contains the XMU action instructions.

Number of Digits

Specifies the number of digits to be collected, from one to seven digits.

Terminating Digit

Specifies the optional terminating digit, # or *.

Selection Timeout (sec)

Specifies the digit collection timeout period, one to sixty seconds. The default is 5 seconds.

Digit Timeout (sec)

Specifies the inter-digit timeout value in seconds, one to 15.

Retry Limit

Specifies the number of retries that are allowed, one to five, if invalid selections or timeouts occur.

DTMF Clear

Erases the DTMF buffer. Options are Yes or No; not applicable to AUTO Nodes.

Note: Click on the Edit buttons to view the options available to each node.

VOX node

VOX Node Editor

Label: Rotary menu

VOX 1 1 of 1

Prompts

Order	Command/Node	Label
1	MSG 1	

Add Insert Remove Edit Up
Quick Assign Down

Exceptions

	Command/Node	Label
Timeout:	XFER 1	
Abort:	MSG 10	
DTMF:	XFER 2	

Edit Default

Actions

Prompt	Command/Node	Label
MSG 1	MSG 2	

Add Insert Remove Edit Up
Quick Assign Down

Beep: Yes

Threshold: 6

Wait(sec): 2

Retry Limit: 3

OK Cancel Apply

Field Name

Description

Prompts

Specifies the prompt message(s) that are played to the caller.

Timeout

Specifies the action taken when the caller does not make a selection. Enter NOOP if the caller should return to the prompt message.

Abort

Specifies the action taken when the retry limit has been reached.

DTMF

Specifies the action taken when the caller presses a DTMF key.

Action Table

The entry consists of two items, a prompt and an action. The Action Table specifies the action taken based on the VOX selection.

Beep

Specifies whether or not a BEEP is presented to the caller after each VOX Prompt.

Threshold

Specifies the sensitivity level of detecting a voice activation selection; zero to seven, zero is the least sensitive and seven is the most sensitive.

Wait (sec)

Specifies the amount of time the XMU waits to receive a response from the caller.

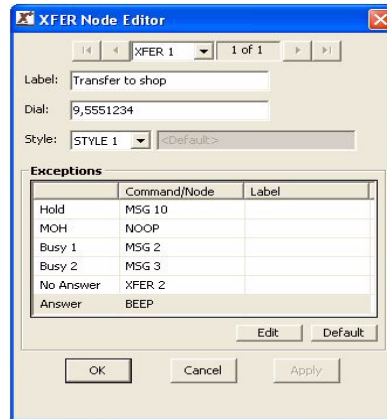
Retry Limit

Specifies the number of retries that are allowed; one to five, if invalid selections or timeouts occur.

Xfer/Style nodes

These two nodes work together to allow the SBX to perform a call transfer. The Xfer target (extension) is configured in the Xfer node and the Style node identifies the sequence (hookflash only or hookflash plus an access code) that the PBX requires to transfer a call.

Xfer node



Field Name	Description
Dial	Specifies the DTMF String to be transferred to. The letters AUTO can be entered when the Xfer Node is collecting digits entered in an AUTO Node. If the PBX uses least cost routing, you may require delays at the end of the dial string. One comma (,) represents a half second delay.
X Style	Specifies the Xfer Style Node to be referenced when transferring a call.
Hold	Specifies the message to play to the caller prior to transferring the call.
MOH	Specifies the message to play that contains the music on hold message while callers are waiting on hold in the XMU.
Busy 1	Specifies the action to be taken in response to the first busy condition; this applies to supervised transfers only.
Busy 2	Specifies the action to be taken in response to further busy conditions; this applies to supervised transfers only.
No Answer	Specifies the action to be taken in response to a no answer condition; this applies to supervised transfers only.
Answer	Specifies the action to be taken in response to an answer condition (this applies to supervised transfers only).

Note: Each Xfer Node must refer to a valid x-style.

Style node

The following characters are used to configure the Transfer, Disconnect and Retrieve fields: 0-9, *, and # are DTMF entries that can be used in a dial string. An exclamation mark (!) is the entry used to represent a Hook Flash. The duration of the Hook Flash is configured in the Hook Flash field. A comma (,) is used to represent a half second pause.

