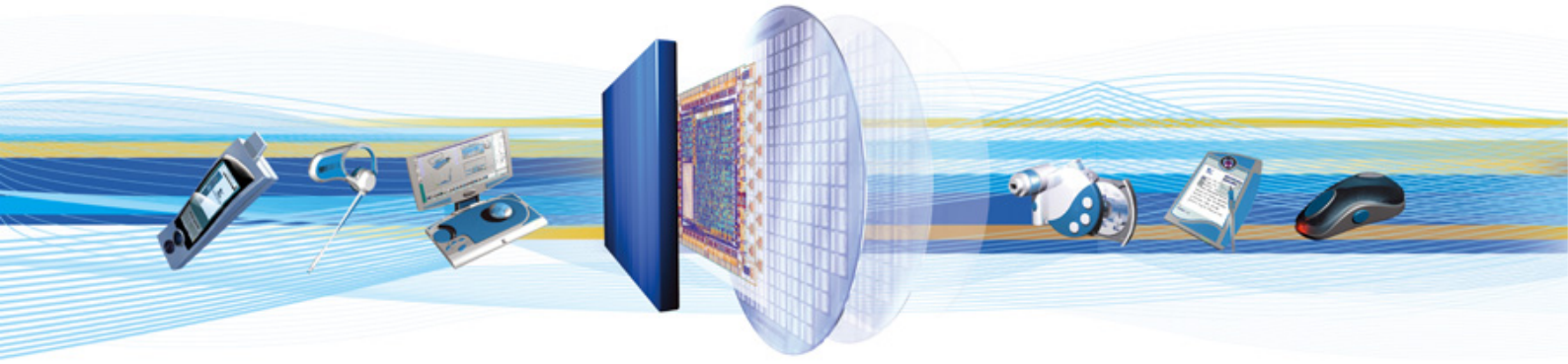
CSR Synergy Bluetooth 18.2.0

BIPS Basic Imaging Profile Server

Demo Description

November 2011



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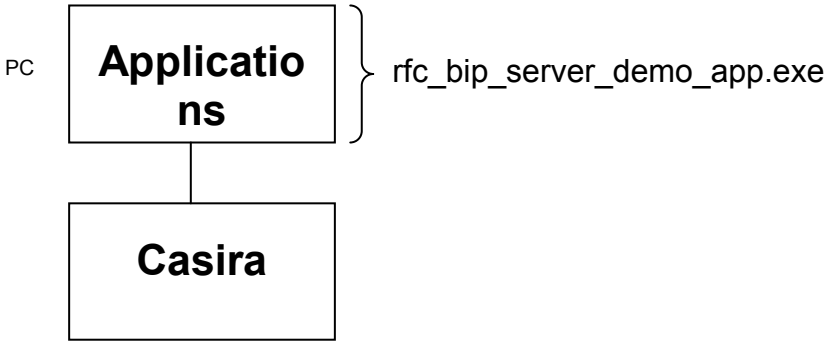
1 Basic Imaging Profile (BIP Server)

1.1 Generally

The BIP server example application can be used for transferring pictures from a BIP server (e.g. a camera) to the BIP server. This demo is running with a CASIRA with RFCOMM-build firmware.



The BIP server program provides the following example functionality:

- Image Push:
  - Get capabilities
  - Put image
  - Put thumbnail
  - Put attachment
- Remote Camera:
  - Get monitoring image
  - Get image properties
  - Get thumbnail
  - Get image
- Automatic Archive:
  - Get Capabilites
  - Get image list
  - Get image properties
  - Get image
  - Get thumbnail
  - Get attachment
  - Delete image
- Up to two Bluetooth channel establishments between a client(s) and a server(s)

The application has been made to run on Windows and Linux and may be connected to the Casira using either a serial connection using BCSP (`rfc_bip_server_demo_app.exe`), a serial connection using H4DS (`rfc_bip_server_demo_app_h4ds.exe`) or an USB connection (`rfc_bip_server_demo_app_usb.exe`).

The description below is based on the Windows demo application but the description also holds for the Linux Demo Application.

1.2 Use of the rfc_bip_server_demo_app.exe program

Note: This description is for CSR Synergy Bluetooth RFCOMM. The functionality of the application for the HCI build is identical. The only difference is the naming: rfc_bip_server_demo_app.exe versus hci_bip_server_demo_app.exe.

Program invocation:

The following program parameters can be given as command line parameters at program start:

-C port	to specify which COM port the program should use (connected to the Casira). For example, -C COM2, default is COM1. (for Linux the default port is /dev/ttyS0)
-B baudrate	to specify which baud rate to use between the PC and Casira. For example, -B 921600, default is 115200.
-A < BD addr.>	specifies the Bluetooth address of the remote device used for the default connection. This parameter is optional.

