Solution Summary | Hyland Healthcare

NilRead Hub and Spoke Deployment Model

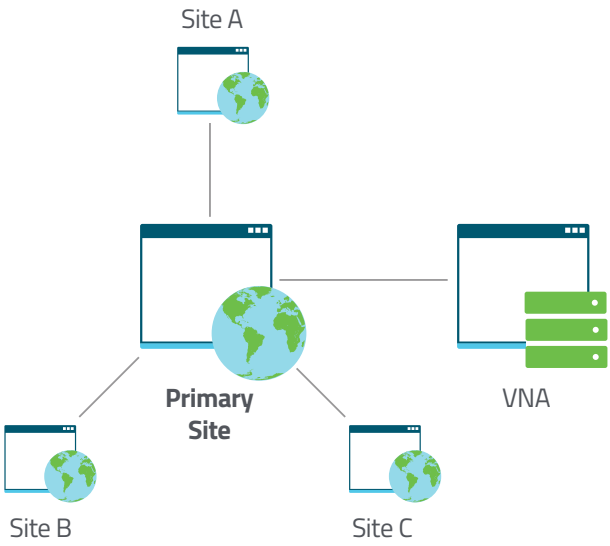
Image enabling remote locations across the healthcare enterprise

Healthcare organizations with remote locations that struggle with exceptionally low bandwidth or poor network reliability need an alternative deployment model. In such cases, NilRead by Hyland can be deployed using a hub and spoke methodology. A hub and spoke deployment provides a distributed processing infrastructure where clinicans can view and the radiologists can read completed studies easily, expeditiously and securely using a zero-footprint, 510K Class II diagnostic quality viewer.

How hub and spoke works

NilRead can be deployed in a number of configurations. As it is a true zero-footprint, server-side rendered solution, access and performance are not as affected as they are with traditional viewing solutions including PACS. NilRead can adapt to the available bandwidth. The minimum recommended bandwidth for diagnostic use is 5 Mbps, but the solution can automatically adapt to lower bandwidth if required. NilRead will always produce full quality, final images at the end of the user interaction.

In the hub and spoke configuration, only the primary site (hub) is connected to and interacting with the vendor neutral archive (VNA). Facility cache servers (spokes) send notification to the primary site as soon as new data is acquired or imported. After the pre-configured hold-off period, data is uploaded to the primary site using available bandwidth.



The primary site is able to perform federated services against data cached both locally and remotely at the facilities. Depending on available bandwidth and remote site endpoint accessibility, remote data can be used for viewing. Facility cache servers maintain a local data dictionary, but are able to perform federated queries against the primary site dictionary and VNA (using the primary site as a VNA proxy) and view primary site objects. In a cooperating sites configuration, all servers can be connected to the same or different VNAs.

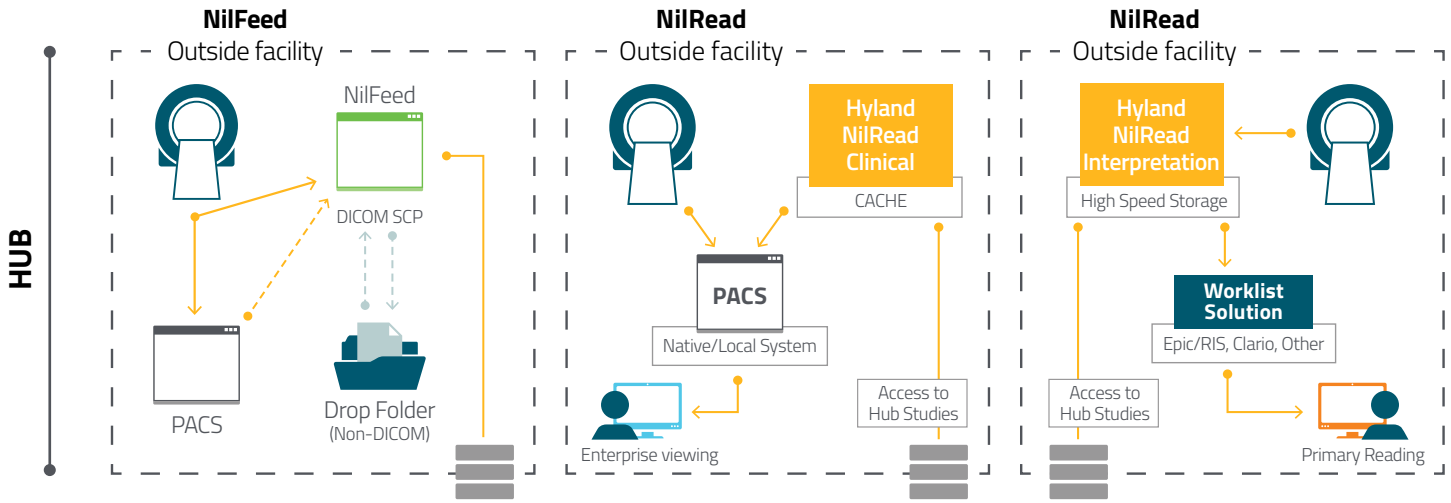
Local data is not exchanged between sites unless it's explicitly authorized and requested. While sites maintain a local cache data dictionary, they are able to perform federated queries and imaging, which can involve data both cached at sites and stored in the VNA.

