JM-Mobile

Java Multimedia for Mobile

User's Guide

JM-Mobile Bluetooth Server version 1.xx.xx

jm-mobile.com

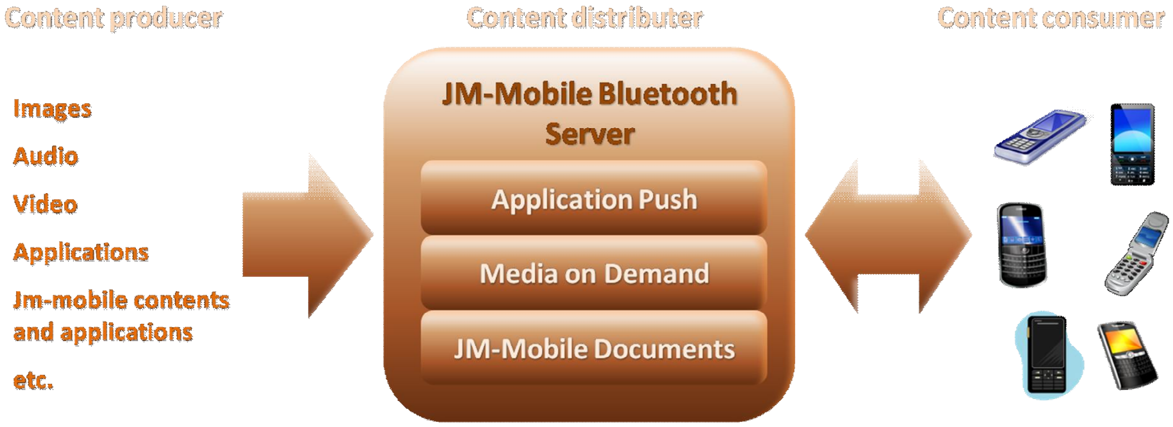
Contents

Introduction

Welcome to Java Multimedia for Mobile - JM-Mobile Bluetooth Server Version 1.00.00.

JM-Mobile Bluetooth Server provides the easy and wireless ways to distribute the multimedia content and the multimedia interactive content to the consumers who are approximate to a location.

The figure below presents the production scheme of the JM-Mobile Bluetooth server:



JM-Mobile Bluetooth Server provides three following services:

- *Bluetooth Push service*: that automatically detects the Bluetooth-enable cell-phones then sends them the interactive content application. This can be used to detect and broadcast advertising/marketing messages to users within the (local) broadcast radius.

- *Bluetooth media on demand service*: with the Jm-mobile Editor we can create the applications to explore and download the media (images, audio, video, application, etc.) from the JM-Mobile Bluetooth Server. See the *btMediaServerBrowing* sample enclosed with the JM-Mobile editor for more detail.

- *JM-Mobile document on demand service* contains the JM-Mobile documents that can be explored and downloaded from the JM-Mobile browser. The *JM-Mobile Browser* can be downloaded from our site web http://www.jm-mobile.com.

Use cases

The JM-Mobile Editor, the Application Push Service and the Media on Demand Service can be used together to make a Bluetooth content distribution system from the production of the interactive contents to the distributing of the contents to clients.

You can use the JM-Mobile Editor to create the application that allows exploring the media contents available of the Media on Demand Service and downloading the media content from it.

The application can be then set in distributing on the Push Service to be ready distributed to the potential clients who are approximate to your location.

When the application is accepted to download and to install on the client's device, the client can use this application to explore the media content of the Media on Demand Service and decide to download any media content that he/she likes to get it.

