ScreenGenie – IT Administration & Configuration Guide

Version 26.1

PNQ Software

Introduction

This document is intended for IT administrators, system administrators, and managed service providers who are responsible for managing, deploying, and configuring ScreenGenie within an organization. The guide describes the architecture, configuration options, automation logic, and best practices for deploying ScreenGenie in a controlled manner within professional work environments.

This manual focuses exclusively on administration and configuration. User interaction and functional explanations for end users are covered in the separate ScreenGenie User Guide.

Notes, Precautions and Warnings

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1. Architecture Overview

ScreenGenie consists of multiple logically separated components that work together to ensure consistent display configurations.

The graphical user interface (GUI) provides limited control options for end users. The ScreenGenie Refresh (Engine) performs the actual logic for detection, application, and storage of settings. Optionally, the ScreenGenie Agent can be deployed to apply configurations automatically without user interaction.

ScreenGenie operates in addition to the native Windows display settings and utilizes the existing Windows display stack. Windows® 11 remains responsible for the actual rendering and persistent storage of display configurations. Brightness and contrast are stored directly on the monitor(s) themselves.

2. Installation and Deployment

ScreenGenie can be deployed using an MSI installer for centralized distribution or as a local installation. Both installation methods place the application files in the \Program Files directory, while the configuration file screengenie.ini is stored by default under \AppData\Roaming\PNQ Software\ScreenGenie. Other files, such as the license file, are stored in \ProgramData\PNQ Software\ScreenGenie.

For enterprise environments, centralized deployment via MDM, RMM, or software distribution tools is recommended.

3. Configuration File Lifecycle

The configuration file screengenie.ini serves as the central policy document for ScreenGenie. This file is read during application startup and during relevant system events.

Changes to this file can be deployed centrally. ScreenGenie may update certain values based on user actions, depending on the configured policy.

4. screengenie.ini – Sections and Settings

The screengenie.ini file contains all central configuration settings for ScreenGenie.

Administrators can edit this file manually or modify it automatically using SetSG.exe with the parameters -section, -item, and -value.

Changes in this file are applied dynamically and form the basis for corrections when the application (or the Engine) starts, as well as during system events such as connecting monitors or docking stations.

4.1 [Settings]

The [Settings] section contains general application settings.

Language = {LC}

Defines the language of the ScreenGenie interface. After installation, ScreenGenie automatically follows the operating system language, provided it is supported.

To set a different language, choose from: EN (English, default), DE (German), FR (French), ES (Spanish), IT (Italian), NL (Dutch), DK (Danish), SE (Swedish), NO (Norwegian).

WindowsMode = {Yes, No}

Determines whether ScreenGenie follows the Windows 11 theme (Light or Dark).

If set to Yes, the Dark mode option in the user interface is disabled.

Mode = {Light, Dark}

Determines whether the ScreenGenie interface is displayed in light or dark mode.

The setting corresponds to the Dark Mode toggle in the interface: enabled = Dark, disabled = Light. This setting applies only when WindowsMode = No.

LogDays = {1..365}

Number of days log files are retained. Older logs are automatically deleted to preserve disk space.

4.2 [Reset]

When the user selects Reset in the interface, ScreenGenie not only resets brightness/contrast but restores the entire screengenie.ini to its original values as they were on the first startup (the initial baseline).

This includes all sections, such as:

[Settings], [Synchronization], [Monitor 1], [Monitor 2], [Layout], [ForceLeft], and [ForceRight].

4.3 [Agent]

The [Agent] section contains timing parameters for automatically triggering a Refresh by the ScreenGenie Engine after a change in power state (dock/undock) or display configuration is detected.

When a laptop is connected to or disconnected from a docking station, Windows first detects the connected displays and determines the new layout. This process may take several seconds.

The Agent therefore introduces a controlled delay before performing a Refresh, ensuring Windows has fully stabilized the display configuration.

Delay = {seconds}

Number of seconds to wait after a detection change before ScreenGenie reapplies the configured layout, brightness, and contrast.

Too low → Windows may still be initializing, causing incomplete or incorrect application.

Too high → Noticeable delay before the desired configuration becomes active.

If the Refresh occurs too early or too late in practice, administrators can adjust this value.

