IBM Software Group

WebSphere® Voice Response for AIX®

Using the Pack Configuration interface

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This presentation will describe how to configure WebSphere Voice Response using the Pack Configuration interface. It assumes that you already have some familiarity with the terms associated with telephony and interactive voice response systems.

Goals

- Describe the Pack Configuration interface
- Explain the options

The goals of this presentation are to describe the main Pack Configuration GUI and then to explain each of the options available to you when configuring the system. At the end of this presentation you will have the knowledge required to use the Pack Configuration GUI to set up the initial configuration of WebSphere Voice Response.

Pack Configuration interface highlights

- Initial high level switch configuration

- Country setting dictates interface type T1 or E1

- Trunk interfaces

- Switch type

- Number of channels and groups

- Channel definition

- Signaling type

After WebSphere Voice Response has been installed, it needs to be configured and the first thing you need to do is use the Pack Configuration GUI.

The main Pack Configuration interface allows you to define the high level settings for a telephony pack that will allow WebSphere Voice Response to be connected to a local switch or Central Office switch. It consists of a variety of options that are shown in this slide. Each option is described in more detail in subsequent slides.

The country/region setting is used to determine the remainder of the available options. This is a system wide setting. For the purposes of this presentation the focus is on configuring a T1 trunk connection for a Digital Trunk Telephony Adapter or DTTA. There are only minor differences between a T1 and E1 configuration. The GUI will present only valid options to you.

Once the country has been specified you will configure one or more telephony packs and set the type of trunk interface that is required, the type of switch that the pack is connected to, the number of channels, how each of the channels are defined and the Signaling type for the channels.

Welcome screen options
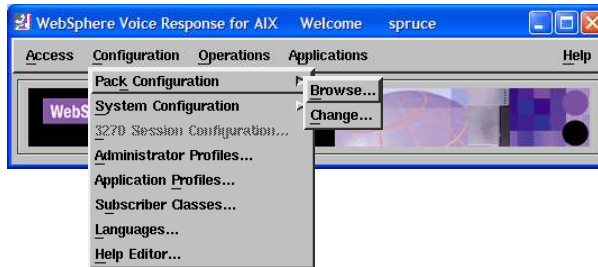
Configuration->Pack Configuration->Change…

Using the Pack Configuration interface   © 2008 IBM Corporation

From the main Welcome screen click Configuration, Pack Configuration and then either Browse… or Change... Either option brings up the same Pack Configuration GUI except that the browse option is read only. If you select Browse… then the GUI will not prevent you from making changes to the configuration but when the save option is selected an error message is displayed informing you that you are in browse mode.
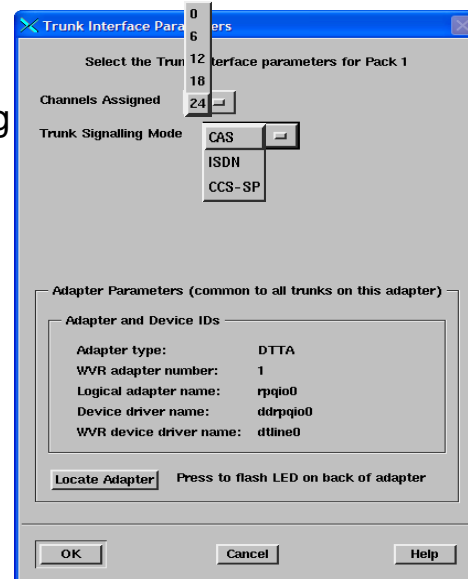
Pack Configuration main screen

This is the main Pack Configuration screen that is displayed for either Browse or Change mode. It already shows that US/Canada has been set for the Country/Region. Adjacent to the Country/Region setting you can see the current interface type. WebSphere Voice Response sets the interface type for US/Canada to be a T1 trunk using mu-law compression. If WebSphere Voice Response is being configured for the United Kingdom then the interface type is E1/A-law. This interface is predetermined and cannot be changed once the country region setting has been made. The following set of slides will go through the main selections available from this screen.

