

Manual

Embedded Configuration Manager

Spectra | v2.2.2 | 19.02.2019

Index

Disclaimer	2
General Description	3
First Steps	3
Lockdown Features	4
Automatic updates	4
Assigned Access	5
Custom Logon	6
Embedded Boot	7
Keyboard Filter	8
OEM Information	9
Shell Launcher	10
Unified Write Filter	11
USB Device Policy	12
General	13
Windows Updates	13
Notifications	13
Power Settings	14
OneDrive	14
Touch Gestures	14
Import / Export Feature & License Manager	15

Disclaimer

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

THE AUTHOR IS UNDER NO OBLIGATION TO PROVIDE SUPPORT, SERVICE, CORRECTIONS, OR UPGRADES TO THE SOFTWARE PROGRAM.

Embedded Configuration Manager



General Description

Windows IoT Enterprise includes many embedded features to customize your system. But the configuration of the new systems is very hard because the Embedded Lockdown Manager (this tool was included in Windows Embedded 8.1 Industry Pro for example) was not carried over to Windows 10 IoT Enterprise.

That's why we created the Embedded Configuration Manager (further referred to as ECM). The Embedded Configuration Manager has even more functionality than the original Microsoft Embedded Lockdown Manager. The new tool can be used as a central management place for all Embedded related settings. It allows to activate or deactivate features and to manage and configure them with ease.

Spectra has licensed the tool for the following operating systems:

- Windows 10 IoT Enterprise 2016 LTSB (Art.Nr. 149386, 149385, 149383)
- Windows 10 IoT Enterprise 2019 LTSC (Art.Nr. 157243, 157240, 157239)

First Steps

How to start

To start the Embedded Configuration Manger please insert your received USB device, open your file explorer, go to the USB device directory and start "Embedded Configuration Manager.exe".

How to use

Please read our manual carefully before using the ECM, do not ignore our warning messages and follow the given instructions.

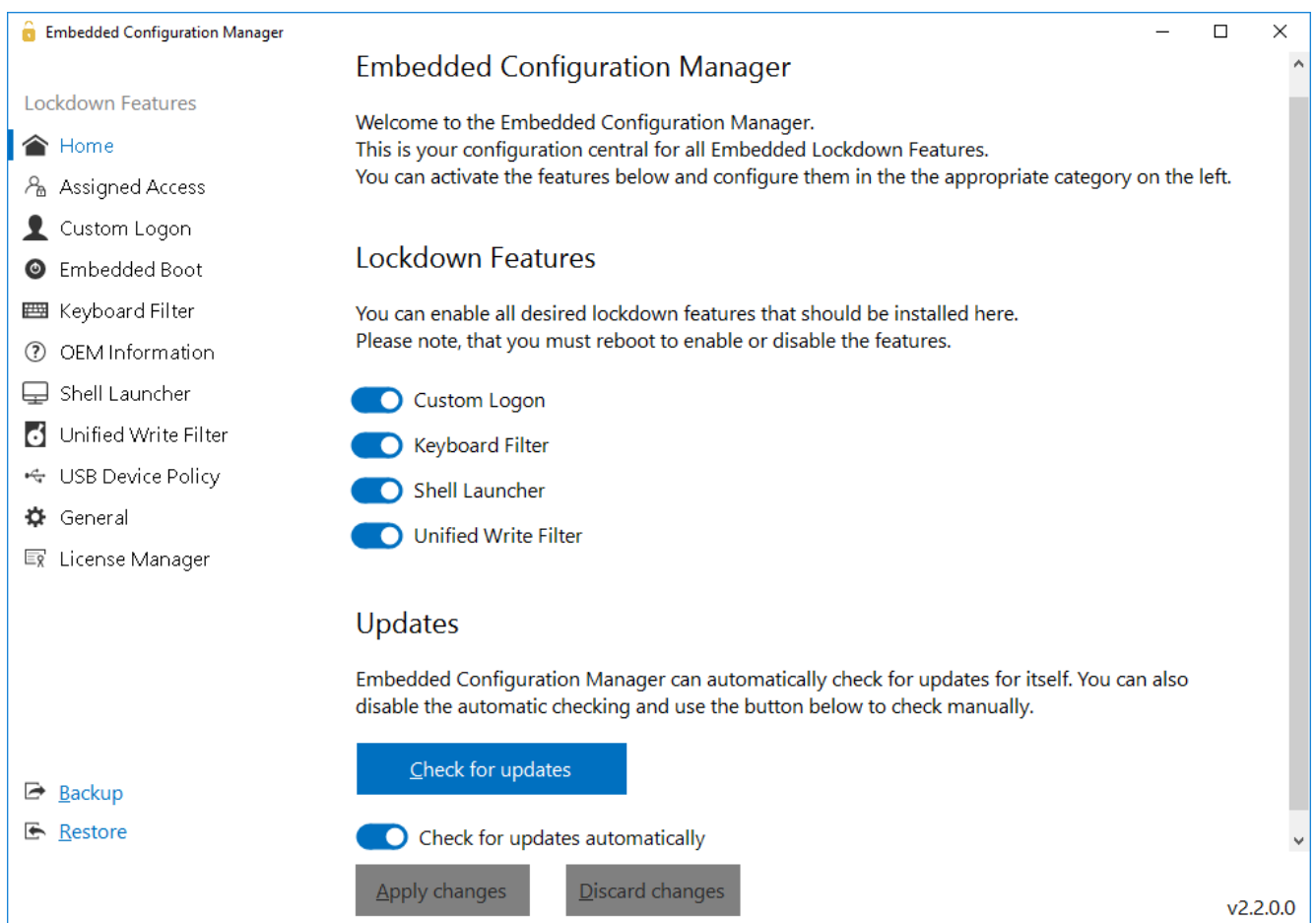
Lockdown Features

To find out which embedded lockdown features are available for your Windows installation, just launch the Embedded Configuration Manager. On the first configuration page you will get a complete list of all available features. To enable them, just toggle the switch in front of their name and click on "Apply". After a reboot the features are available for configuration.

The tool will list all available features that can be configured on the left side. Every setting is described in detail and can be configured with just a few mouse clicks.