4.4 [Synchronization]

This section defines whether settings are synchronized between monitors and/or between brightness and contrast.

When monitor synchronization is enabled, the brightness and contrast sliders for left and right displays move simultaneously.

When brightness/contrast synchronization is enabled, the associated sliders per monitor move together.

If both options are enabled, all four sliders move to the same level.

After releasing a slider, the applied values are written to screengenie.ini.

4.5 [Monitor 1] and [Monitor 2]

For each logical external monitor position, the default brightness and contrast levels are stored.

Brightness = {0..100}

Contrast = {0..100}

Monitor 1

Acts as the master monitor and is defined as:

- the monitor with built-in docking functionality, or
- the first external monitor detected by Windows.

Monitor 2

Acts as the companion monitor.

When the user selects Reverse Displays in the interface, Monitor 1 and Monitor 2 swap roles.

The values in screengenie.ini are swapped accordingly.

4.6 [Change]

The [Change] section defines which system events cause the ScreenGenie Agent to automatically apply settings, such as changes in power state or display configuration.

OnPower = {Yes, No}

Applies the values from screengenie.ini whenever the power state changes.

This prevents inconsistencies when a laptop is docked or undocked.

ScreenGenie checks whether the current configuration matches a valid setup and adjusts values if necessary.

OnDisplay = {Yes, No}

Works similarly but responds to every display configuration change.

This is more restrictive because values are reapplied after any display modification.

These procedures are only executed when ScreenGenie.Agent is active.

4.7 [ForceLeft]

Defines which external display must always be positioned on the left side in the Windows layout.

SerialFile = serials-left.txt

File containing one or more serial numbers (comma-separated or one per line).

Serial =

Optional: one or more comma-separated serial numbers directly in the INI.

Name =

Optional: monitor name or model.

Connection =

Optional: connection type (e.g., HDMI, DP, USB-C, TBT).

When multiple identification methods are provided, ScreenGenie uses them as combined matching criteria.

4.8 [ForceRight]

Functions the same as ForceLeft, but applies to the monitor that must always be positioned on the right side.

SerialFile = serials-right.txt

Serial =

Name =

Connection =

4.9 [Brand Model]

This section allows brightness and contrast to be automatically configured for specific monitor models.

[Brand Model]

Brightness =

Contrast =

When ScreenGenie detects a monitor whose brand and model match this section, the values specified here are applied automatically.

These settings take priority over the values from [Monitor 1] and [Monitor 2].

If a monitor does not match any [Brand Model] entry, ScreenGenie automatically falls back to the default settings from [Monitor 1] or [Monitor 2].

The exact monitor name can be found in the log files located in:

ProgramData\PNQ Software\ScreenGenie\Logs

4.10 [Layout]

Policy settings for display arrangement.

Preset = {LMM, MLM, MML, FREE}

Defines the default position of the laptop and external monitors.

Example:

- LMM → Laptop left, Monitor 1 center, Monitor 2 right
- FREE → Allows the user to create their own layout using the Windows Display settings

VerticalAlign = {Top, Center, Bottom}

Defines vertical alignment of monitors within Windows.

- Top → align top edges
- Center → center vertically
- Bottom → align bottom edges

These settings are automatically applied whenever ScreenGenie adjusts the layout.

5. Automation and Triggers

ScreenGenie can automatically apply settings when specific events occur, such as connecting a docking station or changing the monitor configuration. This automation is designed to ensure consistent settings within flexible workplaces.

An additional component for this purpose is the ScreenGenie Agent, which runs invisibly in the background. At startup — and then on every change in power state (OnPower = Yes) or display configuration (OnDisplay = Yes) — the Agent launches the process:

ScreenGenie.exe /engine

This process verifies the current setup and adjusts it when necessary based on the configuration defined in screengenie.ini.

6. Firmware Management

ScreenGenie supports firmware management for selected monitor models from Dell Technologies®.

The application can read the current firmware version and — depending on configuration — offer firmware updates to the user or perform them automatically. Updates are supplied as EXE or ZIP files and can be executed using a silent argument, allowing the manufacturer's tool to run unobtrusively.

