

CGM LAB

— VIRTUAL USER CONFERENCE

CGM LABDAQ
It's Your System, Own It!

Devang Thaker

Introduction

Devang Thaker

CGM LABDAQ Technical Lead, US Lab Division

Experience at CompuGroup Medical:

- Joined 2016
- Based in Catonsville, MD
- Associate to Technical Support Engineer 0-2 years,
- Implementation Consultant year 3-5
- Technical Lead Lab Support Year 5+

Education:

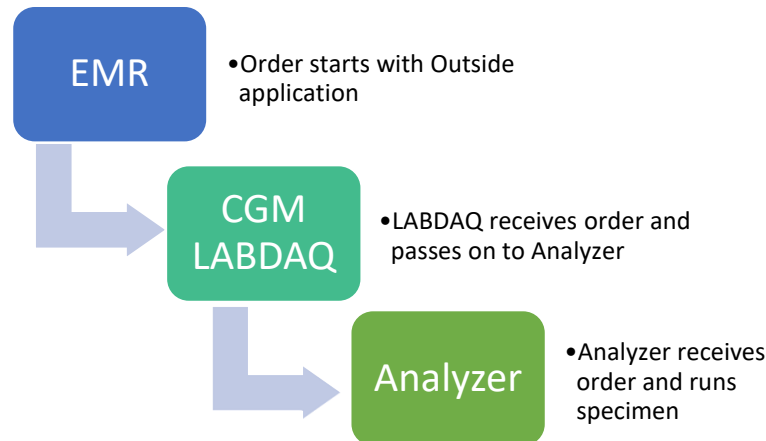
- BA is Business Technology Administrator, UMBC

Agenda

- Analyzer Interfaces
- HL7 Interfaces
- User and User Permissions
- General Troubleshooting
- Knowing when to call Support
- Scenarios
- Q&A

Interface Workflows

- Interface is a generic term which refers to any connection between 2 different systems
 - CGM LABDAQ can have an interface with an Analyzer Platform that runs body fluid specimens.
 - CGM LABDAQ can have an interface with an external system like an EMR/RefLab/Billing



Analyzer Interfaces: Types

- What sort of instruments can my CGM LABDAQ system interface with?
 - Uni-Directional = One-way communication usually starts on the instrument and information is sent back to CGM LABDAQ
 - Examples: Clinitek Status, Cell-Dyn Emerald
 - Bi-Directional = Two-way communication where orders are sent to the analyzer from CGM LABDAQ and results are sent from the analyzer to CGM LABDAQ
 - Examples: Alfa-Wassermann Ace Alera, Ortho Vitros 350

Analyzer Interfaces: Types

- Host Query = Smart two-way communication where the analyzer reads a barcode and sends a "query" to CGM LABDAQ requesting test order, CGM LABDAQ responds with specific tests for that analyzer and results are sent from the analyzer to CGM LABDAQ
 - Examples: AU-680, Access 2
- File-Based = One-way communication where the analyzer saves a file to a folder for CGM LABDAQ to pick up
 - Examples: LCMS analyzers (AB Sciex, Waters, Quant Studio etc.)

Analyzer Interfaces: Communication Issues

- Common communication interruptions
 - Software changes
 - Settings change on analyzer or in CGM LABDAQ
 - Physical connection issues
 - Unplugged cables or adapters
 - Network issues
 - TCP/IP changes, computer not assigned static IP
 - Hardware issues
 - Failure of Analyzer Interface Card (AIC)
 - Failure of COM port
 - Can be caused by power surges, age, etc.

HL7 Interfaces: Applications

- CGM LABDAQ utilizes the following applications to handle import and export of HL7 data.
 - iServer (LabDAQ 4 only)
 - XMLExporter
 - XMLImporter (CGM LABDAQ only)
 - Interface Monitor
 - Mirth
 - LK Transfer

HL7 Interfaces: Applications

- iServer
 - Original HL7 interface application
 - Handles ALL import of HL7 messages into LabDAQ 4
 - Handles Export of HL7 messages out of LabDAQ 4
 - Handles all HL7 interface types supported by LabDAQ 4
 - Demographics (ADT)
 - Orders (ORM)
 - Results (ORU)
 - Billing (DFT)

HL7 Interfaces: Applications

- XMLExporter
 - Introduced in LabDAQ 4
 - Natively generates XML files
 - Requires another application like Mirth to transform the data into HL7
 - CGM LABDAQ
 - can generate XML or HL7 files
 - HL7 files are completely customizable without development modification

HL7 Interfaces: Applications

- XMLImporter
 - Only available in CGM LABDAQ
 - Handles import of all HL7 messages into CGM LABDAQ
 - Import options are completely customizable without development modification(Specifigs)

