XMUCOM+

Application Programming Level 1

Training Session

XMUCOM+

Application Programming Level I

Training Session

Interalia Course # 70005

Overview of the Course

- Module 1: XMU+/SBX Product Overview & Architecture
- Module 2: XMUCOM+ Software Interface
- Module 3: XMUCOM+ Configuration Design
- Module 4: Application Workshop

2009 Interalia Inc. All rights reserved

Course Objectives

This course will permit you to understand:

- The basic hardware components
- The line card population rules, sizing and capacity
- The installation and connection to host equipment
- The upgrades, system backup and restore procedures
- The access to Interalia Field Installation support

2009 Interalia Inc. All rights reserved

Why bother with learning SBX/XMU+

- **Compatible to all technology platforms**
- **Supports your customers with a huge variety of applications and functions, such as:**
  - ACD/UCD Announcements
  - Interactive Call Processing
  - Pre-recorded scheduled or event-base Messages
  - Pre-recorded paging and repetitive Broadcasts
  - Music and Marketing-On-Hold
  - Redundancy for primary call processing system
  - Emergency Messaging
  - Information Lines
- **Pre-requisite to Application Programming Level 2 Training Session**

2009 Interalia Inc. All rights reserved

Module 1 – SBX/XMU+ Product Overview & Architecture

2009 Interalia Inc. All rights reserved

Module 1: Objectives

After completing this Module, you will be able to:

- Understand the three chassis options
- Understand the system components
- Understand the control card and line cards

2009 Interalia Inc. All rights reserved

Interalia XMU+ and SBX Announcers

- Both the XMU+ and the SBX have a solid state designed microprocessor that offers a solution for small to large sized corporations
- They offer major advantages in processing customer calls for a broad range of customer needs
- Deliver high quality ACD (RAN) announcements
- Interactive auto attendant functionality
- Music On Hold

2009 Interalia Inc. All rights reserved

Interalia XMU+ and SBX Announcers

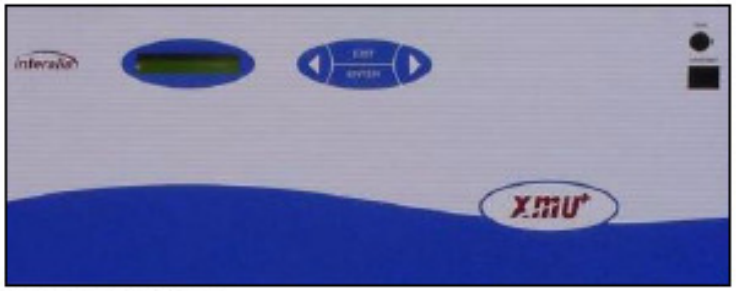
- Pre-recorded announcements that play to assigned lines when the unit is activated by an incoming call
- Ability for users to navigate through different levels of messages by entering commands with a touch-tone telephone
- Flash memory that ensures configuration, statistics and messages are not lost in the event of a power failure
- Internal modem and Ethernet port for remote administration

2009 Interalia Inc. All rights reserved

XMU+ Review Hardware Components

XMU+ offered in two styles:

- XMU+ Large Chassis



XMU+ Large Chassis

- XMU+ Small Chassis

XMU+ Small Chassis

- Both come with 8 minutes of Standard record time expandable to 16,24,40,68,128 or *360 minutes
- Both use the same type control card
- Both accept the same types of line cards that are offered

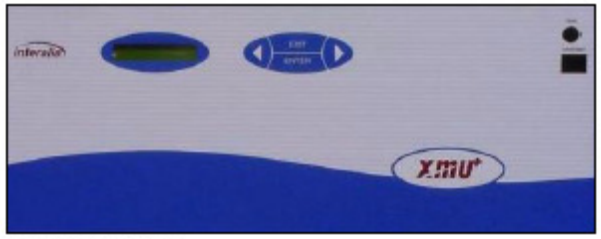
* 360 Minutes must be special ordered in advance

2009 Interalia Inc. All rights reserved

XMU+ Review Hardware Components

XMU+ Large Chassis:

- **The XMU+ large chassis handles up to 8 Analog/MOH line cards for Call Processing, Audio Text, ACD Announcements and Music On-Hold (MOH)**
- **With a Music-On-Hold card installed, it can also act as a music/messaging on-hold system with two music inputs and four different outputs**
- **Redundant (Dual) power available**



XMU+ Large Chassis

Provides a flexible configuration:

- **64 Analog channels**
- **48 T1 channels**
- **8 MOH cards (with dual power supply)**

2009 Interalia Inc. All rights reserved

XMU+ Review Hardware Components

XMU+ Small Chassis

- **The XMU+ small chassis handles 1 line card for call processing, audio text, ACD announcements, auto attendant or Music on Hold (MOH)**
- **With a Music-On-Hold card installed, it can also act as a music/messaging on-hold system with two music inputs and four different outputs**

Provides a fixed configuration:

- **Only one line card:**
  - **4 or 8 Low Impedance channels**
  - **4 or 8 Analog channels**
  - **24 T1 channels**
  - **1 MOH card**

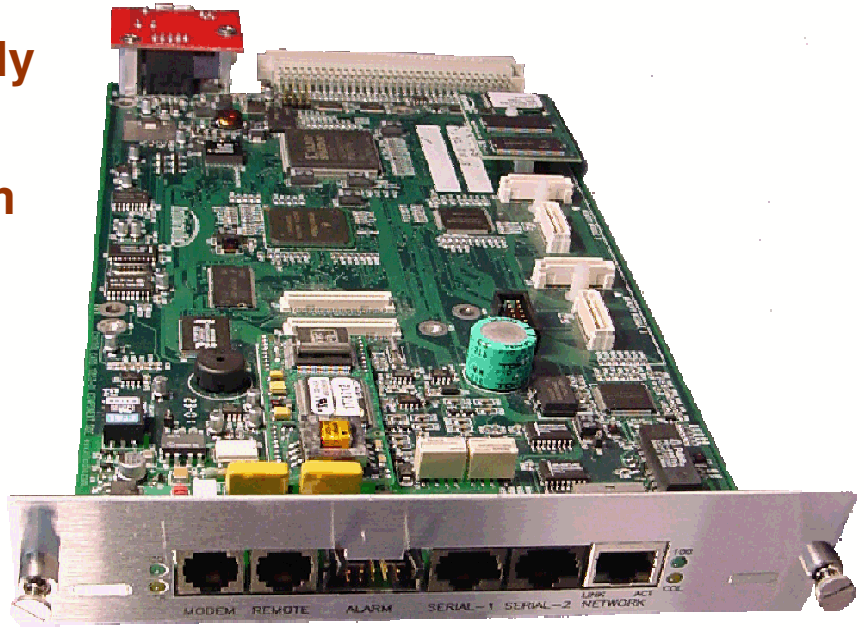
XMU+ Small Chassis

2009 Interalia Inc. All rights reserved

XMU+ Review Hardware Components

XMU+ Control Card

- Modem
  - Download firmware remotely
  - Remote Administration
  - Download canned & system prompts remotely
- Remote Access
- Alarm
- Serial port 1
- Serial Port 2
- Network Interface



Flash Memory (up to 6 hours)

2009 Interalia Inc. All rights reserved

XMU+ Review Hardware Components

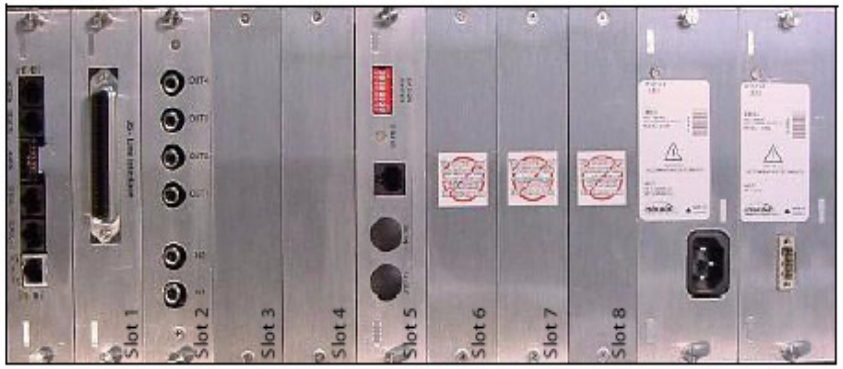
XMU+ Card Population Rules

- **The XMU+ small chassis:**
  - **Has one slot for placement of only one card of any type**

Small Chassis

- **The XMU+ large Chassis:**
  - **Max 8 Low impedance cards**
  - **Max 8 Hybrid cards**
  - **Max 8 MOH cards (dual power supply)**
  - **Max 2 T1 cards (1st and 5th slot)**

Large Chassis



Both sizes require a control card and at least one power supply

2009 Interalia Inc. All rights reserved

XMU+ Review Hardware Components

Low Impedance Card

- Supports passive applications only – ACD/RAN announcements
- Connect up to 24 UTC ports on a Nortel PBX for 24 concurrent RAN announcements with out RAN Broadcast
- 4 or 8 ports

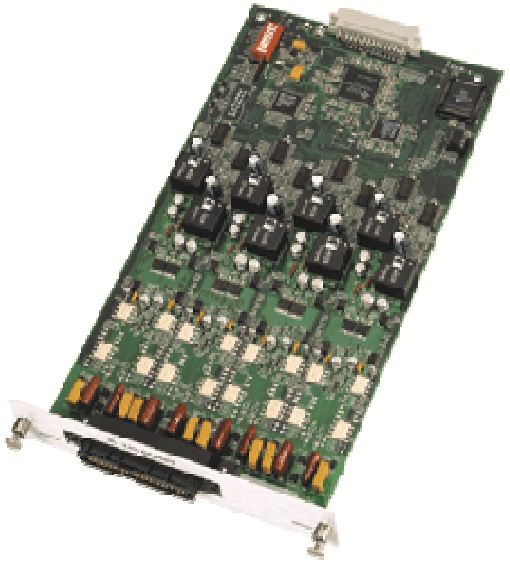
For ACD/RAN Announcements Only

2009 Interalia Inc. All rights reserved

XMU+ Review Hardware Components

Hybrid Card

- Supports both Passive (ACD/RAN) and Interactive (Auto Attendant) applications on a per port basis



- Interactive Applications:
  - Audio text/Information Lines
  - Auto Attendant/Call Processing
- ACD
  - RAN Announcements
- 4 or 8 ports

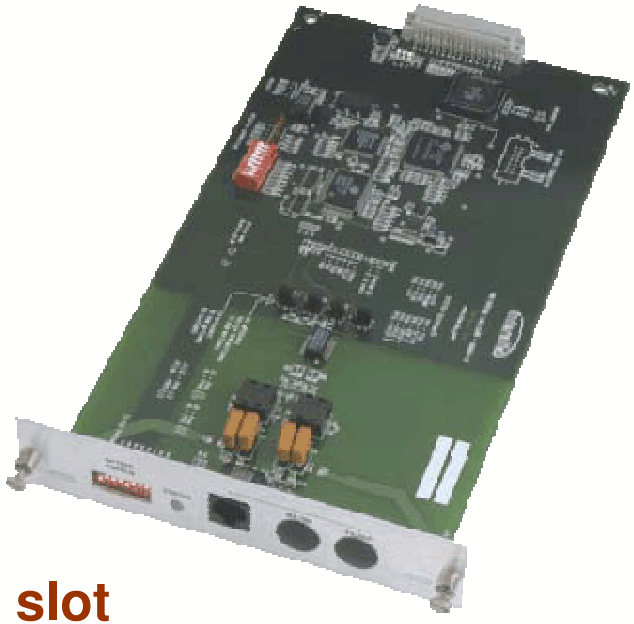
For ACD/RAN Announcements and Interactive Applications

interalia

2009 Interalia Inc. All rights reserved

XMU+ Review Hardware Components

Digital (T1) Card



- T1 (line side T1 – 24 ports)
  - Signaling: Loop start or E&M
  - Line coding: AMI, B8ZS
  - Framing Format: SF/D4 or ESF
- 1 Card max. on Small Chassis
- 2 Card max. on Large Chassis
- Should only be installed in the 1st or 5th slot
- Only for call processing/audio text applications
- CAT5 cable to connect RJ-45 port on the T1 line card directly to the RJ-45 on the line side T1 card of the PBX