Installation

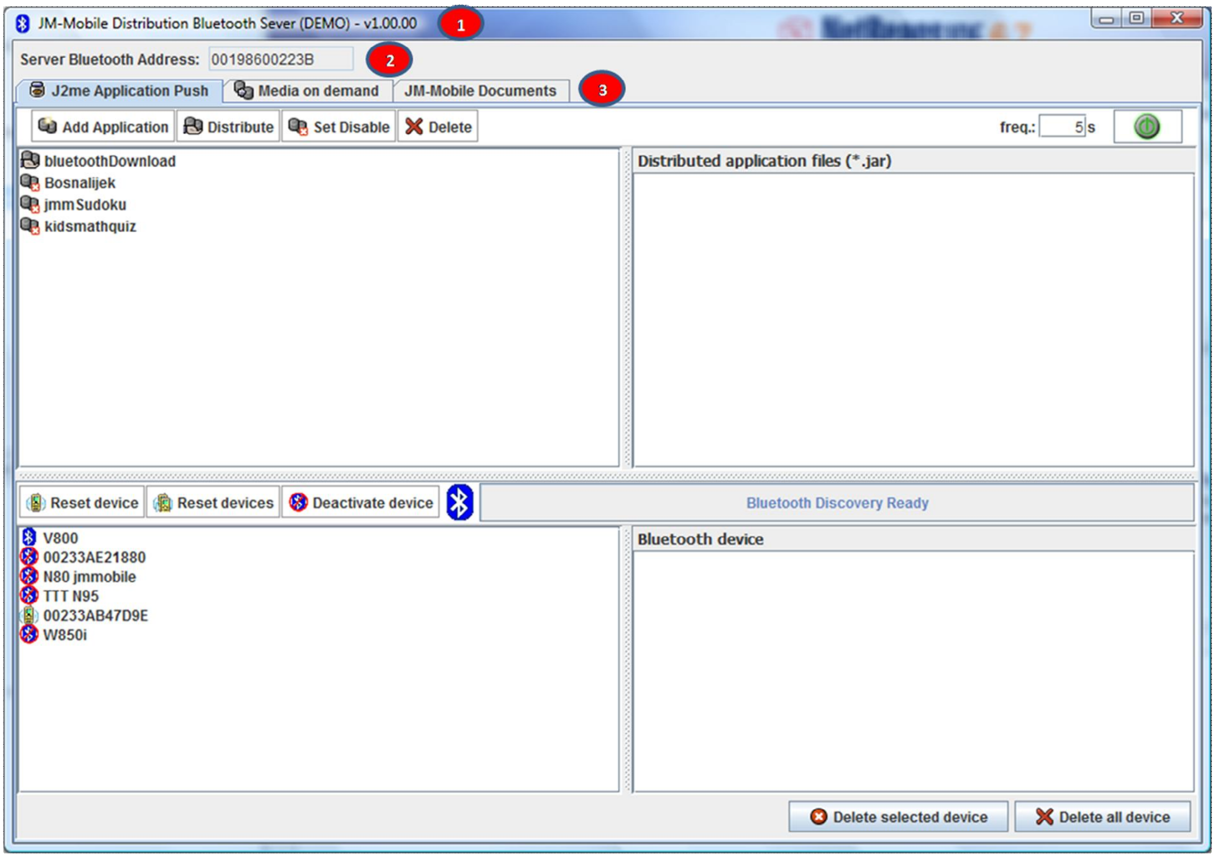
The installation of the server is really simple. You just download the application zip file at http://jm-mobile.com/bt_server_download.html then *unzip* the application in one place on your PC then double-click on the *jmmobile_pc_btclientserver.jar* file to start the server.

Before start the server you must be sure about following requirements:

- The Bluetooth server requires a java jre 1.5 or higher installed on your PC.
- Extraction the BT server in a folder of which the path doesn't contain any space.
- A Bluetooth dongle must be plugged into the PC's USB port BEFORE you start the server.
- The server can't be tested by using the mobile simulators.
- The cell-phones used for testing must support btapi (jsr82). If you want to test *JM-Mobile document on demand service* the cell-phone must be installed the JM-Mobile Browser.

Interface

JM-Mobile Bluetooth Server provides an interface to manipulate the server.



JM-Mobile Distribution Bluetooth Sever (DEMO) - v1.00.00

Server Bluetooth Address: 00198600223B

freq.: 5 s

bluetoothDownload
Bosnalijek
jmmSudoku
kidsmathquiz

Bluetooth Discovery Ready

V800
00233AE21880
N80 jmmobile
TTT N95
00233AB47D9E
W850i

The global interface includes:

1. On the top of the window is the title, the type of release and the version number of the server.

2. The first line on the interface window is the address of the Bluetooth server. This address will be changed depending in the Bluetooth dongle plugged into the PC. This address is very importance to help the JM-Mobile applications on the client sides to detect quickly the JM-Mobile server.

