



MAX Communication Server HPBX 6.5

Addendum

to MAX Communication Server
Administration Manual for ACM 6.5

7/2009 4410-0001C

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HPBX Addendum to MAXCS ACM 6.5 Administration Manual

MAXCS HPBX Overview

MAXCS HPBX is an IP-hosted PBX for small organizations and multi-tenant buildings. It supports up to 1,000 users and 256 separate organizations per server platform. It is based on AltiGen's MAX Communication Server ACM. The *MAX Communication Server Administration Manual - ACM 6.5* should be your main reference. This addendum explains the tenant-based configurations found in MAXCS HPBX.

Clients can be in the same building, different buildings, remote locations or a combination of all geographical configurations. Tenant organizations or a hosted PBX subscriber's companies can be as small as one and as large as 1,000 working off the same system. All company sizes will benefit from the powerful, productive and easy-to-use feature set.

System Requirements

The following operating systems are supported in HPBX 6.5:

- For **MAXCS Server**: Windows Server 2003
- For **External CDR Databases**: Microsoft SQL Server 2000/2005
- For **HPBX Admin**: Windows Server 2003 or Windows XP Professional with SP2
- For **AltiGen SDK 6.5**: ActiveX Control for AltiAgent (now MaxAgent):
Windows 2003 Server or Windows XP Professional with SP2

Boards Support

The following types of board are supported in HPBX 6.5:

- Triton T1/PRI Board (1.544 MHz) revision A3 or above.
- Triton T1/E1/PRI Board (2.048 MHz)
- Triton IP Boards revision A3 or above, which includes
— IP 12-Port Board (G.711/G.723.1/G.729A+B)

— IP 30-Port Board (G.711 Only) (same hardware as 12-Port IP Board)

- Triton Analog 12-Extension Board Rev A3 or above
- Triton Analog 12-Trunk LS Board Rev A3 or above
- Triton Resource Board Rev A3 or above

Installation

To install MAXCS HPBX, launch **Setup.exe** from the MAX Communication Server HPBX folder, and follow the prompts.

Licenses

Your license configuration will be enabled at AltiGen after you have performed installation and notified AltiGen.

License Consumption

In HPBX all licenses are seat-based.

Note: A license is consumed when you check the **Agent** field in **PBX > Extension Configuration**. In the same configuration screen, in the **License Assignment** field in the Call Recording Options panel, only **Dedicated Seat** license is available in HPBX.

The screenshot shows the 'Extension Configuration - 5007 : Physical(Agent)' window. On the left, there is a table with columns: Num..., Type, Name, and Dep. The table contains the following data:

Num...	Type	Name	Dep.
5002	IP	Little Max	
5004	IP	Axel Max	
5005	Virtual		
5007	Physical...	John Doe	

On the right, the configuration fields are as follows:

- Personal Information: First Name (John), Last Name (Doe), Password (*****), Department, Description, DID Number (510551212), Tenant (3 - Retail), Transmitted CID, Feature Profile (1 - Platinum Users), E911 CID.
- Checkboxes: Enable Dial-By-Name, Enable Intercom, Agent (circled in red).
- Account Code: Enable Forced Account Code.
- Call Recording Options: License Assignment (Dedicated Seat) (circled in red).

Tenant-based Configurations in HPBX

In HPBX 6.5, the following configurations are tenant-based:

- Extensions
- Manager extension
- Operator extension
- Trunk assignment
- Auto attendant
- Line park appearance
- Paging groups
- Holiday profiles
- DNIS routing
- Caller ID routing
- Access to centralized recording files
- Access to AltiReports
- Music-on-hold files (see “Tenant-Based Music Source Support” on page 19)

In addition, AltiGen SDK 6.5 includes tenant implementation

How MAXCS HPBX Works

Multiple tenants can be created in one MAXCS HPBX system. Each one has a tenant number and a tenant name and serves one customer. The default tenant with tenant number 0, named super tenant, is reserved for the service provider (SP), itself, for administrative tasks.