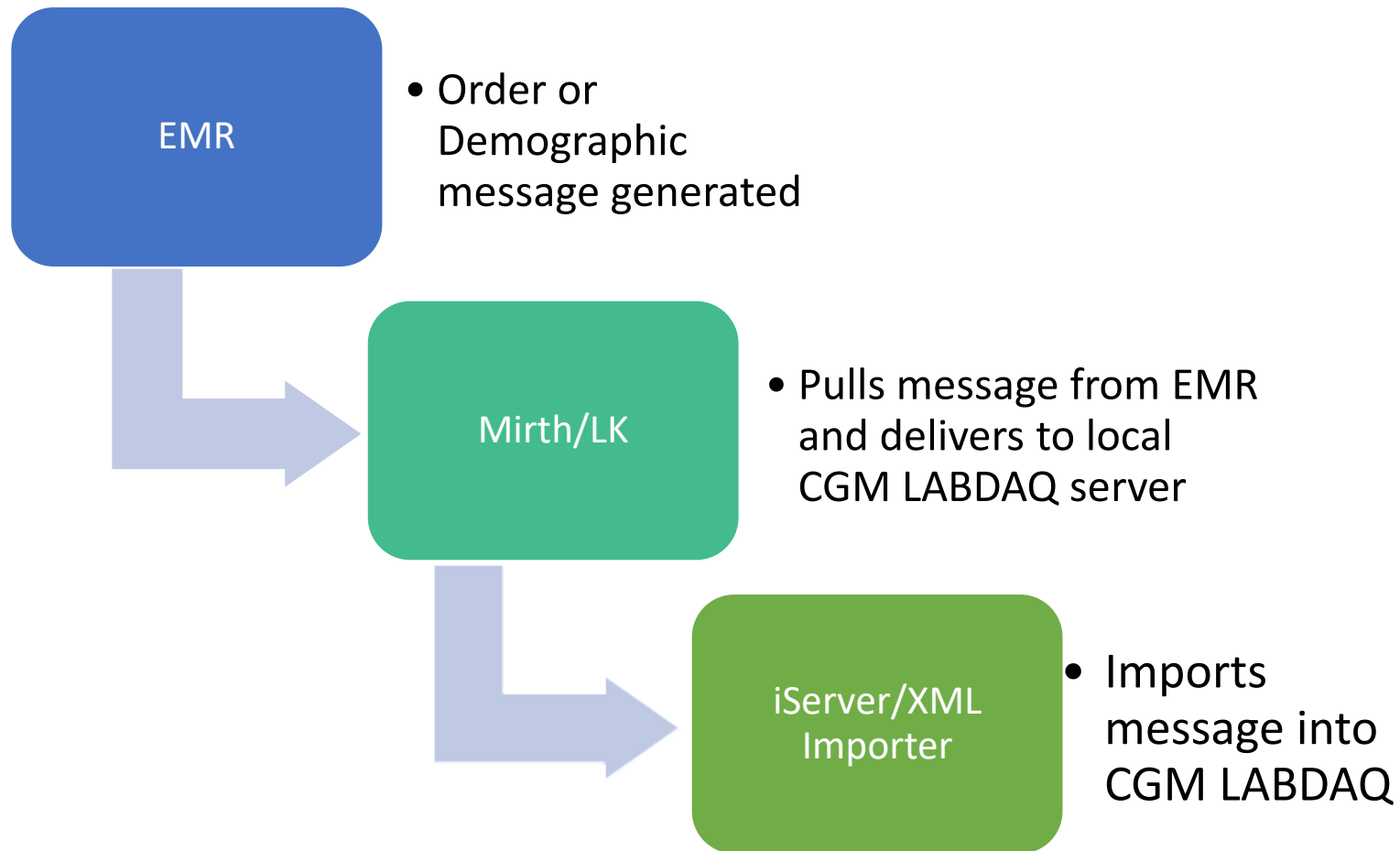
HL7 Interfaces: Applications

- Mirth
 - Responsible for interconnectivity between computer systems across the web
 - Send to: TCP/IP, SFTP, File Drop, etc.
 - Can perform message filtering based off data in the HL7 message
 - Can transform XML files into HL7
 - Installed locally on laboratory server
 - Configured and managed by CGM LABDAQ support

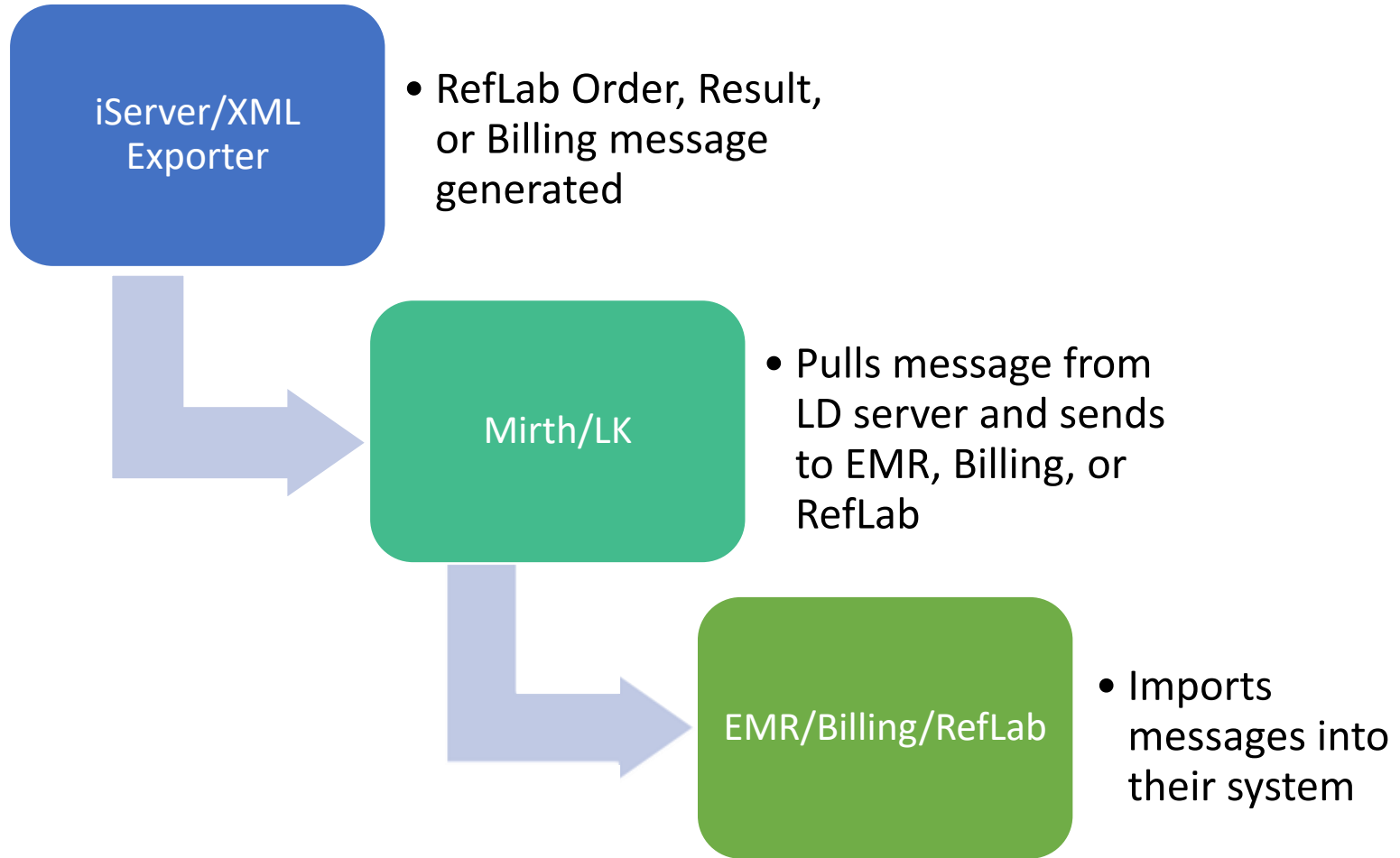
HL7 Interfaces: Applications

- LK Transfer
 - Subscription based service which connects lab server to EMR server
 - Hosted connection by LK Transfer
 - Uses a locally installed app to send/receive files to the LK Transfer cloud