For Interactive Applications Only

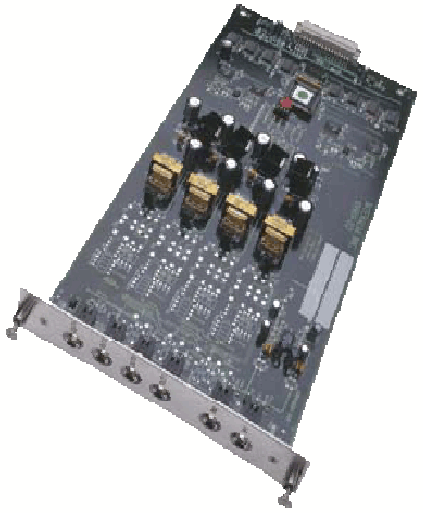
interalia

2009 Interalia Inc. All rights reserved

XMU+ Review Hardware Components

MOH Card

- 4 MOH outputs
- 2 Music source inputs
- Configurable fade times
- Configurable volume levels
- Combines music and messages
- Change messages “on the fly” using remote message access



PABX Signal	Input 1	Input 2	Output 1	Output 2	Output 3	Output 4
External	grn	grn				
External	red	red				
MOH Input			grn	grn	grn	grn
MOH Input			red	red	red	red

For MOH Applications

interalia

2009 Interalia Inc. All rights reserved

SBX Review Hardware Components

SBX Applications

- The SBX can be used for:
  - Auto attendant/Call processing
  - Audio text/Information lines
  - ACD (RAN) Announcements
  - Music on Hold (Optional)

SBX Options

- SBX options:
  - 8 Standard /16/32/60 minutes of memory
  - 4 or 8 analog channels
  - 2 MOH outputs (Optional)
  - 1 MOH input (Optional)

Flash Memory (up to 1 hour)

2009 Interalia Inc. All rights reserved

SBX Review Hardware Components

SBX Chassis

- Alarm
- Modem
  - Download firmware remotely
  - Remote Administration
  - Download canned & system prompts remotely
- Serial port 1
- Network Interface
- MOH Output 1
- MOH Output 2
- Audio Input
- Remote Access
  - Message security
- Analog ports 1- 8

2009 Interalia Inc. All rights reserved

Module 1: Objectives

After completing this Module, are you able to:

- Understand the three chassis options?
- Understand the system components?
- Understand the control card and line cards?

2009 Interalia Inc. All rights reserved

Module 2 – XMUCOM+ Software Interface

2009 Interalia Inc. All rights reserved

Module 2: Objectives

After completing this Module, you will be able to:

- Understand the XMUCOM+ Toolbar
- Understand the XMUCOM+ Menu Bar and Functions
- Understand the XMUCOM+ Site Setup
- Understand the XMUCOM+ Communications

2009 Interalia Inc. All rights reserved

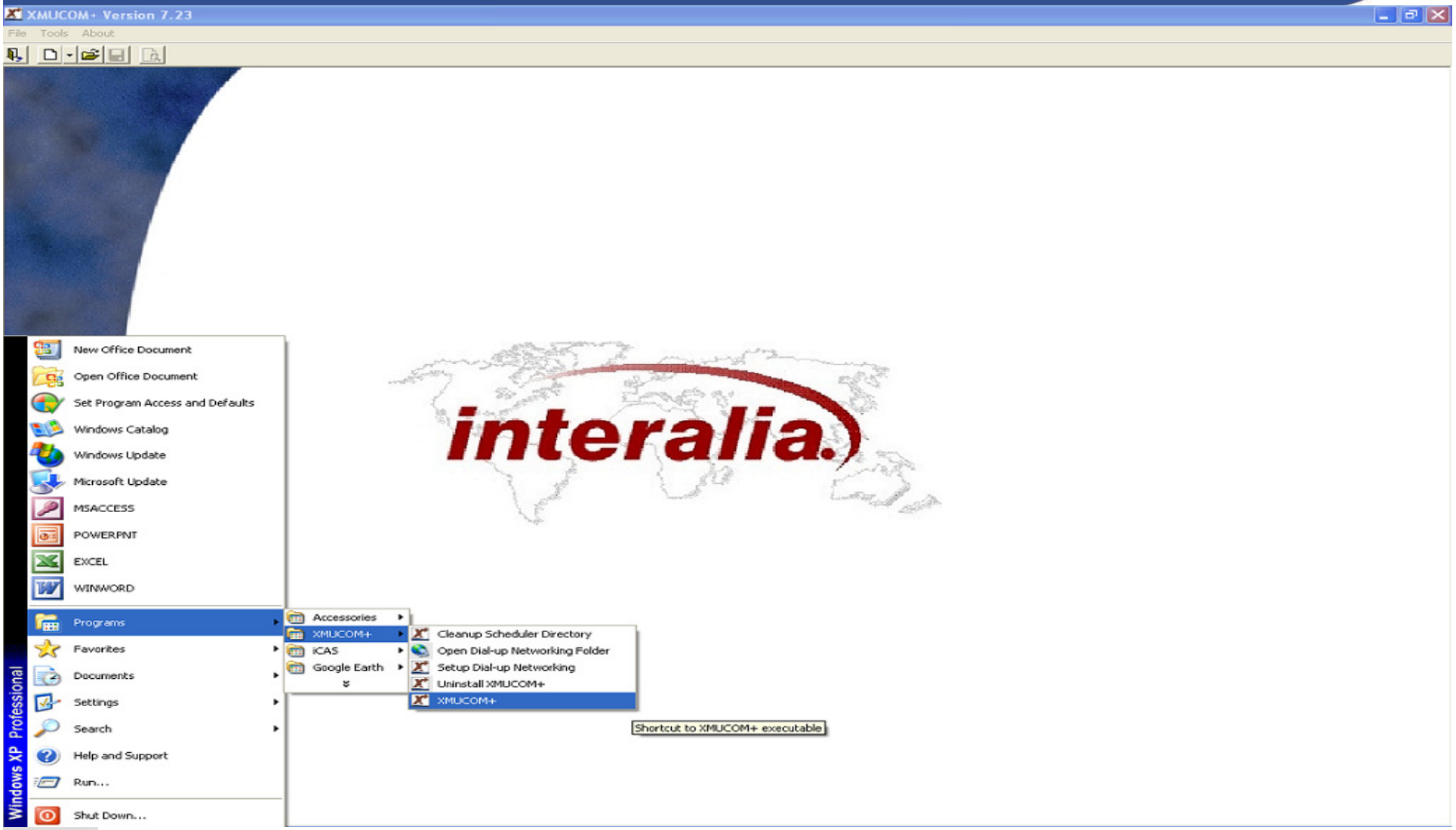
XMUCOM+ Software Interface

XMUCOM+ is a windows-based configuration and communication software program for the both the XMU+ and SBX product lines.

The software uses a simple "point and click" interface to help administrators directly manage 1000 or more XMU+/SBX systems via LAN (Network), Modem, or Direct RS-232 connection.

2009 Interalia Inc. All rights reserved

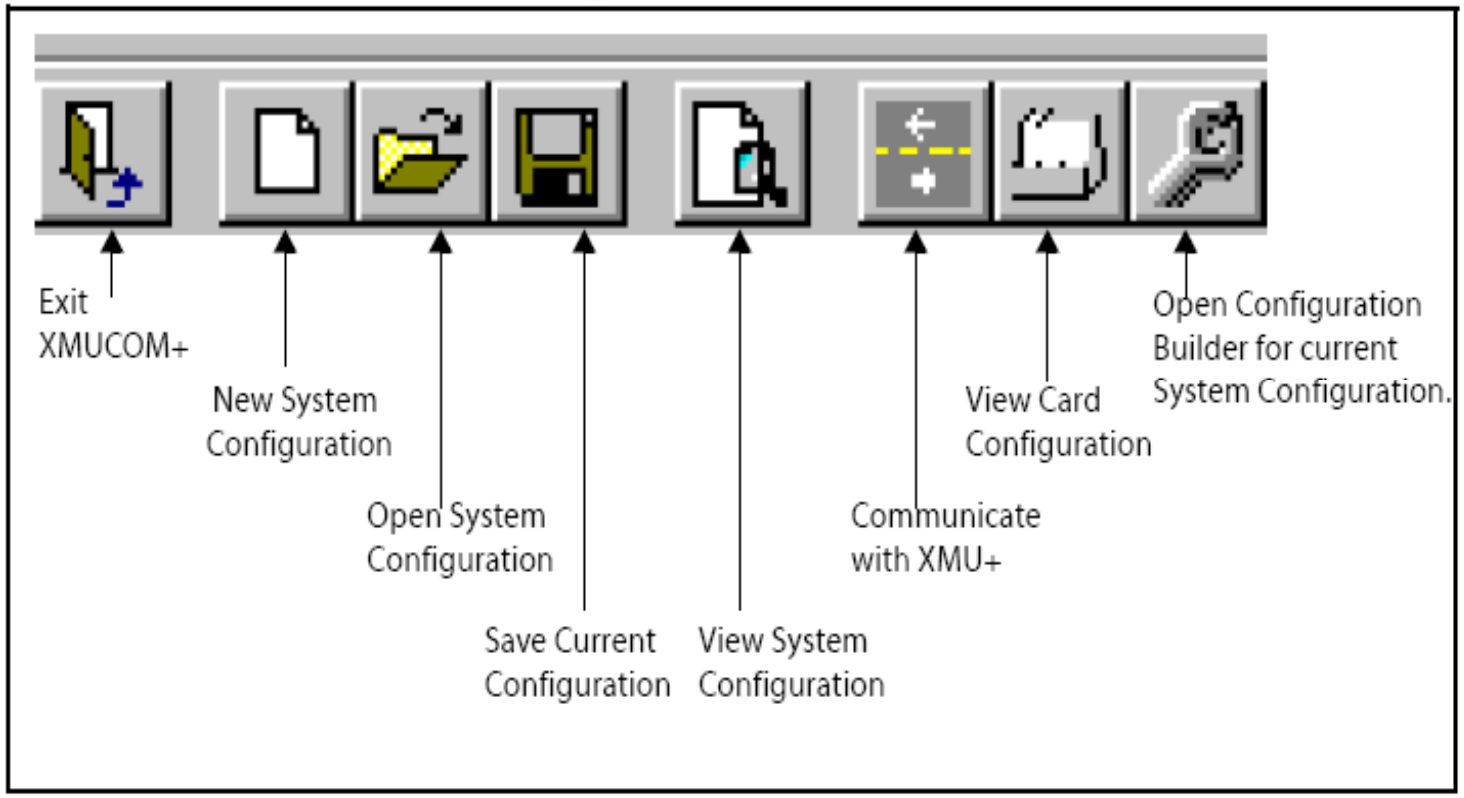
XMUCOM+ Software



2009 Interalia Inc. All rights reserved

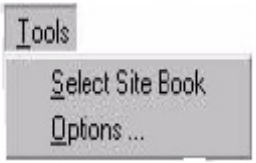
XMUCOM+ Toolbar

The *XMUCOM+ Toolbar* provides quick access to commonly used commands and tools. The Toolbar remains accessible through all XMUCOM+ functions and screens.



2009 Interalia Inc. All rights reserved

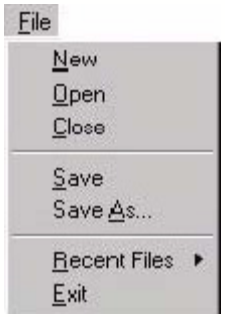
XMUCOM+ Menu Bar - Tools



This command...	Is used to...
Select Site Book	Choose a site book stored on the local drive of your PC, or one saved onto a network drive if shared access is required.
Options	Enable, disable or modify the Auto Save feature, the User Login feature, and notify unprocessed completed tasks.

2009 Interalia Inc. All rights reserved

XMUCOM+ Menu Bar - File



This command...	Is used to...
New	Create a new XMU+ system configuration.
Open	Open an existing system configuration.
Close	Close current configuration.
Save	Save the current program or system configuration to the database.
Save As	Save the current system configuration under a new file name.
Recent Files	Open the nine most recently used configurations.
Exit	Exit the XMUCOM+ application.

2009 Interalia Inc. All rights reserved

XMUCOM+ Menu Bar - Communications

This command...	Is used to...
Site Book	Manage and enter site specific information such as site name, site ID, connection methods, file handling standards, and configuration and statistic file handling guidelines.
Import Site Book	Import previously stored site information to a new or existing version of XMUCOM+. Imported site information is stored in the XMUCOM+ database. This process will overwrite any existing entries.
Export Site Book	Export site information from the current version of XMUCOM+ into a backup file.
Communicate	Enter and manage uploads and downloads of configurations to and from the XMU+. These tabs allow you to identify the elements to be downloaded or uploaded, and lets you set schedules for certain activities, such as generating statistics.

