

# Integrated MFA and IBM i

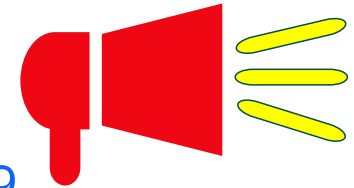
Tim Rowe STSM – IBM i  
Architect Application  
Development & System  
Management  
[timmr@us.ibm.com](mailto:timmr@us.ibm.com)



2025 April

## Details on the Announce!

IBM i



IBM i Technology Updates

<https://www.ibm.com/support/pages/node/1119129>

IBM i 7.6 Announce Details

<https://www.ibm.com/support/pages/ibm-i-76-base-enhancements>

IBM i 7.6 TR1 Announce Details



<https://www.ibm.com/support/pages/ibm-i-76-tr1-enhancements>

IBM i 7.5 TR7 Announce Details



<https://www.ibm.com/support/pages/ibm-i-75-tr7-enhancements>

## iSee – Multi Factor Authentication



<https://learn.common.org/products/ibm-isee-video-blog>

# IBM i 7.6 Themes



## Security

- MFA
- Secure by Default
- Impersonation Protection
- DCM
- Encryption



## Database

- Final Table
- SQL Services
- SQE Performance improvements
- Security Improvements



## Tools

- ACS
- VsCode Code for i
- Navigator



## Modern Development

- GIT
- VsCode Code for i
- Modern RPG
- Code Assistant

IBM i

# Multi-Factor Authentication (MFA)

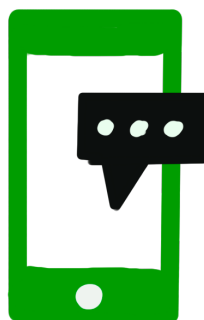
A security feature that requires the user to provide a Time-based One-time Password (TOTP) in addition to a password

Something they **know**



Password

Something they **have**



TOTP

Something they **are**

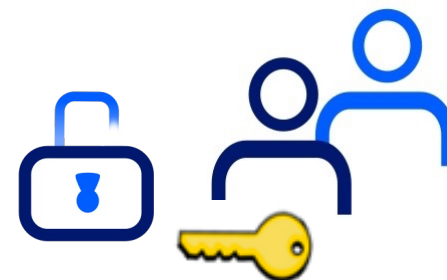


Fingerprint

# Multi-Factor Authentication (MFA)

## **MFA on IBM i 7.6 is:**

- Integrated into IBM i
- No gap between the password and MFA processing
- Enabled User by User
- Works when in restricted state
- Supports System Service Tools (STRSST)
- No remote server needed
- Core access interfaces enabled
  - ACS
  - Telnet
  - Navigator
- Compatible with standard industry TOTP Client Authenticators (RFC 6238)



Everyone has a part to play....

## Administrators


- Ready the system
- Notify users to play their part....
- Enable users for MFA once a MFA key has been set



## Users

- Signon – User /PW
- Set and validate their new MFA Key
- Signon – User/PW/ MFA


## Welcome to IBM Navigator for i



User Name:

Password:

Additional Factor:



System . . . . . : UT23P72  
Subsystem . . . . . : QINTER  
Display . . . . . : QPADEV0001

User . . . . . : \_\_\_\_\_  
Password . . . . . : \_\_\_\_\_

Program/procedure . . . . . : \_\_\_\_\_  
Menu . . . . . : \_\_\_\_\_  
Current library . . . . . : \_\_\_\_\_  
Additional factor . . . . . : \_\_\_\_\_

### Add New Node

Node Hostname:

Node Display Name:

User Name:

Password:

Additional Factor:


The user credentials for the GUI will be tried when accessing this node. If the credentials are incorrect, a prompt will appear.

Connection method between GUI and managed nodes:

☒ Non-secure, no TLS  
☐ Secure, use TLS

Description:

### Signon to IBM i common76.ilnTheCloud.com



Signon information

System:

User:

Password:

Additional factor:



## Validate MFA Key and Save Recovery Key



The new MFA key has been saved to your user profile. Validate that the MFA code allows this user profile to sign on, and then save the recovery key.