Each tenant is a virtual PBX system on its own. It has its own extensions, operator, workgroups, outcall trunks, AAs, business hours, holidays, call routings, and custom phrases.

The main rule of a multi-tenant system is: No cross dialing or referencing between different tenants. The only exception is calls to or from the super tenant: the other tenants can make calls to the super tenant, and the super tenant can make calls to the other tenants.

A Tenant's Resources

A tenant is a group of softswitch resources for serving an independent customer, as if it had a whole PBX system to itself.

Each tenant has an operator extension, which handles only the calls to this tenant.

A tenant can be added, modified, and deleted with MaxAdministrator. When a tenant is deleted in MaxAdministrator, all its resources, except custom phrases, are returned back to the super tenant. Custom phrases are deleted.

Extensions

Every extension belongs to a tenant, either a common tenant or the super tenant. In the Extension list, extensions should be grouped with tenants. An extension's tenant number is assigned when the extension is created, and cannot be changed. To change its tenant, an extension must be deleted and then recreated.

A tenant's extensions can only call and transfer within the tenant to which they belong. The only exception is the super tenant, which can call and receive calls from the other tenants. All other cross calls and references are prohibited.

In MaxAdministrator, all an extension's options are restricted to its own tenant's resources (plus the super tenant's extension). These restrictions include workgroup membership, the voice mail's press "0" option, message notification, all forwards and ONA forwards, the monitor list and the IP phone's BLF keys settings.

Workgroups

Every workgroup belongs to a tenant. A workgroup's tenant number is assigned when it is created, and cannot be changed. To assign a workgroup to another tenant, delete the workgroup first and then recreate it and assign it to the new tenant.

Auto Attendants

By default, every Auto Attendant (AA) belongs to the super tenant, as well as to the tenant to which you assign it. An AA can only be used by a tenant to which it belongs. This includes AAs that are targets for forwarding or transferring.

Business Hours and Holidays

All the business hours profiles and holiday profiles have their own tenant number, and they can be only used in the tenant they belong to. The "System" business hours profile and "System" holiday profile are reserved for the super tenant, and cannot be changed.

Trunks and Mobile Extensions

The trunks are shared for incoming calls. Outgoing trunks are assigned to Tenant 0 by default. All tenants can use outgoing trunks assigned to Tenant 0.

An outgoing trunk assignment can be changed to a non-zero tenant ID. In this case, the tenant can use its own assigned trunks for trunk calls, plus trunks assigned to Tenant 0. Other tenants cannot use trunks assigned to a non-zero tenant ID.

In Call Routing

DNIS Routing

The multi-tenant system is based mainly on the DNIS routing feature of MAXCS. Each DNIS entry has a tenant number, and which tenant a trunk call is intended for is determined by the DNIS routing.

When a call from a trunk with a DNIS number is received, the system will search for a DNIS match first, and assign this call to the DNIS entry's tenant. If no such DNIS entry is found, or a trunk call without DNIS comes in, then it is a call to the super tenant.

Caller ID Routing

A Caller ID routing entry must have the tenant number assigned, since different tenants may have a different Caller ID routing policy. One Caller ID may have several entries, each with a different tenant number, because different tenants may have different routing for the same Caller ID.

When searching the Caller ID routing, MAXCS searches the DNIS routing table with the DNIS number first, to find what tenant it's calling, and with this tenant number searches the Caller ID routing table to find the entry with this tenant number and Caller ID.

Custom phrases

Each tenant has its own directory for custom phrases. Each tenant can assign a manager extension. The tenant manager can record up to 1,000 custom phrases for this tenant.

When configuring the AA or Queue, each tenant can see only its own custom phrases.

Configuring a Tenant in HPBX

Configuring a tenant in HPBX involves:

- Adding a tenant to the tenant list
- Adding extensions and assigning them to the tenant
- Assigning a tenant operator and tenant manager
- Assigning trunks to the tenant (optional)
- Configuring auto attendant, holiday hours, line park, and paging group
- Configuring DNIS routing and caller ID routing

Adding a Tenant

To add a tenant:

1. On the **System Configuration > Tenant** tab, click the **Add** button.



Figure 1. System Configuration, Tenants tab

2. In the dialog box that appears, type in the **Tenant Name** and click **OK**. Then click the **Apply** button in the Tenant window. The tenant ID is assigned automatically and sequentially.
3. Click **OK**.

