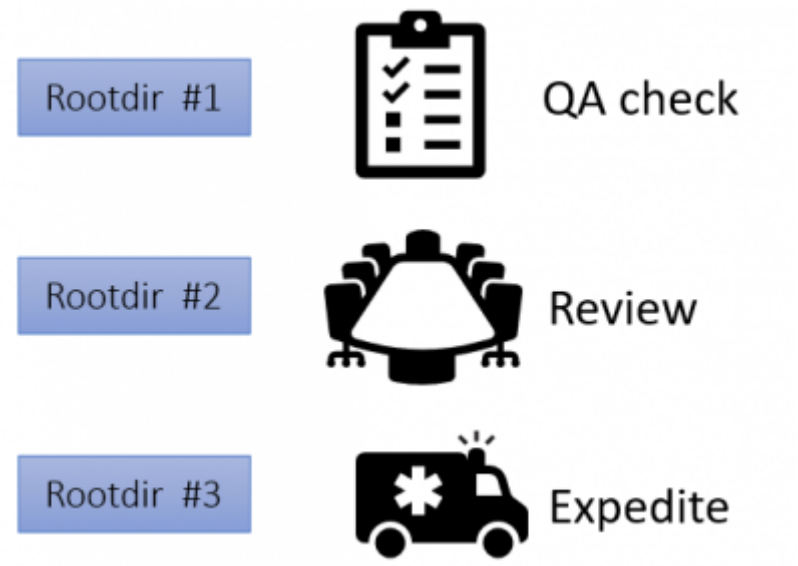
Root directories

In order for PMA.core to show content, you need to set up root directories. A root directory is a starting location from which your various whole slide images will be hosted.

The reason for working with root directories offers several advantages:

- You don't have to navigate through a complicated directory structure before reaching the files that you want to work with
- You can map multiple root directories to organize slides according to different purposes or workflows.
- Swtich out different types of storage without the end-user knowing about it. When you move data from a conventional hard disk to cloud, you typically need to install a new piece of software (S3 browser, or an FTP explorer). With PMA.core, you just re-direct the root-directory to point to the updated location and you're done; the end-user remains unaffected

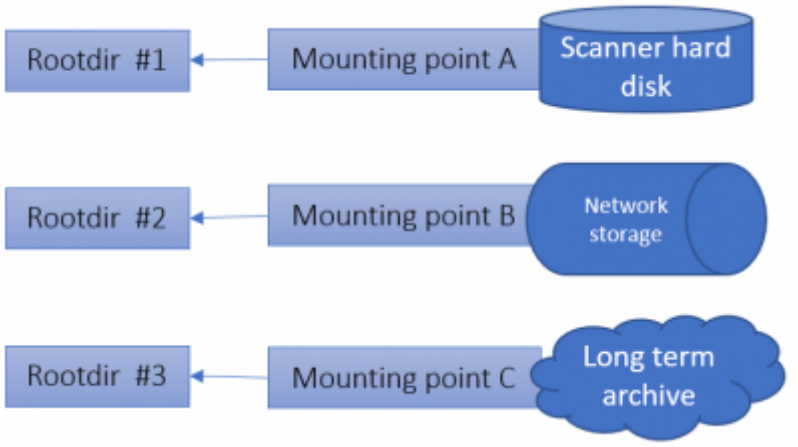


The concept of root directories is not dissimilar to mapped network drives in the Microsoft Windows operating system, where you map a map such as \\myserver\dir\subdir\subsubdir\ to a (much simpler to remember and address) drive letter.

Mounting points

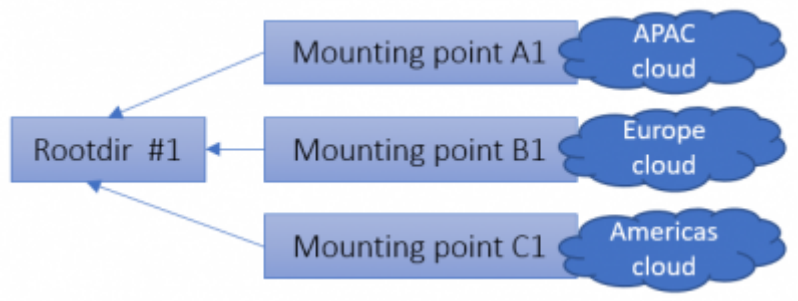
Since PMA.core 2, a root directory is defined by one or more mounting point. This was done to be able to facilitate geo-replication scenarios.

A mouning point for a root directory may either be a local directory, a UNC share, Azure blob storage, FTP folder, or an Amazon S3 compatible storage.