### 1. Saved MFA Key:

Using your client generator application, enter the MFA key below (without blanks) or scan the QR code



GDFU SRYO JSVB ZHYN OE7T QX23 MKOJ M7N7



### 2. Validate MFA Key:

Enter your user profile password and the MFA code from your client generator application to validate that your user profile can sign on with MFA

Password:

MFA Code:

Validate

### 3. Recovery Key:

Save the recovery key in a safe place, it can be used in place of the user password as a one time recovery if the MFA key and code are not working



OK

# Configuring TLS

The screenshot displays the 'ARETEST - Apache TLS Wizard' interface within the 'IBM Navigator for i' application. The wizard is divided into two main sections: 'HTTP Apache Servers' and 'All Host Servers'.

**HTTP Apache Servers - Configure Ports:**

- Configure Ports:** The 'TLS Port Number' is set to 443. The 'Disable non-TLS port' option is set to 'No'.
- Buttons:** '< Back' and 'Next >' buttons are visible.

**Basic Configuration:**

- ID:** EndpointByNavigator
- IP Address:** All IP Addresses (dropdown)
- TLS Port Number:** 443
- TLS Protocol:** TLS v1.3 (dropdown)
- Buttons:** '< Back' and 'Next >' buttons are visible.

**All Host Servers - TLS Configuration:**

- Select Servers:** The instruction is 'Select the Network Servers to be configured for TLS'.
- Host Servers:** A list of servers with checkboxes for selection:
  - Central (9470)
  - Data Queue (9472)
  - Net Print (9474)
  - Sign On (9476)
  - Database (9471)
  - File (9473)
  - Remote Command (9475)
  - Host Connection (9480)
- Buttons:** '< Back' and 'Next >' buttons are visible.

# Manage TLS for Key Servers

IBM Navigator for i

Search ut23p97 timmr

Dashboard

Home

Work Management

Configuration and Service

System

Monitors

My Work

Network

Security

Users and Groups

Performance

File System

Content Manager OnDemand for i

Bookmarks

Serviceability

**Network**

- > TCP/IP Configuration
- ▼ Servers
  - TCP/IP Servers
  - IBM Host Servers
  - DNS Servers
  - User-Defined Servers
  - Alternative Subsystem Routing
  - TLS Configuration**
- > IP Policies
- > Web Administration
- Network Attributes

**TLS Configuration**

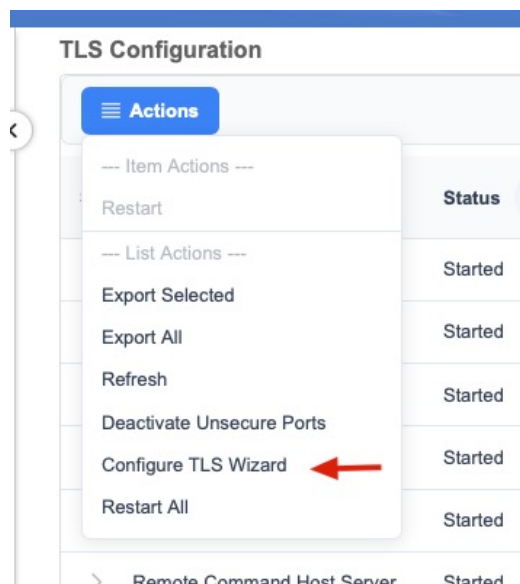
Actions

Server Name	Status	TLS Port	TLS Port Active	Unsecure Port	Unsecure Port Status
> Central Host Server	Started	9470	Active	8470	Active
> Database Host Server	Started	9471	Active	8471	Active
> Data Queue Host Server	Started	9472	Active	8472	Active
	Started	9473	Active	8473	Active
	Started	9474	Active	8474	Active
	Started	9475	Active	8475	Active
	Started	9476	Active	8476	Active
	Started	9480	Active	0	Inactive