HL7 Interfaces: Message Pathways, Import

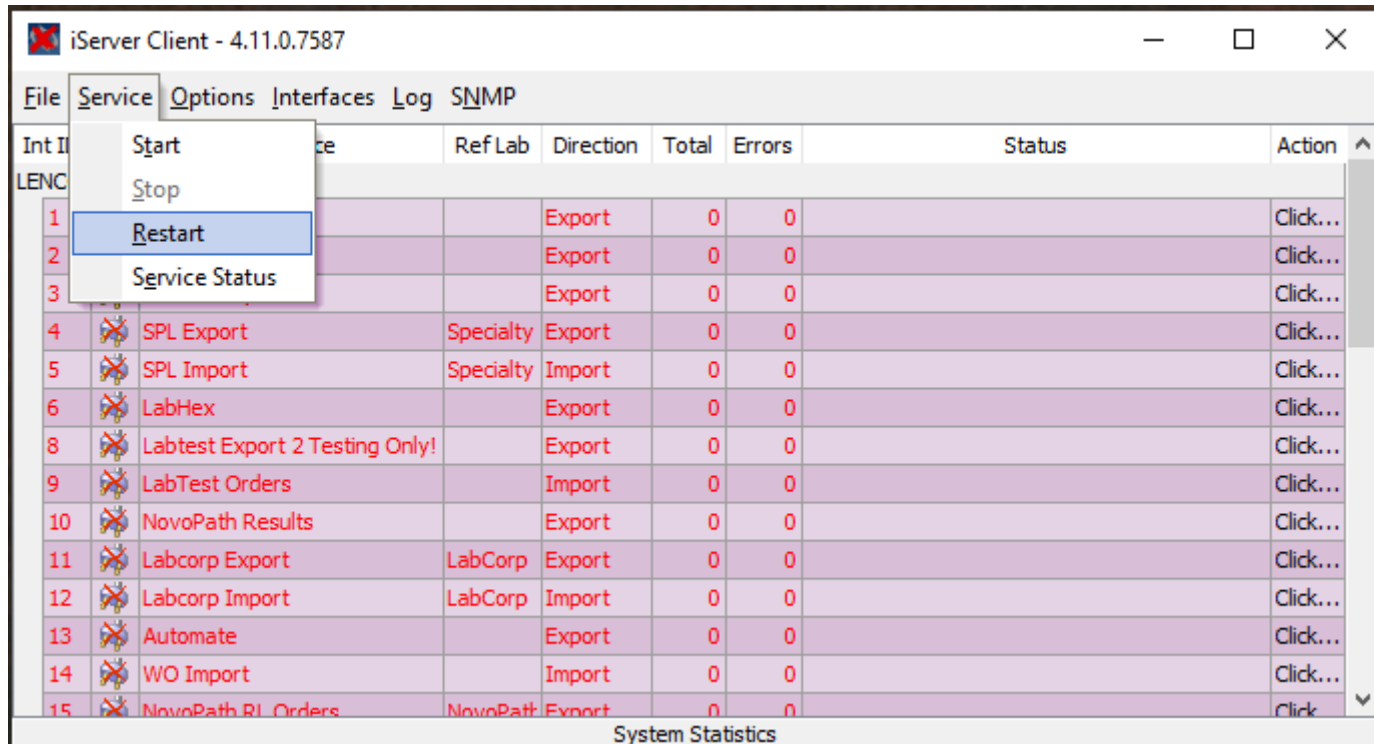


HL7 Interfaces: Message Pathways, Export



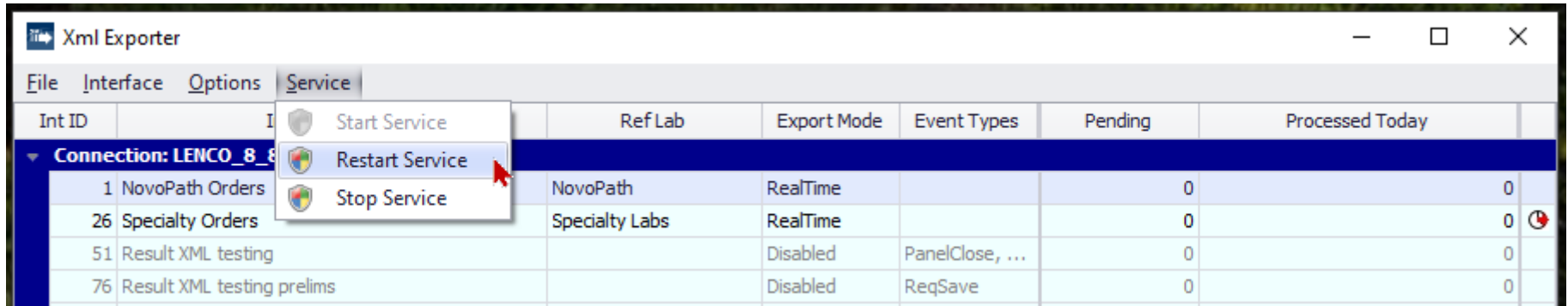
HL7 Interfaces: What can I do?

- When interfaces stop communicating what can I do before contacting support?
 - LabDAQ 4: Restart iServer Service



HL7 Interfaces: What Can I Do?

- LabDAQ 4: Restart XMLExporter

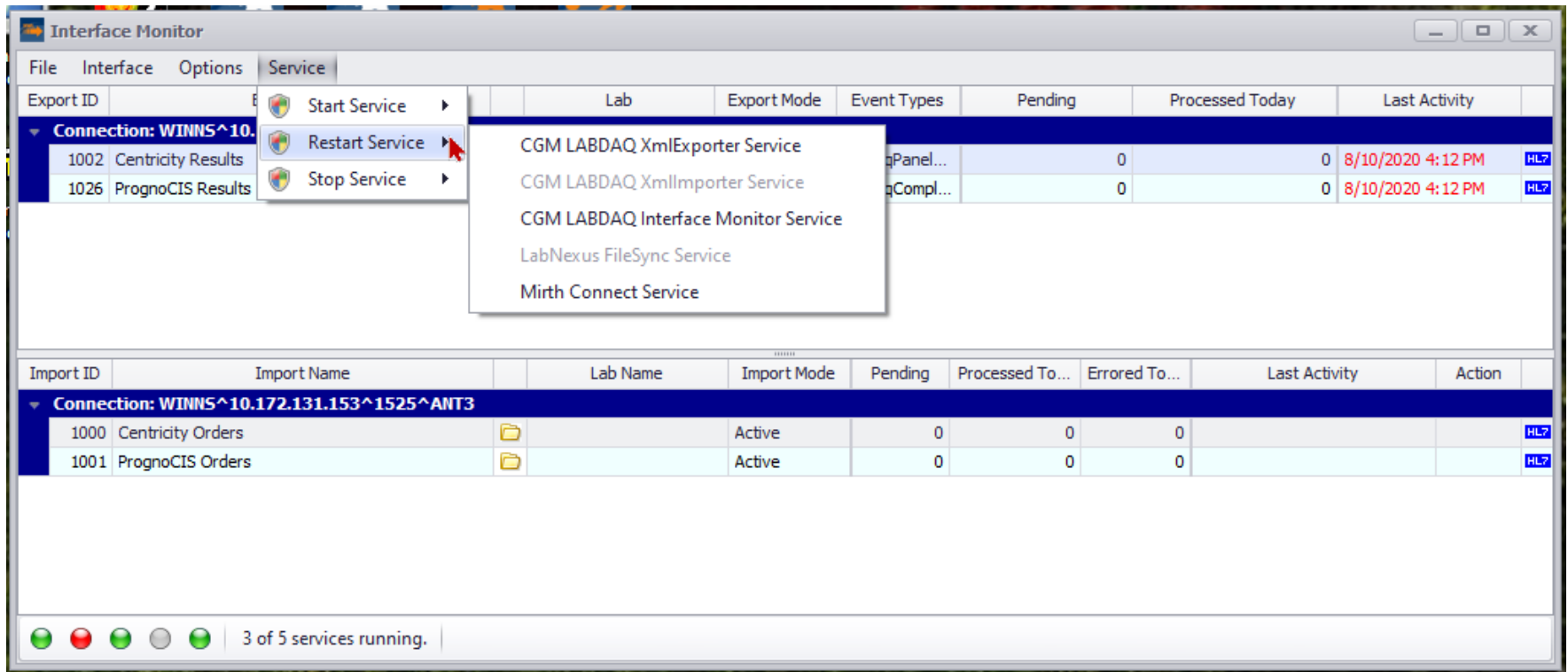


The screenshot shows the 'Xml Exporter' application window. The 'Service' menu is open, displaying three options: 'Start Service', 'Restart Service', and 'Stop Service'. A red mouse cursor is pointing at the 'Restart Service' option. The background shows a table with columns: Int ID, Ref Lab, Export Mode, Event Types, Pending, and Processed Today. The table contains four rows of data.

