

Navigator for i

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STSM – IBM i Business Architect

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History of Navigator for i

1995 – iSeries Navigator

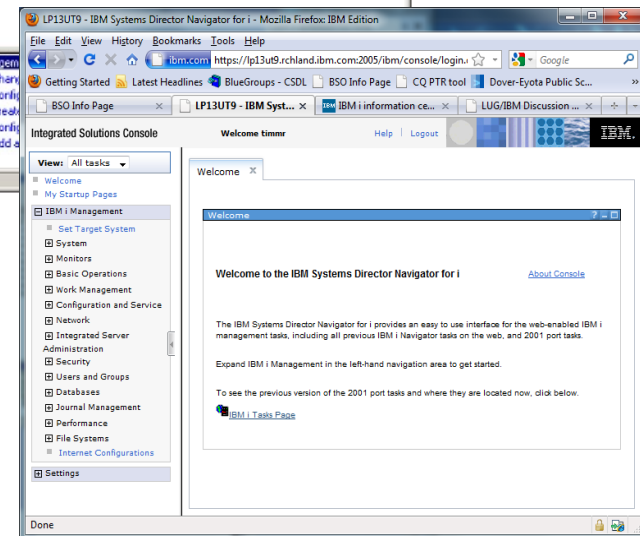
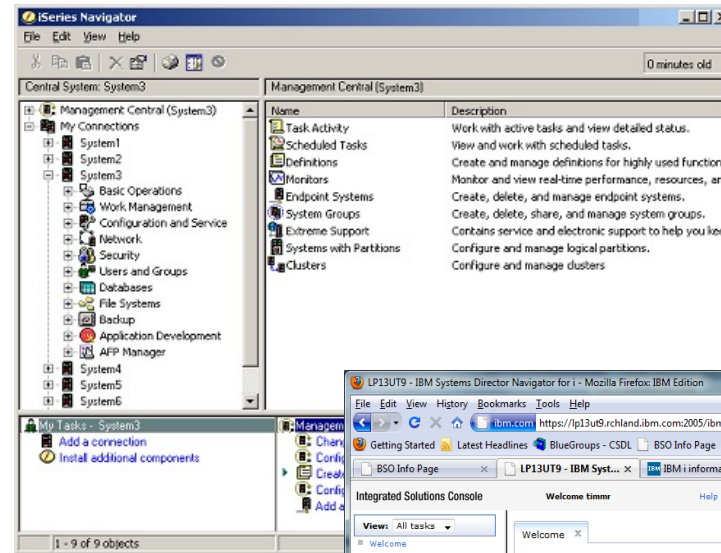
- Installed on Windows PC
- Largely written in Java, Java Swing

2008 – Heritage

- Web based
- Still largely written in Java

2013 – Heritage + Dojo

- Added in Dojo for table management
- Added multiple node management

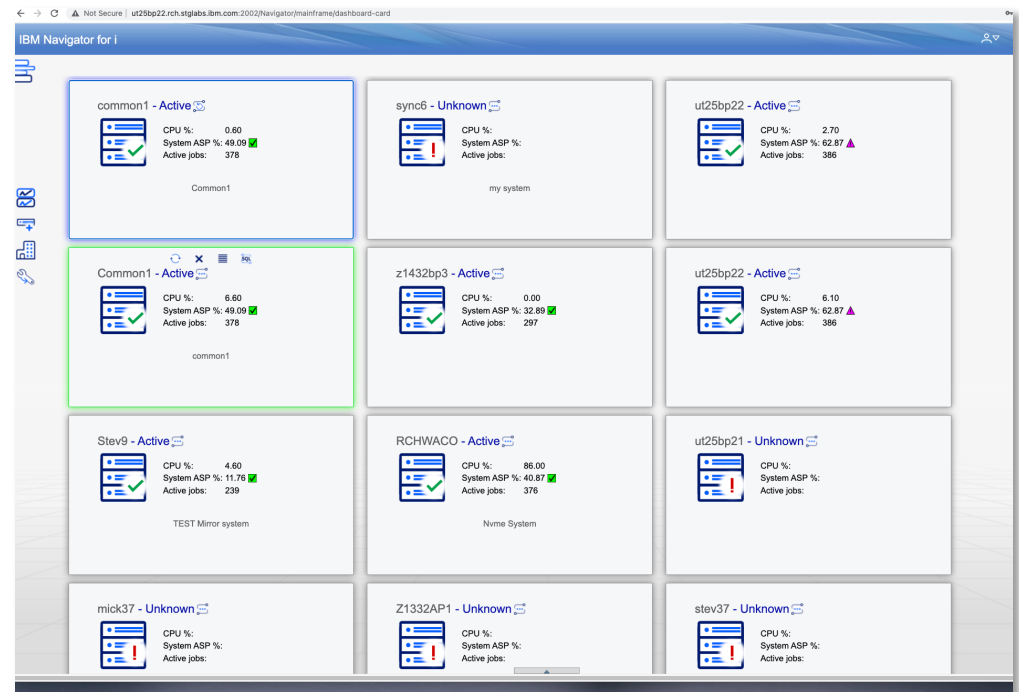


Navigator Now



2021 – New Navigator

- Written in Java and Angular
- Leverages IBM i Services
- End to end secure, modern interface
- Built to manage multiple nodes
- Improved monitoring capabilities



How to get Navigator

Shipped as part of SS1 option 3

- Latest HTTP PTF group
- Latest Database PTF group
- Latest Java PTF group
- Latest Java Toolbox PTF
- Latest Performance PTF group

