Technical Bulletin CS-17-03

Installing and Using Distinctive Ring Tones with 84-Series Handsets

This document describes how to install and use custom ring tones on 84-series devices. These additional ring tones can be initiated by nurse-call systems using a Alert-Info header within the SIP telephony signaling. This allows a nurse-call system to play distinct and different ring tones. These customs ring tones need to be installed into the 84-series device prior to use.

Many nurse-call systems use an integrated SIP server (commonly Brekeke) to communicate with mobile end-points. SIP makes it easy for nurse-call systems to support many different endpoints without custom integration. The nurse-call system generates phone calls to the nurse's wireless telephone whereby the caller ID string provides the alert and location information, and the custom ring tone allows the nurse to audibly identify the priority of the alert.

> Note: It is common practice to configure a second line registration on the 84-series device directly to the nurse-call system's SIP server (e.g. Brekeke) so that the Brekeke SIP signaling is received intact using the second line at the wireless telephone.
>
> What we have found when an 84-series device is only registered to the main/corporate SIP server, and the nurse-call system uses a SIP trunk from the Brekeke to the the corporate SIP server, the corporate SIP server often strips the special SIP alert-info header containing the ring-tone information. And so the wireless telephone does not receive (i.e. play) the alert-info instruction.

Installing New Ring Tones

To install additional ring tones into an 84-series device, the new ring tones need to be put on an provisioning server, and additional configuration parameters need to be set to ensure the 84-series device downloads these tones at start-up. The tones are loaded into the handset's volatile memory, so they are lost when a handset is powered off, and thus need to be left on the provisioning server.

> Note: The new WAV files should be less than 300 KB, in the WAVE file format and either mono 8 kHz G.711 u-Law, or G.711 A-Law.

To configure a handset to download new ring tones, use the saf.x parameter in the configuration file. Typically x is 4 to 10. For example:

> <sampled_audio

saf.4 =”ftp://192.168.1.11/example.wav”

/>

In the above example, saf.4 directs the handset to use FTP to retrieve example.wav from the specified FTP server IP address. Note the 84-series will use the the FTP provisioning server credentials set elsewhere, i.e. during initial provisioning via QNC).

Note: You can verify the ringtone is installed into the handset, by checking the ringtone (it should appears around number 14) under the Notification Profiles: setting->basic->notification->normal-> ringing->calls->ring pattern

For more information on 84-series configuration parameters and syntax please refer to the “Default Ring Tones and Alert Tones” section of the 84-Series administration guide document.

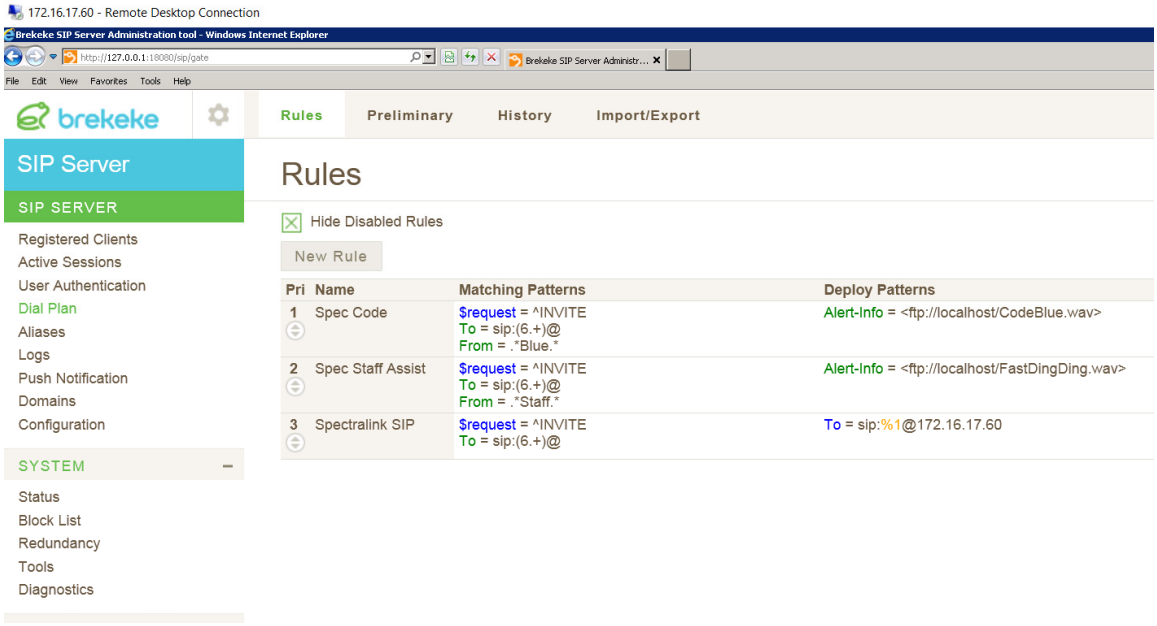
Setting the Alert-Info Rule

Once the ring-tones are configured and downloaded to the 84-series device, the nurse-call call-server (e.g. Brekeke) can use these tones as ring tones by adding an Alert-Info header directive (e.g. “Alert-Info = <ftp://localhost/example.wav>”) to a dial plan rule in the Brekeke call-server. An example of dial plan rule example is below, where “example.wav” can be substituted with one of the other WAV files above:

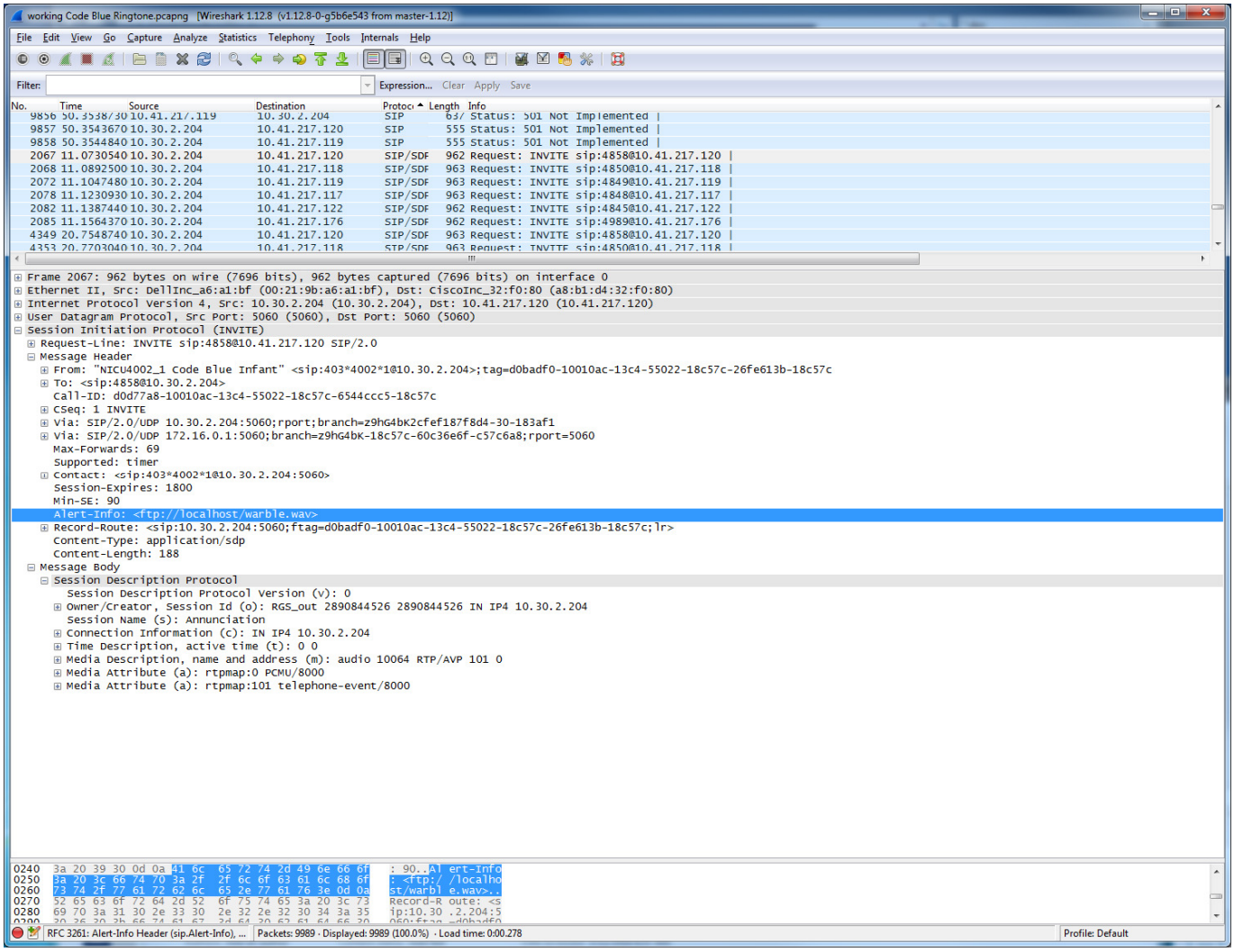
```
$request = ^INVITE
To = sip:(8.+)@
From = Code
Alert-Info = <ftp://localhost/example.wav>
```

Note, the case is important on setting up the dial plan rules in the Brekeke, for example, SIP must be lowercase not a mixed case (i.e. “sip” not “Sip”.

Below is an exerpt from a brekeke SIP server, showing a few simplistic dial plan examples. For more general information on Dial Plan Rules and Pattern Matching please refer to the appropriate nurse-call or Brekeke documentation.



Once the Brekeke SIP server is setup, and assuming a nurse-call alert is generated that meets the configured dial plan rule, the Brekeke should send SIP signaling with an Alert-Information header. This can be verified using Wireshark to analyze the SIP signaling. In the example below you see an alert-info for a warble.wav.



If the specified WAV file is not installed or present on the wireless telephone, then the specified WAV file will not play. If after configuration of both 84-series and Brekeke SIP server and the 84-series still does not play the custom ring tone as expected, one approach is to use an Open Source software tool called SIP inspector to inject Alert-Info SIP signaling to the wireless telephone. If using SIP Inspector the custom ringtone plays, then it suggests the problem is at the Brekeke call-server, and a Wireshark trace may be helpful.

Note: If you continue have difficulties, Spectralink Support may be able to assist troubleshooting the system (possibly at a billable rate). However Brekeke call-server configuration is generally outside of Spectralink Support expertise.

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