



SuperNova Enterprise and Professional Guide



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1 Introduction

This guide provides information on the installation and configuration of SuperNova Enterprise and Professional.

Applicable versions: v24

Throughout this guide the following terminology is used:

1. "Dolphin Software" refers to SuperNova Magnifier & ScreenReader, SuperNova Magnifier & Speech, SuperNova Magnifier, SuperNova Professional, SuperNova Enterprise, and Dolphin ScreenReader.
2. "SAM" refers to "Synthesizer Access Manager". This is a Dolphin software component that provides communication between SuperNova/Screen Reader and Speech Synthesizers/Braille displays.
3. "TTS" refers to "Text To Speech engine". This is the software/hardware synthesizer that generates speech. Examples of TTS engines are Dolphin Orpheus, Eloquence, Vocalizer, Vocalizer Expressive and SAPI5.

2 Server and Client requirements and configurations

This section details the Dolphin Software requirements for the server and clients.

2.1 Configurations supported by Dolphin Software

The server configurations supported by Dolphin Software:

- Microsoft Windows 2022 64bit Server.
- Microsoft Windows 2019 64bit Server.
- Microsoft Windows 2016 64bit Server.
- Microsoft Windows 2012 R2 64bit Server.

Remote working environments supported by SuperNova Enterprise edition:

- Citrix Virtual Apps and Desktops (formerly XenApp and XenDesktop) 5.5 and later (Latest Citrix environments tested: <https://kb.yourdolphin.com/knowledge/citrix-virtual-apps-desktops>)
- Remote Desktop (Windows 2012 R2 and later)
- VMWare Horizon 6.7 and later

Local and remote machine requirements:

<https://yourdolphin.com/product/system-requirements?pid=17>

Other versions of the remote environments may work but have not been tested extensively.

Servers with Citrix installed can use both ICA and RDP protocols, however the ICA protocol is recommended.

2.2 Client specifications supported by Dolphin Software

Dolphin Software can be configured to work with both thick and thin clients. The recommended system requirements are as follows:

For a thick client:

- Processor - Multi-Core Intel Pentium, Xeon, or i-series processor or AMD. Recommended dual core 2.4 Gigahertz (GHz) or faster 32-bit (x86) or 64-bit (x64) processor. Note: Operating System and other running applications should be considered.
- Memory - 2 GB or higher.
- Video/Graphics display - ideally a dedicated AGP/PCI-E compatible GPU with 256 MB memory or higher.
- Audio - "add in" card or on board - this is only required if a SAM supported software synthesizer/TTS is to be used on the client.
- Hard disk - 5 GB of free space - this depends upon which (if any) software synthesizer/TTS is being used.
- Serial ports - if serial hardware synthesizer/TTS and Braille displays are to be used then 1 serial port for each device will be required.
- USB ports - if USB hardware synthesizer/TTS and Braille displays are to be used then 1 USB port for each device will be required.
- Operating system - Windows 7, Windows 8.1 or Windows 10.

For a thin client:

- USB ports - if USB hardware synthesizer/TTS and Braille displays are to be used then 1 USB port for each device will be required.
- Operating system - Embedded Windows 7, Windows 8.1 or Windows 10.

2.3 Client software versions supported by Dolphin Software

The following client software versions are supported:

- ✓ Citrix Workspace
- ✓ Citrix Receiver 4
- ✓ Citrix Receiver 3
- ✓ Citrix Quick Launch
- ✓ Remote Desktop Services in Windows Server 2012 R2 and later
- ✓ Remote Desktop support for Windows 10 and Windows 8.1
- ✓ VMWare Horizon Client 3.5, 4.10 (x86 and x64) and later

Note: Many Thin clients may have an older version of the Citrix ICA Client installed, if possible, this should be updated to version 11.x or later, however if this is not possible then earlier client versions should work if run in "full screen" mode.

Certain versions of the ICA protocol claim to support audio redirection. Therefore, it is possible to run a Text To Speech (TTS) engine on the server and pipe the audio to the client. However, in our opinion the excessive audio latency introduced by the network means that this is not a practical solution for a screen reader and therefore is not recommended.

The colour settings for the client need to be "24 bit" or higher.

Note: All of the client terminals connected to a particular server do NOT have to be the same.

ICA protocol supported configurations

Supported Client Terminals	Software on the Client.	Supported Options	Requirements
Windows Desktop PC (Window 8.1,10, 11), ICA client version 10 to latest Workspace.	SAM 2.x (required for Speech or Braille); Dolphin Orpheus TTS (optional). Eoquence (optional). Vocalizer Expressive (optional). SAPI (optional).	Software Speech (All SAM devices)	SAM and Text To Speech (TTS) engines (Dolphin Orpheus, Eloquence, Vocalizer, Vocalizer Expressive, SAPI) to be installed on the clients. Sound card.
		Hardware Speech (All SAM devices)	USB/Serial port.

		Braille (All SAM devices)	USB/Serial port.
		Basic Magnification.	
Windows Desktop PC (Window 8.1, 10, 11), ICA connection client version 10 to latest Workspace.	None.	Hardware Speech (All SAM serial devices)	USB/Serial port. ICA port mapping.
		Braille (All SAM serial devices)	USB/Serial port. ICA port mapping.
		Basic Magnification.	
Thin Client ICA connection client version 11	None.	Hardware Speech (All SAM serial devices)	USB/Serial port. ICA port mapping.
		Braille (All SAM serial devices)	USB/Serial port. ICA port mapping.

RDP protocol supported configurations

Windows desktop PC (Windows 8.1, 10 and 11),	Dolphin SAM version 2.x (required for speech or Braille output). Dolphin Orpheus TTS (optional). Eoquence (optional). Vocalizer (optional). SAPI (optional).	Software Speech (All SAM devices)	SAM and and SAM directly driven Text To Speech (TTS) engines (Dolphin Orpheus, Eloquence, Vocalizer, Vocalizer Expressive, SAPI) to be installed on the clients. Sound card.
		Hardware Speech (All SAM devices)	Serial/USB port.
		Braille (All SAM devices)	Serial/USB port.
		Basic Magnification.	

Basic Magnification consists of all standard magnification features, however it is not as smooth or responsive as on a stand alone machine.

2.4 Technical Guidelines and Resource Metrics

The following are guidelines outlining Dolphin Software network bandwidth requirements. These requirements are per Dolphin Software user and must be considered in addition to any other requirements for the remote session and any other applications.

- CPU Usage: Maximum of 4 Dolphin Software users per CPU-core (approx 700Mhz per user), ideally 1 Dolphin Software user per CPU-core.
- Network Bandwidth: For magnification/Colour Scheme/visual effects: 5Mbit/sec
- Network Bandwidth: Sam Remote extensions: 50Kbits/sec
- Network audio (optional) 500Kbit/sec
- Network latency: < 10ms.
- Memory: 250MB per user - the memory requirements of third party applications that are used should also be taken into account.

In summary, the network bandwidth between the server and client ideally needs to be at minimum of 10Mbit/sec. Trying to run Dolphin Software over a client connected via a typical 2Mbit WAN is unlikely to be very successful due to the network latency and bandwidth sharing.

If you have a fast enough network, you should turn off data compression in the ICA/RDP protocol to increase performance.

3 Installation Instructions for Dolphin Software

This section describes the steps to install Dolphin Software onto a Server, VM and client. When performing the installation, you may find it useful to use the installation check lists found in [Appendix A](#) of this document.

3.1 Manual installation of Dolphin Software to a device

Perform an installation of your Dolphin Software

4. Logon as the Administrator or someone who has security equivalence.
5. Run the Dolphin installation program (DVD or Demo download).
6. Unlock with the software with the code provided by Dolphin to serialise the software.
7. Activate the software if requested.