Automatic program updates

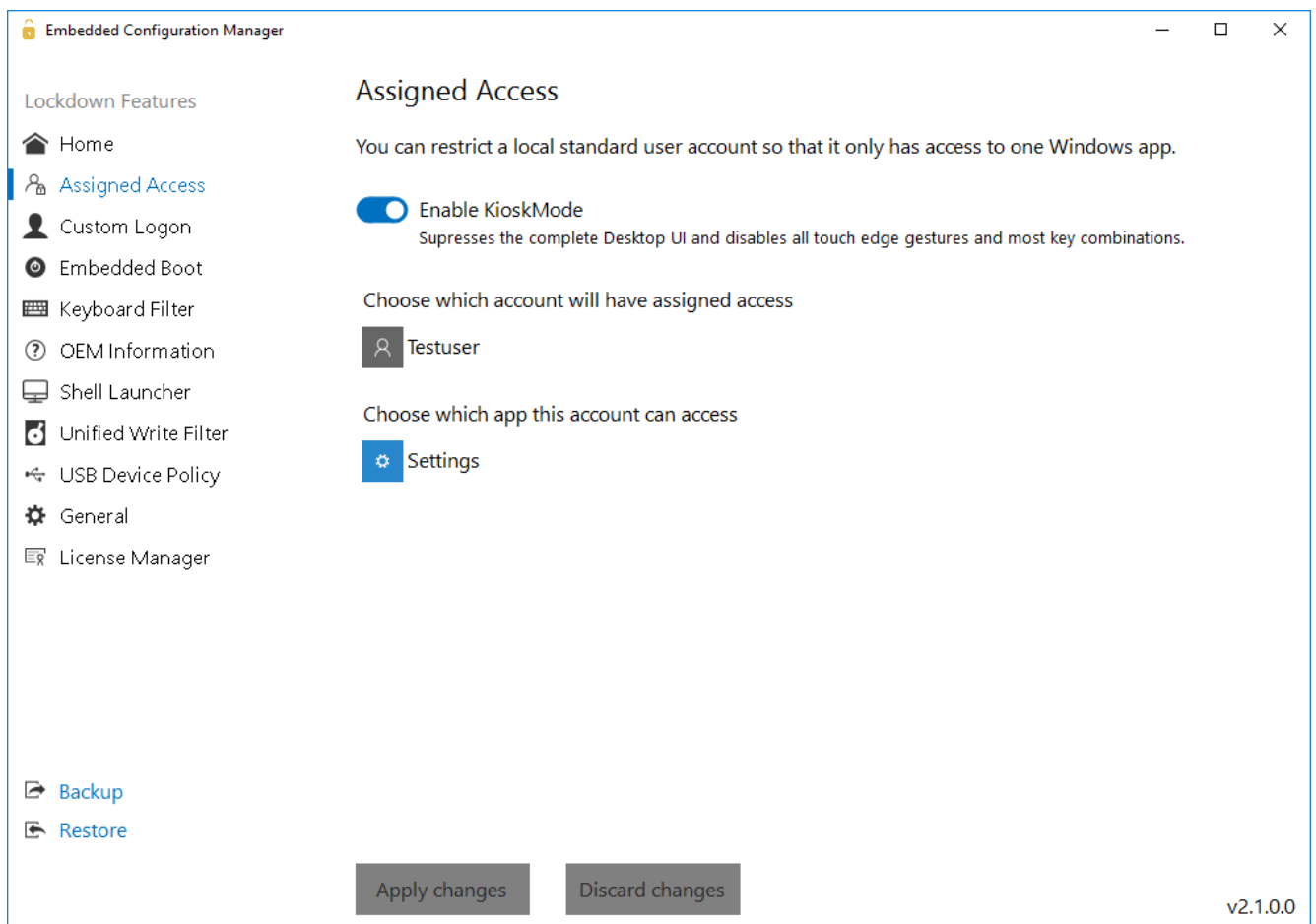
At first start-up you will be asked if you would like to enable the auto-update function to automatically receive future updates for the ECM. This can be changed anytime with the "Check for updates automatically" setting. It is also possible to check for updates manually by pressing the "Check for updates" button.



Assigned Access

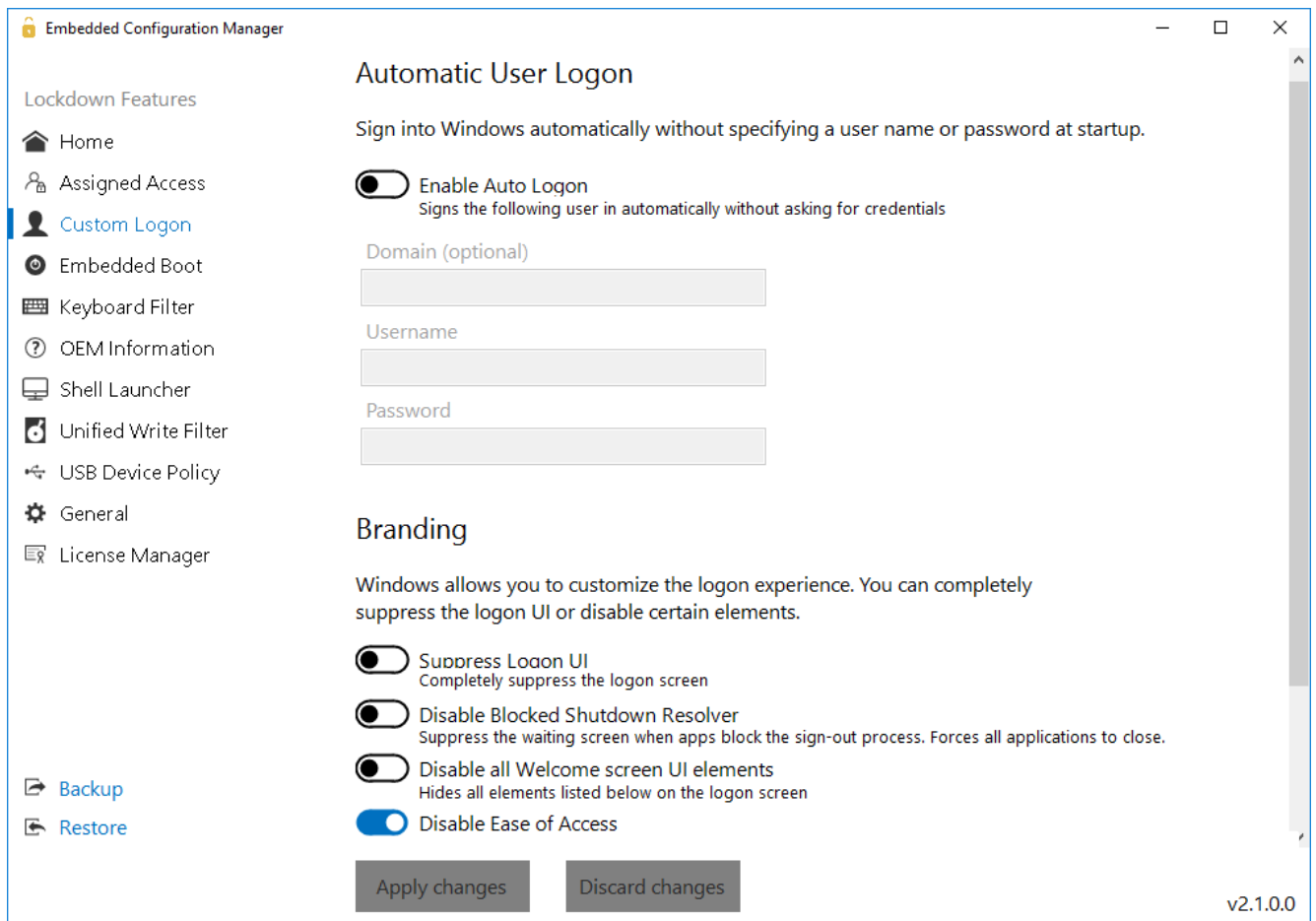
With the Assigned Access configuration, you can easily select a modern Universal Windows Platform App that should be the default shell for a specific user.

With the "Enable KioskMode" functionality, that is only available through the Embedded Configuration Manager on Windows 10 IoT Enterprise 2016 versions, you can also completely suppress the Windows Desktop to ensure the user cannot exit the app!



Custom Logon

These settings allow to easily setup an automatic logon for a specific windows user and allows you to configure the branding settings. With these settings, you can easily suppress the complete Logon UI and hide certain elements, such as the power button or ease of access button from the logon screen!



The screenshot shows the 'Automatic User Logon' settings in the Embedded Configuration Manager. The interface includes a left-hand navigation pane with options like Home, Assigned Access, Custom Logon (selected), Embedded Boot, Keyboard Filter, OEM Information, Shell Launcher, Unified Write Filter, USB Device Policy, General, and License Manager. At the bottom of the pane are Backup and Restore options.

