

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.

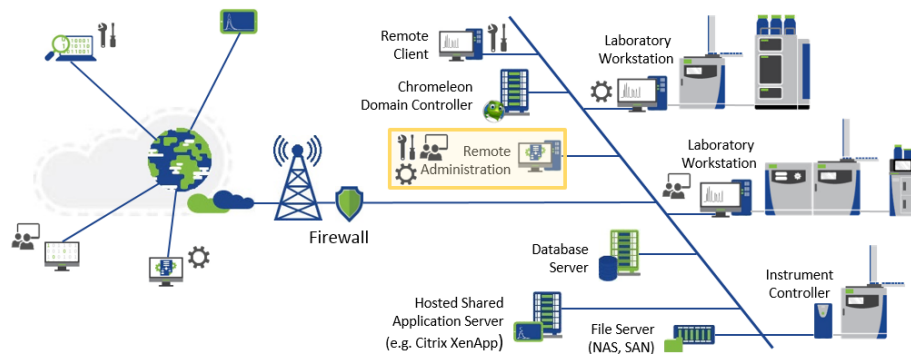


Figure 1. Remote administration from anywhere

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).

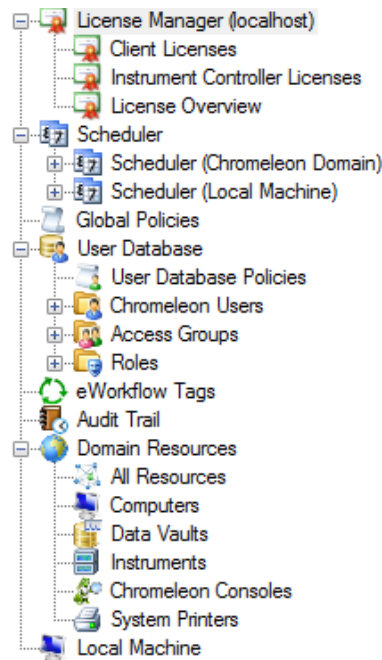


Figure 2. Content of centralized administration console

Feature	Total	Granted	In Use	Available
Client Licenses				
Data Client	5	0	0	5
Instrument Operation	5	0	0	5
Compliance Tools	5	0	0	5
Report Designer Pro	5	0	0	5
Virtual Column Basic	5	0	0	5
Virtual Column Complete	5	0	0	5
SDK Runtime	0	0	0	0
Standard Instrument Integration	0	0	0	0
Non-targeted MS Data Processing	5	1	0	4
Chromeleon XPS	30	0	0	30
Intact Protein Deconvolution	5	1	0	4
Chromeleon Process Analyzer	5	0	0	5
Instrument Controller Licenses				
Instrument Controller	5	1	1	4
Instrument Class 1	30	2	2	28
Instrument Class 2	30	0	0	30
Instrument Class 3	10	2	2	8
3D Data Acquisition	5	1	1	4
SQ / QqQ GC-MS Data Acquisition	5	0	0	5
LC-MS Data Acquisition	5	0	0	5
Fraction Collection	5	0	0	5

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.

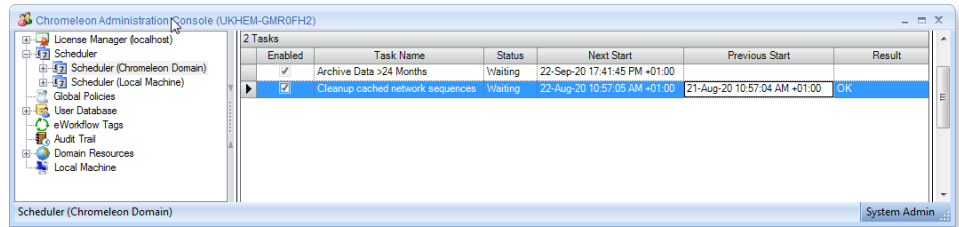


Figure 4. The Scheduler provides automated system organization

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).