STYLE Node Editor

STYLE 1 1 of 1

Label: <Default>

Supervised

BLIND PARTIAL FULL

DIALCONTINUE ENHANCED

Hook Flash (msec): 500

Transfer: !

Disconnect:

Threshold: Low

Retrieve: |

Busy Retry (sec): 4

Num Retries: 3

Ring Limit: 5

Busy On (msec): 500

Busy Off (msec): 500

Ring On (msec): 2000

Ring Off (msec): 4000

OK Cancel Apply

Field descriptions continued on next page.

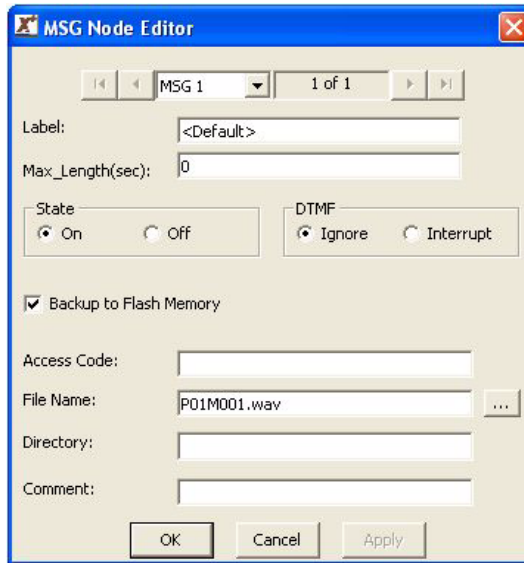
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Field Name	Description
HookFlash (msec)	Defines the duration of the hook flash, 50 to 2000 milliseconds. Default is 500 msec.
Supervised	Specifies the treatment required during a call transfer; Blind, Partial, Full, D&C or Enhanced: <ul style="list-style-type: none"> • Blind - no call progress monitoring • Partial - busy condition monitoring only • Full - busy and no answer call monitoring • D&C - issues re-route digits to a network provider • Enhanced – Dual busy condition monitoring only (fast/slow busy)
Threshold	Defines the level at which call progress monitoring is carried out. The default is 'Low.' If problems with noisy lines are experienced during supervised transfers, Medium or High can be selected.
Transfer	Specifies the dial string needed to perform a call transfer/conference function; default = !.
Disconnect	Specifies the dial string used to perform a disconnect function; default = blank.
Retrieve	Specifies the dial string used to perform a retrieve function; default = !
Busy Retry (sec)	Specifies the duration between call transfer retries on a busy condition; one to 30 seconds
Num. Retries	Specifies the number of times the XMU should attempt a retry when a busy condition is detected; one to 30 retries.
Ring Limit	Specifies the number of rings needed to determine a ring no answer condition; one to 20 seconds.
Busy On (msec)	Specifies the duration of the busy on tone; 50 to 1500 milliseconds.
Busy Off (msec)	Specifies the duration of the busy off tone; 50 to 1500 milliseconds.
Ring On (msec)	Specifies the duration of the ring on tone; 50 to 10000 milliseconds.
Ring Off (msec)	Specifies the duration of the ring off tone; 50 to 10000 milliseconds.

Note: When Enhanced Supervision is selected, the Busy On/Busy Off changes to Busy1/On Busy2/On. The setting in milliseconds represents half of the busy signal.

For example, a setting of 500 milliseconds looks for a busy signal that is 500 milliseconds of tone and 500 milliseconds of silence. A fast busy signal is set for half the time of a regular busy tone or 250 milliseconds.