The main content area is titled 'Automatic User Logon' and contains the following settings:

- Sign into Windows automatically without specifying a user name or password at startup.**
 - Enable Auto Logon**
Signs the following user in automatically without asking for credentials
 - Domain (optional):
 - Username:
 - Password:
- Branding**

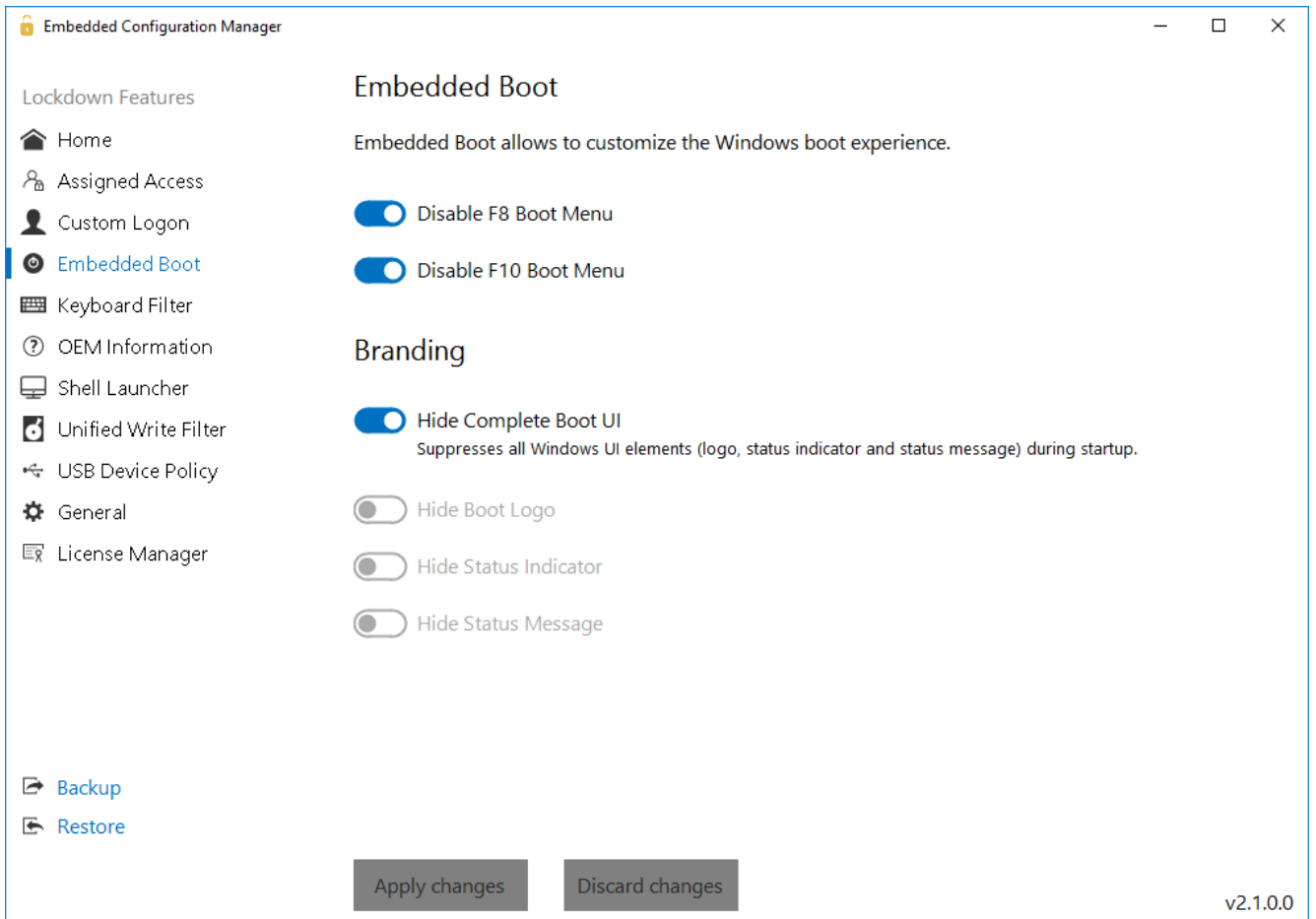
Windows allows you to customize the logon experience. You can completely suppress the logon UI or disable certain elements.

 - Suppress Logon UI**
Completely suppress the logon screen
 - Disable Blocked Shutdown Resolver**
Suppress the waiting screen when apps block the sign-out process. Forces all applications to close.
 - Disable all Welcome screen UI elements**
Hides all elements listed below on the logon screen
 - Disable Ease of Access**

At the bottom of the settings area are two buttons: 'Apply changes' and 'Discard changes'. The version number 'v2.1.0.0' is displayed in the bottom right corner.

Embedded Boot

The Embedded Boot settings allow to easily brand the boot experience. You can disable the boot logo, text and status ring, or block access to the F8 and F10 boot menu. These settings are important if you want to build a completely branded device.



The screenshot shows the Embedded Configuration Manager application window. The title bar reads "Embedded Configuration Manager". On the left is a navigation pane with the following items: Lockdown Features, Home, Assigned Access, Custom Logon, Embedded Boot (highlighted), Keyboard Filter, OEM Information, Shell Launcher, Unified Write Filter, USB Device Policy, General, License Manager, Backup, and Restore. The main content area is titled "Embedded Boot" and contains the following text and settings:

Embedded Boot

Embedded Boot allows to customize the Windows boot experience.

- Disable F8 Boot Menu
- Disable F10 Boot Menu

Branding

- Hide Complete Boot UI
Suppresses all Windows UI elements (logo, status indicator and status message) during startup.
- Hide Boot Logo
- Hide Status Indicator
- Hide Status Message

At the bottom of the window are two buttons: "Apply changes" and "Discard changes". The version number "v2.1.0.0" is displayed in the bottom right corner.

Keyboard Filter

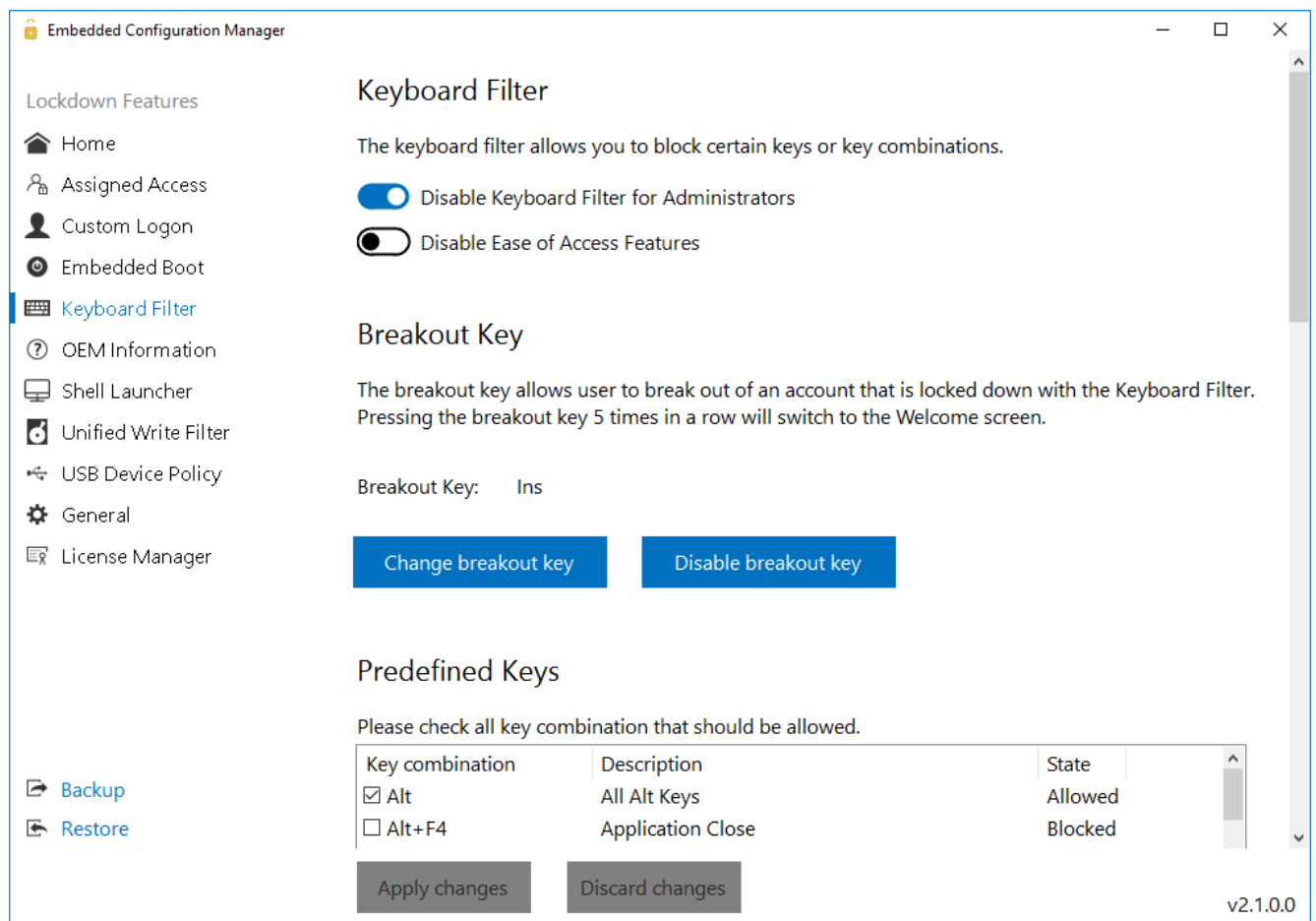
The Keyboard Filter settings allow you to simply block keys or key combinations, such as Ctrl+Alt+Del. These combinations can be selected from a wide range of pre-defined keys, or you can easily add a custom combination that should be blocked. The keyboard filter allows to block keys based on the key ID, such as Z, the keys will be blocked regardless of the keyboard layout. If the keyboard layout changes and the key wanders to a different location it will be blocked there as well. Alternatively the keys can be blocked based on the keys scan code. In this case the physical key on the keyboard will be blocked, ignoring what key is currently mapped from the keyboard layout.