3.2 MSI Deployment to devices

SuperNova can be obtained as an MSI installer package allowing for silent deployment to multiple devices. The MSI packages for each edition are available from the links below:

SuperNova Magnifier: <https://yourdolphin.com/product/networks?pid=1>

SuperNova Magnifier & Speech: <https://yourdolphin.com/product/networks?pid=2>

SuperNova Magnifier & Screen Reader: <https://yourdolphin.com/product/networks?pid=4>

Dolphin ScreenReader: <https://yourdolphin.com/product/networks?pid=3>

For the latest information on deploying SuperNova/Dolphin ScreenReader visit: <https://kb.yourdolphin.com/knowledge/deploy-supernova-to-end-user-devices>

For information on upgrading the Dolphin software and retaining users' settings: <https://kb.yourdolphin.com/knowledge/deploy-supernova-msi>

For the latest information on deploying your Enterprise license visit: <https://kb.yourdolphin.com/knowledge/deploy-enterprise-license>

3.3 Installation to a Windows Server

This section details the installation and configuration of the Dolphin Software on a device for connection via Microsoft RDS (Remote Desktop Services).

Install Dolphin Software

Perform an installation of your Dolphin Software and SAM - note you do not need to install Dolphin Orpheus TTS or the Vocalizer Expressive voices. To perform the installation follow the instructions below:

1. Logon as the Administrator or someone who has security equivalence.
2. Run the Dolphin installation program (Demo download or MSI package).

Installation of the Dolphin Interceptor on Windows Server 2012 R2, 2016 and 2019

There are no additional configurations required other than to restart the server following the installation of SuperNova.

Installation of the Dolphin Interceptor on Windows Server 2022

Following the installation set SuperNova to use the “Windows Graphic Capture” magnification mode, this option can be found in the SuperNova Enterprise Configuration Utility.

For further information on supporting Citrix Virtual Apps (formerly XenApp) refer to [Appendix D](#)

3.4 Installation to a Windows desktop

This section details the installation and configuration of the Dolphin Software on a machine for connection via Citrix Virtual Desktops and Apps.

Install Dolphin Software

Perform an installation of your Dolphin Software and SAM - note you do not need to install Dolphin Orpheus TTS or the Vocalizer Expressive voices. To perform the installation follow the instructions below:

1. Logon as the Administrator or someone who has security equivalence.
2. Run the Dolphin installation program (MSI package or Demo download).

Installation of the Dolphin Software to a Windows 10 device

There are no additional configurations required other than to restart the VM following the installation of SuperNova.

Installation of the Dolphin Software to a Windows 11 device

There are no additional configurations required other than to restart the VM following the installation of SuperNova.

3.5 Product activation for network version

Once the Dolphin Software is installed on the server, product activation is required in order to obtain a software licence for SuperNova. Without a software licence Dolphin Software will run for only 30 days.

WARNING - please ensure you review the End User Licence Agreement before activating SuperNova. Once the Dolphin Software has been activated a refund is not available.

1. Run the software as a user with administrator rights.
2. Click on the button to Unlock the software.
3. Enter the unlock code you have been supplied with.

Note: If you need to deploy the unlock code to several computers, please visit: <https://kb.yourdolphin.com/knowledge/deploy-enterprise-license>

3.6 Finalise SAM Server installation

Note: This step is not required with the installation of SuperNova Magnifier.

In order to make the network version of SAM visible to all users, you need to get SAM to create its registry keys. To do this locate the SAM installation folder as specified during the installation of SAM, e.g. C:\Program Files (x86)\Dolphin\SAM, then run the SAM.exe program.

Once SAM has been run for the first time on the server you need to give full access control for all terminal server users to the SAM registry keys in order to ensure that SAM is able to save the settings for each machine. This is performed using regedit. Set the permissions for HKEY_LOCAL_MACHINE\Software\Dolphin\SAM and all sub keys for all users to read/write/update.

Note: For 64-bit server versions the location would be HKEY_LOCAL_MACHINE\Software\WOW6432Node\Dolphin\SAM

Citrix Virtual Apps & Desktops 2109 and later will require that you disable the “Virtual Channel allow list” Policy.

The Policy can be located in the Citrix Studio > Policies > Create a new policy or edit the default policy used by the machines running SuperNova > Search for “Virtual Channel Allow List”.

3.7 Configuration of the client workstations

Note: No client configuration is required if you are installing SuperNova Magnifier, unless you would also like to install the software locally to work with locally installed applications.

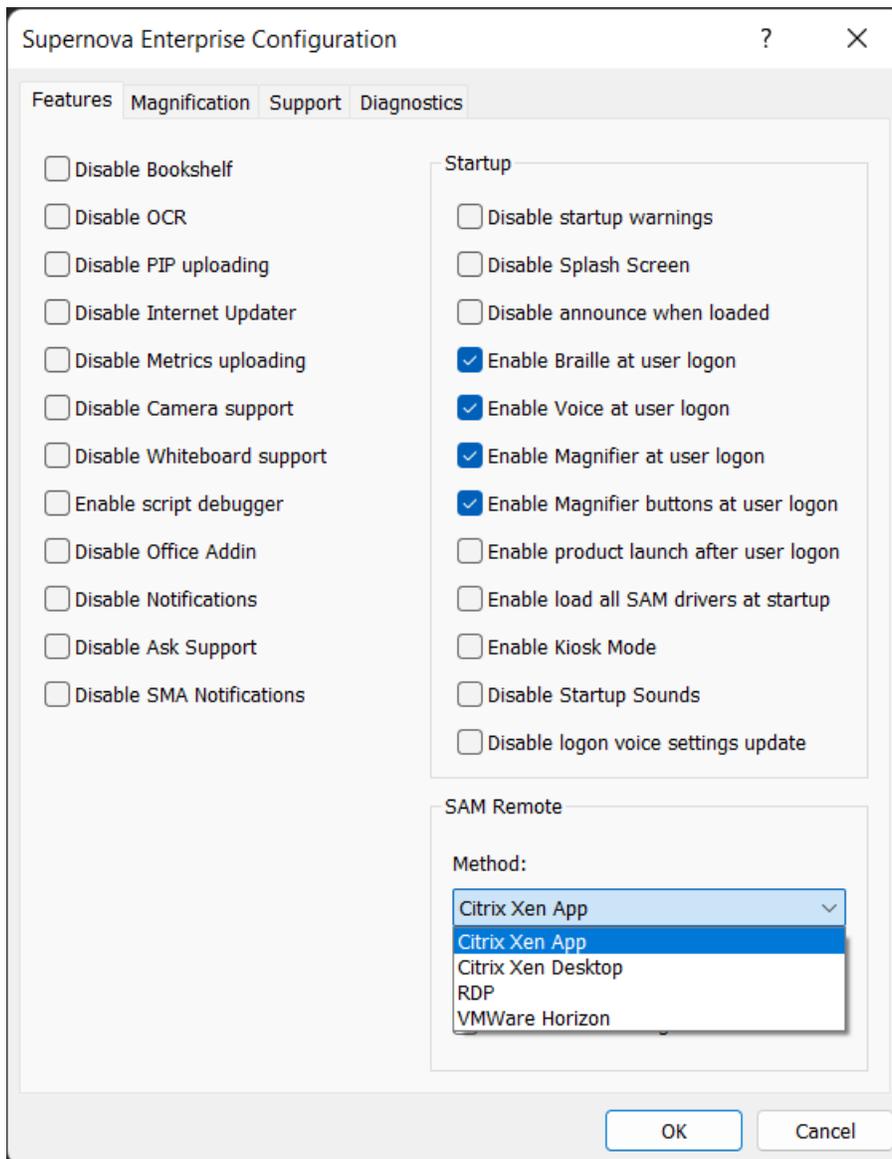
SAM client solution (all SAM supported devices)

Access to all SAM supported devices including software synthesizers (e.g. Orpheus) requires a Windows Desktop client.

SAM Terminal Server Extensions

SAM includes Terminal Server extensions which will allow the output devices such as speech synthesizers and Braille displays attached to a local computer, to be used by the Dolphin Software running within a Citrix, VMWare Horizon or Terminal Server session.

To configure the local workstation for the correct environment you need to launch the SuperNova Enterprise Configuration utility (enterpriseconfig.exe in the SuperNova installation directory) and then select your environment from the SAM Remote group in the Features tab sheet, once selected click on the “Configure” button, and then click on the OK button to close the utility.



See [Appendix C](#) for details on the changes made when clicking Configure.

Configuring Windows 10 and 11 VM to use the SAM Remote driver in a Citrix environment

To ensure the Citrix VM uses the SAM Remote driver you need to:

- Log on to the VM.
- Using REGEDIT make the following changes to the Windows registry:
 - Navigate to HKEY_LOCAL_MACHINE\SOFTWARE\Dolphin\SAM\RemoteDriver
 - Create a DWORD value called 'protocol'
 - Set the value data to '1'.

