

Welcome

Mastering the future - together.

# Code for IBM i – What's New?

And what's next!



i and me - IT Training and Solutions GmbH

[www.iandme.rocks](http://www.iandme.rocks)

Alan Seiden (Seiden Group)



# Wait...that's not Sanjula!

- Sébastien “Seb” Julliand
- Code for IBM *i core team* member
- IBM *i Pipeline Steps Jenkins* plugin core maintainer
- IBM Champion since 2024
- R&D Tech Lead at i and me - Training and consulting



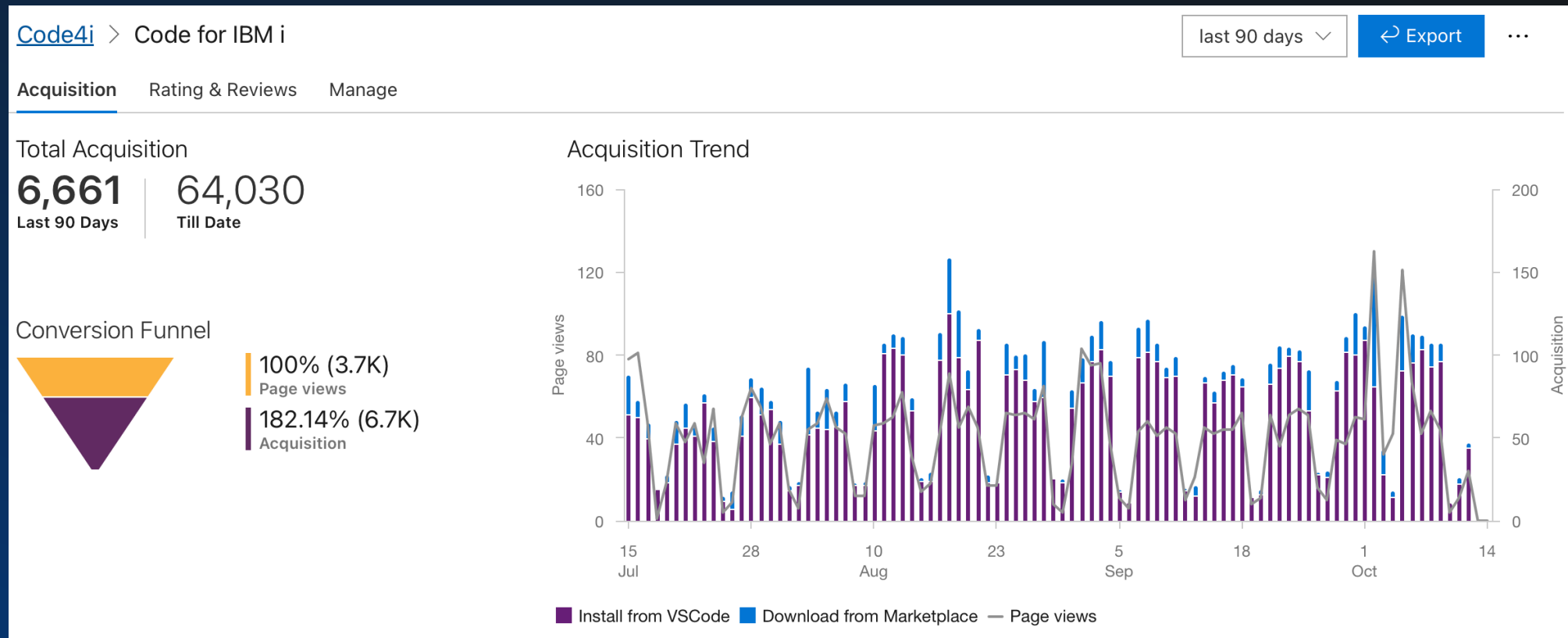
# Who here is using Code for IBM I?

Show of hands!





# How is Code for IBM i adoption?





# What's New in Code for IBM i?

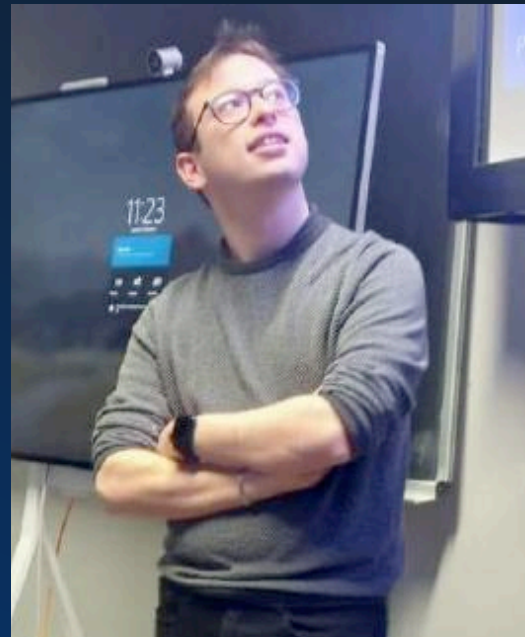




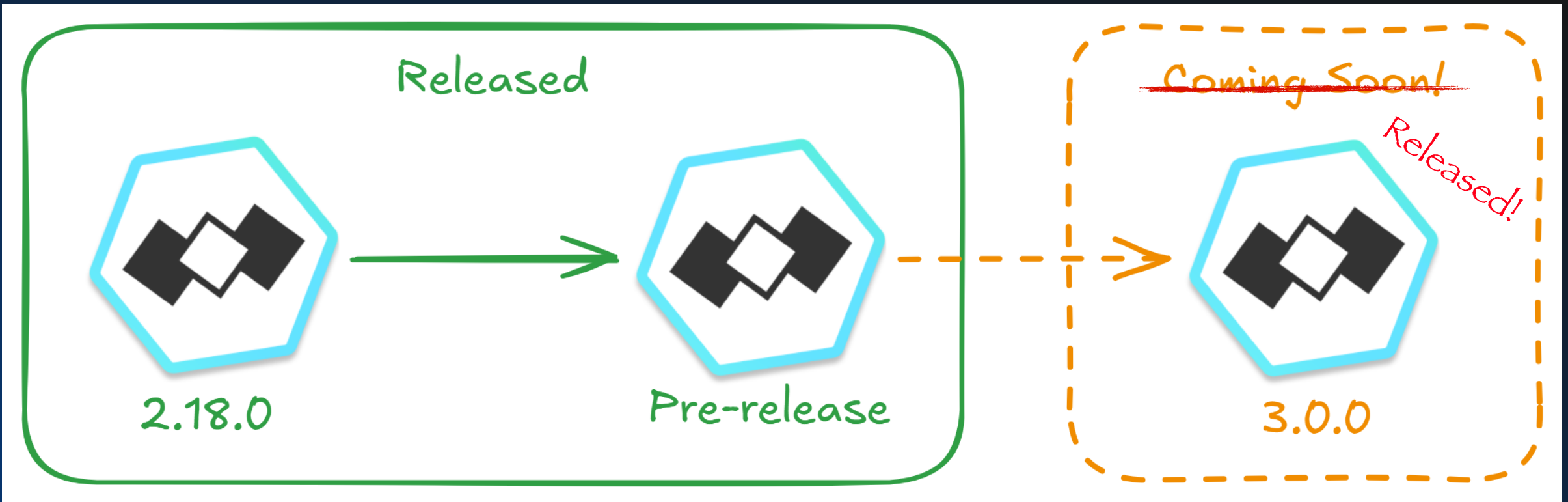
# New Core Team members! 🎉

Let's hear it for

- Andrea BUZZI 🇮🇹
- Bob COZZI 🇺🇸



# Version 3.0.x is out!





# Version 3.0.x is out!

- Lot of changes under the hood
  - 100+ pull requests merged!
- Use Mapepire for SQL queries
- New Environment view
- Change Password action
- Spanish translation
- Bidi CCSID Support
- ...go see the release notes 🥰