Documentation: <http://www.ibm.com/support/pages/node/6483299>

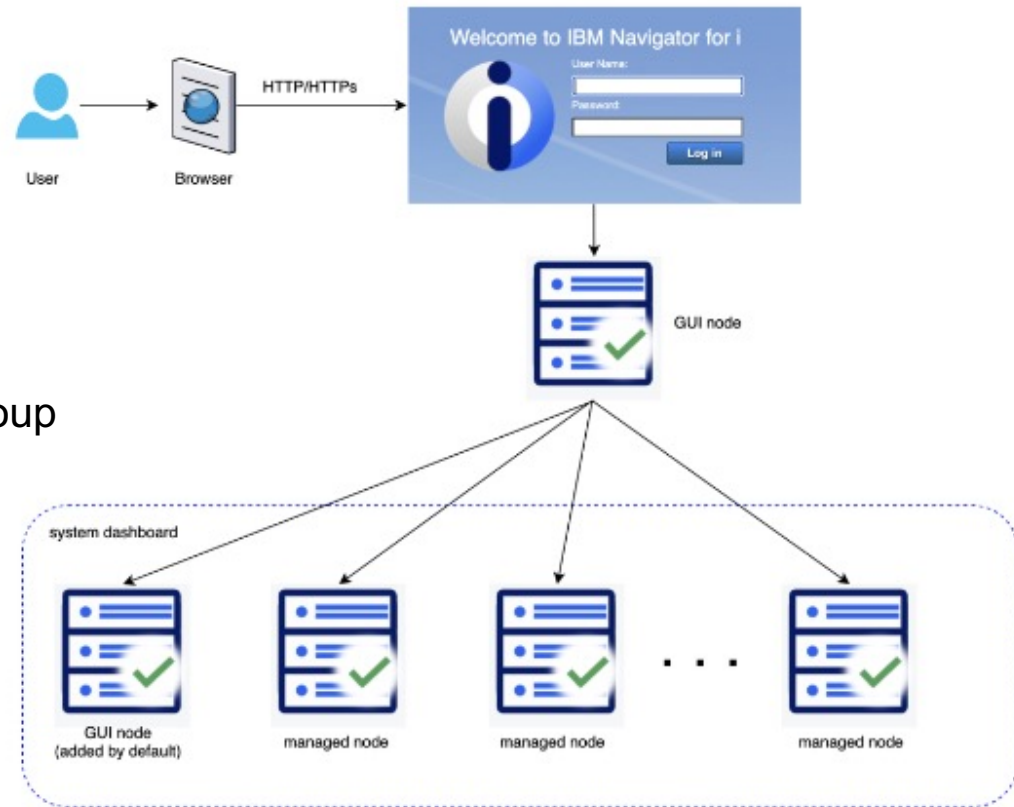
Architecture

GUI node

- Latest PTFs installed
- Runs in ADMIN1 server

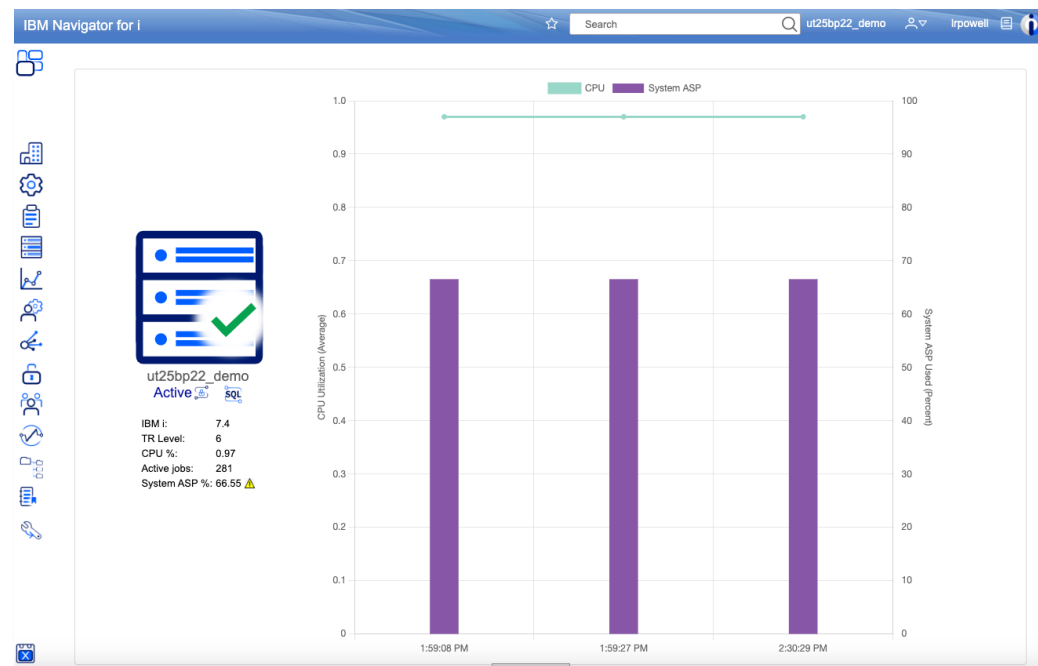
Endpoint nodes

- Do not need ADMIN1 running
- Do not need the latest PTFs
 - Recommend the Database PTF group



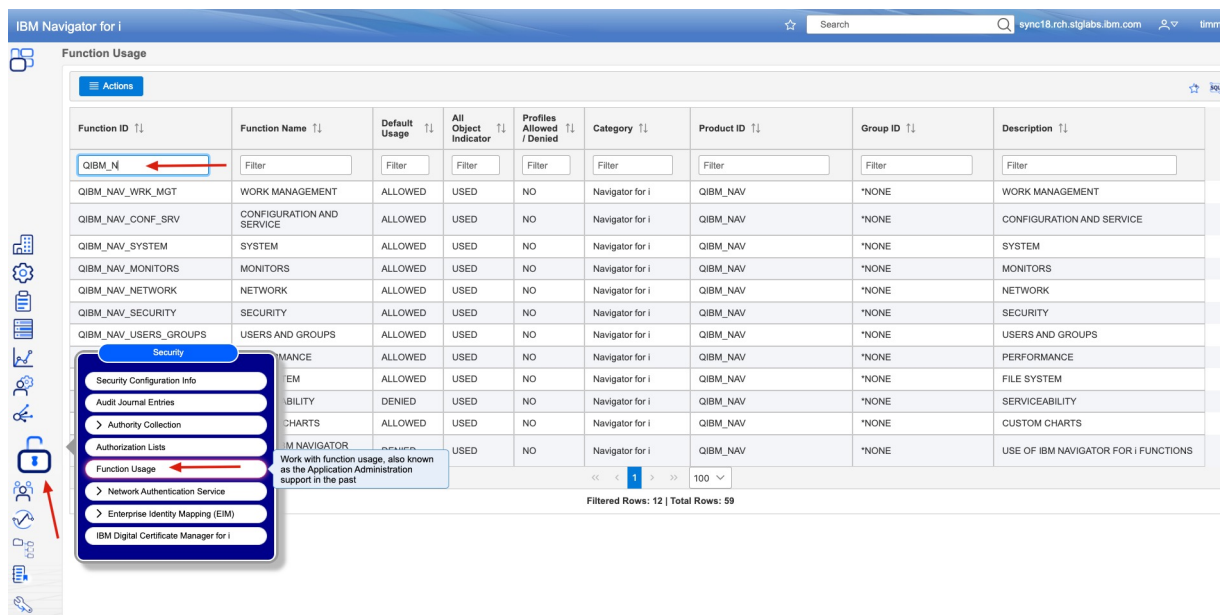
Topics

- Function Usage
- TLS
- Web Admin Functions
- Setup for multiple users
 - Import / Export system configurations
 - Import / Export custom settings
- Audit Journaling
- User Profiles
- Monitors
- File Shares
- Multi System Monitoring
- Job Scheduling
- Security Configuration
- System Values
- Licensing



Function Usage

- Shipped Secure by Default
- Granular today by high level category
- Easy to add new users and Groups to a function usage category



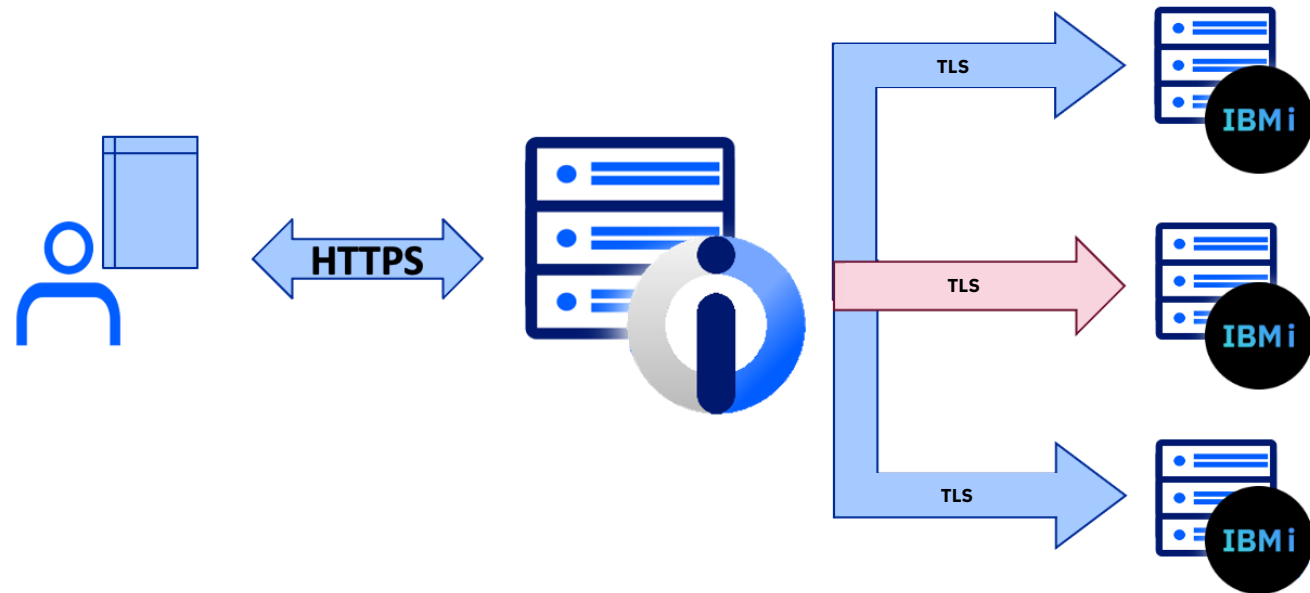
The screenshot displays the 'Function Usage' configuration page in IBM Navigator for i. The main area contains a table with columns for Function ID, Function Name, Default Usage, All Object Indicator, Profiles Allowed / Denied, Category, Product ID, Group ID, and Description. A search bar is located at the top of the table. A sidebar on the left contains a navigation menu with a 'Security' section expanded to show 'Function Usage' selected. A tooltip points to the 'Function Usage' entry in the sidebar, stating: 'Work with function usage, also known as the Application Administration support in the past'. The table shows various function categories like WORK MANAGEMENT, CONFIGURATION AND SERVICE, SYSTEM, MONITORS, NETWORK, SECURITY, USERS AND GROUPS, PERFORMANCE, FILE SYSTEM, SERVICEABILITY, CUSTOM CHARTS, and IBM NAVIGATOR FOR I FUNCTIONS.