Note: Ensure that you have SAM 2.87 or later to enable support for the SAM remote driver in Citrix environments.

Configuring Windows 10 VM to use the SAM Remote driver in a VMWare Horizon environment

We recommend the use of the PCoIP or VMWare Blast protocols due to an intermittent issue with the RDP protocol in VMWare Horizon environments.

Enable the Terminal Server Remote Driver in SAM

To allow SuperNova to redirect audio to the local machine you need to enable the Terminal Server Remote Driver. To enable the driver, you need to:

- Launch SuperNova via a Citrix or Remote session.
- Open the SuperNova Control Panel (LEFT CONTROL + SPACE BAR).
- Open the General Menu > Advanced Options > SAM Setup.
- Ensure that “Terminal Server Remote Driver” is enabled.

3.8 Configure Dolphin Software for user logins

For users to be able to run the Dolphin Software when they login to a Citrix session there are a couple of settings that need to be made.

Create shortcuts to the Dolphin Software in the users Windows Start menu

For each user shortcuts will be needed to be made to the network installed Dolphin Software. These shortcuts should point to the executable (exe) file of the Dolphin Software in the product installation folder, the exe's are as follows:

SuperNova Magnifier & Screen Reader - Snova.exe.

Dolphin ScreenReader - Hal.exe.

SuperNova Magnifier - Lunar.exe.

SuperNova Magnifier & Speech - Lunpls.exe.

Set the user's Dolphin Software settings folder

The changes users make to SuperNova settings are saved in the user's Settings folder. The default location for this folder is:

```
%userprofile%\ AppData\Local\dolphin\[prod][ver] \Settings
```

Where [prod] represent the product name and [ver] represents the product version. For example, SuperNova Magnifier & Screen Reader version 22.04 settings are saved in the \.\SnovaSuite2204\Settings folder.

If user permissions mean that the above location is inaccessible, then you can change the folder location by adding an entry to the system registry.

You can load the user's settings path from either the HKLM or the HKCU branch, the default branch is HKCU, but this can be changed in the “Features” tab of the Enterprise Config Tool.

1. Create one of the following keys depending on your preference:
 - HKEY_CURRENT_USER\Software\Dolphin\Supernova2204
 - x86 OS: HKEY_LOCAL_MACHINE\Software\Dolphin\Supernova2204
 - x64 OS: HKEY_LOCAL_MACHINE\Software\Wow6432Node\Dolphin\Supernova2204

*You must modify the version number to match the version installed, for example, the key

must be Supernova2204 if you have SuperNova Magnifier & Screen Reader version 22.04 installed.

2. Create an expandable string value called "Settings".
3. Set the value data to be the folder location, for example, H:\Settings or %USERPROFILE%\SnovaSettings
4. Finally ensure that if you intend to load the key from HKLM that you have enabled the option in the Enterprise Config Tool.

Using a client installation of SAM

1. Create a Citrix session and SAM will automatically start on the local machine.
2. Once logged in, start the Dolphin Software. "Sam installed" will be spoken by any local synthesizers.
3. The Dolphin Software will probably default to using the first synthesizer available which will usually be the version of Vocalizer Expressive installed on the terminal server. This will be sluggish as audio is being sent across the network.
4. From the Dolphin Software control panel select an alternative voice post-fixed with "(terminal)". This will use the device installed locally, which will be more responsive.

3.9 Operation Instructions

Basic operation of Dolphin Software within the Citrix session is the same as on a desktop machine, with the following exceptions:

Interceptor Status Errors

If the Interceptor is not properly installed, you will get a message telling you so. However, despite what the message says, it will NOT automatically install the Interceptor. The System administrator needs to do this on the server.

Audio Problems

If you attempt to run a TTS engine on the server and use the audio redirection facility of RDP or ICA to send the sound to the client terminal, you will get unsatisfactory results such as audio clipping. This is not a supported installation scenario.

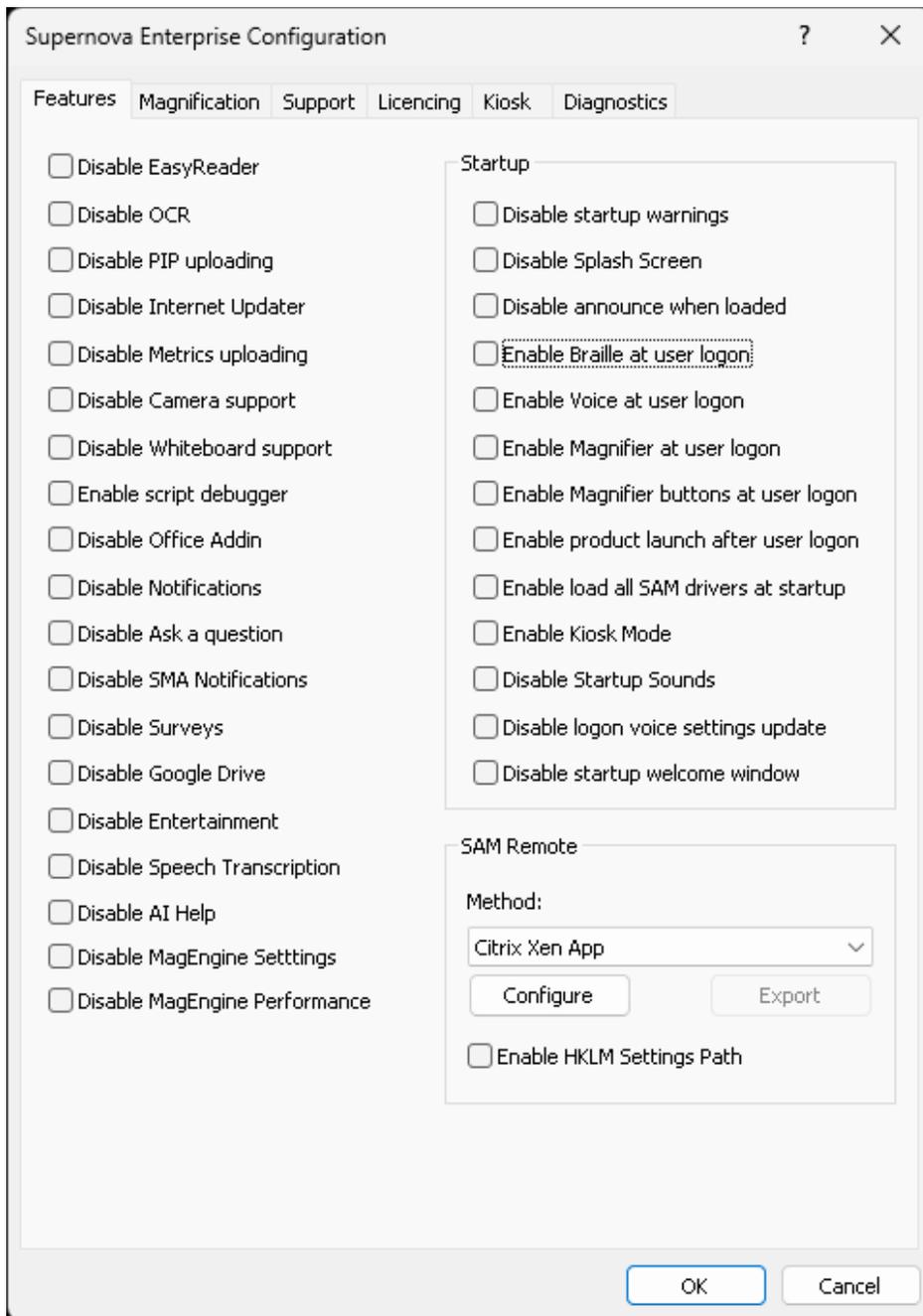
4 Enterprise Configuration Utility

The enterprise configuration utility is a tool for Administrators to restrict access to features of SuperNova, adjust advanced settings for performance and allow logging to be enabled when troubleshooting issues.

The enterprise configuration utility can be found in the SuperNova installation directory on the server (by default C:\Program Files (x86)\Dolphin\SnovaSuite2301).

4.1 Features

This dialog allows administrators to disable features of SuperNova that they do not want users to have access to, and to configure the startup preferences for SuperNova.