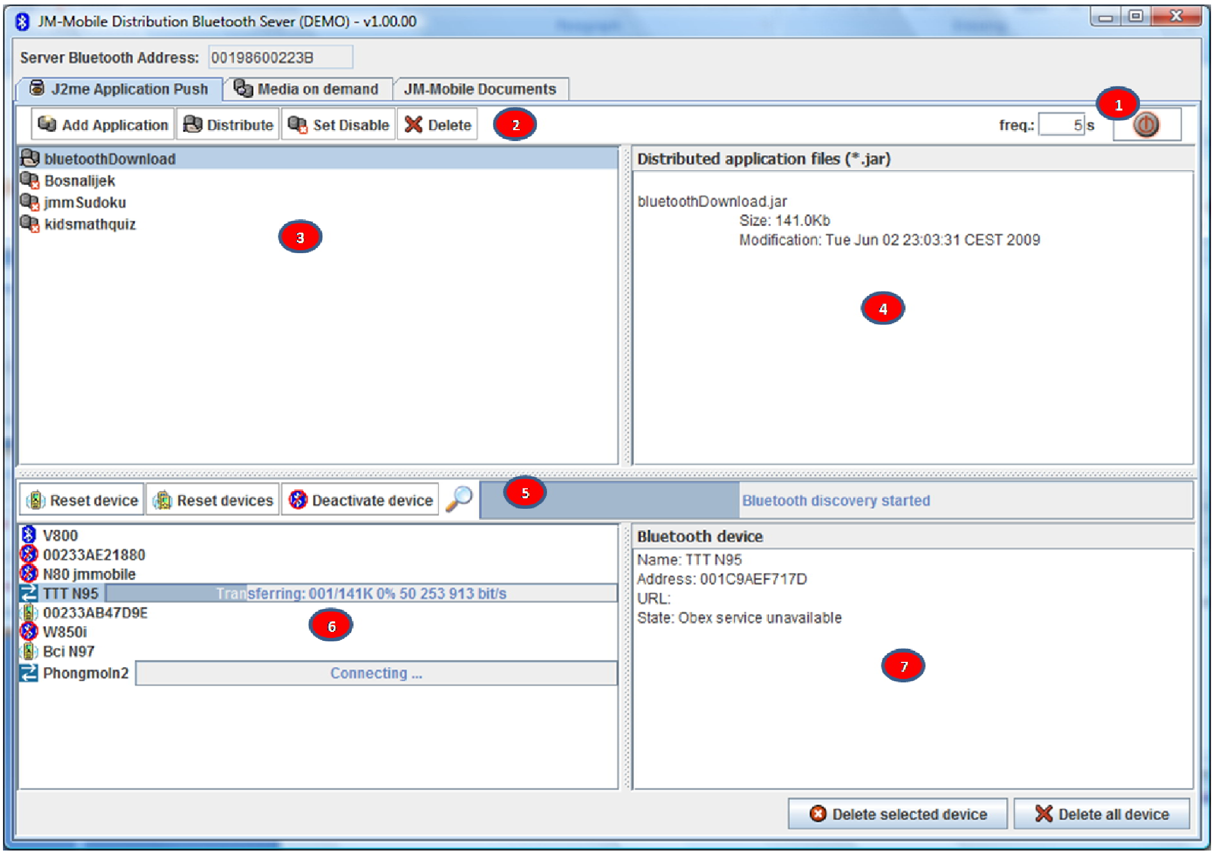
3. The tabbed panel with three tabs according to three services of the server.

To shoot down the server, you just click on the exit icon on the top right corner of the window.

Application Push Service

The Application Push Service interface provides the interactive ways:

- to manage the list of distributed applications,
- to manage the list of the detected Bluetooth cell-phones and to monitor theirs states,
- to monitor the state of the distribution of the application



JM-Mobile Distribution Bluetooth Sever (DEMO) - v1.00.00

Server Bluetooth Address: 00198600223B

freq.: 5 s

bluetoothDownload
Bosnalijek
jmmSudoku
kidsmathquiz

Distributed application files (*.jar)

bluetoothDownload.jar
Size: 141.0Kb
Modification: Tue Jun 02 23:03:31 CEST 2009

Bluetooth discovery started

V800
00233AE21880
N80 jmmobile
TTT N95 Transferring: 001/141K 0% 50 253 913 bit/s
00233AB47D9E
W850i
Bci N97
Phongmoln2 Connecting ...

Bluetooth device
Name: TTT N95
Address: 001C9AEF717D
URL:
State: Obex service unavailable

Global control

The group (1) is the elements allowing to global control of the service:

- The *freq.* text box allows defining the frequency in second of the device detecting loop. If the 5s is filled in this textbox the server will start the Bluetooth device detecting each 5 seconds.
- The *Start/Stop* button allows starting/stopping the services of device detecting and pushing. If you want to change the distributable application, this service must be in the stopped state (this button is in green color). If the service is in the started state (this button in the red color) you must stop the service.

