Outbound Contact Deployment Guide

Tones Section

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Tones Section

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Tones Section

The `tones` section does not configure the tone definition when CPD Server is used with Dialogic DM3 hardware, with the exception of the `use-fax2-as-am-tone` and `forth-tone` options. If you need to reconfigure specific tones for Dialogic DM3 hardware, you can do so by creating a `dm3tones` section (see Reconfiguring Tones for Dialogic DM3 Hardware) or through `/config/fcd/pcd` Dialogic files.

Note:	This section is not used when the `line-type` option is set to `sip-hmp`.

Any of the following can be represented by a tone:

- Busy signal
- Dial tone
- Fax machine
- Ring back
- Beep signal

Within each of these broad categories of tones, there are specific types of tones--for example a local dial tone or an international dial tone.

Note:	The `qual` templates are configured in the `/config/fcd/pcd` Dialogic files when CPD Server is use with Dialogic DM3 hardware. If you are using the `line-side-dm3, isdn-dm3`, or `cas-dm3` line types, you can either reconfigure specific tones using a separate `dm3tones` section (Reconfiguring Tones for Dialogic DM3 Hardware) or by changing the tone definition in the Dialogic `*.config, *.fcd`, and `*.pcd` files. These files are located at `$DIALOGICDIR\data`. For more information on modifying these files, consult the Dialogic documentation. For `isdn-dm3, sip-hmp`, and `sip-hmp-asm` line-types, CPD Server ignores a voice message and detects only tones during pre-connect call progress analysis (CPA), even if the voice message is detected before the tone. To enable preconnect CPA (that is, the CPA is performed before the connection is established), set the `engage-cpd-on-call-setup` option to `yes` in either the `isdn` section for the `isdn-dm3` line-type or in the `hmp` section for all HMP line-types.

Tone Options

There is a Dialogic option for each type of tone, that the Genesys configuration environment recognizes. These tone options are as follows:

- `busy-tone-1`

- busy-tone-2
- disconnect-tone
- extra-dial-tone
- fax-tone-1
- fax-tone-2
- forth-tone
- intl-dial-tone
- local-dial-tone
- ring-back-tone-1
- ring-back-tone-2
- sit-tone

Tone Parameters provides more details about each of these tone options.

Tone Parameters

For the tone options described in this section, a series of numbers separated by semicolons represents the following nine parameters for each tone:

- Frequency of first tone
- Frequency deviation for first tone
- Frequency of second tone
- Frequency deviation for second tone
- On duration
- Ontime deviation
- Off duration
- Offtime deviation
- Repetition count

Note:	All parameters inside string values for CPD Server options are separated by semicolons.

For examples of tone parameters, see the default values for the following tone options.

Note:	In the following tone option descriptions, parameters are in 10 ms units.

busy-tone-1

- Type: Optional
- Default Value: `500;200;0;0;55;40;55;40;4;`
- Valid Values: Any string of numbers separated by semicolons and representing the nine tone parameters. (see Tone Parameters).
- Defines a template for the first busy tone.

busy-tone-2

- Type: Optional
- Default Value: `500;200;500;200;55;40;55;40;4;`
- Valid Values: Any string of numbers separated by semicolons and representing the nine tone parameters. (see Tone Parameters).
- Defines a template for the second busy tone.

disconnect-tone

- Type: Optional
- Default values: `500;200;500;200;55;40;55;40;10;`
- Valid Values: Any string of numbers separated by semicolons and representing the nine tone parameters.
- Defines a template for disconnect tone, also known as a "fast busy tone."

extra-dial-tone

- Type: Optional
- Default Value: `401;125;401;125;0;0;0;0;0;`
- Valid Values: Any string of numbers separated by semicolons and representing the nine tone parameters. (see Tone Parameters).
- Defines a template for an extra dial tone.

fax-tone-1

- Type: Optional
- Default Value: `2150;150;0;0;25;-25;0;0;0;`
- Valid Values: Any string of numbers separated by semicolons representing the nine tone parameters. (see Tone Parameters).
- Defines a template for the first FAX tone.

fax-tone-2

- Type: Optional
- Default Value: `1100;50;0;0;25;-25;0;0;0;`
- Valid Values: Any string of numbers separated by semicolons representing the nine tone parameters. (see Tone Parameters).
- Defines a template for a second FAX tone.

forth-tone

- Type: Optional
- Default Value: `0;0;0;0;0`
- Valid Values: Any string of numbers separated by semicolons representing the following tone parameters: (see Tone Parameters).