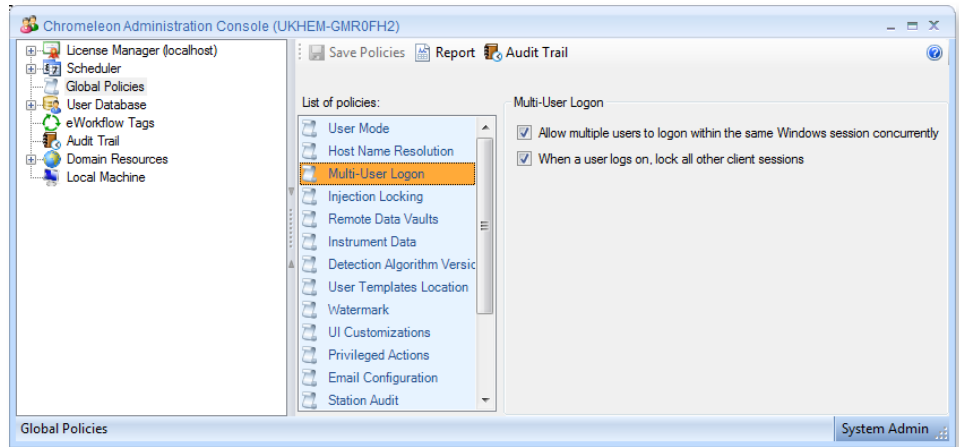


Figure 5. Global polices: Example shown defines the Multi-User Logon feature — straightforward and easy to implement

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).

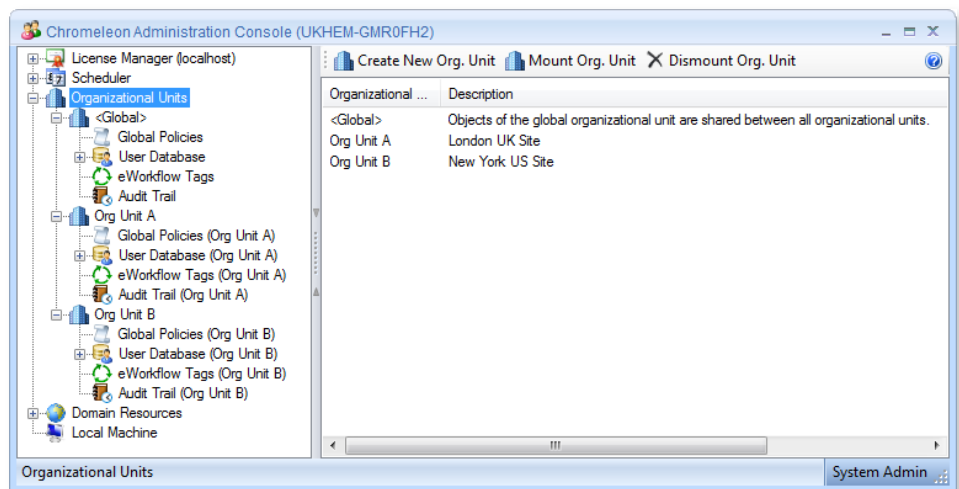
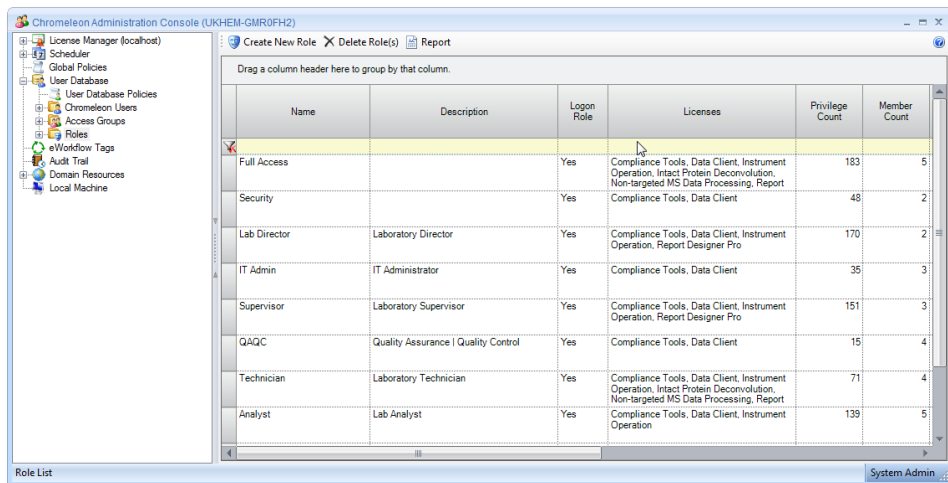


