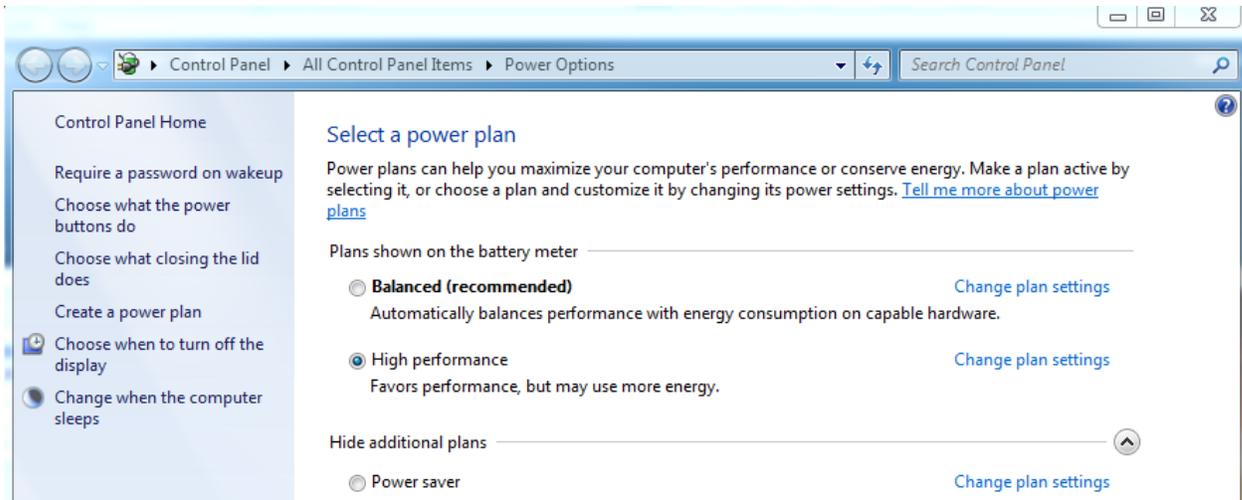


Custom Power Settings for WES 7/8 and WEI 8.x

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Windows® XP Embedded had limited power settings. Starting with WES 7, the power setting options have expanded. There are three power setting levels (High Performance, Balanced, and Power Saver) and several different advanced settings for things like USB devices, power button, and display brightness.



There have been a few customers who have asked us if there is any way to get better performance out of their systems. Typically, these customers are running low end Intel® Atom™ or AMD G-Series processors. Besides eliminating features and services, changing the power plan to High Performance can make a difference in how well the system responds. Of course, one needs to take into account thermal cooling when running a processor at High Performance for extended periods of time.

Automating the installation of the embedded operating system is an important goal when architecting the system. The powercfg.exe utility can be used to preset power settings in ICE or SIM using synchronous commands. The problem is that the powercfg.exe utility can be a bit cryptic for changing individual settings. GUIDs are used for different setting options, and some settings require multiple GUIDs just to change one setting. With limited space in a synchronous command, some settings might not fit.

The solution is to create the power plan in the target system, and then export the power plan to a single file using powercfg.exe utility. The file can then be imported and set active via synchronous commands. Here are the basic steps to create a custom power plan and install it along with the operating system:

1. Install the Windows OS on your target machine. Because every system is different, you want to create a power plan file that is directly from your hardware. For WES7 install Windows 7 or WES7 from IBW. For WE8S, install Windows 8 or WE8S from IBW. For WEI 8.x, just install WEI.
2. Install any missing device drivers.
3. Open Control Panel.
4. Open the Power Options control panel applet.

- The best starting point is to choose one of the basic plans first - High Performance, Balanced, and Power Saver. Click on the radio button, so that it becomes the active plan.
- Next click on "Change Plan Settings" link that is next to the select plan.

Change settings for the plan: High performance

Choose the sleep and display settings that you want your computer to use.

