Product Spotlight

Ease of Administration

Introduction

System administration can pose a significant challenge for an enterprise Chromatography Data System (CDS) as it often entails numerous processes and tasks covering both IT and the laboratory. Regular system maintenance for both servers and local computer stations is usually managed by IT and can include operating system updates, antivirus software updates, creating backups for disaster recovery, application updates, and so on. Performing these actions manually on each local station, can present a considerable logistical challenge and be a very time-consuming process.

Thermo Scientific™ Chromeleon™ CDS provides a central location in a single application that streamlines the performance of daily tasks, updates/upgrades, and routine maintenance using automated features designed to save valuable time, increase productivity and ensure business continuity. More importantly the administration application can be accessed from any station within the Chromeleon Domain (Figure 1), providing the user has the necessary privilege to do so. This gives the end-user peace of mind and confidence that access is secure and controlled.
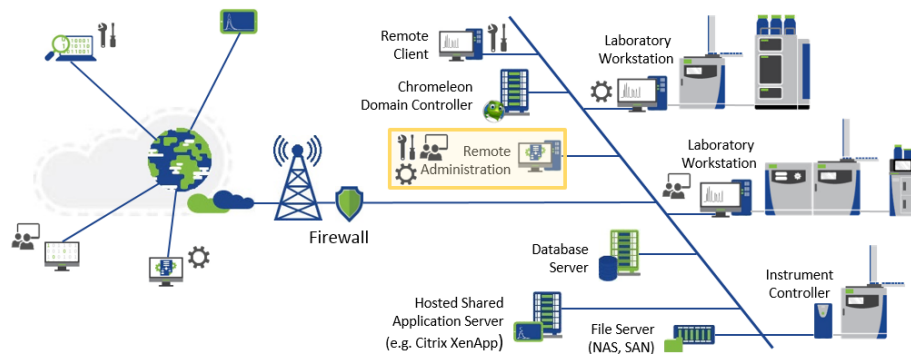

Figure 1. Remote administration from anywhere

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Reduced management effort with total flexibility

By using a single administration application, Chromeleon CDS enables access from outside the lab, across the lab, different sites and even multiple geographies. This means administrators do not have to be in front of specific computers or servers, resulting in less travel and more time to concentrate on other business activities. It also allows devolution of admin tasks across the business.

With Chromeleon software's modular architecture, expansion is straightforward and capacity can be added whenever and wherever needed, for example, file or database storage. All such activities are comprehensively documented in the administrative audit-trail that also covers User Management, Global Policies, Domain Resources and Data Vault (Database) configuration, to meet the requirements for compliance and data integrity.

The Chromeleon Administration Console (Figure 2) is the single point of system administration.

Components of the central administration console

Licence manager

Viewing, assigning, distributing, activating and updating licences is made simple with a clear layout making the process straightforward and less time consuming. Get the full picture of which licences are in use and which are available and make an assessment on licence utilization (Figure 3).
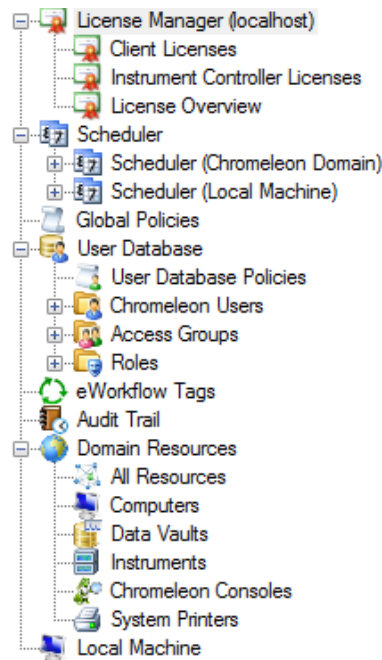

Figure 2. Content of centralized administration console

Figure 3. Licence Overview for utilization

Scheduler

Enables system organization (Figure 4), where administrators can automatically move data, between Data Vaults, for example, for archiving purposes. Tasks define how the data is handled, the storage location and naming convention, thereby removing the need for external IT applications.
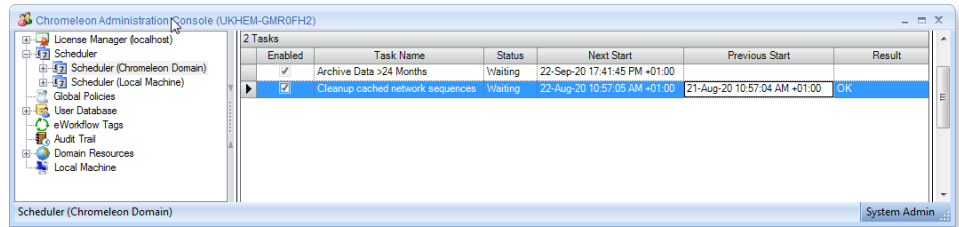
Global policies

This allows for modification of general, top level Chromeleon CDS settings that affect all parts of the software — an example of easy administration that delivers efficient system use (Figure 5).