Total Rows: 8 << < 1 > >> 100

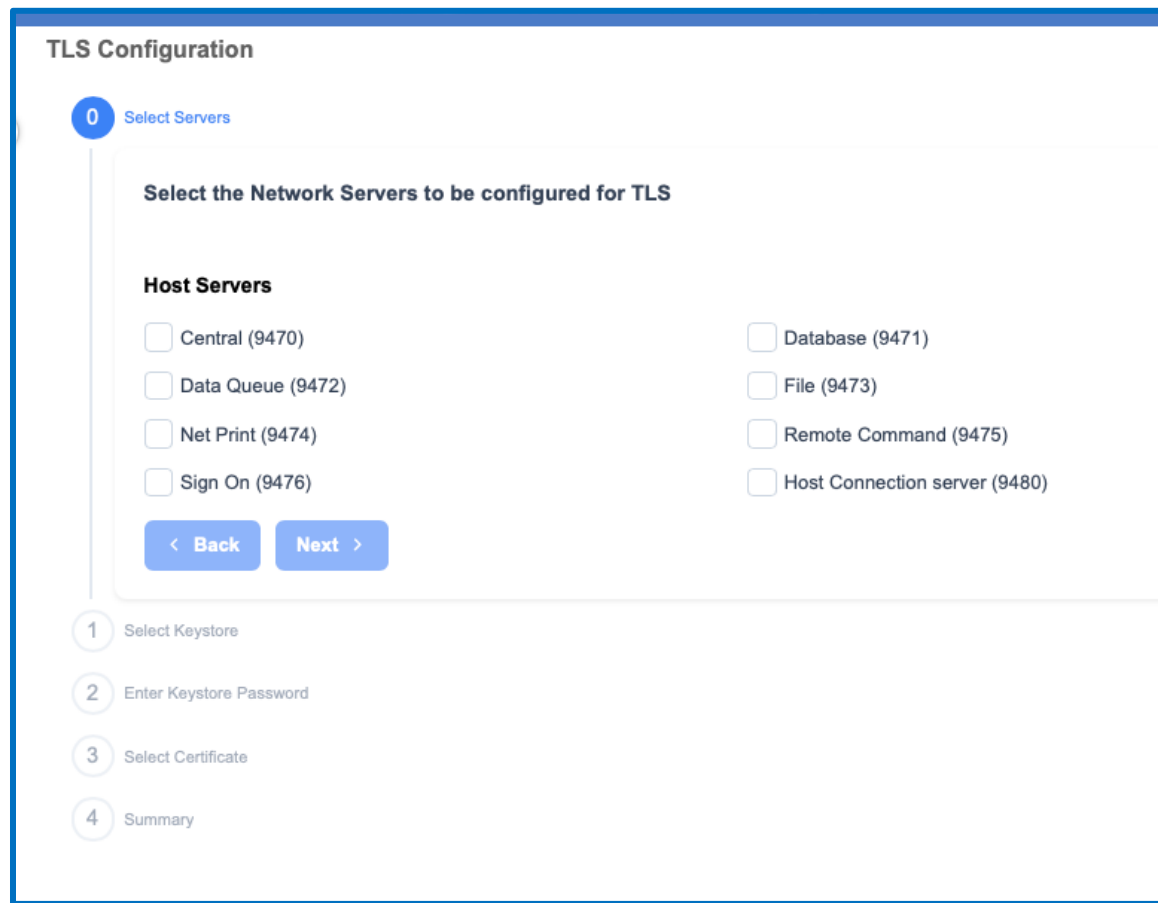
One place to see if your servers have been configured for TLS or not

# TLS Configuration Made Easy



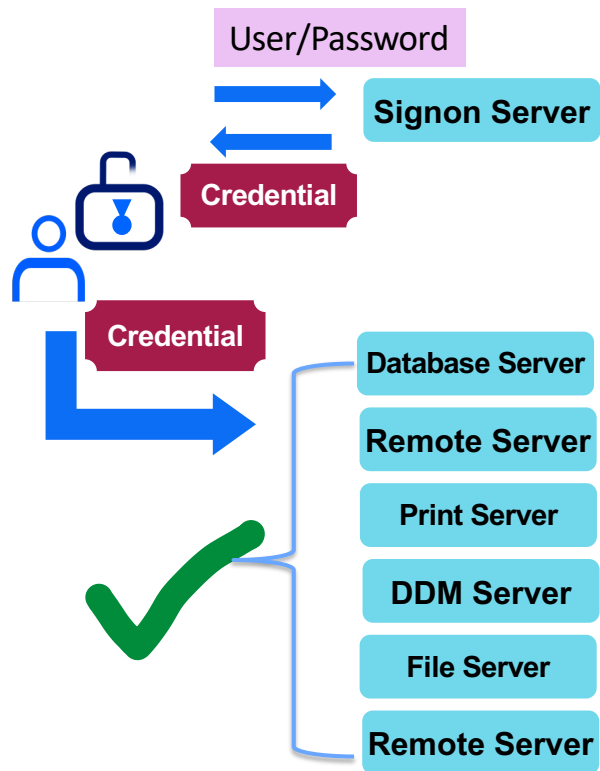
Configure all the host servers in one action!