Modifying a Tenant Name

To edit a tenant name, double-click the name in the Tenant window (or select the name and click **Edit**), then change the name in the dialog box that appears, and click **OK**.

Adding an Extension and Assigning to a Tenant

1. Select **PBX > Extension Configuration > General** tab.

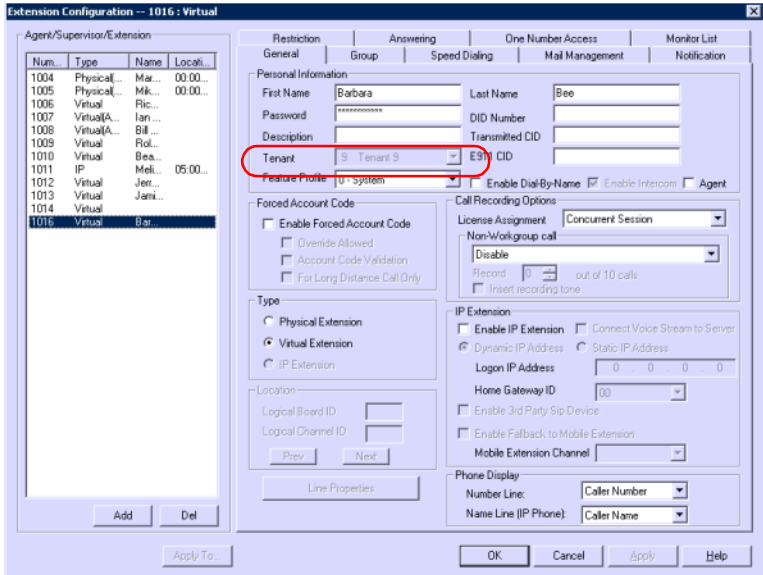


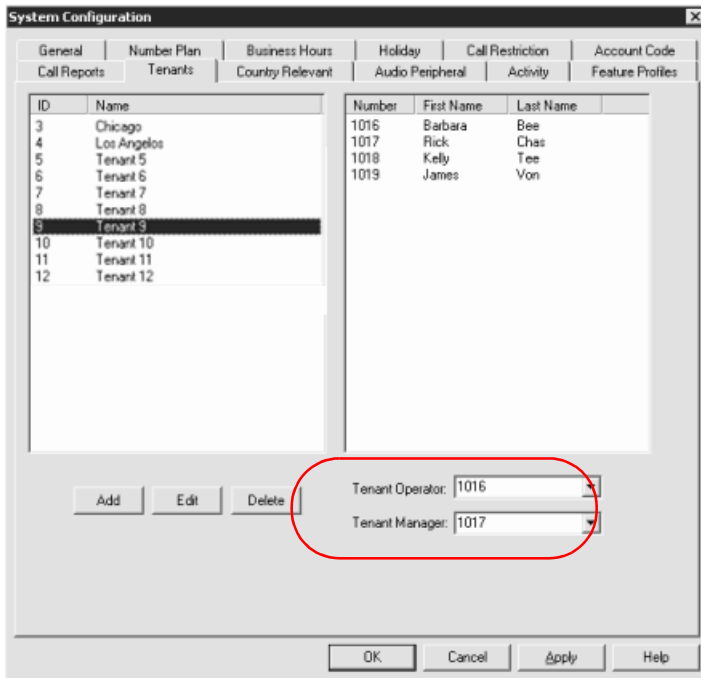
Figure 2. Extension Configuration, General tab

2. Click **Add** to create an extension. In the Add Extension dialog box, enter the extension number, select a type, and assign the extension to a tenant.
3. Click **OK**.
The tenant name appears in the Personal Information panel. It is not editable.