Trunk interface parameters

- CAS
  - ▶ Channel associated Signaling
- CCS
  - ▶ Common channel Signaling
  - ▶ ISDN

Trunk Interface Parameters

Select the Trunk Interface parameters for Pack 1

Channels Assigned   24

0
6
12
18
24

Trunk Signalling Mode   CAS

CAS
ISDN
CCS-SP

Adapter Parameters (common to all trunks on this adapter)

Adapter and Device IDs

Adapter type:	DTTA
WVR adapter number:	1
Logical adapter name:	rpqio0
Device driver name:	ddrpqio0
WVR device driver name:	dtline0

Locate Adapter   Press to flash LED on back of adapter

OK   Cancel   Help

Using the Pack Configuration interface   © 2008 IBM Corporation

This screen is displayed when you click the Trunk Parameters button on the Pack Configuration GUI.

The default setting for the trunk interface Signaling mode is CAS. CAS stands for Channel Associated Signaling and denotes that the Signaling information for the call is carried in-band on the voice channel. The two other available options are ISDN and CCS-SP. ISDN stands for Integrated Services Digital Network and is an example of a CCS or Common Channel Signaling protocol. CCS differs from CAS in that for CCS, signaling information is carried on a separate, dedicated "out of band" channel. The last option is CCS-SP. SP stands for Signaling Process. This option is selected if you have a custom written CCS signaling process. An example of a CCS-SP is Signaling System 7 or SS7.

The Channels Assigned drop-down list shows the number of channels available for telephone calls and is allocated in multiples of six. This number should match the number of channels provisioned by the switch vendor. If you increase the number of channels you will be asked to confirm that you have licensed the appropriate number of channels.

If you have multiple trunks connected to WebSphere Voice Response then you will need to configure the trunk parameter interface for each trunk.

If you need to locate the physical location of the DTTA adapter then the Locate Adapter button will flash the LED on the adapter. This is useful if you have multiple adapters installed in the system and are not certain how the physical location maps to the logical location as shown in the Pack Configuration and the System Monitor GUIs.

ISDN specific options

- Trunk ID
  - Assigned by network provider
- Trunk group
  - Up to 10 trunks can be assigned
- Signaling channel
  - Primary D-channel trunk
  - Backup trunk
  - Voice trunk

For T1 systems only, if you select ISDN for the Trunk Signaling mode then additional options are available as shown in the screen capture. It is not applicable to E1 systems.

Normally a single Primary Rate ISDN trunk has the capability to support 23 voice or bearer channels and 1 data or D-channel on a T1 trunk.

Non-Facility Associated Signaling or NFAS provides the functionality to configure multiple ISDN trunks to use only 1 D-channel to carry the signaling information for all of the channels. This frees up the D-channel on the other trunks to be used as another voice channel.

NFAS support is unchecked by default and is only required when your trunks have been provisioned by your telephony network provider to support NFAS.

The Trunk ID field is provided by your telephony network provider. The trunk group number is a value between 1 and 4 and is used to denote which trunk group the trunk belongs to. You can assign up to 10 trunks in each of the 4 trunk groups.

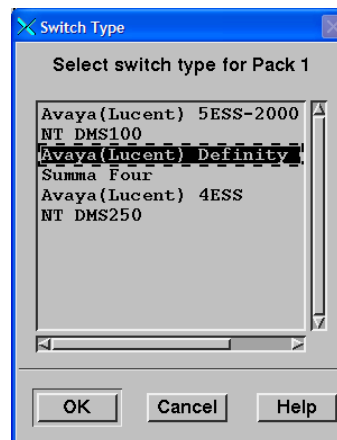D-channel configuration is determined using the Signaling Channel drop down list. The trunk which carries the D-channel is known as the primary trunk. You can also select a backup trunk to carry a D-channel in the event that the primary trunk goes down. A backup trunk should always be specified to prevent the possibility of a single point of failure in the network. Select None if the trunk will only carry 24 voice channels.