	 On battery	 Plugged in
 Dim the display:	<input type="text" value="5 minutes"/>	<input type="text" value="10 minutes"/>
 Turn off the display:	<input type="text" value="10 minutes"/>	<input type="text" value="15 minutes"/>
 Put the computer to sleep:	<input type="text" value="Never"/>	<input type="text" value="Never"/>
 Adjust plan brightness:		

[Change advanced power settings](#)

[Restore default settings for this plan](#)

Save changes

Cancel

- The next screen provides the basic settings that can be changed. You can change these settings or click on the "Change advanced power settings" to get access to more settings.

Change settings for the plan: High performance

Choose the sleep and display settings

Dim the display:

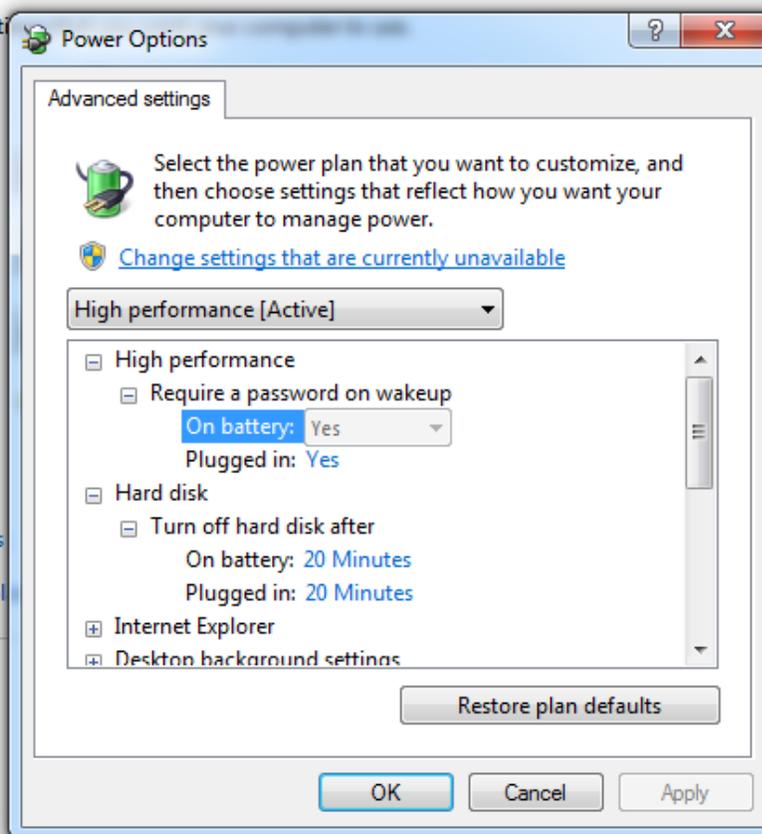
Turn off the display:

Put the computer to sleep:

Adjust plan brightness:

[Change advanced power settings](#)

[Restore default settings for this plan](#)



8. A dialog will appear that presents the available power settings for the system. Make the necessary changes and click OK when finished.
9. Click Save Changes on the “Change settings for plan:” page.
10. Open a command window with elevated privileges (run cmd.exe as administrator).
11. Using powercfg.exe, run the following command to list the power settings available and active:

C:\>powercfg /L

```

Microsoft Windows [Version 6.1.7601]
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C:\Users\sean>powercfg /l

Existing Power Schemes (* Active)
-----
Power Scheme GUID: 381b4222-f694-41f0-9685-ff5bb260df2e    (Balanced)
Power Scheme GUID: 8c5e7fda-e8bf-4a96-9a85-a6e23a8c635c    (High performance) *
Power Scheme GUID: a1841308-3541-4fab-bc81-f71556f20b4a    (Power saver)
Power Scheme GUID: d8bb8260-4900-432c-9404-73b89bb44043    (Samsung Optimized)

C:\Users\sean>

```

12. The * next to the plan indicates the active plan. Make sure this is the plan you made active to earlier.

13. Using the GUID associated with the active power plan, you can give your power plan a unique name by running the following:

```
C:\>powercfg.exe /CHANGENAME 8c5e7fda-e8bf-4a96-9a85-a6e23a8c635c "ACME Power Plan" "Advanced Power Plan for ACME System"
```

