

Run Book: FIX, MQ and Seamans

Contents

[Key information 2](#_Toc181281427)

[IP Addresses 2](#_Toc181281428)

[Data feed specifications 2](#_Toc181281429)

[FIX Checklist 3](#_Toc181281430)

[Start of Day Checklist - FIX 3](#_Toc181281431)

[Intra-Day Checklist - FIX 3](#_Toc181281432)

[End of Day Checklist - FIX 3](#_Toc181281433)

[MQ Server Checklist 4](#_Toc181281434)

[MQ NDM Checklist 4](#_Toc181281435)

[MQ ILMT Checklist 4](#_Toc181281436)

[Seamans Checklist 5](#_Toc181281437)

[IBM MQ Checklist Instructions 6](#_Toc181281438)

[Start of Day Operating Instructions – IBM MQ 6](#_Toc181281439)

[Start of Day Operating Instructions – IBM NDM 7](#_Toc181281440)

[Start of Day Operating Instructions – IBM ILMT 7](#_Toc181281441)

[Start of Day Operating Instructions – Seamans 7](#_Toc181281442)

[FIX Checklist Instructions 11](#_Toc181281443)

[FIX Start of Day Operating Instructions 11](#_Toc181281444)

[FIX Intraday Operating Procedure 12](#_Toc181281445)

[FIX End of Day Operating Procedure 13](#_Toc181281446)

[Troubleshooting 13](#_Toc181281447)

[Reset FIX Sequence numbers 13](#_Toc181281448)

[MS MQ for FIX 14](#_Toc181281449)

[FIX Services not starting? 15](#_Toc181281450)

[Appendix 16](#_Toc181281451)

[Appendix 1: Credentials 16](#_Toc181281452)

[Background information 17](#_Toc181281453)

[IBM MQ 17](#_Toc181281454)

[FIX 18](#_Toc181281455)

[Seamans 18](#_Toc181281456)

[Revision History 18](#_Toc181281457)

# Key information

## IP Addresses

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Items** | **IP** | **Service** | **Access needed** | **Base Directory** |
| FIX Server | UAT | 22.33.51.105 | sa\_mamcs@icbcfs.cloud | BR\_VPN VNET | E:\Fix |
| Prod | 10.224.15.20 | sa\_fix\_prod |  |  |
| DR | 10.224.89.20 | sa\_fix\_prod |  |  |
| MQ Server | UAT | 22.33.51.106 | sa\_mqmcs@icbcfs.cloud | BR\_VPN VNET |  |
| Prod | 10.224.15.9\**10 (10 active)** | sa\_mqmcs |  |  |
| DR | 10.224.89.9\**10 (10 active)** | sa\_mqmcs |  |  |
| MQ Consumer | UAT | 10.1.10.19 | sa\_mqmcs@icbcfs.cloud | BR\_VPN VNET |  |
| Prod | 10.224.15.18 | sa\_mqmcs |  |  |
| DR | 10.224.89.18 |  |  |  |
| NDM | UAT | 22.33.51.107 | tracker@icbcfs.cloud |  |  |
| Prod | 10.224.15.**29**\30 \* (29 active) | tracker |  |  |
| DR | 10.224.89.**29**\30\*  (29 active) | tracker |  |  |
| ILMT | UAT |  |  |  |  |
| Prod | 10.224.15.13 | sa\_mqmcs |  |  |
| DR | None | sa\_mqmcs |  |  |
| Seamans | Prod | 10.224.15.18 | sa\_mqmcs |  |  |
| DR | 10.224.29.18 | sa\_mqmcs |  |  |

* \*10.224.15.30 and 10.224.89.30 NDM server is not actively used for failover.
* BR is running the NDM PROD and DR in parallel. Design is a hot-hot setup.

## Data feed specifications

Data feed information can be found within the Data section of the Technology SharePoint site.