Switch type

- CAS
- ISDN

Switch Type
Select switch type for Pack 1

Avaya(Lucent) Definity G1/G2/G3
Avaya(Lucent) 5ESS/4ESS
Avaya(Lucent) System 75/85
NT DMS100/250
ROLM 9751(9005)
Aspect Call Center
Rockwell Galaxy
NT Meridian (SL1)
Summa Four
Default
Ericsson MD110
Intecom IBX
Channel Bank
Centrex
ROLM/Siemens 9751(9006)
Avaya(Lucent) 5ESS with PACR

OK   Cancel   Help

Switch Type
Select switch type for Pack 1

Avaya(Lucent) 5ESS-2000
NT DMS100
Avaya(Lucent) Definity
Summa Four
Avaya(Lucent) 4ESS
NT DMS250

OK   Cancel   Help

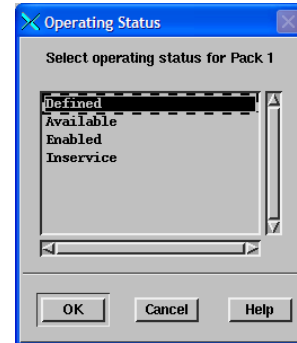Using the Pack Configuration interface   © 2008 IBM Corporation

The following example screens are displayed when you click the Switch Type/Resource Type button on the Pack Configuration GUI.

When the country/region setting has been defined, WebSphere Voice Response will populate the switch type GUI with a list of common switches that are supported by WebSphere Voice Response for the particular country. The list shown in these two screen captures are for US/Canada CAS and ISDN trunk settings. Selecting one of these will load a set of predefined values into WebSphere Voice Response based on specifications from the switch vendors. This means fewer system configuration steps need to be taken after pack configuration has been completed. There is also a default option available if the switch you are using is not on the supported list. This loads a generic set of values and the expectation is that one or more system configuration values will need to be changed in order for you to establish correct communication between the switch and WebSphere Voice Response. There is no default switch type when configuring an ISDN trunk and a valid supported switch must be selected.

Operating status GUI

- Defined
  - ▸ Default setting. Must be changed
- Available
  - ▸ Diagnostics are not run
  - ▸ Channels are not in service
- Enabled
  - ▸ Diagnostics are run
  - ▸ Channels are not in service
- Inservice
  - ▸ Diagnostics are run and channels are put into service

Operating Status

Select operating status for Pack 1

| Defined |
| Available |
| Enabled |
| Inservice |

OK   Cancel   Help

Using the Pack Configuration interface   © 2008 IBM Corporation

This screen is displayed when you click the Operating Status button on the Pack Configuration GUI.

The Operating Status GUI is used to select the initial state of the telephony pack when WebSphere Voice Response is started. There are four available settings. Defined is the default setting. You must change the Operating Status to Available, Enabled or Inservice before you can change any of the subsequent options.

The Defined state indicates that WebSphere Voice Response is up and the packs are visible from the System Monitor GUI but in a disabled state.

The Available state indicates that the packs are available but that the microcode has not been loaded to the adapter and diagnostics have not been run. The channels are not put into service and no calls can be received by WebSphere Voice Response.

The Enabled state indicates that microcode is loaded and diagnostics are run on the adapter when WebSphere Voice Response is started. The channels are not put into service and no calls can be received by WebSphere Voice Response.

The Inservice state means that when WebSphere Voice Response is started the microcode is loaded, the diagnostics are run and then the channels are put into service. Calls can be immediately received or made by WebSphere Voice Response. This is the recommended status for production machines. In the event of a power outage, WebSphere Voice Response will automatically restart when power is restored and the trunks and channels are put into service without the need for manual intervention. This minimizes the time the system is out of production.

Channel groups/resources GUI

Channel Groups

Select channels groups for Pack 1

Channels from `01` to `24` in Channel Group `01`

Channels from `  ` to `  ` in Channel Group `  `

OK   Cancel   Help

- Channels can be assigned into channel groups
- A channel group can span more than one trunk
- Only two groups can be shown in the GUI.
- More can be created though

This screen is displayed when you click the Channel Groups/Resources button on the Pack Configuration GUI.