Frequency of first tone:

- Frequency range: 200 Hz to 4000 Hz
- Frequency resolution: 1 Hz

Frequency of second tone:

- Frequency range: 200 Hz to 4000 Hz
- Frequency resolution: 1 Hz

Amplitude of first tone:

- (E-1) -40 dBm0 to +0 dBm per tone nominal
- (T-1) -43 dBm0 to -3 dBm per tone nominal

Amplitude of second tone:

- (E-1) -40 dBm0 to +0 dBm per tone nominal
- (T-1) -43 dBm0 to -3 dBm per tone nominal

Duration: 10 millisecond increments

The forth-tone option enables or disables a beep signal that alerts an agent immediately before a customer is connected to him or her. When an agent is in the *engaged* mode and waiting to be connected to a customer, this low-frequency tone notifies him or her that a connection is imminent. You can configure the tone frequency, duration, and amplitude of the signal. CPD Server supports this signal on DM3 hardware and SIP-HMP-ASM line-type.

intl-dial-tone

- Type: Optional
- Default Value: `402;125;402;125;0;0;0;0;0;`
- Valid Values: Any string of numbers separated by semicolons representing the nine tone parameters (see Tone Parameters).
- Defines a template for an international dial tone.

local-dial-tone

- Type: Optional
- Default Value: `400;125;400;125;0;0;0;0;0;`
- Valid Values: Any string of numbers separated by semicolons and representing the nine tone parameters (see Tone Parameters).
- Defines a template for a local dial tone.

ring-back-tone-1

- Type: Optional
- Default Value: `450;150;0;0;130;105;580;415;0;`
- Valid Values: Any string of numbers separated by semicolons and representing nine tone parameters (see Tone Parameters).
- This option defines a template for the first ring-back tone.

ring-back-tone-2

- Type: Optional
- Default Value: `450;150;450;150;130;105;580;415;0;`
- Valid Values: A string of numbers separated by semicolons representing nine tone parameters (see Tone Parameters).
- This option defines a template for a second ring-back tone.

sit-tone

- Type: Optional
- Default Value: `900;1000;5;50;0;0;0;0;0;0;0;0;`
- Valid Values: Any string of numbers separated by semicolons and representing the following tone parameters.
- Defines the SIT signal parameters in the Dialogic DX_CAP data structure.

A series of 12 numbers separated by semicolons representing these 12 parameters for the sit-tone:

- Lower Frequency: Lower bound for 1st tone in an SIT. (Call Analysis) Length: 2. Default Value: 900. Units: Hz.
- Upper Frequency: Upper bound for 1st tone in an SIT. (Call Analysis) Length: 2. Default Value: 1000. Units: Hz.
- Time Frequency: Minimum time for 1st tone in an SIT to remain in bounds. The minimum amount of time required for the audio signal to remain within the frequency detection range specified by upper frequency and lower frequency for it to be considered valid. (Call Analysis) Length: 1. Default Value: 5. Units: 10 ms
- Maximum Time Frequency: Maximum allowable time for 1st tone in an SIT to be present. Length: 1. Default Value: 0. Units: 10 ms.
- Lower Bound for 2nd Frequency: Lower bound for 2nd tone in an SIT. Length: 1. Default Value: 0. Units: Hz.
- Upper Bound for 2nd Frequency: Upper bound for 2nd tone in an SIT. Length: 1. Default Value: 0. Units: Hz.
- Time for 2nd Frequency: Minimum time for 2nd tone in an SIT to remain in bounds. Length: 1. Default Value: 0. Units: 10 ms.
- Maximum Time for 2nd Frequency: Maximum allowable time for 2nd tone in an SIT to be present. Length: 1. Default Value: 0. Units: 10 ms.
- Lower Bound for 3rd Frequency: Lower bound for 3rd tone in an SIT. Length: 1. Default Value: 0. Units: Hz.
- Upper Bound for 3rd Frequency: Upper bound for 3rd tone in an SIT. Length: 1. Default Value: 0. Units: Hz.
- Time for 3rd Frequency: Minimum time for 3rd tone in an SIT to remain in bounds. Length: 1. Default Value: 0. Units: 10 ms.
- Maximum Time for 3rd Frequency: Maximum allowable time for 3rd tone in an SIT to be present. Length: 1. Default Value: 0. Units: 10 ms.

Note:	Please note that SIT tone definitions should be customized only if the default settings are inappropriate for your particular system.

Reconfiguring Tones for Dialogic DM3 Hardware

If you want to reconfigure specific tones for Dialogic DM3 hardware, you can do so by configuring a `dm3tones` section and associated options, instead of changing the tone definition in the Dialogic `*.config, *.fcd`, and `*.pcd` files. Ten additional user tones can be defined for DM3 hardware in the `dm3tones` section. Options names for user tones are from `user-tone-1` to `user-tone-10`.

The option values for user tones have the same format as other tones in the `dm3tones` section, but they also require the addition of the `tone-id` parameter after the `treat-as` parameter.

Format Example:

The user tone format is as follows: `treat-as=<tone-name2>;tone-id=<id_of_the_tone>; numofseg; tn_rep_cnt; (tn_dflag; tn1_min; tn1_max; tn2_min; tn2_max; tn_twinmin; tn_twinmax; tnon_min; tnon_max; tnoff_min; tnoff_max)` The `id_of_the_tone` parameter is an integer within the interval 268 - 282 (which corresponds to the `TID_CUSTOM_SIT1` to `TID_CUSTOM_SIT15` Dialogic tones). Specific hardware might have restrictions on which tone IDs can be used. Check the Dialogic documentation to find the tone IDs that can be used for user tones in your configuration.

Note:	The `treat-as` and `tone-id` parameter is mandatory for user-defined tones.For a description of other parameters, see the configuration of non-user tones in the dm3tones section.

Format Example:

You can define additional busy tones that will be treated as `busy-tone-1` by defining `user-tone-1` with the following value:

```
treat-as=busy-tone-1;tone-id=268;3;1;(0;950;1020;0;0;0;0;32;45;0;5)
(0;1310;1430;0;0;0;0;15;30;0;5)(0;1740;1850;0;0;0;0;0;0;0;0).
```

This means that the additional tone with ID 268 is defined for the board. When this tone is detected during call progress analysis (CPA), CPD Server behaves as if `busy-tone-1` is detected.

Configuring a dm3tones Section

Start

1. Configure a new `dm3tones` section.
2. In this new section, configure the following tones, as required:
   - `busy-tone-1`
   - `busy-tone-2`
   - `disconnect-tone`
   - `extra-dial-tone`
   - `fax-tone-1`
   - `fax-tone-2`
   - `intl-dial-tone`
   - `local-dial-tone`
   - `ring-back-tone-1`
   - `ring-back-tone-2`
   - `sit-no-circuit`
   - `sit-operator-intercept`

- sit-reorder
- sit-vacant-circuit

Note:	The format for these option differs from those in the tone section. See Option Value Format for dm3tones Section. For a description of these options, with the exception of the sit options, refer to their associated descriptions in the tones section at the page number indicated. For the sit options, the option is described in this section. The sit-no-circuit, sit-operator-intercept, sit-vacant-circuit, and sit-reorder tones are specific to DM3 hardware. As such, they do not appear in the tones section.

