

Radiology reporting with integrated cloud-based voice recognition powered by Nuance Dragon Medical.



Challenge

Radiologist productivity suffers when radiologists need to multiple voice recognition (VR) solutions. Switching between systems can be (a) time consuming due to logging out and back into different solutions (b) cumbersome due to the requirement to use different microphones or (c) impossible because the workstation owner (hospital) will not allow another VR solution to be installed.

Solution

Clario has developed an innovative, fully web-based VR solution powered by Dragon Medical. It will run on any workstation with a modern browser installed, serving as a completely zero footprint solution. Like the Clario Smart Worklist, it is subscription priced, making it a cost effective solution in a high priced market.

Clario's VR in the Cloud plugin is comprised of three components:

- **Voice Recognition.**
Nuance's Dragon Medical is embedded into the Clario Smart Worklist. Dragon Medical provides accurate, speech recognition software in the cloud so you can dictate reports anywhere. Real-time, secure speech-to-text populates directly into Clario's report editor. Dragon Medical is HIPAA-compliant and uses medical dictionaries with radiology language models to deliver highly accurate speech recognition.
- **Template Management.**
With Clario's template management you create comprehensive and consistent report templates across your practice. Or preload your system with templates from Eidetico Radiology Solutions.
- **Quality Check.**
Clario's quality check module provides immediate access to clinical guidance and immediate feedback on the quality of your report

Benefits of a speech enabled smart worklist

- ✧ Cost reduction
- ✧ Application consolidation
- ✧ Voice control over other key worklist features

Benefits of cloud-based VR

- ✧ VR that will run on any PC, in any setting
- ✧ No software to install or maintain

Benefits of Template Management

- ✧ Standard templates across your practice
- ✧ Maximize payment by ensuring reports capture required information.

Benefits of Quality Check

- ✧ Immediate access to clinical guidance from ACR Assist or other societies.
- ✧ Immediate identification of report inconsistencies and errors.
- ✧ Ensure radiologists meet your practice's quality standards by creating your own rulesets.

Clario is committed to delivering the best radiology workflow, enabling more flexibility for radiologists to efficiently read exams.

Additional Information

The following pages describe the technology, security and configuration of Clario's VR in the Cloud plugin.

Multiple Locations

Clario VR is available anywhere you have Internet access, a modern web browser installed and a microphone.

Supported web browsers include: Chrome, Firefox, and Edge.

Microphone Compatibility

Any microphone connected to your PC will work with Clario's VR in the Cloud plugin. Clario recommends using a traditional radiology microphone that will provide radiologists with the ability to program their microphone with Clario and Dragon Medical commands for ease of navigation and editing throughout the report. Clario does not sell the microphone.

- Nuance PowerMic II
- Nuance PowerMic III
- Philips SpeechMike Air
- Philips SpeechMike III
- Olympus DirectRec

Network Guidelines

Clario's VR in the Cloud can be used over any network connection: wired, WiFi or 3G/4G cellular networks.

A radiologist's speech is recognized once the audio data has been successfully transmitted to the Nuance data center via secure Internet connection. This means that the radiology experience is affected by the quality of the network connection.

Network bandwidth, network latency and background noise are likely to have an impact on a user's speech recognition experience.

Network Bandwidth

Network bandwidth requirements per user are minimal and users need a minimum 28kbps bandwidth between the endpoint and Nuance data centers.

To test individual connection speed we recommend using a standard tool such as <http://speedtest.net>.

Network Latency

For optimal performance, network latency between the endpoint and Nuance servers should be less than 50ms.



Security

To provide for the possibility that the data processed by Dragon Medical contains protected health information (PHI), the following features are in place:

- All communication between Clario and Nuance speech services is via HTTPS utilizing TLS 1.2 with the 256-bit AES cipher algorithm
- Nuance hosted speech services leverage Microsoft Azure and provide a HIPAA-compliant hosting infrastructure with BAAs, 24/7 availability and 99.95% uptime
- SOC I Type 1 and SOC II Type 2 compliant
- Qualys® SSL Labs rated “A”
- Geographically diverse active/active data centers with least latency routing based on location
- 5 Minute Recovery Time Objective (RTO) and Recovery Point Objective (RPO)
- No persistent audio storage on client device; data is freed from memory when a session is closed
- Security best practices including red teams, DDOS and intrusion detection, penetration testing, and other rigorous privacy policies and procedures in place

Dictionary

Clario’s VR in the Cloud uses the Dragon Medical dictionary with radiology language model, which includes an up-to-date medical dictionary, terms, phrases and clinical formatting rules in addition to user customized vocabularies.