The Channel Groups/Resources GUI allows you to configure how your channels are grouped together.

A T1 trunk carries 24 channels and within WebSphere Voice Response there is the capability to group one or more of these channels into channel groups. A channel group is nothing more than a collection of channels which have a common set of characteristics. For example, you might want to define one set of applications per channel group. Another example might be to configure a set of channels to only handle outbound calls.
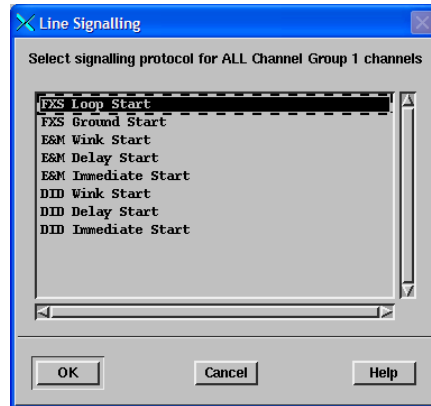
It is also possible for a channel group to span more than one trunk. If you have two trunks which are configured exactly the same then you can use the GUI to set all 48 channels to a single channel group instead of having a channel group for each trunk. If you then need to make a change to the channel configuration you only need to change the entry in one channel group rather than making two changes which increases the possibility of making an error.

The GUI has a limitation in that it only shows two rows where data can be entered. WebSphere Voice Response does allow more than two channel groups to be created per trunk. If you need to add a third or more channel group to a trunk then create the first two channel groups and then save the configuration by pressing the OK button. Then bring up the Channel Groups GUI again and then create additional channel groups for your remaining channels.

The main Pack configuration GUI also only shows the first two channel groups even though more might have been created. In order to confirm that the channel groups have been created correctly you will need to use the System Configuration GUI. The System Configuration GUI allows you to make more granular changes to the configuration.

Line Signaling GUI

- CAS options shown below only

Line Signalling

Select signalling protocol for ALL Channel Group 1 channels

FXS Loop Start
FXS Ground Start
E&M Wink Start
E&M Delay Start
E&M Immediate Start
DID Wink Start
DID Delay Start
DID Immediate Start

OK   Cancel   Help

Using the Pack Configuration interface   © 2008 IBM Corporation

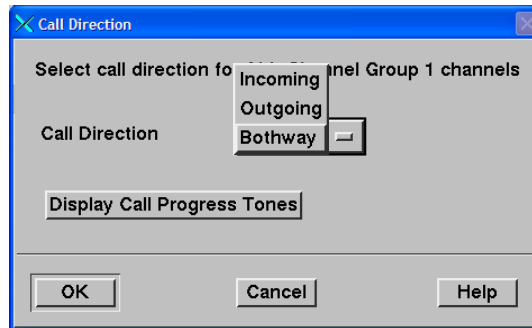This screen is displayed when you click the Line Signaling button on the Pack Configuration GUI.

This GUI allows you to select the signaling protocol that is valid for the selected channel group. Normally the telephony network provider will provide you with the information that you need to select in this screen. The list of available options shown will depend on the Trunk Interface Parameter setting which you will have defined earlier. This screen only shows the options if CAS is selected.

At a high level, Foreign Exchange Station or FXS does not support called or calling party number but does support call transfer. E&M alternatively does support called and calling party number but does not support call transfer. It is outside of the scope of this presentation to go into further detail about each of these options.

Care should be taken to ensure that the correct option is selected here. Failure to do so will result in telephony errors being logged by WebSphere Voice Response when it is started.

Directions and tones GUI

- Defines call capability for a channel group

Call Direction

Select call direction fo _____ nel Group 1 channels

Incoming
Outgoing
Call Direction   Bothway

Display Call Progress Tones

OK   Cancel   Help

This screen is displayed when you click the Directions and Tones button on the Pack Configuration GUI.