Disable EasyReader

Hides and disables access to the EasyReader application via SuperNova.

Disable OCR

Hides and disables the OCR functionality, including OCR from camera and PDF.

Disable PIP Uploading

Turns off the product improvement program. The PIP uploads anonymous statistical usage data to Dolphin to help us understand how users use the product.

Disable Internet Updates

Disables and hides the internet update settings and functionality. This includes product updates and map file updates.

Disable Metrics uploading

Disables metrics telemetry. Metrics are sent to dolphin that record session time and MTBF statistics to help us improve the product.

Disable Camera Support

Disables the camera interface in Connect and View.

Disable Whiteboard Support

Disables whiteboard support which normally allows Supernova to connect to a VNC Server elsewhere on the local network.

Enable script debugger

If enables, the script debugger will be launched to debug problems with scripts.

Disable office Addin

The Office addin is an Office helper component that loads into Microsoft office and allows us to access the Office object model quicker.

Disable Notifications

Disables push notification messages that may be sent from Dolphin. This includes messages during a 30-day demo.

Disable Ask Support

Disables the ask support feature, which allows users to send a message directly to Dolphin support.

Disable SMA Notifications

Disables the Software Maintenance Agreement notifications, which allows users to be notified when the SMA is due to expire or has expired.

Disable Surveys

Disables in product satisfaction feedback surveys.

Disable Google Drive

Disables the ability to store files from the Scan & Read feature in a Google Drive.

Disable Entertainment

Disables the entertainment group in the product, this includes access to Books, News, Radio Stations and Podcasts.

Disable AI Help

Disables the AI Help features in Help by removing all access to the feature.

Disable MagEngine Settings

Disables the Magnification Engine options in the SuperNova Control Panel > General > Advanced Options.

Disable MagEngine Performance

Disables the Magnification Engine performance options in the SuperNova Control Panel > General > Advanced Options > Magnification Engine Options.

Startup

Disable Startup Warnings

This will disable all startup warning messages, including messages about colour depth and if you are using the Microsoft Basic display driver.

Disable Splash Screen

Does not display the splash screen.

Disable announce when loaded

Does not say “Supernova loaded” when it is ready.

Enable Braille at user logon

Enables braille support for the logon screen reader.

Enable Voice at user logon

Enables Speech at the logon prompt.

Enable Magnifier at user logon

Allows the user to magnify the logon screen - using F7 and F8.

Enable Magnifier buttons at user logon

Displays the mini 2 button control panel on the logon desktop.

Enable product launch after user logon

Runs Supernova when the user has logged on

Enable load all SAM drivers at startup

When enabled, all SAM drivers (Synthesiser and Braille) are loaded. When disabled, only the driver(s) you last used will be loaded.

Enable Kiosk Mode

When enabled SuperNova will support kiosks, requires additional development and support. If Kiosk mode is required, please contact Dolphin for additional support and information.

Disable Startup Sounds

When the setting is enabled the sounds that are emitted when loading SuperNova will be disabled.

Disable logon voice settings update

When the setting is enabled the voice settings used on the login screen will be locked so that users cannot make changes.

Disable startup welcome window

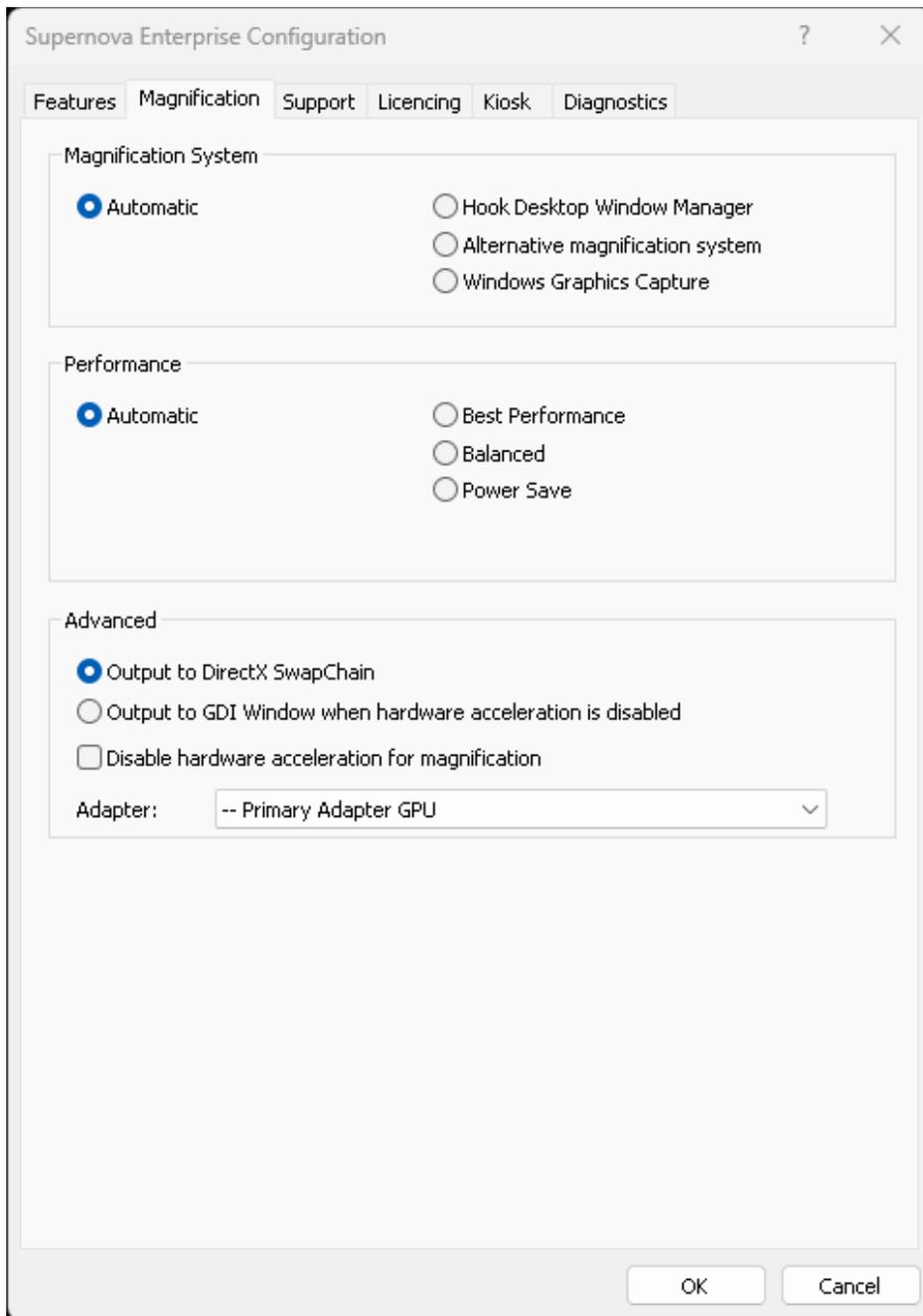
When the setting is enabled the initial help window is not shown when launching the software. This setting can be controlled on an individual level should some users find this useful.

SAM Remote

This is used to setup Sam to work in Terminal server and Citrix environments.

4.2 Magnification

This dialog contains settings that can be adjusted to improve magnification performance.



Magnification System

These settings are used to select the Magnification engine used in SuperNova. The correct mode for your environment should be automatically selected, however this option allows you to change in the mode in the event of any issues. We do not recommend altering this setting unless advised to do so.

Hook Desktop Window Manager

Supernova will hook into the desktop window manager to capture the desktop and replace it with a magnified image. This is efficient and the recommended method. It may not work on remote desktop systems.

Use Alternative magnification system

The alternative system will work in any configuration, including remote desktops, however it may use more CPU/GPU and not run at quite as high a frame rate as hooking the desktop manager.

Windows Graphics Capture

This is the latest method introduced with the release of SuperNova v24, this method requires the CaptureService to be enabled and supported in Windows to function.

Performance

The recommended settings will be applied automatically for performance. Adjusting this setting will affect how the magnification performs and how much power is used on the device. We do not recommend altering this setting unless advised to do so.

Best Performance

This setting will use the most power on the device but will also provide the best performance.

Balanced

This setting will use a mix of performance and power.

Power Save

This setting will use the least amount of power but will show a reduced performance under certain circumstances.