Program usage:

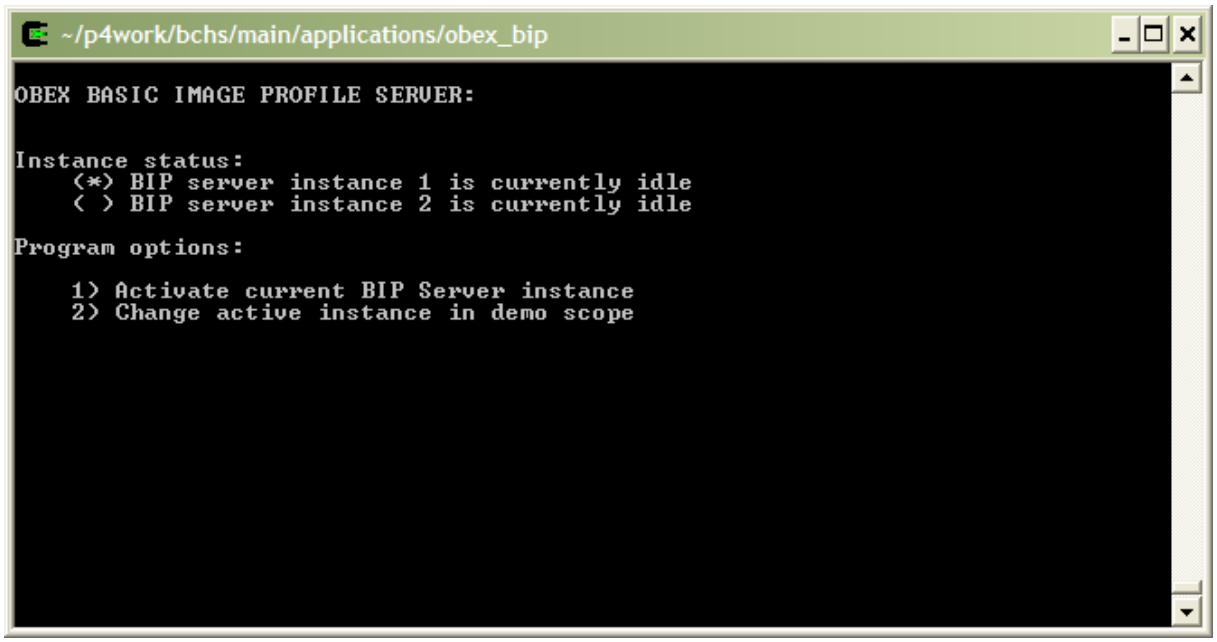
The demo application is implemented as simple menu-based terminal program. The program can be closed by pressing the ESC key at any time.

The BIP server can act as Image Push Server, Remote Camera Server, or as Automatic Archive secondary client.

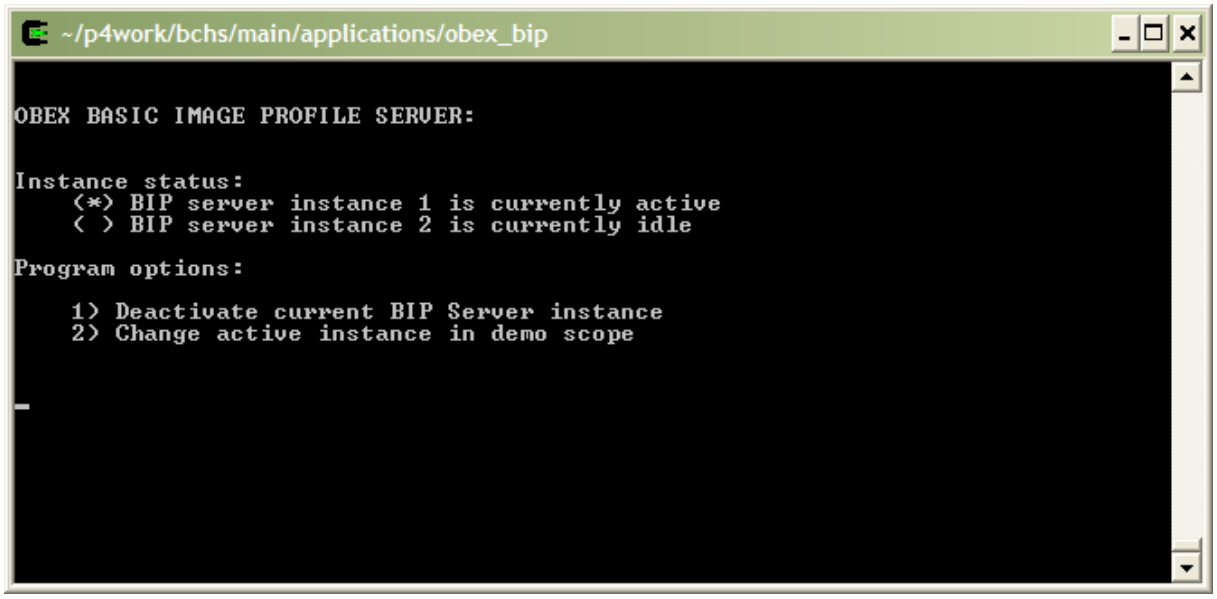
For the image push and remote camera modes, the BIP server demo application can only receive pictures. **This means that most user-interaction is performed on the device sending the pictures to the BIP server** (discover, connect and send picture to the BIP server). For the automatic archive mode the BIP server is acting as secondary client – this gives more user interaction. We will come back to this later.