[ICBC FS Technology - Home](https://industrialfs.sharepoint.com/sites/ICBCFSTechnology)

## 

# FIX Checklist

## Start of Day Checklist - FIX

|  |  |  |  |
| --- | --- | --- | --- |
| **Step** | **Time** | **UAT** | **Prod** |
| FIX Login Message passed | 6-7am EST | □ | □ |
| FIX Heartbeat messages occurring | 6-7am EST | □ | □ |
| MSMQ up | 6-7am EST | □ | □ |

## Intra-Day Checklist - FIX

|  |  |  |  |
| --- | --- | --- | --- |
| **Step** | **Time** | **UAT** | **Prod** |
| FIX Heartbeat messages occurring | A few times 7am-6pm | □ | □ |
| Timing or intraday trades | A few times 7am-6pm | □ | □ |

## End of Day Checklist - FIX

|  |  |  |  |
| --- | --- | --- | --- |
| **Step** | **Time** | **UAT** | **Prod** |
| FIX Logout Message passed | 6:45-7:30pm | □ | □ |

# Weekend Checks

Do the same check Sunday 6pm+

# MQ Server Checklist

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Step** | **Time** | **Prod Active** | **Prod InActive** | **DR Active** | **DR Inactive** | **UAT** |
| C Drive not full | 6-7am EST | □ | □ | □ | □ | □ |
| E Drive is mapped and not full | 6-7am EST | □ |  | □ | □ | □ |
| F Drive is mapped and not full |  |  |  |  |  | □ |
| Server Manager Console à All Servers à Services are clear | 6-7am EST | □ | □ | □ |  | □ |
| Queue Manager are up : ICBCFS073 (Impact), ICBCFS1432 (Nina) and QM.FS. SWIFT | 6-7am EST | □ |  |  |  | □ |
| Listeners Manager are up : ICBCFS073 (Impact), ICBCFS1432 (Nina) and QM.FS. SWIFT |  | □ |  |  |  | □ |

# MQ NDM Checklist

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Step** | **Time** | **Prod Active** | **Prod In Active** | **DR Active** | **DR Inactive** | **UAT** |
| C Drive not full | 6-7am EST | □ | □ | □ | □ |  |
| E Drive is mapped and not full | 6-7am EST | □ |  | □ |  |  |
| F Drive is mapped and not full |  |  |  |  |  |  |
| Server Manager Console à All Servers à Services are clear | 6-7am EST | □ | □ | □ | □ |  |
| Failover Cluster Manager à Cluster Core Resources are both online | 6-7am EST | □ | □ |  |  |  |

# MQ ILMT Checklist

|  |  |  |
| --- | --- | --- |
| **Step** | **Time** | **Prod Active** |
| C Drive not full | 6-7am EST | □ |
| BigFix Controller connects |  | □ |

# Seamans Checklist

|  |  |  |
| --- | --- | --- |
| **Step** | **Time** | **Prod Active** |
| No windows popup | 6-7am EST | □ |
| E, W, X, & Y drives |  | □ |
| 29 Files in marginftp à BR |  | □ |
| 3 .ok files in marginftp à Seamans |  | □ |
| Seaman\_liquidity file in marginftp à Seamans\_Liquidity |  | □ |

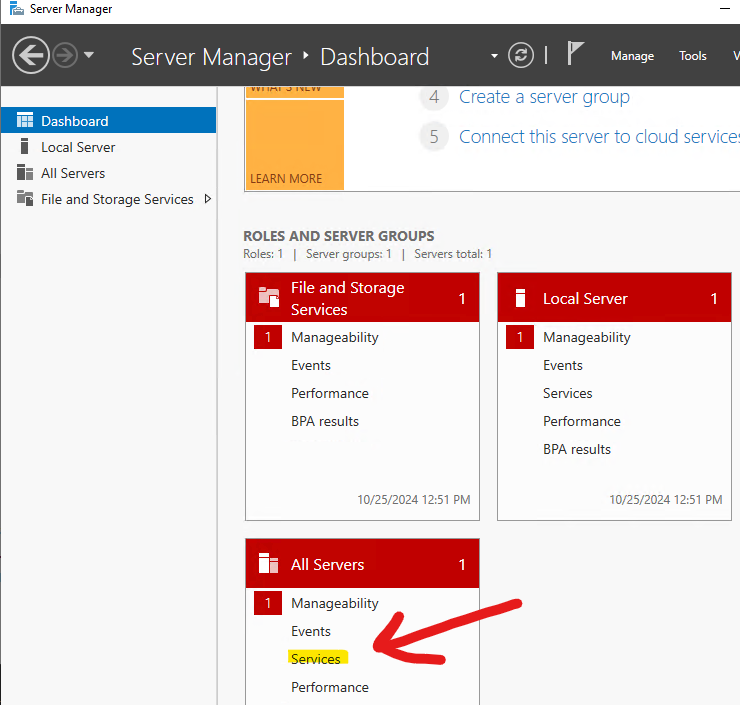
# IBM MQ Checklist Instructions

## Start of Day Operating Instructions – IBM MQ

1. Log onto all of the MQ Server machines listed above.
2. Ensure that all servers:
   1. C: Drive not full
   2. E: Drive is mapped and has space \*Only Active Nodes
      1. Please note D: drive not mandatory



* 1. In Server Manager Console à All Servers à Services is blank. If so, restart it.