Output to DirectX SwapChain

This is the default setting and should be used for optimal performance if hardware acceleration is enabled and you have a physical GPU.

Output to GDI Window when hardware acceleration is disabled.

If hardware acceleration is disabled it may be more efficient for Supernova to write directly to a GDI window, instead of copying frames to a swapchain. Citrix users should test this setting to see if it is better on or off.

Adapter

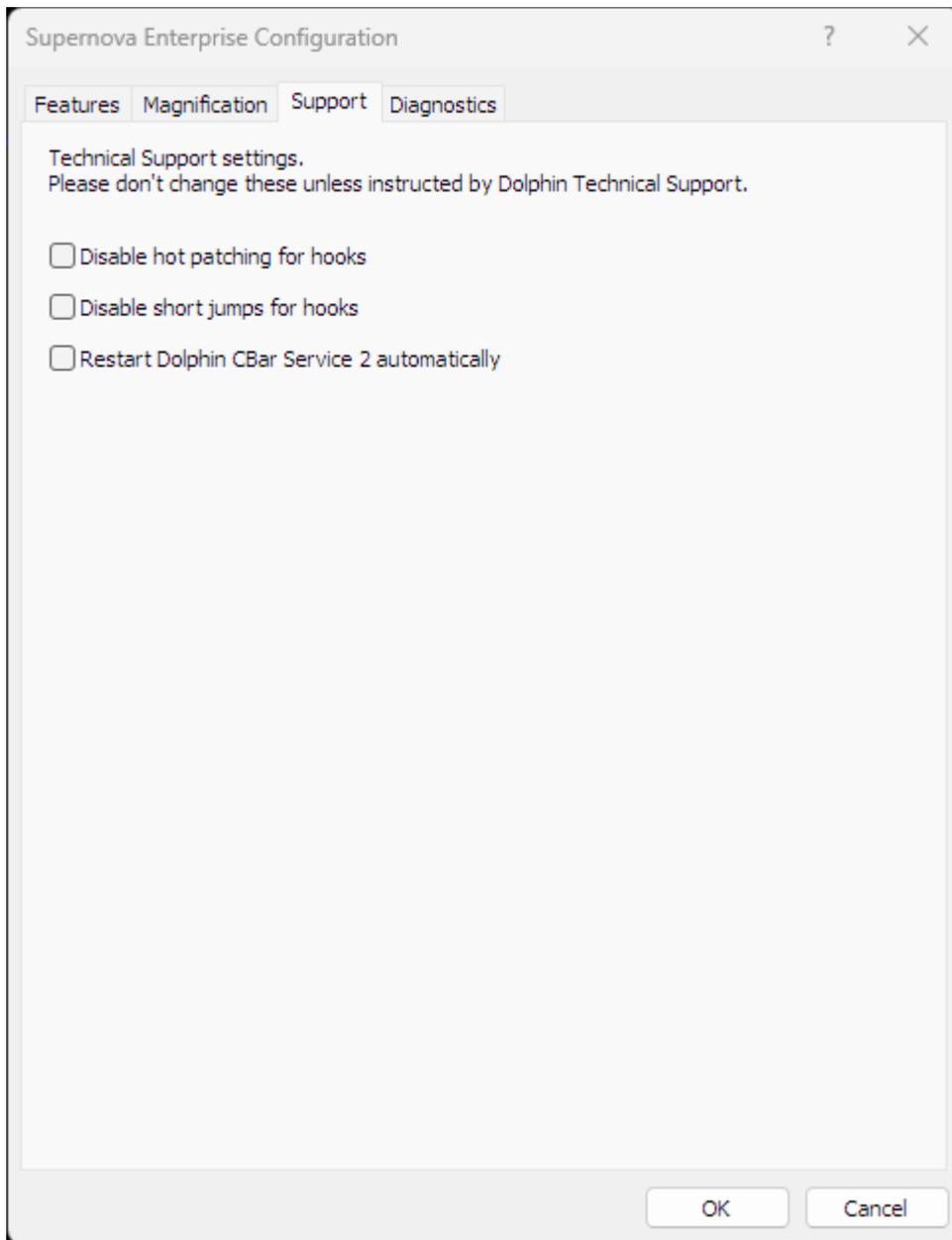
Choose which GPU Supernova should use. On most PC's there is only one GPU, so this is irrelevant. Supernova will normally choose the "default" GPU, whichever one that is. On a server with a GPU (e.g. NVIDIA Grid), you may have to manually choose the GPU, otherwise Supernova may pick the default software emulated GPU.

The "Primary Adaptor" is the adaptor that is connected to the primary monitor. The "Default Adaptor" is the adaptor that is the default one for applications. Usually this is the same as the primary adaptor.

You may edit the registry key manually and include wildcard characters (? and *). EnterpriseConfig will not overwrite the registry key unless you choose a different setting from the pull down.

4.3 Support

The settings in this dialog should only be used when advised by Dolphin Support. Incorrect use could result in reduced accessibility in some applications.



Disable hot patching for hooks

Supernova uses hot patching to hook functions. This is the most reliable method of hooking; however, it can have compatibility problems if you have another application that is also hooking but is not aware of hot patches (e.g. NVDA). Try turning this on if you experience application crashes when running in conjunction with other applications.

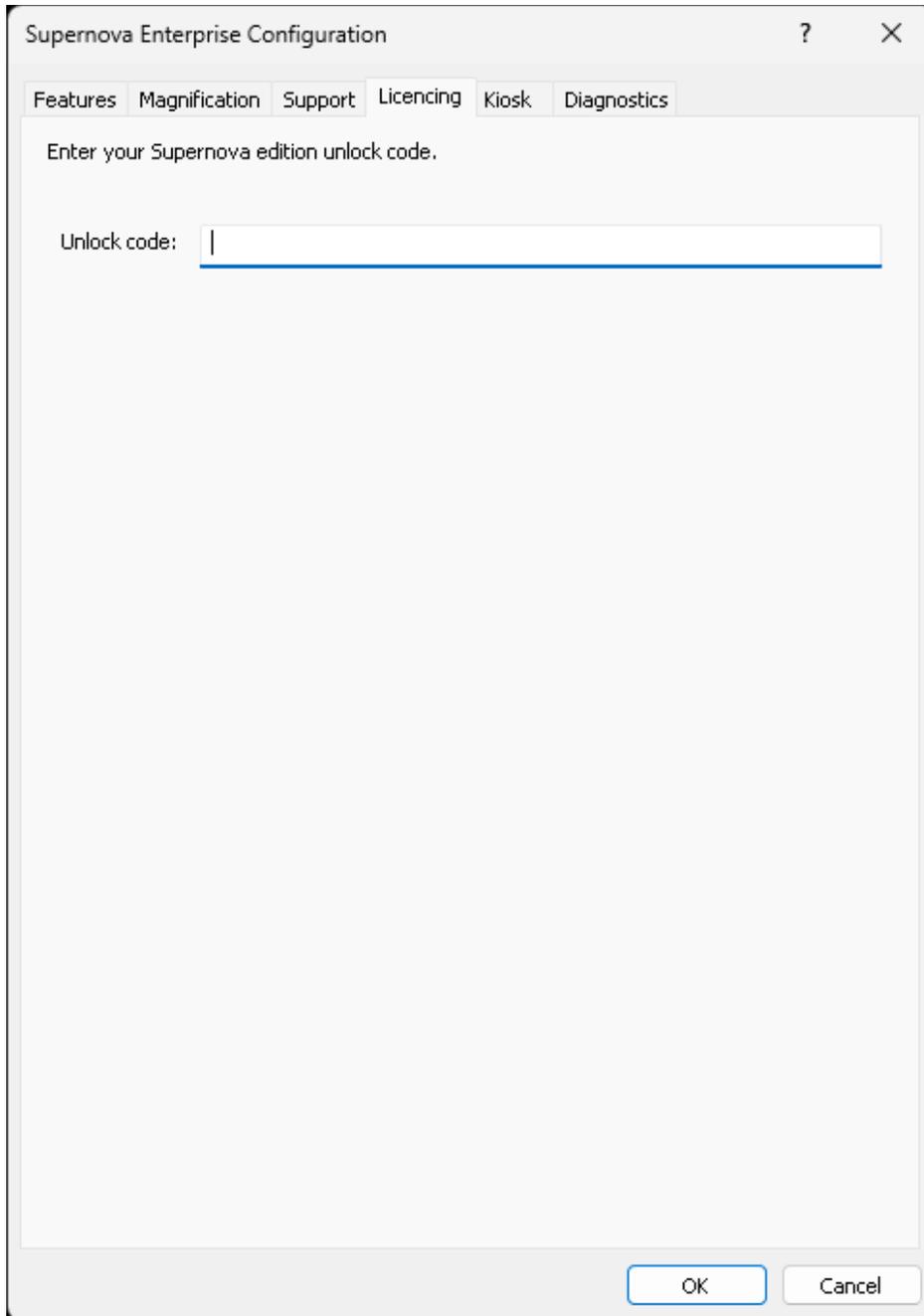
Disable short jumps for hooks

This only applies to 64-bit code. Supernova can use a long jump (14 bytes) or a short jump (5 bytes) to hook a function. The shorter the jump code, the more reliable it is. However, you can have compatibility problems if you have another application that is also hooking but is not aware of short jumps. Enabling this will force Supernova to use long jumps for hooking.