Function ID	Function Name	Default Usage	All Object Indicator	Profiles Allowed / Denied	Category	Product ID	Group ID	Description
QIBM_N	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter
QIBM_NAV_WRK_MGT	WORK MANAGEMENT	ALLOWED	USED	NO	Navigator for i	QIBM_NAV	*NONE	WORK MANAGEMENT
QIBM_NAV_CONF_SRV	CONFIGURATION AND SERVICE	ALLOWED	USED	NO	Navigator for i	QIBM_NAV	*NONE	CONFIGURATION AND SERVICE
QIBM_NAV_SYSTEM	SYSTEM	ALLOWED	USED	NO	Navigator for i	QIBM_NAV	*NONE	SYSTEM
QIBM_NAV_MONITORS	MONITORS	ALLOWED	USED	NO	Navigator for i	QIBM_NAV	*NONE	MONITORS
QIBM_NAV_NETWORK	NETWORK	ALLOWED	USED	NO	Navigator for i	QIBM_NAV	*NONE	NETWORK
QIBM_NAV_SECURITY	SECURITY	ALLOWED	USED	NO	Navigator for i	QIBM_NAV	*NONE	SECURITY
QIBM_NAV_USERS_GROUPS	USERS AND GROUPS	ALLOWED	USED	NO	Navigator for i	QIBM_NAV	*NONE	USERS AND GROUPS
	PERFORMANCE	ALLOWED	USED	NO	Navigator for i	QIBM_NAV	*NONE	PERFORMANCE
	FILE SYSTEM	ALLOWED	USED	NO	Navigator for i	QIBM_NAV	*NONE	FILE SYSTEM
	SERVICEABILITY	DENIED	USED	NO	Navigator for i	QIBM_NAV	*NONE	SERVICEABILITY
	CUSTOM CHARTS	ALLOWED	USED	NO	Navigator for i	QIBM_NAV	*NONE	CUSTOM CHARTS
	IBM NAVIGATOR FOR I FUNCTIONS	ALLOWED	USED	NO	Navigator for i	QIBM_NAV	*NONE	USE OF IBM NAVIGATOR FOR I FUNCTIONS

TLS

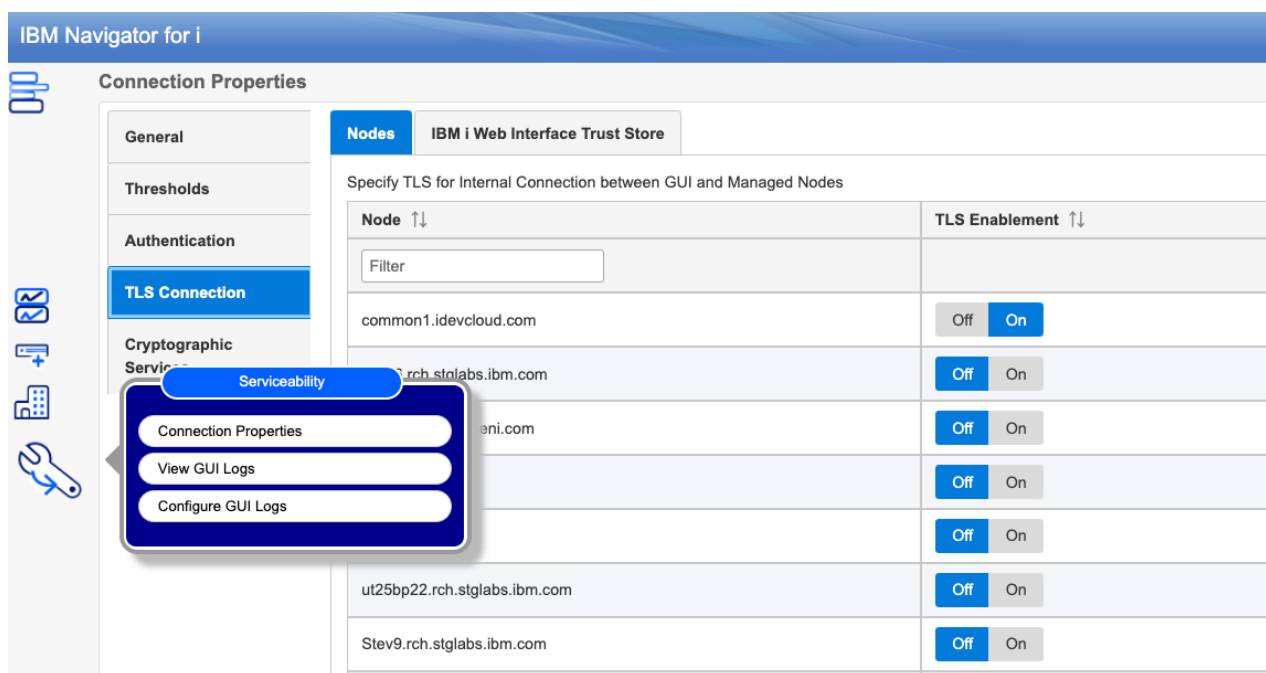
TLS can be configured in 2 places:

- From Browser to the GUI Node
- From the GUI Node to each IBM i endpoint node



TLS Between the GUI Node and an IBM i Endpoint Node

1. Go to Serviceability -> Connection Properties
2. Click on the TLS Connection tab
3. Under the TLS Enablement column, select 'On'



IBM Navigator for i

Connection Properties

Nodes IBM i Web Interface Trust Store

Specify TLS for Internal Connection between GUI and Managed Nodes

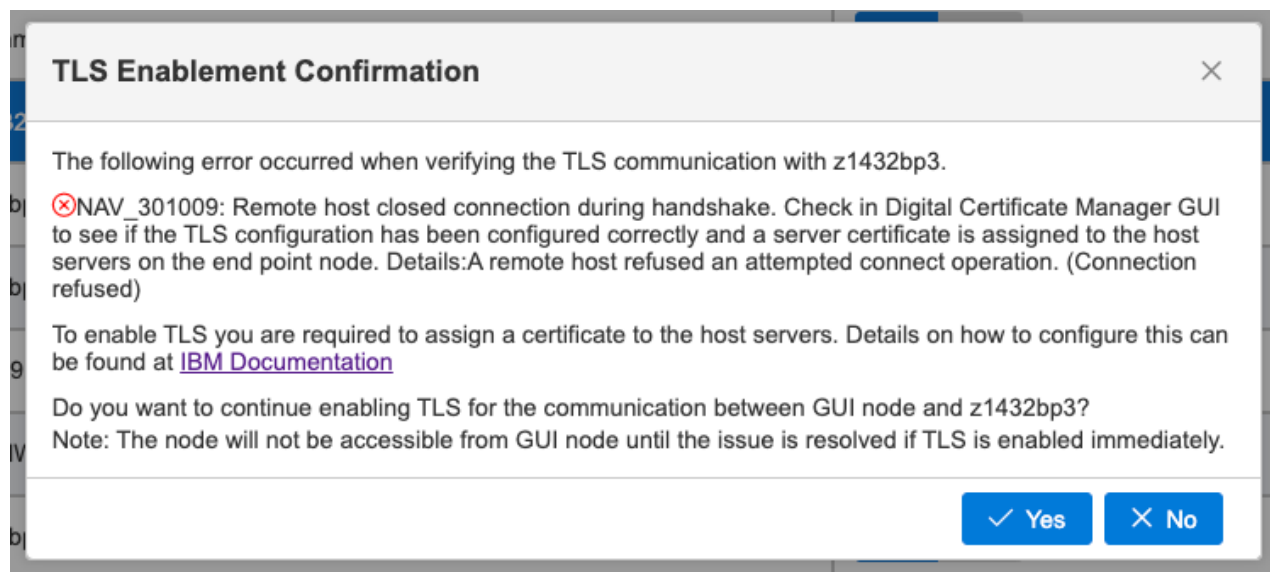
Node ↑↓	TLS Enablement ↑↓
Filter	
common1.idevcloud.com	Off On
rch.stglabs.ibm.com	Off On
eni.com	Off On
	Off On
	Off On
ut25bp22.rch.stglabs.ibm.com	Off On
Stev9.rch.stglabs.ibm.com	Off On

Serviceability

- Connection Properties
- View GUI Logs
- Configure GUI Logs

TLS Between the GUI Node and an IBM i Endpoint Node

1. Configure the Host servers on each endpoint node for TLS:
<https://www.ibm.com/docs/en/i/7.4?topic=servers-setting-up-i-use-ssl#sslreq>
2. Click Yes



TLS Between the GUI Node and an IBM i Endpoint Node



3. The GUI will retrieve the certificate from the IBM i end-point node
4. Click Close to have this certificate installed into the Web Certificate store
5. The connection from the GUI to the endpoint node is secured with TLS!