Figure 6. Implementing Organization (Org) Units to segregate user management

User database

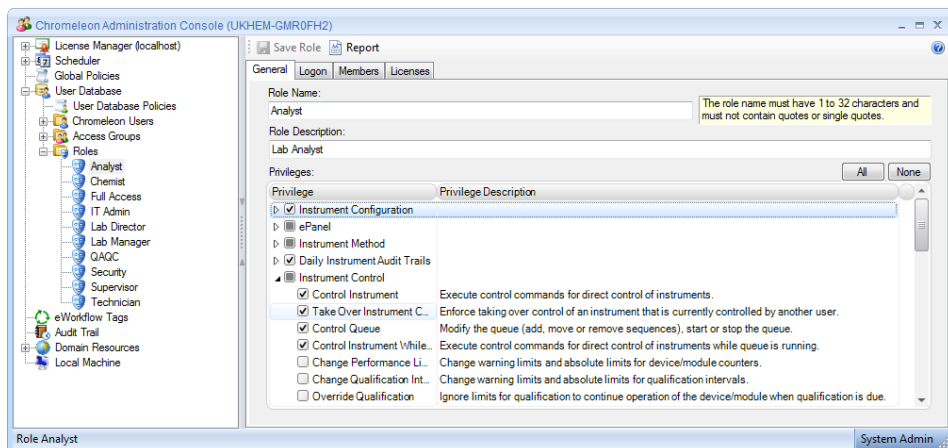
This node provides easy definition of users, roles (Figure 7), privileges and controls access to specific data locations, such as folders or Data Vaults. The Chromeleon User Database provides simplified user management, backed by a dedicated audit trail recording user actions, such as logon and logoff 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.



The screenshot shows the Chromeleon Administration Console with a 'Role List' table. The table has columns for Name, Description, Logon Role, Licenses, Privilege Count, and Member Count. The roles listed include Full Access, Security, Lab Director, IT Admin, Supervisor, QAQC, Technician, and Analyst.

Name	Description	Logon Role	Licenses	Privilege Count	Member Count
Full Access		Yes	Compliance Tools, Data Client, Instrument Operation, Intact Protein Deconvolution, Non-targeted MS Data Processing, Report	183	5
Security		Yes	Compliance Tools, Data Client	48	2
Lab Director	Laboratory Director	Yes	Compliance Tools, Data Client, Instrument Operation, Report Designer Pro	170	2
IT Admin	IT Administrator	Yes	Compliance Tools, Data Client	35	3
Supervisor	Laboratory Supervisor	Yes	Compliance Tools, Data Client, Instrument Operation, Report Designer Pro	151	3
QAQC	Quality Assurance Quality Control	Yes	Compliance Tools, Data Client	15	4
Technician	Laboratory Technician	Yes	Compliance Tools, Data Client, Instrument Operation, Intact Protein Deconvolution, Non-targeted MS Data Processing, Report	71	4
Analyst	Lab Analyst	Yes	Compliance Tools, Data Client, Instrument Operation	139	5

Figure 7. User Roles defined in Chromeleon CDS



The screenshot shows the configuration for the 'Analyst' role. It includes fields for Role Name, Role Description, and Lab Analyst. The Privileges section is expanded to show a list of permissions with checkboxes and descriptions.

Privilege	Privilege Description
<input checked="" type="checkbox"/> Instrument Configuration	
<input type="checkbox"/> ePanel	
<input type="checkbox"/> Instrument Method	
<input checked="" type="checkbox"/> Daily Instrument Audit Trails	
<input type="checkbox"/> Instrument Control	
<input checked="" type="checkbox"/> Control Instrument	Execute control commands for direct control of instruments.
<input checked="" type="checkbox"/> Take Over Instrument C.	Enforce taking over control of an instrument that is currently controlled by another user.
<input checked="" type="checkbox"/> Control Queue	Modify the queue (add, move or remove sequences), start or stop the queue.
<input checked="" type="checkbox"/> Control Instrument While.	Execute control commands for direct control of instruments while queue is running.
<input type="checkbox"/> Change Performance Li.	Change warning limits and absolute limits for device/module counters.
<input type="checkbox"/> Change Qualification Int.	Change warning limits and absolute limits for qualification intervals.
<input type="checkbox"/> Override Qualification	Ignore limits for qualification to continue operation of the device/module when qualification is due.

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.