Report Editor

Clario’s Report Editor is displayed in patient view. The Worklist panel and Notes panel are minimized to provide more working space for your report. Templates, Field Options and Macros are selected from the panel to the right. Clario’s Quality Check feedback is also displayed to the right of the report editor.

Template Management Services

When you purchase Clario’s VR in the Cloud plugin, you can also choose any of the following professional services:

Training	Learn about all the tools you need to import and manage your own templates.
Template Import	If you have a standard set of templates already in place, Clario will get them imported for you.
Template Licensing	Through our partnership with Edietico, you can license a full set of radiology templates that are ICD-10 and PQRS compliant.

Transcriptionist Workflow

Clario does not support a transcription workflow. Voice files are not saved with Clario’s VR in the Cloud plugin. Instead, real-time, audio segments are processed by Nuance Dragon Medical and immediately converted to text. The audio segments are not saved or retained. Because of this, Clario does not support a transcription workflow. An editor workflow is possible, but this would be done without saved audio files.

Report Distribution

Clario will manage report distribution for all reports dictated using the VR plugin.

FAQ: You have questions, we have the answers

What IT requirements (VPNs, Ports, etc...) are required at each reading location?

In order to use Clario's VR, all you need is a computer connected to the Internet and a web browser.

Does the voice recognition require voice training?

Nuance's Dragon Medical does not require voice training.

The speech recognition profile of a Dragon Medical user is continuously adapted to the user's way of speaking. The system learns by comparing the text created by Dragon Medical to the final text after it has been corrected by the user. This is a statistical and heuristic process that significantly reduces the number of recognition errors over time.

Your speech profile is available wherever you use Clario's VR in the Cloud plugin.

Can you use Nuance PowerScribe 360 in one place and Dragon Medical in another?

Yes, you can set up different profiles for different locations. For example, when you are reading at the hospital, you might use PowerScribe 360, but if you are reading from home you could use Clario's VR.

What about doctors with accents?

Dragon Medical automatically detects speaker accents and optimizes individual user profiles to ensure an optimal experience and speech recognition accuracy.

How is this different than Nuance PowerScribe 360?

Clario's VR in the cloud plugin uses Nuance Dragon Medical to convert your voice to text. All the tools that support radiology workflow were developed by Clario.

Can it prompt best practices as a RAD is reading?

Yes, you can configure your own set of rules or quality checks to perform as a report is dictated or when it is signed. For example,

- If the radiologist dictates any of the following words: breast, ovary, etc., and the patient is male, a warning dialog box will open.
- If the radiologist dictates "pneumothorax" open a dialog to display best practices for the finding.
- If the radiologist signs a report of the neck and there is no mention of the carotid arteries, it will open a warning dialog

These checks are configurable in the user interface, so you can create the quality checks and guidelines appropriate for your practice.

Can we dictate/load shortcuts?

Yes, in Dragon Medical these are called auto-texts. You can manage your own auto-texts directly through the DragonBar you use in Clario. Your administrator can manage auto-texts for the practice using the Nuance Management Center (NMC).

Does Nuance PowerMic work?

Yes, Clario will support any microphone. Using a radiology mic will provide more commands. Clario recommends the following mics:

- Nuance PowerMic II
- Nuance PowerMic III
- Philips SpeechMike Air
- Philips SpeechMike III
- Olympus DirectRec

Are reports saved as the radiologists dictates to ensure work is accidentally lost if the browser is closed?

Yes, as you are dictating your report into the Clario report editor, Clario is automatically saving your work.

Can you dictate notes?

Yes, Clario has implemented custom commands for you to interact with other components of the worklist, including adding Notes.

Mobile support?

Not yet, but stay tuned.

Does it run on a MAC?

Not yet, but stay tuned.