# How to pronounce Mapepire



ma-peuh-pee



ma-peu-pi

# Mapepire to the rescue (single mode & server)



+



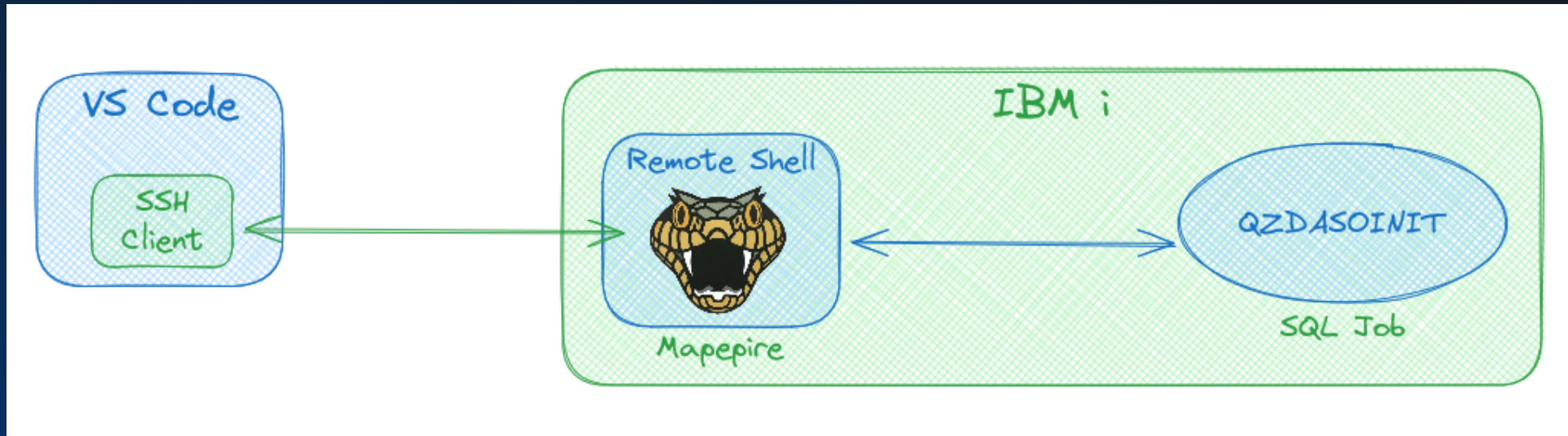
=

Performance  
Gains

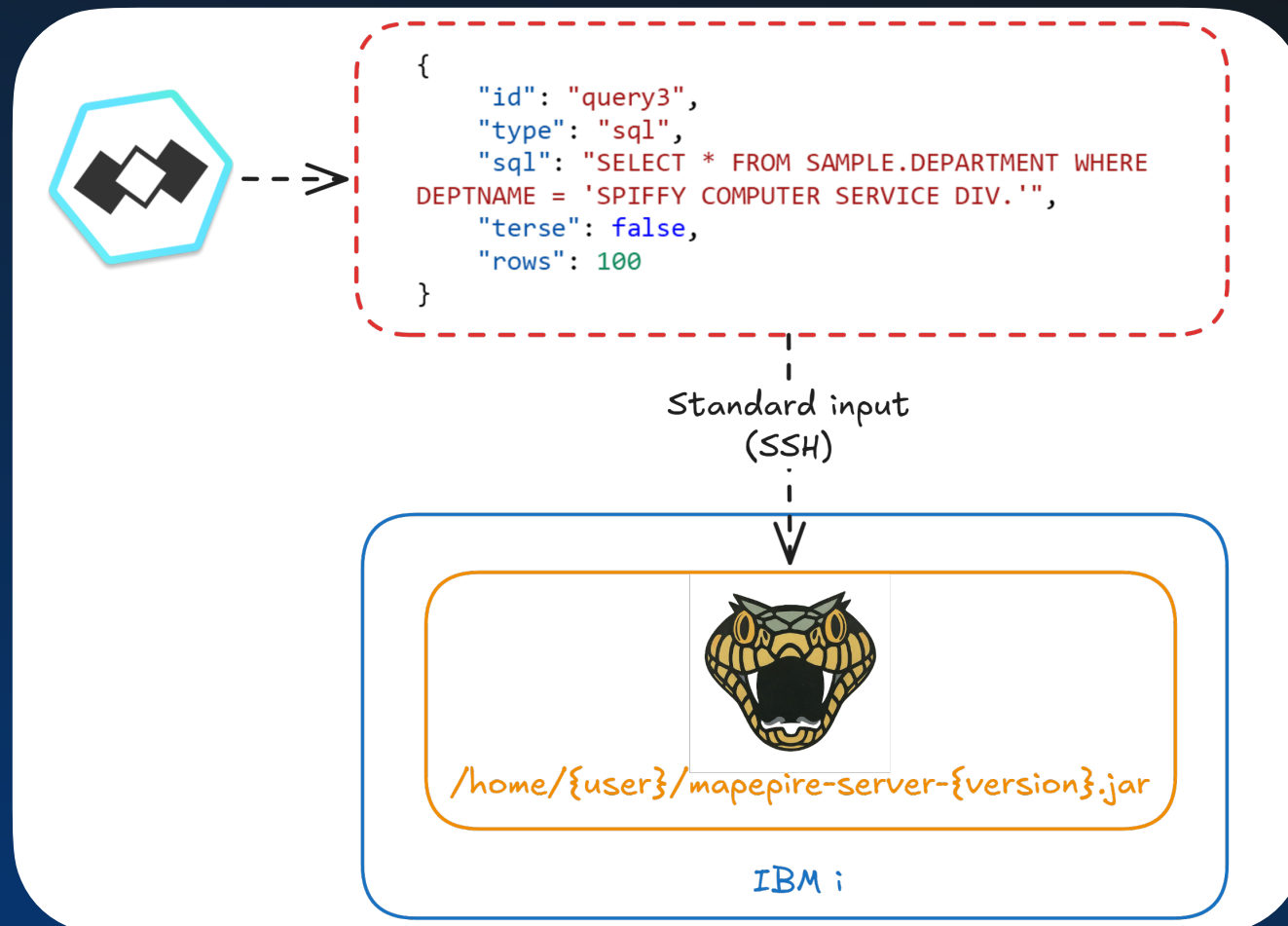
CCSID  
Improvements

Consistency  
with Db2 for  
IBM i

# How does it work in single mode?



# How does it work in single mode?



# How does it work in single mode?



```
{
  "id": "query3",
  "has_results": true,
  "update_count": -1,
  "metadata": {
    "column_count": 1,
    "job": "112480/QUSER/QZDASOINIT",
    "columns": [
      {
        "name": "DEPTNO",
        "type": "CHAR",
        "display_size": 3,
        "label": "DEPTNO",
        "precision": 3,
        "scale": 0
      }
    ]
  },
  "data": [
    {
      "DEPTNO": "A00"
    }
  ],
  "is_done": true,
  "success": true
}
```

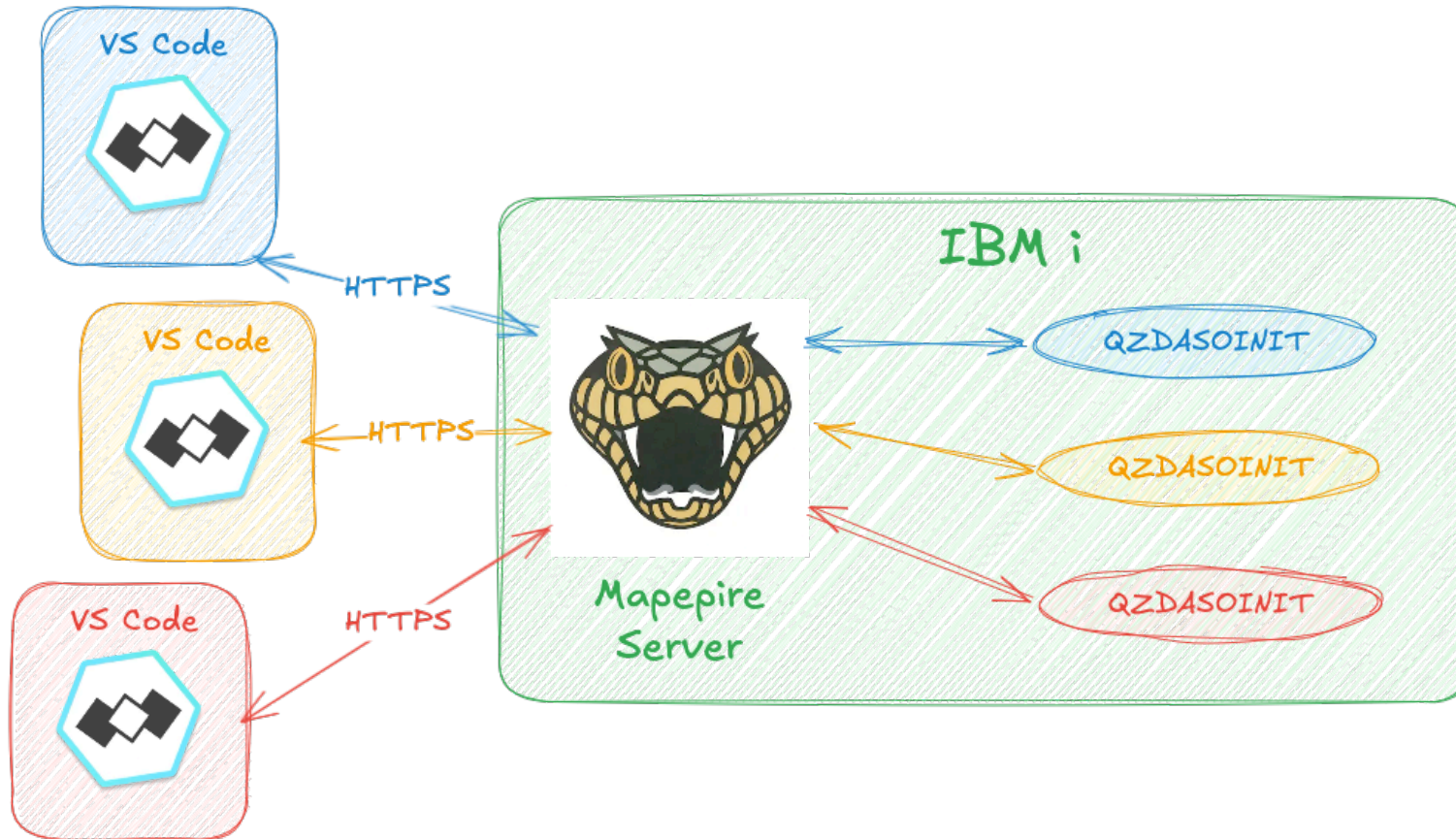
← Standard output (SSH)



`/home/{user}/mapepire-server-{version}.jar`

IBM i

# How does it work in server mode?





# Mapepire connection settings

Use secure SQL connection

When enabled, Mapepire will connect to the database using TLS (i.e. the `secure` JDBC option will be enabled)

## Mapepire Java Runtime

The Java version used to run Mapepire; it must be installed and available on the LPAR.

Default

Connect to remote Mapepire Server

When enabled, Code for IBM i will connect over HTTPS to a remote Mapepire server already running on the target IBM i instead of uploading and running Mapepire in an SSH channel.

Allow all certificates

When enabled, allows either self-signed certificates or certificates from a CA when connecting to a remote Mapepire server.

## Remote Mapepire Server port

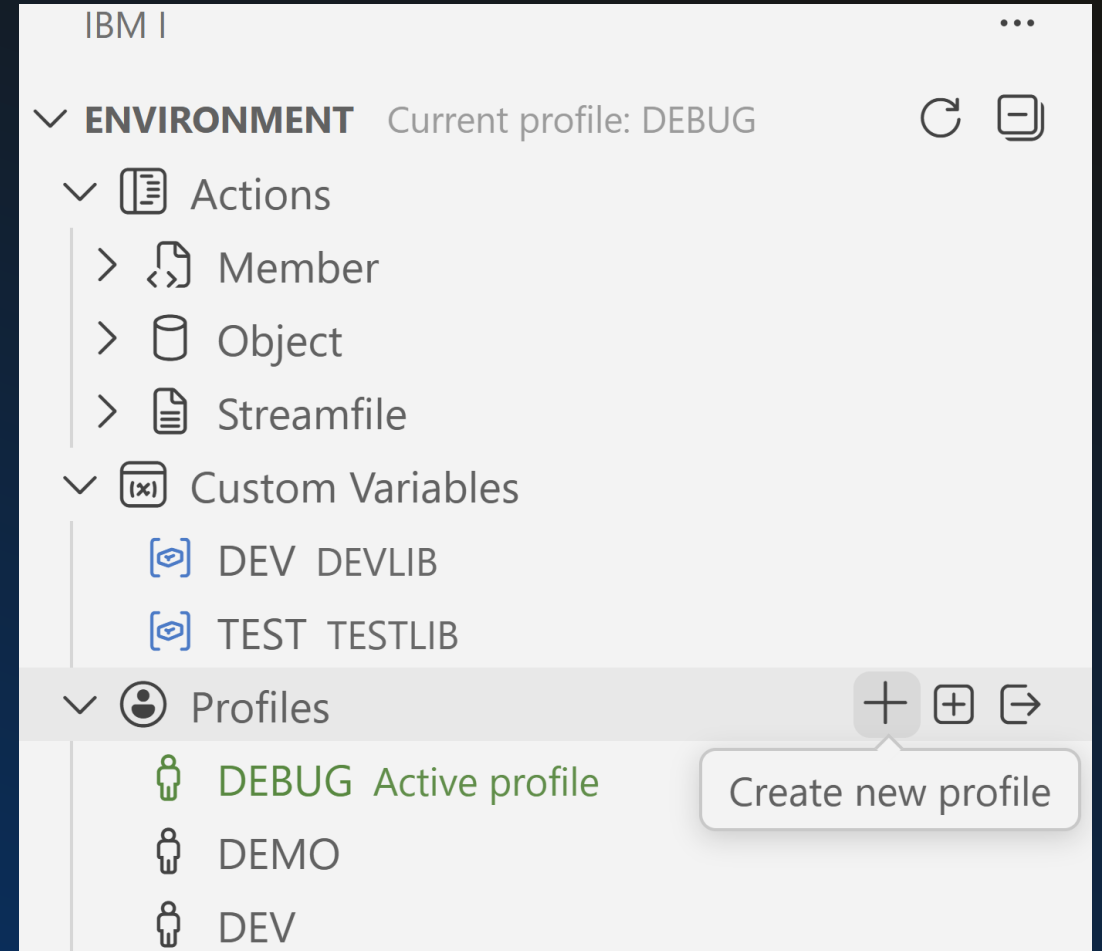
The TCP port number Code for IBM i will use when connecting to a remote Mapepire server.