Distributed application management

The set of buttons (2) allows manipulating on the list of distributed applications.

- *Add*: to add a new application into the application list.
- *Distribute*: to set the selected application in the list to distributable state.
- *Set Disable*: to set the selected application to unavailable state.
- *Delete*: to delete the selected application from the list.

The list (3) represents the applications managed by the Application Push Service. Each application has an icon to show the distributable state of the application. There is only one application in the list that can have the distributable state at a moment.

The text area (4) shows the attribute of the selected application.

Detected Device management

The tool bar (5) provides the buttons to control the detected device list and to monitor the device detecting state.

- *Reset device*: to reset a detected device becoming a new detected device state. A device in this state that will be tried to explore the Bluetooth file sending capacity and then if ok, a Bluetooth connection will be established to send the distributable application to the device.
- *Reset devices*: to reset all detected device in the list.
- *Deactivate device*: to deactivate the selected device to inactivated state. A device in inactivated state will be ignored. If you know the detected devices that are unavailable or don’t support the Bluetooth file sending, you can use this button to deactivate these detected devices to help the server don’t be waste time to explore these devices.
- *Delete selected device*: to delete the selected device from the list. A device deleted from the list can be reappeared on the list in the next device detecting time of the server.
- *Delete all devices*: to delete the all devices of the list.
- *The progress bar* shows the device detecting and exploring states of the server.

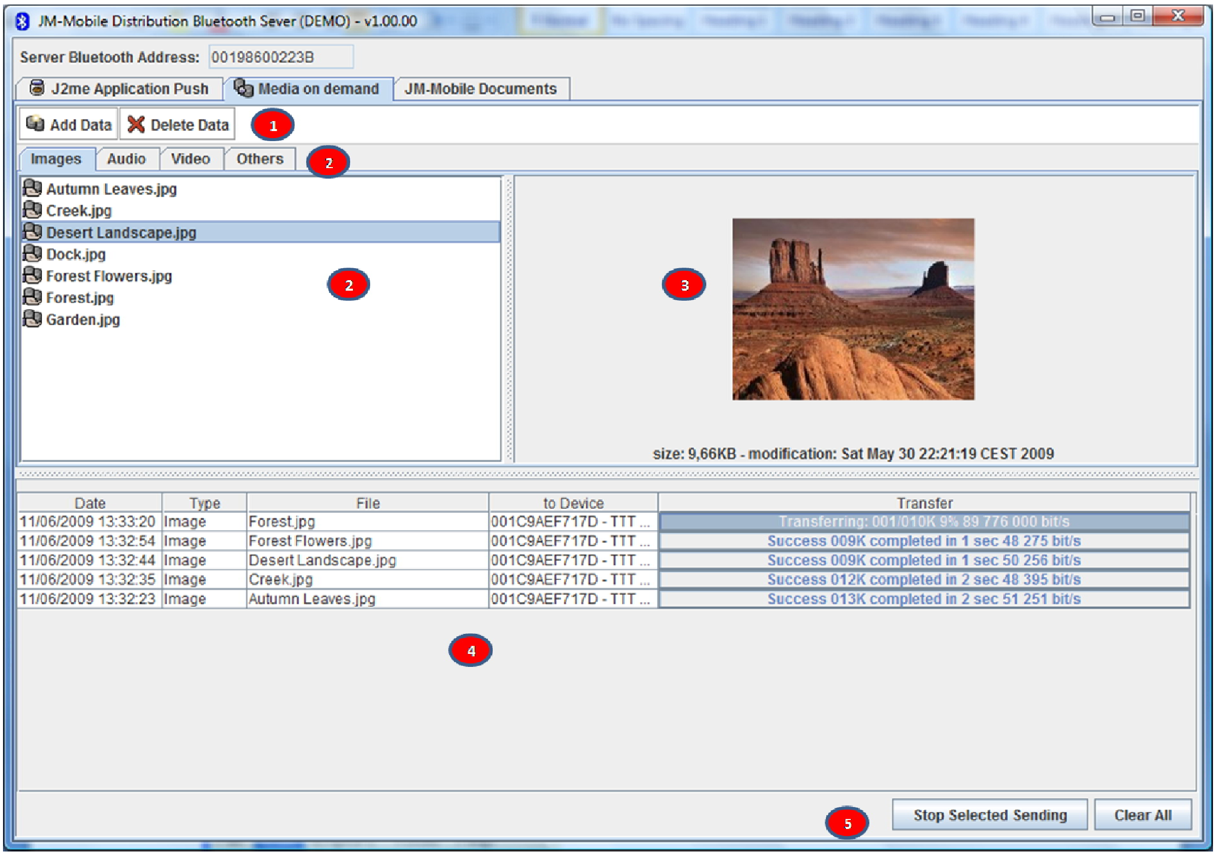
The list (6) represents the detected devices managed by the server. A detected device in the list can have one of the three states:

- *Available state*: A detected device will have this state when this device has been detected the first time, or user makes a *reset device* command on it. A device on this state will be explored to find the Bluetooth file sending capacity of the device.
- *Unavailable state*: A device in this inactivated state will be ignored to explore its Bluetooth sending capacity. User can sets a detected device in this state by doing the *Deactivated device* action.
- *Connected state*: A device will be in this state if the server has detected its Bluetooth file transfer capacity and tried to establish a Bluetooth connection to it. The device in this state will have a progress bar to inform its connection state and the file transferring state.

The text area (7) shows the attributes of the selected device.

Media on Demand Service

The Media on Demand Service provides the ways to distribute your media base (images, audio, video, interactive content, application, etc.) on demand in using together with the JM-Mobile applications authored by using the JM-Mobile Editor.



size: 9,66KB - modification: Sat May 30 22:21:19 CEST 2009

Date	Type	File	to Device	Transfer
11/06/2009 13:33:20	Image	Forest.jpg	001C9AEF717D - TTT ...	Transferring: 001/010K 9% 89 776 000 bit/s
11/06/2009 13:32:54	Image	Forest Flowers.jpg	001C9AEF717D - TTT ...	Success 009K completed in 1 sec 48 275 bit/s
11/06/2009 13:32:44	Image	Desert Landscape.jpg	001C9AEF717D - TTT ...	Success 009K completed in 1 sec 50 256 bit/s
11/06/2009 13:32:35	Image	Creek.jpg	001C9AEF717D - TTT ...	Success 012K completed in 2 sec 48 395 bit/s
11/06/2009 13:32:23	Image	Autumn Leaves.jpg	001C9AEF717D - TTT ...	Success 013K completed in 2 sec 51 251 bit/s

Media management

The button group (1) allows:

- to add a media file to the Media on Demand Service or
- to delete a selected media file to the Media on Demand Service

The tabbed panel (2) contents four lists of different media types: *images*, *audio*, *video*, *others*.

The text area (3) represents the attributes/content of selected media file.

Distributing control and monitoring

The table (4) represents the distributing media information. Each line of the table represents the distributing information of a media file to a device.

The button group (5) allows:

- To stop a media file transferring
- To clear all information on the table

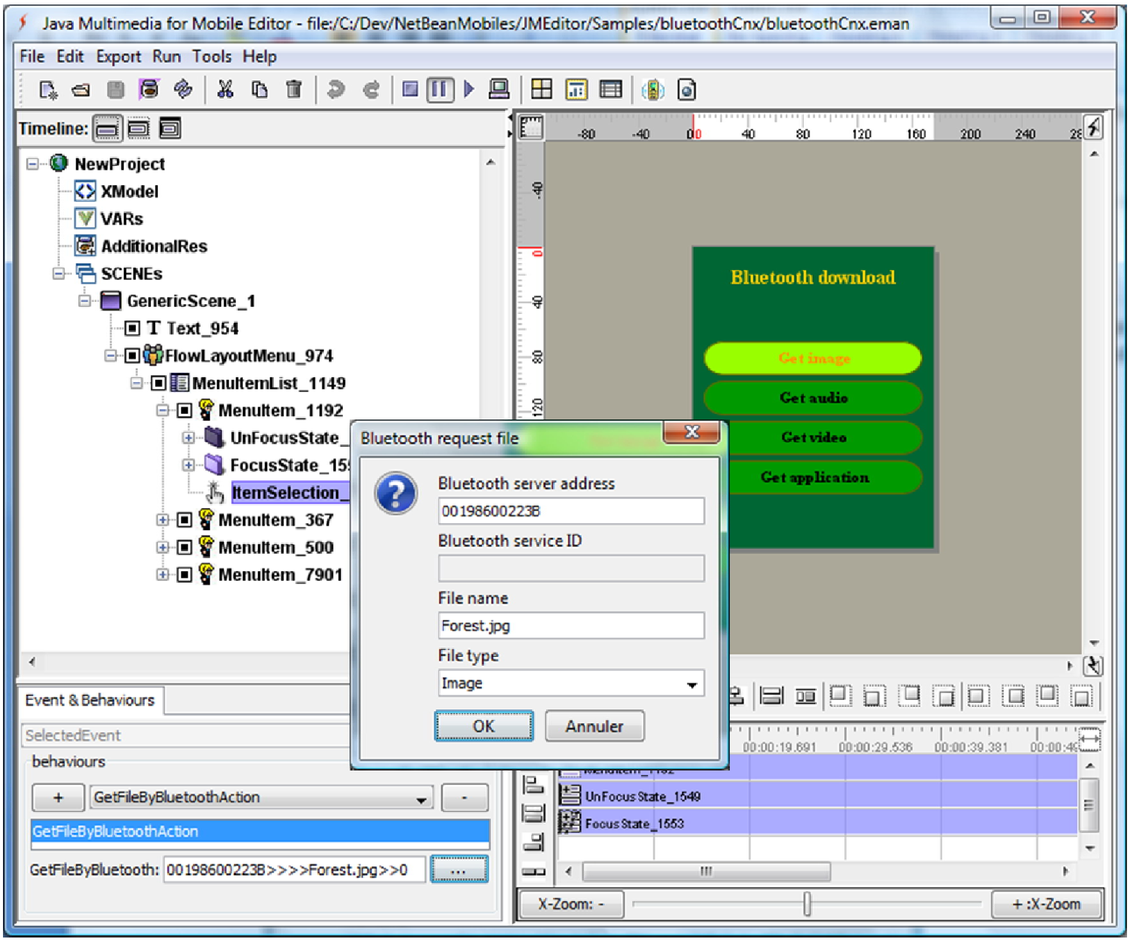
Using the service with the JM-Mobile Editor