Restart Dolphin CBar Service 2 automatically

If this is turned on, the Dolphin CBar service will be set to restart automatically if it goes wrong or gets terminated. This may be useful in some terminal server environments.

4.4 Licensing



This dialog enables an administrator to unlock the installed software and then export the license to be deployed to other devices, for more information visit:

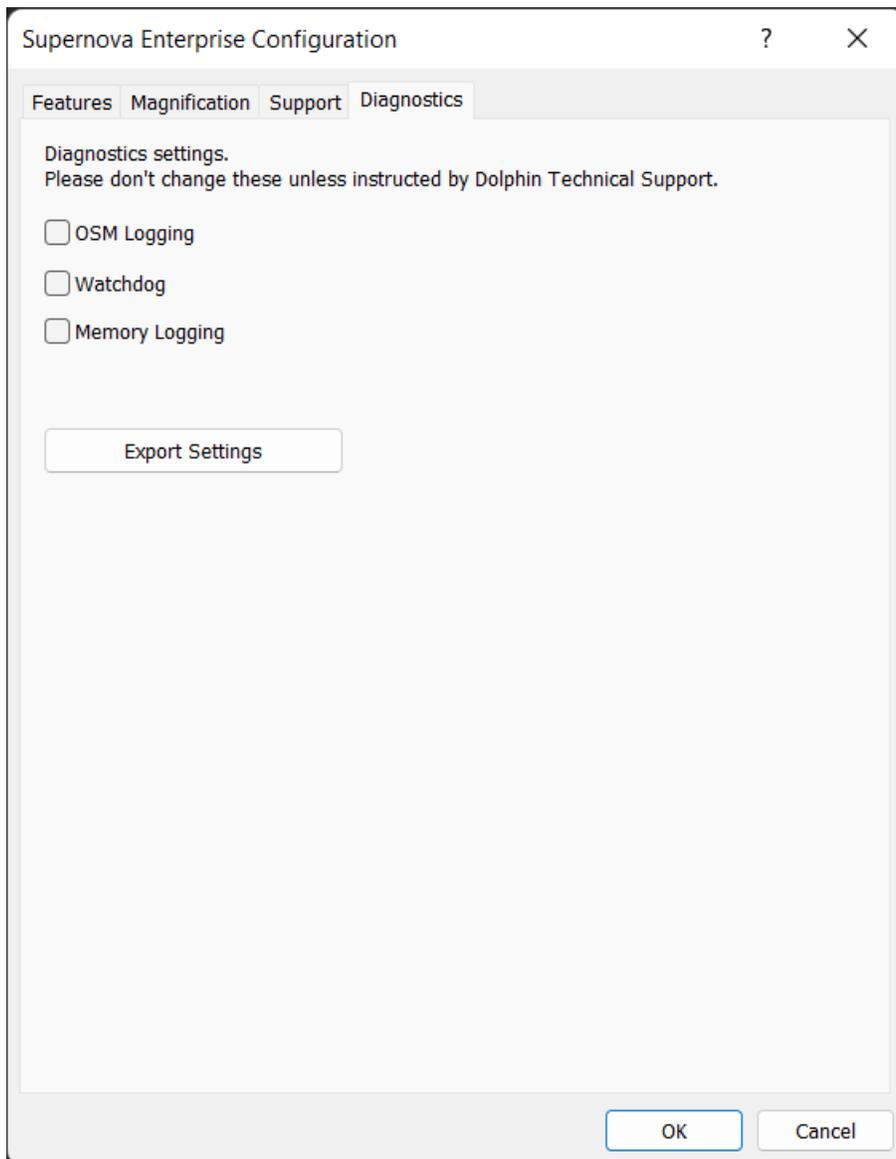
<https://kb.yourdolphin.com/knowledge/deploy-enterprise-license>

4.5 Kiosk

These settings are for our Kiosk implementation, we do not recommend using these settings unless advised to do so as part of a Kiosk implementation.

4.6 Diagnostics

This dialog enables an administrator to collect log files to aid in diagnosing the cause of any issues experienced, only use these if instructed to do so by Dolphin support.



OSM Logging

This can be used to help Dolphin diagnose problems with the off-screen model. To use, create a directory on your desktop named “osm” and turn this on. Supernova will create an OSM log as a single large file in this directory. This file can be sent to Dolphin to help fix issues.

Watchdog

If this is turned on, Supernova will enable a watchdog feature that monitors its internal threads and generates a crash dump if anything hangs, the crash logs will be created in %PUBLIC%\Documents.

Memory logging

This will cause Supernova to create a memory usage log file and can be used to help check for and diagnose memory leaks. The text files “memory_osm.txt”, “memory_sit.txt”, “memory_newdel.txt” and “memory_main.txt” will be created in the %temp% directory. By default, the logs are updated every 60 seconds, if you launch SuperNova with the switch command “-memory_diag 30000” you can change the frequency to every 30 seconds (the frequency number is milliseconds).

Export Settings

This button will save a .reg file of the current settings allowing you to import the settings into other machines.

5 Troubleshooting

This section provides solutions to common problems and offers answers to some frequently asked questions. The information provided is not in any order of priority.

Q. What accessibility limitations should be expected?

Dolphin Software will offer speech, Braille and basic magnification support in a thick client's Citrix server environment. Basic Magnification consists of all standard magnification features; however, magnification may not be as smooth or responsive as on a standalone computer. Magnification is not supported on a thin client.

Q. How do I fix the appearance of two mouse pointers in the Citrix session?

To resolve this issue, carry out the following suggestions in turn testing after each by restarting the session:

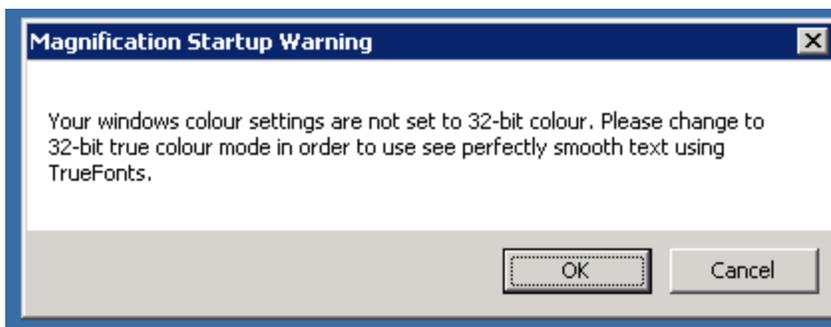
1. Try changing the Windows Theme to Windows Basic or Classic Theme.
2. In the Citrix Studio set the “Desktop Composition Redirection” policy to disabled (this can be found in the “Desktop UI” group).
3. In the SuperNova Enterprise Config Tool select the “Magnification” tab sheet and then select an alternative display adapter from the “Adapter” pull down list box - restart the server and then test.
4. Reduce MouseTimer setting in the ICA Client:
Changing this setting will cause more frequent redrawing of the Citrix screen that should improve mouse performance.
 - On the thin/thick client open the registry editor.
 - Navigate to HKEY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\Citrix\ICA Client\Engine\Lockdown Profiles\All Regions\Lockdown\Virtual Channels\Mouse.
 - Change the value of MouseTimer from ‘*’ to a value less than ‘10’ - I recommend ‘1’.
 - Restart the ICA Client/receiver.
5. Mouse pointer shadows:
Enabling this will force a server-side rendered mouse pointer in Citrix.
 - On the thin/thick client and on the VM...
 - Open the windows control panel.
 - Open the Mouse applet and select the ‘Pointers’ property sheet.
 - Select the ‘Enable pointer shadows’ check box to turn the shadows on for the client.You may also want to enable this on the VM also.

