Data Synergy

PowerSAV Logout Screen Saver
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Overview

The **PowerSAV** Logout Screen Saver is designed to complement PowerMAN Power Manager. The tool is intended for use in larger multi-user environments where each user has a distinct logon such as:

- University computer rooms

- School ICT suites

In such multi-user environments the number of active users can fluctuate between zero and maximum many times during the day. It is often desirable to use active power management in such scenarios to ensure that equipment is either off or in a low power state when not required.

However, the desire to reduce energy costs can often conflict with practical or organisational requirements such as:

- Computers should be available at specific times

- Computers should be available within a few seconds (precluding a full shut-up sequence)

- Users should not turn equipment on/off

- Hardware supports scheduled wake from Hibernate (S4) or Sleep (S1-S3) states but not from shutdown (S5)

- Sleep / hibernate are desirable but cannot be used because the current user session will be suspended (leaving the workstation unusable by a subsequent user)

Unfortunately the Windows power management architecture does not provide a ready method to solve these problems. PowerSAV is designed to remedy this situation by allowing the administrator to configure a user idle timeout that will result in the current user being logged off. This may be used in combination with the PowerMAN 'NoUser' policy to subsequently hibernate or sleep the workstation. Workstations that are configured to save energy in this way can be rapidly restored to operation and often can be configured to do this at specific times (which is usually not possible from a full shutdown).

> Although **PowerSAV** has multiple uses it was original conceived for situations where a scheduled wake was desirable but the hardware did not support wake from the shutdown (S5) state. PowerSav allows this problem to be worked around by using the hibernate (S4) or sleep (S1-S3) states instead. However, the direct use of these power saving modes could mean that an active user session would be suspended. Often this may cause problems in such multi-user environments because the user would not have saved their documents in an orderly fashion and a subsequent user would not be able to logon to the restored system due to the pre-existing session.
>
> **PowerSAV** resolves this by logging out the user and therefore allowing the system to be suspended with no user logged on. This means that when the system is subsequently restored there is no previous user session to interfere with the next user.
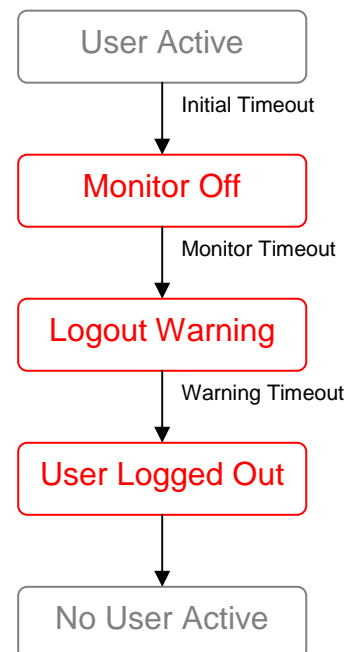
PowerSAV Phases

PowerSAV is implemented as a screen saver application that combines the traditional functionality expected from a screen saver with the ability to log the user out after a preset time. PowerSAV has three distinct phases of operation:

The **Initial Timeout** specifies the period that will elapse before PowerSav is activated. Any user activity during this period resets the timer to zero again (in other words the user must be totally inactive for the initial period for the next stage to be reached)

The optional **Monitor Timeout** specifies a period during which the monitor is turned off. Any user activity during this period restores the monitor power and cancels any further action.

The optional **Warning Timeout** specifies a period during which a warning is displayed to the user indicating that a logout is pending. Any user activity during this period cancels the logout.

Finally, if no user activity occurs the user is logged out.

```
        User Active
             |
             |  Initial Timeout
             v
        Monitor Off
             |
             |  Monitor Timeout
             v
      Logout Warning
             |
             |  Warning Timeout
             v
     User Logged Out
             |
             v
       No User Active
```

The **Monitor Off** phase may be used to reduce power consumption without logging the user out. This allows PowerSAV to be used instead of a traditional screen saver.

> **Warning:** Windows will not activate PowerSAV if a Monitor Off AC/DC setting is configured within PowerMan that is lower than the initial PowerSAV idle timeout. To avoid this problem **always** set the Monitor Off AC/DC settings to 0 within the power management configuration and use the PowerSAV monitor timeout instead.

Typical Scenario

A common scenario in a school ICT suite is some combination of the following:

- Computers are used by numerous users during the day
- Computer use can fluctuate during the working day
- Sometimes no users may be present
- Computers must be powered on at the start of each day
- Computers must be available at short notice
- Computers must be powered off at the end of each day
- During the day power consumption must be minimized

PowerMAN and PowerSAV may be used together to achieve the above using the following configuration:

PowerSAV Setting	Value	Purpose
Initial Timeout	5 minutes	Turn monitor off after 5 minutes. This will save a significant amount of energy. A typical CRT monitor can consume 150W whilst a typical LCD monitor can consume 60-90W. The computer can be instantly accessed by moving the mouse or pressing any key
Monitor Timeout	30 minutes	Keep the monitor off for 30 minutes
Warning Timeout	5 minutes	Display warning for 5 minutes

PowerMAN Setting	Value	Purpose
User/Default User Monitor Off AC/DC	0	As noted above this setting **MUST** be disabled to allow PowerSAV to operate. When PowerMan and PowerSAV are used together the monitor timeout is provided by PowerSAV.
NoUser Idle Action/Timeout	Sleep after 5 minutes	Save energy after 5 minutes. Typically computers in the sleep state consume <1W and can be restored in <5 seconds by pressing any key
Scheduled Shutdown	Hibernate at 18:00	Save maximum energy at night. Computers in the hibernate state consume 0W and can be restored in around 45-60 seconds. Most modern hardware supports a scheduled wake from the sleep and hibernate states.
Scheduled Wake	Wake at 8:30 Mon-Fri	Wake computer for use each morning. Typically the computer will then enter the sleep state after a 5 minutes but will be available almost instantly should a user require the system.