Message node



Messages

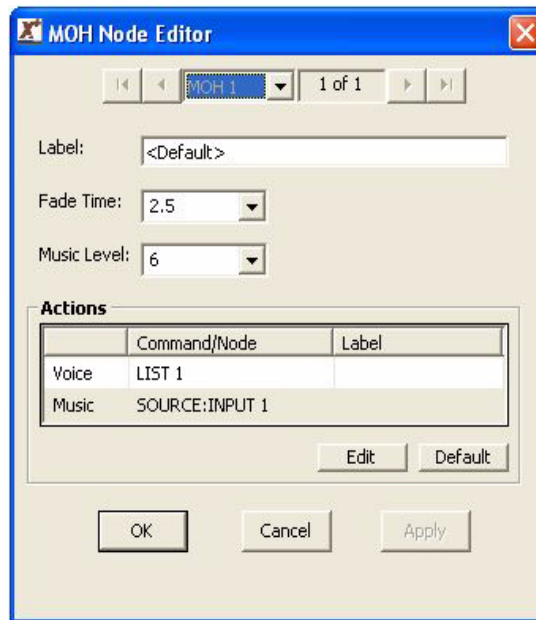
Each message has several configurable fields that affect its functionality. To view message fields, double click on the desired message number in the Config Builder. Messages can be assigned the following characteristics:

- **Maximum Message Length** - this limits the length of the message so that one message cannot be recorded and utilize all of the recording time in the XMU. This feature is useful when different people may be recording messages.
- **On/Off State** - messages can be turned off and on remotely from any touch tone telephone. The default is On.
- **DTMF** - the message can be interrupted by a DTMF tone if configured. Rather than listen to the message, callers can enter any DTMF digit and skip to the next message or node in the call flow.
- **Backup to Flash Memory** – default is to back up so message will be stored even in a power fail situation. De-select if you don't wish to use Flash memory
- **Access Code** - if set, you must enter a password before changing this message using the remote access feature. Each message can have its own password or a password may be shared.
- **Filename** - When messages are uploaded from the XMU each message is stored as a separate file and assigned a default filename. You can assign a new filename to the messages.
- **Directory** – reflects the path or directory location of the .wav file for this message.
- **Comment** – available for additional information about the message.

MOH node

The MOH ports connect to the MOH input(s) on the PBX. Using the MOH node, music and messages are combined to create a seamless on-hold environment. Music and messages may be recorded within the SBX or the music may be provided from an external source. In either case, the SBX will insert messages into the music at configured intervals. The SBX fades the music out before the messages are played. When the messages are finished, the SBX fades the music in again. The music volume and the duration of the music fade time is user configurable.

The SBX has 1 input and 2 outputs: The audio input is used when music is provided by an external source (this is typically an existing source, such as muzak). When the music source is a message recorded within the SBX, the audio input is not used. The MOH audio outputs connect to the MOH input(s) on the PBX. The audio outputs are used in one of two ways: To output messaging in combination with an existing music source. To output music and messages that reside in the SBX (when the music source is a message recorded within SBX). The PBX will be configured in the same way as it would be when a stand alone MOH source is installed. When the PBX connects a caller to a MOH port, the caller hears music or music and messages from the MOH port(s) on the SBX.



The MOH Node has four fields as follows:

- ◆ **Fade Time** is the time it will take for the music to fade in and out before and after the promotional and/or information messages are played to callers on hold. Default is 2.5 seconds.
- ◆ **Music Level** field is configured to control the music level during the fade in and fade out. Default is 6. The range is 1-9; with 1 representing quiet and 9 representing loud.
- ◆ **Voice** field is configured to instruct the SBX which messages to insert into the music. Other available options are: Play, CMD, List, Date, DBN, Time, Table, Pause and NOOP.
- ◆ **Music** field is configured to identify the music source. The music source may be an internal (a message in the SBX) or an external source: External Music

Source: A message recorded within the SBX. The music field can be configured to play a message (this uses recording memory). Options available are: Play, CMD, List, Date, DBN, Time, Table, Pause and NOOP.

External Music Source: Music coming from an external source. The music can be provided by an external source via the MOH input port (muzak, etc.).

PAAS node

The Public Address Announcement System (PAAS) operation on the SBX is designed to play announcements on a public address system. Announcements can be triggered by an external contact closure or by a caller dialing into the system. A message or a group of messages are played when a trigger is received.

The PAAS operation uses two elements - the PAAS instruction and the PAAS Node.

PAAS Instruction: The PAAS instruction is used to trigger a PAAS node. Whenever a PAAS instruction is executed, a PAAS node is triggered and begins to play on the output channel (configured in the PAAS node).

