Information Note
FXS Call Transfer

When analogue handsets, connected to Vega 50 FXS gateways, are used in place of a PBX, as well as making and receiving calls, users frequently wish to be able to transfer calls.

On PBXs a call transfer is initiated by pressing the hookflash key (sometimes known as the recall key) on the phone and then entering the required destination number.

By default, when a Vega 50 FXS gateway detects that a hookflash has been pressed it will generate a SIP message saying that a hookflash has been received. Some systems will take this hookflash message and initiate advanced services.

Many SIP proxy based systems however do not handle the SIP hookflash message; they rely on the endpoint handling the initiation of call transfer.

From R070S011 Vega 50 FXS gateways can initiate call transfer.

Vega configuration

On the web browser:
1. Create appropriate dial plans.
   - dial plans are needed to route incoming calls to the appropriate telephony interfaces

   N.B. For call transfer to operate on calls connected between telephone interfaces on the same Vega, dial plans to route calls from one telephony interface on the Vega to another telephony interface on the same Vega must not route calls directly between the interfaces, but must route calls via the SIP interface (routing the call to the Vega's own IP address) – the Supplementary Service handling code is built into the SIP handler, hence "within unit" calls must be routed via the SIP handler.

   - dial plans are also needed to route 'transfer' calls.

   Vega will use the dial plan that matches both the interface that is initiating the call transfer and the dialled digits entered as the destination to route the call to.

2. In the Supp. Services page
   - select Enable
   - in the Supplementary Services Profile set Dial Timeout = 5 (seconds)

3. in the POTS, Advanced POTS, General Configuration section
   - Poll Timer = 15

4. in the POTS, Advanced POTS, FXS Configuration, Hardware Profile Configuration section
   - Hookflash Debounce Time = 30
   - Hookflash Time = 500

5. In the Advanced, Advanced Media page
   - un check Direct TDM Enable

Consultative transfer

Consultative transfer is the ability to transfer a call, and speak to the called party before 'putting the call through'.

To perform a consultative transfer, whilst in a call:
   ➢ press recall
   ➢ enter <destination number>
   ➢ press #
   ➢ wait for the call to be answered
   ➢ talk to the called party
   ➢ clear down (the call transfer will be completed)

Pressing the # is optional, it tells the Vega that the destination number is complete. If # is not pressed then the Vega has to wait Dial Timeout (seconds) before it can act upon the dialled number – in case extra digits are pressed.

If you wish to 'broker' between the to-be-transferred party and the transfer-target party, before clearing down:
   ➢ press recall
      - you now hear 'stuttered dial tone' and you are in command mode
   ➢ press recall
      - you may now speak to the to-be-transferred party
   ➢ press recall
      - you now hear 'stuttered dial tone' and you are in command mode
   ➢ press recall
      - you may now speak to the transfer-target party

repeated presses of recall cycles through these options.

During command mode press * 5 2 (the Call Clear Code) to clear down the party you were last connected to.

Whilst speaking to either party, clear down and the other two parties will be connected together. (Alternatively press * 9 9 when in command mode to connect both parties together and drop yourself out of the call).

Blind transfer

Blind transfer is the ability to transfer a call without talking to the far end.

To initiate a blind transfer:
- ➢ press recall
- ➢ enter * 9 8 *
- ➢ enter <destination number>
- ➢ press #

The transferor may put the phone down as soon as they have completed this sequence as the transfer has been executed. If the transfer-target party picks up before the transferor replaces their handset, the transferor will hear busy tone.

In general it is usual (easier) to use consultative transfer even if you do not wish to speak to the transfer-target party. There are, however, some proxies that, when consultative call transfer is used, require that the call is answered before they will correctly connect the parties.

On an installation, operation of consultative transfer on calls that are not answered before the transferor clears (or manually types in the Consultative Transfer Code to connect the parties) should be checked. If the problem exists, then blind transfer should be used where the call is to be passed and the called party may not answer.

Annex 1

Supplementary service profile parameters

Supplementary Services Profiles

Supplementary Services Profile 1	
Recall	!
Transfer On Hangup	☑
Dial Timeout (seconds)	5
Dial Termination Digit(s)	#
Blind Transfer Code	*98*
Consultative Transfer Code	*99
Call Cycle Code	!
Call Clear Code	*52

Recall = !	-	never change this, this indicates that recall is triggered by hookflash
Transfer On Hangup	-	when checked, this means that a call cleardown will initiate the connection of the to-be-transferred and the transfer-target parties (otherwise need to enter the Consultative Transfer Code during command mode to join the two parties together)
Dial Timeout (seconds)	-	time to wait after DTMF entry to see if another DTMF character is to be keyed. After the timeout expires the received DTMF characters are processed
Dial Termination Digit(s)	-	key (or key sequence) that indicates DTMF input is complete – this avoids having to wait for the Dial Timeout to expire
Blind Transfer Code	-	key sequence to press on initial entry to command mode (i.e. after pressing the hookflash), before entering the destination number, to indicate that a blind transfer is required
Consultative Transfer Code	-	key sequence to press when in command mode to join the to-be-transferred and the transfer-target parties together. (If Transfer On Hangup is checked, then it is usually easier to connect the parties by the transferor clearing the call)
Call Cycle Code	-	never change this, this indicates that hookflash swaps the transferor between command mode and the call(s) on hold
Call Clear Code	-	use this key sequence in command mode to clear the party last spoken to

Annex 2

Debug to confirm that hookflash is being detected

On a command line interface enter the following debug commands:
- ➢ debug enable _pots it
- ➢ debug enable router rs
- ➢ debug on
- ➢ sip monitor on

The resulting log will show messages being sent when hookflash is detected.

For more detailed debugging use:
- ➢ debug enable _pots it234
- ➢ debug enable _pots *suppserv
- ➢ debug enable _def 4
- ➢ debug enable router rs
- ➢ debug on
- ➢ sip monitor on

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