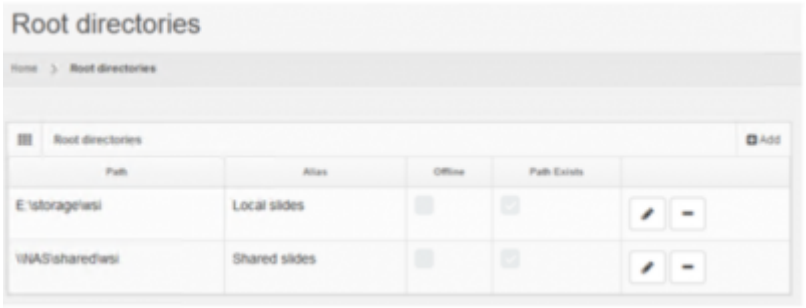
A Mounting point is a further abstraction of the concept “where are my slides stored?”. While most users will end up having one mounting point per any one root directory, here are the different scenarios in which you could have multiple mounting points:

- Geo replication
- Automatic failover between different storage types. If a network resource is not available, a fallback could be offered to an alternative location (possibly with a reduced or older dataset)



In order to make root directories work, you need to attach at least one mounting point to it.

The mounting point of a root directory refers to the base directories where the system should look into for whole slide images. All the subdirectories of the root directories are exposed by the application and whole slide images that are discovered are advertised.



Configuration

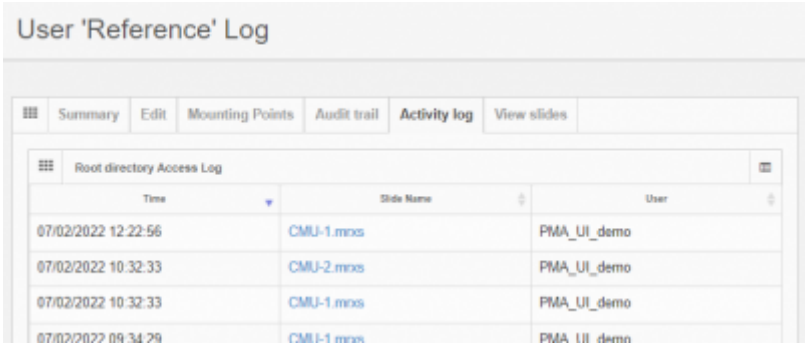
We have a separate section in this wiki that takes you through the different steps that you can take to configure root directories and mounting points.

Root-directories can be labeled public or private, which allow you to take security precautions when configuring these.

Security

Root directories can be either public or private.

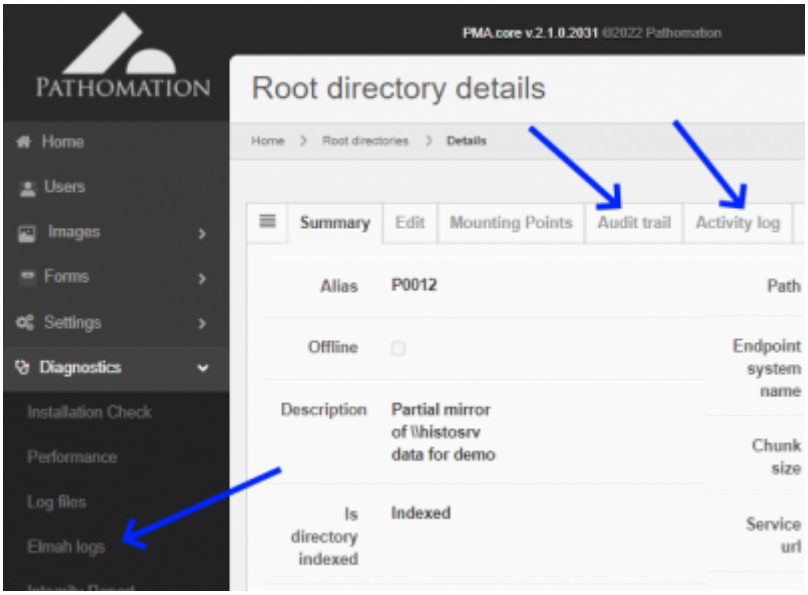
Who's accessed what (either public or private) folder can be monitored via the Access log tab.



Logging

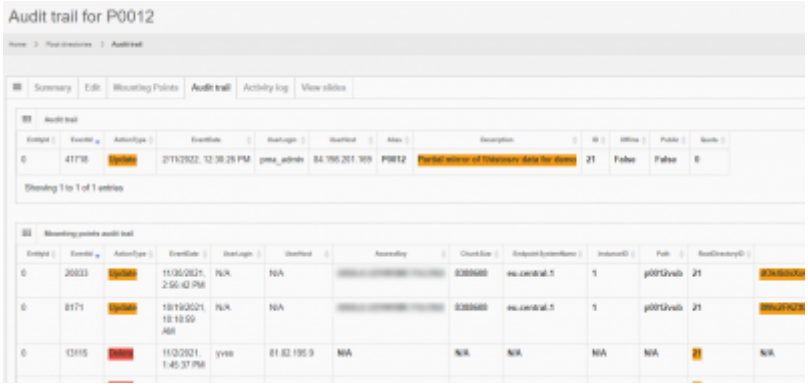
Apart from manipulating root directories, monitoring their use is an important aspect of our software as well.