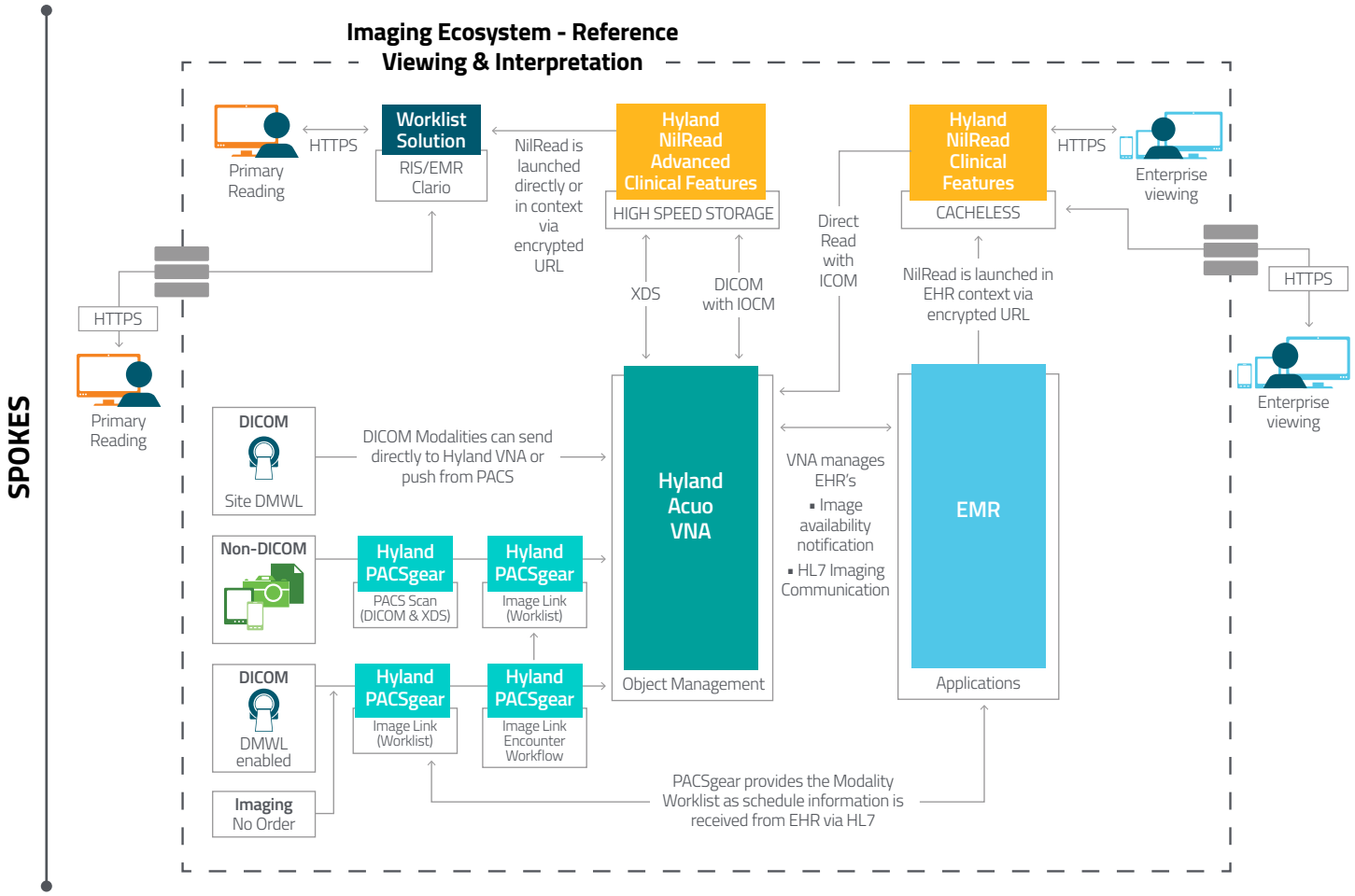
Seamless object exchange between sites

Hyland NilFeed can also be implemented to facilitate the exchange of DICOM and non-DICOM objects. NilFeed is a DICOM storage SCP "store-and-forward" proxy, which provides transfer of objects from remote sites to a central server using secure and reliable HTTPS-based transport.

NilFeed is installed on a remote site as a Windows service providing a DICOM storage SCP endpoint. Any objects automatically or manually routed to the SCP will be temporarily stored on the local hard drive to optimize performance. This includes the ability to perform reliable data transfer with auto restart and retry if the connection is interrupted. The routed data is then uploaded to a configured NilRead server using the NilRead server credentials and HTTPS protocol. Data is deleted from NilFeed once transmitted.

NilRead™ by Hyland





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