Assigning an Operator and a Manager

To assign an operator and a manager:

1. Select **System Configuration > Tenants** tab.



2. Select a tenant in the list on the left, and assign an operator to this tenant from the drop-down list beside the **Tenant Operator** field. This operator can be accessed only by members of this tenant group. When a tenant extension dials the operator, this call will be sent to the specified tenant operator.
If the tenant operator is not configured, this call will be routed to the System Tenant (Tenant ID "0") operator.
3. Select a tenant in the list on the left, and assign a tenant manager to this tenant from the drop-down list beside the **Tenant Manager** field. The tenant manager can record 1,000 customized phrases (0000-0999) for its auto attendant and queue. The phrases recorded by the Tenant Manager extension are stored under **PostOffice\phrases\tenant <ID> custom folder**, where <ID> is the tenant ID, for example, Tenant1Custom

Assigning Trunks to Tenants

To assign trunks to a tenant:

1. Select **PBX > Trunk Configuration** to open the Trunk Configuration General window.

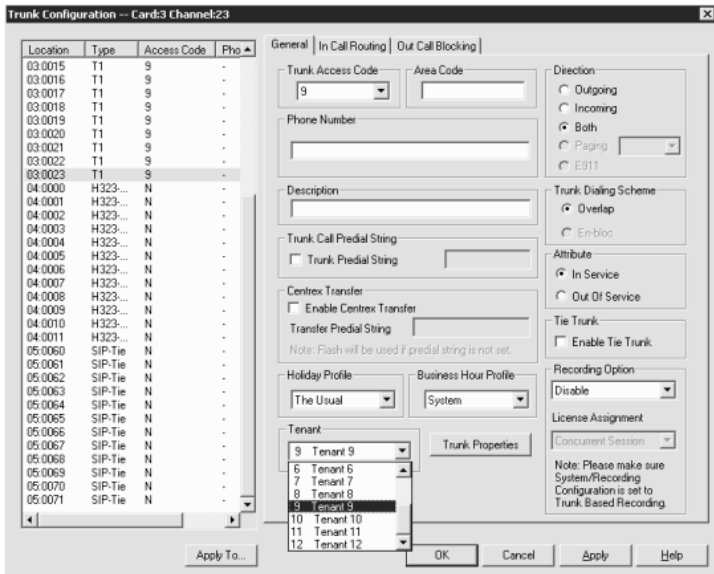


Figure 3. Trunk Configuration, General tab

2. For each trunk you want to assign to a tenant:
 - a. In the trunk list, select a trunk you want to assign to a tenant.
 - b. Select a tenant in the **Tenant Selection** drop-down list, then click **Apply**.
3. When finished assigning trunks, click **OK** to close the Trunk Configuration window.

When a trunk is assigned a tenant, outgoing calls made through this trunk can be initiated by the tenant users ONLY.

To change the trunk-to-tenant ID assignment

Open the Trunk Configuration, General tab, and use the **Tenant Selection** drop-down list to change the tenant ID assigned to any trunk.

Note: If a trunk is assigned to **Tenant ID 0** in the **Tenant Selection** drop-down list, the trunk is accessible to all extensions, even though there are tenant assignments.

Auto Attendant

In the HPBX version of MAXCS, the **AA Select** dialog box and **Auto Attendant** configuration window display a **Tenant Name** field.