The keyboard filter also allows to change the breakout key or to completely disable it.

The breakout key allows a user to break out of an account that is locked down, e.g. with a custom shell. Pressing the breakout key 5 times in a row will get the user to the Welcome screen so he can login with another user account.

Per default the breakout key is the Windows key.

It is recommended to change the key or to completely disable the functionality and handle this scenario solely through the custom shell application.



The screenshot shows the 'Keyboard Filter' settings in the Embedded Configuration Manager. The window title is 'Embedded Configuration Manager'. On the left is a navigation pane with 'Lockdown Features' expanded, showing options like Home, Assigned Access, Custom Logon, Embedded Boot, Keyboard Filter (selected), OEM Information, Shell Launcher, Unified Write Filter, USB Device Policy, General, and License Manager. Below this are 'Backup' and 'Restore' options.

The main content area is titled 'Keyboard Filter' and contains the following sections:

- Keyboard Filter:** A description stating 'The keyboard filter allows you to block certain keys or key combinations.' and two toggle switches: 'Disable Keyboard Filter for Administrators' (checked) and 'Disable Ease of Access Features' (unchecked).
- Breakout Key:** A description stating 'The breakout key allows user to break out of an account that is locked down with the Keyboard Filter. Pressing the breakout key 5 times in a row will switch to the Welcome screen.' Below this, the 'Breakout Key' is set to 'Ins'. There are two buttons: 'Change breakout key' and 'Disable breakout key'.
- Predefined Keys:** A description stating 'Please check all key combination that should be allowed.' Below this is a table with columns for 'Key combination', 'Description', and 'State'.

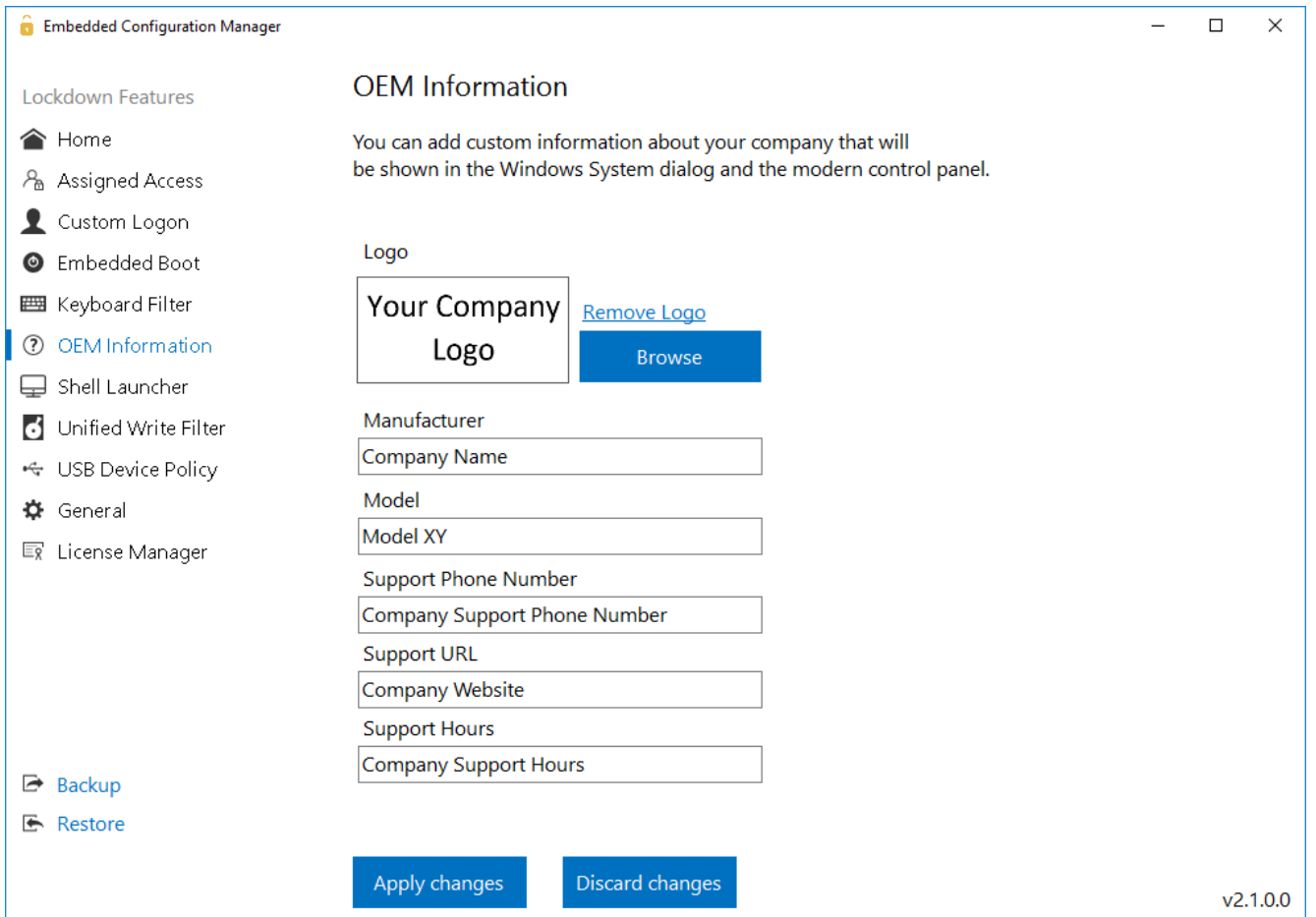
Key combination	Description	State
<input checked="" type="checkbox"/> Alt	All Alt Keys	Allowed
<input type="checkbox"/> Alt+F4	Application Close	Blocked

At the bottom of the main content area are two buttons: 'Apply changes' and 'Discard changes'. The version number 'v2.1.0.0' is displayed in the bottom right corner.

OEM Information

The new feature allows you to easily modify the OEM Information of your devices.

This information is shown in the System properties and allows the end user to see who the manufacturer of the device is – and where to get support.