TLS Information [Close]

TLS Environment Active

Protocol: TLSv1.2
Cipher Suite: SSL_ECDHE_RSA_WITH_AES_128_GCM_SHA256

Certificate Information:

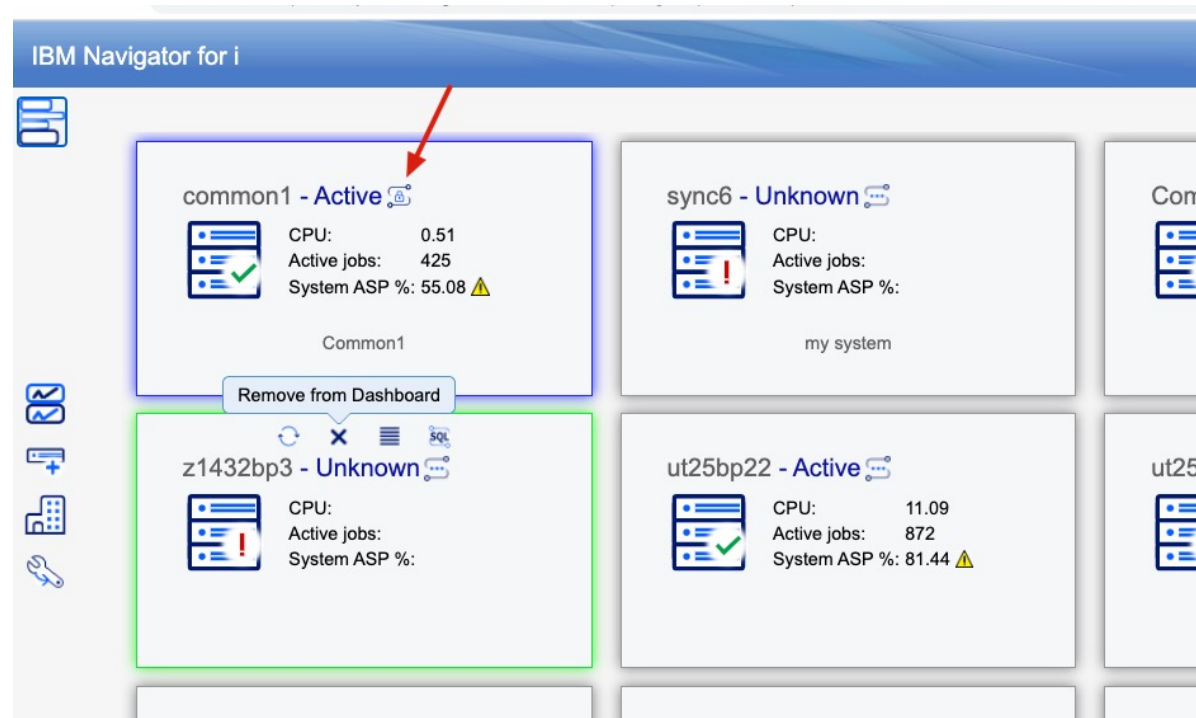
Server Certificate | Issuer Certificate

Subject: CN=ut25bp22_hostsvr_cert, OU=IBM, O=IBM, L=BJ, ST=BJBJ, C=CN
Issuer: CN=ut25bp22 Local CA, O=CSL IBM i team, L=Beijing, ST=Beijing, C=CN
Serial Number: 27717360690203008
Certificate Type: X.509
Version: 3
Signature Algorithm: SHA256withRSA
Validity Period: May 8, 2022 3:03:58 AM - May 9, 2023 3:03:58 AM
Public Key Algorithm: RSA
Public Key Format: X.509
Public Key Length: 2048
Public Key:
30 82 01 22 30 0d 06 09 2a 86 48 86 f7 0d 01 01 01 05 00 03 82 01 0f 00 30 82
01 0a 02 82 01 01 00 c4 ae 08 bc 79 a6 f6 0c 6c 6e 04 b6 a5 01 6c 7b c1 70 18
d2 8d 84 07 20 2d ea 2d 27 f7 48 87 a9 90 a4 bd 40 89 f8 9e cd ff d7 7f e7 4c
b8 cc 96 5f d7 82 df a2 17 f1 05 35 b2 38 bb 5b 90 50 5d 50 6d 32 ec e5 8e 74
07 36 9a e0 51 05 b9 2b 76 6b c9 ee 10 5c 4d 7f 43 3e 49 b6 ab 6a 9d fd c5 41
4f 94 84 74 77 18 85 c5 b9 49 e6 1a c2 a3 a4 89 89 c9 78 cf 73 80 1e 2a 74 9a
46 96 2e 96 a6 e5 56 5b dd 82 7a 28 37 3d a9 ab 7a ce ec ec 9f 21 ca 27 58 b8
2a 45 f5 21 5d f6 4e 67 2e 4c 47 4a 39 ef 55 d2 5a 58 cf 02 19 95 a4 0c 96 5f
b3 6d 41 e6 d9 40 57 63 1b 88 36 7e 33 62 38 81 78 3e 09 4d 85 28 77 ab 77
21 bc 9e d3 fb fa 51 39 f6 60 8c 33 a1 cf 5a e6 3f d6 65 2e a2 58 28 9d d8 3d
36 49 1a 61 3e d6 39 35 83 34 25 67 b8 c6 60 59 fb ab c3 39 60 e9 0a b8 07 6d
02 d7 41 95 02 03 01 00 01
Signature:
5b 86 85 b9 93 b9 b6 e8 0d f6 70 8c 01 c9 f4 25 e4 97 3b 27 24 57 50 5e 1a 90
e4 ab e2 3b a3 a7 fb e0 08 9c 0e 1a 1b a0 66 3d 93 91 c7 f5 62 01 2d 57 28 e2
22 f9 c2 23 cc 51 b1 63 c0 0b 41 29 66 2d e1 35 bc c4 63 b2 cb ad 0e 32 c7 b8
b5 38 cc dd eb 7c 1b e1 35 c9 8e 58 41 87 f5 57 83 45 b2 fa 16 fe 9c 7a d7 c3
ff d6 7f 66 6e db b7 33 05 5a 99 41 0b db c6 f4 a3 bc 42 55 ea bf a6 6e f6 c5 25
52 47 05 18 dd fc d8 fd 6d c7 bc 47 a2 89 40 da 5b 6b ba c3 b5 1a 7c 89 1b a8
d9 3a 96 89 6b 14 11 75 a3 3f 87 79 36 ff 1e 33 12 a7 0b 8d e5 71 04 05 2e 20
29 43 5d 88 86 9f c9 9e e8 f4 39 4a 16 aa bf 6c d0 97 4b bb f4 98 8d 5f 4b 97
d9 7c 3d 5a ac e8 b8 25 ef 14 13 2e 95 20 b8 63 cf 93 32 7b 2a 2c 10 41 8c c8
d4 2d cc c6 cf ba 17 71 8c bd ec aa 47 5b 1e 6c 4f fb 6b 2d f3

[Close]

TLS Between the GUI Node and an IBM i Endpoint Node

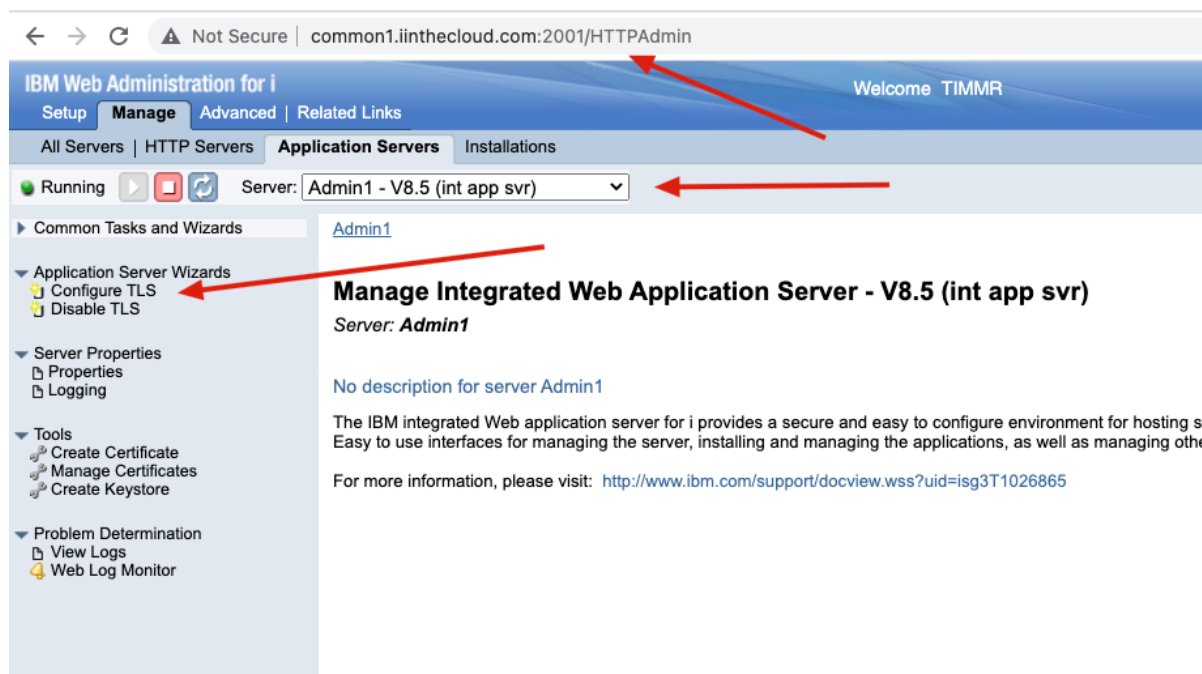
Lock Icon will appear once the connection is established with TLS



TLS Between the Browser and the GUI Node

The Admin1 server needs to be configured for TLS

1. Sign into the Web Administration GUI (<http://hostname:2001/HTTPAdmin>)
2. Click on the Application Server tab
3. Select the Admin1 server
4. Launch the Configure TLS wizard