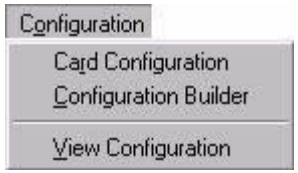
2009 Interalia Inc. All rights reserved

XMUCOM+ Menu Bar - Communications (Cont.)

Completed Scheduled Tasks	View a list of completed scheduled tasks. This menu lets you determine which scheduled communication tasks are completed and can be processed.
Delete Partition	Delete a selected partition from the XMU+ configuration
Synchronize	This feature allows the user to cross reference the PC software configuration with the one currently residing on the XMU+ . A list of nodes/messages existing on the XMU+, but not found in the PC software file will be displayed and can be deleted from the XMU+ at this time if required.
Launch ReScheduler	Open an application which tracks all tasks scheduled and/or repeated in the future before submitting them to SchedulerPlus to be executed.
Launch Dashboard	Open the communication dashboard which displays progress and status on a scheduled event.
Launch Telnet Session	Start a diagnostic session with an XMU+ via Telnet.

2009 Interalia Inc. All rights reserved

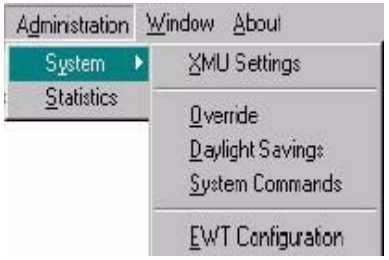
XMUCOM+ Menu Bar - Configuration



This command...	Is used to...
Card Configuration	Open the *Card Configuration* window so that you can configure and set options for the various cards in the XMU+ unit. This includes: ◆ Specifying the types of cards on your XMU+ unit. ◆ Identifying the program configuration (start nodes) that are to run from each line and partition. ◆ Setting Line and Partition behaviors.
Configuration Builder	Open the *Config Builder* window, where you can design, edit, modify, or delete program configurations, their associated nodes, and their partition settings. Developers can create the program configuration on the XMUCOM+ (independent of the XMU+ unit) and download them using the **Communications** command when they are ready to test and implement them.
View Configuration	Display a text-based view of your current system configuration. This file provides summary information about all the partitions, cards, default nodes, program nodes, commands, and messages that make up your current system configuration.

2009 Interalia Inc. All rights reserved

XMUCOM+ Menu Bar - Administration

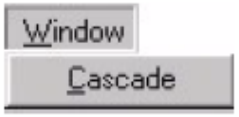


This command...	Is used to...
System	Set XMU system settings, access codes, session limits, partitioning, and other XMU+ options. The four main sub-menu options are: **XMU Settings**: Use this window to set access codes, session limits, enable partitioning, modes of operation, and language of operation. **Override**: Use this window to set the start node for the override configuration (for each line on each card) of an XMU+ unit. **Daylight Savings**: Use this window to set the start and stop dates for daylight savings. This command is only required for those parts of the country that implement daylight savings. **System Commands**: Lets you set, retrieve, and send date, time, and firmware related information to the selected XMU+ unit. These tasks are not commonly used. Most of these tasks can also be performed directly from the Front Panel of the XMU+ box.
Statistics	Retrieve and view statistics for a specific site and partition of the selected XMU+ unit. Users can also choose to view existing or already retrieved statistics.

2009 Interalia Inc. All rights reserved

XMUCOM+ Menu Bar – Window/About

Window Menu.



This command...	Is used to...
Cascade	Cascade open windows for easy access.

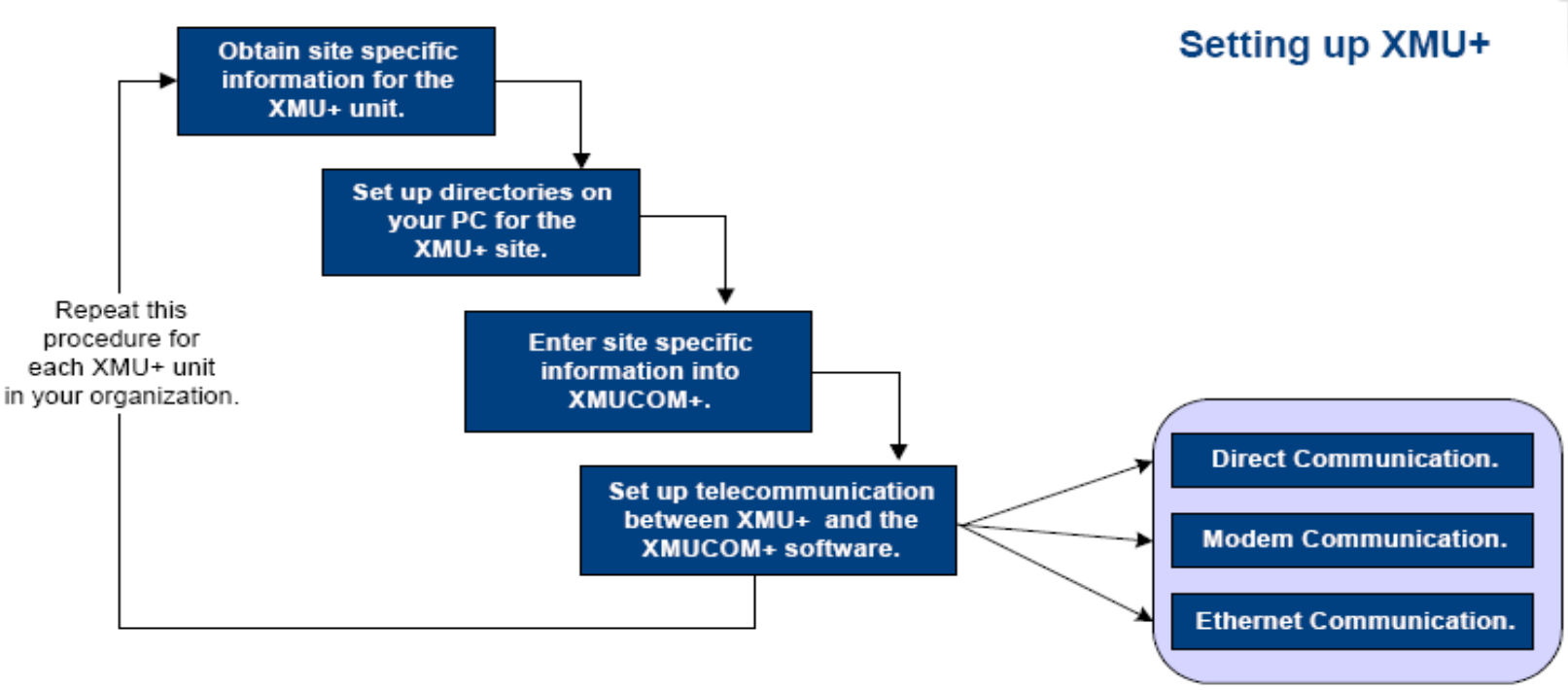
About Menu.

This command...	Is used to...
About Interalia's XMUCOM+	Provide general information about the XMUCOM+ application, its version, and contact information.

2009 Interalia Inc. All rights reserved

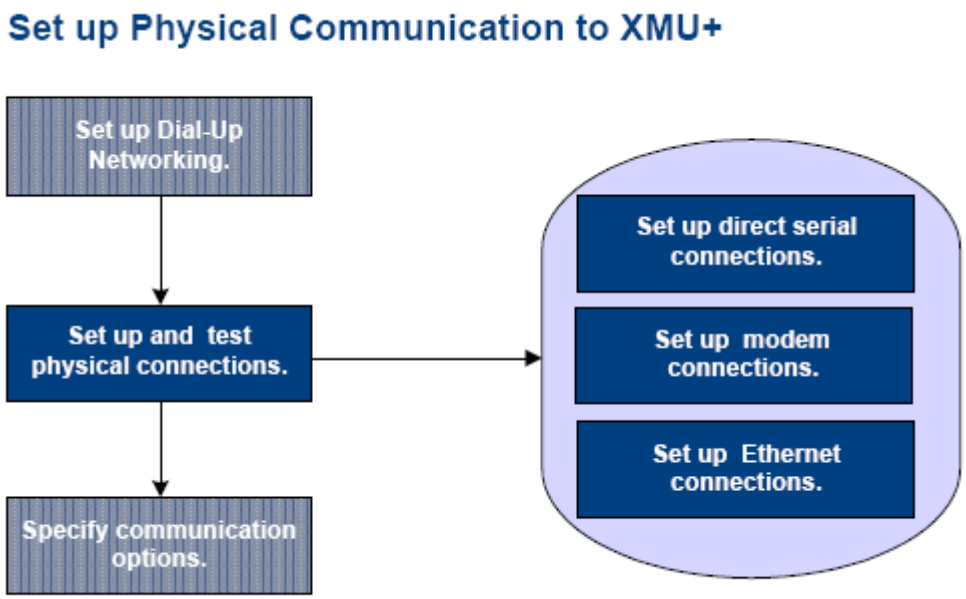
Overview - Site Preparation

XMU+ units can be installed at multiple sites or locations. Organizations that choose to install XMU+ at multiple sites must properly organize, document, and prepare site specific information. XMUCOM+ site management features let you manage multiple XMU+ sites from a single location.