Q. How to configure SAM to use a client device?

- Create a session on the Citrix server. Sam should automatically start on the local machine.
- Once logged in, start the Dolphin Software. "Sam installed" will be spoken by any local synthesizers.
- The Dolphin Software will default to using the first synthesizer on the Citrix server. This will be sluggish as audio is being sent across the network.
- From the Dolphin Software control panel select an alternative voice post-fixed with "(terminal)". This will use the device installed locally, which will be more responsive.

Q. When I start SuperNova on the server a “Magnification Starting Warning” message is displayed stating -

“Your Windows Colour settings are not set to 32-bit colour. Please change to 32-bit true colour mode in order to see perfectly smooth text using TrueFonts”



This message always pops up when connecting to a Terminal server via RDP even though 32-bit colour is set on both client and server.

Solution: The depth in the client and the display properties may say 32-bit, but it is not actually set to this. The server properties or group policy can override this. To resolve this, please refer to the article <http://technet.microsoft.com/en-gb/library/cc772048.aspx>

Q. When I start SuperNova in a Citrix session “Magnification Starting Warning” message is displayed stating -

“We’ve detected that you are using the Microsoft Basic Display Adaptor. Your Assistive technology will work best if you install a display driver for your video card. Try running Windows Update to find one or download one from your device manufacturer’s website.”



This message will be displayed in certain Citrix Environments due to issues detecting the display device. To prevent this message from being displayed open the Enterprise Configuration Utility from the SuperNova directory (enterpriseconfig.exe) and in the 'Features' tab select 'Disable startup warnings'.

Q. When I start a Citrix or Remote Desktop session with Windows Server 2012 R2, and my client machine is using Multiple Monitors the session freezes?

As a temporary workaround for this issue either configure Citrix or the Remote session to use a single monitor or ensure that the session is not running in full screen and instead extend the Window to cover the multiple monitors.

Q. SAM is installed locally but it does not run when I start the Dolphin Software. Why?

Make sure that you have permissions on the client to install the registry entries for SAM, e.g. HKEY_LOCAL_MACHINE/SOFTWARE/DOLPHIN/SAM with the PIIK and PIIK2 values and ensure this key is present. If it is not present, then log on as administrator and install SAM.

Q. Magnification Error Code 7 on start up?

Open the Enterprise Configuration Tool and switch to the Alternate Magnification Mode and then restart SuperNova.

Q. Error code 2 is displayed when loading SuperNova on a Citrix Windows 7 VM?

To resolve the issue, open the Enterprise Config tool on the VM and select the Magnification Tab, then for the Adapter pull down select "Default Adapter GPU".

Q. Intermittent hanging on Windows Server 2012 when running SuperNova in a remote session?

An intermittent hang can occur in the "d3d10warp.dll" (software emulated GPU) if you have not disabled the hardware acceleration for Magnification when there is no physical GPU available to the session. To resolve this issue, open the SuperNova Enterprise Configuration Utility "Magnification" tab sheet then enable the "Disable hardware acceleration for magnification" checkbox before clicking OK and launching SuperNova.

Q. When I use the Dolphin Software in a Citrix session there is no speech/braille, and I am unable to select any devices"?

1. This may be caused by the SAM Terminal Server Extensions not being correctly configured on the client.

To check this, when you start the Citrix session look in the local Windows System tray to see if SAM loads. If SAM is not loading, then check through the installation instructions in the sections of this guide for “SAM Terminal Server Extensions”, specifically check the changes that have been made to the module.ini file or the Citrix Client registry keys created/updated and ensure that the Samremote.dll file has been copied to the Citrix Client/Receiver program directory.

2. This issue could be due to the user/group not having the required permissions to use Virtual Channels. To resolve this, you need to:
 - Log on to the Citrix Server as an administrator.
 - Open the ‘Remote Desktop Session Host Configuration’ (or Terminal Services Configuration).
 - Open Properties for the ‘ICA-TCP’ connection.
 - Select the ‘Security’ Tab sheet.
 - Click on the ‘Advanced’ button.
 - Select or add the group or individual users.
 - Click on the ‘Edit’ button.
 - Ensure that ‘Virtual Channels’ is set to ‘Allow’.
 - Apply any changes and then terminate any Citrix Sessions before testing.

3. The SAMRemote may be configured correctly but may not load if there are too many Virtual drivers being loaded by the client. Adjust the order in which the Virtual Drivers on the client machine load so that the SAMRemote driver is called earlier in the loading process, to do this you need to:
 - On the client open the registry editor.
 - Navigate to ‘HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Citrix\ICA Client\Engine\Configuration\Advanced\Modules\ICA 3.0’.
 - Open the VirtualDriver string value.
 - Move SamRemote so that it loads after the initial ‘ThinWire’ virtual driver.
 - Save the changes and ensure that any local Citrix sessions are restarted.

Q. I want to use the Dolphin Software from a Citrix Server session within another Citrix Server session, but I get no speech or Braille.

To have speech and Braille running from a session within a session you first need to copy the samremote.dll (which you copied to the local SAM folder) to the SAM folder on the Citrix server.

Then from within the Citrix session you need to add the additional registry key, this is done in the same way as when the local SAM registry entry was added but this time point the path for SAM to SAM on the Citrix server. This registry entry would need to be done for each additional Terminal Server session that you wanted to use the Dolphin Software in, but you could just do one registry entry export it and then import it on each additional terminal server session.

When you are within the session within the session the synthesizer or Braille display would list as (Terminal) (Terminal) so if you went to the Dolphin Software control panel and then Configuration and then Braille or synthesizer it would list it as (Terminal) (Terminal).

Q. After installing the Dolphin Interceptor, I can no longer start a new Citrix session to the server?

Please reboot the server if this occurs.

If the fault persists, refer to Appendix B to disable or remove the Dolboot driver and consult with your Dolphin Technical Support provider.

Q. “A referral was returned from the server” error when launching SuperNova?

This error can occur if the GlobalSign Root CA’s have not been installed to the server/VDI and if the ‘Turn off Automatic Root Certificates Update’ Group Policy has been enabled. The certificates are available to download from: <https://support.globalsign.com/customer/portal/articles/1426602-globalsign-root-certificates>

Q. When I use Microsoft Office applications in a Citrix environment the text on the ribbon bar is corrupt and difficult to read?

This error can occur with certain configurations, to resolve the issue open the Enterprise Config Tool > Support Tab sheet, and then enable the “Use alternative hooking method in Windows 7” option.

6 Useful Knowledge base articles

- Settings location for changes made in the Enterprise Configuration Utility:
<https://kb.yourdolphin.com/knowledge/settings-location-for-changes-made-in-the-enterprise-configuration-utility>
- Adjust SuperNova Features for secure environments:
<https://kb.yourdolphin.com/knowledge/snsecure-environments>
- Real-time behaviour monitoring features of anti-virus software causes poor SuperNova performance or crashes:
<https://kb.yourdolphin.com/knowledge/real-time-behaviour-monitoring-features-of-anti-virus-software-causing-poor-supernova-performance-or-crashes>
- Settings location for changes made in the Enterprise Configuration Utility:
<https://kb.yourdolphin.com/knowledge/settings-location-for-changes-made-in-the-enterprise-configuration-utility>

- Can I use the local SuperNova installation to magnify a remote environment like those provided by Citrix, VMWare and Microsoft:
<https://kb.yourdolphin.com/knowledge/magnifyremotenvironment>
- The SAM Remote driver is not working in a VMware Horizon remote environment
<https://kb.yourdolphin.com/knowledge/samremote-vmware-horizon>
- The Vocalizer speech synthesiser is not detected in SuperNova/Dolphin ScreenReader
<https://kb.yourdolphin.com/knowledge/vocalizer-detection>

7 Hot Key Reference

This section provides a list of the default Windows shortcut key equivalents that are used in the RDP and ICA.