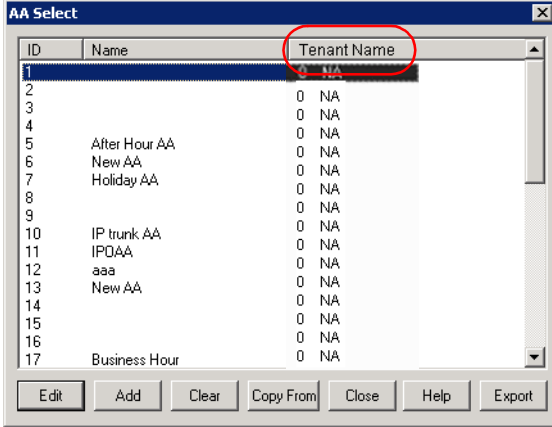


Figure 4. AA Select dialog box

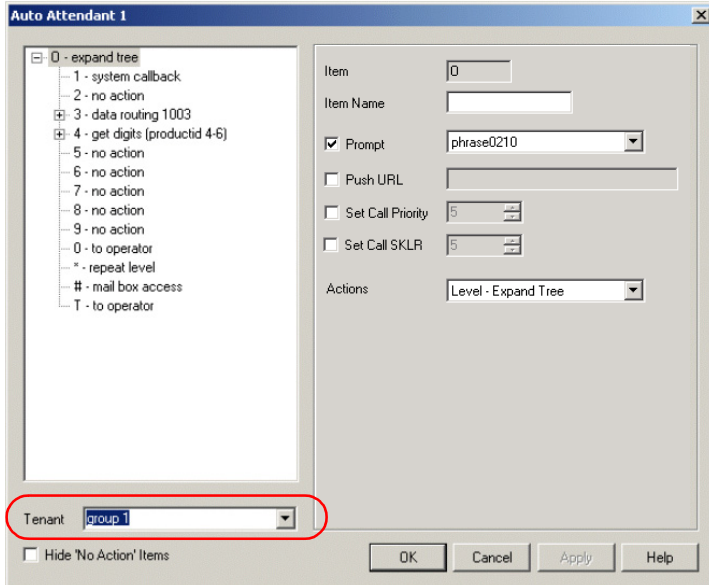


Figure 5. Auto Attendant configuration window

Before configuring an AA, select the tenant to which this AA will belong.

Line Park Configuration

In the HPBX version of MAXCS, the **Line Park** configuration window displays a field for **Tenant**. When you add a group, specify what tenant this group belongs to. The tenant name appears in the **Tenant** field when the group is selected in the **Groups** list.

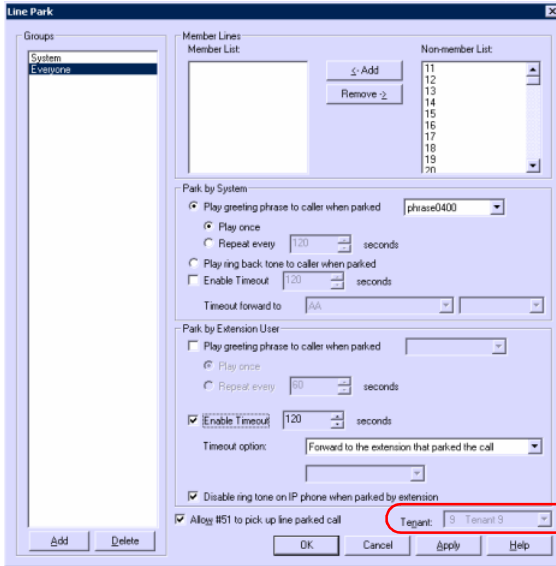


Figure 6. Line Park configuration

Note: If the exit destination is the Auto Attendant, the Auto Attendant must belong to the tenant displayed in the **Tenants** field. The phrase is also a tenant-customized phrase.

Paging Group Configuration

In the HPBX version of MAXCS, the **Paging Group** configuration window displays a **Tenant** field. When you add a group list, specify the tenant the group list belongs to. The tenant name will then appear in the **Tenant** field.