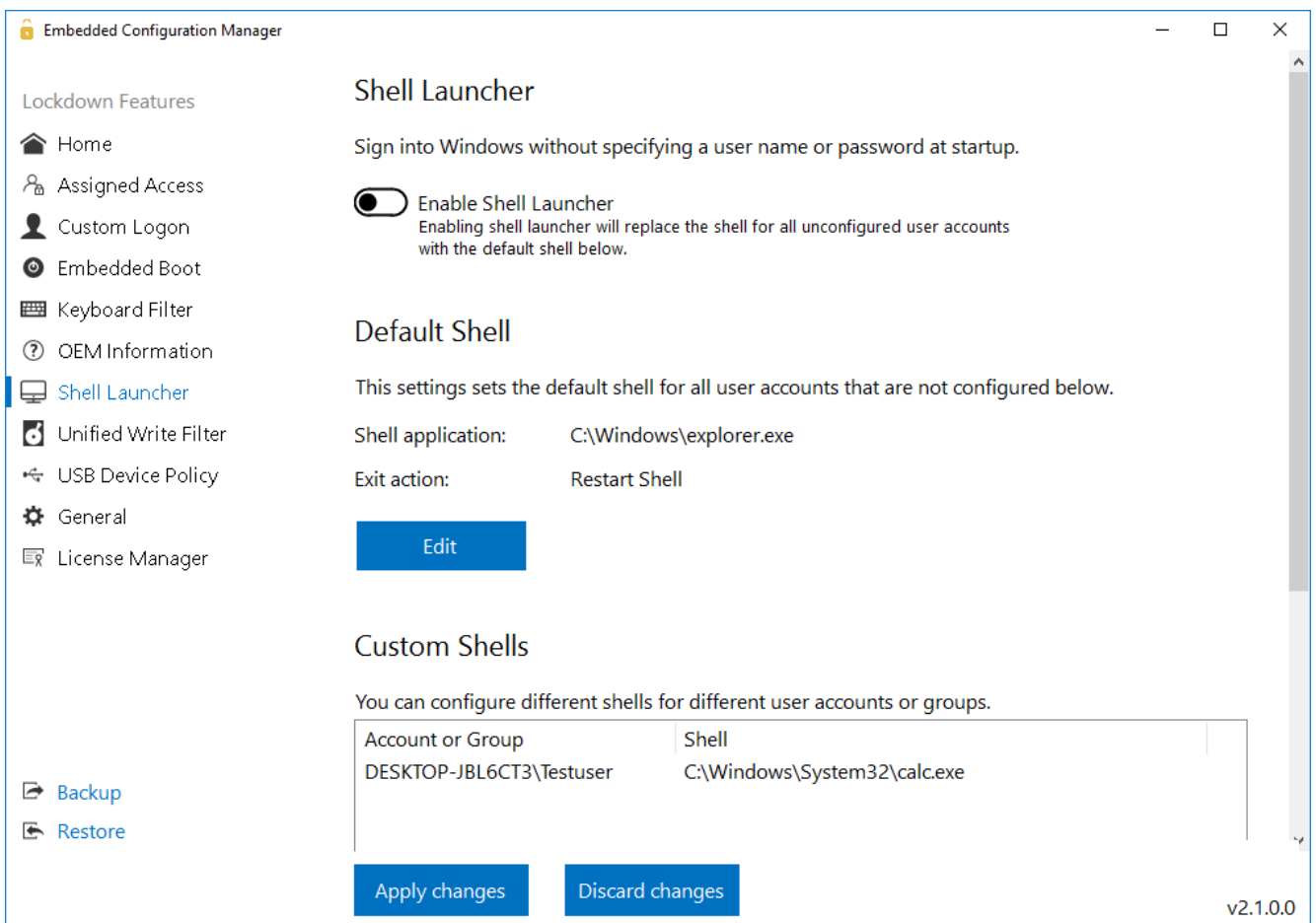
The screenshot shows the 'OEM Information' settings window in the Embedded Configuration Manager. The window title is 'Embedded Configuration Manager'. On the left, there is a navigation pane under 'Lockdown Features' with the following items: Home, Assigned Access, Custom Logon, Embedded Boot, Keyboard Filter, OEM Information (selected), Shell Launcher, Unified Write Filter, USB Device Policy, General, and License Manager. At the bottom of the navigation pane are 'Backup' and 'Restore' options. The main content area is titled 'OEM Information' and contains the following text: 'You can add custom information about your company that will be shown in the Windows System dialog and the modern control panel.' Below this text are several input fields: 'Logo' (with a 'Remove Logo' link and a 'Browse' button), 'Manufacturer' (with a 'Company Name' input field), 'Model' (with a 'Model XY' input field), 'Support Phone Number' (with a 'Company Support Phone Number' input field), 'Support URL' (with a 'Company Website' input field), and 'Support Hours' (with a 'Company Support Hours' input field). At the bottom of the main area are 'Apply changes' and 'Discard changes' buttons. The version number 'v2.1.0.0' is displayed in the bottom right corner.

Shell Launcher

The Shell Launcher allows to setup different shells for different users or groups. With the Embedded Configuration Manager, the programs that should be used as shell for a specific user can be configured very easily.

With the shell launcher you can configure a default shell for the standard users, so they can use the shell application only but cannot access anything else in the system.

Administrators however, can be configured to boot into the regular Windows Explorer shell so they can use the full desktop experience to configure and service the devices.



The screenshot shows the 'Shell Launcher' settings window in the Embedded Configuration Manager. The window title is 'Embedded Configuration Manager'. On the left, there is a navigation pane with 'Shell Launcher' selected. The main content area is divided into three sections: 'Shell Launcher', 'Default Shell', and 'Custom Shells'.

Shell Launcher
 Sign into Windows without specifying a user name or password at startup.
 Enable Shell Launcher
 Enabling shell launcher will replace the shell for all unconfigured user accounts with the default shell below.

Default Shell
 This settings sets the default shell for all user accounts that are not configured below.
 Shell application: C:\Windows\explorer.exe
 Exit action: Restart Shell
 [Edit]

Custom Shells
 You can configure different shells for different user accounts or groups.

Account or Group	Shell
DESKTOP-JBL6CT3\Testuser	C:\Windows\System32\calc.exe

[Apply changes] [Discard changes]

v2.1.0.0

Unified Write Filter

Windows 10 IoT Enterprise contains the Unified Write Filter (referred as UWF in the following) feature to protect the system from unwanted changes. Unfortunately, Windows itself will fill up the overlay within a few minutes.

Because of this, the feature is unusable in production as Windows might crash the system.

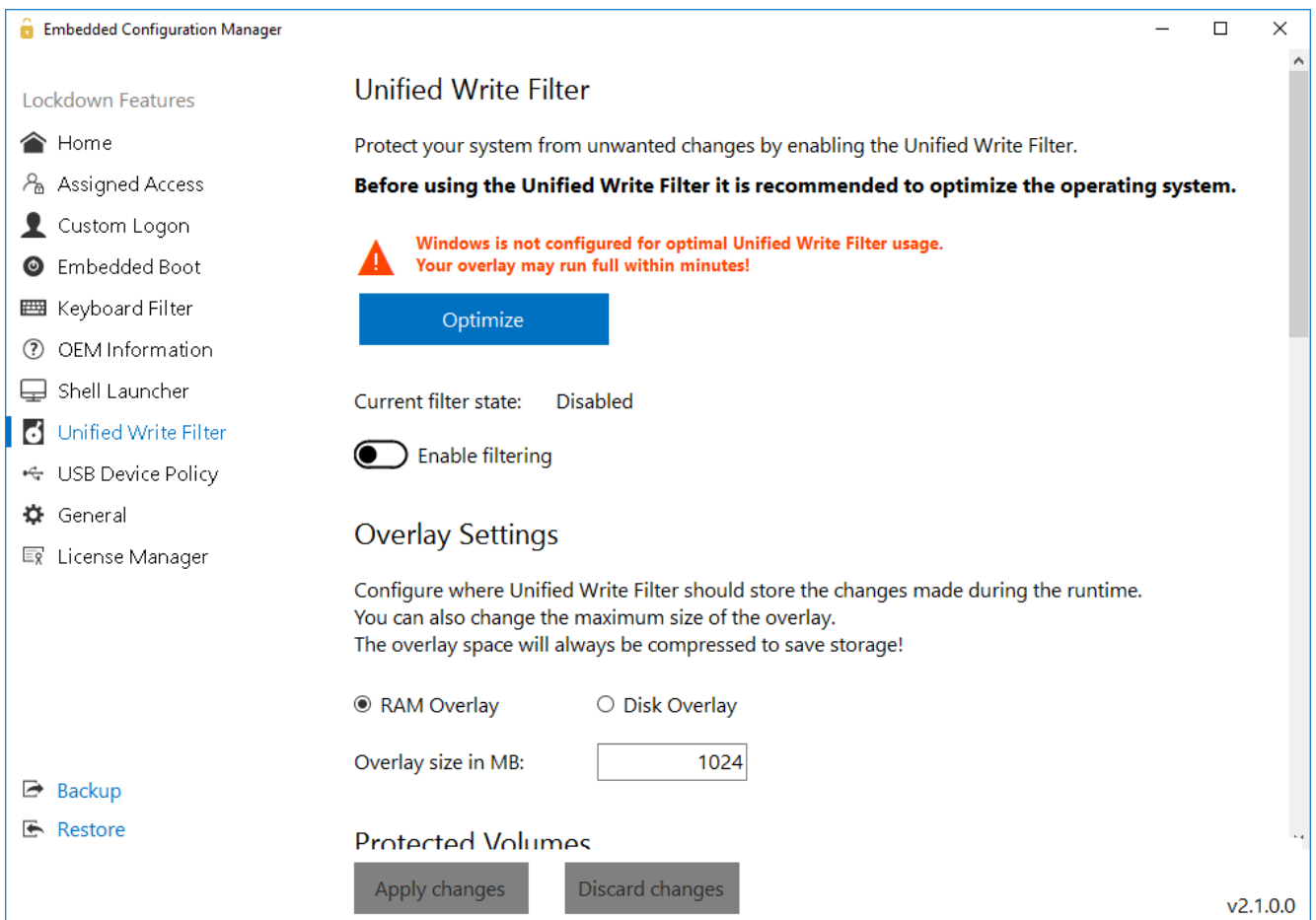
The Embedded Configuration Manger now contains a feature that will optimize your system for the Unified Write Filter usage with just one click. Use the optimization before enabling the UWF.