Initially the BIP server demo application has 2 options:

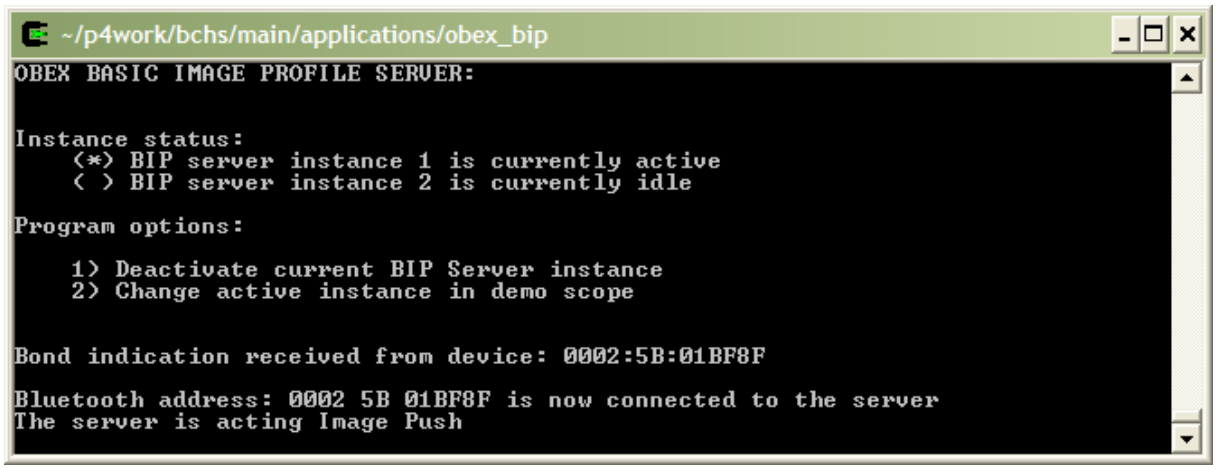
1. Activate Obex BIP Server. This option activates the BIP server so that other devices can discover and connect to the device.
2. Change the active instance in the demo scope. – It is possible to have up to two BIP servers active at the same time.



When the BIP server is activated pictures can be discovered, connected and sent to it. If the remote device requires a PIN code, enter a PIN code.



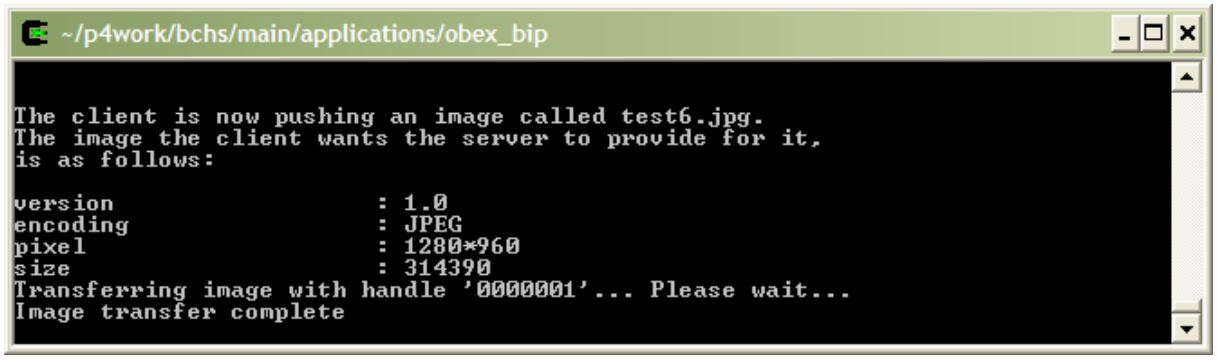
When the server is connected as image push, or remote camera, the following screen appears:



From here it is possible to:

1. Activate OBEX BIP Server. This option deactivates the BIP server so that any existing OBEX connections are closed and other devices can not discover or connect to the device.
2. Change the active instance in the demo scope.