3. For isdn-dm3, sip-hmp, and sip-hmp-asm line-types, set the engage-cpd-on-call-setup option to yes.

End

Option Value Format for dm3tones Section

The format for the option values in this dm3tones section differs from those in the tones section, and is as follows:
treat-as=<tone-name2>; numofseg; tn_rep_cnt; (tn_dflag; tn1_min; tn1_max; tn2_min; tn2_max; tn_twinmin; tn_twinmax; tnon_min; tnon_max; tnoff_min; tnoff_max) Where:

- The treat-as=<tone-name2> parameter is used to map one tone to another and is optional. It is applicable for mapping SIT tones to any of the other tones.
- <tone-name2> can be the name of any of the other tones, whether or not its value is defined this section.

The text in the parentheses can be repeated any number of times, as specified by the numofseg parameter.

The format parameters include:

- numofseg--Specifies the number of segments (defined by the parameters in the parentheses) for a multi-segment tone.
- tn_dflag--Specifies whether the tone is a dual tone (a value of 1) or a single tone (a value of 0).
- tn_rep_cnt--Specifies the debounce repetition count.
- tn1_min--Specifies the minimum frequency in Hertz (Hz) for tone 1.
- tn1_max--Specifies the maximum frequency in Hz for tone 1.
- tn2_min--Specifies the minimum frequency in Hz for tone 2.
- tn2_max--Specifies the maximum frequency in Hz for tone 2.
- tn_twinmin--Specifies the minimum frequency in Hz of the single tone proxy for the dual tone.
- tn_twinmax--Specifies the maximum frequency in Hz of the single tone proxy for the dual tone.
- tnon_min--Specifies the debounce minimum ON time in 10 msec units.

- `tnon_max`--Specifies the debounce maximum ON time in 10 msec units.
- `tnoff_min`--Specifies the debounce minimum OFF time in 10 msec units.
- `tnoff_max`--Specifies the debounce maximum OFF time in 10 msec units.

Format Example:

You can redefine the `sit-vacant-circuit` tone to treat it as `busy-tone-1`, and configure the `sit-vacant-circuit` option with the following value: `treat-as=busy-tone-1;3;1;(0;950;1020;0;0;0;0;32;45;0;5)(0;1310;1430;0;0;0;0;15;30;0;5)(0;1740;1850;0;0;0;0;0;0;0;0)`.

This means that the board's tone definition for `sit-vacant-circuit` will be redefined according to previously listed parameters and, when this tone is detected during call progress analysis (CPA), CPD Server will behave as if `busy-tone-1` was detected.

Notes:	• Changes to the options in the `dm3tones` section take effect only after CPD Server is restarted. • Redefined tones remain active in the DM3 board until the Dialogic service is restarted. • Some boards may not support redefining every tone. • When redefining tones, make sure that their redefinition does not prevent a protocol from working properly. Consult your Dialogic manuals for more information. • There are no default values for the options in this `dm3tones` section. The Dialogic driver loads the default tones definition into the DM3 board during startup of the Dialogic system. The values of the tones definition may depend on Dialogic protocol and other Dialogic configuration. Consult your Dialogic manuals for more information

sit-no-circuit

- Type: Optional
- Default Value: none
- Valid Values: See Option Value Format for dm3tones Section
- Defines a template for a No Circuit SIT tone.

sit-operator-intercept

- Type: Optional

- Default Value: none
- Valid Values: See Option Value Format for dm3tones Section
- Defines a template for an Intercept SIT tone.

sit-reorder

- Type: Optional
- Default Value: none
- Valid Values: See Option Value Format for dm3tones Section
- Defines a template for a Reorder SIT tone.

sit-vacant-circuit

- Type: Optional
- Default Value: none
- Valid Values: See Option Value Format for dm3tones Section

Defines a template for a Vacant Circuit (Vacant Code) tone.