Dell monitors are supported by default because their firmware update tool does not require administrative privileges. Only monitor brands whose update or diagnostic utilities can run without elevated rights are eligible for the same automation. As soon as another brand meets this requirement, ScreenGenie can apply the same update method for that brand.

6.1 Requirements

For correct operation, the following conditions must be met:

- The monitor is manufactured by Dell
- The monitor supports firmware updates via USB-C or Thunderbolt
- The monitor is connected through USB-C or Thunderbolt (TBT)
- ScreenGenie is properly installed
- Internet access is available and connections to *.dell.com are permitted

Note: When connected via DisplayPort or HDMI, no firmware update will be offered.

6.2 Location of firmware.ini

Create, modify and manage this file centrally at:

C:\ProgramData\PNQ Software\ScreenGenie\firmware.ini

This file determines whether firmware updates are allowed and which monitors are supported.

A separate tool may be provided with a UX/UI to add or remove monitors from the list.

6.3 Basic Configuration

In the [Settings] section, firmware upgrades must be explicitly enabled:

[Settings]

FirmwareUpgrade = Yes

Without this setting, ScreenGenie will never offer a firmware update..

6.4 Monitor-Specific Sections

For each Dell monitor allowed to receive firmware updates, a dedicated section must be created using the exact monitor model name as detected by ScreenGenie.

Example:

[DELL C2722DE]

Version = 113

Location = https://dl.dell.com/FOLDER12217142M/1/Dell_C2722DE_FWUpdate_M3T113_Windows.zip

Silent = -s

Meaning of the fields

KEY	REQUIRED	DESCRIPTION
VERSION	Yes	Target firmware version (last three digits)
LOCATION	Yes	Download URL of the Dell firmware ZIP
SILENT	No	Silent install parameter for the firmware updater

6.5 How ScreenGenie Determines Whether an Upgrade Is Needed

When the ScreenGenie UX/UI starts:

- The current firmware version of the monitor is read
- The last three digits are extracted → e.g., 113
- This value is compared with Version in firmware.ini

If: CurrentVersion < Version, an Upgrade button appears for the corresponding monitor.

6.6 User Experience

When an update is available:

- An Upgrade Firmware button appears next to the monitor
- The user clicks the button and confirms the upgrade

ScreenGenie then:

1. Downloads the firmware package from Dell
2. Extracts the ZIP archive
3. Launches the Dell firmware updater

After completion:

- The monitor may restart itself
- ScreenGenie re-checks the firmware version
- The button disappears automatically if the monitor is up to date

6.7 Management in Larger Environments

Recommended approach:

- Deploy firmware.ini centrally via GPO, Intune, SCCM, etc.
- Maintain firmware versions centrally and keep them up to date
- ScreenGenie clients automatically follow the central configuration

Result:

A single, centralized firmware list with automated distribution to all endpoints.

6.8 Security & Validation

ScreenGenie only accepts firmware download locations within the following domains:

- dell.com
- *.dell.com

This prevents execution of firmware from external or untrusted sources.

6.9 Benefits for IT

- No additional Dell tools required
- No standalone scripts needed
- Minimal user interaction (click + confirm)
- Consistent firmware versions across the environment
- Fewer incidents related to USB-C, docking or display issues

7. Command-Line Configuration

The ScreenGenie command-line tool allows centralized management of the configuration file located at:

%AppData%\PNQ Software\ScreenGenie\screengenie.ini

This file contains all functional ScreenGenie settings, including language, brightness and contrast, synchronization behavior, monitor layout, and ForceLeft/ForceRight rules.

Using the command line makes it possible to configure and maintain ScreenGenie fully automatically—during installation, at user logon, or as part of an Intune, SCCM, GPO or RMM deployment script.

Settings can be added, modified, or—where applicable—extended with multiple values, without any manual user intervention.

7.1 SetSG.exe

SetSG.exe is a standalone console tool that allows IT administrators to add, modify or manage configuration values in:

%AppData%\PNQ Software\ScreenGenie\screengenie.ini

- without opening the ScreenGenie GUI.

The tool is designed for automated deployment via Intune, SCCM, GPO, or RMM.

Basic syntax:

SetSG.exe -Section "SectionName" -Item "ItemName" -Value "Value"

By default, a value is replaced.