Organizational (org) units

The management of larger installations is made much easier and administration is simplified, which delivers segregation and reflects geographical or preferred business structure. Implementing Org Units enables administration on a per site basis while regaining central control, which provides the option to group resources such as Data Vaults, users or Instrument Controllers into units that have their own User Manager Database with its own User Manager (Figure 6).
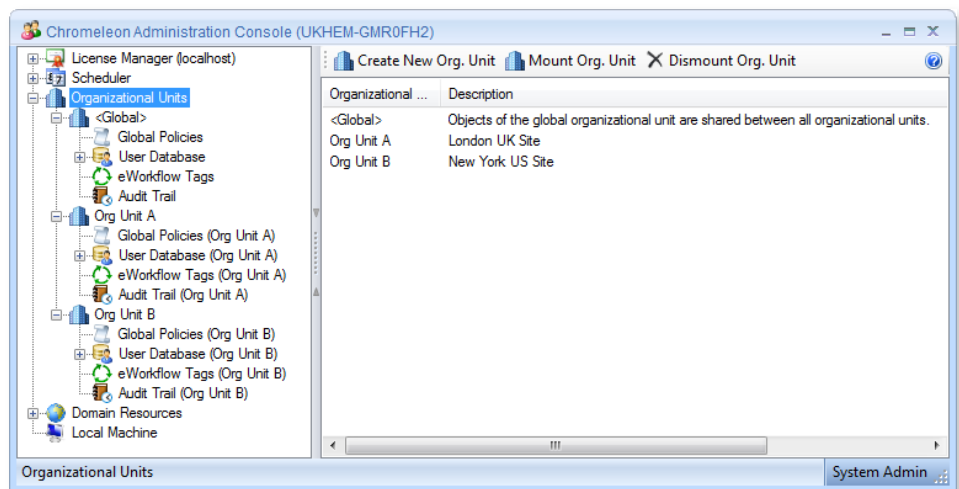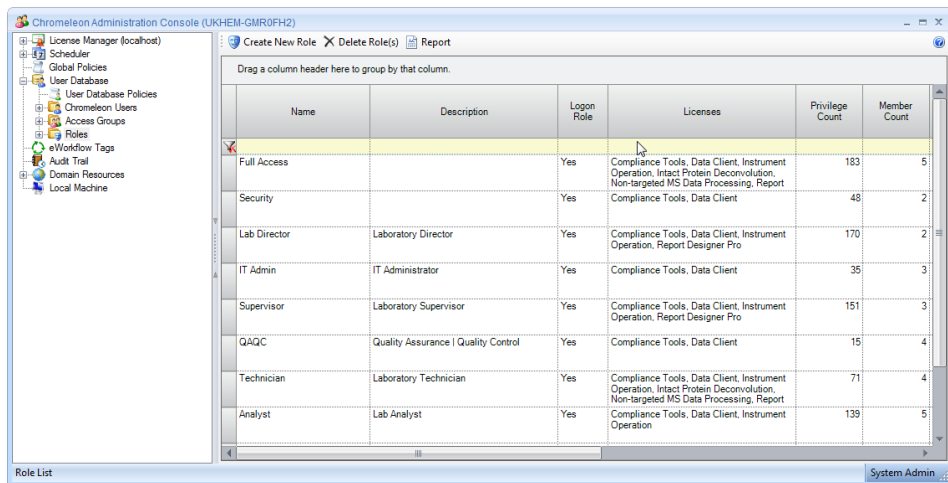

Figure 4. The Scheduler provides automated system organization

Figure 5. Global polices: Example shown defines the Multi-User Logon feature — straightforward and easy to implement

