

The Midi Protocol does try to leave advanced implementation to each manufacturer. For instance, System Exclusive is a command which sets out a very basic packet.....
 "This is a system exclusive command....this is the end of a system exclusive command"
 What happens inside these bookend commands is completely manufacturer and product determined.

To some extent, this applies also to the Bank Select commands.

If you look at the manual for your Roland JV1010, page 68, you see these entries under the Midi Implementation/Control Change sub-heading

Bank Select (Controller number 0,32)

status	2nd byte	3rd byte
BnH	00H	mmH
BnH	20H	IIH
n=MIDI channel number:	0H - FH (ch.1 - ch.16)	
mm,II=Bank number:	00 00H - 7F 7FH (bank.1 - bank.16384)	

- Not received when the Receive Program Change or Receive Bank Select (SYSTEM) is OFF.
- Not received in GM mode.

• The Patches corresponding to each Bank Select are as follows.

Bank Select		Program No	Group	Patch No.
MSB	LSB			
80	0	0 - 127	User	1 - 128
81	0	0 - 127	PR-A	1 - 128
81	1	0 - 127	PR-B	1 - 128
81	2	0 - 127	PR-C	1 - 128
81	3	0 - 127	GM	1 - 128
81	4	0 - 127	PR-E	1 - 128
84	0	0 - 127	XP-A (Session)	1 - 128
84	1	0 - 126	XP-A	129 - 255
84	2	0 - 127	XP-B	1 - 128
84	3	0 - 127	XP-B	129 - 256

• The Performance corresponding to each Bank Select are as follows.

Bank Select		Program No	Group	Performance No.
MSB	LSB			
80	0	0 - 31	User	1 - 32
81	0	0 - 31	PR-A	1 - 32
81	1	0 - 31	PR-B	1 - 32

• The Rhythm set corresponding to each Bank Select are as follows.

Bank Select		Program No	Group	Rhythm set No.
MSB	LSB			
80	0	0 - 1	User	1 - 2
81	0	0 - 1	PR-A	1 - 2
81	1	0 - 1	PR-B	1 - 2
81	2	0 - 1	PR-C	1 - 2
81	3	0 - 1	GM	1 - 2
81	4	0 - 1	PR-E	1 - 2
84	0	0 - 7	XP-A (Session)	1 - 8
84	2	0 - 127	XP-B	1 - 128
84	3	0 - 127	XP-B	129 - 256

You are no doubt familiar with the Pr A/B/C structure in the unit – this refers to Preset Bank A/B/C

If there are expansion cards in the synth, the patches contained therein come up at Expansion Bank A/Expansion Bank B

Let's focus on patches rather than Performances or Rhythm sets for a while.

Lets say you want to call up a patch that's in Preset Bank C and patch 104 therein – the manual says it's "MG SWEEP"...

The above listing tells us we must send a set of commands –

BANK SELECT MSB 81 // BANK SELECT LSB 2 // PROGRAM CHANGE 103 [Pr ch 0~127 correspond to patches 1~128]

So how do we do this in Cubase.....

METHOD 1

Simplest way is in the List or Key Midi Editor .

Go into the List Editor – position is just before where you want the patch change to take place...

Select Controller under "Insert Event Type" then select the Draw Tool.

Click in two events, one after the other

In the List, you will see two entries, both of which under Data 1 Show "CC0",

and under Comment show "Bank Sel MSB". Now Cubase is very good, but it's not that good....It can't smell that what we are after is a Bank Select command....it is simply that it enters the lowest possible value as default in the data list – in the case of the Controller event, that is CC 0 – and that is Bank SEL MSB.

The second entry also is a CC0//Ban Sel MSB – we want to change that to CC32//BankSel LSB. Mouse to the Data 1 field Select the second entry and scroll up to CC32. Now its comment field will say "Bank Sel LSB"

OK, we have prepared the Bank Select events – we now need to tell which of each bank we want.

From above, we want an MSB value of 81 and an LSB value of 2....

You've guessed it – mouse to the DATA 2 field – at the MSB event type or scroll to 81, and at the LSB event insert 2.

We're nearly there.... We now insert a Program Change event just AFTER the two bank sel events....

We enter a value of 103 in the DATA 2 column.

Now, this MIDI part contains the info the switch our JV1010 to Preset C104 "MG SWEEP"

Ok a little bit of housekeeping to do, with regard to Midi Channel..

Have a look at the inspector for the Midi Track. It should have your JV1010 as the MIDI instrument....otherwise, All of the above won't happen. If there is a specific MIDI channel selected, then that's the channel that will trigger the program change. [This RASTER in Cubase forces the MIDI events to that channel, rather than the channel recorded in the Editor]. If, however, the channel is set to "Any", it allows whatever channel[s] used in the editor to apply. If this is the case, then the entries in the "Channel" column decide where the program change will be triggered.

METHOD 2

This assumes you are using a direct output [ie not a patchscript output] to the instrument.

This method provides an initial patch change in Cubase for a Midi track. If you want to "Set-and-forget" your sound, use this one.

Under the Midi Output/Midi Channel Output fields in the inspector, there are two more. They both default to an "Off" display.

The left one is a Bank selector. Now if only Cubase used TWO fields here called "BANK MSB // BANK LSB", then everything would be instantly apparent – we would enter "81" into field 1, "2" into field 2.

Alas, not quite so intuitive!!! This field combines both the MSB and LSB in one result...achieved by $RESULT = MSB \text{ value} * 128 + LSB \text{ value}$I hope it's apparent how this value is produced.

So for our example, the value in the Bank field will be $81 * 128 + 2 = 10370$.

If we now enter 103 into the Program Select field, we should have PRESET3 104 "MG SWEEP" on the relevant channel"

Hope this is making sense....one more piece about patch scripts to come.