If the key does not yet exist, it will be created automatically.

Example

SetSG.exe -Section "Settings" -Item "Language" -Value "EN"

Result:

[Settings]

Language=EN

7.2 Special Logic for ForceLeft and ForceRight (Serial)

The Serial items in the [ForceLeft] and [ForceRight] sections are treated as comma-separated lists.

When using -Value, serial numbers are appended and automatically deduplicated.

Example — Adding serial numbers:

- SetSG.exe -Section "ForceLeft" -Item "Serial" -Value "ABC#1234"
- SetSG.exe -Section "ForceLeft" -Item "Serial" -Value "DEF#5678,XYZ#9999"

Result:

Serial=ABC#1234,DEF#5678,XYZ#9999

Removing serial numbers

SetSG.exe -Section "ForceLeft" -Item "Serial" -Remove -Value "ABC#1234"

Clearing the serial list

SetSG.exe -Section "ForceRight" -Item "Serial" -Clear

7.3 Other Commands

Using SetSG.exe, IT administrators can centrally and automatically manage the complete ScreenGenie configuration without manually editing screengenie.ini.
The tool provides a consistent command-line interface to set individual parameters per section and per item.
After execution, each value is written directly to screengenie.ini.
At the next ScreenGenie startup (or reload event), these settings are automatically applied.
Multiple items can be changed within a single script.
Below are examples—per section—of how IT administrators can configure parameters.

```
# [Settings]
SetSG.exe -section "Settings" -item "Language" -value "EN"
SetSG.exe -section "Settings" -item "WindowsMode" -value "Yes"
SetSG.exe -section "Settings" -item "Mode" -value "Dark"
SetSG.exe -section "Settings" -item "LogDays" -value "14"

# [Agent]
SetSG.exe -section "Agent" -item "Delay" -value "10"

# [Synchronization]
SetSG.exe -section "Synchronization" -item "Monitors" -value "Yes"
SetSG.exe -section "Synchronization" -item "BrightnessContrast" -value "No"

# [Message]
SetSG.exe -section "Message" -item "File" -value "message.txt"

# [Monitor 1] [Monitor 2]
SetSG.exe -section "Monitor 1" -item "Brightness" -value "38"
SetSG.exe -section "Monitor 1" -item "Contrast" -value "76"
SetSG.exe -section "Monitor 2" -item "Brightness" -value "38"
SetSG.exe -section "Monitor 2" -item "Contrast" -value "76"

# [ForceLeft] of [ForceRight]
SetSG.exe -section "ForceLeft" -item "Name" -value "DELL C2722DE"
SetSG.exe -section "ForceLeft" -item "Connection" -value "USB-C,TBT"

# [BRAND MODEL]
SetSG.exe -section "DELL C2722DE" -item "Brightness" -value "39"
SetSG.exe -section "DELL C2722DE" -item "Contrast" -value "78"

# [Layout]
SetSG.exe -section "Layout" -item "Preset" -value "MML"
SetSG.exe -section "Layout" -item "VerticalAlign" -value "Center"

# [Change]
SetSG.exe -section "Change" -item "OnPower" -value "Yes"
SetSG.exe -section "Change" -item "OnDisplay" -value "No"
```

8. Licensing

ScreenGenie is licensed through a central server using a subscription model with an expiration date.

The license is valid per system for the defined period. Without a valid license, the software will not operate and notifies the user that a license is missing.

8.1 License Storage

The license key must be stored in the file license.ini.

This file can be populated in several ways:

Tijdens installatie

Silent: msiexec /i ScreenGenie.msi LICENSEKEY="LICENSE-KEY" /qn

CMD line

Using AddLicense.Cli.exe:

AddLicense.Cli.exe -License “LICENSE-KEY”

Centrally via MDM/RMM management

Place the file license.ini in:

\ProgramData\PNQ Software\ScreenGenie

This file can be distributed to all systems using an MDM or RMM solution.

Examples include Microsoft Intune and Workspace ONE by Omnissa (formerly VMware).

This method enables centralized license management and automatic rollout across all managed devices.