Int ID	Ref Lab	Export Mode	Event Types	Pending	Processed Today
1	NovoPath	RealTime		0	0
26	Specialty Labs	RealTime		0	0
51		Disabled	PanelClose, ...	0	0
76		Disabled	ReqSave	0	0

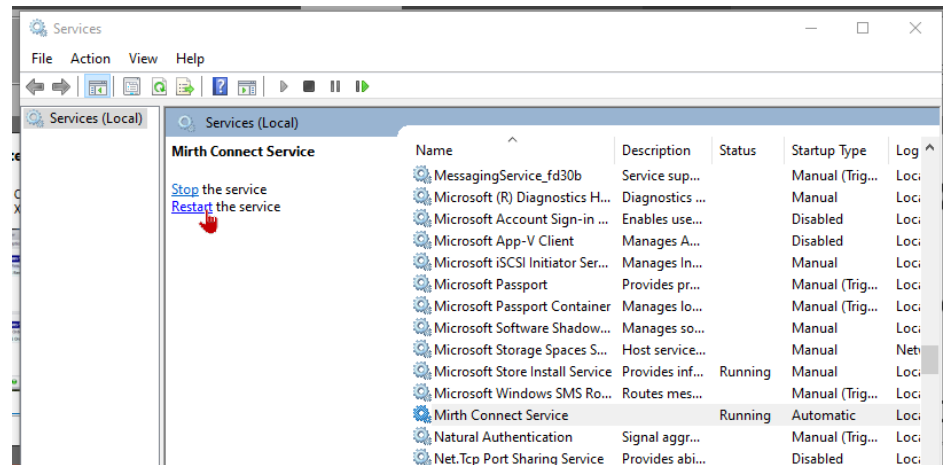
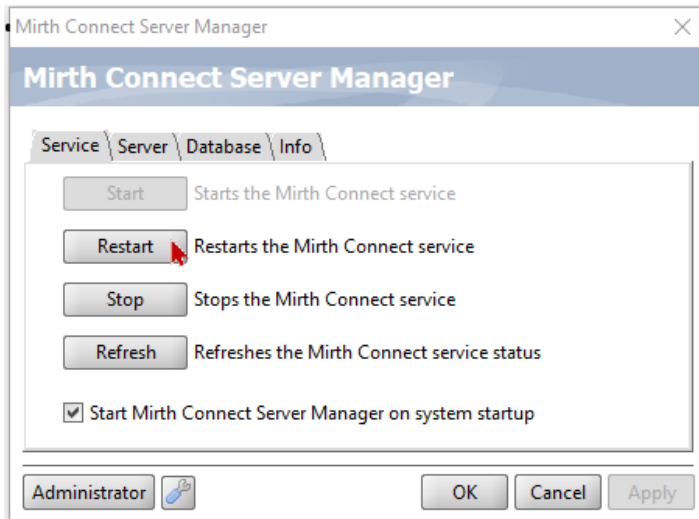
HL7 Interfaces: What Can I Do?

- CGM LABDAQ: Interface Monitor, restart XMLImporter, XMLExporter, etc.



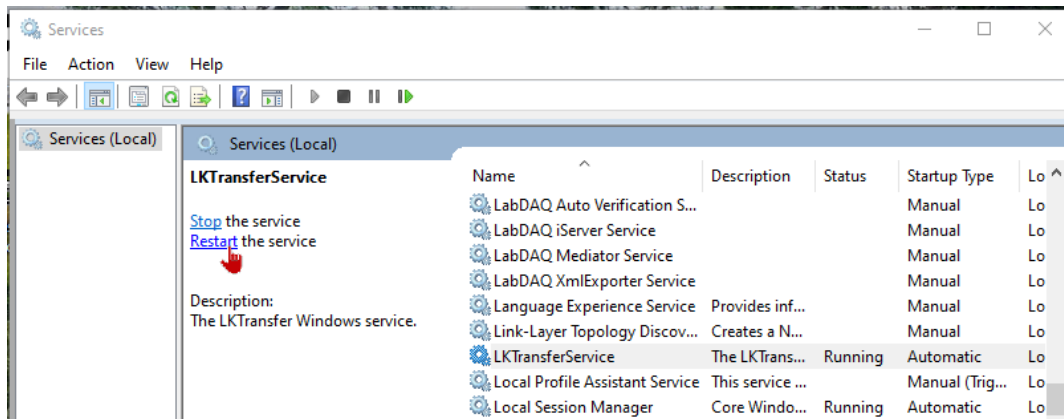
HL7 Interfaces: What Can I Do?

- Restart Mirth service, either through the Mirth Connect Server Manager, or through Services app in Windows

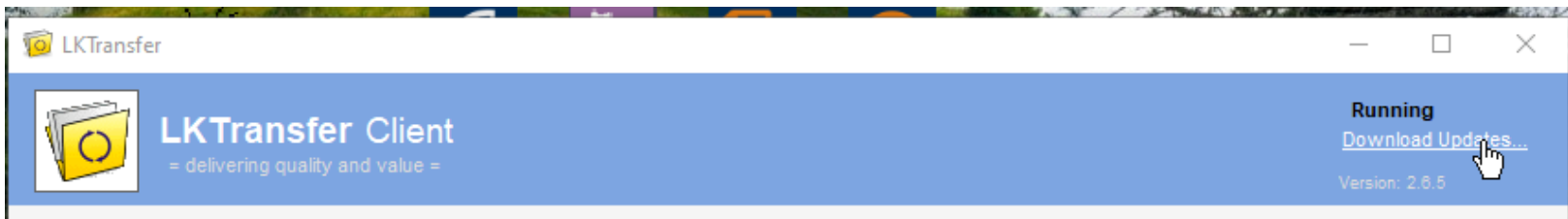


HL7 Interfaces: What Can I Do?

- Restart LK service through Services app in Windows



- Make sure that LK Transfer is running latest version



User Setup in LabDAQ 4

- Can a LabDAQ 4 facility maintain their own user base?
 - User Setup is accessible through the setup in LabDAQ 4
 - Click on the SETUP button and select User Setup / or type US from the blue background screen in LD

The screenshot shows a 'User' setup window with the following fields and options:

- User: [] Last: [] First: [] Middle: [] Initials: [] Password: []
- Printer Mapping: NONE (dropdown) Allow web access: Confirm: []
- Demographics: User Groups | Organizations | Analyzer Access | Other
- Title: [] SSN: []
- Address: [] Birth: []
- [] [] [] Hired: []
- [] [] Terminated: []
- Home Phone: []
- Work Phone: [] Ext: []
- Pager: []
- Cell Phone: []
- Email: []
- Lookup: [] OK: [] Cancel: []

User Setup in LabDAQ 4

- The fields to focus on are:
 - Demographics Tab
 - USER = Login ID
 - Last Name
 - First Name
 - Initials
 - Password & Confirm