You can use the JM-Mobile Editor to create easily the applications that can get the media files on this Media on Demand Service.

JM-Mobile Editor provides the special tools to explore the media base of the service and/or to get directly the media files of the service.

GetFileByBluetoothAction command

JM-Mobile Editor provides the *GetFileByBluetoothAction* behavior for the events. This action behavior allows getting directly a media file of the Media on Demand Service of the Bluetooth server. The image below represents a *GetFileByBluetoothAction* authoring in the JM-Mobile Editor.


Java Multimedia for Mobile Editor - file:/C:/Dev/NetBeanMobiles/JMEditor/Samples/bluetoothCnx/bluetoothCnx.eman

Bluetooth request file

Bluetooth server address: 00198600223B

Bluetooth service ID:

File name: Forest.jpg

File type: Image

OK Annuler

Event & Behaviours

SelectedEvent

behaviours

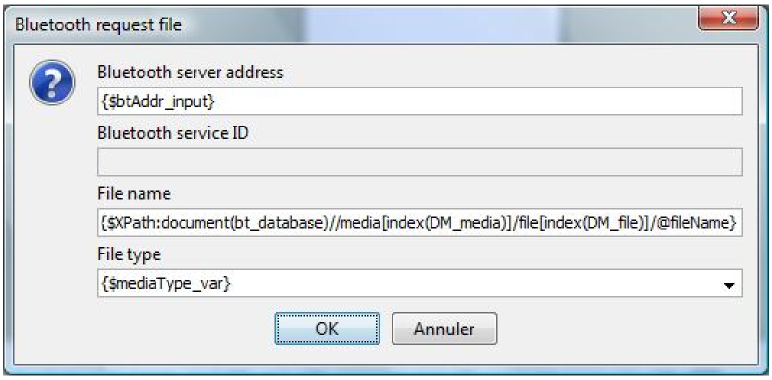
+ GetFileByBluetoothAction -

GetFileByBluetoothAction

GetFileByBluetooth: 00198600223B>>>>Forest.jpg>>0 ...

This edition requires getting the *Forest.jpg image* from the Bluetooth server having the address *001986002238.*

The *GetFileByBluetoothAction* authoring above uses the static information. You can use the variables and the XML data in this authoring to make the action more dynamic. The image bellow represents such dynamic authoring of the *GetFileByBluetoothAction* behavior.


Bluetooth request file

Bluetooth server address: {$btAddr_input}

Bluetooth service ID:

File name: {$XPath:document(bt_database)//media[index(DM_media)]/file[index(DM_file)]/@fileName}

File type: {$mediaType_var}

OK Annuler

Such a dynamic specification of the *GetFileByBluetoothAction* behavior will make this behavior being dynamic. That means that each time the behavior is activated, it's depending on the values of the variables *btAddr_input*, *mediaType_var* and the XML xpath context selector to detect the final media file that will be downloaded.

