decimal eRT System Requirements

Purpose

The purpose of this document is to provide an indication of the minimum and recommended system requirements to be able to run the decimal ElectronRT software (including both the decimal Launcher and the decimal eRT user client).

Minimum System Requirements

Operating System	64-bit Windows 10
Processor	Intel Core i7 2.2+ GHz (quad-core) or equivalent processor
Memory	16 GB RAM
Video	OpenGL 2.0+ compatible graphics card
Display	1920 x 1080 native resolution
Hard Disk	SSD with 500 MB for application + 10 GB for cache space
Connectivity	High Speed internet connection
Permissions	Local user installation (non-admin)

OpenGL

OpenGL 2.0 or later is required for the ElectronRT application to correctly function (3D views, BEV, block projections, etc). As such, the following scenarios can cause issues with the application:

- **Virtual Machines**: Many virtual machines (e.g.: Hyper-V, VMWare, EC2, etc) may not have a graphics card (GPU). As such the default OpenGL drivers loaded are normally version 1.1, which is not sufficient to run the ElectronRT application.
- **Remote Desktop**: Remote Desktop Protocol (RDP) connections may have trouble loading OpenGL drivers from the host PC, even if the host has a dedicated graphics card (GPU). This seems to be an inconsistent issue and is based on the configuration of your host computer. The following article(s) are a few common issues and potential solutions to common OpenGL and RDP problems:
    - Solutions for OpenGL over Windows Remote Desktop
        - Video Card Support: NVIDIA's professional line of graphics cards (e.g.: Quadro) are one of the few cards that support OpenGL RDP passthrough. https://stackoverflow.com/a/51708079/4406324,https://developer.nvidia.com/blog/tools-and-best-practices-for-remote-work/
- **Integrated graphics**: May not have the required OpenGL drivers or dedicated graphical processing capabilities to efficiently use the ElectronRT App.

Recommended System Requirements

Operating System	64-bit Windows 10
Processor	Dual Intel Xeon(R) 2.4+ GHz (quad-core+) or equivalent processor
Memory	32 GB RAM
Video	NVIDIA Quadro or equivalent graphics card
Display	2560 x 1440 native resolution
Hard Disk	SSD with 500 MB for application + 100 GB for cache space
Connectivity	High Speed internet connection >30Mbps
Permissions	Local user installation (non-admin)

Network Requirements

decimal eRT uses HTTPS communications to our decimal Direct API service to authenticate users, manage application permissions, and order patient hardware. This address and port must be open to passive communication with external addresses from the machine that is running decimal eRT. Note that all communication is initiated from decimal eRT (i.e., there should be no need to forward ports to the decimal eRT workstations), however, you must ensure that the following address be allowed to communicate with the decimal eRT workstation in order for the software to function properly:

Server URL	direct.dotdecimal.com (64.128.252.104)
Port	443 (HTTPS)

In addition, decimal eRT requires the decimal Launcher application for application access and release management. As such, satisfying the network requirements of the decimal Launcher application are also required for using the decimal eRT application.