This will reduce the writes of Windows itself to the overlay and allows the usage of UWF again!

The tool allows to configure the overlay settings, such as size and type.

You can easily add volumes to the protection and create exclusions based on files or folders and registry keys under HKEY_LOCAL_MACHINE.

NOTE: Enabling or changing settings of the Unified Write Filter requires a reboot!



The screenshot shows the 'Embedded Configuration Manager' window with the 'Unified Write Filter' settings page. The left sidebar lists various lockdown features, with 'Unified Write Filter' selected. The main content area includes:

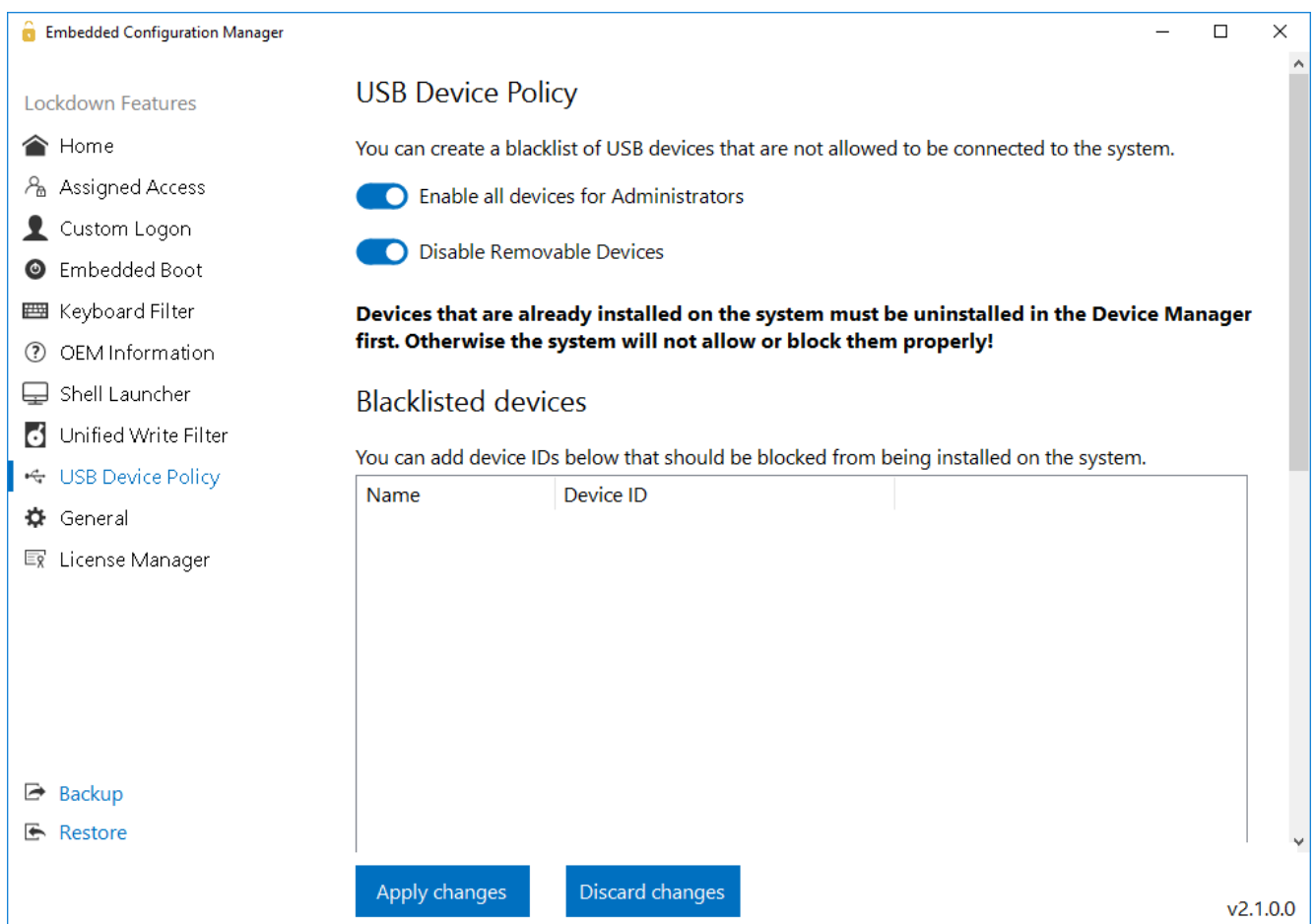
- Unified Write Filter**: Protect your system from unwanted changes by enabling the Unified Write Filter.
- Before using the Unified Write Filter it is recommended to optimize the operating system.**
- Warning**: Windows is not configured for optimal Unified Write Filter usage. Your overlay may run full within minutes!
- Optimize**: A blue button to optimize the system.
- Current filter state**: Disabled
- Enable filtering**: A toggle switch currently turned off.
- Overlay Settings**: Configure where Unified Write Filter should store the changes made during the runtime. You can also change the maximum size of the overlay. The overlay space will always be compressed to save storage!
- RAM Overlay** (selected) and **Disk Overlay** (unselected) radio buttons.
- Overlay size in MB**: A text input field containing the value '1024'.
- Protected Volumes**: A section for adding and managing protected volumes.
- Apply changes** and **Discard changes** buttons.
- Version: v2.1.0.0

USB Device Policy

The USB Device Policy allows you to create blacklists of devices that are not allowed to be connected to the system. Simply select a currently connected device and add it to the blacklist. The next time the device is being connected to the system it will no longer be allowed to be installed.

The filtering can be done based on the device ID or device classes. With the device classes you can block devices within a class in general, such as Bluetooth devices.

The tool also allows you to disable the filtering for Administrators or block removable devices in general.



The screenshot shows the 'USB Device Policy' settings window in the Embedded Configuration Manager. The window title is 'Embedded Configuration Manager'. On the left is a navigation pane with 'Lockdown Features' and various settings like Home, Assigned Access, Custom Logon, Embedded Boot, Keyboard Filter, OEM Information, Shell Launcher, Unified Write Filter, USB Device Policy (selected), General, and License Manager. At the bottom of the pane are 'Backup' and 'Restore' options.

The main content area is titled 'USB Device Policy' and contains the following text: 'You can create a blacklist of USB devices that are not allowed to be connected to the system.' Below this are two toggle switches: 'Enable all devices for Administrators' (checked) and 'Disable Removable Devices' (checked).

A warning message states: 'Devices that are already installed on the system must be uninstalled in the Device Manager first. Otherwise the system will not allow or block them properly!'.