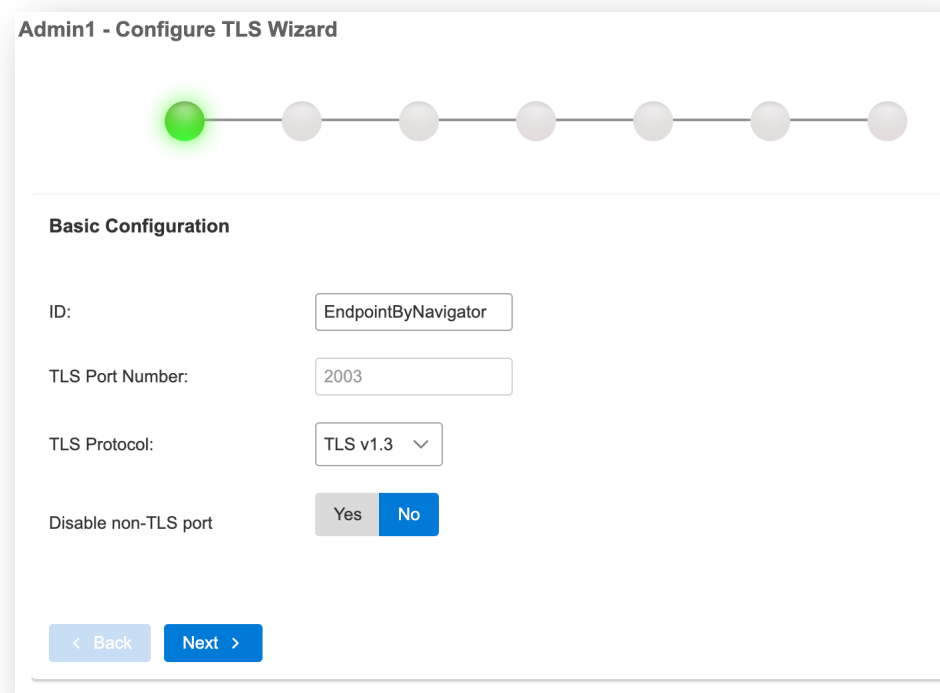
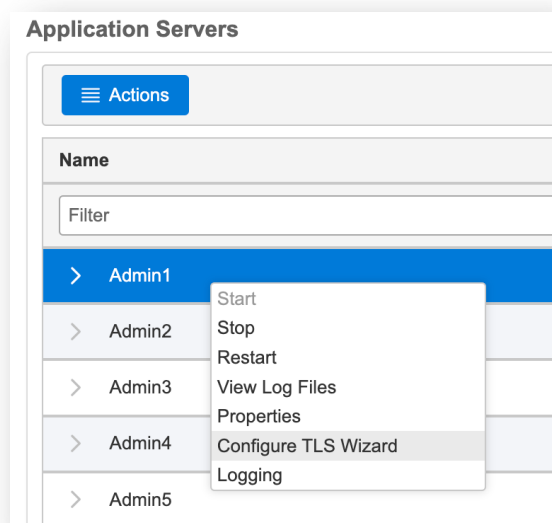


<https://www.ibm.com/support/pages/node/6483573>

TLS Between the Browser and the GUI Node

Or use Navigator! 😊

1. Go to Network -> Web Administration -> Application Servers
2. Right click on Admin1
3. Click on Configure TLS Wizard



Web Admin Functions

Migrating old web admin functions into a new modern interface:

- Work with HTTP servers
- Work with application servers
 - View log files
 - Configure TLS
- Work with certificate stores

Application Servers

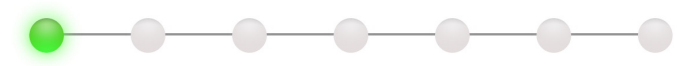
Actions

Name	Status
Admin1	Started

ID	TLS Enabled	TLS Port
defaultHttpEndpoint	No	Disabled
HttpEndpointByWebAdmin	Yes	2003

Total Rows: 2

Admin1 - Configure TLS Wizard



Basic Configuration

ID:

TLS Port Number:

TLS Protocol:

Disable non-TLS port:

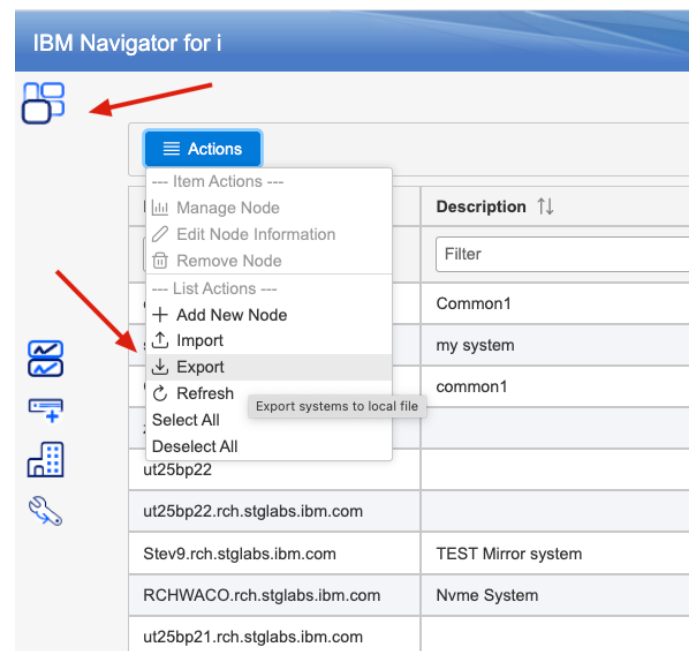
Import/Export System Configuration

Once you have the systems configured:

1. Go to the table view of systems
2. Under the Actions, choose Import or Export

The export will create a json file with all the configured system information including TLS connection details

NO AUTHORIZATION details are saved or imported



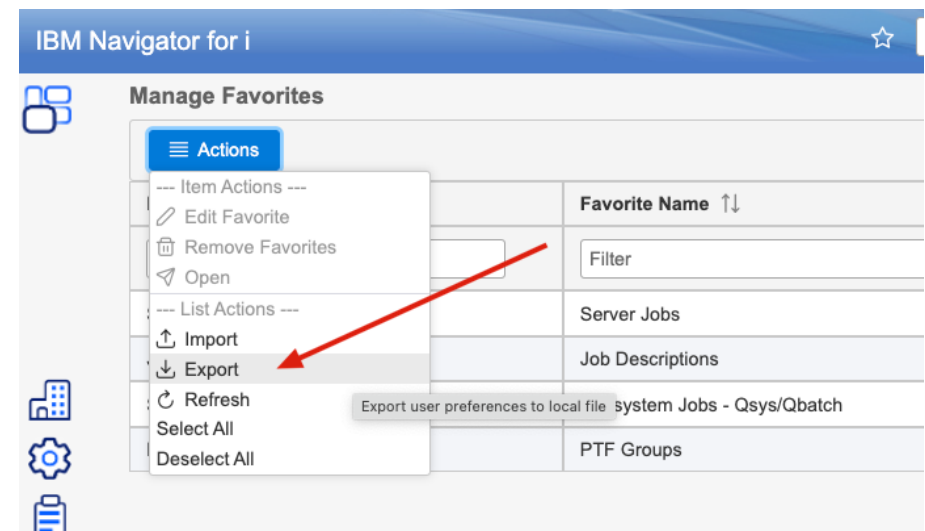
Import/Export Customized Settings

Every table can be customized

- Change column widths
- Change columns shown
- Change column order

These setting (including favorites) can be exported:

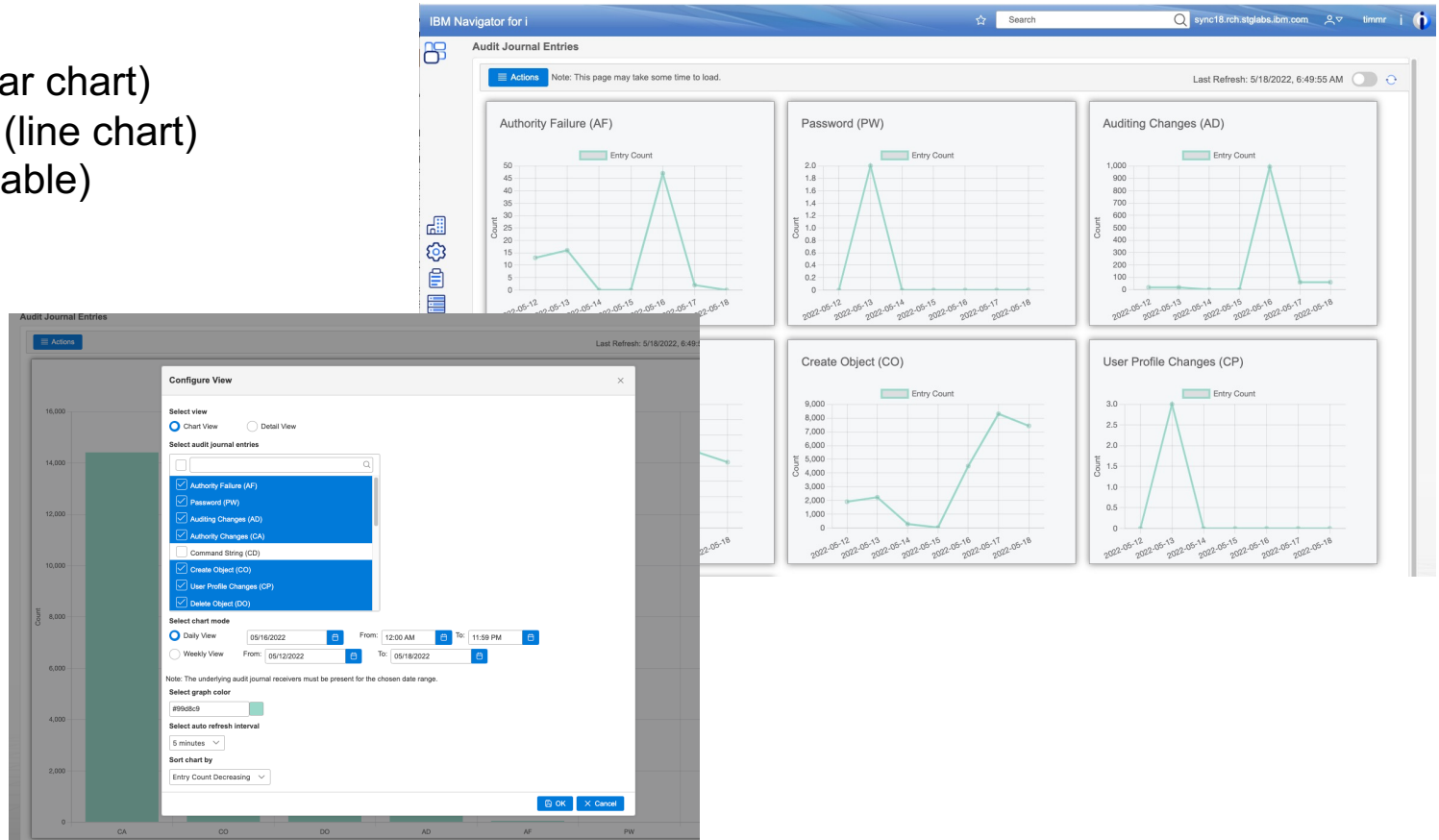
1. Open Manage Favorites
2. Under Actions, chose Import or Export
3. A json file will be created with your settings



Audit Journaling

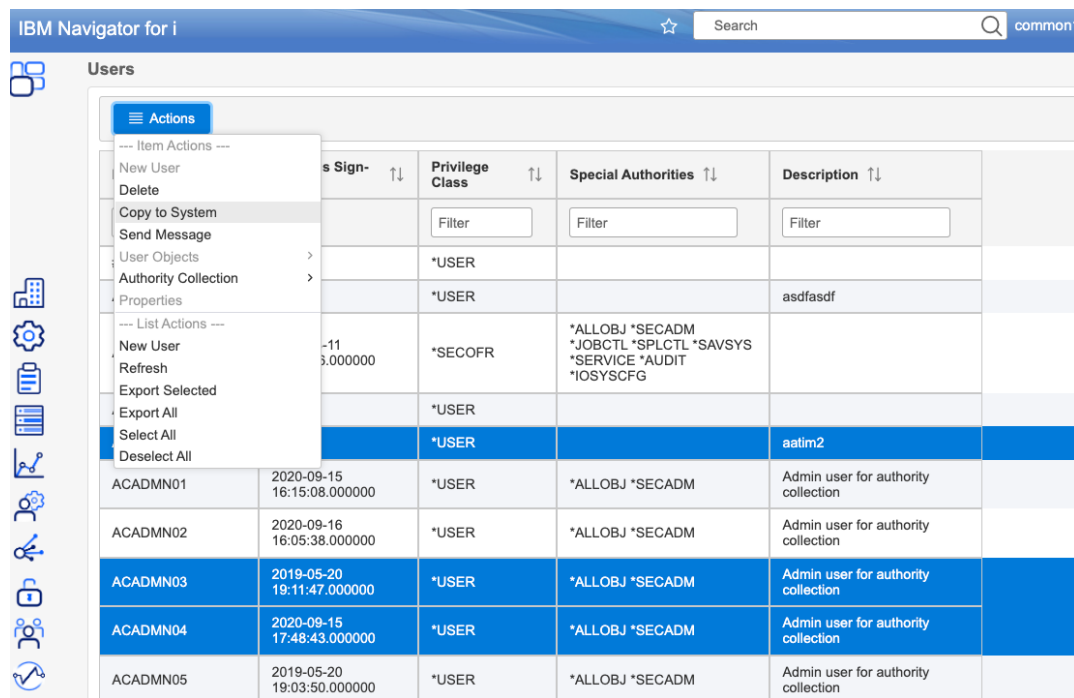
Multiple views:

- Daily View (bar chart)
- Weekly View (line chart)
- Detail View (table)



User Profiles

- Manage user profile properties
- Send user profiles to other IBM i endpoints
- And more...

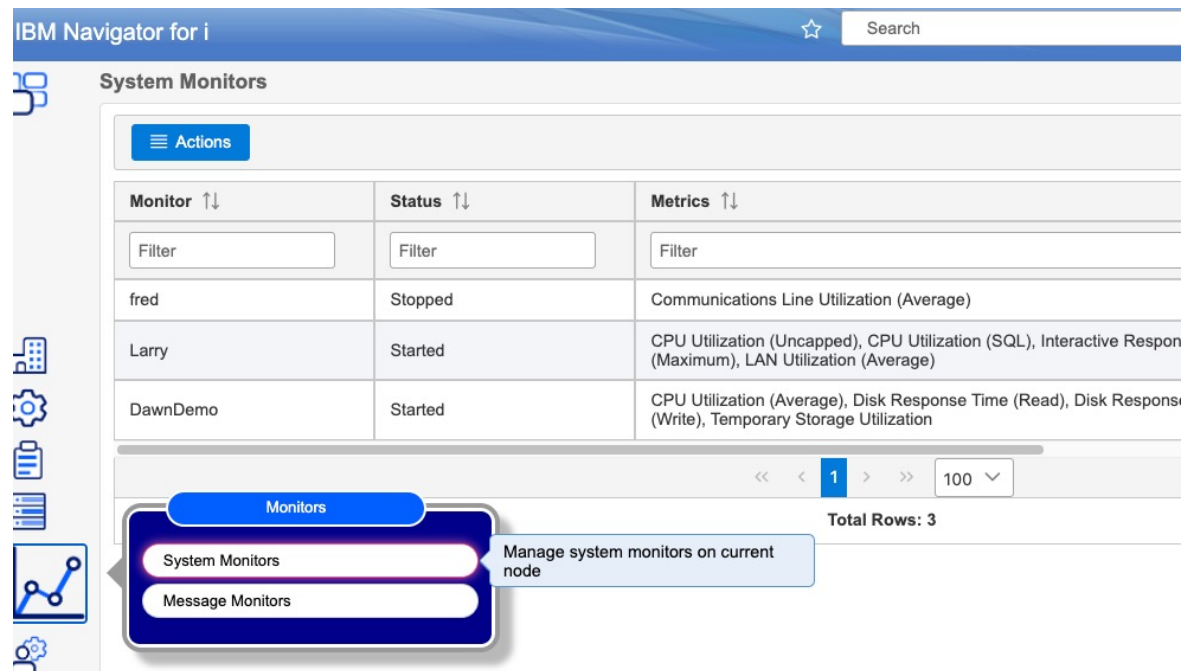


The screenshot shows the 'Users' page in IBM Navigator for i. A table lists user profiles with columns for Name, Sign-on, Privilege Class, Special Authorities, and Description. An 'Actions' menu is open over the table, listing options like 'New User', 'Delete', 'Copy to System', 'Send Message', 'User Objects', 'Authority Collection', 'Properties', 'Refresh', 'Export Selected', 'Export All', 'Select All', and 'Deselect All'. The 'aaim2' user profile is highlighted in blue.