Figure 6. Implementing Organization (Org) Units to segregate user management
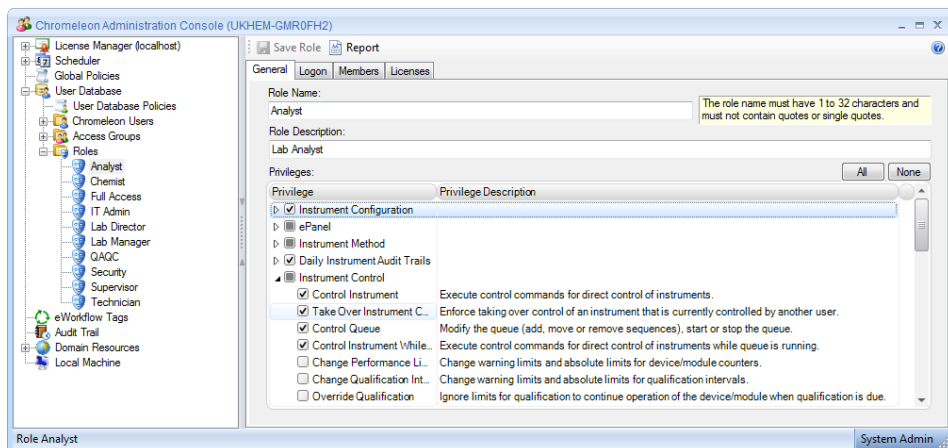
User database

This node provides easy definition of users, roles (Figure 7), privileges and controls access to specific data locations, such as folders or Data Vaults. The Chromeleon User Database provides simplified user management, backed by a dedicated audit trail recording user actions, such as logon and logoff events and modifications to user profiles, like changes to privileges that define what actions users can perform from within the software platform (Figure 8). These processes increase flexibility without comprising security.

Figure 7. User Roles defined in Chromeleon CDS

Figure 8. Privileges that outline user actions within the software

Domain resources

With a focus on IT administration and its associated features, the Domain Resources node allows accessibility to all Chromeleon Consoles, computers, instruments, Data Vaults, and system printers currently registered with the Chromeleon Domain Controller (Figure 9).

A resources overview displays a summary of the domain resources, which enables an information rich view of the system status and its associated components (Figure 10), saving time and delivering operational efficiency.

Instrument configuration

The Administration Console enables instrument setup and modification via the Instrument Configuration Manager (Figure 11) from anywhere in the Chromeleon Domain, removing the need to be in front of the actual PC for most operations. It allows modifying parameters, configuring new modules or verifying correct installation with access to a configuration check and instrument controller message window for live updates.
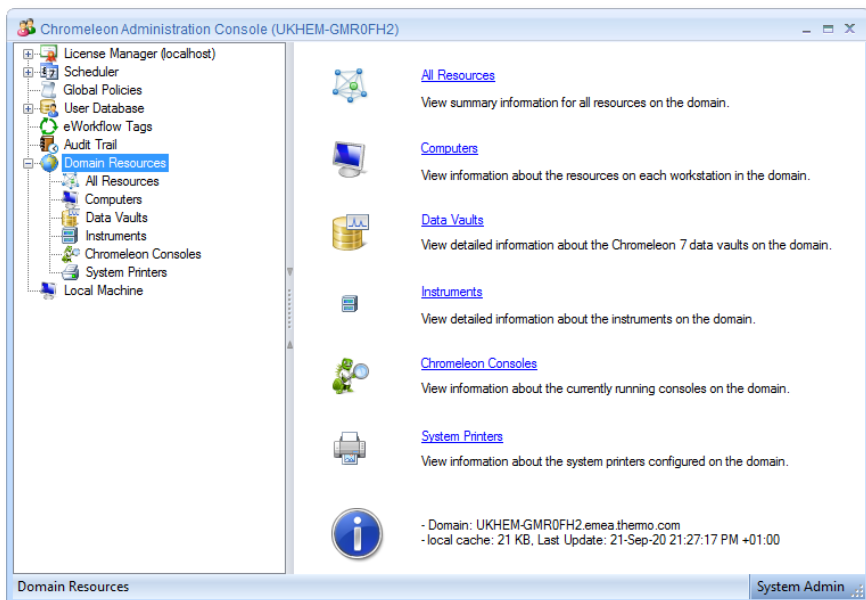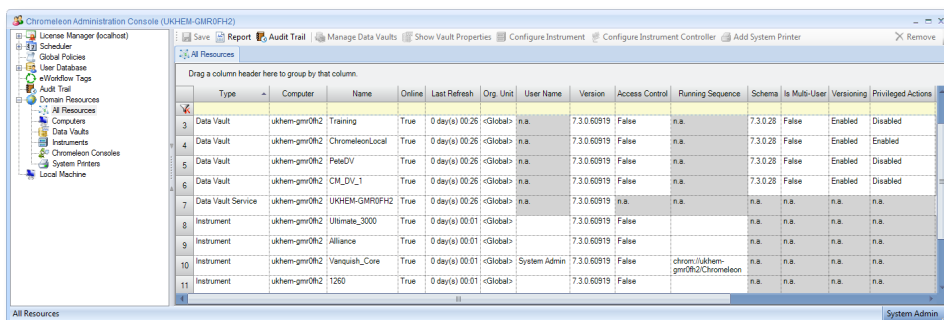