User [TEST] LabDAQ Admin

User Last First Middle Initials Password Confirm

Printer Mapping Allow web access

Demographics SSN

Address Birth

Hired

Terminated

Home Phone

Work Phone Ext

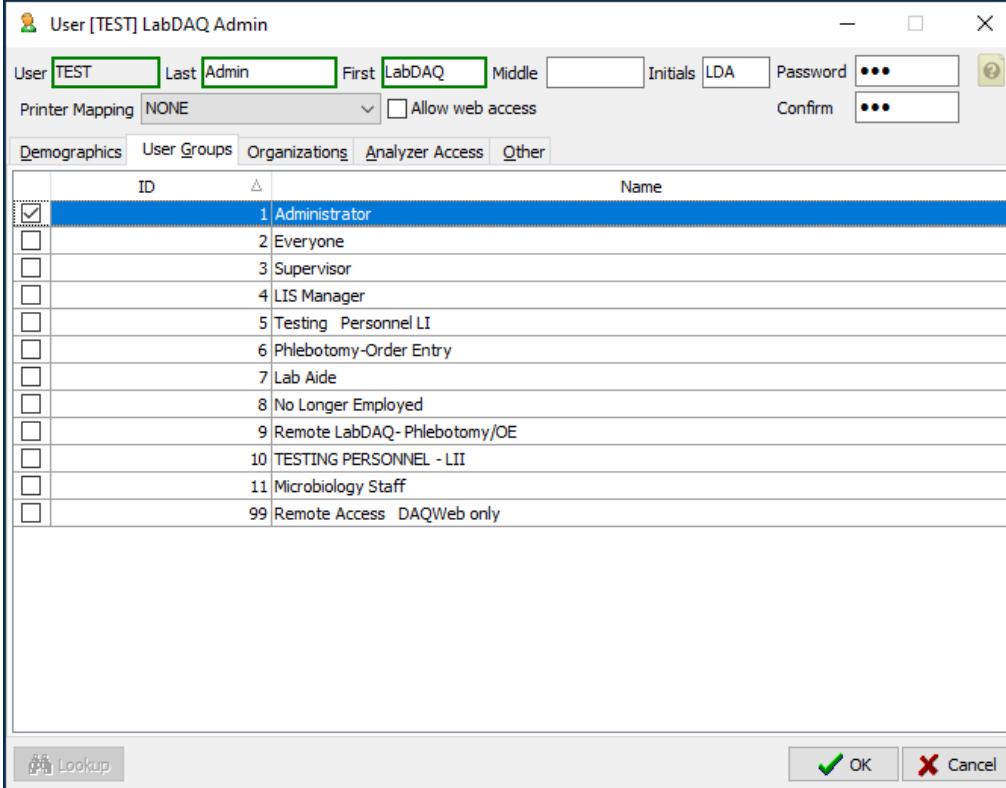
Pager

Cell Phone

Email

User Setup in LabDAQ 4

- User Groups Tab
 - ONLY choose one user group from the options available



The screenshot shows the 'User [TEST] LabDAQ Admin' window. The 'User Groups' tab is active, displaying a list of user groups. The 'Administrator' group (ID 1) is selected, indicated by a checked checkbox and a blue highlight. Other groups include 'Everyone', 'Supervisor', 'LIS Manager', 'Testing Personnel LI', 'Phlebotomy-Order Entry', 'Lab Aide', 'No Longer Employed', 'Remote LabDAQ- Phlebotomy/OE', 'TESTING PERSONNEL - LII', 'Microbiology Staff', and 'Remote Access DAQWeb only'. The 'OK' button is highlighted in green.

ID	Name
<input checked="" type="checkbox"/>	1 Administrator
<input type="checkbox"/>	2 Everyone
<input type="checkbox"/>	3 Supervisor
<input type="checkbox"/>	4 LIS Manager
<input type="checkbox"/>	5 Testing Personnel LI
<input type="checkbox"/>	6 Phlebotomy-Order Entry
<input type="checkbox"/>	7 Lab Aide
<input type="checkbox"/>	8 No Longer Employed
<input type="checkbox"/>	9 Remote LabDAQ- Phlebotomy/OE
<input type="checkbox"/>	10 TESTING PERSONNEL - LII
<input type="checkbox"/>	11 Microbiology Staff
<input type="checkbox"/>	99 Remote Access DAQWeb only

User Setup in LabDAQ 4

- Organizations Tab
 - Only important IF the user is going to be limited to a single organization

User [TEST] LabDAQ Admin

User: TEST Last: Admin First: LabDAQ Middle: Initials: LDA Password: Confirm:

Printer Mapping: NONE Allow web access

Demographics User Groups Organizations Analyzer Access Other

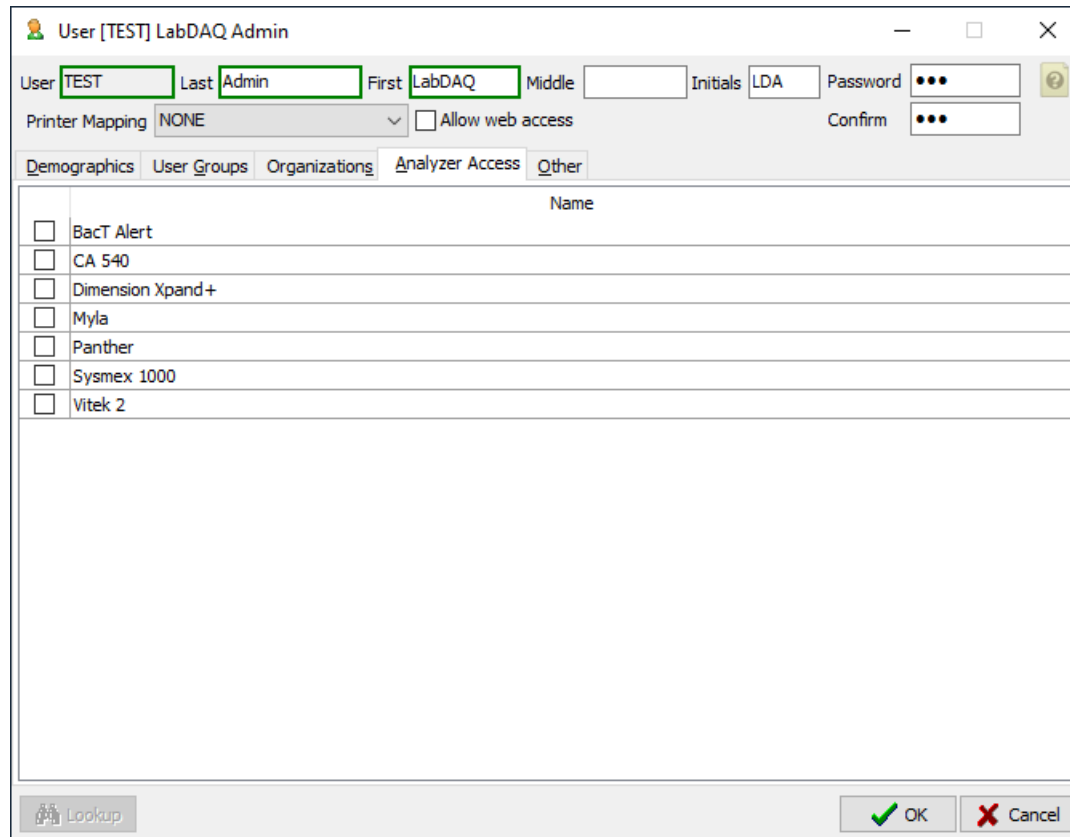
Firewall this user to these Organizations