* 1. Confirm that all queues are up and running \*Only Active Nodes
     1. ICBCFS073 à IMPACT
     2. ICBCFS1432 à NINA
     3. QM.FS.SWIFT à SWIFT

All other queues are optional.

A screenshot of a computer

Description automatically generated

* 1. Confirm channels are running for each. \*Only Active Nodes

A screenshot of a computer

Description automatically generated

* 1. Confirm listeners are running\*Only Active Nodes

A screenshot of a computer

Description automatically generated

## Start of Day Operating Instructions – IBM NDM

1. C and E and G re not out of space
2. Services are clear
3. Failover Cluster Manager à Cluster Core Resources are both online

## Start of Day Operating Instructions – IBM ILMT

1. C drive is okay (no shared drives)
2. BigFix Controller connects. Look under Computers

## Start of Day Operating Instructions – Seamans

1) Make sure no command window pop up. If there are, then These are errors from Ravi’s job

3) Check that we have E, W, X, Y, and Z drive

A screen shot of a computer

Description automatically generated

1. In ftphome à marginftp à BR. Make sure there are the 29 files.
   1. Ravi
      1. Tacc\_sec\_hldr\_memo
      2. Seamans\_tprchs\_sale\_historical
      3. Tsecurity\_rating\_extract
      4. Tsec\_price\_extract
      5. Tsec\_xref\_key\_extract
      6. Tsecurity\_desc\_extract
      7. Tprchs\_sale\_trans\_extract
      8. Tsec\_trd\_exchange\_extract
      9. Tprchs\_sale\_trans\_COUNTS\_extract
      10. Tcurrency\_cvrsn\_extract
      11. Tmsd\_base\_extract
      12. Tbook\_trans\_extract\_with\_account\_freeze
      13. Tcage\_rdm\_data\_extract
      14. Tdiv\_trans\_extract
      15. Taccount\_sec\_hldr\_extract
      16. Tdiv\_trans\_extract
      17. Taccount\_sec\_hldr\_extract
      18. Tbond\_data\_extract
      19. Tbook\_trans\_extract
      20. Tacc\_party\_extract
      21. Tacc\_type\_balance
   2. BONY via Greg Stellate
      1. APIBAL\_
      2. APIBALA
      3. APIBALE
      4. Po758310
      5. Trn\_
      6. Trn3
   3. Jose (International Operations)
      1. Euroclear - R30T-U – Securities balances – Real-time processes
      2. Custody\_Holdings

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1. Check for 3.ok files.

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Description automatically generated

1. Check for the seaman\_liquidity\_data.xlsx file. If this doesn’t work call Seamans.

A computer screen with a message

Description automatically generated

This file is consumed by the Data warehouse and is used as a part of the Daily Intraday report. Prasad created this for Jenny Shi's team.

Along with MQ's BONY and DTCC files, the Stock liquidity file is also used for Excess Liquidity calculations.

# FIX Checklist Instructions

## FIX Start of Day Operating Instructions

1. RDP to the FIX Server.
2. Go to the Base Directory.
3. Go to Logs.

A screenshot of a computer

Description automatically generated

**Check that we logged in.**

In the event.current log, see that the logon was received.