8076

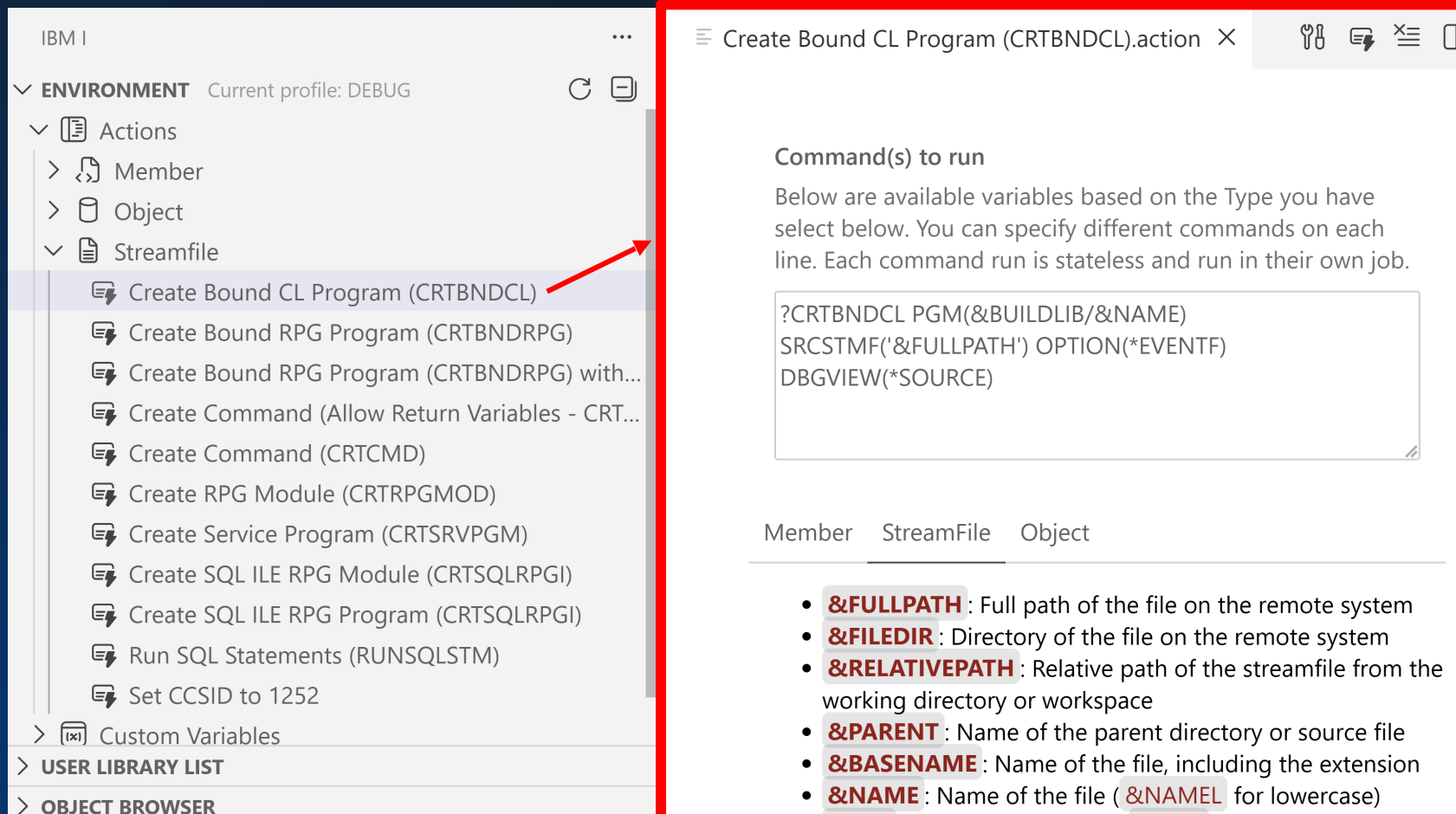
# New Environment view

Revamped management of

- actions
- custom variables
- profiles



# Manage built-in and custom actions



The screenshot shows the IBM I Actions menu on the left and the configuration dialog for the 'Create Bound CL Program (CRTBNDCL).action' on the right. A red arrow points from the selected action in the menu to the configuration dialog.

**ENVIRONMENT** Current profile: DEBUG

**Actions**

- Member
- Object
- Streamfile
  - Create Bound CL Program (CRTBNDCL)**
  - Create Bound RPG Program (CRTBNDRPG)
  - Create Bound RPG Program (CRTBNDRPG) with...
  - Create Command (Allow Return Variables - CRT...
  - Create Command (CRTCMD)
  - Create RPG Module (CRTRPGMOD)
  - Create Service Program (CRTSRVPGM)
  - Create SQL ILE RPG Module (CRTSQLRPGI)
  - Create SQL ILE RPG Program (CRTSQLRPGI)
  - Run SQL Statements (RUNSQLSTM)
  - Set CCSID to 1252

**Create Bound CL Program (CRTBNDCL).action**

**Command(s) to run**

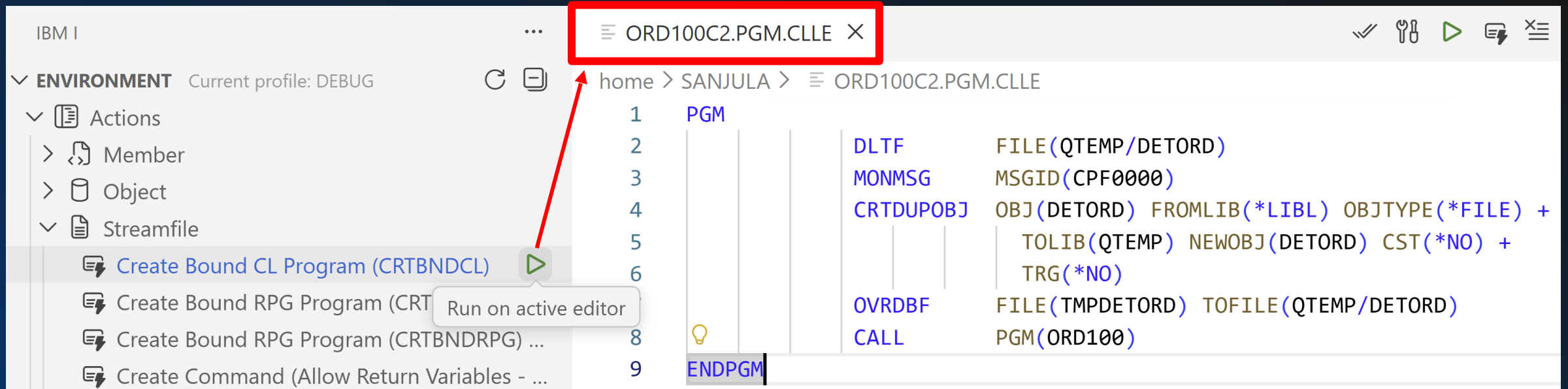
Below are available variables based on the Type you have select below. You can specify different commands on each line. Each command run is stateless and run in their own job.

```
?CRTBNDCL PGM(&BUILDLIB/&NAME)
SRCSTMF('&FULLPATH') OPTION(*EVENTF)
DBGVIEW(*SOURCE)
```

Member StreamFile Object

- &FULLPATH**: Full path of the file on the remote system
- &FILEDIR**: Directory of the file on the remote system
- &RELATIVEPATH**: Relative path of the streamfile from the working directory or workspace
- &PARENT**: Name of the parent directory or source file
- &BASENAME**: Name of the file, including the extension
- &NAME**: Name of the file ( **&NAMEL** for lowercase)

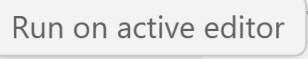
# Easily find and run actions on active editor



IBM I

ENVIRONMENT Current profile: DEBUG

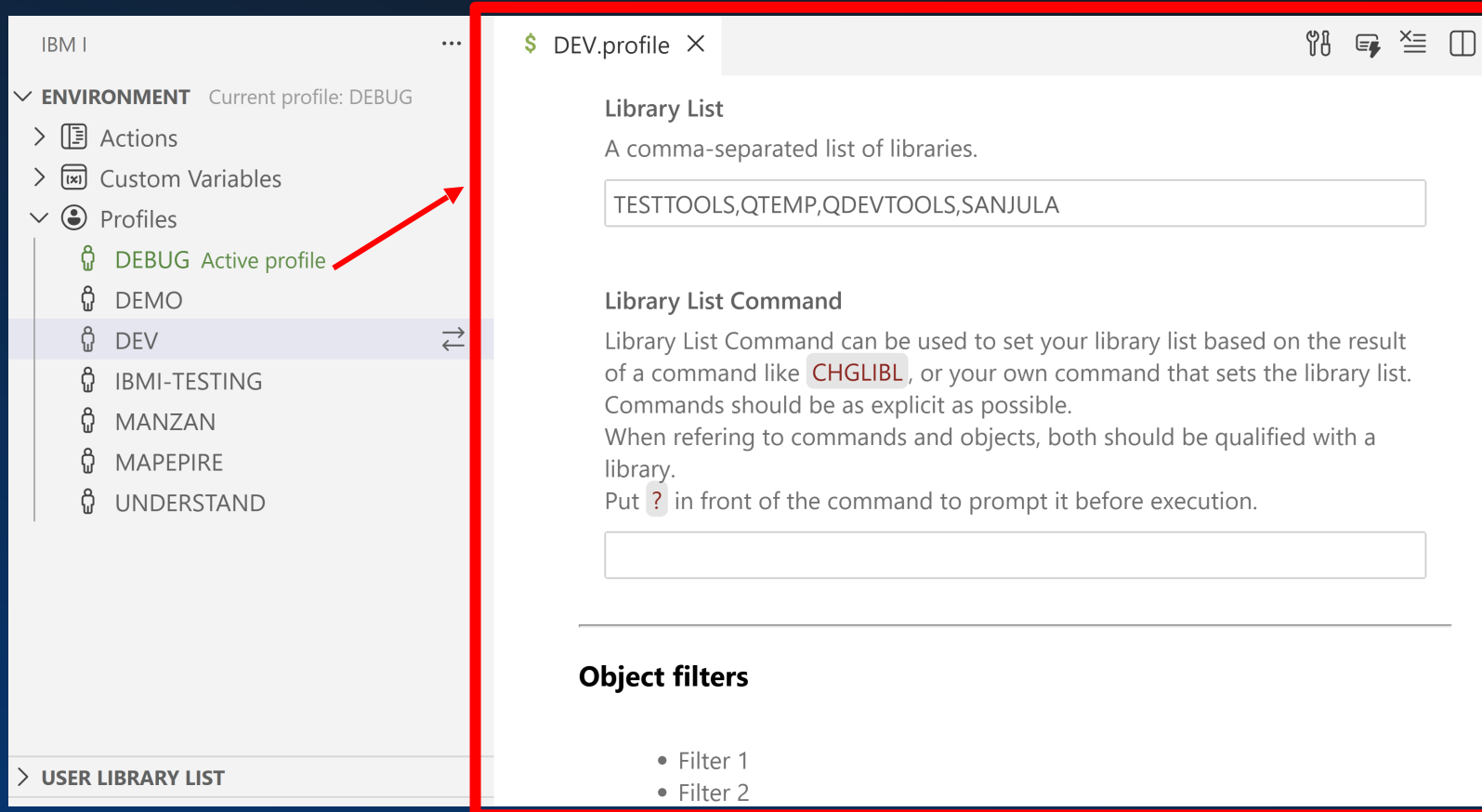
Actions

- Member
- Object
- Streamfile
- Create Bound CL Program (CRTBNDCL) 
- Create Bound RPG Program (CRT...)
- Create Bound RPG Program (CRTBNDRPG) ...
- Create Command (Allow Return Variables - ...)

home > SANJULA > ORD100C2.PGM.CLLE

```
1 PGM
2
3 DLTF FILE(QTEMP/DETORD)
4 MONMSG MSGID(CPF0000)
5 CRTDUPOBJ OBJ(DETORD) FROMLIB(*LIBL) OBJTYPE(*FILE) +
6 TOLIB(QTEMP) NEWOBJ(DETORD) CST(*NO) +
7 TRG(*NO)
8 OVRDBF FILE(TMPDETORD) TOFILE(QTEMP/DETORD)
9 CALL PGM(ORD100)
ENDPGM
```

# Manage profiles



The screenshot displays the IBM I environment management interface. On the left, a sidebar shows the 'ENVIRONMENT' section with 'Profiles' expanded. The 'DEV' profile is selected and highlighted. A red arrow points from the 'DEV' profile in the sidebar to the right-hand pane. The right-hand pane, titled '\$ DEV.profile X', shows the configuration for the 'DEV' profile. It includes a 'Library List' field containing 'TESTTOOLS,QTEMP,QDEVTOOLS,SANJULA', a 'Library List Command' field, and 'Object filters'.