The section 'Blacklisted devices' includes the text: 'You can add device IDs below that should be blocked from being installed on the system.' Below this is a table with two columns: 'Name' and 'Device ID'. The table is currently empty.

At the bottom of the window are two buttons: 'Apply changes' and 'Discard changes'. The version number 'v2.1.0.0' is displayed in the bottom right corner.

General

Windows Updates

Disabling the updates in Windows 10 IoT Enterprise is not an easy task as Windows will try to ensure that it can talk to the update service and download new files if needed.

The Embedded Configuration Manager now includes a single click solution to disable Windows Updates and automatic Windows Defender updates completely.

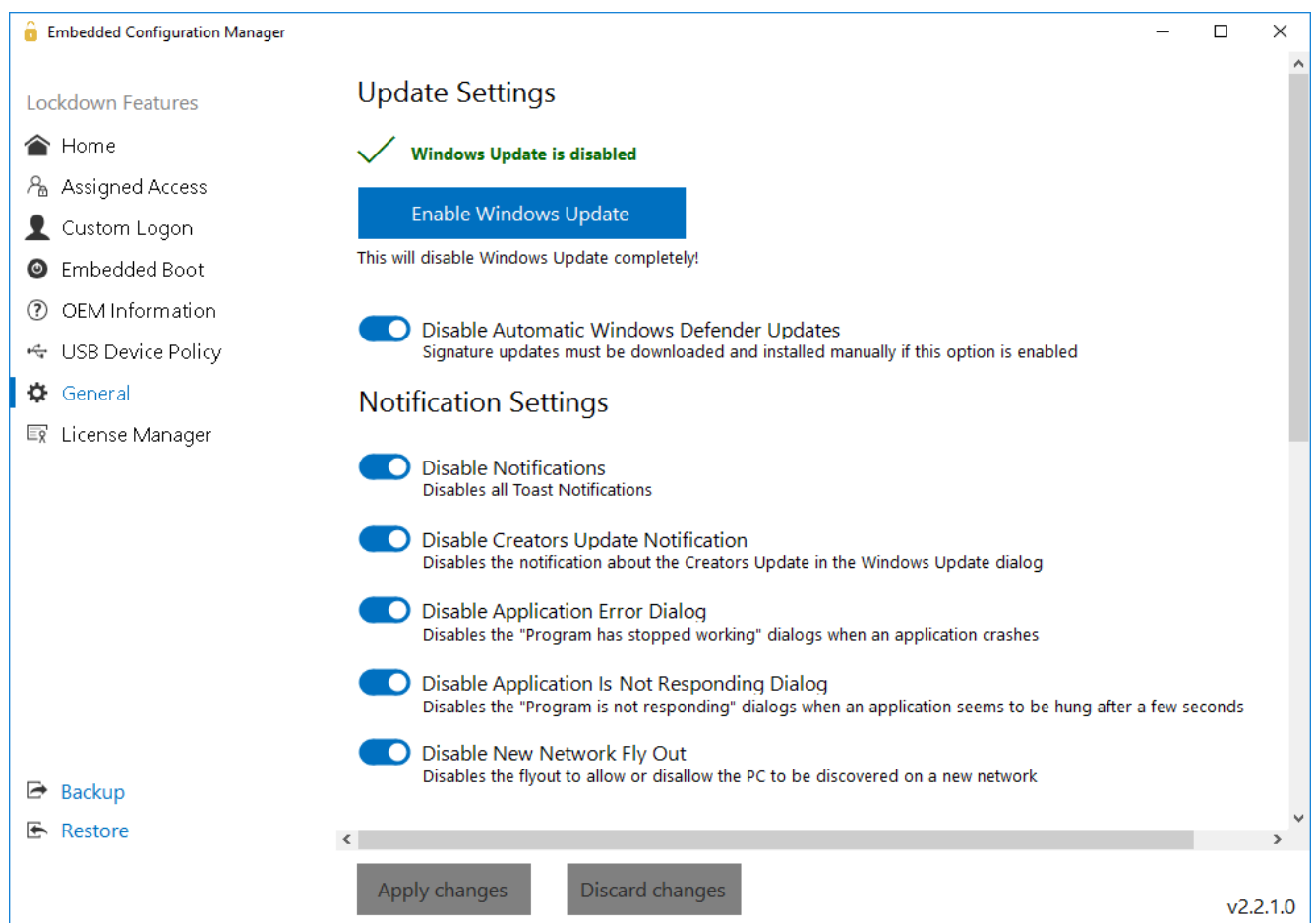
With this feature you have full control to manage the updates on your system again.

Notifications

With a simple click, the tool can disable toast notifications within Windows, the creators update notifications, Application Error Dialogs and "Application is not responding" dialogs.

The ECM also allows you to disable the Network Fly Out, which defines whether you want your PC to be discovered in the network or not.

These features let you remove any unwanted notifications from Windows itself or other applications.



Power Settings

In the power settings, you can change the power profile to “high performance” to get the most power out of your hardware. The tool also allows you to configure the system, not to turn off the display after a given time and prevent it to go to sleep mode.

OneDrive

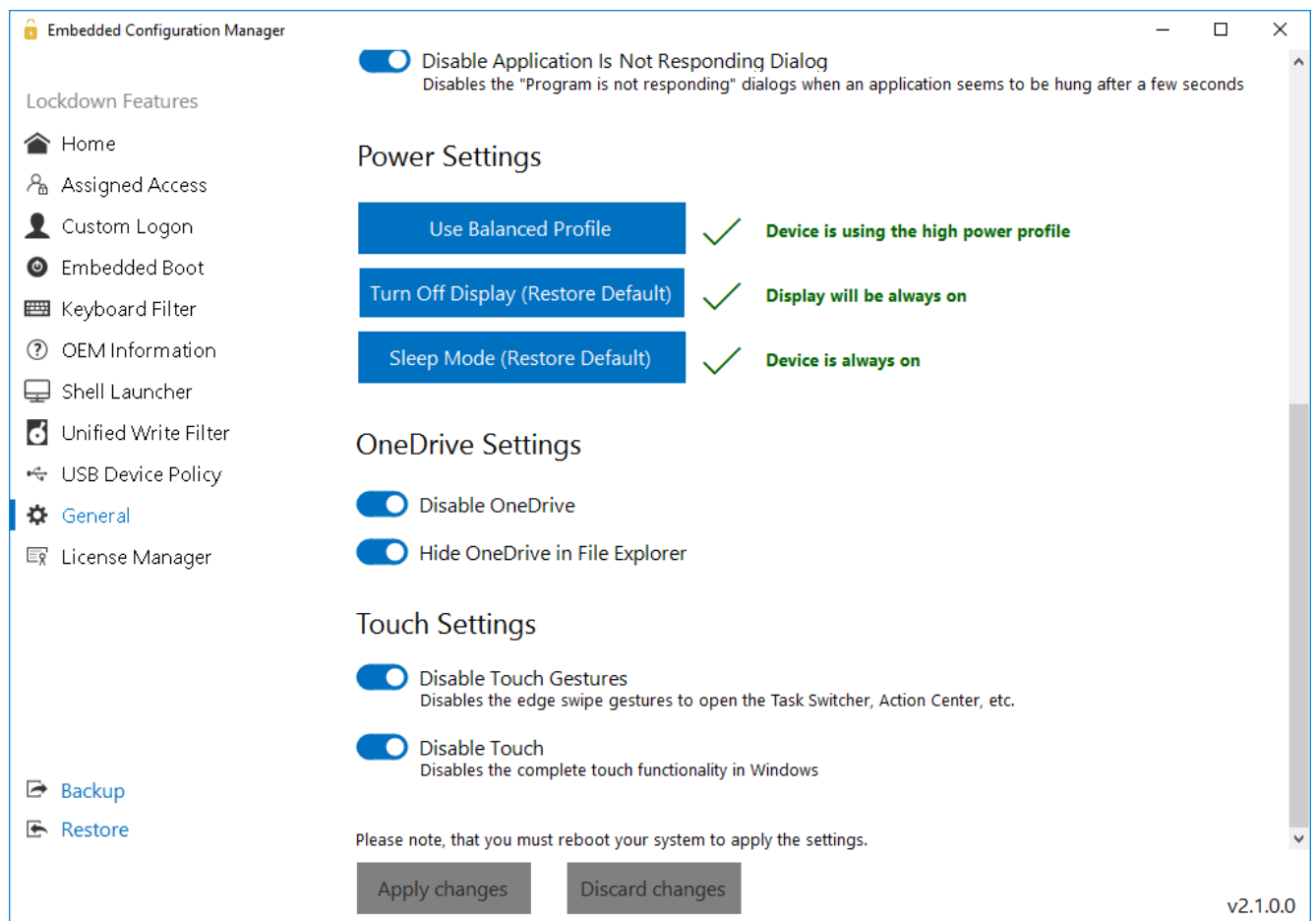
In most scenarios OneDrive is not needed on embedded devices. Therefore, the tool allows you to easily turn off OneDrive, so it does no longer run in the background and ask for a configuration.