You can monitor logs for several kinds of acivity:



Audit trail

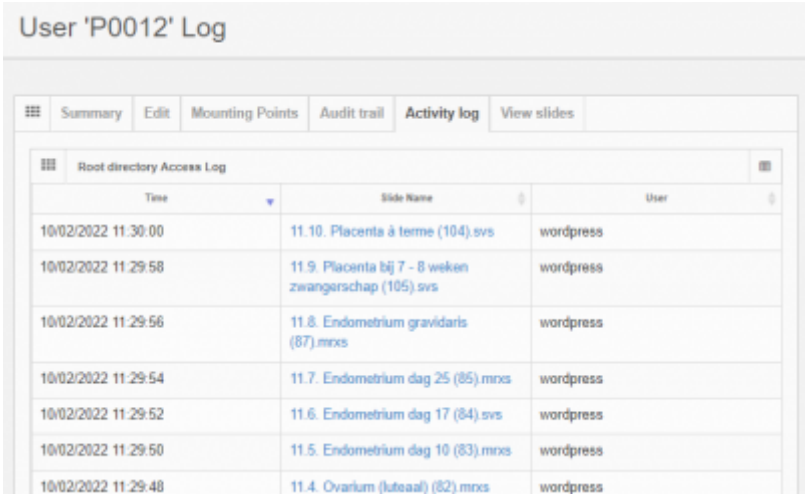
The audit trail tab conbines any operations that were performed on both root directory entries and underlaying mounting point entries.



The presented information 21 CFR pârt 11 compliant.

Activity log

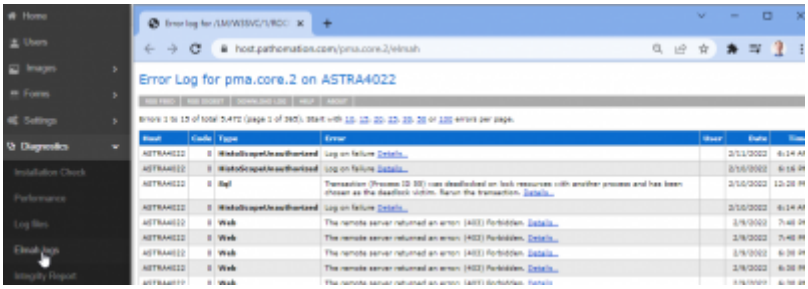
In addition to an audit trail, an activity log is available that chronologically tell you which user has been accessing what slides in the root directory:



Elmah log

Elmah error logs are a standard way of capturing runtime errors in software. While these logs are not specific to root directories, they can help troubleshoot intermittent problems. Examples include:

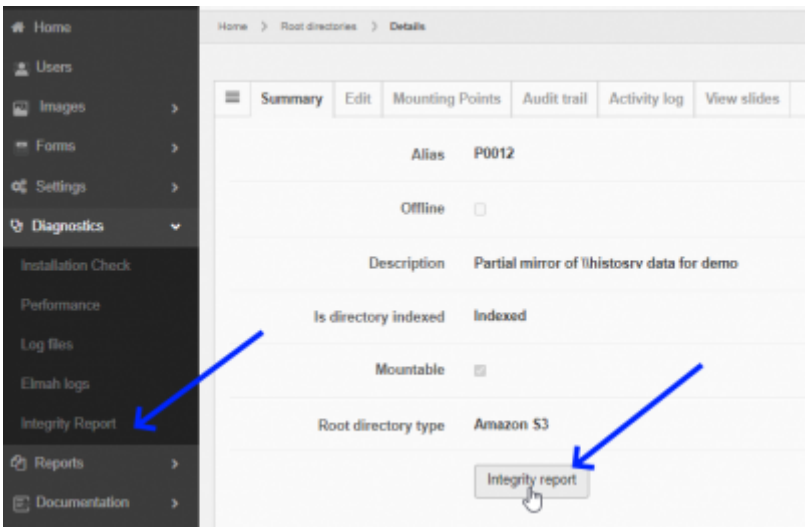
- connection information is (temporarily) no longer correct
- a file format may have been modified by its vendor and now no longer renders correctly



Integrity check

When problems persist over time, a structured and proactive approach is warranted.

When you suspect certain slides in a particular root directory are corrupt, you can run an integrity check on a particular folder:



This attempts to read all slides in a folder and reports on the ones that fail. You should then try to find out why such slides cannot be read.

For problems that only occur occasionally and don't appear to be persistent, Elmah logs are available to assist in for ad-hoc troubleshooting.