Turn off the unsecure ports



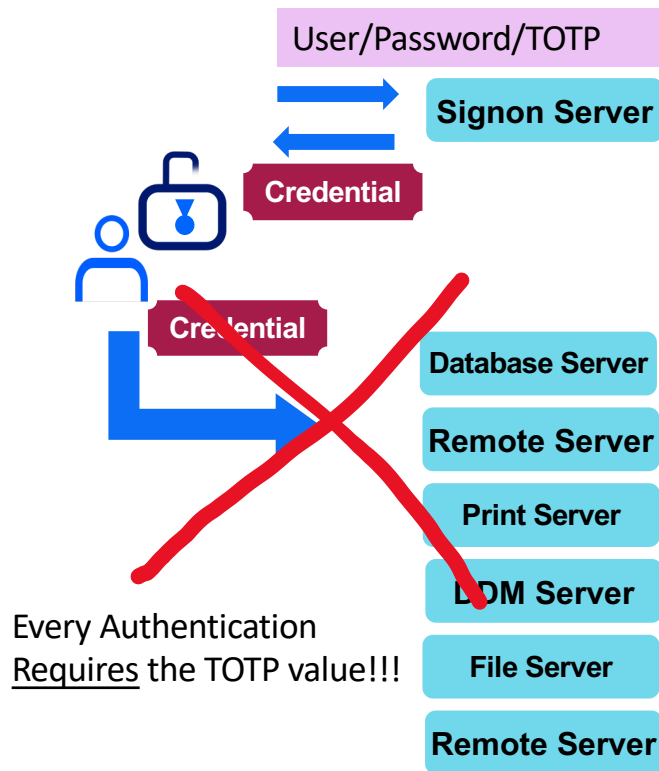
# Host Connection Server

Today – User/Password



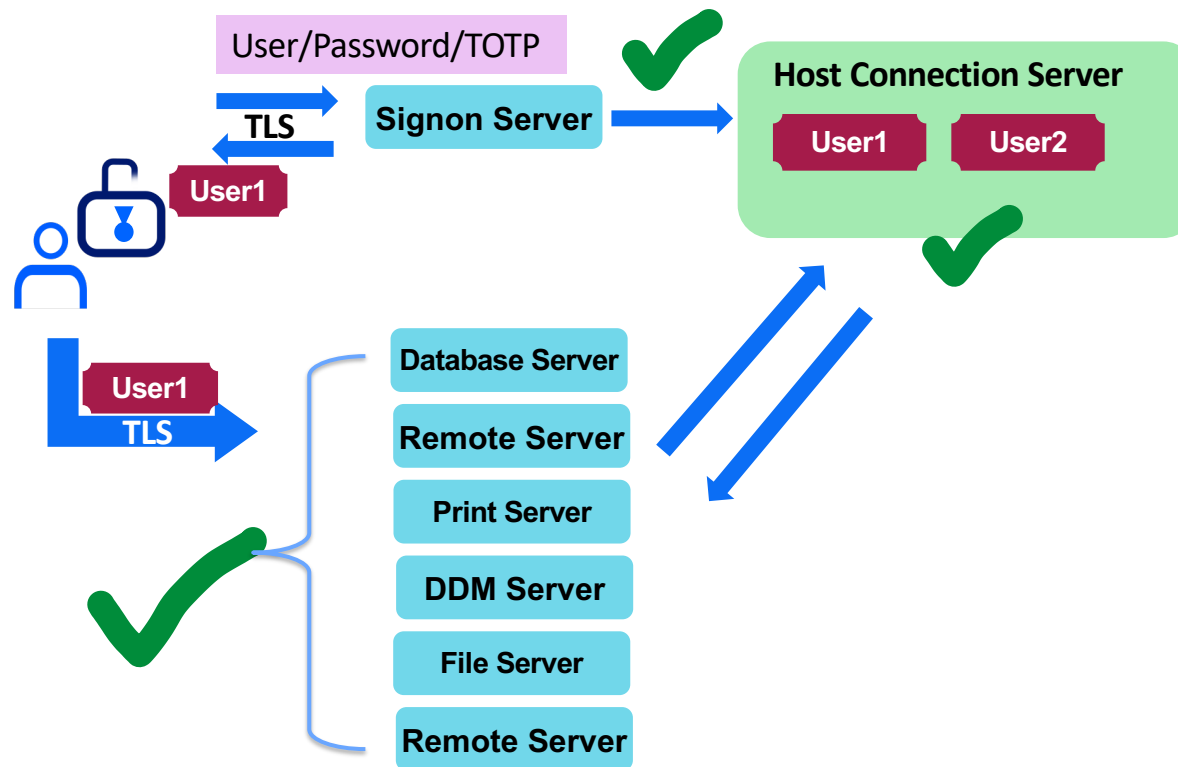
© Copyright IBM Corporation 2025

User/Password & TOTP



# Host Connection Server

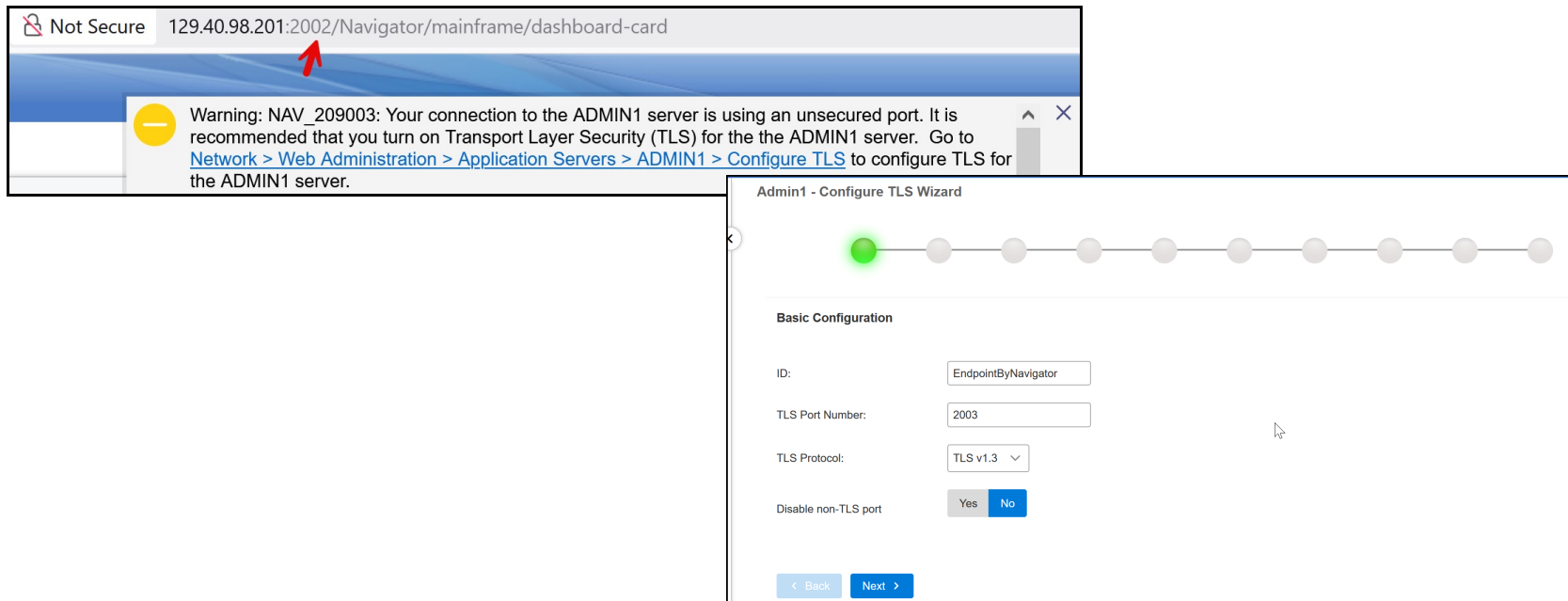
Today – User/Password & TOTP



© Copyright IBM Corporation 2025

# Secure/Encrypt Navigator for i Connection

- If Navigator communications are not encrypted, your system is at risk!
- IBM guidance:
  - <https://www.ibm.com/support/pages/ibm-navigator-i-tls-encryption>



# Protection from Impersonation

Restricts a user profile from being impersonated

- Prevents anyone from swapping to identity of the protected user profile
- Enabled via the QIBM\_RUN\_UNDER\_USER\_NO\_AUTH Function Usage ID
- Independent of MFA

```
--
-- Prevent Scott from impersonating Tim
--
CHGFCNUSG FCNID(QIBM_RUN_UNDER_USER_NO_AUTH) USER(TIMMR) USAGE(*DENIED)
```

IBM i 7.5

Run SQL Scripts - COMMON75.FRANKENI.COM(Common75)

File Edit Search View Connection Run Explain Monitor Editor Tools Help

\*Untitled 1 x

```
1 Set session authorization timmr;