Citrix ICA Client defaults

Windows Function	ICA Client Shortcut Key
Task list	Shift + F1
Close Remote Application	Shift + F3
Toggle Title Bar	Shift + F2
Ctrl + Alt + Del (display the Windows security dialog)	Ctrl + F1
Windows Key (Ctrl + Esc)	Ctrl + F2
Alt + Esc	Alt + F2
Alt + Tab	Alt + +
Alt + Back tab	Alt + -
Ctrl + Shift + Esc	Ctrl + F3

Appendix A - Installation Check Lists

The following installation checklists are intended to be used in conjunction with the installation instructions in this document to ensure that all installation steps on the server and clients are completed. We recommend that for each server and workstation installation you complete the checklists as you install.

There are checklists for:

- Server Installation

- Client Installation

Server Installation Checklist

- Step 1: Run SAM for the first time on the server?
- Step 2: All users have full access to the server registry key for SAM i.e. HKEY_LOCAL_MACHINE\Software\Dolphin\SAM?
- Step 3: The authorise.ini and setup.msi files have been added to the Dolphin Software product folders to unlock and activate?
- Step 4: The Server has been restarted?

Client Installation Checklist

- Step 1: Server installation completed?

Note: If installing SuperNova Magnifier there is no need to configure the client machines so these steps are not required

- Step 2: SAM has been installed locally (or the complete Dolphin Software)?
- Step 3: SAM compliant software/hardware synthesizer and/or Braille display installed?
- Step 4: The correct SAM Remote configuration has been applied using the SuperNova Enterprise Configuration tool.
- Step 6: If serial port re-direction used (for older Braille Displays) - serial port re-direction configured on the client?

Appendix B - Dolphin Interceptor Details

General Details of the Dolphin Interceptor

1. Installer and uninstaller - dolcompinst.exe - this will install and un-install the driver

The dolcompinst.exe is in the Dolphin product installation folder for Supernova Magnifier & ScreenReader for a standard installation by default this will be:

On 32bit Windows - C:\Program Files\Dolphin\SnovaSuite<version number>.

On 64bit Windows - C:\Program Files (x86)\Dolphin\SnovaSuite<version number>\amd64.

The dolcompinst.exe can be run from a Windows Explorer or from a command (CMD) prompt. There are couple of command line options -

dolcompinst.exe [-v] [-remove] [-force] [/?]

These command line switches can be used in combination or as single options, details are as follows:

(a) dolcompinst.exe

This will install the required files.

(b) dolcompinst.exe -remove

This will remove all the above listed files - as long as there are not entries in the registry key HKEY_LOCAL_MACHINE\SOFTWARE\Dolphin\.

(c) dolcompinst.exe -v

Verbose output, this installs the components and displays information about which components are currently installed.

(d) dolcompinst.exe /?

This displays usage and status information without installing components.

(e) dolcompinst.exe -force

This allows a downgrade or a forced uninstall even if the Interceptor is in use for other Dolphin products.

Appendix C - SAM Client Manual Configuration

Configuring SAM client installation for Citrix

- Copy "SamRemote.dll" from the \TerminalServer folder on the Dolphin product DVD or from <http://downloads.yourdolphin.com/downloads/citrix/SamRemote/> to the Citrix client installation folder on the workstation which will usually be:

On a 32bit system C:\Program Files\Citrix\ICA Client.

On a 64bit system C:\Program Files(x86)\Citrix\ICA Client.

- Using REGEDIT and make the following changes to the Windows registry:

- For 32bit versions of Windows

Add "SAMRemote" to the "VirtualDriver" string (ensuring that it is comma separated) contained in: HKEY_LOCAL_MACHINE\Software\Citrix\ICA Client\Engine\Configuration\Advanced\Modules\ICA 3.0

Add a string value called "SAMRemote" to the "VirtualDriver" key located at: HKEY_LOCAL_MACHINE\SOFTWARE\Citrix\ICA Client\Engine\Configuration\Advanced\Modules\VirtualDriver

Create a new Key in: HKEY_LOCAL_MACHINE\Software\Citrix\ICA Client\Engine\Configuration\Advanced\Modules\SAMRemote

Create three new String values in the above key, namely:

- a) "DriverName" with the Value data of "SamRemote.DLL"
- b) "DriverNameWin16" with the Value data of "Unsupported" (or leave blank)
- c) "DriverNameWin32" with the Value data "SamRemote.DLL"

- For 64bit versions of Windows

Add "SAMRemote" to the "VirtualDriver" string (ensuring that it is comma separated) contained in: HKEY_LOCAL_MACHINE\Software\Wow6432Node\Citrix\ICA Client\Engine\Configuration\Advanced\Modules\ICA 3.0

Add a string value called "SAMRemote" to the "VirtualDriver" key located at: HKEY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\Citrix\ICA Client\Engine\Configuration\Advanced\Modules\VirtualDriver

Create a new Key in: HKEY_LOCAL_MACHINE\Software\Wow6432Node\Citrix\ICA Client\Engine\Configuration\Advanced\Modules\SAMRemote

Create three new String values in the above key, namely:

- a) "DriverName" with the Value data of "SamRemote.DLL"
- b) "DriverNameWin16" with the Value data of "Unsupported" (or leave blank)

c) "DriverNameWin32" with the Value data "SamRemote.DLL"

Configuring Windows 7 & 10 VM to use SAMRemote in a Citrix environment

Carry out all steps in section above (3.5.1.2 Configuring SAM client installation for Citrix (ICA)) after these are complete you need to force SAM to use the Remote driver on the VM, to force the Remote Driver to be used you need to:

- Using REGEDIT and make the following changes to the Windows registry:
Navigate to HKEY_LOCAL_MACHINE\SOFTWARE\Dolphin\SAM\RemoteDriver
Create a DWORD value called 'protocol'
Set the value data to '1'.

Note: Ensure that you have SAM 2.87 or later to enable support for the SAM remote driver in Citrix environments.

Configuring SAM client installation for Terminal Server (RDP)

For 32bit versions of Windows client -

- Copy SamRemote.dll from the \TerminalServer\Win32 folder on the DVD (also available here <http://downloads.yourdolphin.com/downloads/citrix/SamRemote/>) to the local Sam installation folder which will usually be:
C:\Program Files\Dolphin\Sam

For 64bit versions of Windows client -

- Copy SamRemote64.dll and Sam64.dll from the \TerminalServer\X64 folder on the DVD (also available here <http://downloads.yourdolphin.com/downloads/citrix/SamRemote/>) to the local Sam installation folder which will usually be:
C:\Program Files (x86)\Dolphin\Sam

Next, start an RDP connection then create the following registry key:

For 32bit versions of Windows

- HKEY_CURRENT_USER\Software\Microsoft\Terminal Server Client\Default\AddIns\SamRemote

Create a string value in the above key called "name" containing the path to where the SamRemote.dll was copied to above, e.g. C:\Program Files\Dolphin\Sam\SamRemote.dll

For 64bit versions of Windows

- HKEY_CURRENT_USER\Software\Microsoft\Terminal Server Client\Default\AddIns\SamRemote

Create a string value in the above key called "name" containing the path to where the SamRemote.dll was copied to above, e.g. C:\Program Files\Dolphin (x86)\Sam\SamRemote64.dll

Appendix D - Citrix Virtual Apps (formerly XenApp) working with Published Applications

For Dolphin software to function with Published Applications, it needs to be installed and run from the same server as the applications you wish to access. If only applications are being published from the remote environment to the workstations the Dolphin Software must also be published in the same session as the applications. When working with Published Applications if using the separate applications always start SuperNova Enterprise first, then launch the application you would like to access. Alternatively create a published application that launches both SuperNova and the additional application as a single published application using a batch file or script e.g. if the user uses Notepad published through Citrix, then rather than publish Notepad you would instead publish a script or batch file that starts both Supernova and Notepad as a single published app

```
@Echo Off
start /i %SystemDrive%\Apps\Dolphin\SnovaSuite\Snova.EXE
%SystemRoot%\notepad.exe
Kill Snova.EXE
End
```

In this example if Notepad were being published through Citrix the Dolphin Software would also launch in the same "session" and magnify notepad (but none of your local apps). The Dolphin Software will be restricted to the Window of the published application so it would be recommended to run the application fully maximised.