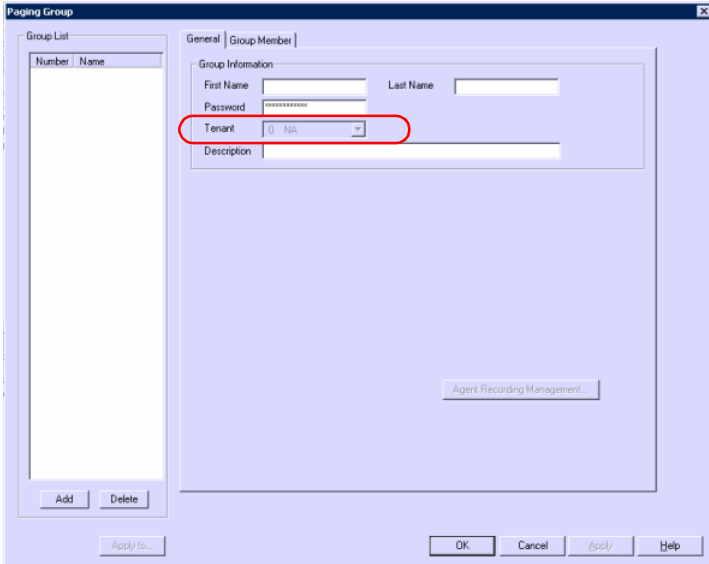


Figure 7. Paging Group configuration

Configuring DNIS Routing

To add a DNIS number to a tenant:

1. Select **In Call Routing Configuration > DNIS** tab.

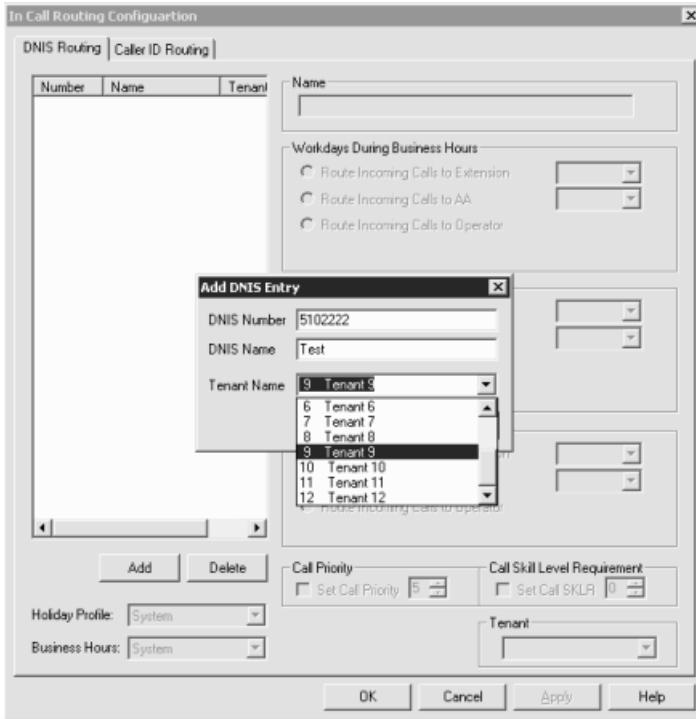


Figure 8. Adding a DNIS number to a tenant

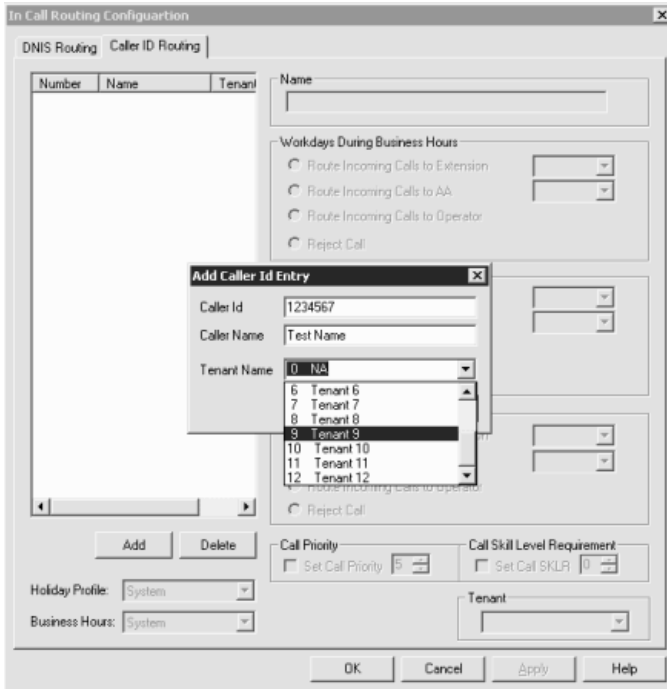
2. Click the **Add** button, type the DNIS number you want to add, give it a name, and select a tenant from the **Tenant Name** drop-down list.