Local manual entry

The license can also be entered manually by editing:

\ProgramData\PNQ Software\ScreenGenie\license.ini

Local manual entry

The license can also be entered manually by editing:

\ProgramData\PNQ Software\ScreenGenie\license.ini

8.2 Valid License Required

Without a valid license, ScreenGenie will not start fully.

Licenses are time-bound and must be renewed before the expiration date to ensure continuity.

The file license.lic specifies:

- To whom the license is assigned
- Until which date it is valid
- How many licenses were available for the system at issuance

9. Best Practices for Deployment

ScreenGenie can be deployed in different ways depending on organizational requirements.

The three most common implementation models range from full user control to fully automated IT-managed environments.

In all cases, Windows 11 remains responsible for the persistent storage of display configurations.

ScreenGenie acts primarily as a correction mechanism to restore or optimize settings when required.

9.1 User-Initiated ScreenGenie Execution

In this configuration, the user manually launches ScreenGenie whenever display settings need to be applied or corrected.

ScreenGenie then reads the configuration from screengenie.ini and applies the values to the connected monitors.

Characteristics

- No automatic triggers
- No background processes
- User decides when settings are applied

Advantages

- Minimal system load
- Full control for the user
- No automatic system intervention

Disadvantages

- Settings are not automatically reapplied when display configurations change
- User must actively start ScreenGenie

Suitable for

- Individual systems
- Small organizations
- Environments where users manage their own monitor configuration

9.2 IT-Light Model – ScreenGenie Engine at Login

In this model, IT automatically launches the ScreenGenie Engine when the user logs in.

This can be implemented using Task Scheduler, a login script, or a management tool such as Microsoft Intune, SCCM, or an RMM platform.

The Engine:

- Checks the current monitor configuration
- Applies the values from screengenie.ini if needed
- Terminates itself after completion

Users retain the ability to adjust display settings afterwards if desired.

Characteristics

- Engine runs once at login
- No continuous background processes
- IT defines the baseline configuration

Advantages

- Consistent startup configuration at every login
- Minimal system overhead
- User flexibility remains
- No unnecessary corrections when Windows already has the correct layout stored

Disadvantages

- Changes in docking or display configuration are only corrected at the next execution of ScreenGenie

Suitable for

- Enterprise environments with fixed workstations
- Organizations wanting to enforce a baseline configuration
- Environments where docking changes during a session are rare

9.3 Fully Automated – ScreenGenie Agent

In this configuration, the ScreenGenie Agent is actively used. This component monitors changes in power state and display configuration and automatically launches the ScreenGenie Engine whenever needed.

The Agent can respond to events such as:

- connecting or disconnecting a docking station
- changes in monitor configuration
- variations in power delivery

When such an event is detected, the Agent automatically starts the Engine to re-evaluate the configuration and correct it if necessary.

Characteristics

- Continuous background monitoring
- Automatic correction of monitor settings
- No manual user actions required

Advantages

- Optimal user experience in flexible workplaces
- Automatic correction during docking and undocking
- Consistent settings when display configurations change

Disadvantages

- An additional background process is active
- Corrections may occur even when Windows has already stored the correct configuration

Suitable for

- Flexible work environments
- Hot-desking setups
- Laptop-and-dock environments with frequent changes

This mode is activated via screengenie.ini, for example:

[Change]

OnPower = Yes

OnDisplay = Yes

9.4 Recommended Deployment Model

Although ScreenGenie supports multiple automation models, PNQ Software recommends the IT-Light model in most environments, where the ScreenGenie Engine is executed once at user login.

Windows persistently stores monitor positions, scaling settings, and resolutions as part of its display configuration. Once a workstation has been set up correctly, this configuration typically remains stable.

By running ScreenGenie once at each login:

- a consistent baseline configuration is guaranteed
- incorrect settings are prevented from persisting
- system load remains minimal

After this initial validation, the user may adjust monitor settings through the ScreenGenie application as desired. These adjustments remain active as long as the physical setup does not change.

Full automation through the ScreenGenie Agent can still be deployed in environments where display configurations change frequently, such as flexible workplaces or docking scenarios with many transitions.

9.5 Overview of Deployment Models

Model	Automation Level	Best Use Case
User-initiated ScreenGenie	None	Individual systems
IT-Light (Engine at login)	Limited	Most enterprise environments
Agent fully automated	High	Flexible workplaces / docking setups

10. Troubleshooting

In cases of incorrect detection or unexpected behavior, refreshing display information may help resolve the issue. Always verify both the logical and physical monitor order and confirm that the correct configuration has been applied.