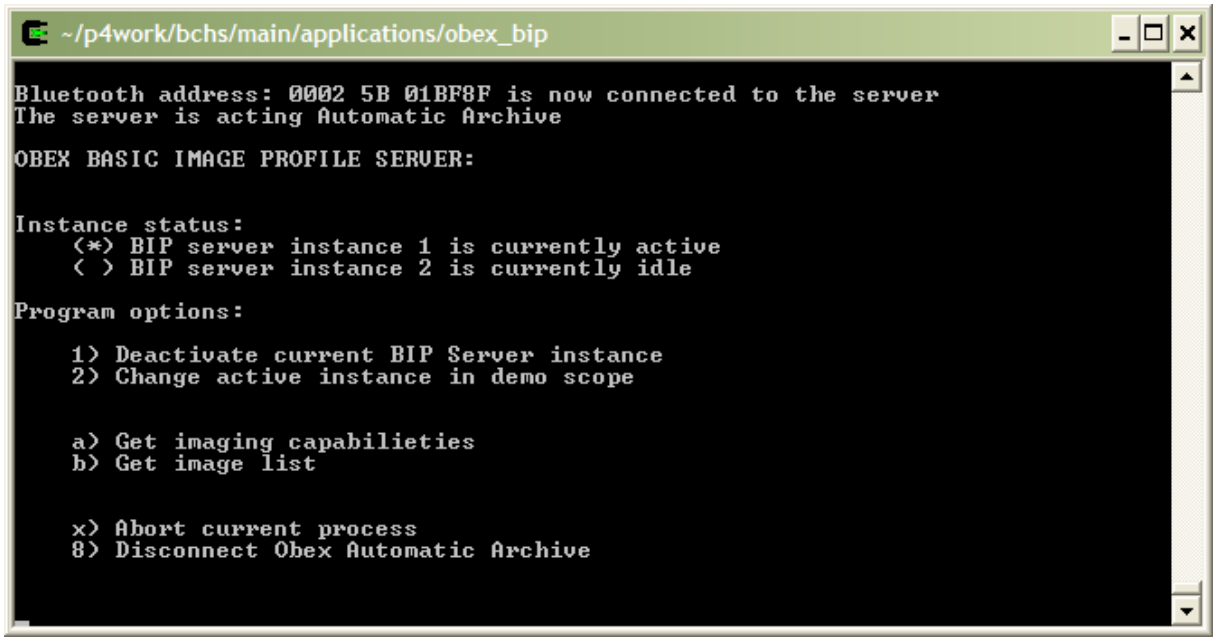
When pushing the picture is started the demo application will display the name and size of the picture. The application is also set to ask for a thumbnail of the picture. The pictures will be saved in the same directory as the application and the pictures will be displayed in the default windows picture viewer.



1.3 Automatic Archive

Since the BIP server is acting as secondary client during an automatic archive session, the options to the user is explained here.

When the primary client has connected in using automatic archive the following menu is available:

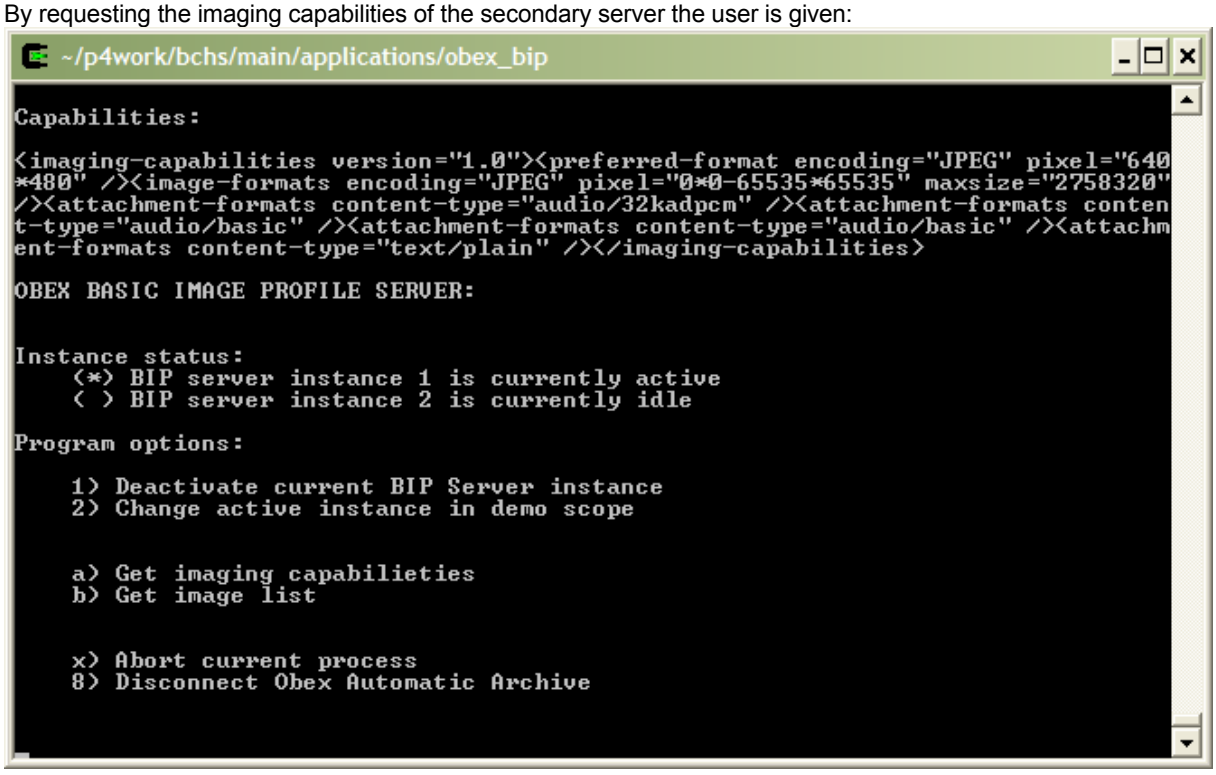


On top of the possibility to deactivate the server, etc. it is now also possible to

- 'a' Get the imaging capabilities of the secondary server
- 'b' Request the image list
- '8' Disconnect the Automatic archive OBEX connection

1.4 Get Imaging Capabilities

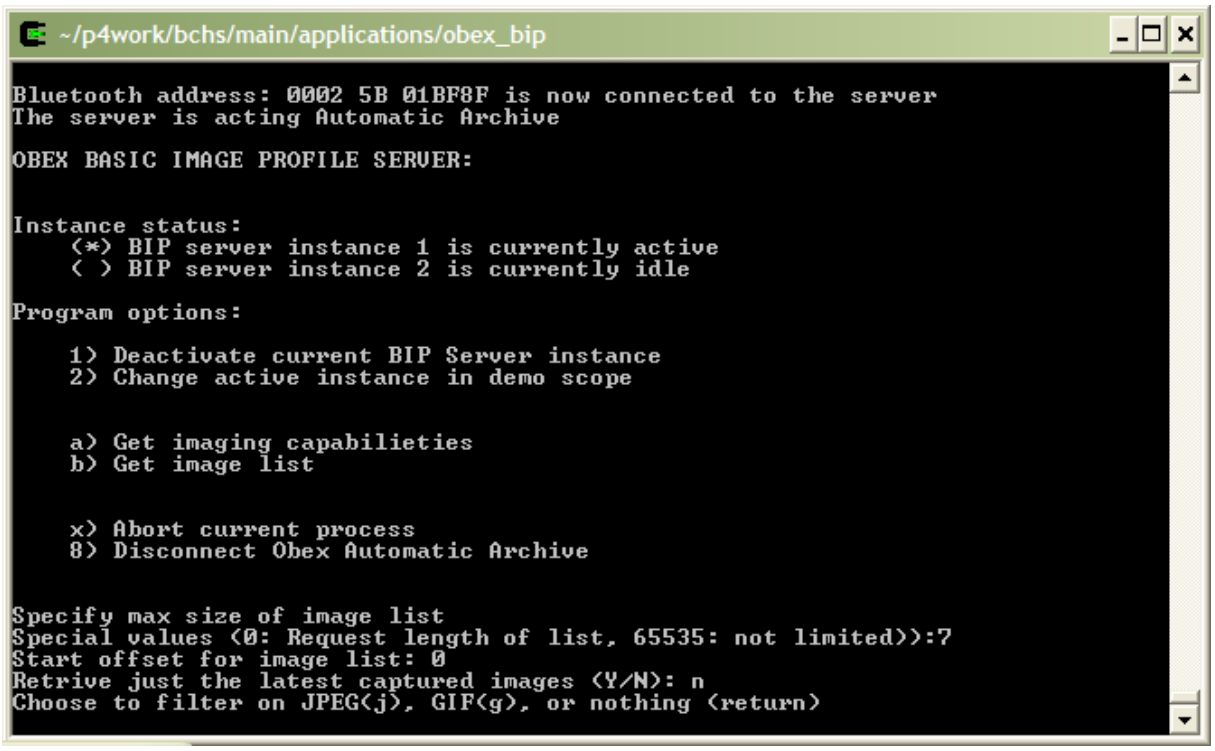
By requesting the imaging capabilities of the secondary server the user is given:



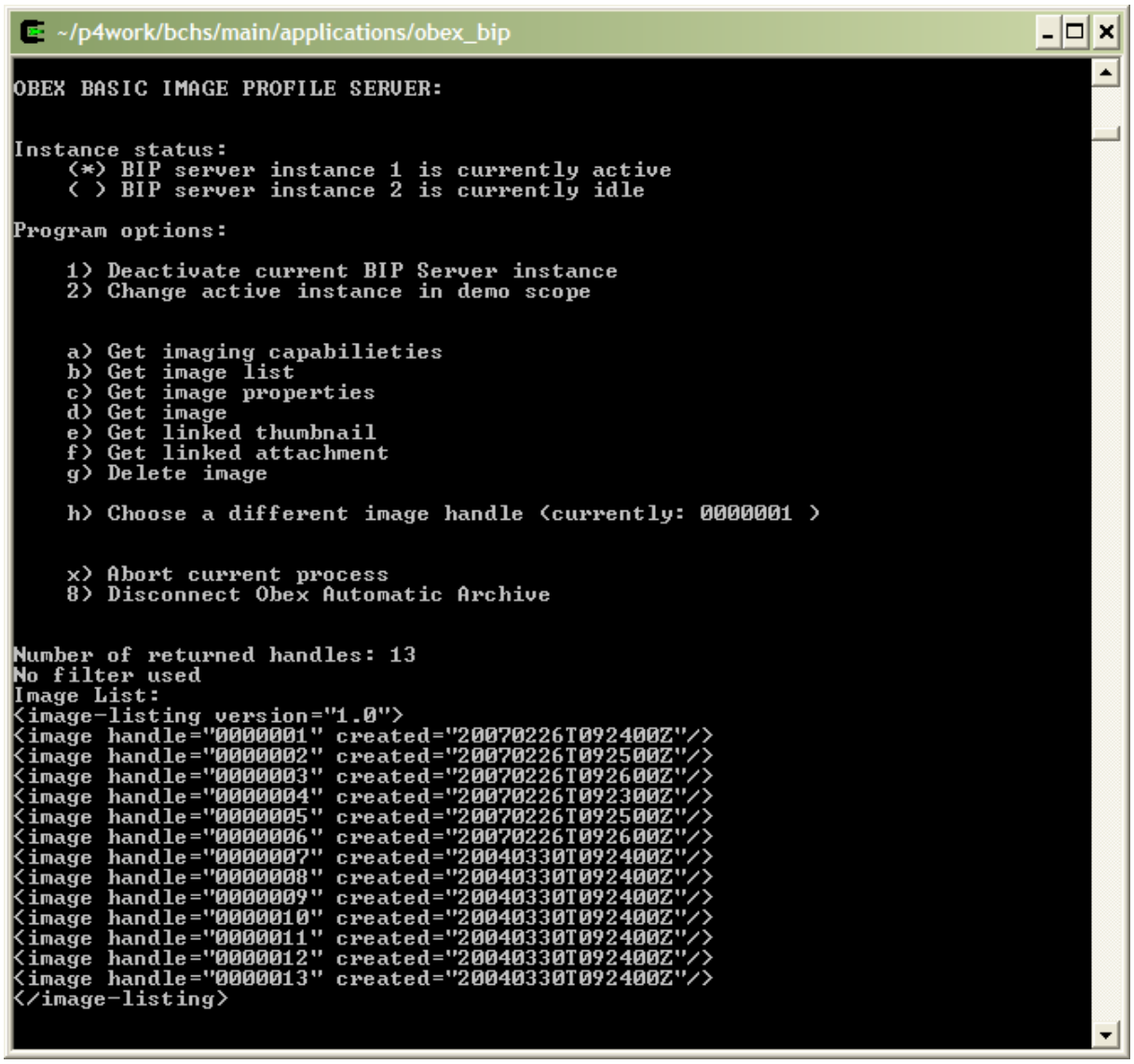
From which we can read that the preferred image format, the range of formats and the recognized types of attachments

1.5 Get Image List

When requesting the image list the user must supply: the max size of the list, the offset in the list, and a filter



The result of the image list is presented below the menu options, see the following screen dumb. Here the images are listed using there image handle and in this case their creation stamp.