WebSphere Voice Response can be configured so that a channel group can handle specific types of calls. The three available options are incoming, outgoing and bothway. As their names imply, incoming will set the channels in the channel group to only accept inbound calls. Outgoing will set WebSphere Voice Response to only allow outbound calls to be placed on the channel. Bothway means there is no restriction on the channel and it can handle inbound and outbound calls.

The Display Call Progress Tones button will display a non editable list of the call tones that are currently associated with the channel group. These values are set when the switch type is selected in the main pack configuration GUI.

Address signaling

- Configures outgoing/incoming in-band telephone number information
- CAS->FXS loop start example screen
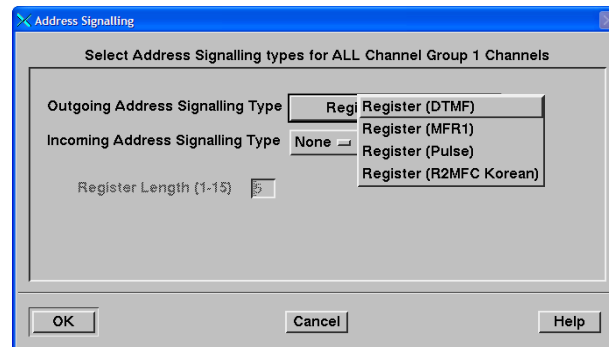
This screen is displayed when you click the Address Signaling button on the Pack Configuration GUI.

The Address Signaling GUI allows you to define the outgoing and incoming address signaling types. The options available here are dependant on the Line Signaling value set earlier. The value that is set determines the type of Signaling WebSphere Voice Response should use when sending or receiving in-band telephone number information. If applicable then the Register Length field is used to set the number of digits that WebSphere Voice Response expects to receive from the network. Note that in this example it is not possible to set any type of incoming address Signaling for an FXS/Loop Start configuration.

Channel identification GUI

- Used to determine which application to invoke

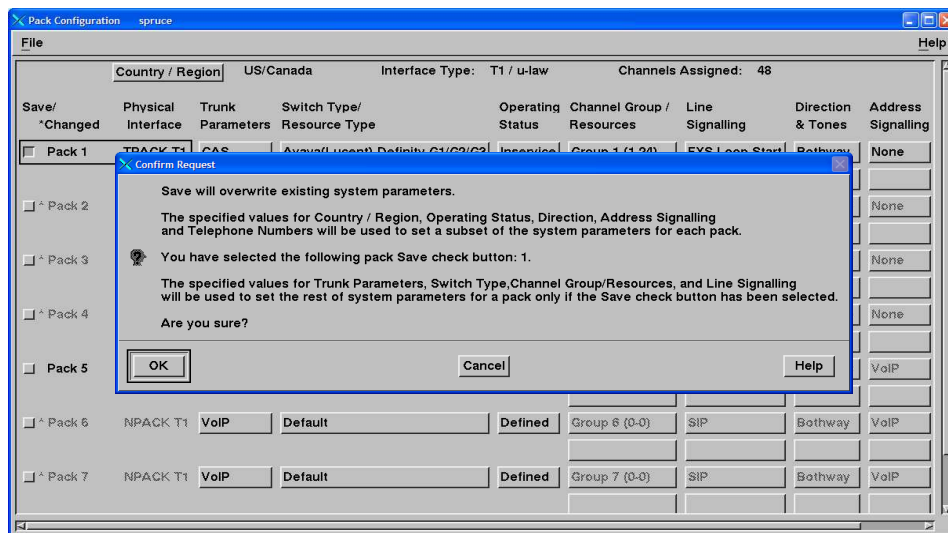Using the Pack Configuration interface © 2008 IBM Corporation

The last option in the pack configuration GUI is the Channel Identification setting. The screen captures show a default configuration for a channel group consisting of 12 channels and a set of application profiles that are available.