PAAS Input: The PAAS instruction may be used as the starting node for a channel configured in PAAS mode. When a contact closure is received on the channel, it will execute the starting instruction. Since the starting node is a PAAS instruction, the contact closure will trigger a PAAS node. The messages in the PAAS node are played to the paging system.

PAAS NODE: The PAAS Node contains a list of messages that are played to a particular channel. The PAAS node has the following elements -

Line: The channel number to be used for playback (note - this line must be configured for PAAS mode of operation)

Priority: The priority of the PAAS node. The priority ranges from 0 (lowest) to 9 (highest).

Interrupt: Indicates if the PAAS node can be interrupted, either Yes or No.

Actions: The PAAS node contains a list of messages to be played to the paging system

PAAS Node Editor

PAAS 1 1 of 16

Label: PAAS

Line: 1

Priority: 9

Interrupt: No

Actions

Order	Command/Node	Label
1	MSG 1	Emergency

Add Insert Remove Edit Up Down

Quick Assign

OK Cancel Apply

PAAS Priority: If no PAAS nodes are playing and a trigger is received for a PAAS node, the PAAS node is played immediately.

If a PAAS node is currently playing (current PAAS node) and a trigger is received for a different PAAS node (triggered PAAS node), the SBX will check the priority of the current node with the triggered node. The following are the possible cases -

Trigger PAAS priority less than Current PAAS priority - the triggered PAAS node will be queued up to play after the current PAAS node

Trigger PAAS priority equal to Current PAAS priority - the triggered PAAS node will be queued up to play after the current PAAS node

Trigger PAAS priority greater than Current PAAS priority - the system checks the 'interrupt' to see if the current PAAS node can be interrupted.

If the Current PAAS interrupt is set to Yes, then the Current PAAS node is stopped and the triggered PAAS node is started, or if the Current PAAS interrupt is set to No, the Current PAAS node is allowed to finish. The triggered PAAS node is queued up to play after the current PAAS node.

Multiple PAAS Triggers: If multiple triggers are received, they will follow the rules as stated previously. If a node is queued up, the following rules apply to the order in which the PAAS nodes are queued -

If the PAAS node has a higher priority than any item in the queue, it is placed at the front of the queue.

If the PAAS node has the same priority as other items in the queue, it is added to the queue after any other PAAS nodes with the same priority.

If the PAAS node has a lower priority as other items in the queue, it is added to the end of the queue.

APLY instruction (Auto Play): Takes the digits entered by the user (via the AUTO node) and plays back the digits (using recorded messages). For example, if the user is prompted “Please enter your area code”, the digits collected by the system are stored (in the AUTO buffer) and are played back to the caller using the APLY instruction “Your area code is ... Is this correct?”

The APLY instruction uses messages to play back each digit entered by the user. The digit to message mapping is as follows –

Digit	Message Number	Audio message
*	988	“star”
#	989	“pound”
0	990	“zero”
1	991	“one”
2	992	“two”
3	993	“three”
4	994	“four”
5	995	“five”
6	996	“six”
7	997	“seven”
8	998	“eight”
9	999	“nine”

Table node

Is used to allow the SBX to perform different actions at different periods or intervals (time, date, month, day, weekly, hourly, monthly & calendar). It contains a Mode of operation, an 'invalid' and a 'continue' instruction, followed by a list of Action Table entries. Each Action Table entry contains a starting and ending value, followed by an instruction. When the Table node is encountered in the call flow, the contents of the Table are checked and if any of the entries match, the Action is executed. If none of the entries match, the SBX executes the 'Invalid' instruction.