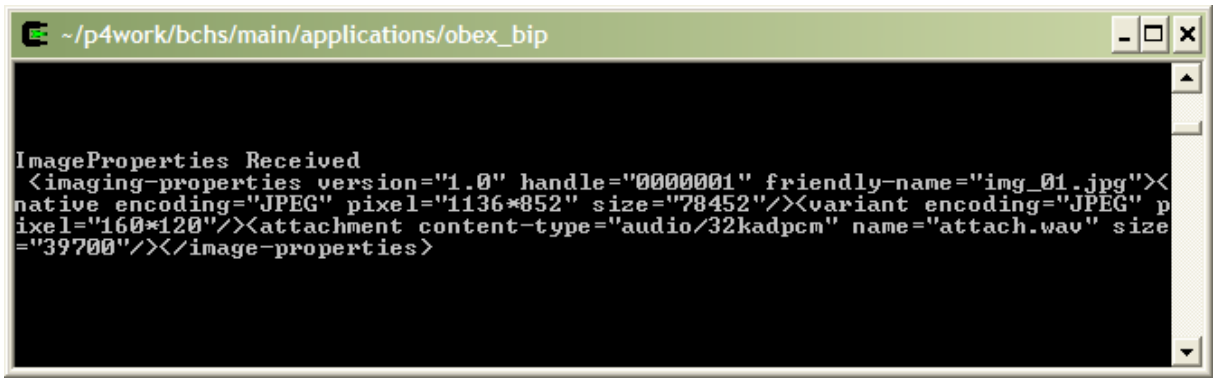


As can be seen from the image above, the menu has now been expanded to also include

- Get image properties
- Get image
- Get image thumbnail
- Get attachment
- Delete image, and
- Choose another image handle

1.6 Get Image Properties

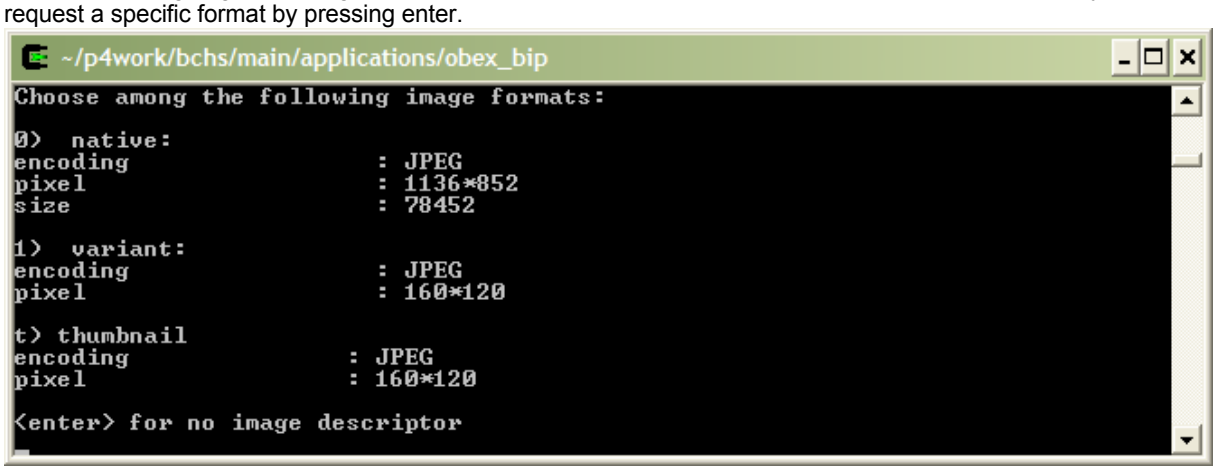
When requesting the image properties (c) we are presented with the result as seen below:



From this we can see that the image with handle '0000001' is available in two formats 1136*852, and 160*120 – both using JPEG as encoding. Furthermore there exists an attachment.

1.7 Get Image

When requesting to get the image (d) we are presented with the available formats. It is also a possibility to not request a specific format by pressing enter.