10.1 DisplayReset Utility

The DisplayReset utility is available in the Programs folder.

This tool must always be executed with administrative privileges.

The utility removes the complete Windows display cache by deleting specific registry keys.

As a result, all locally stored monitor configurations, positions, scaling factors, and connectivity metadata are cleared.

Windows is then forced to rebuild the display stack as if the monitors were being connected for the first time.

When DisplayReset is executed:

- Existing display settings are removed from the registry.
- (Optional) A backup of the removed keys is created unless the tool is started with NoBackup.
- If the tool is launched without Reboot, a restart is recommended.

Recommended procedure after running DisplayReset:

- Physically disconnect the monitor(s) or docking station.
- Reconnect the monitor(s) or docking station afterward.

After reconnecting, Windows detects the displays as if they are newly attached and will temporarily register them in “duplicate” mode.

This is expected behavior.

At this point, ScreenGenie can re-read the monitors and reapply all relevant values based on the existing configuration—without relying on outdated or corrupted Windows detection data.

10.1.1 Command-line syntax

The DisplayReset utility supports the following parameters:

DisplayReset.exe [-Reboot] [-NoBackup]

Parameter Description

-Reboot

Performs an automatic system restart after clearing the display cache.

-NoBackup

Skips the creation of a backup of the affected registry keys.

Without this parameter, a backup is saved in the Windows TEMP directory by default.

All parameters are optional.

If launched without parameters, the display cache is cleared, a backup is made, and a restart is recommended but not enforced.

Recommended workflow after execution

- Run DisplayReset with administrative privileges
- Reboot the system or physically disconnect all external monitors/docking
- Reconnect the monitors/docking

Windows will now detect the displays again as if they were connected for the first time.

ScreenGenie can then reapply all required values based on the configuration, without using stale or corrupted detection data.

10.2 Physically Resetting Monitors

In some cases, Windows or the GPU may cache control data, causing VCP or EDID communication to function incorrectly.

The following steps may help:

- Completely remove power from the monitor(s)
- Wait 5–10 seconds
- Reconnect the power

This forces internal monitor controllers to reinitialize.

10.3 Restart the System to Rebuild the Graphics Stack

For docking stations: also reset or restart the docking device, as these often contain their own DisplayPort/USB-C routing chips that may become unresponsive.

10.4 Common Causes

Below are realistic causes that may explain DisplayPort stack issues or interruptions in VCP commands:

1. DisplayPort Hot-Plug Detection (HPD) stuck

Windows relies heavily on HPD signals.

When the HPD line becomes stuck due to:

- a faulty cable
- a loose connector
- a malfunctioning docking chipset

Windows may cache incorrect EDID or VCP states.

As a result, a monitor may appear "present," but no longer accept VCP commands.

2. MST hubs or docking stations altering routing

With USB-C/Thunderbolt docks, DisplayPort streams are dynamically routed.

If the dock firmware becomes unstable:

- VCP access may disappear
- monitors may be detected in the wrong order
- EDID profiles may not be passed through correctly

A dock reset or firmware update often resolves these issues.

3. Firmware issues inside the monitor

Some monitor firmwares:

- only accept VCP commands after a full power cycle
- become "locked" after rapid changes in resolution or refresh rate
- may lose the internal DDC/CI buffer, preventing brightness/contrast control

4. Windows caching EDID or display topology

Windows stores EDID information and display topology locally.

This cache may become inconsistent after:

- Windows updates
- sleep or hibernation cycles
- switching between different docks
- hot-plug events during high GPU load

DisplayReset.exe is specifically designed to clear this cache.

5. GPU driver timeouts or DP link renegotiation

If the DisplayPort link is renegotiated by the GPU driver — for example during a driver update or changes to G-Sync/FreeSync — the DDC/CI channel may temporarily drop.

The monitor may stop responding to VCP commands until it is physically reconnected.

11. PNQ Software Support

For additional assistance, please contact PNQ Software.

Support portal: https://pnqsoftware.com/support/

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