Range	Command/Node	Label
00 - 15	LIST 1	
15 - 30	LIST 2	
30 - 45	LIST 3	
45 - 00	LIST 4	

Field Name Description

Mode: The Mode specifies the period that is being compared in the Action Table. For example; weekly, hourly, monthly

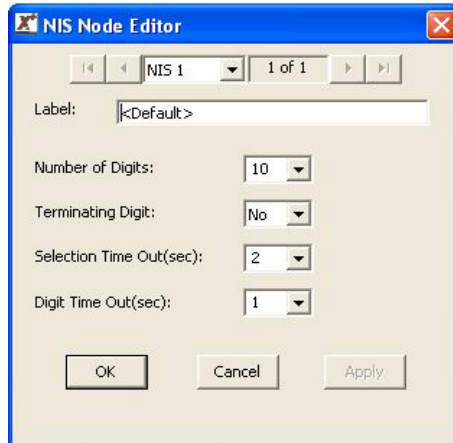
Invalid: The invalid instruction is executed if there was no match in the Action Table

Continue: The Continue instruction is executed if the Action Table instruction executed was a PLAY or LIST node

Action Table: The Action Table contains a variable number of "start - end" choices depending on which Mode was selected.

NIS node

The NIS node allows callers to be directed to a different call flow based on the number they dialed or based on the number of the caller. The NIS feature allows the SBX to handle DNIS/ANI information and to direct the caller accordingly. The SBX receives the digits either before going off hook (T1 wink start or immediate start) or after going off hook (Hybrid line card.) The digits are captured into a NIS buffer, the call flow is directed using a TABLE node to decode portions of the NIS buffer.



Field Name	Description
Number of Digits	Specifies the number of digits to be collected, from 1 to 31 digits.
Terminating Digit	Specifies the optional terminating digit.
Selection Time Out	Specifies the digit collection timeout period, from 1 to 60 seconds. Default is 5 seconds.
Digit Time Out	Specifies the inter-digit timeout value in seconds. From 1 to 15 seconds.

DBN Node

The Dial By Name (DBN) node allows callers to be directed to an extension by entering the first / last name of the person they wish to contact into the telephone keypad. The most common application (and default for this node) is to prompt the incoming caller to enter the first three (3) digits of the last name of the person they wish to contact. For example to contact John Brown, the caller would enter 276 (BRO) into the keypad. Once the person is recognized, the SBX will transfer the call to the correct extension. The SBX is flexible enough to allow the DBN node to accept first name only, last name only, first then last names, last then first name, etc. Also to allow the number of digits required from the caller to range between one (1) to nine (9)

DBN node when 'Default Last Name' is selected in the method field.

DBN Node Editor

Label: <Default>

Greeting: NOOP

Directory: DIR 1

Method: Default Last Name

Language 1: English

Language 2: None

	Command/Node	Label
Valid Match	XFER 1	Transfer to shop
Abort	MSG 1	<Default>
*	NOOP	
#	NOOP	
0	NOOP	

Edit Default

OK Cancel Apply

Greeting: Specifies which MSG node will be used as the greeting message to callers.

Directory: Specifies which DIR node will be referenced by this DBN node.

Method: Choose either Default (last name only) or choose Custom for additional options.

Language 1; Language 2: Select which language will be used for this dial by name feature. Two languages can be used if required.

Action Table: Displays what action will take place when a condition is seen by the SBX.

DBN node when 'Custom' is selected in the Method field.

The screenshot shows the 'DBN Node Editor' dialog box with the following sections and settings:

- General:**
 - Label: <Default>
 - Greeting: NOOP
 - Directory: DIR 1
 - Method: Custom
 - Language 1: English
 - Language 2: None
- Actions:**

	Command/Node	Label
Valid Match	XFER 1	Transfer to shop
Abort	MSG 1	<Default>
*	NOOP	
#	NOOP	
0	NOOP	
- Custom Settings:**
 - Mode:**
 - Match: First Match (Last Name), Second Match (None)
 - Min Digits: 2 (First), 1 (Second)
 - Max Digits: 5 (First), 5 (Second)
 - Prompt: MSG 1 (First), MSG 1 (Second)
 - Error Settings:**
 - Timeout: MSG 1
 - Invalid: MSG 1
 - Selection Time Out(sec): 5
 - Digit Time Out(sec): 10
 - Retry Limit: 1
 - Confirmation:**
 - Confirmation: Yes
 - Max Matches: 5

	Command/Node	Label
Before Names	MSG 1	
After Names	MSG 1	<Default>
Name1	MSG 1	<Default>
 - On Exit:**
 - Exit Prompt: MSG 1
 - Play Name: Yes

Buttons: OK, Cancel, Apply, Edit, Default.