Note: The routing destination, extension, or Auto Attendant, must belong to the same tenant as specified in the **Tenant** field. If the selected destination is **Operator**, a tenant operator must be specified in the **Tenant** field in **System Configuration > Tenant** tab.

Configuring Caller ID Routing

To add a caller ID number to a tenant:

1. Select **In Call Routing Configuration > Caller ID Routing** tab.



2. Click the **Add** button, type the caller ID and caller name, select a tenant for this caller ID, and click **OK**. The tenant you select appears in the **Tenant** field:

In Call Routing Configuration

DNIS Routing | Caller ID Routing

Number	Name	Tenant
1234567	Test Name	Tenant

Name:

Workdays During Business Hours

Route Incoming Calls to Extension
 Route Incoming Calls to AA
 Route Incoming Calls to Operator
 Reject Call

Workdays Outside Business Hours

Route Incoming Calls to Extension
 Route Incoming Calls to AA
 Route Incoming Calls to Operator
 Reject Call

Non Workdays

Route Incoming Calls to Extension
 Route Incoming Calls to AA
 Route Incoming Calls to Operator
 Reject Call

Call Priority: Set Call Priority
 Call Skill Level Requirement: Set Call SKLR

Holiday Profile:
 Business Hours:

Tenant:

Holiday Tab - System Configuration

In the HPBX version of MAXCS, the Holiday tab in the System Configuration window displays a **Tenant** field.

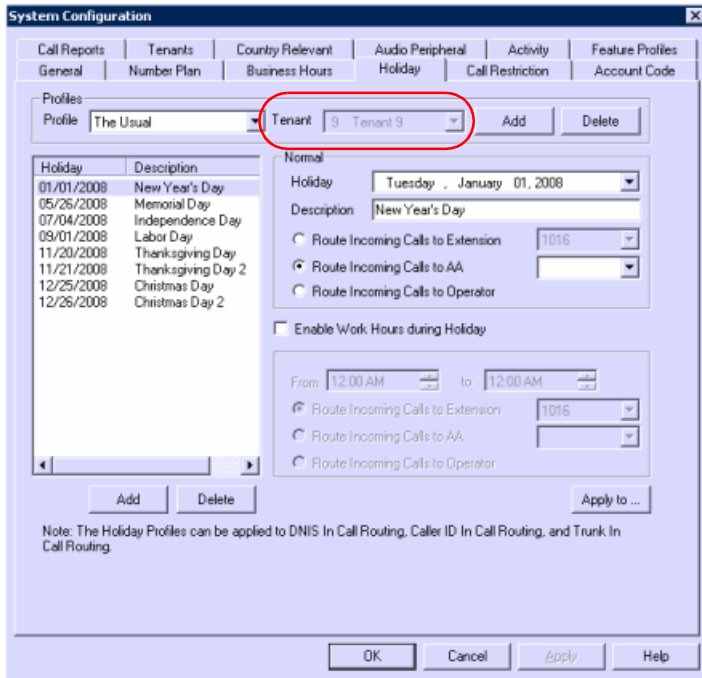
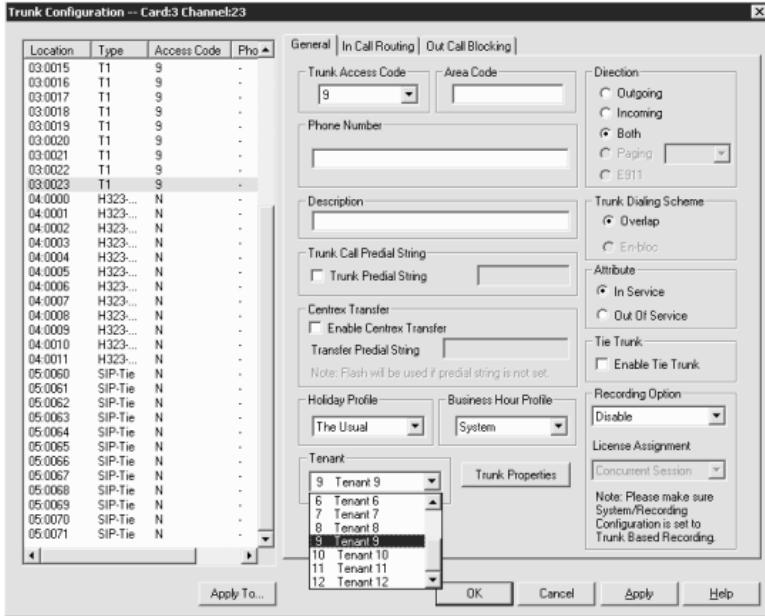