ID	Name	DAQaccess Location	Choose Location
<input type="checkbox"/> 3	TEST VET CLINIC		<input type="checkbox"/>
<input type="checkbox"/> 95	NEBRASKA MEDICAL CENTER		<input type="checkbox"/>
<input type="checkbox"/> 100	KANSAS PATHOLOGY SERVICES, LLC		<input type="checkbox"/>
<input type="checkbox"/> 101	KANSAS PATHOLOGY DRUG ACCOUNTS		<input type="checkbox"/>
<input type="checkbox"/> 102	KANSAS PATHOLOGY CONSULTANTS [INACTIVE]		<input type="checkbox"/>
<input type="checkbox"/> 999	John Doe's Clinic		<input type="checkbox"/>
<input type="checkbox"/> 1010	LOGAN CO HOSPITAL		<input type="checkbox"/>
<input type="checkbox"/> 1011	GREAT BEND REGIONAL HOSPITAL		<input type="checkbox"/>
<input type="checkbox"/> 1013	NEW FRONTIERS HEALTH SERVICES		<input type="checkbox"/>
<input type="checkbox"/> 1014	HUTCHINSON CLINIC ALLERGY DEPARTMENT (I		<input type="checkbox"/>
<input type="checkbox"/> 1185	KINGMAN COMMUNITY HOSPITAL		<input type="checkbox"/>
<input type="checkbox"/> 1187	KIOWA CO HEALTH DEPARTMENT		<input type="checkbox"/>
<input type="checkbox"/> 1215	KINGMAN CO HEALTH DEPARTMENT		<input type="checkbox"/>
<input type="checkbox"/> 1331	PRATT CO HEALTH DEPT		<input type="checkbox"/>
<input type="checkbox"/> 1452	KIOWA CO MEMORIAL HOSP-GREENSBURG		<input type="checkbox"/>
<input type="checkbox"/> 1457	PRATT INTERNAL MEDICINE		<input type="checkbox"/>
<input type="checkbox"/> 1459	MEDICINE LODGE MEMORIAL HOSPITAL		<input type="checkbox"/>

Lookup OK Cancel

User Setup in LabDAQ 4

- Analyzer Access
 - Only important IF the user will be limited to specific analyzers



The screenshot shows a window titled "User [TEST] LabDAQ Admin" with the following fields and options:

- User: TEST (highlighted in green)
- Last: Admin (highlighted in green)
- First: LabDAQ (highlighted in green)
- Middle: (empty)
- Initials: LDA
- Password: (masked with dots)
- Confirm: (masked with dots)
- Printer Mapping: NONE
- Allow web access

The "Analyzer Access" tab is selected, showing a list of analyzers with checkboxes:

	Name
<input type="checkbox"/>	BacT Alert
<input type="checkbox"/>	CA 540
<input type="checkbox"/>	Dimension Xpand+
<input type="checkbox"/>	Myla
<input type="checkbox"/>	Panther
<input type="checkbox"/>	Sysmex 1000
<input type="checkbox"/>	Vitek 2

At the bottom, there is a "Lookup" button and "OK" and "Cancel" buttons.

User Setup in LabDAQ 4

- Other
 - Generally this is not necessary to modify

The screenshot shows a user setup dialog box titled "User [TEST] LabDAQ Admin". The fields are as follows:

- User: TEST
- Last: Admin
- First: LabDAQ
- Middle: (empty)
- Initials: LDA
- Password: (masked with dots)
- Confirm: (masked with dots)
- Printer Mapping: NONE
- Allow web access: (unchecked)

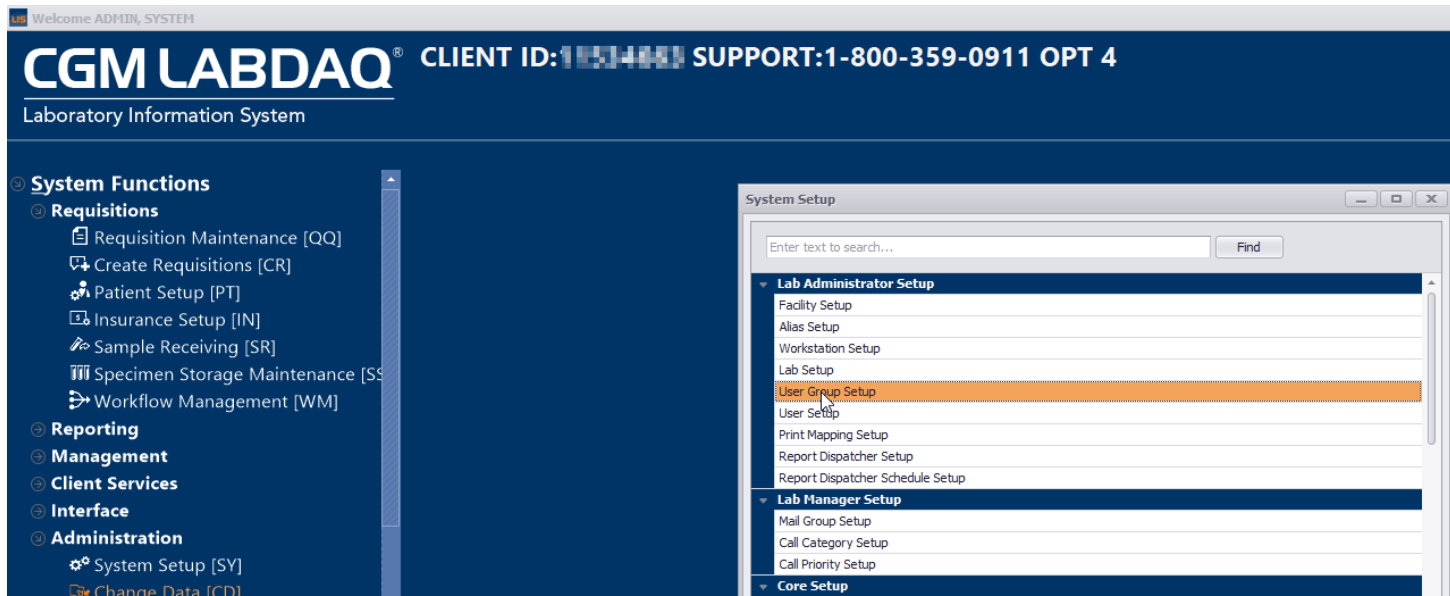
Below the fields are several tabs: Demographics, User Groups, Organization, Analyzer Access, and Other. The "Other" tab is selected and contains the following options:

- Log Off Min: 0
- Password Expiration Days: 0
- Maximum Window Count: 1000
- Mark all panels closed by this user as requiring approval
- Panels this user can approve if they have approval privileges: ALL

At the bottom of the dialog, there is a "Lookup" button on the left and "OK" and "Cancel" buttons on the right.

User Setup in CGM LABDAQ

- User Setup is found in the System Settings menu
 - System Functions – Administration – System Setup – Lab Administrator Setup – User Setup button
 - or type SY from the blue background of CGM LABDAQ



User Setup in CGM LABDAQ

- The fields to focus on are:
 - Demographics Tab
 - Code = User Login
 - Last Name
 - First Name
 - Initials
 - Active box
 - checked for active users