Field Name	Description
Mode settings	Select which criteria you wish the caller to enter and the SBX to match from. Selections are First name, Last name, Both names, Extension. Then select the minimum and maximum number of digits the caller should enter. Finally choose a Prompt message which should instruct the caller what they are expected to enter.
Error Settings	<p>The Timeout field instructs the SBX what to do if the caller should fail to make an entry within the specified time limit.</p> <p>The invalid field instructs the SBX what to do if the caller enters a selection that isn't recognized.</p> <p>Selection Time Out – set the time limit in seconds for the caller to make an entry.</p> <p>Digit Time Out – set time limit between digits entered by the caller</p> <p>Retry Limit – set the number of retries a caller can make if invalid selections or timeouts occur.</p>
Confirmation	<p>If you have matching names within your directory, it may be necessary to select “yes” for confirmation. This allows the caller to select from a list of matching names. For example “Press 1 for John B, press 2 for John T.”</p> <p>Before Name – Select a message to play before the SBX lists the matching names. (Or select No-op if no message is required)</p> <p>After Names – Select a message to play after the SBX lists the matching names. (or select No-op.)</p> <p>Name 1, Name 2, etc – Select a message to play before the SBX lists each matching name in turn.</p>
On Exit	<p>Exit Prompt – Select a message to play before the SBX transfers the caller, e.g. “transferring your call.”</p> <p>Play Name – Select if you'd like the SBX to play the name of the person to which the caller is being transferred.</p>

DIR Node

The DIR or Directory node is referenced by the DBN node when attempting to make a match from the callers key presses. The DIR node contains a list of all possible matches (i.e. people in the company) and their telephone extension number. In order for a dial-by-name application to work, both a DBN and a DIR node must be configured.

Field Name	Description
Access Code	Optional. Enter an access code for remote telephone users to access and modify this node.
Starting Prompt	Set the message number you wish your directory prompts to start from. This message will typically contain the person's name and will be played out when the "Play Name" field in the DBN Node is set to "Yes."
CSV Filename	The DIR node will allow you to import a CSV file (e.g. M/S Excel) that contains a list of personnel and their extension numbers. The format of the CSV file must be Last Name, First Name, Extension
Directory Table	This table shows all the people in the directory, their extension and the message prompt assigned to that person. You can manually enter names into this table or import them as described above.

About SBX Program Configurations

SBX program configurations are simple programs that you, the user, can develop with the XMUCOM+ application, and that run on the SBX unit.

SBX program configurations are composed of commands, nodes, messages, and music that are executed when a call is received.

You can develop and build your program configurations from either the XMUCOM+ application (recommended, and most intuitive method) or from the Front Panel of the SBX (only recommended for very simple configurations).

Planning for an SBX Program Configuration

It is important to spend some time planning and designing your SBX program configurations, before creating and implementing them in XMUCOM+.

During the planning phase, you should:

- 1. Determine your program configuration requirements.**

Your requirements will depend on the type of program configuration you are designing, the size of your organization, options and variances you need to include, and the complexity and depth of your call flow requirements.

- 2. Plan your call flow order.**

Begin by determining what should happen when a call is first received, and proceed to call completion in a logical fashion, through all the options and paths that the call can take. This plan should provide a clear representation of all of your desired call flow.

- 3. Draw a call flow diagram (node map plan) showing the calls, menu selections, messages, transfers to extensions, music, and other options you want to include in your program configuration.**

The call flow diagram helps you to understand how the various nodes are linked together to create and execute program configurations.

Sample SBX Call Flow Diagram

You should develop call flow diagrams that document and show the transfer of control from one node to the next for every program configuration that you plan to create and implement.

Call Flow diagrams provide a visual means for documenting and showing how callers are moved through the SBX system. They are effective for showing all the possible paths that a caller can take through your system

The following diagram illustrates a typical call flow diagram. You should create similar, detailed call flows for each of your program configurations.