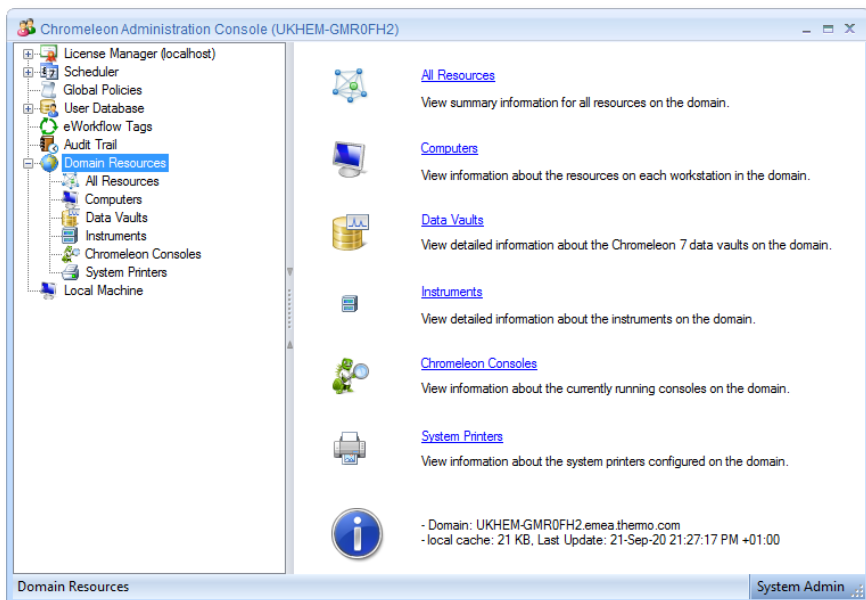


Figure 9. Domain Resource categories

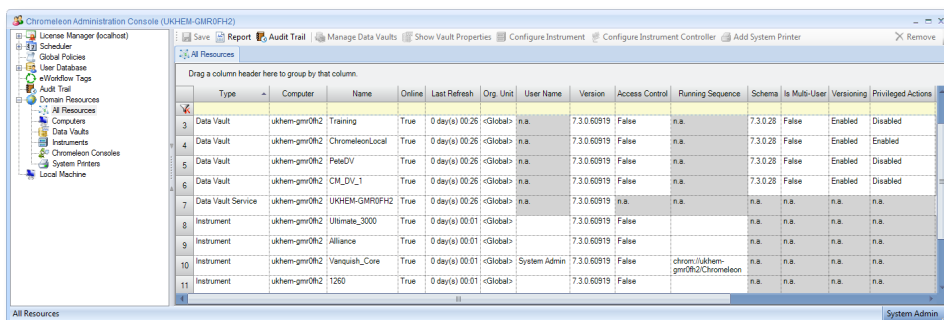


Figure 10. Domain Resources Overview

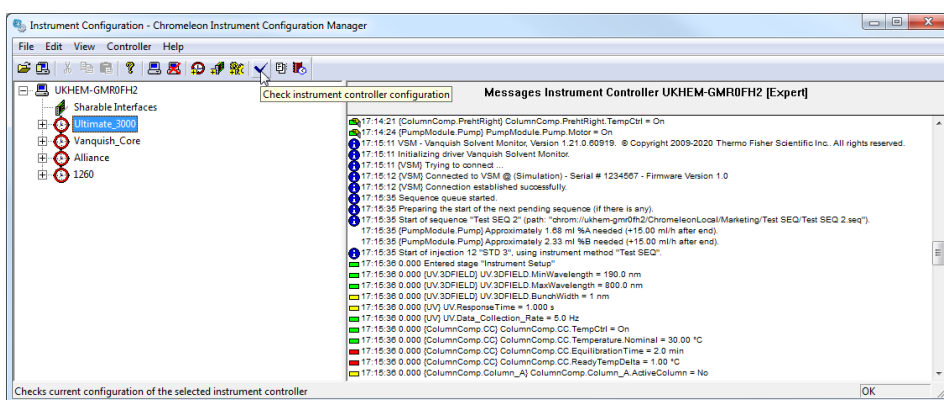


Figure 11. Chromeleon Instrument Configuration Manager

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.