Figure 9. Holiday tab, System Configuration

On the **System Configuration > Holiday** tab, select a holiday Profile that is assigned to the tenant you want to work with, and then set the routing.

Note: If **Operator** is the selected routing destination, a tenant operator must be specified in the **Tenant Operator** field in **System Configuration > Tenants** tab.

Tenant-Based Music Source Support



Each tenant can have different music on hold. The music file format must be PCM (only the super tenant can use WAV files). A VoIP board is required.

To assign a music file to a tenant group, rename the music file you want to use to “Music0001” through “Music0099.” (The 4 digit number represents the number of the tenant group. So the file “Music0012” will play this music file for the Tenant Group assigned as “12” in HPBX Admin. Once you have renamed the music file, place the file into the PostOffice folder of the system running HPBX Admin. (**PostOffice > Phrases > Music**). If a file is not assigned to a tenant group, the system music file will be played (set in **Audio Peripheral Configuration**).

Changed Feature Codes

The following MAXCS ACM feature codes are changed in MAXCS HPBX:

- ## <pwd> - Log in to VM at your own station
Check tenant number when calling another extension or setting up reference to another extension in VM

- ###<ext><pwd> - Log in to VM at another station
Check tenant number when logging in to another extension
- #34 - Dial by Name
Check tenant number when dialing by name
- #69 - Dial Last Caller
Check tenant number when dialing to extension
- #77 - Station Speed Dial
Check tenant number when speed dialing to extension
- #99 - Last Number Redial
Check tenant number when dialing to extension
- #93 - Intercom
Check tenant number when dialing to extension
- #29<ext> - Individual Call Pickup (a specific station)
Check tenant number when picking up a call for an extension
- #30 - System Tenant Call Pickup (any station ringing)
Check tenant number when pick ing up a call for an extension
- Flash#31 - Personal Call Park
Assign tenant number to a parked call
- #31<ext> - Personal Call Park Pickup
Check tenant number when picking up the call
- Flash#41 - System Tenant Call Park
Assign tenant number to system-parked call
- #41<loc.#> - System Tenant Call Park Pickup
Check tenant number when picking up the call
- #36 - Call Forwarding
Check tenant number when setting call forwarding to an extension
- Flash#15<AA#> - Transfer to AA
Check tenant number when transferring to AA
- Flash##<ext> - Transfer to a extension VM
Check tenant number when transferring to an extension VM
- Flash<ext>Flash - Consultation
Check tenant number when using Consultation to extension
- Flash<number># - Conference Call
Check tenant number when using Conference to extension

Unsupported Feature Codes

The following MAXCS ACM feature codes are not supported in MAXCS HPBX:

- #35 - Virtual Login (station privilege override)
- #37 - Remote Call Forwarding
- #38 - Outside Call Blocking (operator only)
- #39 - Operator Offline (operator only)
- #44 - Overhead Paging
- #45 - Overhead Paging by Trunk
- #55 - List Feature Tips
- #73 - Silent System Call Park
- #88 - System Speed Dial

AltiReport and VRManager Applications

The AltiReport administrator and VRManager (VRM) administrator can assign a tenant ID to each user. That user's queries will then be restricted to the assigned tenant.

Unsupported Applications

The following applications are not supported in MAXCS HPBX:

- AltiReach
- Exchange Integration
- Enterprise Manager for Multi-Site
- TAPI

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