In case OneDrive should not be disabled completely, the tool also supports to just remove OneDrive from the File Explorer and file open and save dialogs.

Touch Gestures

The tool allows you to disable touch gesture, such as swiping from the right side to open the Action Center. This is very helpful to ensure users stay within the application on touch-based devices.

It also allows to completely disable the whole touch functionality on a device. This can be useful on tablets where the touchscreen should not be used for interaction with the device.



The screenshot displays the 'Embedded Configuration Manager' application window. The interface includes a sidebar with navigation options: Home, Assigned Access, Custom Logon, Embedded Boot, Keyboard Filter, OEM Information, Shell Launcher, Unified Write Filter, USB Device Policy, General (selected), and License Manager. At the bottom of the sidebar are Backup and Restore options.

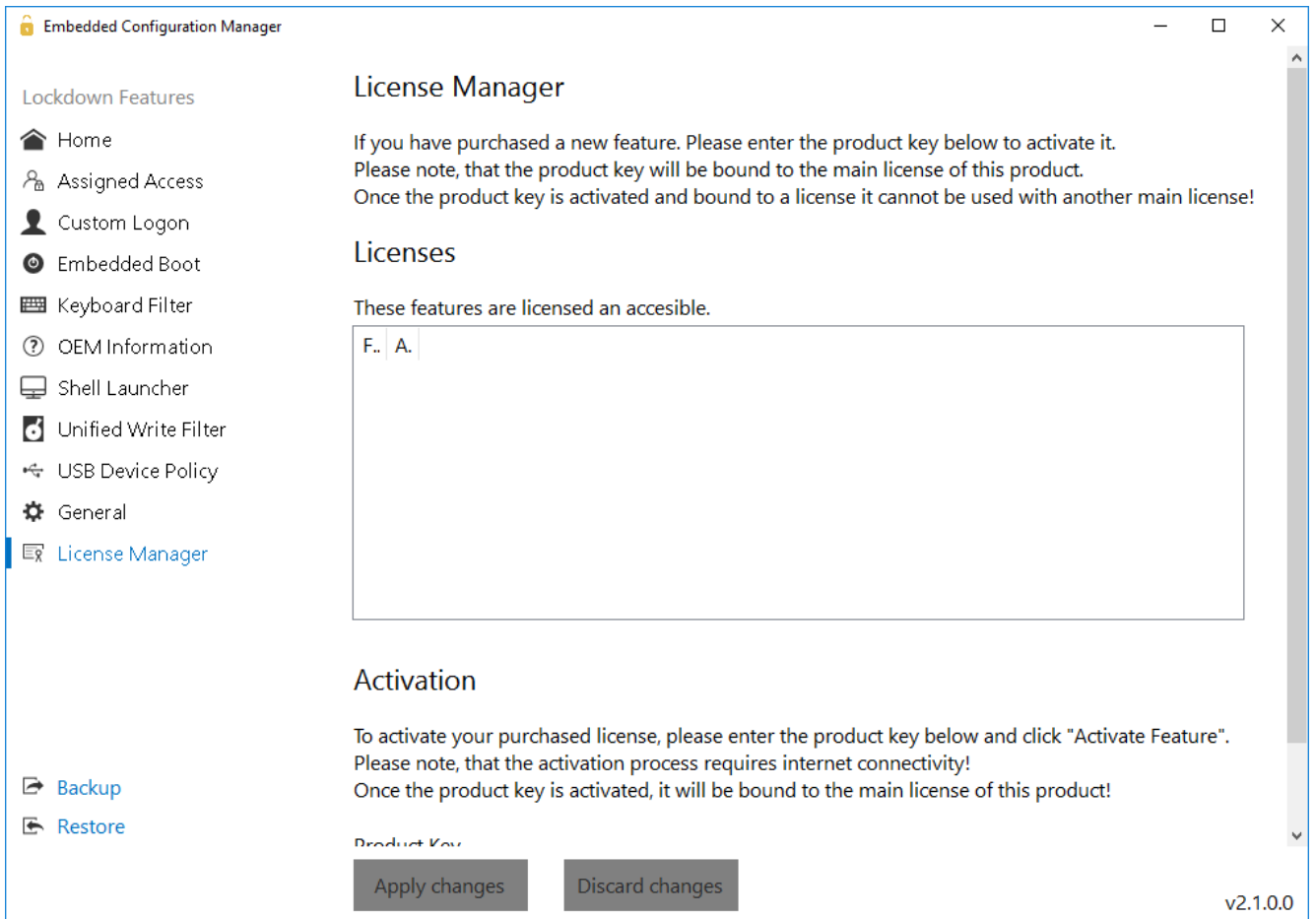
The main content area is divided into several sections:

- Disable Application Is Not Responding Dialog:** A toggle switch is turned on. Description: Disables the "Program is not responding" dialogs when an application seems to be hung after a few seconds.
- Power Settings:** Three blue buttons with status indicators:
 - Use Balanced Profile:** Status: Device is using the high power profile.
 - Turn Off Display (Restore Default):** Status: Display will be always on.
 - Sleep Mode (Restore Default):** Status: Device is always on.
- OneDrive Settings:** Two toggle switches, both turned on:
 - Disable OneDrive
 - Hide OneDrive in File Explorer
- Touch Settings:** Two toggle switches, both turned on:
 - Disable Touch Gestures: Disables the edge swipe gestures to open the Task Switcher, Action Center, etc.
 - Disable Touch: Disables the complete touch functionality in Windows.

At the bottom, a note states: "Please note, that you must reboot your system to apply the settings." Below this note are two buttons: "Apply changes" and "Discard changes". The version number "v2.1.0.0" is displayed in the bottom right corner.

Import / Export Feature & License Manager

You can export all settings into an XML file. This allows you to create several configuration templates that can easily be imported to other machines.



The screenshot shows the 'License Manager' window within the 'Embedded Configuration Manager' application. The window title is 'Embedded Configuration Manager'. On the left, there is a navigation pane under 'Lockdown Features' with the following items: Home, Assigned Access, Custom Logon, Embedded Boot, Keyboard Filter, OEM Information, Shell Launcher, Unified Write Filter, USB Device Policy, General, and License Manager (which is currently selected). At the bottom of the navigation pane are 'Backup' and 'Restore' options.

The main content area is titled 'License Manager' and contains the following text:

If you have purchased a new feature. Please enter the product key below to activate it.
Please note, that the product key will be bound to the main license of this product.
Once the product key is activated and bound to a license it cannot be used with another main license!

Below this text is a section titled 'Licenses' with the subtext 'These features are licensed an accesible.' (Note the typo 'accesible'). Underneath is a large empty text box with a few characters 'F.. A.' visible at the top left.

Further down is an 'Activation' section with the following text:

To activate your purchased license, please enter the product key below and click "Activate Feature".
Please note, that the activation process requires internet connectivity!
Once the product key is activated, it will be bound to the main license of this product!

At the bottom of the main content area, there is a 'Product Key' label and two buttons: 'Apply changes' and 'Discard changes'.

The version number 'v2.1.0.0' is displayed in the bottom right corner of the window.