Installation

PowerSAV is designed for installation by the system administrator.

Typically PowerSAV is deployed using Windows Group Policy mechanism although it can be deployed using any similar method such as Zen Works or manually incorporated within an operating system image prior to deployment.
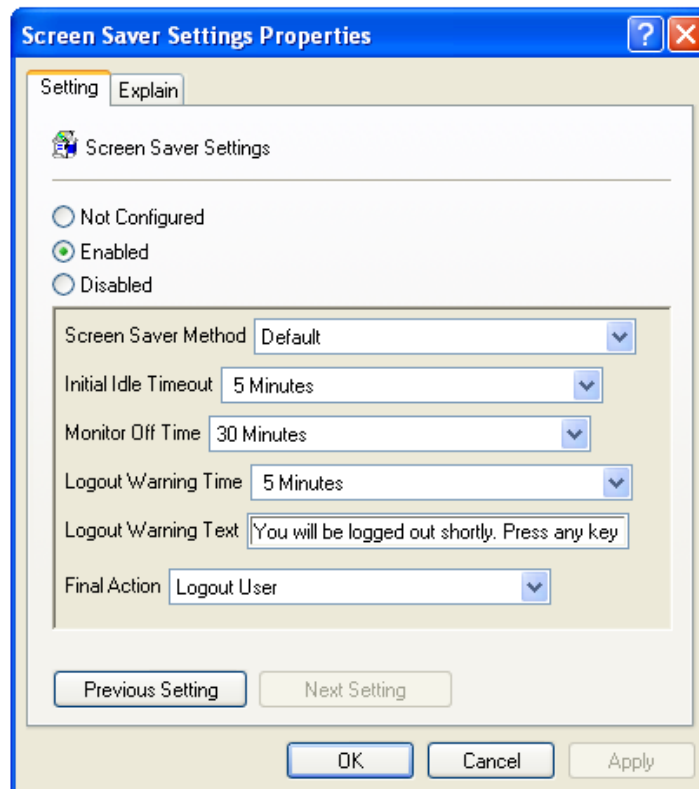
Basic Configuration

PowerSAV can be easily configured using the supplied Administrative Template (ADM) file (or directly via the relevant registry settings – see Appendix).

The following section explains the available policy settings which may be configured with the **PowerSAV.adm** file.

1. **Hide Screen Saver Tab** – Enable this setting to hide the screen saver configuration from the user. Note: When the screen saver is enabled it is not possible for the user to modify the settings. This setting is designed to obscure the operation of PowerSAV from the user.

2. **Screen Saver Settings** – Configure the PowerSAV timeouts. This displays the following configuration dialog:

A minimal installation requires **only** an initial idle timeout. The screen saver method and final action settings are currently not configurable.

Appendix – Policy Settings Reference

PowerSAV is designed, primarily, for configuration with the Microsoft Windows group policy tools supplied with all recent versions of Windows Server. An Administrative Template (ADM) file, **PowerSAV.adm**, is supplied to simplify this process.

PowerSAV may also be configured by manually creating suitable settings and importing them into the system registry of the deployed workstation computers. This section documents the supported policy settings and their default values.

All settings are of type REG_SZ. This restriction is necessary to ensure that PowerSAV remains compatible with the requirements of the Windows Group Policy engine.

The policy settings are stored in the following registry location:

HKCU\Software\Policies\Microsoft\Windows\Control Panel\Desktop

The available policy settings are as follows:

Registry Setting Name / Type	Meaning
SCRNSAVE.EXE **REG_SZ** **PowerSav.scr**	This setting specifies the name of the screen saver application. This must be set to PowerSav.scr
ScreenSaveActive **REG_SZ** **0=Disable (all savers)** **1=Enable**	This setting enables the screen saver. This setting must be set to 1 to enable PowerSAV.
ScreenSaveTimeOut **REG_SZ** **e.g. 1200 (20 minutes)**	This setting specifies the initial idle period in seconds before PowerSAV becomes active. Any user activity during this period will result in the timer being restarted.
ScreenSaveMonitorTimeOut **REG_SZ** **e.g. 1800 (30 minutes)**	This setting specifies the period that the monitor will be powered off. Any user activity during this period restores the display and resets PowerSAV.
ScreenSaveWarningTimeOut **REG_SZ** **e.g. 300 (5 minutes)**	This setting specifies the period that the user warning will be displayed. If the monitor was previously powered off the monitor power is restored to allow this message to be displayed. Any user activity during this period restores the display and resets PowerSAV.
ScreenSaveWarningText **REG_SZ** **e.g. "You will be logged out shortly. Press any key to prevent this"**	This setting specifies the message to be displayed during the warning phase. If this setting is missing a default message is used.