IBM I ...

ENVIRONMENT Current profile: DEBUG

- > Actions
- > Custom Variables
- > Profiles
  - DEBUG Active profile
  - DEMO
  - DEV
  - IBMI-TESTING
  - MANZAN
  - MAPEPIRE
  - UNDERSTAND

USER LIBRARY LIST

\$ DEV.profile X

**Library List**  
A comma-separated list of libraries.

TESTTOOLS,QTEMP,QDEVTOOLS,SANJULA

**Library List Command**  
Library List Command can be used to set your library list based on the result of a command like `CHGLIBL`, or your own command that sets the library list. Commands should be as explicit as possible. When referring to commands and objects, both should be qualified with a library. Put `?` in front of the command to prompt it before execution.

Object filters

- Filter 1
- Filter 2



# Better iASP support at profile level

## Home Directory

/home/SJULLIAND

## Current Library

XXSJUASP

## Library List

A comma-separated list of libraries.

QGPL,QTEMP

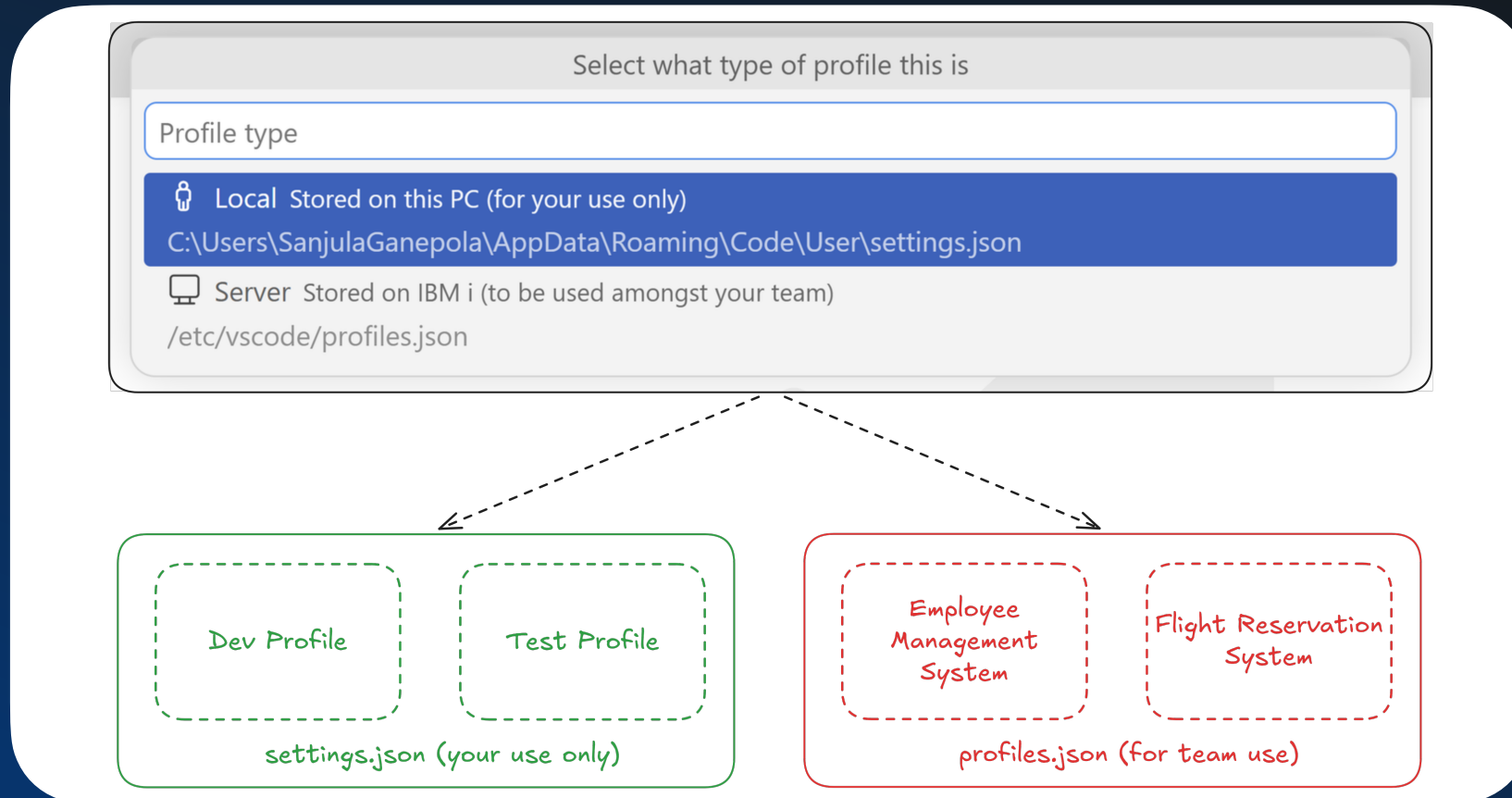
## Current IASP

The independent ASP to enable when using this profile. If the database name of this ASP is different from its name, make sure to use the database name here. Leave blank to use the system ASP.

IASP1










# Server-side profiles (coming soon)





# Server-side profiles (coming soon)

Developers connecting to same IBM i can access the shared profiles

- ▼ ENVIRONMENT Current profile: Code4i
  - >  Actions
  - >  Custom Variables
  - ▼  Profiles
    -  Code4i Active
    -  Conference Demos
    -  Employee Management Application
    -  Flight Reservation System

# Server-side global settings

Located on the IFS in [/etc/vscode/settings.json](#)

```
{} settings.json 2 ●
etc > vscode > {} settings.json > {} codefori
1 {
2   "codefori": {
3     "connectringStringFor5250": "+uninhibited localhost",
4     "tempLibrary": "ILEDITOR",
5     "autoClearTempData": true,
6   }
7 }
8
```

enableSourceDates  
encodingFor5250

When enabled, Code for IBM i will retain/update source dates of members when editing source members. Requires SQL to be enabled for this feature to work. If this config is changed, you must reconnect to the system.

# Server-side: Read-only mode

```
{ } settings.json ×
```

```
etc > vscode > { } settings.json > ...
```

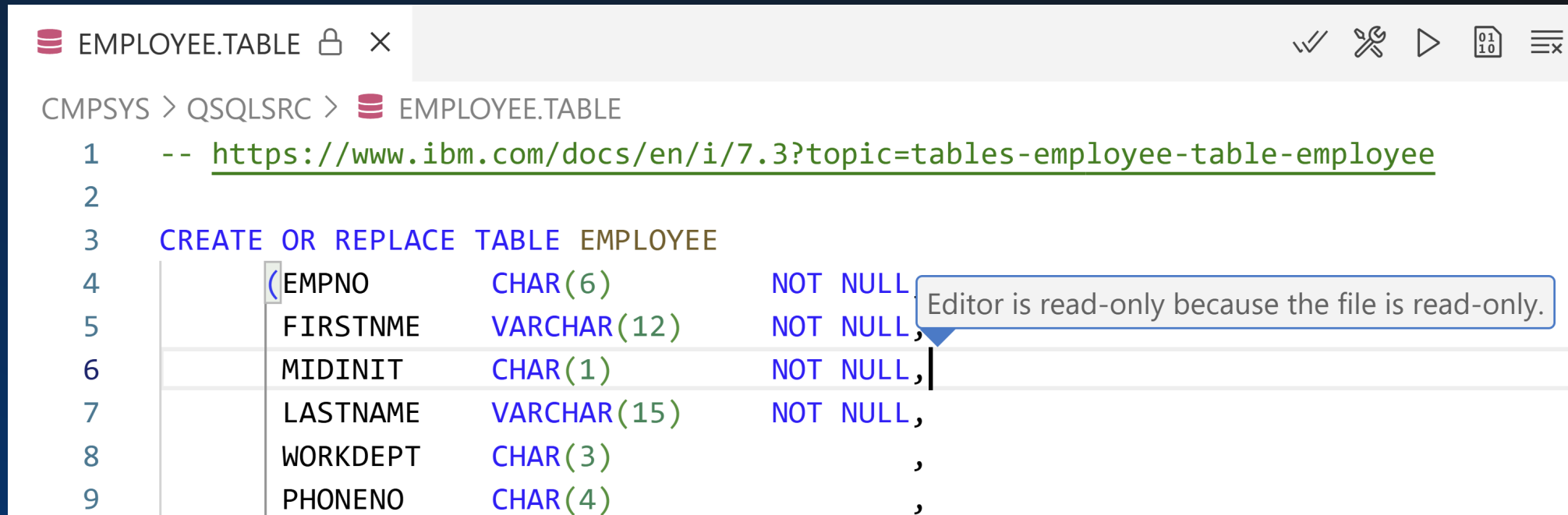
```
1   {  
2   |   "codefori": {  
3   |       "readOnlyMode": true  
4   |   }  
5   }
```



# Local: Read-only mode

The screenshot shows the 'Settings: Demo System' window in VS Code. The 'Features' tab is selected. A message states: 'Some of these settings have been set on the server and cannot be changed here.' Below this, the 'Read only mode' setting is checked and highlighted with a red box. Its description reads: 'When enabled, content on the server can not be changed. Requires restart when changed.' Below that, the 'Quick Connect' setting is also checked, with a description: 'When enabled, server settings from previous connection will be used, resulting in much quicker connection. If server settings are changed, right-click the connection in Connection Browser and select **Connect and Reload Server Settings** to refresh the cache.'

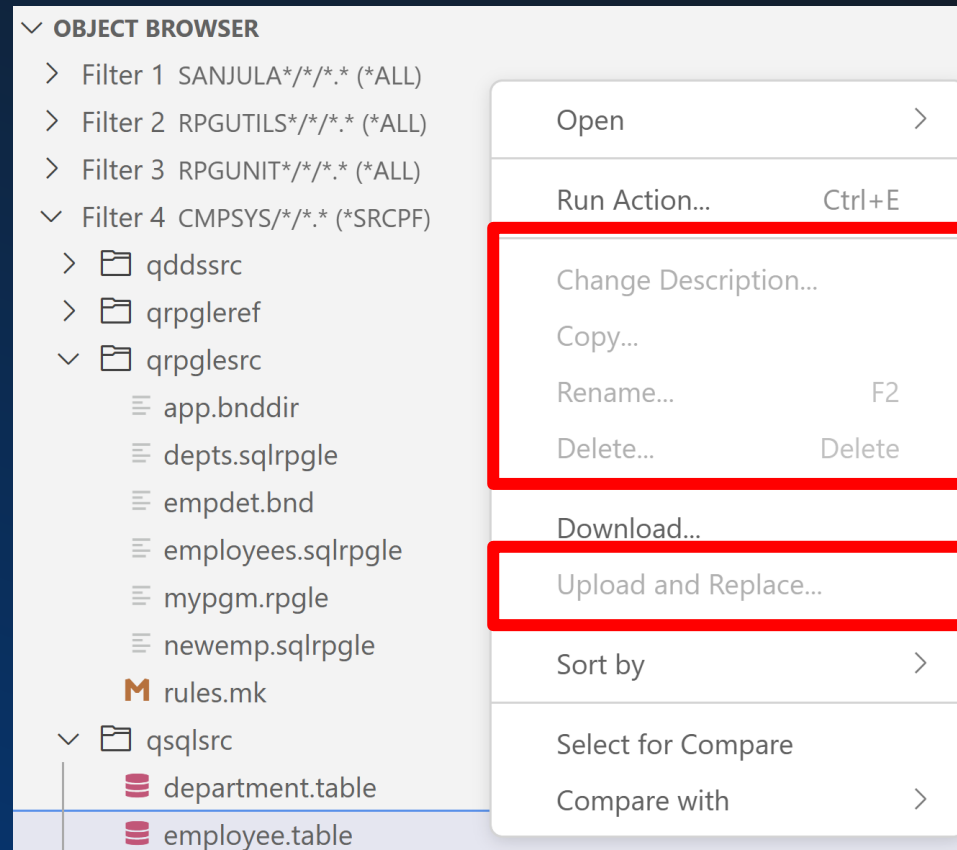
# Prevents file changes



```
EMPLOYEE.TABLE
CMPSYS > QSQLSRC > EMPLOYEE.TABLE
1  -- https://www.ibm.com/docs/en/i/7.3?topic=tables-employee-table-employee
2
3  CREATE OR REPLACE TABLE EMPLOYEE
4  (EMPNO      CHAR(6)      NOT NULL
5   FIRSTNME   VARCHAR(12)   NOT NULL,
6   MIDINIT    CHAR(1)      NOT NULL,
7   LASTNAME   VARCHAR(15)   NOT NULL,
8   WORKDEPT   CHAR(3)
9   PHONENO    CHAR(4)
```

Editor is read-only because the file is read-only.