Name	Sign-on	Privilege Class	Special Authorities	Description
		Filter	Filter	Filter
		*USER		
		*USER		asdfasdf
		--- List Actions ---		
		*SECOFR	*ALLOBJ *SECADM *JOBCTL *SPLCTL *SAVSYS *SERVICE *AUDIT *IOSYSCFG	
		*USER		
		*USER		aaim2
ACADMN01	2020-09-15 16:15:08.000000	*USER	*ALLOBJ *SECADM	Admin user for authority collection
ACADMN02	2020-09-16 16:05:38.000000	*USER	*ALLOBJ *SECADM	Admin user for authority collection
ACADMN03	2019-05-20 19:11:47.000000	*USER	*ALLOBJ *SECADM	Admin user for authority collection
ACADMN04	2020-09-15 17:48:43.000000	*USER	*ALLOBJ *SECADM	Admin user for authority collection
ACADMN05	2019-05-20 19:03:50.000000	*USER	*ALLOBJ *SECADM	Admin user for authority collection

Monitors

Monitor and take action for system metrics and messages

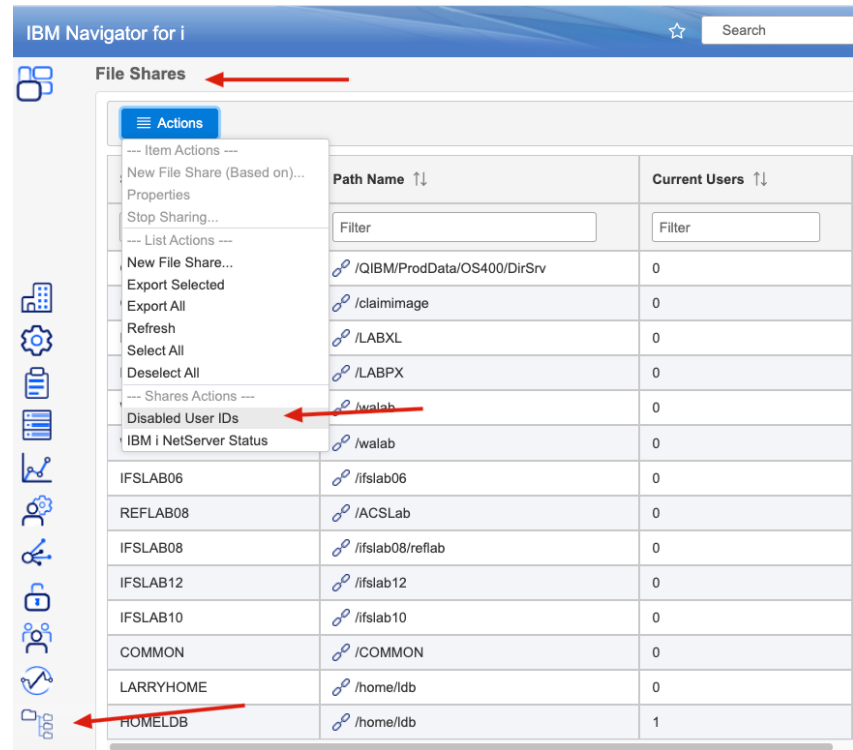


The screenshot shows the 'System Monitors' page in IBM Navigator for i. The page has a blue header with the title 'IBM Navigator for i' and a search bar. Below the header is a sidebar with various icons. The main content area is titled 'System Monitors' and contains an 'Actions' button. A table lists three monitors: 'fred' (Stopped), 'Larry' (Started), and 'DawnDemo' (Started). Each monitor has associated metrics listed. Below the table is a pagination control showing page 1 of 1 and a total of 3 rows. A blue callout box is overlaid on the bottom left, titled 'Monitors', with two options: 'System Monitors' and 'Message Monitors'. A tooltip points to the 'System Monitors' option, stating 'Manage system monitors on current node'.

Monitor ↑↓	Status ↑↓	Metrics ↑↓
fred	Stopped	Communications Line Utilization (Average)
Larry	Started	CPU Utilization (Uncapped), CPU Utilization (SQL), Interactive Response (Maximum), LAN Utilization (Average)
DawnDemo	Started	CPU Utilization (Average), Disk Response Time (Read), Disk Response Time (Write), Temporary Storage Utilization

File Shares

View which users have disabled IDs and enable them



IBM Navigator for i

File Shares

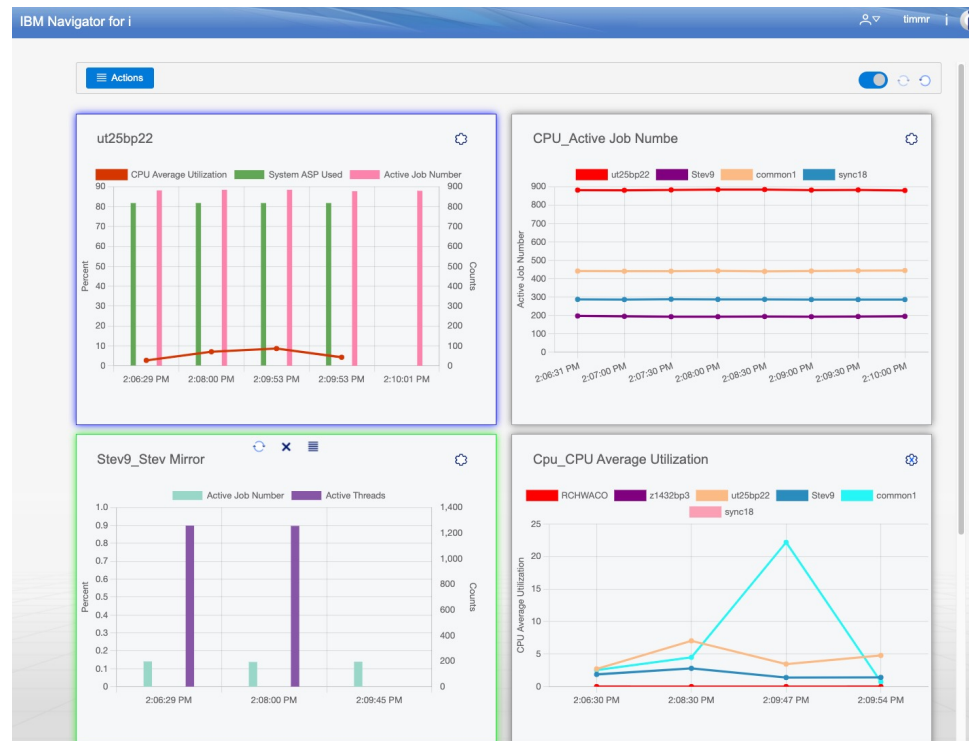
Actions

- Item Actions ---
- New File Share (Based on)...
- Properties
- Stop Sharing...
- List Actions ---
- New File Share...
- Export Selected
- Export All
- Refresh
- Select All
- Deselect All
- Shares Actions ---
- Disabled User IDs
- IBM i NetServer Status

Path Name ↑↓	Current Users ↑↓
Filter	Filter
/QIBM/ProdData/OS400/DirSrv	0
/claimimage	0
/LABXL	0
/LABPX	0
/walab	0
/walab	0
/fslab06	0
/ACSLab	0
/fslab08/reflab	0
/fslab12	0
/fslab10	0
/COMMON	0
/home/db	0
HOMELDB	1

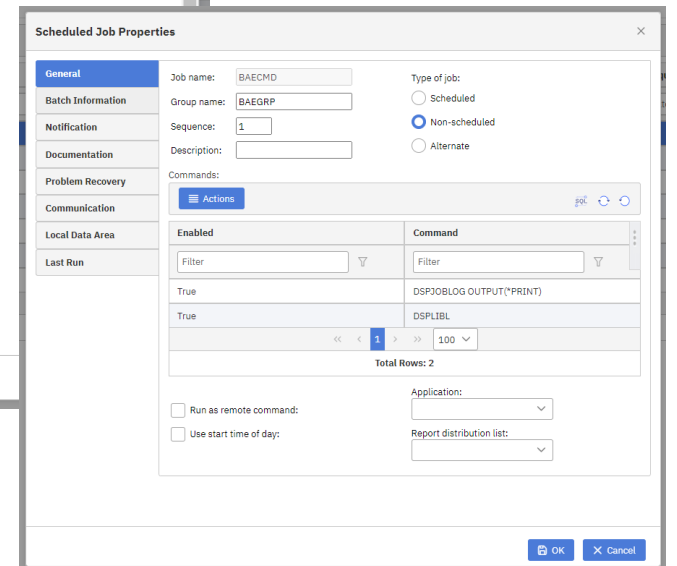
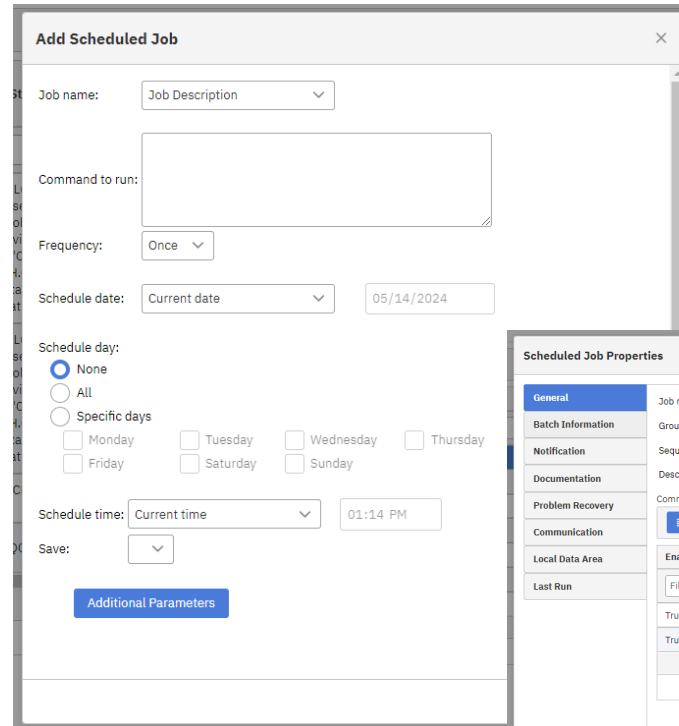
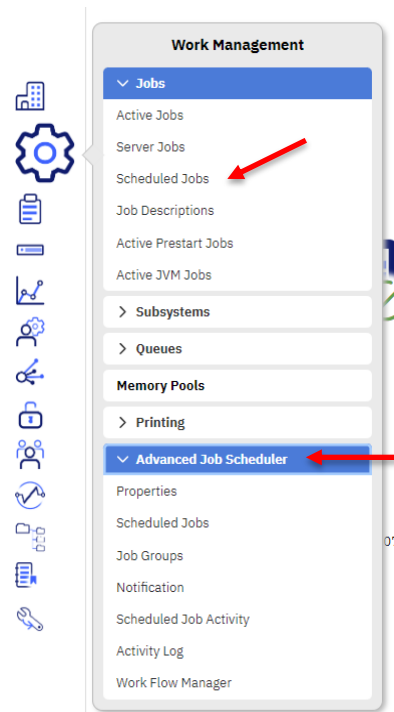
Custom Charts