Figure 9. Domain Resource categories
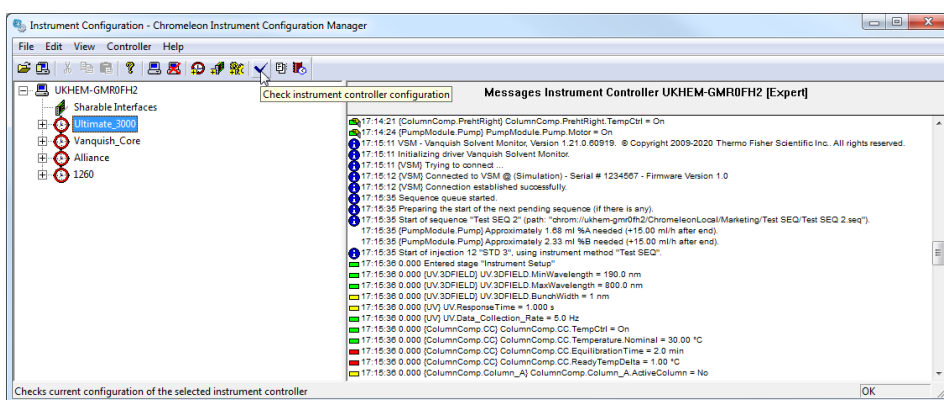

Figure 10. Domain Resources Overview

Figure 11. Chromeleon Instrument Configuration Manager

Remote systems management

Centralized system maintenance can be scheduled for convenience (Figure 12) and defined for each Chromeleon Client, instrument controller PC (IPC) or Thermo Scientific™ 247 Instrument Controller. Options include the ability to apply settings to single or multiple computers, sequence/injection queue handling to ensure that the system is not running, with user notifications and warnings displayed in the Console and Studio. This minimizes system downtime, avoids conflicts of application use and enables smooth laboratory operation.

Automated software deployment is managed through a centralized distribution and updating tool (Figure 13). Updater packages can be centrally created for any update (not just the CDS application) and distributed regionally (in a controlled manner to maintain network bandwidth) to the local computers ready for installation. Chromeleon CDS updates can then be automatically installed for one, groups, or all computers at the predetermined time providing controlled, automated deployment.

It is also possible to run and manage Install Qualification (IQ) on remote devices and view the associated reports from the Administration Console (Figure 14). This can save significant time and reduces the need of having to be at every Chromeleon Station.
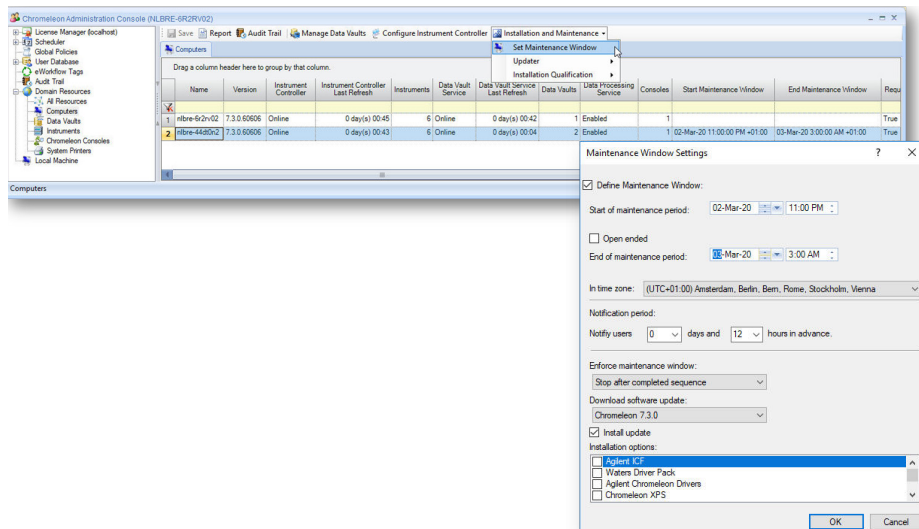