Description XML of the Media on demand service

The Media on Demand Service can provides a XML data that describes the contents of the media base of the Media on Demand Service. The structure of the XML data is as like as following:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<jmmBtDatabase>
    <media label="image" type="0">
        <file fileName="Autumn Leaves.jpg" label="Autumn Leaves"/>
        <file fileName="Creek.jpg" label="Creek"/>
        <file fileName="Desert Landscape.jpg" label="Desert Landscape"/>
        <file fileName="Dock.jpg" label="Dock"/>
        <file fileName="Forest Flowers.jpg" label="Forest Flowers"/>
        <file fileName="Forest.jpg" label="Forest"/>
        <file fileName="Garden.jpg" label="Garden"/>
    </media>
    <media label="audio" type="1">
        <file fileName="defaultAudio.mp3" label="defaultAudio"/>
        <file fileName="PhamQuynhAnh_BonjourVietnam.mp3" label="PhamQuynhAnh_BonjourVietnam"/>
    </media>
    <media label="video" type="2">
        <file fileName="cartoons.3gp" label="cartoons"/>
        <file fileName="news.3gp" label="news"/>
        <file fileName="sports.3gp" label="sports"/>
    </media>
    <media label="others" type="3">
       <file fileName="jmmSudoku.jar" label="jmmSudoku"/>
    </media>
</jmmBtDatabase>
```

Above is the XML data provided by the demo version of the JM-Mobile Bluetooth Server.

This XML data can be used in the JM-Mobile Editor together with the dynamic menu elements (*DMenuTemplate*, *XMenuTemplate*) to create a dynamic menu system that allows exploring the media on demand database of the Bluetooth server. See the *btMediaServerBrowing* sample enclosed with the JM-Mobile editor for more detail.

To get this XML data in the JM-Mobile Editor, you create a XML data *XInstance* in the XML model part *XModel* of the JM-Mobile project. You fill in the *FileName* attribute of the XML data with a Bluetooth server address in the format following:

btspp://<*Bluetooth server address*>

For example:

btspp://001986002238

You can define a dynamic address by using the variable as following:

btspp://{$btAddr_input}

btAddr_input is a variable that contents a Bluetooth address value entered by the user. See the *btMediaServerBrowing.eman* JM-Mobile project sample enclosed with the JM-Mobile Editor for more detail.

The XML data created can be used as like as the others XML data.

JM-Mobile Document on Demand Service

The JM-Mobile document on demand service manages a list of the JM-Mobile documents that can be explored and downloaded from the JM-Mobile Browser.

From the JM-Mobile Browser you can chose the Bluetooth service: *option* -> *Bluetooth* -> *Get contents* -> *Find Server*.

The browser will start to discover the Bluetooth devices around it;

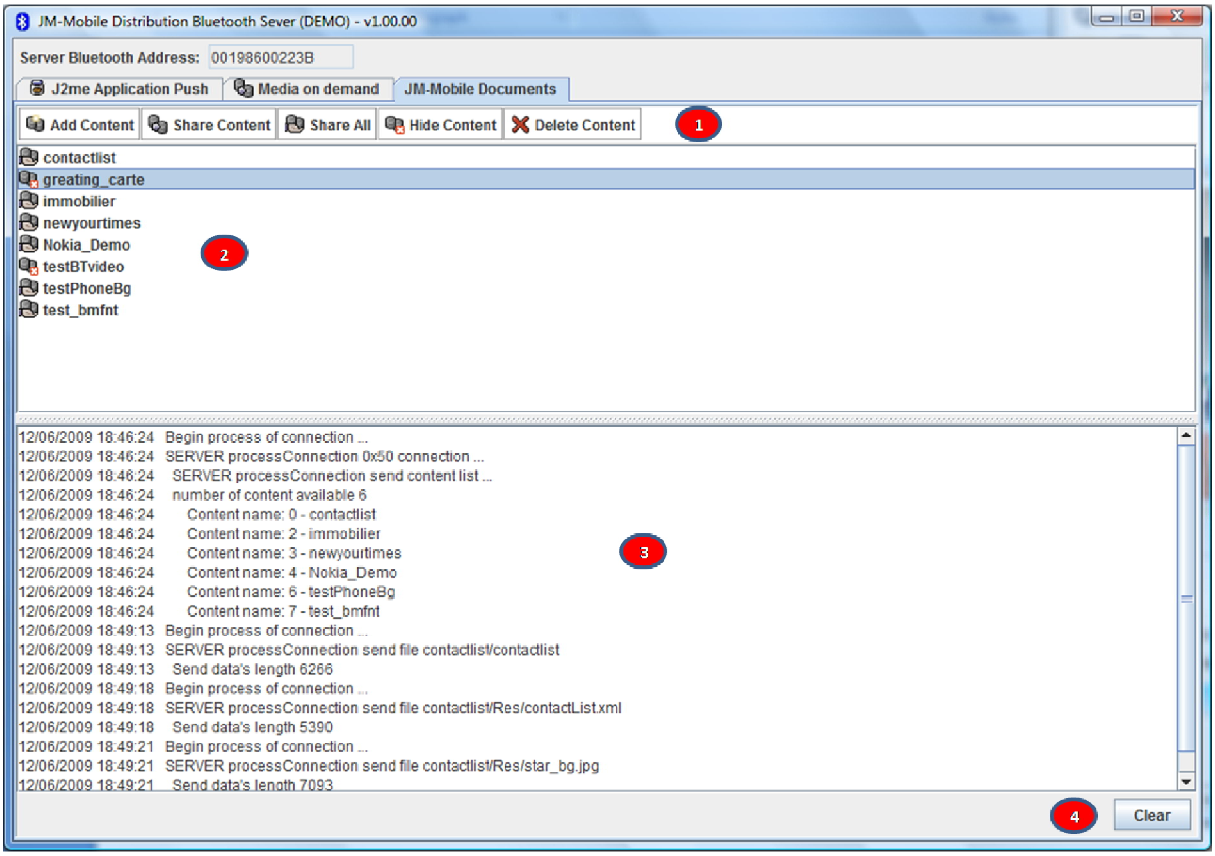
A list of the Bluetooth devices found will be presented on the JM-Mobile Browser;

You choose the PC on which the JM-Mobile Bluetooth service is working;

You can see a list of the JM-Mobile documents represented on the JM-Mobile Browser;

You can choose to download one of the JM-Mobile documents in the list. The Document will be downloaded into the document list of the browser. You can then choose to open the downloaded document from the list of the documents of the browser.

The image below represents the interface of the JM-Mobile Document on dement service.



Server Bluetooth Address: 00198600223B

contactlist
greating_carte
immobilier
newyourtimes
Nokia_Demo
testBTvideo
testPhoneBg
test_bmfnt