- Monitor many metrics for a single system on a single chart
- Monitor a single metric across multiple systems on a single chart



Job Scheduling

- Basic Job Scheduler
- Advanced Job Scheduler
 - Now a no cost option!



Security Configuration



View and change security configuration values

Security Configuration Information

Actions ☆ go ↻ ↺

Name	Current Value	Possible Values	Description
Security Level	50	20=Password security only, 30=Password and object security, 40=Password, object, and operating system integrity, 50=Password, object, and enhanced operating system integrity	Security Level (20, 30, 40, 50) (QSECURITY)
Pending Security Level		Blank=No change, 20=Password security only, 30=Password and object security, 40=Password, object, and operating system integrity, 50=Password, object, and enhanced operating system integrity	The security level that the system will use after the next IPL
Password Level	3	0=User profile passwords with a length of 1-10 characters are supported, 1=User profile passwords with a length of 1-10 characters are supported *, 2=User profile passwords with a length of 1-128 characters are supported, 3=User profile passwords with a length of 1-128 characters are supported *	Password Level (0, 1, 2, 3) (QPWDLVL)
Pending Password Level		Blank=No change, 0=User profile passwords with a length of 1-10 characters are supported, 1=User profile passwords with a length of 1-10 characters are supported *, 2=User profile passwords with a length of 1-128 characters are supported, 3=User profile passwords with a length of 1-128 characters are supported *	The password level that the system will use after the next IPL
Password Change Block	*NONE	*NONE, 1-99 Hours	The current setting for the block password change (QPWDCHGBLK) system value
Password Expiration Interval	186	*NOMAX, 1-366 Days	The current setting for the password expiration interval (QPWDEXPITV) system value
Password Expiration Warning	7	1-99 Days	The current setting for the password expiration warning (QPWDEXPW)

Total Rows: 46

System Values

View and change system values

System Values

Category	Description	
Auditing	Changes auditing values	
Date and Time	Changes date, time, and time zone information	
Devices	Changes device auto-configuration and recovery values	
International	Changes locale settings and format of numbers, currency, dates, and time	
Jobs	Changes system level job limits and default job properties	QMAXJOB, QACTJOB, QTOTJOB, QADLACMSGQFL, QJOBMSGQMX, QINACTMSGQ, MAXSPLF, QENDJOBBLMT, QALWJOBITP, C
Library Lists	Changes the default library lists	QSYSLIBL, QUSRLIBL
Messages and Service	Changes message, logging, and service information	QHSTLOGSIZ, QCFGMSGQ, QACGLVL, QSTMP, QRMTSRVATR
Password	Changes password expiration and validation	QPWDLVL, QPWDCHGBLK, QPVDLDPGM, LMTAJC, QPWLMTCHR, QPWLMTREP, C, V, QPWDEXPWRN
Performance	Changes performance values for processing, memory pools, communications, and database	QDYNPTYADJ, QDYNPTYSCD, QPFRADJ, C, SEPOOL, QCMNRCYLMT, QCMNARB, QPA, LIBLCKLVL, QTHDRSCAFN, QTHDRSCADJ
Power Control	Changes power supply values	QUPSDLYTIM, QUPSMGQ

Total Rows: 17

Auditing Configuration

System Values > Auditing Configuration

Auditing Control

Auditing Control (QAUDCTL). This system value controls object and user action auditing.

Enable action auditing (*AUDLVL)

Enable object auditing (*OBJAUD)

Do not audit objects in QTEMP (*NOQTEMP)

Auditing Action

Attention events (*ATNEVT)

Authorization failure (*AUTFAIL)

Object creation (*CREATE)

Object deletion (*DELETE)

Job tasks (*JOBDTA)

Communication and networking tasks (*NETCMN)

Secure network connections (*NETSECURE)

Additional Audit System Values

New Objects

Advanced

Auditing for New Objects (QCRTOBJAUD). This system value controls the auditing value for a new object.

None (*NONE)

Use user settings (*USRPRF)

Audit changes to objects (*CHANGE)

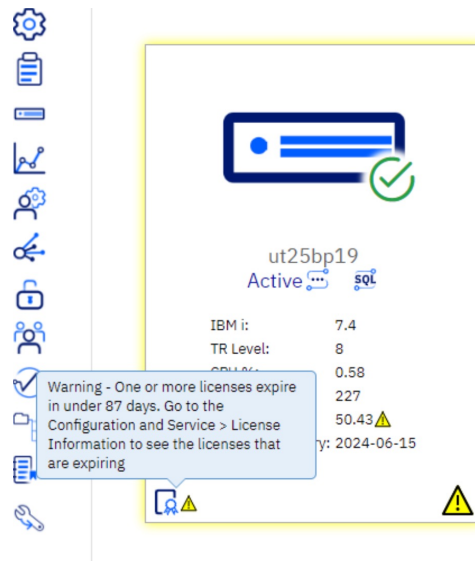
Audit all access to objects (*ALL)

OK Cancel

Licensing

Working on ways to make it clear that your license is expiring:

- Expiration date included on dashboard
- Set threshold for icon
- View detailed license information
- Alerts
- And more...



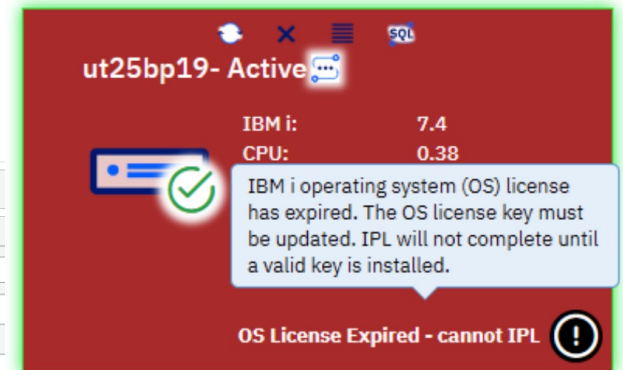
ut25bp19
Active

IBM i: 7.4
TR Level: 8
CPU: 0.58
50.43
227
y: 2024-06-15

Warning - One or more licenses expire in under 87 days. Go to the Configuration and Service > License Information to see the licenses that are expiring

License Information

Product ID	License Term	License Expiration	Feature ID
SS1	V7	2025-02-28	5051
SS1	V7R5M0	2025-02-28	5120
NT1	V7	2025-02-28	5050
DBM	V7R5M0	2025-02-28	5101
DBM	V7R5M0	2025-02-28	5102
DBM	V7R5M0	2025-02-28	5103
DBM	V7R5M0	2025-02-28	5104
DBM	V7R5M0	2025-02-28	5105
HAS	V7R5M0	2025-02-28	5051
WDS	V7R5M0	2025-02-28	5103
WDS	V7R5M0	2025-02-28	5101
WDS	V7R5M0	2025-02-28	5102
SS1	V7R5M0		5050
NT1	V7		6050



ut25bp19- Active

IBM i: 7.4
CPU: 0.38

IBM i operating system (OS) license has expired. The OS license key must be updated. IPL will not complete until a valid key is installed.

OS License Expired - cannot IPL

NO	Db2 Mirror Enablement
NO	Reserved - Option 2
NO	Reserved - Option 3
NO	Reserved - Option 4
NO	Reserved - Option 5
YES	PowerHA for i Enablement
YES	Application Development ToolSet
NO	ILE COMPILERS: RPG, COBOL, C/C++
NO	HERITAGE COMPILERS: OPM, S/36, S/38 RPG COE
YES	IBM i
YES	NATT QBLDSYSR Library - IBM Internal Tools

Total Rows: 16



IBM

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