1.8 Get Image Thumbnail

To get the thumbnail of the current image press 'e',

1.9 Get Attachment

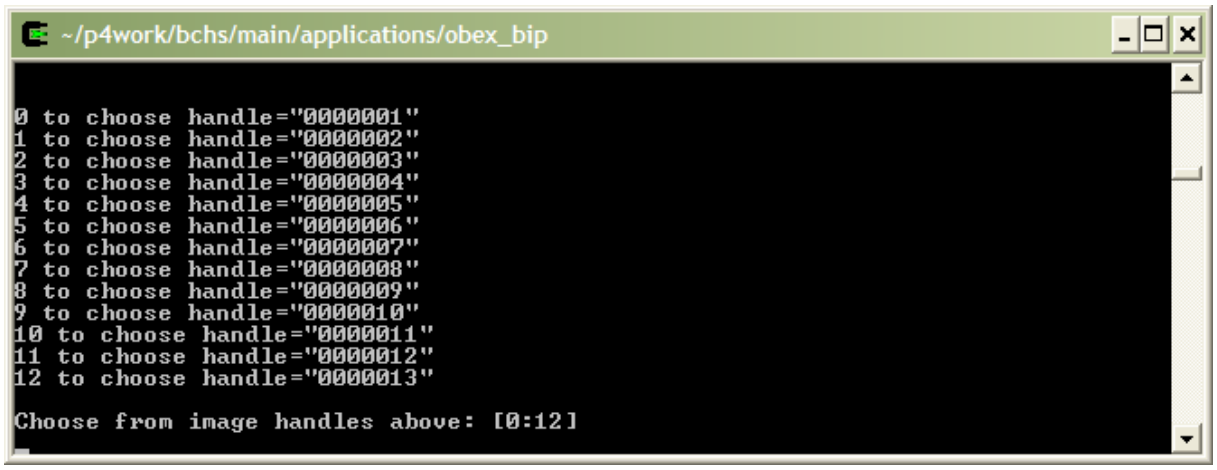
If the current image has an attachment (Check by getting image properties 'c') this can be retrieved by pressing 'f'. The user is requested to choose the correct format ((t)ext or (w)av. The attachment will upon reception be presented in a appropriate viewer

1.10 Delete Image

By pressing 'g' the user can request that the current image is deleted.

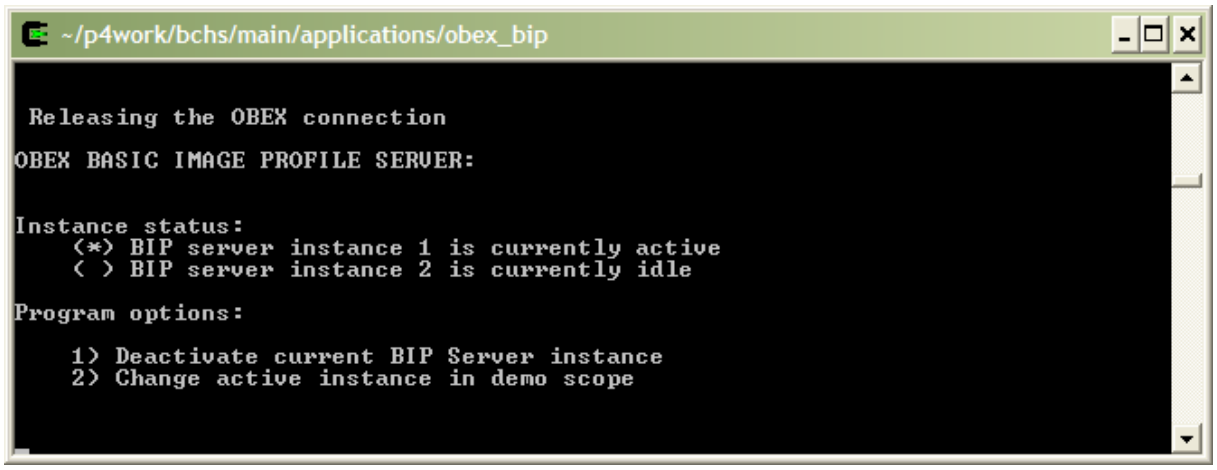
1.11 Choose Image Handle

By pressing 'h' the user can choose which image handle from the image list to set as current:



1.12 Disconnect Automatic Archive OBEX Connection

By pressing ‘8’ the OBEX connections are released and the BIP server will return to its initial enactive state.



2 Linux

This section describes how to build and run the BIPS demo application on Linux.

The BIPS demo application (pure user space), located in `./applications/obex_bip`, may be compiled on Linux by means of:

> make clean all TARGET_ARCH=Linux-2.6-x86

This will output six files: `hci_bip_server_demo_app`, `hci_bip_server_demo_app_h4ds` and `hci_bip_server_demo_app_usb`, for serial and USB communication using a HCI split and `rfc_bip_server_demo_app`, rfc`_bip_server_demo_app_h4ds` and `rfc_bip_server_demo_app_usb`, for serial and USB communication using a RFC split.

The demo applications are used like described above for Windows.

Terms and Definitions

BlueCore®	Group term for CSR's range of Bluetooth wireless technology chips
Bluetooth®	Set of technologies providing audio and data transfer over short-range radio connections
CSR	Cambridge Silicon Radio
UniFi™	Group term for CSR's range of chips designed to meet IEEE 802.11 standards

Document History

Revision	Date	History
1	26 SEP 11	Ready for release 18.2.0

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