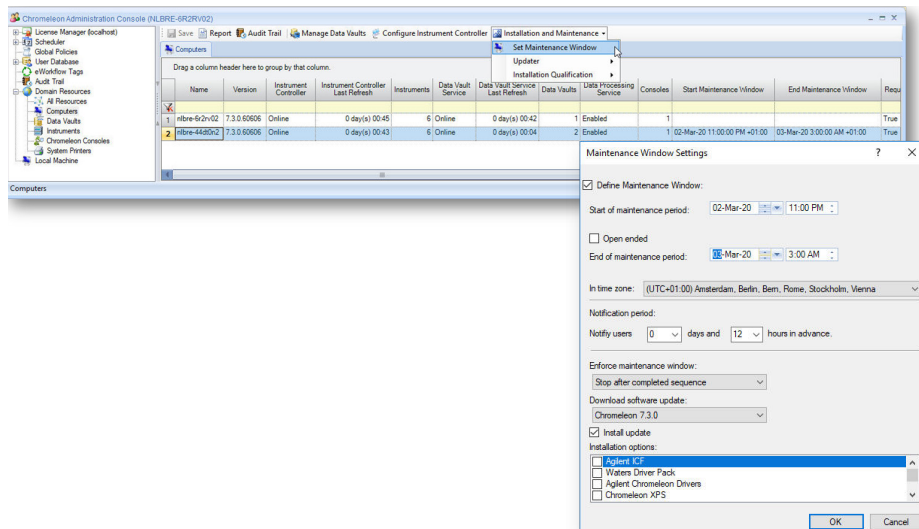


Figure 12. Maintenance Window with options for notifications and sequence handling

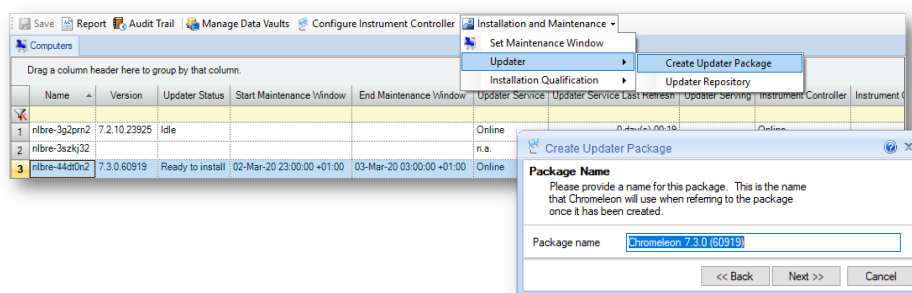


Figure 13. Automated software updating

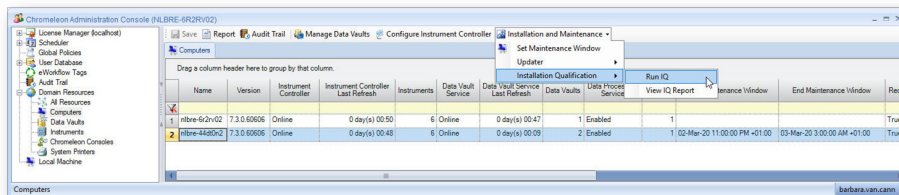


Figure 14. IQ available on remote devices

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.

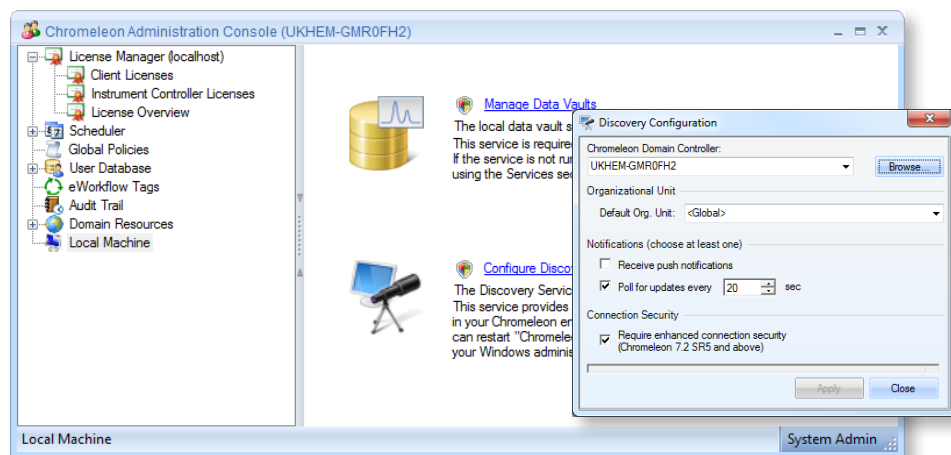


Figure 15. Configure Discovery — a simple process to deliver system changes

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