A screenshot of a computer

Description automatically generated

**Check Heartbeats**

Open up the messages.current and make sure that you see heartbeat messages:

A screenshot of a computer

Description automatically generated

They look like. The tag 49 is the Sender Comp ID so you can tell if it is Broadridge (BRD\*\*\*\*) vs ICBC (ICBC\*\*\*). They have a message tag of 112

## FIX Intraday Operating Procedure

1. RDP to the FIX Server
2. Go to the Base Directory
3. Go to Logs
4. Make sure that you see heartbeats on occasion
5. Open up the messages.current and make sure that you see heartbeat messages:

A screenshot of a computer

Description automatically generated

1. They look like. The tag 49 is the Sender Comp ID so you can tell if it is Broadridge (BRD\*\*\*\*) vs ICBC (ICBC\*\*\*). They have a message tag of 112

## FIX End of Day Operating Procedure

1. RDP to the FIX Server
2. Go to the Base Directory
3. Go to Logs
4. Make sure you see a logout.

# Troubleshooting

## Reset FIX Sequence numbers

There are two sequence numbers: one that ICBCFS sends to Broadridge and one that we receive.   
In the base directory, you can change the Base Directory\Store\FIX4.4-ICBC01T.seqnum file

ICBC-to-Broadridge sequence number: Broadridge-to-ICBC sequence number.

Change as needed

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## MS MQ for FIX

The FIX server gets the messages from MS MQ. If you are hearing that messages are being processed in the database, but you aren’t seeing them in the logs, check the MQ

1. Open up computer management.
2. Go To services and applications à Message Queuing
3. See the queue.

Dbtobroadridge\_impact\_priority is the queue name of the trades that we get from the SQL server.

Broadridgetodb -à I am guessing is the one that sends something to some process to do the GemsAckNack, but no idea

A screenshot of a computer

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A screenshot of a computer

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If you do not see a message here, then the SQL server is not sending it, or it is not logged in.

## FIX Services not starting?

They are controlled by a scheduled task. Take a look an you should see a start and stop

A screenshot of a computer

Description automatically generated

# Appendix

## Appendix 1: Credentials

UAT

1. Install Azure Virtual Desktop Preview on your laptop
2. Log in with your @icbkfs.com email address.   
   ex. *John.Doe@Icbkfs.com*
3. Click on the virtual desktop that you have (depending on role you might have different ones)

A screenshot of a computer

Description automatically generated

1. Once in, you can RDP in. Use either your @icbcfs.cloud account or the service account listed above.

A screenshot of a computer

Description automatically generated

### Production

1. You need to be logged into your jumpbox to get into the Green zone environment. If you don’t have a jumpbox, please request your administrator to create/assign a jumpbox for you.

## Appendix 2: Background Information - IBM MQ

IBM MQ (Message Queue) is a messaging middleware that allows applications, systems, and services to communicate by sending and receiving messages in a reliable and secure manner. It uses message queues to decouple communication between distributed systems, ensuring messages are delivered even if one component is temporarily unavailable. IBM MQ supports a variety of messaging patterns, including point-to-point and publish/subscribe, and is widely used in enterprise environments for integrating applications across diverse platforms. It ensures message integrity, sequencing, and transactional processing.

* **Queue Manager**:
  + The core component in IBM MQ that manages message queues and handles all messaging operations. It oversees message routing, storage, and delivery, acting as a control center for the entire messaging infrastructure.
* **Queues**:
* Data structures within the Queue Manager where messages are stored until they are consumed or delivered to the intended recipient. There are different types of queues, such as local queues (for messages on the same Queue Manager) and remote queues (for messages destined for a different Queue Manager).
* **Channels**:
* Communication links that enable message transfer between Queue Managers or between clients and Queue Managers. Channels ensure the secure and reliable transmission of messages across the network, with different types like sender-receiver or request-reply channels.

It is used for real-time transmission of data from Broadridge, BONY and DTCC to ICBCFS. This document *only covers support for Broadridge transmission****.*** If these connections do not work, then the information that are driving our reports will be out of date. For example, we booked a trade into Broadridge and we think that the total money of x. What the real number will be is calculated by Broadridge and comes back in one of those messages.

## Appendix 3 Background Information - FIX

This sends trades from ICBCFS to Broadridge for Fixed Income. All trades from the client portal, Gresham and SFTP go through this connection.

FIX is a standard library where it goes by key=value. You can read any message in the log if you have the library. One that is nice is: <https://www.onixs.biz/fix-dictionary/4.4/fields_by_tag.html> but just google around. Once you go to the definitions, you can read FIX

I.e.