2009 Interalia Inc. All rights reserved

XMUCOM+ Site Setup

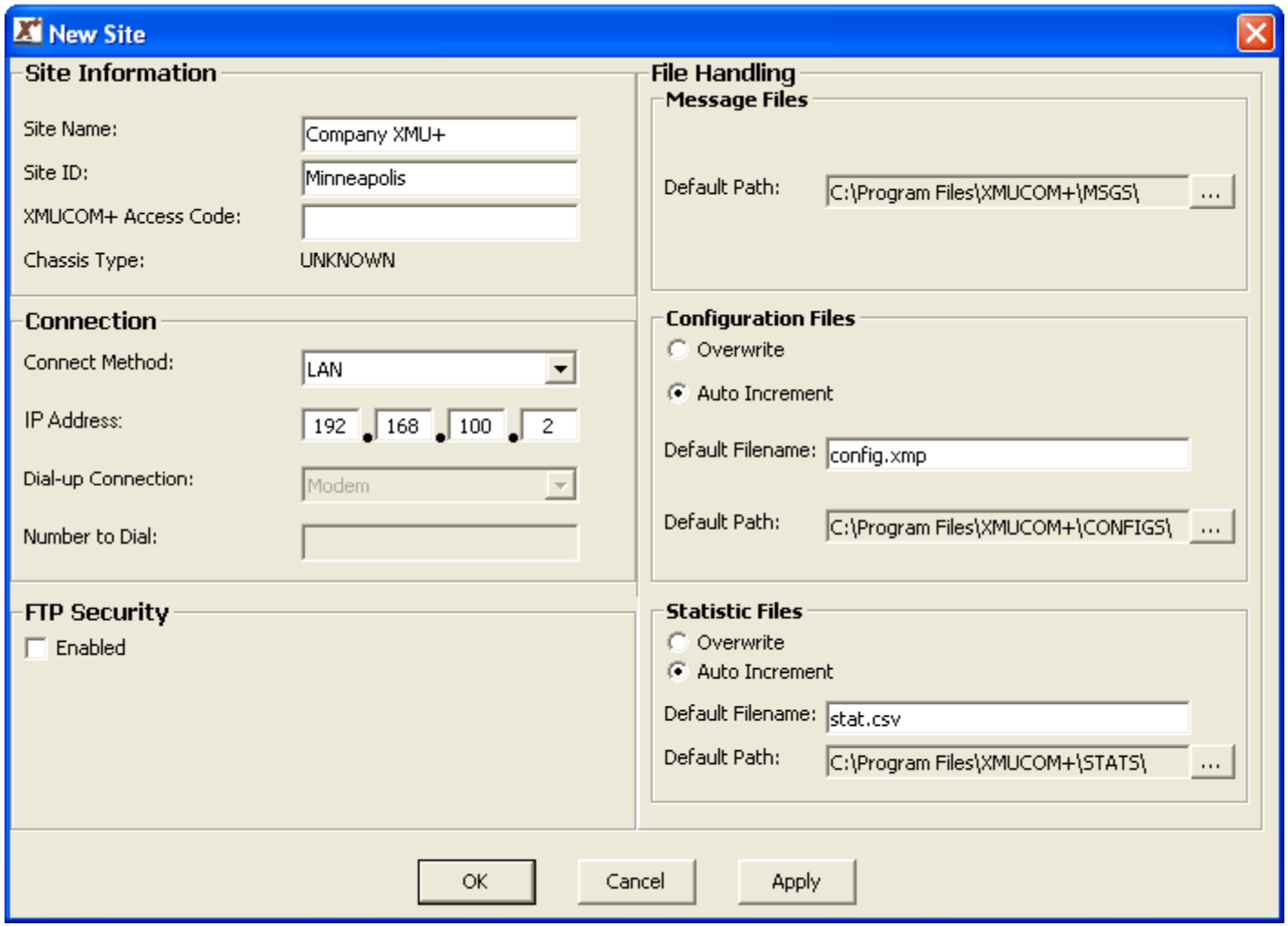


2009 Interalia Inc. All rights reserved

XMUCOM+ Communications

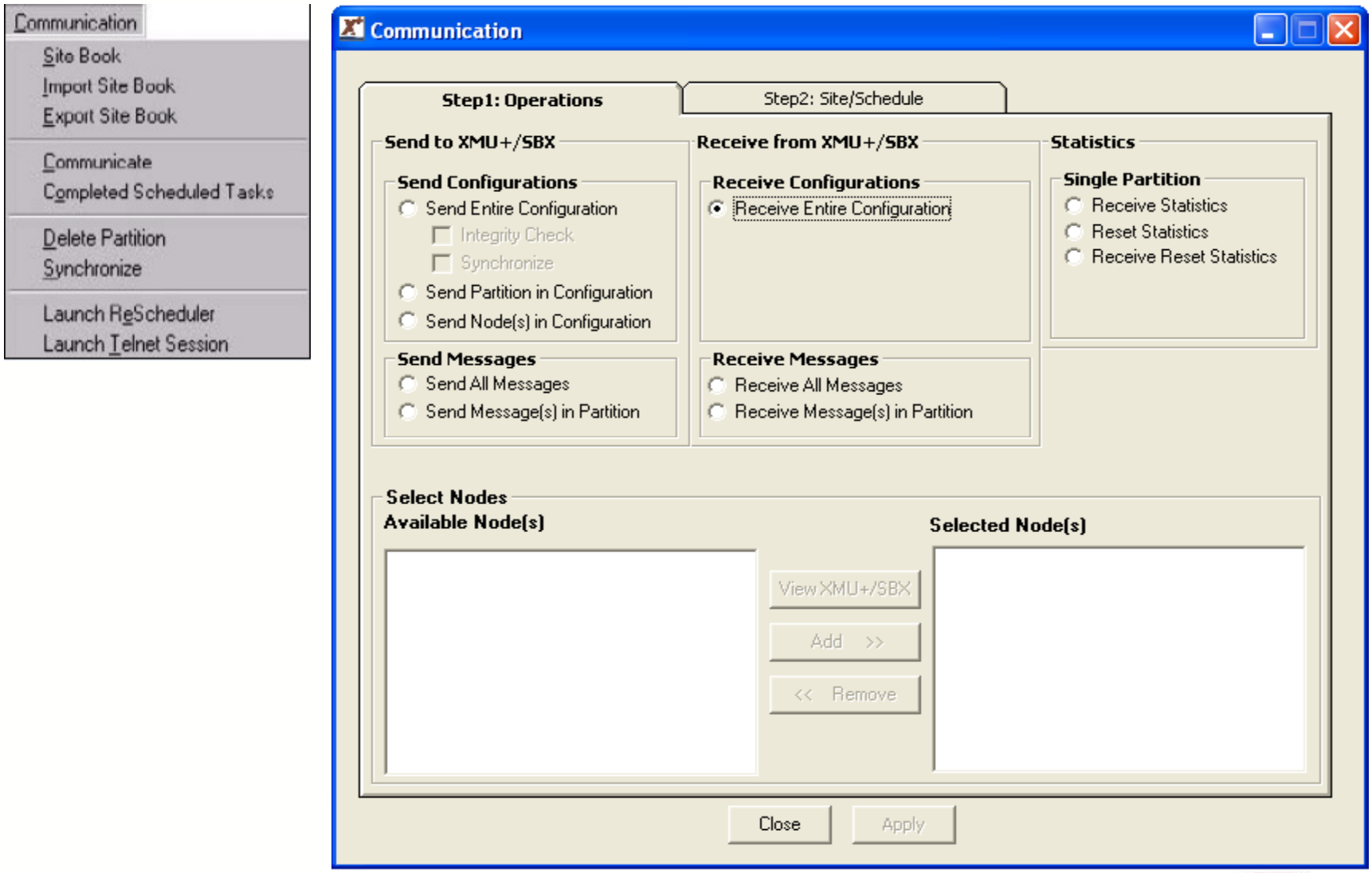
Communication

Site Book



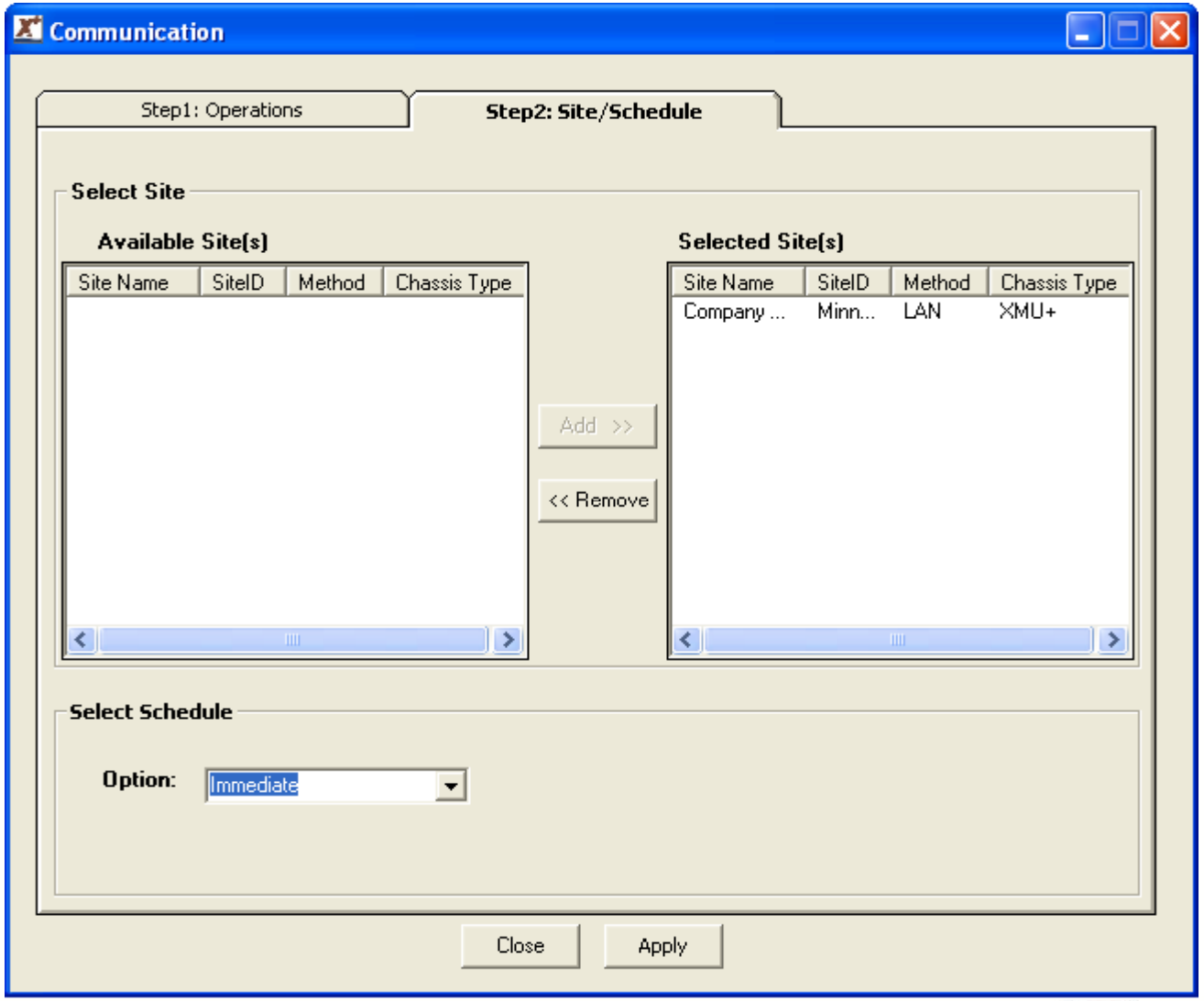
2009 Interalia Inc. All rights reserved

XMUCOM+ Communications



2009 Interalia Inc. All rights reserved

XMUCOM+ Communications



2009 Interalia Inc. All rights reserved

Module 2: Objectives

After completing this Module, are you able to:

- Understand the XMUCOM+ Toolbar?
- Understand the XMUCOM+ Menu Bar and Functions?
- Understand the XMUCOM+ Site Setup?
- Understand the XMUCOM+ Communications?

2009 Interalia Inc. All rights reserved

Module 3 – Configuration Design Nodes

2009 Interalia Inc. All rights reserved

Module 3: Objectives

After completing this Module, you will be able to:

- Understand the basic XMUCOM+ Configuration Nodes
- Understand how the modules interrelate / interconnect
- Ready to program

2009 Interalia Inc. All rights reserved

Configuration Design Nodes

NODES:

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

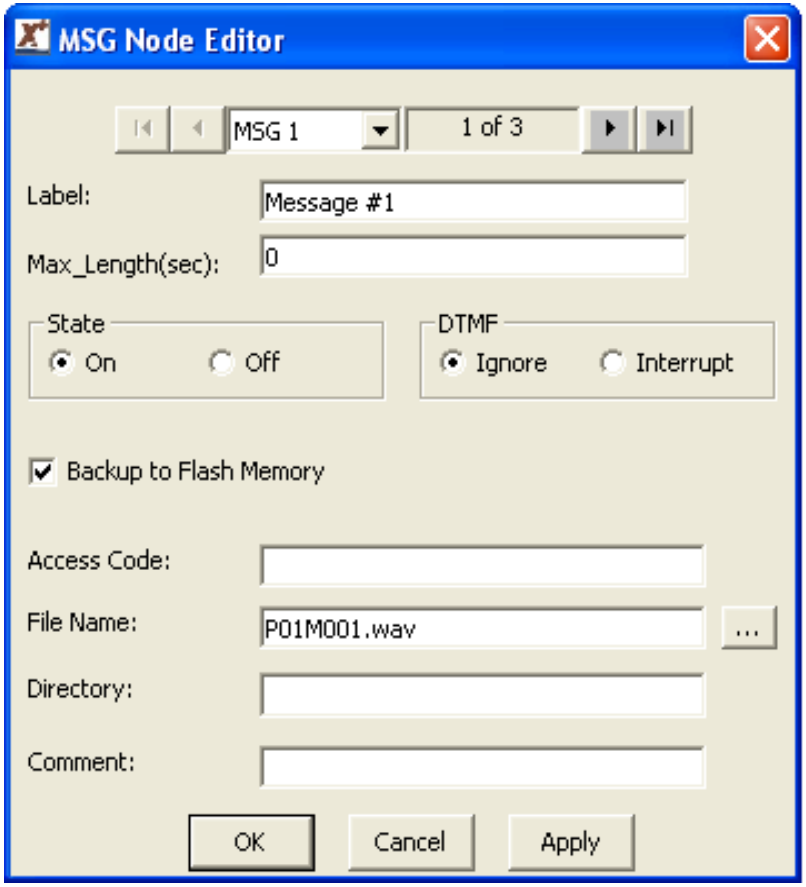
Nodes are used as steps within a call flow, to add menu choices, play additional messages. Add time/date screening, provide user interaction and responses, transfer calls, or allow branching to new actions

2009 Interalia Inc. All rights reserved

Message Node:

Used to identify and store message file information.

Each message node, with it's associated message or music file, can be re-used in multiple locations within a single program configuration.