# Disables operations



The screenshot shows an 'OBJECT BROWSER' window with a tree view of folders and files. A context menu is open over the 'rules.mk' file. The menu items are: Open, Run Action... (Ctrl+E), Change Description..., Copy..., Rename... (F2), Delete... (Delete), Download..., Upload and Replace..., Sort by, Select for Compare, and Compare with. The 'Change Description...', 'Copy...', 'Rename...', and 'Delete...' items are highlighted with a red box, and a red arrow points from the text 'Disabled!' to this box. The 'Upload and Replace...' item is also highlighted with a red box, and a red arrow points from the text 'Disabled!' to it.

Disabled!

# Server-side: Enable source dates

```
{ } settings.json ×
```

```
etc > vscode > { } settings.json > ...
```

```
1  {  
2  |   "codefori": {  
3  |     "enableSourceDates": true  
4  |   }  
5  }
```



# Local: Enable source dates

Features Source Code Terminals Debugger Temporary Data Components Extension Auth

**Source ASP**  
Current ASP is based on the user profile job description and cannot be changed here.

\*SYSBAS

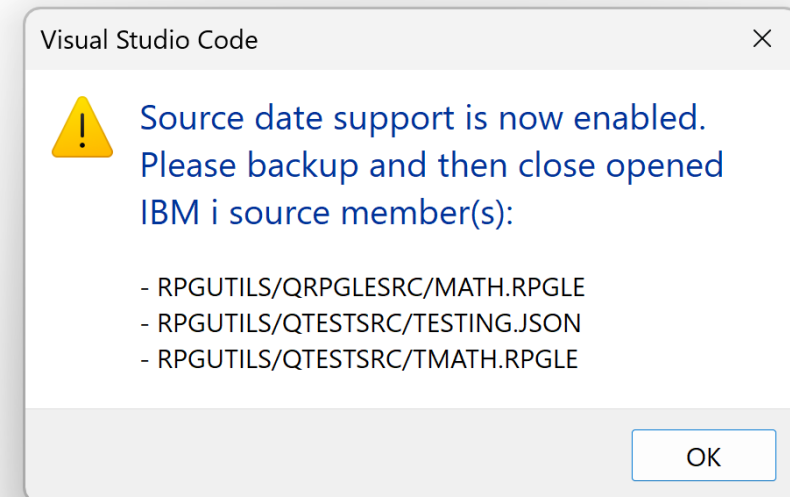
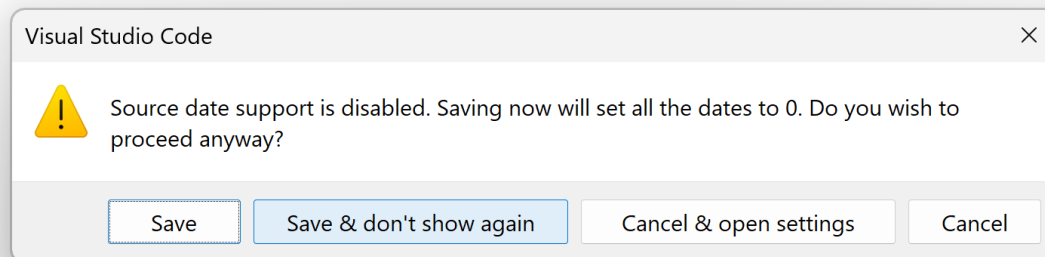
**Source file CCSID**  
The CCSID of source files on your system. You should only change this setting from \*FILE if you have a source file that is 65535 - otherwise use \*FILE. Note that this config is used to fetch all members. If you have any source files using 65535, you have bigger problems.

\*FILE

Enable Source Dates  
When enabled, source dates will be retained and updated when editing source members. Requires restart when changed.

Source Dates in Gutter  
When enabled, source dates will be displayed in the gutter. This also enables date search and sequence view.

# Source date warnings

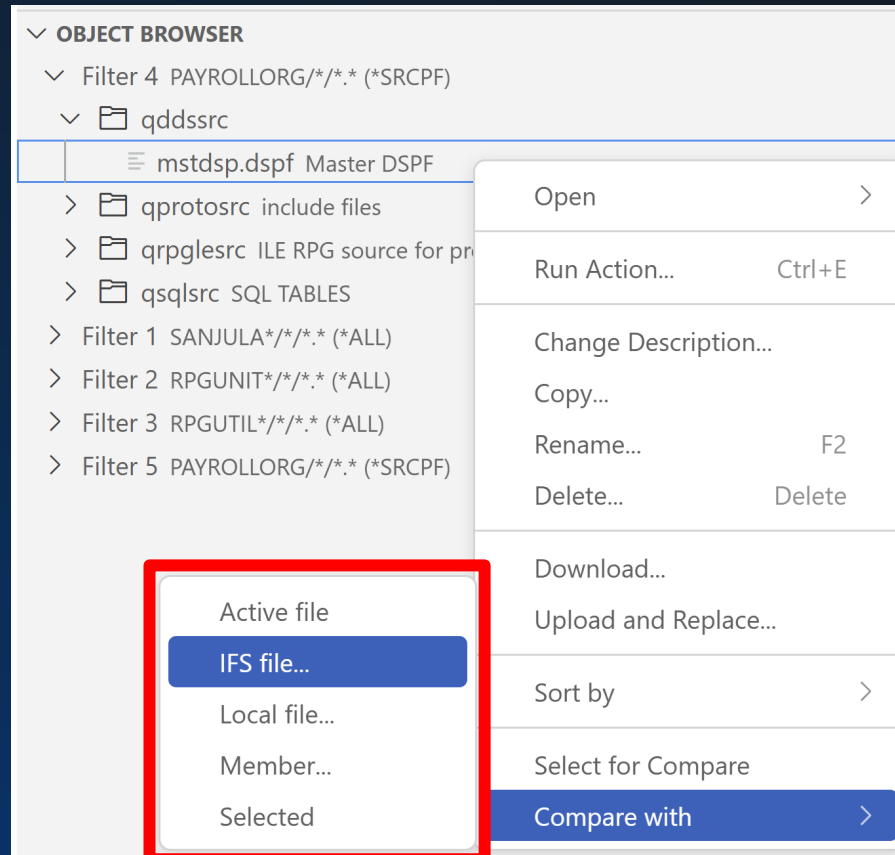




# Quality of Life Improvements



# Improved compare options



# Improved compare options

The screenshot shows a code editor with two files being compared: ERRORTB1.RPGLE and ERRORTB2.RPGLE. The code is displayed in a split view with alternating red and green highlights. The code includes comments and declarations for error handling.

```
1 1 **free
2 2 // This contains global constants, variables and prototypes
3 3 -// for the Payroll
3+ 3+ // for the Payroll Maintenance app
4 4
5 5 //
6 6 // Compile time array containing error descriptions.
7 7 -Dcl-S ERR Char(40) DIM(10) CTDATA PERRCD(1);
7+ 7+ Dcl-S ERR Char(50) DIM(10) CTDATA PERRCD(1);
8 8
9 9 Dcl-C INVALID_MAINTENANCE_SELECTION 1;
10+ 10+ Dcl-C INVALID_ACTION_CODE 4;
10 11
```

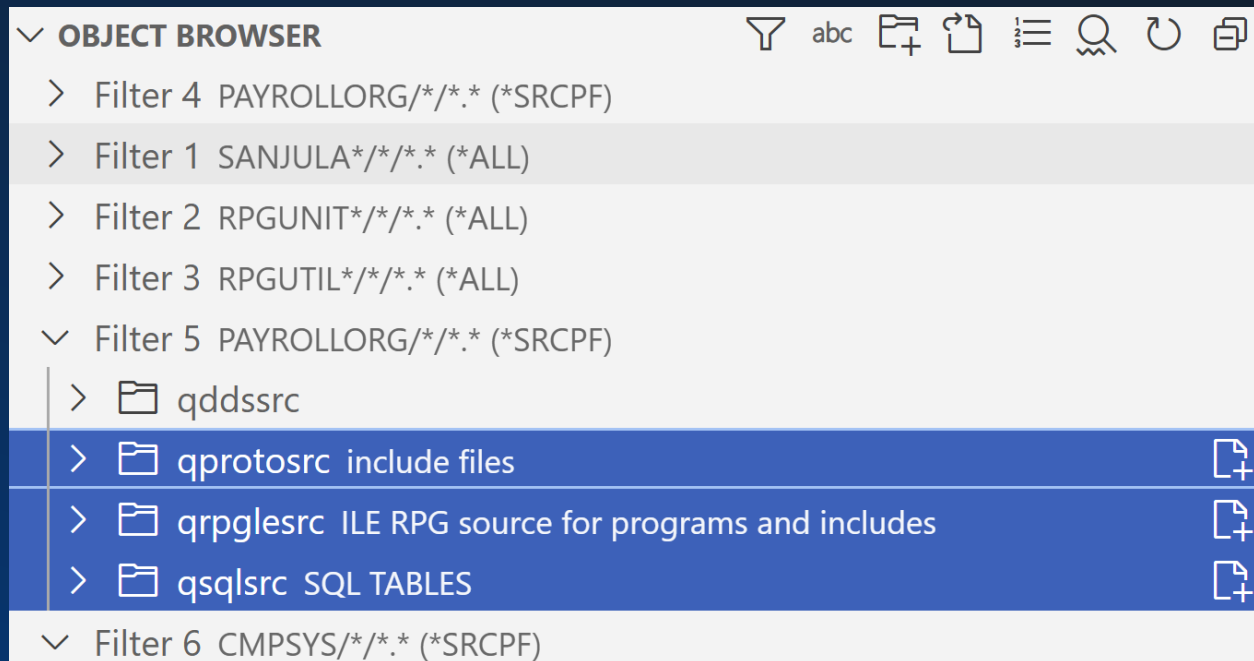
The right sidebar shows the 'OBJECT BROWSER' with a context menu open over the 'errorrtb2.rpgle' file. The menu options are:

- Open
- Run Action... (Ctrl+E)
- Delete... (Delete)
- Download...
- Sort by

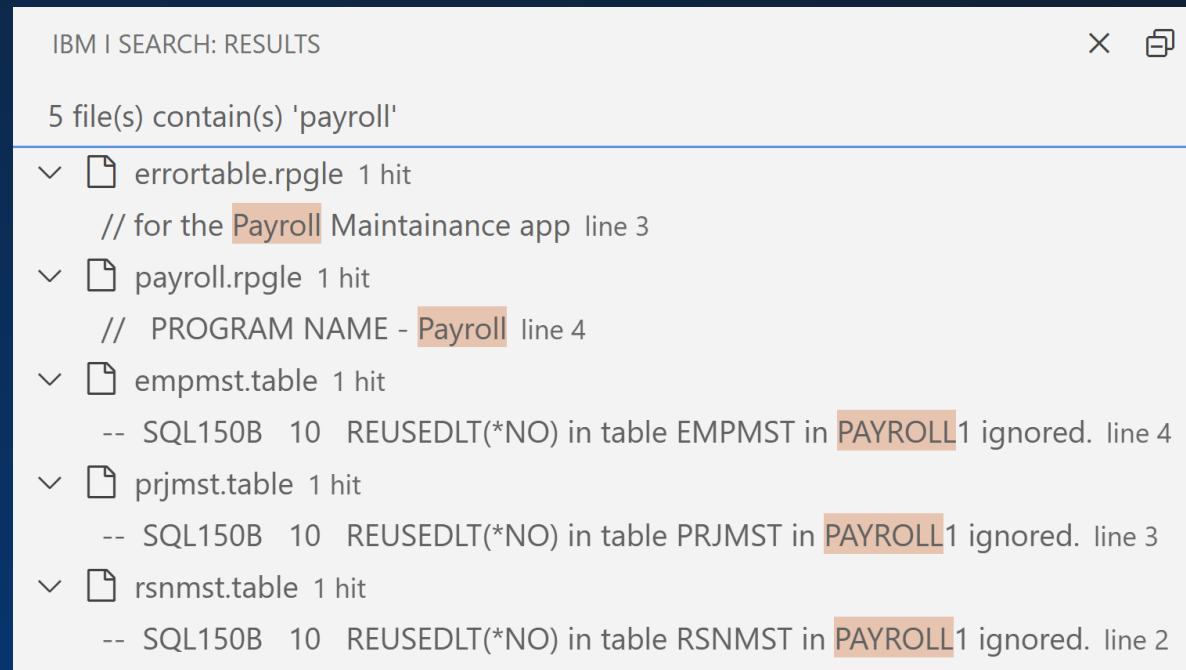
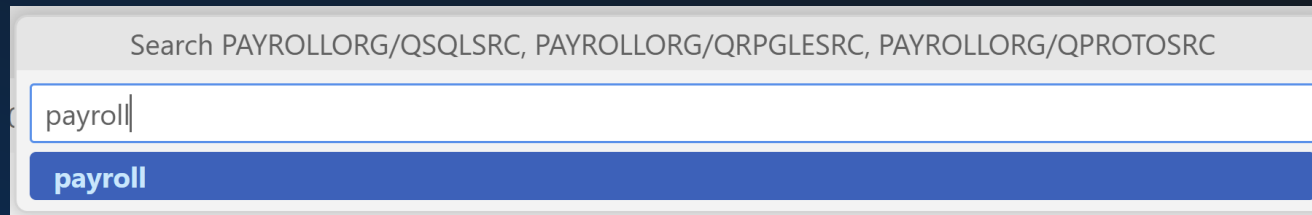
At the bottom right, there are two buttons: 'Each other' and 'Compare with'. A red arrow points from the 'Compare with' button to the code area.

# Improved multi-selection support

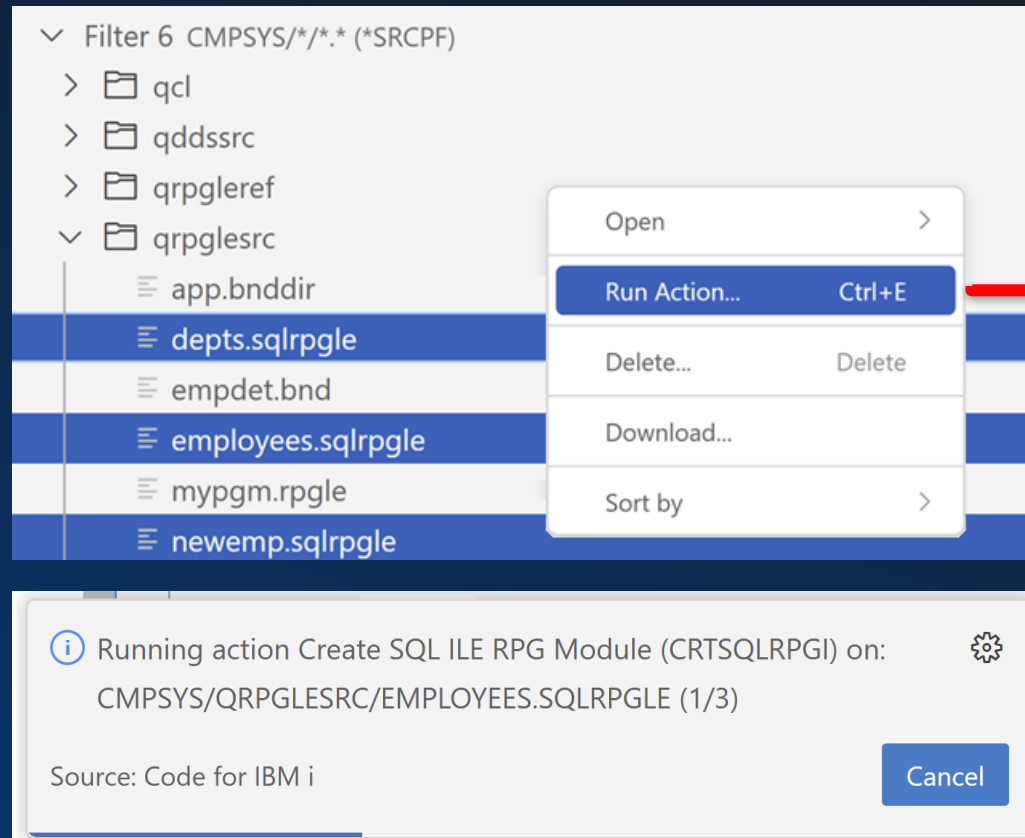
[ctrl+click](#) or [shift+click](#) in the Object Browser or IFS Browser and perform operations on multiple items



# Search across multiple source files



# Compile multiple objects with the same action sequentially



Filter 6 CMPSYS/\*\*.\* (\*SRCPF)

- > qcl
- > qddsrc
- > qrpqleref
- ▼ qrpglesrc
  - ≡ app.bnmdir
  - ≡ **employees.sqlrpgle**
  - ≡ empdet.bnd
  - ≡ mypgm.rpgle
  - ≡ newemp.sqlrpgle

Open >

**Run Action... Ctrl+E**

Delete... Delete

Download...

Sort by >

Running action Create SQL ILE RPG Module (CRTSQLRPGI) on: CMPSYS/QRPGLESRC/EMPLOYEES.SQLRPGLE (1/3)

Source: Code for IBM i

Cancel

# View output of each compilation

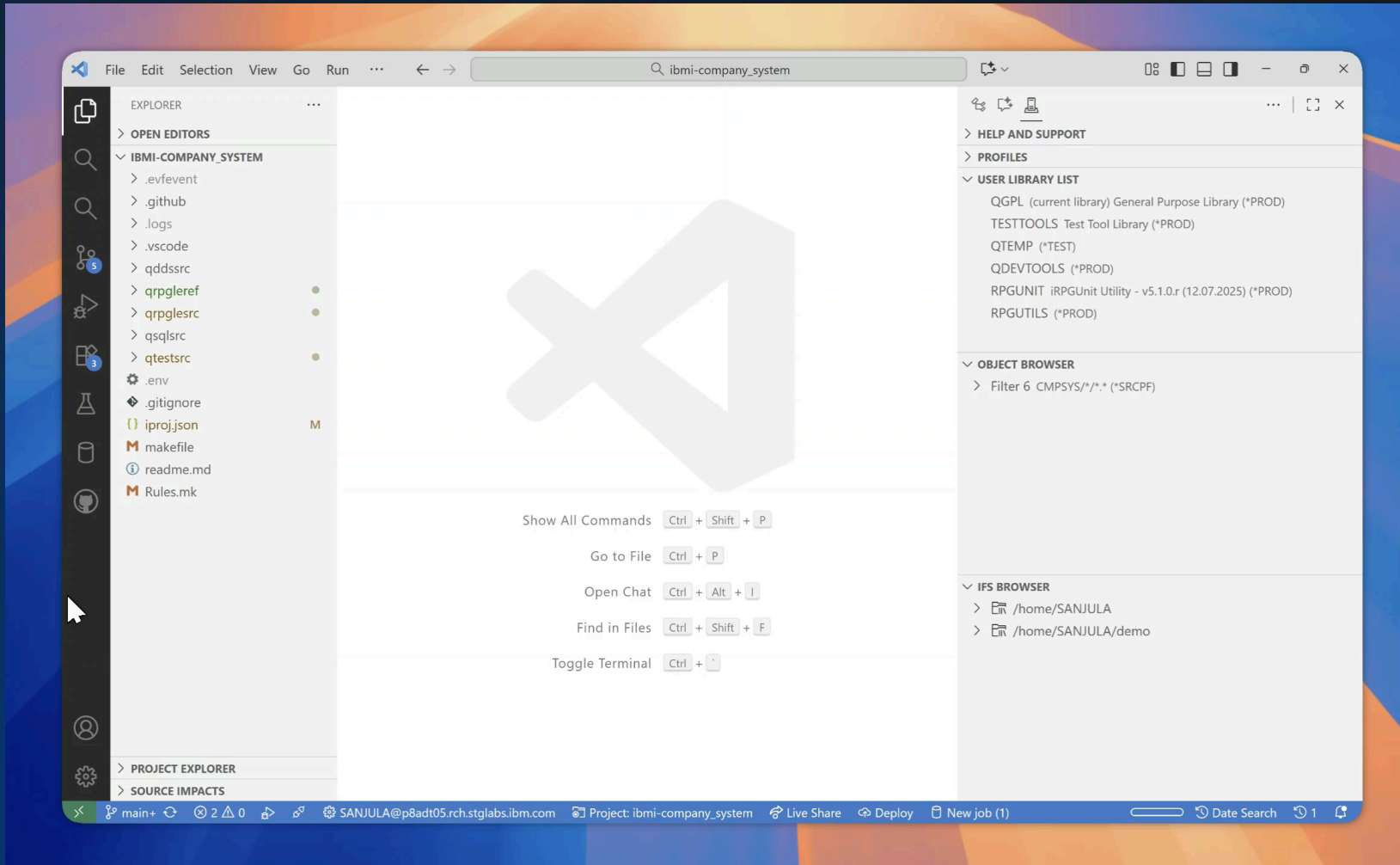
```
☰ Create SQL ILE RPG Module (CRTSQLRPGI) [10/11/2025, 9:54:20 PM] ✕
```

✕ NEWEMP.SQLRPGLE  
✕ EMPLOYEES.SQLRPGLE  
✕ DEPTS.SQLRPGLE

```
Running Action: Create SQL ILE RPG Module (CRTSQLRPGI) (9:54:09 PM)
Current library: SANJULA
Library list: TESTTOOLS QTEMP QDEVTOOLS RPGUNIT SANJULA RPGUTILS
Working directory: /home/SANJULA
Commands:
        CRTSQLRPGI OBJ(CMPSYS/NEWEMP) SRCFILE(CMPSYS/QRPGLESRC) OBJTYPE(*MODULE) CLOSQLCSR

CPFA0A9: Object not found. Object is EN_US.UTF-8.
CPC7301: File EVFEVENT created in library CMPSYS.
CPC7305: Member NEWEMP added to file EVFEVENT in CMPSYS.
CPD4090: Printer device PRT01 not found. Output queue changed to QPRINT in library QGPL.
CPC7301: File QSQLPRE created in library QTEMP.
CPC7305: Member NEWEMP added to file QSQLPRE in QTEMP.
CPC3201: Member NEWEMP file QSQLPRE in QTEMP changed.
CPFA0A9: Object not found. Object is EN_US.UTF-8.
CPFA0A9: Object not found. Object is EN_US.UTF-8.
CPF4102: File QRPGLEREF in library *LIBL with member CONSTANTS not found.
RNS9308: Compilation stopped. Severity 40 errors found in program.
CPC0904: Data area RETURNCODE created in library QTEMP.
RNS9309: Compilation failed. Module NEWEMP not created in library CMPSYS.
SQL9019: SQL precompile failed.
5770WDS V7R4M0 190419 RN          IBM ILE RPG          CMPSYS/NEWEMP          P8ADT0!
Command . . . . . : CRTRPGMOD
  Issued by . . . . . : SANJULA
Module . . . . . : NEWEMP
Library . . . . . : CMPSYS
```

# Improved drag and drop support





# Security Enhancements





# MFA Support / SSH Keys Passphrase

Form fields for Password, MFA, Private Key, and Key Passphrase.