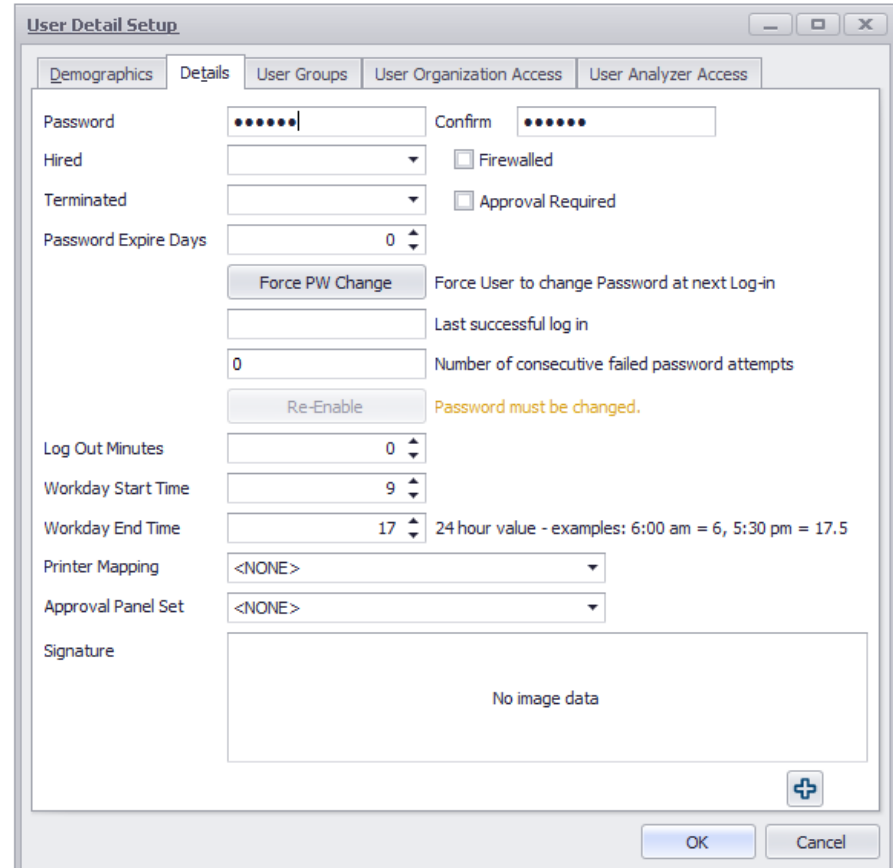
The screenshot shows a 'User Detail Setup' dialog box with the 'Demographics' tab selected. The form contains the following fields and values:

- Code: TEST
- Last Name: McTesterson
- First Name: Tess
- Middle Name: (empty)
- Prefix: (dropdown)
- Suffix: (dropdown)
- Initials: TMT
- Birth Date: 100 years
- Gender: (dropdown)
- SSN: (text box)
- Address: (text box)
- Home Phone: (text box)
- Work Phone: (text box)
- Work Ext: (text box)
- Cell Phone: (text box)
- Fax Number: (text box)
- Pager: (text box)
- Email Address: (text box)
- Note: (text area)

The 'Active' checkbox is checked. At the bottom right, there are 'OK' and 'Cancel' buttons.

User Setup in CGM LABDAQ

- Details Tab
 - Password & Confirm

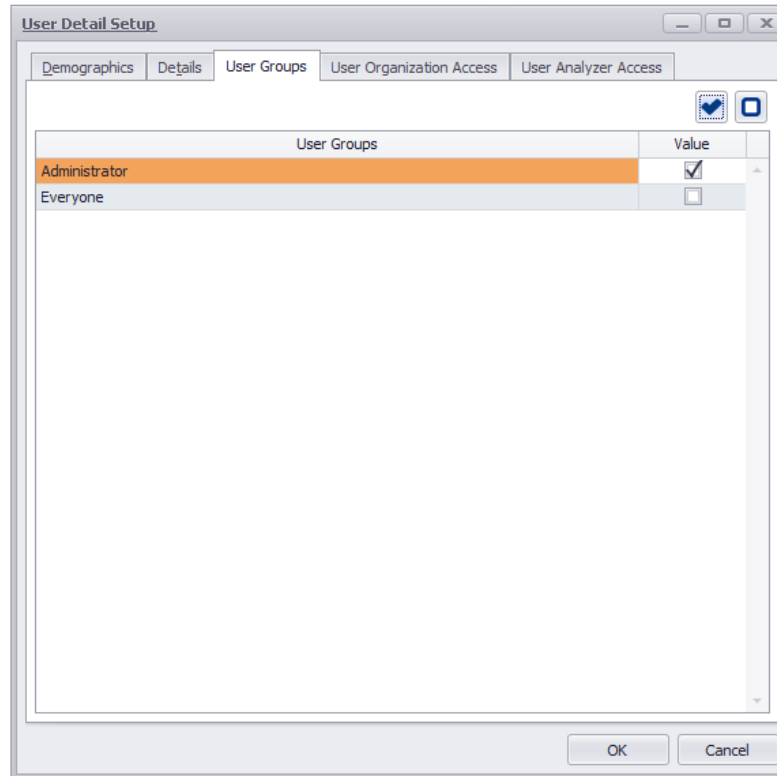


The screenshot shows the 'User Detail Setup' dialog box with the 'Details' tab selected. The 'Password' and 'Confirm' fields are filled with masked characters. The 'Hired' and 'Terminated' fields are empty. The 'Password Expire Days' field is set to 0. The 'Force PW Change' button is visible, and the 'Last successful log in' field is empty. The 'Number of consecutive failed password attempts' field is set to 0. The 'Re-Enable' button is visible, and the 'Password must be changed' message is displayed. The 'Log Out Minutes' field is set to 0. The 'Workday Start Time' field is set to 9. The 'Workday End Time' field is set to 17. The 'Printer Mapping' and 'Approval Panel Set' fields are set to '<NONE>'. The 'Signature' field is empty and contains the text 'No image data'. The 'OK' and 'Cancel' buttons are at the bottom right.

Field	Value
Password
Confirm
Hired	
Terminated	
Password Expire Days	0
Force PW Change	Force User to change Password at next Log-in
Last successful log in	
Number of consecutive failed password attempts	0
Re-Enable	Password must be changed.
Log Out Minutes	0
Workday Start Time	9
Workday End Time	17
Printer Mapping	<NONE>
Approval Panel Set	<NONE>
Signature	No image data

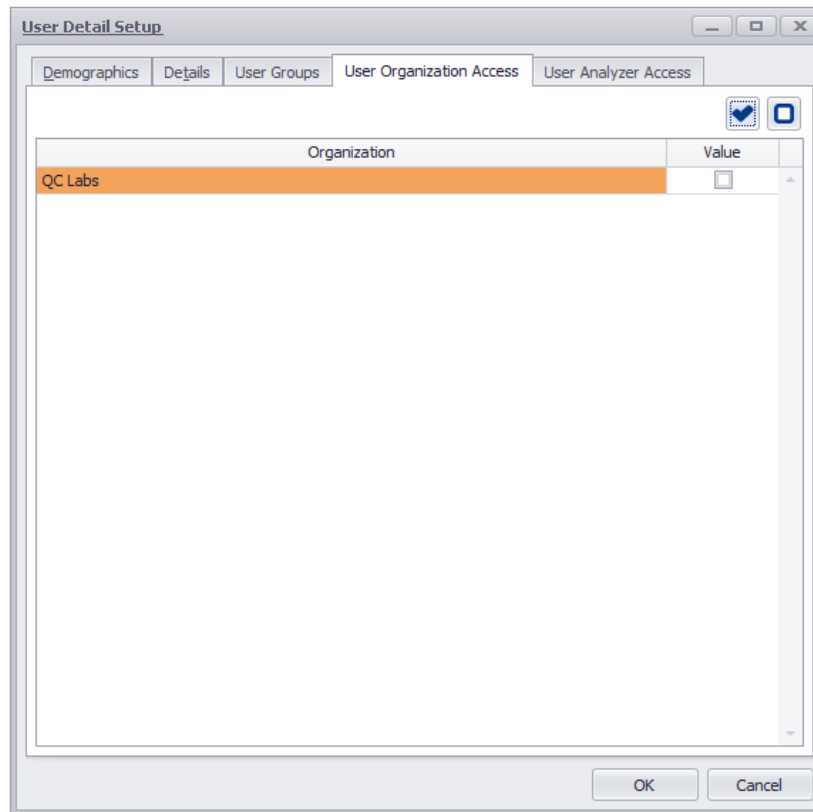
User Setup in CGM LABDAQ

- User Groups Tab
 - ONLY one user group should be selected from the available options