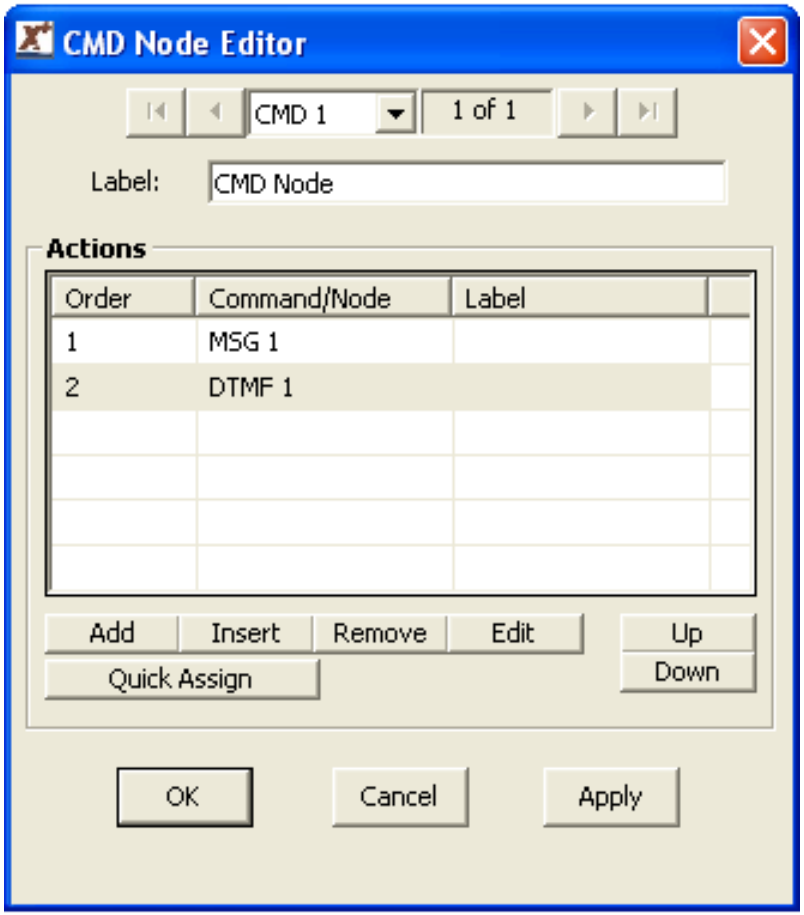
2009 Interalia Inc. All rights reserved

Nodes

CMD Node:

Contain other commands and nodes to group a related set of commands.

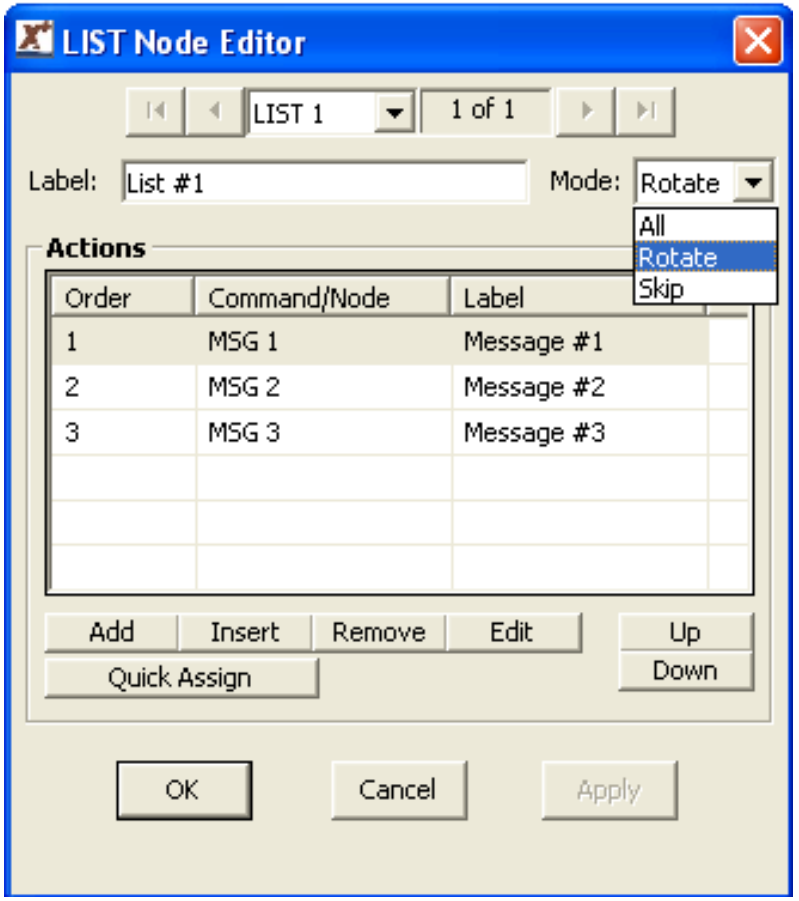
It is typically used to execute a series of commands that can send the caller to various destinations.



2009 Interalia Inc. All rights reserved

List Node:

Used to insert a series of messages into an XMU+/SBX program configuration

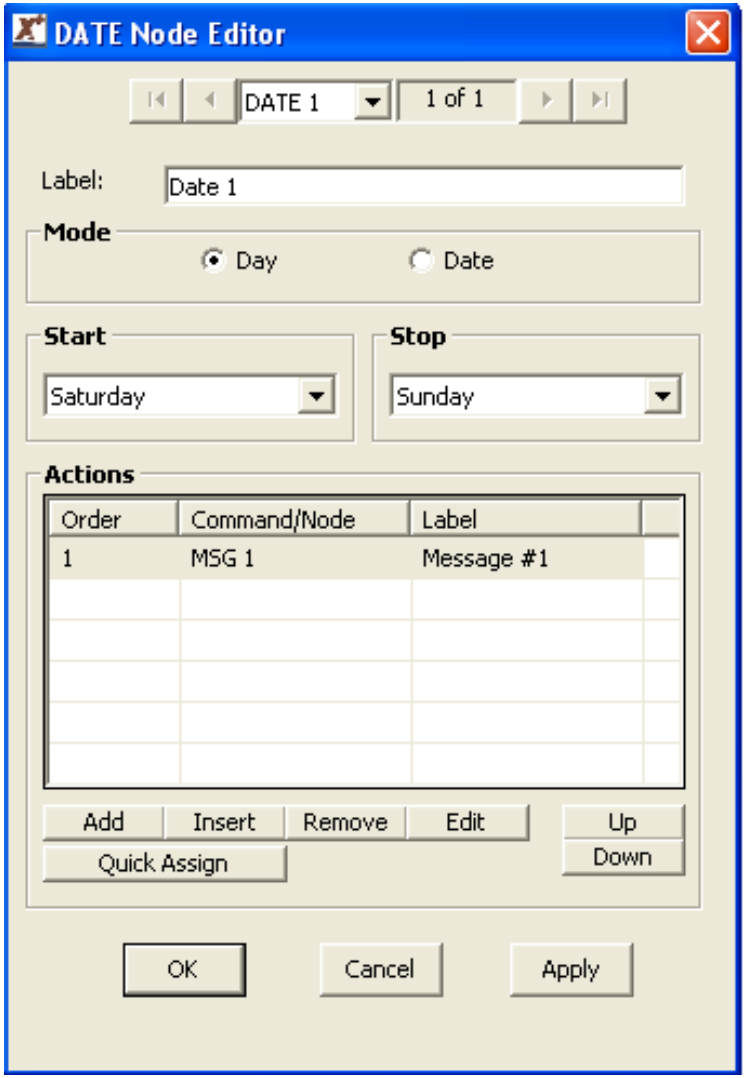


2009 Interalia Inc. All rights reserved

Nodes

Date Node:

Will execute a set of commands on a specific date or day, or within a range of dates.

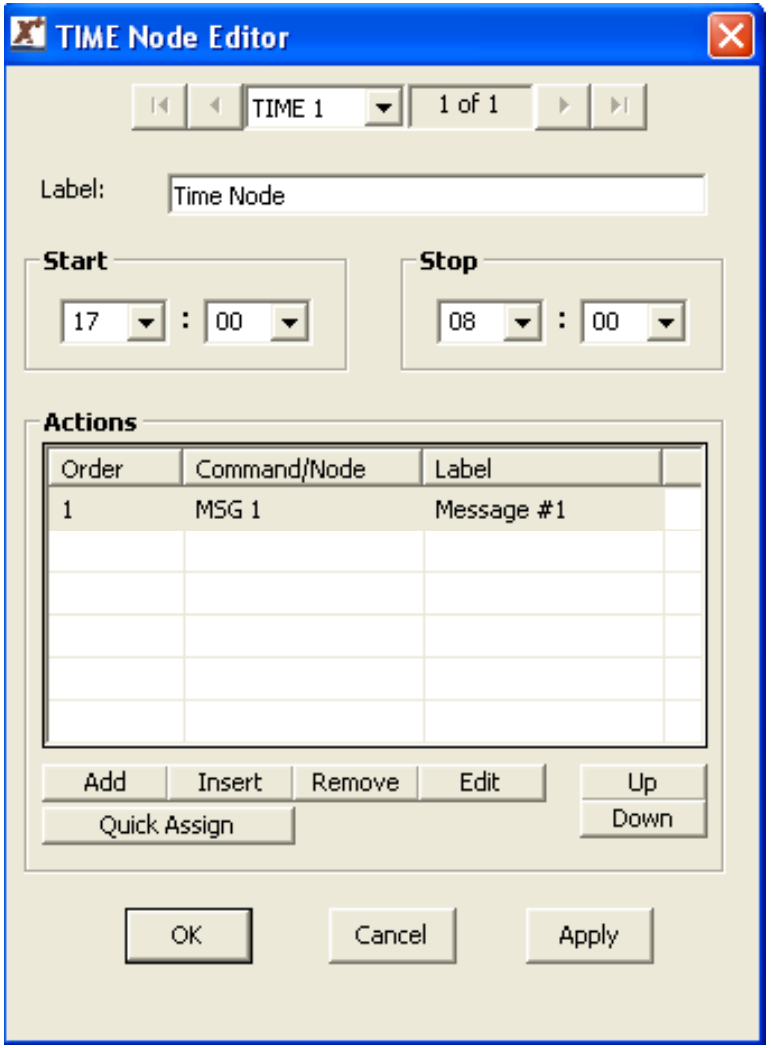


2009 Interalia Inc. All rights reserved

Nodes

Time Node:

Will execute a group of commands when a call is received within a specific time range.

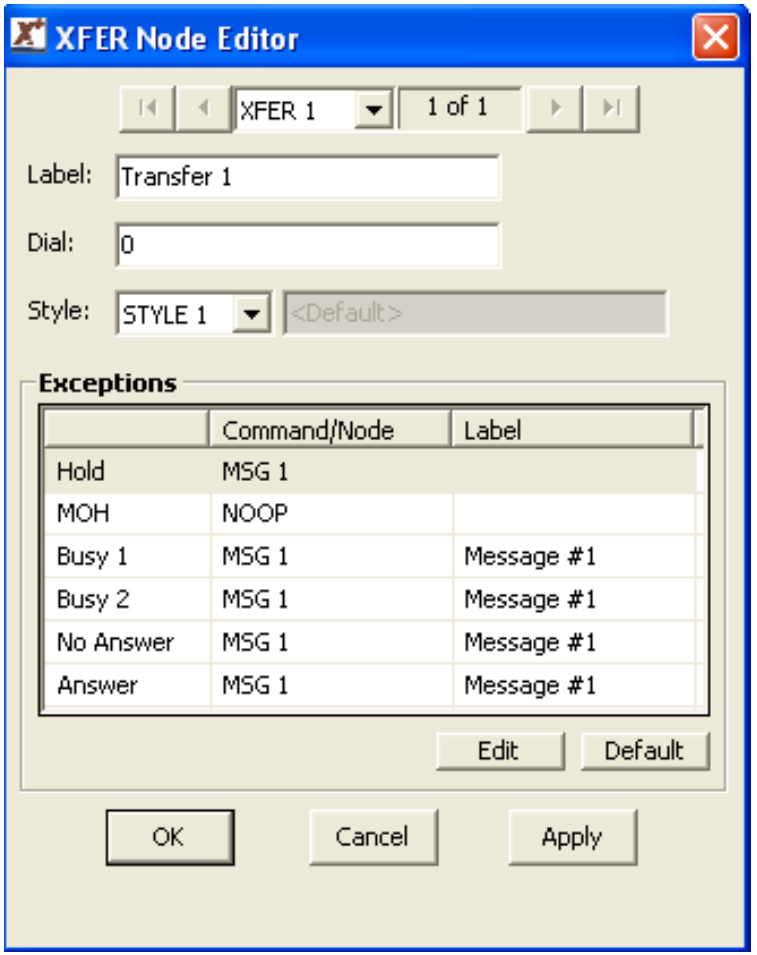


2009 Interalia Inc. All rights reserved

Nodes

XFER Node:

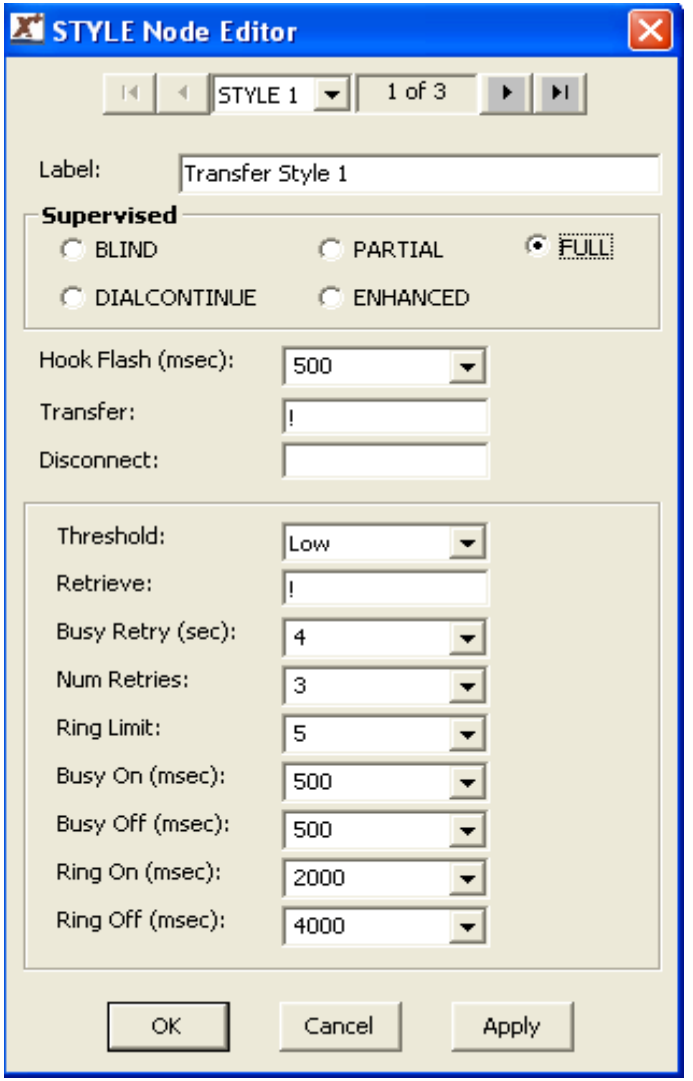
Group settings and commands that allow the XMU+/SBX to perform call transfers.



2009 Interalia Inc. All rights reserved

STYLE Node:

Settings that ensure the XMU+ unit will perform transfers in a manner compatible with the PBX (hook-flash duration etc.)

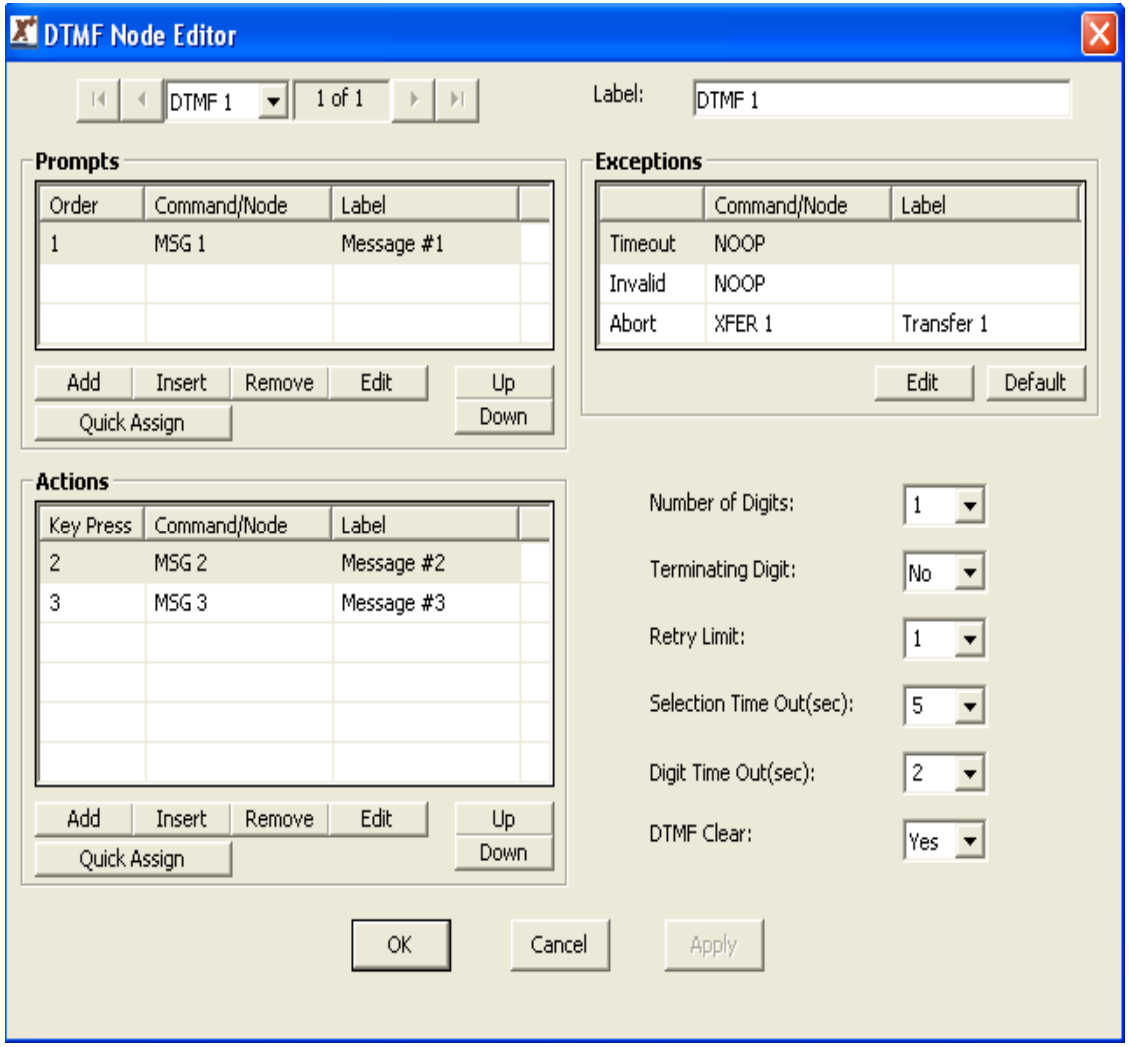


2009 Interalia Inc. All rights reserved

Nodes

DTMF Node:

- Used to present menu selection prompts to a callers, and to execute specific actions depending on the digits entered by the caller.
- Each action has a pre-defined target such as playing a message, transfer to an extension or sub-menu.



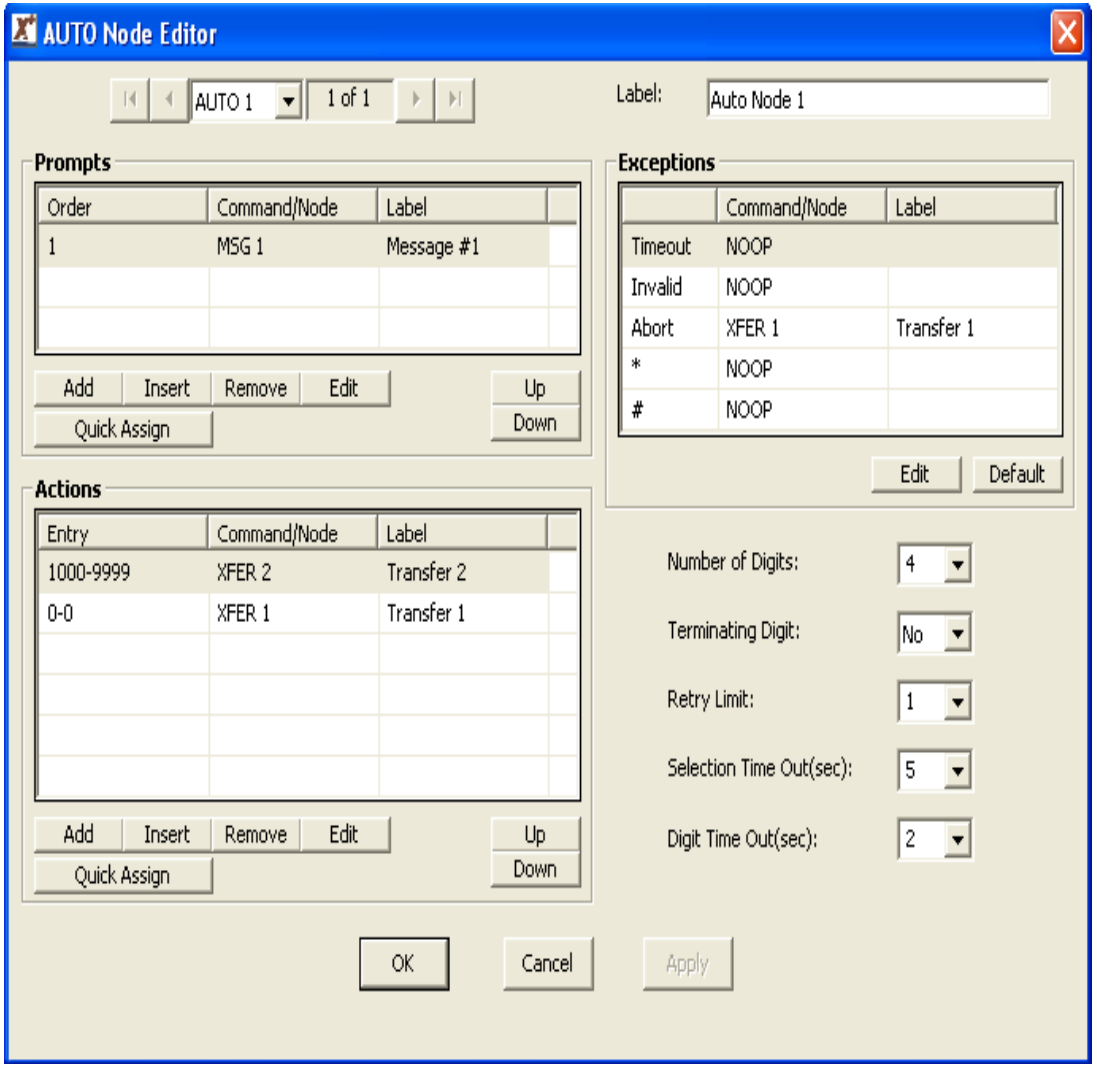
2009 Interalia Inc. All rights reserved

Nodes

AUTO Node:

Used to develop Auto-Attendant program applications.

Allows you to provide a menu that allows callers to dial Both extension ranges and single key press options in the same menu (no need to "press one to dial by extension").