```

Connected to relational database Common75 on COMMON75.FRANKENI.COM as SCOTTF - 004043/QUSER/QZDAS0INIT using JDBC configuration 'SQL with no hex handling'.

[ 04/05/2025, 06:26:15 PM ] Run Selected...

Set session authorization timmr

✓ Statement ran successfully (68 ms)

IBM i 7.6

Run SQL Scripts - COMMON76.FRANKENI.COM(C

File Edit Search View Connection Run Explain Mor

\*Untitled 1 x

```
1 Set session authorization timmr;
```

Connected to relational database Common76 on COMMON76. SCOTTF - 132621/QUSER\_NC/QZDAS0INIT using JDBC configu

[ 04/05/2025, 06:26:20 PM ] Run Selected...

Set session authorization timmr

✗ SQL State: 28000

Vendor Code: -552

Message: [SQL0552] Not authorized to SET SESSION\_USER.



# IBM i Security Sessions for Even More Information!



## Tuesday

- Securing IBM i in the Age of Cyber Threats – Koen Decorte
- What's New in IBM i Security in IBM i 7.5 and 7.6 – Carol Woodbury
- IBM i Security Best Practices – Janus Hertz
- Using IBM Navigator in a Secure Manner – Tim Rowe
- Inject more security into Db2 for i – Scott Forstie