14. Using the GUID associated with the active power plan, run the following command to export the current active plan:

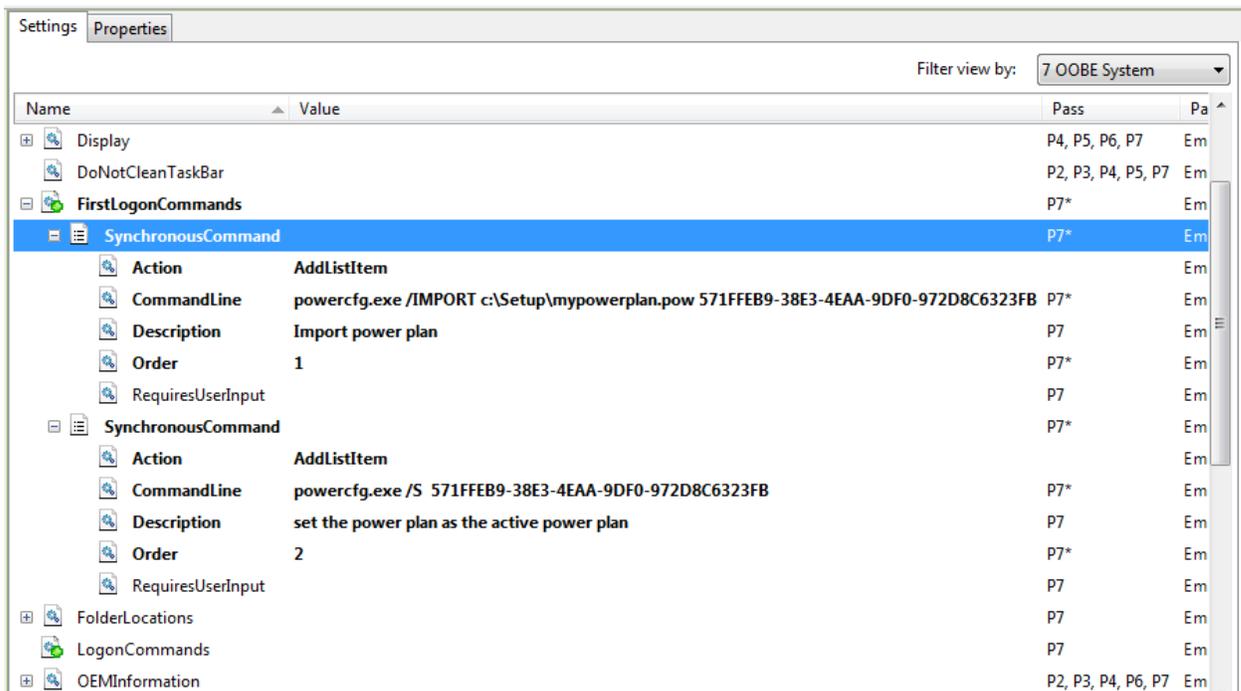
```
C:\>powercfg.exe /EXPORT mypowerplan.pow 8c5e7fda-e8bf-4a96-9a85-a6e23a8c635c
```

15. Copy the plan file (mypowerplan.pow) to your development machine.
 16. Place the plan in the distribution share, if you are using WES7 (ICE) or WEI 8.x (SIM), or in a WE8S module.
 17. Use a GUID generator utility from Visual Studio or the web-based GUID generator from <http://www.guidgenerator.com/> to generate a unique GUID. We will use this new GUID to import the plan and set the plan active.
 18. In the answer file (WES7 / WEI 8.x) or configuration file (WE8S), create a Pass 7 oobeSystem synchronous command to import the power plan:

```
powercfg.exe /IMPORT c:\Setup\mypowerplan.pow 571FFEB9-38E3-4EAA-9DF0-972D8C6323FB
```

19. Add another Pass 7 oobeSystem synchronous command to set the plan as active:

```
powercfg.exe /S 571FFEB9-38E3-4EAA-9DF0-972D8C6323FB
```



20. Save the file.

Once you build and install the image on your target, you should see your custom plan as the default plan for the system.