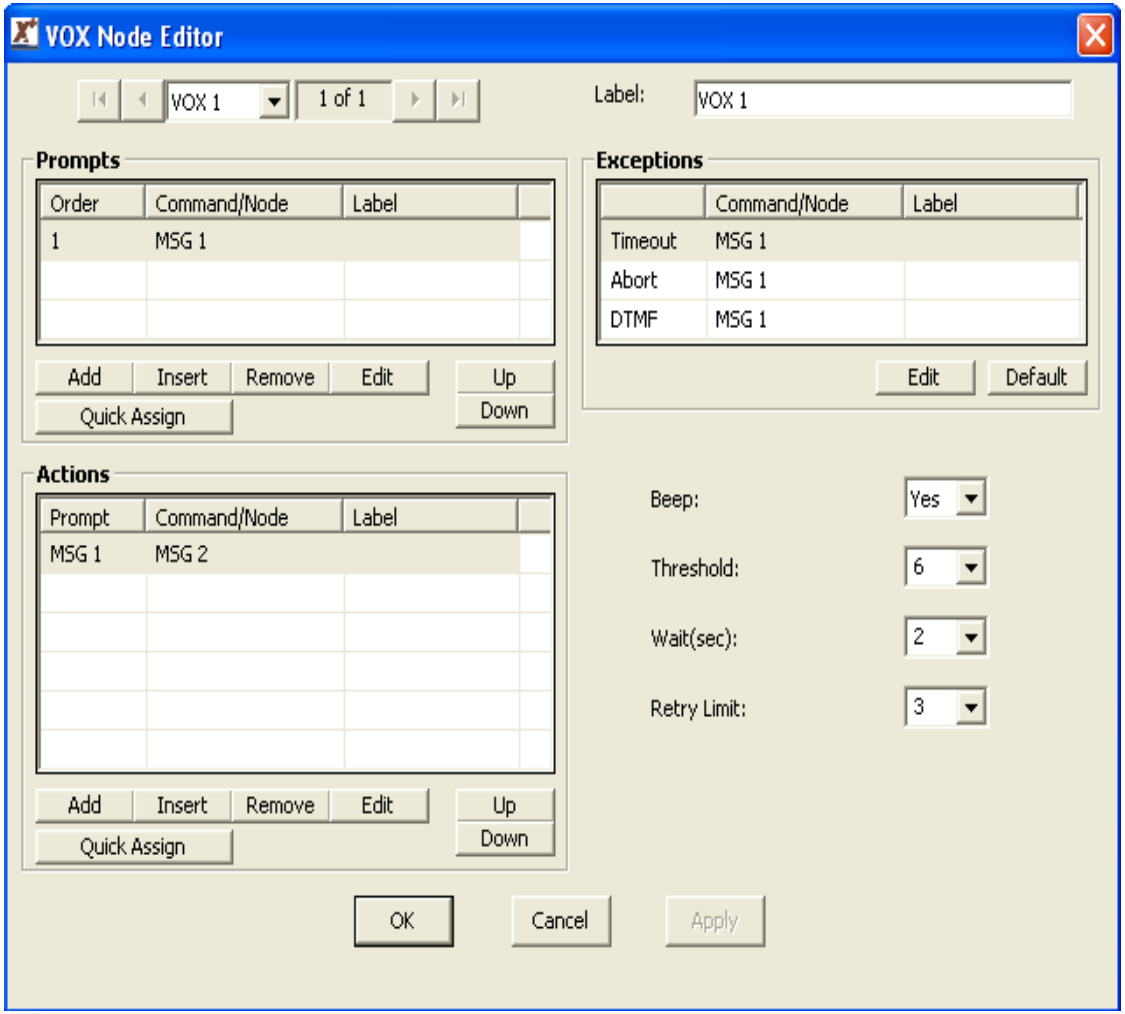


2009 Interalia Inc. All rights reserved

Nodes

VOX Node:

Used to provide a menu that responds to caller's voice prompts instead of DTMF prompts.

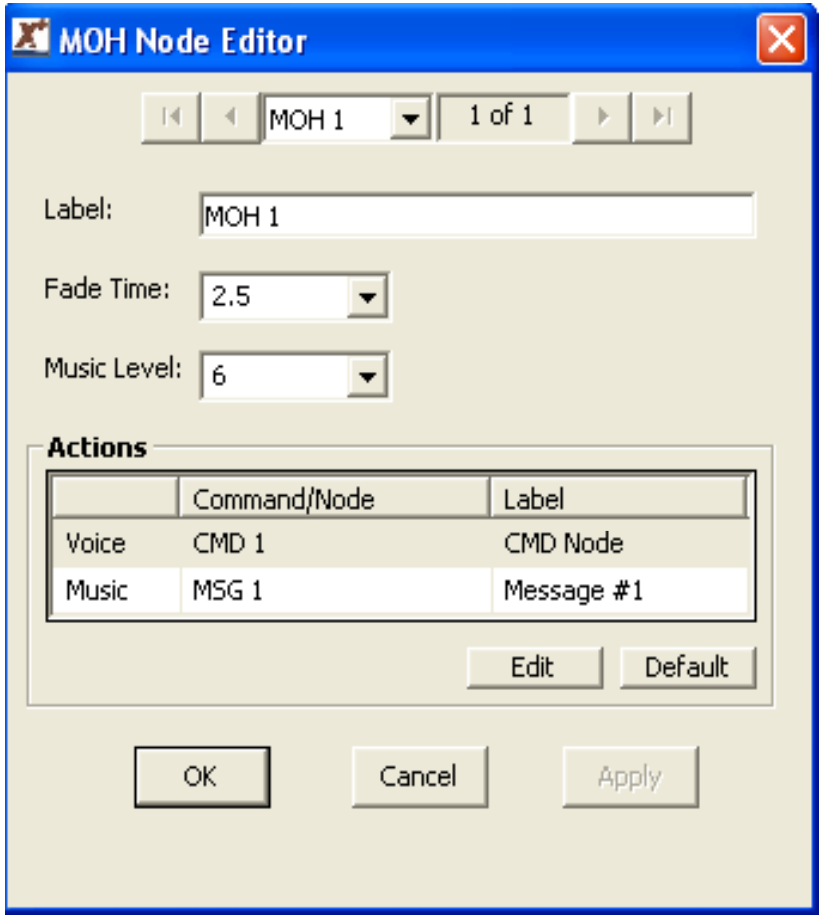


2009 Interalia Inc. All rights reserved

Nodes

MOH Node:

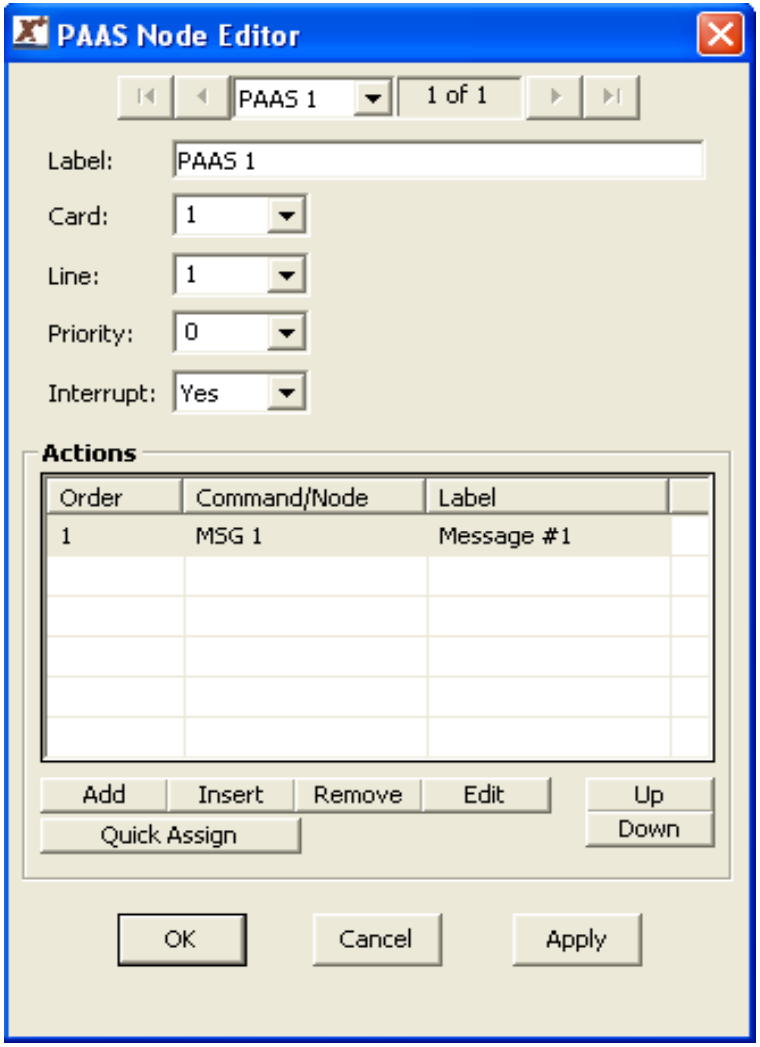
Allows the XMU+ (with MOH interface card) to be used as a Music on Hold source for delivering a combination of messages and music to callers on hold.



2009 Interalia Inc. All rights reserved

PAAS Node:

Used to activate a message or a series of messages to be played over a Public Address Announcement System.



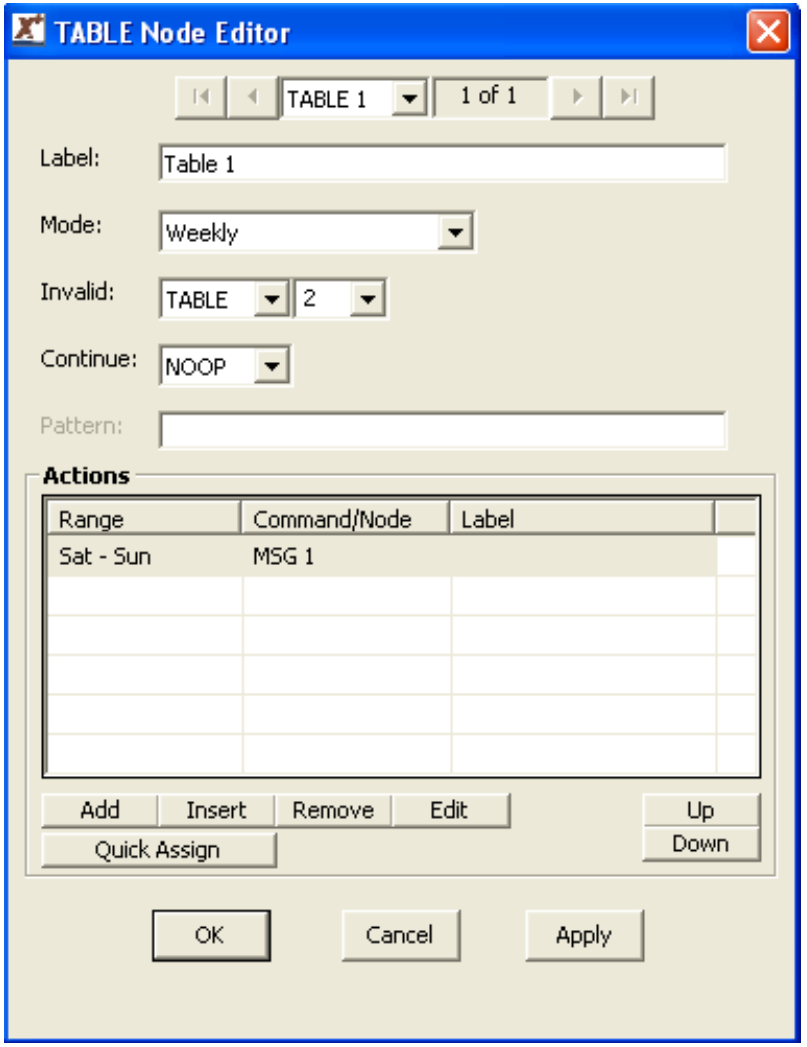
2009 Interalia Inc. All rights reserved

Nodes

TABLE Node:

Used to carry out an action based on a user defined schedule.

This schedule can be activated using the following modes: Time, Date, Month, Day, (Day of) Week, Hourly, Monthly and Calendar year.

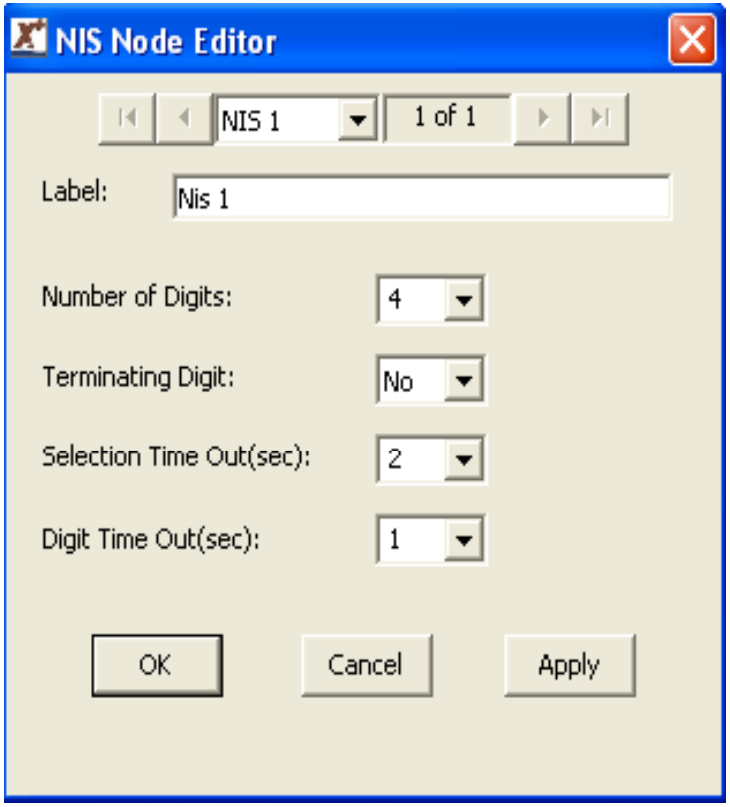


2009 Interalia Inc. All rights reserved

NIS Node:

Used to carry out an action 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.