If the telephone switch does not supply the called number to WebSphere Voice Response then the area code and telephone number information provided in this screen is used to determine which application profile to find and therefore which application to invoke. In this simple example all calls coming into this group of channels will invoke the application that is associated with application profile 4085551234. If the called number is supplied by the switch then this lookup is not performed and WebSphere Voice Response will invoke an application directly using the called number.

The Line ID field is only required if you have an exchange data link or EDL connection between the switch and WebSphere Voice Response. The value is used as a line identifier and the format of this identifier will depend on the type of EDL connection used. Each ID must be unique and it is not safe to assume that IDs are sequential with the channel number. Your network provider should provide appropriate information for this field if you are using an EDL connection.

Save the configuration

Pack Configuration   spruce

File   Help

Country / Region   US/Canada   Interface Type: T1 / u-law   Channels Assigned: 48

Save/ *Changed	Physical Interface	Trunk Parameters	Switch Type/ Resource Type	Operating Status	Channel Group / Resources	Line Signalling	Direction & Tones	Address Signalling
☐ Pack 1	TPACK T1	CAS	Avaya(Lucent) Definity G1/G2/G3	Inservice	Group 1 (1-24)	FXS Loop Start	Bothway	None

Confirm Request

Save will overwrite existing system parameters.

The specified values for Country / Region, Operating Status, Direction, Address Signalling and Telephone Numbers will be used to set a subset of the system parameters for each pack.

You have selected the following pack Save check button: 1.

The specified values for Trunk Parameters, Switch Type, Channel Group/Resources, and Line Signalling will be used to set the rest of system parameters for a pack only if the Save check button has been selected.

Are you sure?

[OK]   [Cancel]   [Help]

☐ ^ Pack 2								None
☐ ^ Pack 3								None
☐ ^ Pack 4								None
☐ Pack 5								VoIP
☐ ^ Pack 6	NPACK T1	VoIP	Default	Defined	Group 6 (0-0)	SIP	Bothway	VoIP
☐ ^ Pack 7	NPACK T1	VoIP	Default	Defined	Group 7 (0-0)	SIP	Bothway	VoIP

Once you have followed these steps to create a pack configuration, you will then need to save it.

First you should click the check box under the Save/*Changed column for each pack that you just configured. If you do not do this then only system wide configuration parameters are saved and pack specific changes such as the Trunk Parameters are not saved. Then click File->Save. The Confirm Request dialog window will be displayed. The help text clearly describes under what condition each parameter falls under and what will happen when OK is clicked. Click OK to accept the changes and save the configuration.

Save the configuration (continued)

Once the parameters have been saved, you can close the Pack Configuration GUI by clicking File->Close and then clicking OK on the Confirm Request dialog.

Next steps

- Additional low level configuration may be required.
  - ▸ System Configuration GUI
- Restart WebSphere Voice Response and test

In most cases it should be possible to now restart WebSphere Voice Response and test the system using the sample applications. But there may be instances where additional lower level configuration of the system needs to be performed before the system can accept calls. An example of this is where you want to use one Signaling type across multiple channel groups instead of each group having its own Signaling type. In order to do this you will need to use the System Configuration GUI. You should be aware that if you use the System Configuration GUI to make changes but then go back and make further changes using the Pack Configuration GUI that the System Configuration parameter may get overwritten.

Further information

- Configuring the System online manual
  - ▶ Current version is SC34-6381

- All current WebSphere Voice Response documentation is available at:
  http://www-01.ibm.com/software/pervasive/voice_response_aix/library/wvraix42.html

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Further detailed information on the Pack Configuration interface can be found in the "Configuring the System" manual. If you do not have a copy of this document then all WebSphere Voice Response manuals can be downloaded from the URL listed.

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Summary

- Described the Pack Configuration GUI
- Explained the options available

In summary, this presentation described how to navigate through the Pack Configuration GUI and explained at a high level what purpose each of the options have when configuring the WebSphere Voice Response system. This information will enable you to set up the initial configuration of WebSphere Voice Response before moving onto more detailed configuration tasks.

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