**Password**

Save Password

Enable Multi-Factor Authentication (MFA)  
Enable this to be prompted for your additional factor when connecting.

**Private Key**  
OpenSSH, RFC4716 and PPK formats are supported.

Select File

**Key Passphrase**

# Change password

The screenshot shows the IBM I interface with a 'Password change' dialog box. The dialog is titled 'Change password for SANJULA on common1.frankfurt.com'. It contains three input fields: 'Current password', 'New password', and 'Confirm new password'. A blue 'Change password' button is located at the bottom of the dialog. A red box highlights the entire dialog area. A red arrow points from the 'Change Password' option in the 'Actions' menu (located at the bottom right of the interface) to the dialog box.

IBM I Password change

**Change password for SANJULA on common1.frankfurt.com**

Current password

New password

Confirm new password

Change password

Settings

Terminals

Actions

Change Password

Debugger 3.0.0 (off)

feature/visual-explain-react-flow\* 0 0 Run Extension (vscode-db2i) (Conference Demos) Deploy Secure Job (1)



# Security recommendations

<https://codefori.github.io/docs/tips/secure/>

```
/* Create group profile GRPDEV for Code for IBM i developers. */
CRTUSRPRF USRPRF(GRPDEV) PASSWORD(*NONE) TEXT('Group profile for Code for IBM i developers')

/* Make ALICE and BOB part of the group. */
CHGUSRPRF USRPRF(ALICE) GRPPRF(GRPDEV)
CHGUSRPRF USRPRF(BOB) GRPPRF(GRPDEV)

/* Make the developer group profile the owner of the Code for IBM i library ILEDITOR. */
CHGOBJOWN OBJ(ILEDITOR) OBJTYPE(*LIB) NEWOWN(GRPDEV)

/* Exclude access for users not in the developer group. */
GRTOBJAUT OBJ(ILEDITOR) OBJTYPE(*LIB) USER(*PUBLIC) AUT(*EXCLUDE)
```



# What's new in CL?



# CL syntax checker

Shout out to Bob Cozzi!

ORD100C2.PGM.CLLE 4, M

QCLSRC > ORD100C2.PGM.CLLE

```

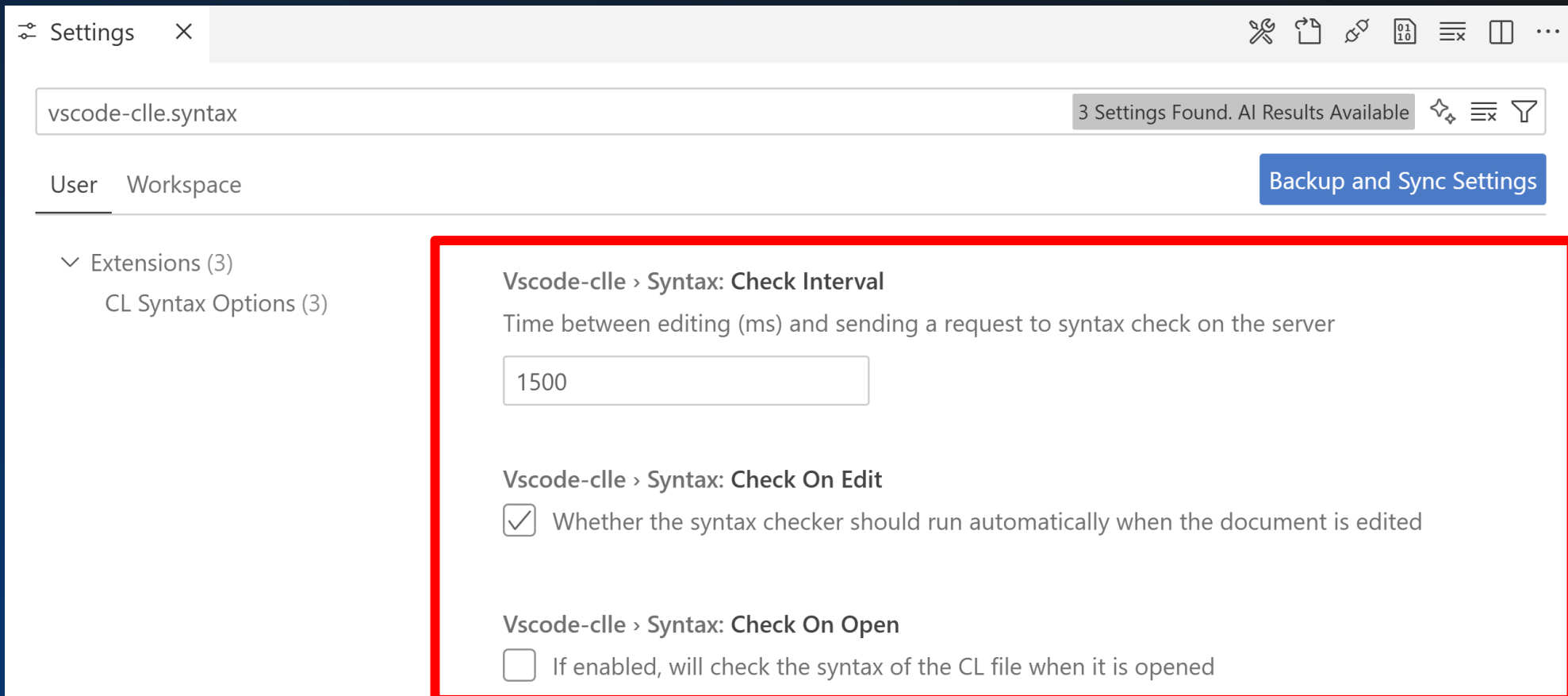
1
2 PGM
3 DLTF FILE(QTEMP/DETORD)
4 MONMSG MSGID(CPF0000)
5 CRTDUPOBJ OBJ(DETORD) FROMLIB(*LIBL) OBJTYPE(*FILE) + CPD0084: '*ALLL ' not valid for parameter ACCCTL.
6 TOLIB(QTEMP) NEWOBJ(DETORD) CST(*NO) +
7 TRG(*NO) ACCCTL(*ALLL)
8
9 OVRDBF FILE(TMPDETORD) TOFILE(QTEMP/DETORD)
10 CALL PGM(ORD100 CPD0013: A matching parenthesis not found.
11 ENDPGM
  
```

PROBLEMS 4 DB2 FOR I DEBUG CONSOLE OUTPUT TERMINAL IBM I JOB LOG Filter (e.g. text, \*\*/\*.ts)

ORD100C2.PGM.CLLE QCLSRC 4

- CPD0084: '\*ALLL ' not valid for parameter ACCCTL. [Ln 5, Col 14]
- CPF0001: Error found on CRTDUPOBJ command. [Ln 5, Col 14]
- CPD0013: A matching parenthesis not found. [Ln 10, Col 14]
- CPF0001: Error found on \*N command. [Ln 10, Col 14]

# CL syntax checker options



The screenshot shows the VS Code settings interface for the 'vscode-clle.syntax' extension. The search bar contains 'vscode-clle.syntax' and shows '3 Settings Found. AI Results Available'. The settings are categorized under 'User' and 'Workspace'. The 'Extensions (3)' section is expanded to show 'CL Syntax Options (3)'. Three settings are listed:

- Vscode-clle > Syntax: Check Interval**  
Time between editing (ms) and sending a request to syntax check on the server  
Input field: 1500
- Vscode-clle > Syntax: Check On Edit**  
 Whether the syntax checker should run automatically when the document is edited
- Vscode-clle > Syntax: Check On Open**  
 If enabled, will check the syntax of the CL file when it is opened

# CL documentation

ORD100C2.PGM.CLLE

QCLSRC > ORD100C2.PGM.CLLE

1				
2	PGM			
3		DLTF	FILE(QTEMP/DETORD)	
4		MONMSG	MSGID(CPF0000)	
5		CRTDUPOBJ	OBJ(DETORD) FROMLIB(*LIBL) OBJTYPE(*FILE) +	
6			TOLIB(QTEMP) NEWOBJ(DETORD) CST(*NO) +	
7			TRG(*NO)	
8		OVRDBF	FILE(TMPDETORD) TOFILE(QTEMP/DETORD)	
9		CALL		
10	ENDPGM			

**File being overridden (FILE)**

Specifies the file in the using program to which this override command is applied. The specified file must be a database file when \*FILE is specified in the **Overriding to data base file (TOFILE)** parameter. Otherwise, any device file or database file name can be specified.

This is a required parameter.

**name**

Specify the name of the file.

[View Full Documentation](#)

File Edit Selection View Go Run ... BBS400

EXPLORER

OPEN EDITORS

- BBSHELPERC.pgm.cll... M

BBS400

- src
  - programs
    - acallsrv\_m.rpgle
    - acallsrv\_ilepgm
    - BBS400PROD.pgm.clle
    - BBSAACCLVR.pgm.rpgle
    - BBSADGCR.pgm.rpgle
    - BBSADMMNUR.pgm.rpgle
    - BBSADNUDFR.pgm.rpgle
    - BBSAEPGMMR.pgm.rpgle
    - BBSBRDLR.pgm.rpgle
    - BBSDSPIFSC.pgm.clle
    - BBSSETPGMSR.pgm.rpgle
    - BBSHELPERC.pgm.clle M**
    - BBSIFSFILR.pgm.rpgle
    - BBSINFC.pgm.clle
    - BBSLGINR.pgm.rpgle
    - BBSLSTUSR.R.pgm.rpgle
    - BBSMENUMR.pgm.rpgle
    - BBSMSGSLLR.pgm.sqlrpgle
    - BBSMSGSR.pgm.rpgle
    - BBSNEWMSGR.pgm.rpgle
    - BBSNEWREGR.pgm.rpgle
    - BBSPLL.R.pgm.rpgle
    - BBSPOLLSLR.pgm.rpgle

PROJECT EXPLORER

SOURCE IMPACTS

src > programs > BBSHELPERC.pgm.clle > ...

```
1 PGM PARM(&MODE &EXTPGM &EXTLIB &USER)
2
3 DCL VAR(&MODE) TYPE(*CHAR) LEN(1)
4 DCL VAR(&EXTPGM) TYPE(*CHAR) LEN(10)
5 DCL VAR(&EXTLIB) TYPE(*CHAR) LEN(10)
6 DCL VAR(&USER) TYPE(*CHAR) LEN(10)
7
8 /* MODE = C -> Call External programs */
9 IF COND(&MODE *EQ 'C') THEN(DO)
10 CALL PGM(&EXTLIB/&EXTPGM)
11 MONMSG MSGID(CPF0000)
12 GOTO CMDLBL(END)
13 ENDDO
14 /* MODE = N -> Send Notification of message to user */
15 IF COND(&MODE *EQ 'N') THEN(DO)
16
17 GOTO CMDLBL(END)
18 ENDDO
19 END:
20 ENDPGM
21
```