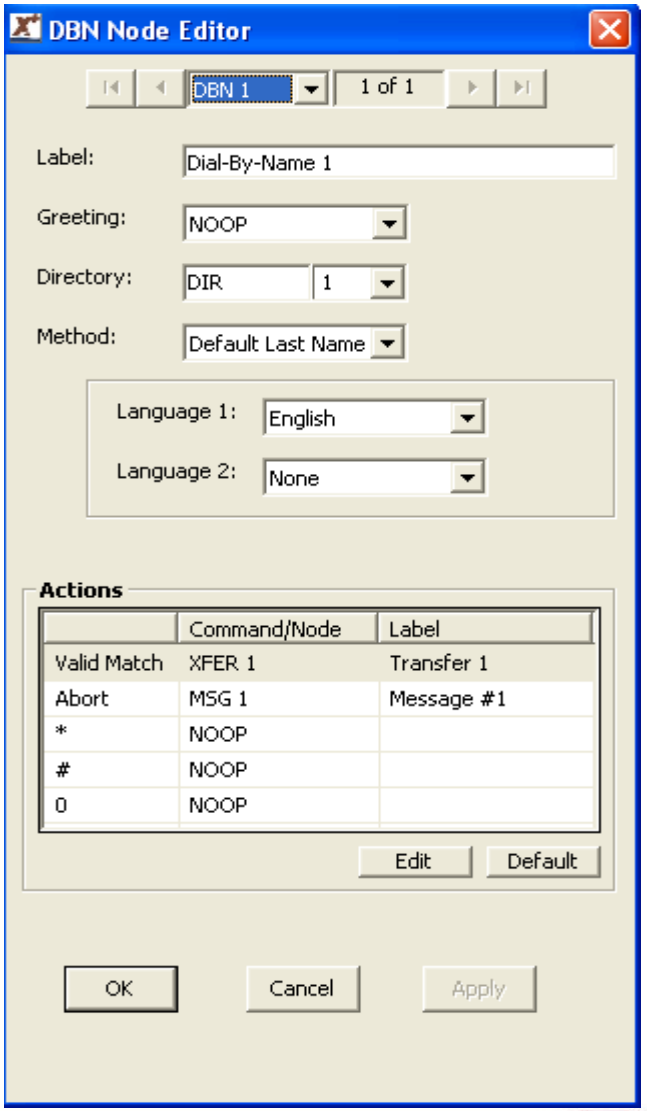


2009 Interalia Inc. All rights reserved

Nodes

DBN Node:

Contains details used by the XMU+/SBX to perform Dial by Name applications.



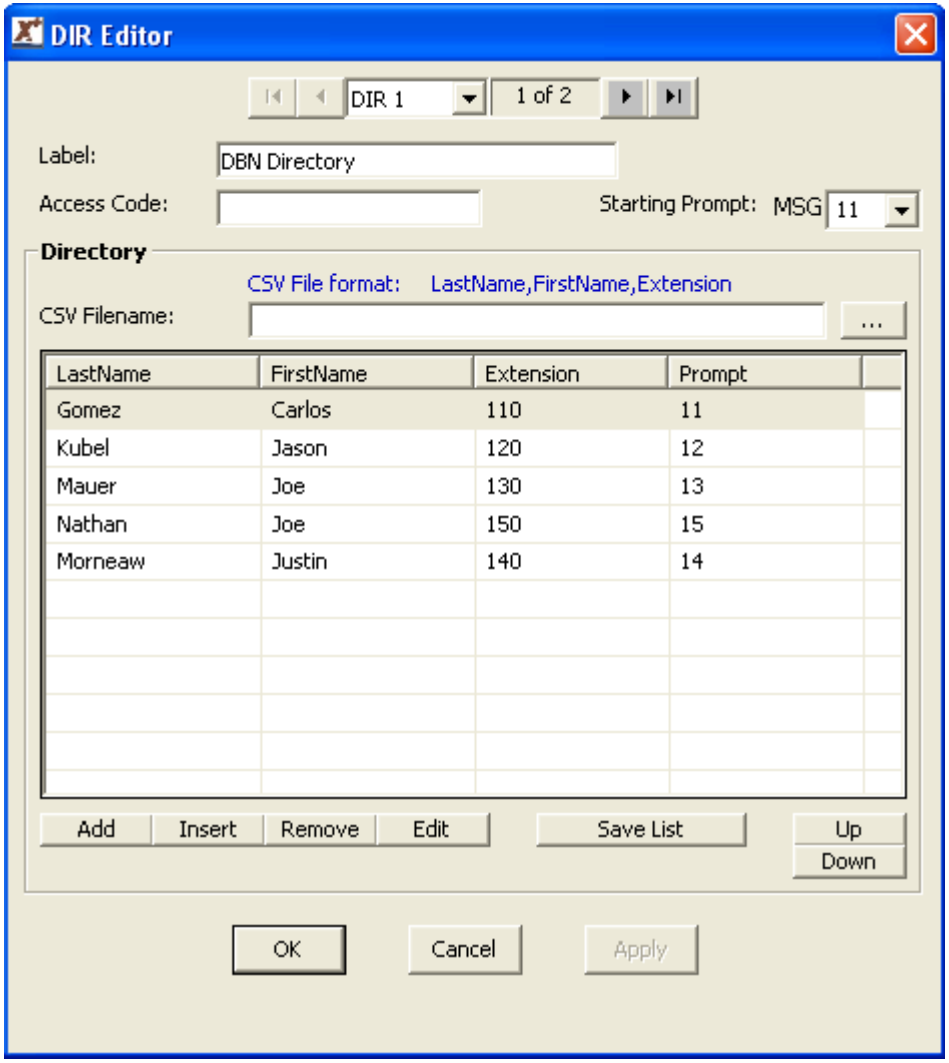
2009 Interalia Inc. All rights reserved

Nodes

DIR Node:

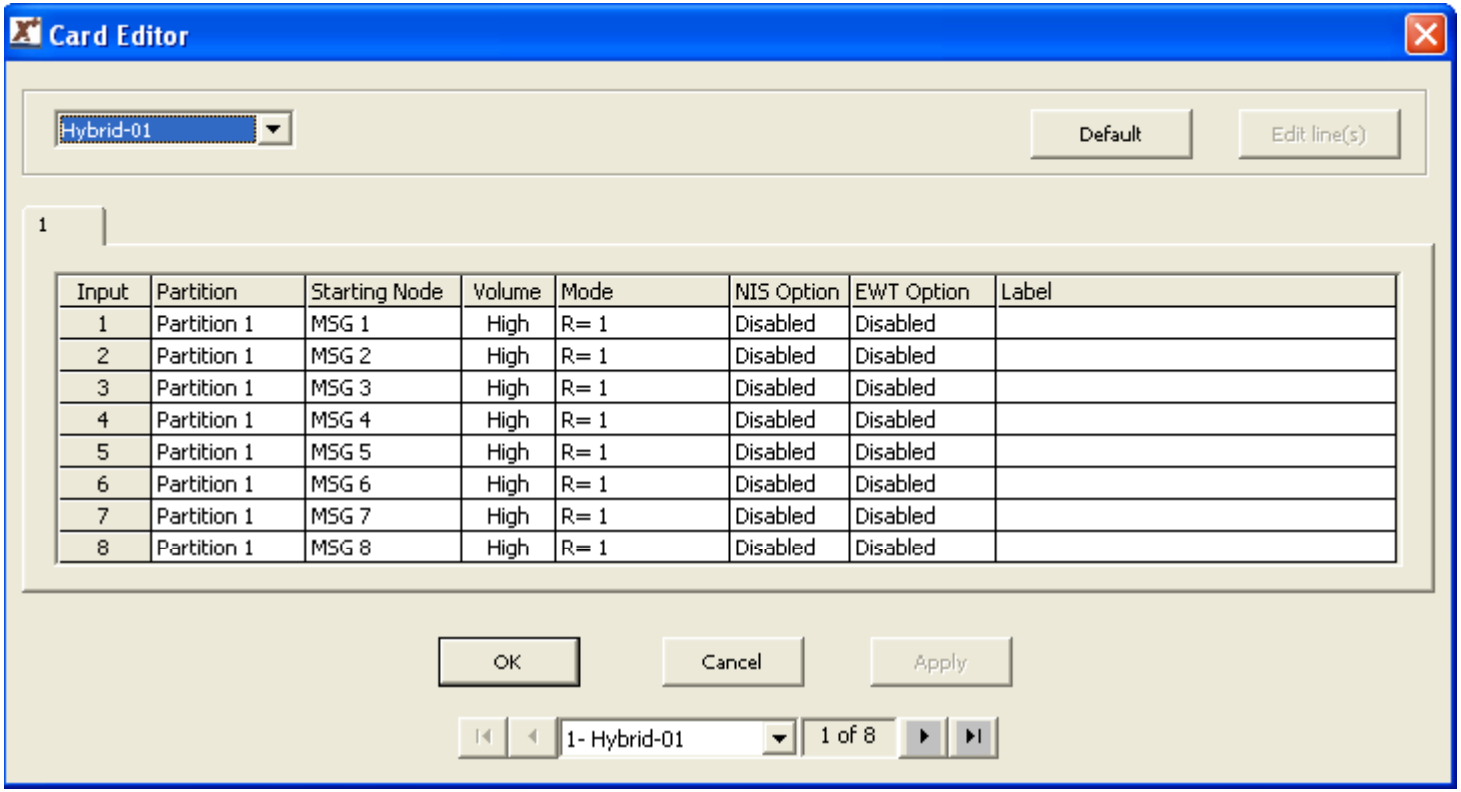
Used in conjunction with the DBN Node.

Contains the Directory of names and extensions used by the DBN Node.



2009 Interalia Inc. All rights reserved

Nodes



Input	Partition	Starting Node	Volume	Mode	NIS Option	EWT Option	Label
1	Partition 1	MSG 1	High	R= 1	Disabled	Disabled	
2	Partition 1	MSG 2	High	R= 1	Disabled	Disabled	
3	Partition 1	MSG 3	High	R= 1	Disabled	Disabled	
4	Partition 1	MSG 4	High	R= 1	Disabled	Disabled	
5	Partition 1	MSG 5	High	R= 1	Disabled	Disabled	
6	Partition 1	MSG 6	High	R= 1	Disabled	Disabled	
7	Partition 1	MSG 7	High	R= 1	Disabled	Disabled	
8	Partition 1	MSG 8	High	R= 1	Disabled	Disabled	

Starting Nodes:

Set the first action that the XMU+ must perform when a call is received at a specific port. This is a one step entry that must be performed on each XMU+ port.

2009 Interalia Inc. All rights reserved

Module 3: Objectives

After completing this Module, are you able to:

- Understand the basic XMUCOM+ Configuration Nodes?
- Understand how the modules interrelate / interconnect?
- Ready to program?

2009 Interalia Inc. All rights reserved

Module 4 – Application Workshops

2009 Interalia Inc. All rights reserved

Module 4: Objectives

After completing this Module, you will be able to:

- Understand the basic XMUCOM+ Configuration Nodes
- Understand how the modules interrelate / interconnect
- Ready to program

2009 Interalia Inc. All rights reserved

Application Workshop

Develop applications and download the files to the XMU+

(See Workshop handout)

2009 Interalia Inc. All rights reserved

Module 4: Objectives

After completing this Module, are you able to:

- Understand the basic XMUCOM+ Configuration Nodes?
- Understand how the modules interrelate / interconnect?
- Ready to program?

2009 Interalia Inc. All rights reserved

Course Review…

- Module 1: XMU+/SBX Product Overview & Architecture
- Module 2: XMUCOM+ Software Interface
- Module 3: XMUCOM+ Configuration Design
- Module 4: Application Workshop

2009 Interalia Inc. All rights reserved

XMUCOM+

Application Programming Level 1

Training Session

Thank you for Attending

2009 Interalia Inc. All rights reserved