

Migrating existing programs from PBP 2.x to PBP 3.0.

Program syntax compatibility is maintained in PBP 3.0, but there are issues that you may encounter in regards to changes in the way PBP declares the names of internal registers (SFRs) and how configuration directives are declared.

In addition, the PM assembler is no longer supported. This could have an impact on configuration directives also.

Also note that the file structure of PBP itself has changed, necessitating changes in MicroCode Studio. PBP 3.0 requires MicroCode Studio 5.0, and conversely, MicroCode Studio 5.0 only supports PBP 3.0. We've been careful, though, not to overwrite existing applications by default. Older versions of PBP and MicroCode will continue to function if previously installed.

Configuration Directives for MPASM:

In the past, you may have added configuration directives as Assembly Language. If those directives were intended for Microchip's MPASM assembler, they may have looked like this:

```
ASM
    __config _XT_OSC & _WDT_ON & _LVP_OFF & _CP_OFF
ENDASM
```

Or...

```
@    __config _XT_OSC & _WDT_ON & _LVP_OFF & _CP_OFF
```

To make the above configuration directives work, you also edited the appropriate .INC file within the PBP installation.

In PBP 3.0, you should use the #CONFIG block structure to specify configuration directives for the assembler. This special marker tells PBP to replace the default configuration with the new configuration you specify. The #CONFIG block is automatically treated as Assembly Language, so you should remove the ASM/ENDASM and @ syntax.

The example above should be converted to:

```
#CONFIG
    __config _XT_OSC & _WDT_ON & _LVP_OFF & _CP_OFF
#ENDCONFIG
```

Do not edit any of the .PBPINC files to accomplish configuration. This is unnecessary and changes to these files will be overwritten when the software is updated.

Configuration Directives for PM:

If your code has configuration directives for the obsolete PM assembler, the assembly language used the "device" directive. For example:

```
ASM
    device pic16F877A, xt_osc, wdt_on, lvp_off, protect_off
ENDASM
```

OR...

```
@    device pic16F877A, xt_osc, wdt_on, lvp_off, protect_off
```

Since PM is now extinct, these directives will need to be converted to the syntax required by MPASM and written with the #CONFIG/#ENDCONFIG method discussed above.

In the PBP 3.0 installation folder, you will find a sub-folder named "DEVICE_REFERENCE". Within the folder there is a file with the .INFO extension for every device supported by PBP. These are text files for your use and convenience. The contents of each file describes the MPASM configuration labels and functions for the specific microcontroller. It is our intent that this will ease your transition to MPASM-style configuration directives.

Register (SFR) Names:

For many years, PBP 2.x declared register names based on a master list for each device architecture. A single list of register names was used for any PIC18 device, even though many of the names weren't relevant to the specific device that you were targeting.

In PBP 3.0, a specific list of registers is declared for each device. This change was necessary to avoid conflict that had arisen in recent device releases.

We've found in beta testing that many users have inadvertently used register names that don't actually exist in the device that they are compiling for. The "master-list" system of the old PBP would sometimes allow this, though it was an opportunity for ambiguity and unexpected behavior of the microcontroller.

Here is an example that is specific to the PIC18F87J11:

In my project code for PBP 2.60, I had used the following code to reset the receiving USART:

```
RCSTA = 0
RCSTA = $90
```

In PBP 3.0, this results in a compile error because the register "RCSTA" doesn't actually exist in the 18F87J11. The datasheet calls out "RCSTA1". PBP 2.60 allowed my code to work because "RCSTA" existed in other parts within the PIC18 architecture. The corrected code to allow compilation in PBP 3.0 is:

```
RCSTA1 = 0
RCSTA1 = $90
```