```
12/06/2009 18:46:24  Begin process of connection ...
12/06/2009 18:46:24  SERVER processConnection 0x50 connection ...
12/06/2009 18:46:24   SERVER processConnection send content list ...
12/06/2009 18:46:24   number of content available 6
12/06/2009 18:46:24      Content name: 0 - contactlist
12/06/2009 18:46:24      Content name: 2 - immobilier
12/06/2009 18:46:24      Content name: 3 - newyourtimes
12/06/2009 18:46:24      Content name: 4 - Nokia_Demo
12/06/2009 18:46:24      Content name: 6 - testPhoneBg
12/06/2009 18:46:24      Content name: 7 - test_bmfnt
12/06/2009 18:49:13  Begin process of connection ...
12/06/2009 18:49:13  SERVER processConnection send file contactlist/contactlist
12/06/2009 18:49:13   Send data's length 6266
12/06/2009 18:49:18  Begin process of connection ...
12/06/2009 18:49:18  SERVER processConnection send file contactlist/Res/contactList.xml
12/06/2009 18:49:18   Send data's length 5390
12/06/2009 18:49:21  Begin process of connection ...
12/06/2009 18:49:21  SERVER processConnection send file contactlist/Res/star_bg.jpg
12/06/2009 18:49:21   Send data's length 7093
```

The button group (1) allows managing the list of the MM-Mobile documents:

- *Add Content* allows adding a new JM-Mobile document into list of the service

- *Share Content* allows sharing the selected document. A shared document is the document that can be downloaded from the JM-Mobile Browser.

- *Share All* allows sharing all document of the list

- *Hide Content* allows hiding the selected document. A hidden document won't be downloaded from the JM-Mobile Browser

- *Delete Content* allows deleting the selected document from the list

The list panel (2) represents the list of the JM-Mobile documents managed by the service. Each document on the list has an icon which represents the available state of the document:

- represents a hidden document

- represents a shared document

Contacting Us

If you have any questions, suggestions or need the particular features more customized for the Bluetooth server please feel free to contact us at support@jm-mobile.com.