- Taking the Guesswork out of IBM i Security with Authority Collection – Carol Woodbury

## Wednesday

- 8:30 - Securing and monitoring SSH on IBM i – Stefan Dufaye
- 12:10 – Ransomware and i – Jesper Skov Johanson
- 12:10 – Security Catalog for IBM i – Rohit Chauhan
- 14:00 - IBM i Security: A Dual Responsibility – Steve Will and Carol Woodbury
- 16:30 – IBM i Security with an SQL Chaser – Scott Forstie and Carol Woodbury

## Thursday

- 10:30 - IBM i Security Enhancements – What's new – Janus Hertz
- 10:30 – Using Function Usage to Add another Layer of Security – Carol Woodbury



# IBM i 7.6 Features and Functions



Henry Vo

Larry Bolhuis

Ivaylo Bozhinov

Steve Bradshaw

Rohit Chauhan

Ryan Cooper

Scott Forstie

Ben Huntsman

Axel Lachmann

Marius le Roux

Michael Miller

Dean Mussari

Harold Nelson

Tim Rowe

Prashant Sharma

Shamej Sreedharan

Rudi van Helvoirt

Tim Simon



<https://www.redbooks.ibm.com/redpieces/pdfs/sg248588.pdf>



Mastering IBM i Security provides you with the how-to for using the modern interfaces provided in IBM i 7.5 and recent Technology Refreshes to manage your IBM i security configuration.

# IBM i

IBM