* 8=Begin String = FIX 4.4 So we know it is FIX 4.4 instead of a different version
* 9 = Body Length = 86 is the length of the message.
* 34 = MsgSeqNum = Integer message sequence number. So, the 322 message is sent today. The next one will be 323.
* 49 = SenderCompId = Assigned value used to identify firm sending message. In this case the code is called *ICBC01T*. So we can guess it is ICBCFS. It was defined at startup.
* 52= Send Time = Time of message transmission (always expressed in UTC (Universal Time Coordinated, also known as "GMT"), so this was sent at 12:04:32.026 on September 25, 2024, UTC time, so 7:04am EST
* 56 = TargetCompID=Assigned value used to identify receiving firm. In this case it is some string called “BRD01T” so we can guess it is Broadridge. It would be defined at startup
* 112 = TestReqID = Identifier included in [Test Request <1>](https://www.onixs.biz/fix-dictionary/4.4/msgType_1_1.html) message to be returned in resulting [Heartbeat <0>](https://www.onixs.biz/fix-dictionary/4.4/msgType_0_0.html). So, we know that this is a heartbeat.
* 10=231 = CheckSum = Three bytes, simple checksum (see Volume 2: "Checksum Calculation" for description). ALWAYS LAST FIELD IN MESSAGE; i.e. serves, with the trailing <SOH>, as the end-of-message delimiter. Always defined as three characters. (Always unencrypted)

## Appendix 4: Background Information - Seamans

Seamans generates a consolidates stock record report which is one of the key financial reports of the firm. This process takes files from the data warehouse, BONY, Euroclear, etc. It needs to cover the entire firm so that every one of the positions is covered. From there, a portal is shown to the operations team which then validates it. This then goes to the accounting team as it is an input into regulatory reports.

These reports are looked at early, around 7am but have it by noon so that we can close out the day.

Appendix 5: Contact Information

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **APPIA/GEMS** | **Primary Contact** | **Primary Escalation:** | **Secondary Escalation:** | **Support/Functions** |
| **APPIA Support**  **(Daytime)** | **Allan Doyle -** 347-471-4905  **Alicia  Lai -** 416-865-6531  647-295-4919  **Paula Pereira** - 416-865-6512  416-726-3977  [**group\_appiapage @broadridge.com**](mailto:group_appiapage@broadridge.com) | **Allan Doyle -** 347-471-4905  **Alicia  Lai -** 416-865-6531  647-295-4919  **Paula Pereira** - 416-865-6512  416-726-3977  [**group\_appiapage @broadridge.com**](mailto:group_appiapage@broadridge.com) | **Rahul Reddy Gaddam**  201-714-8713  551-580-1826  **Prasanna Venkata**  201-714-8554  201-241-1489  **Judy  Shen**  201-714-3406  201-616-9046  [**group\_appiapage @broadridge.com**](mailto:group_appiapage@broadridge.com) | Production support  Alert monitoring  Session monitoring  Session Configurations  FIX messaging research |
| **APPIA Support**  **(Nighttime)** | [**BSGBPSHelpDesk @broadridge.com**](mailto:BSGBPSHelpDesk@broadridge.com) | [**BSGBPSHelpDesk @broadridge.com**](mailto:BSGBPSHelpDesk@broadridge.com) | [**BSGBPSHelpDesk @broadridge.com**](mailto:BSGBPSHelpDesk@broadridge.com) | Help desk to call us outside of 7am-5pm time frame. |
| **GEMS Support**  **(Daytime)** | GEMS L2 Support  [@Musidipalli, Rama](mailto:Rama.Musidipalli@broadridge.com)  W:  201-714-8727  C: 201-208-1763 | Sridhar Vempali  W: 973-494-4963  C: 551-482-7521 | Ramchand Swarna  W: 201-424-3162  C: 862-812-9894 | Production support  Support an incident that requires a PPE to be opened. |
| **GEMS Support**  **(Nighttime)** | GEMS L2 Support  [@Musidipalli, Rama](mailto:Rama.Musidipalli@broadridge.com)  W:  201-714-8727  C: 201-208-1763 | Sridhar Vempali  W: 973-494-4963  C : 551-482-7521 | Ramchand Swarna  W: 201-424-3162  C: 862-812-9894 | Production support  Support an incident that requires a PPE to be opened. |

# Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Description** | **Revision Date** | **Revised By** |
| 1.0 | Initial Version | 31-Oct-2024 | Jim Lempenau |
| 1.1 | Add contact info | 4-Nov-2024 | Jim Lempenau |