Figure 12. Maintenance Window with options for notifications and sequence handling
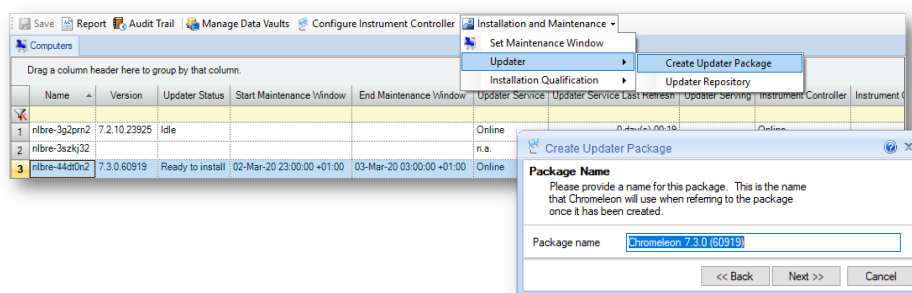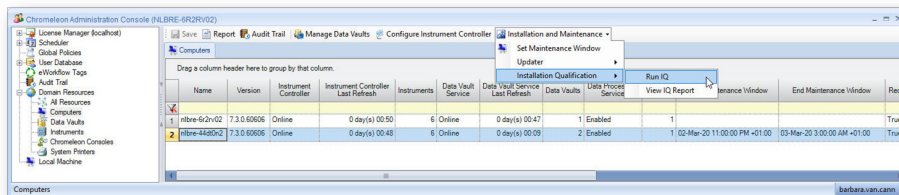

Figure 13. Automated software updating

Figure 14. IQ available on remote devices

Local machine

The Discovery Service is a critical component that maintains a central index of all available resources in the Chromeleon Domain (Figure 15), such as instruments or Data Vaults. Changes are automatically published to all Chromeleon Stations which also drastically simplifies deployment — simply connect a new station to the Discovery Service and all license, user and domain settings are automatically configured. This ensures fast, accurate connection of computers to the Chromeleon Domain and is a great example of ease of administration provided by Chromeleon CDS.

Conclusion

Chromeleon CDS delivers ease of administration that's accessible from anywhere for both IT and the lab with centralized administration of all core admin tasks minimizing downtime, and streamlining operations with both security and reassurance for the end-user.
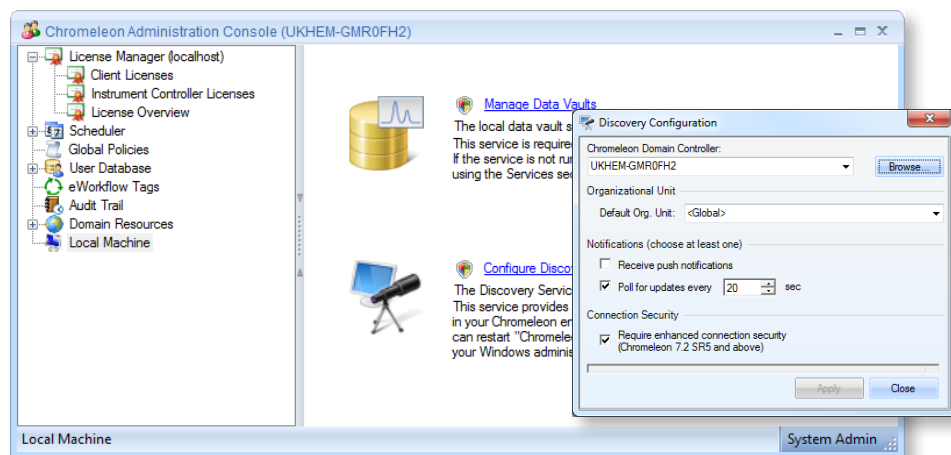

Figure 15. Configure Discovery — a simple process to deliver system changes

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