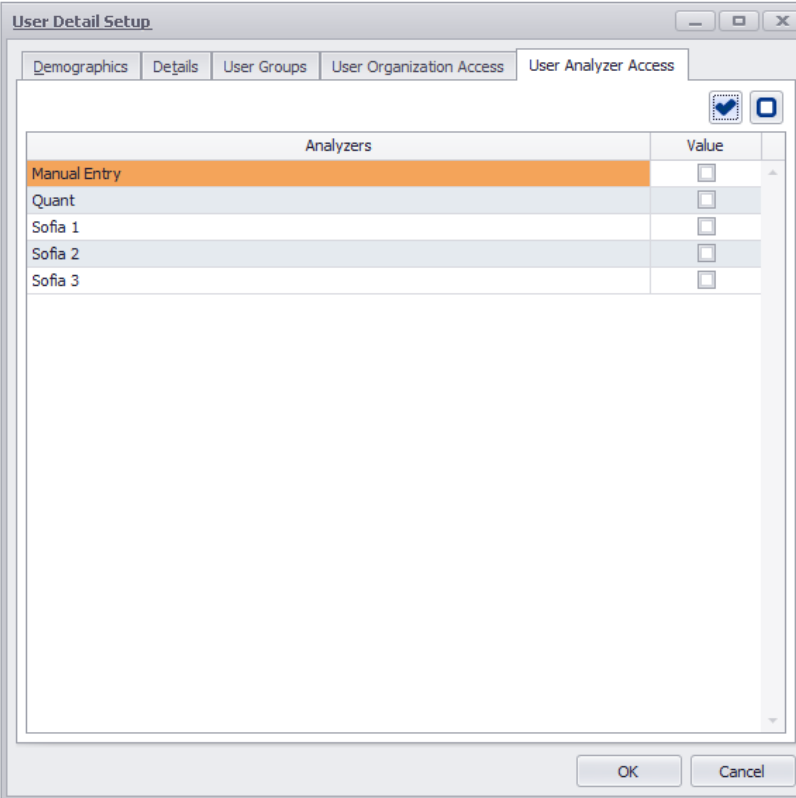
User Setup in CGM LABDAQ

- User Organization Access
 - Only important if the user will be limited to specific organizations within CGM LABDAQ



User Setup in CGM LABDAQ

- User Analyzer Access
 - Only important if the user will be limited to specific analyzers within the lab



The screenshot shows the 'User Detail Setup' dialog box with the 'User Analyzer Access' tab selected. The dialog contains a table with the following data:

Analyzers	Value
Manual Entry	<input type="checkbox"/>
Quant	<input type="checkbox"/>
Sofia 1	<input type="checkbox"/>
Sofia 2	<input type="checkbox"/>
Sofia 3	<input type="checkbox"/>

The 'Manual Entry' row is highlighted in orange. The dialog also features 'OK' and 'Cancel' buttons at the bottom.

Managing Users

- In both LabDAQ 4 and CGM LABDAQ you will notice there is no option to delete a user
 - Users are tied to orders, results, etc in the database and deleting a user will cause major problems with database integrity
 - Users can be TERMINATED which will deny them access into the CGM LABDAQ system, but retain all the necessary linking for the database.

The image displays two screenshots of the LabDAQ user management interface. The left screenshot shows the 'User [TEST] LabDAQ Admin' form, which includes fields for User (TEST), Last (Admin), First (LabDAQ), Middle, Initials, Password, and Confirm. The right screenshot shows the 'User Detail Setup' window, which has tabs for Demographics, Details, User Groups, User Organization Access, and User Analyzer Access. The 'Terminated' dropdown menu is highlighted in yellow in both screenshots.

User Groups

- User Groups are how you create and maintain permissions sets in CGM LABDAQ
- User Groups can be maintained by designated users in the facility
- Support can assist with assigning User Group rights. However, we will request a signed document from either a Lab Manager, Office Manager, Owner, etc. when making changes, especially adding ADMIN permissions.

General Troubleshooting Tips

- What are the questions we ask when investigating system issues?
 - When did the system last work as expected?
 - When did you notice the issue?
 - Has anything happened since the system last worked as expected? (Preventative Maintenance, OS updates, Software updates, Electrical Storms, Power Surges, Power Loss, etc.)
 - What steps have you already taken?

General Troubleshooting

- Help us to help you!
 - When investigating an issue, we will often ask you to be our hands, eyes, and ears.
 - We may ask you to look at a cable, check a connection, or even turn off a device and turn it back on again.
 - Please be patient with us as we work with you to restore functionality

Knowing When To Call Support

- When is it time to call your friendly neighborhood support team?
 - You have restarted above mentioned services, yet nothing seems to work
 - You feel out of your element and don't know what actions to take
 - An error displays on the computer starting with "ORA-"
 - We're the first people you think of
 - You have talked with everyone else
 - You need technical advice on your system

Scenario 1

- You are starting your workday, controls are run and your first patients are drawn and specimens are piling up ready to be loaded and run on your instrument. You load up the first rack into the instrument and it fails to successfully scan the barcode for each specimen on the rack.
- What do you do when the CGM LABDAQ Mediator stops communicating with your analyzer?

Scenario 1: Multiple Choice

- A) Restart mediator service
- B) Resend results from instrument / rescan specimen barcode
- C) Restart analyzer
- D) Restart LABDAQ computer
- **E) All the above**
- F) “Kick the LabDAQ computer/Analyzer. Hitting the toaster always works at home.”

Scenario 2

- It's Monday morning. Normally over the weekend, orders trickle in and are ready for the specimens that are waiting for you when you walk into the lab. You have rack after rack of tubes ready to be received into the system, but when you try to scan them into CGM LABDAQ none of the tubes are recognized.
- What do you do when orders stop crossing from your EMR / Web Portal into CGM LABDAQ?

Scenario 2: Multiple Choice

- A) Spam send orders over and over again for hours at a time
- **B) Restart the iServer (LD4) or the XMLImporter Service (CGMLD)**
- **C) Reboot your CGM LABDAQ computer**
- D) Sit down and watch some anime on your phone, until the order maybe, eventually cross

Scenario 3

- An electrical storm knocked out power to your building and things are just now starting to come back online. Your main CGM LABDAQ computer boots up, you login to windows, and when you try to start CGM LABDAQ, you get an error that says "ORA-03113: end-of-file on communication channel". CGM LABDAQ refuses to open for you no matter how many times you close the application and try to login again

Scenario 3: Multiple Choice

- **A) Contact CGM LABDAQ Support immediately**
- B) Restart your CGM LABDAQ server
- C) Call IT and have them reimagine the CGM LABDAQ server
- D) Take this opportunity to grab a Pumpkin Spice Latte. It's pumpkin season.

Scenario 4

- Your lab has a new technician starting. You would like to make sure they can access CGM LABDAQ and do everything that is required. When you create their user, you assign every user group to them, and only give them access to the hematology analyzer. When they login, CGM LABDAQ seems to be acting strange and they don't have access to perform simple tasks like running QC on the chemistry machine or editing existing orders.
- What could be the issue?

Scenario 4: Multiple Choice

- A) User Group assignments need to be reviewed in User Setup
- B) Analyzer Access settings need to be reviewed in User Setup
- C) Reboot the PC because CGM LABDAQ is acting weird and a good reboot will solve the issue
- **D) A&B**
- E) Just delete all of the user groups

Questions & Answers

- Thank you very much for your time and attention!

Thank you!

CGM LAB

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2021