Ln 16, Col 14 Spaces: 4 UTF-8 LF {} CL

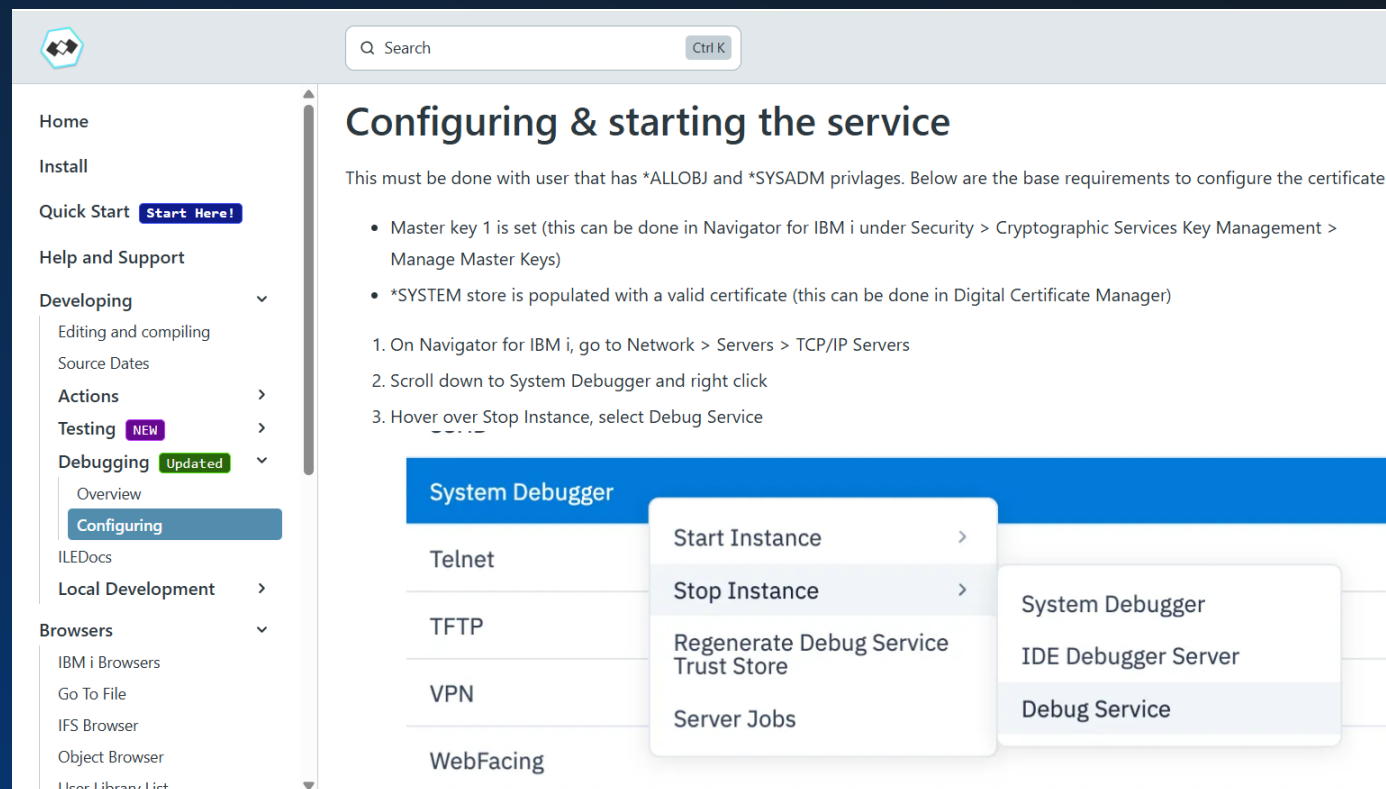


# What's new in Debug?



# Debug

<https://codefori.github.io/docs/developing/debug/overview/>



**Configuring & starting the service**

This must be done with user that has \*ALLOBJ and \*SYSADM privileges. Below are the base requirements to configure the certificate:

- Master key 1 is set (this can be done in Navigator for IBM i under Security > Cryptographic Services Key Management > Manage Master Keys)
- \*SYSTEM store is populated with a valid certificate (this can be done in Digital Certificate Manager)

1. On Navigator for IBM i, go to Network > Servers > TCP/IP Servers
2. Scroll down to System Debugger and right click
3. Hover over Stop Instance, select Debug Service

The screenshot shows a table of services with a context menu open over the 'System Debugger' row. The menu options are:

- Start Instance
- Stop Instance
- Regenerate Debug Service Trust Store
- Server Jobs

The 'Stop Instance' sub-menu is open, showing the following options:

- System Debugger
- IDE Debugger Server
- Debug Service



# Submitting debug issues

<https://github.com/codefori/vscode-ibmi-debug-issues/issues>

The screenshot shows the GitHub interface for the repository 'codefori / vscode-ibmi-debug-issues'. The 'Issues' tab is active, showing 14 open issues. The search bar contains 'is:issue state:open'. The issue list includes:

- Open** 14 **Closed** 24
- Debugger not catching SEP when PGM runs**  
#38 · mshpardPCR opened 2 weeks ago
- SEP issue when the host QB5PHSRV job is terminated** 3  
#37 · mkwan01 opened 2 weeks ago
- Issue with Debug finding the source** 1  
#36 · sebjulland opened on Sep 10
- Unable to use SEP - Debugger 3.0.0 - Sporadic Issue** 2  
#35 · jman116 opened on Sep 9
- Cannot end Debug Server** 2  
#34 · jman116 opened on Aug 27
- Debug source window closes prematurely when multiple jobs activate an SEP and one of the jobs finishes** 6  
#23 · heymchri opened on Jun 13



# What's new in IBM i Testing?





# IBM i Testing

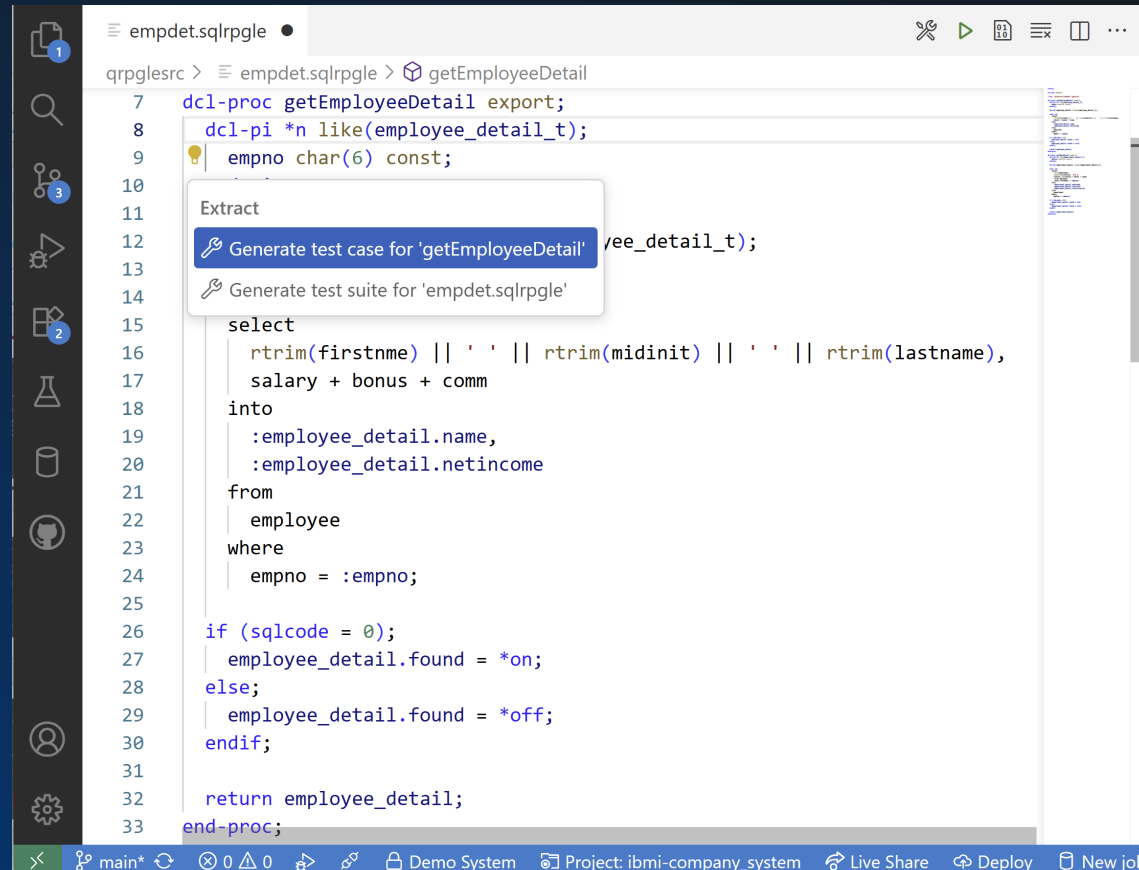
<https://codefori.github.io/docs/developing/testing/overview/>

The screenshot shows the 'Overview' page for the IBM i Testing extension. The left sidebar contains a navigation menu with categories like 'Developing', 'Actions', 'Testing', 'Debugging', 'Local Development', 'Browsers', and 'Languages'. The 'Testing' category is expanded, showing 'Overview' as the selected item. The main content area features a search bar at the top, a 'Light' theme toggle, and a 'Search' button. Below the search bar, the title 'Overview' is displayed. A status bar indicates 'version rate limited by upstream service' and 'installs 713'. The main text describes the extension's purpose: 'The IBM i Testing extension allows developers to run unit tests and generate code coverage results for RPG and COBOL programs on IBM i. Under the covers, this extension leverages the RPGUnit testing framework.' To the right of the text is a large icon of a flask inside a hexagon. Below the text is a list of features:

- Run Tests:** Visualize and run tests suites out of local files or source members.
- Generate Stubs:** Generate test stubs for individual test cases or an entire test suite.
- Configure Tests:** Configure parameters to compile (RUCRTRPG / RUCRTCBL) and run (RUCALLTST) tests.
- View Test Results:** View detailed test results along with inline failure/error messages.
- Generate Code Coverage:** View line and procedure level code coverage results as an overlay in the editor.

Below the list is the 'Installation' section, starting with '1. Extensions'. On the right side of the page, there is a 'On this page' sidebar with a list of links: 'Overview', 'Installation', '1. Extensions', '2. RPGUnit', and '3. CODECOV'.

# Generate test stubs



```
empdet.sqlrpgle •
qrpglesrc > empdet.sqlrpgle > getEmployeeDetail
7 dcl-proc getEmployeeDetail export;
8 dcl-pi *n like(employee_detail_t);
9 empno char(6) const;
10
11
12
13
14
15
16 select
17     rtrim(firstname) || ' ' || rtrim(midinit) || ' ' || rtrim(lastname),
18     salary + bonus + comm
19 into
20     :employee_detail.name,
21     :employee_detail.netincome
22 from
23     employee
24 where
25     empno = :empno;
26
27 if (sqlcode = 0);
28     employee_detail.found = *on;
29 else;
30     employee_detail.found = *off;
31 endif;
32
33 return employee_detail;
end-proc;
```

Extract

- Generate test case for 'getEmployeeDetail' (employee\_detail\_t);
- Generate test suite for 'empdet.sqlrpgle'

main\* 0 Demo System Project: ibmi-company\_system Live Share Deploy New job

# View test stubs

```

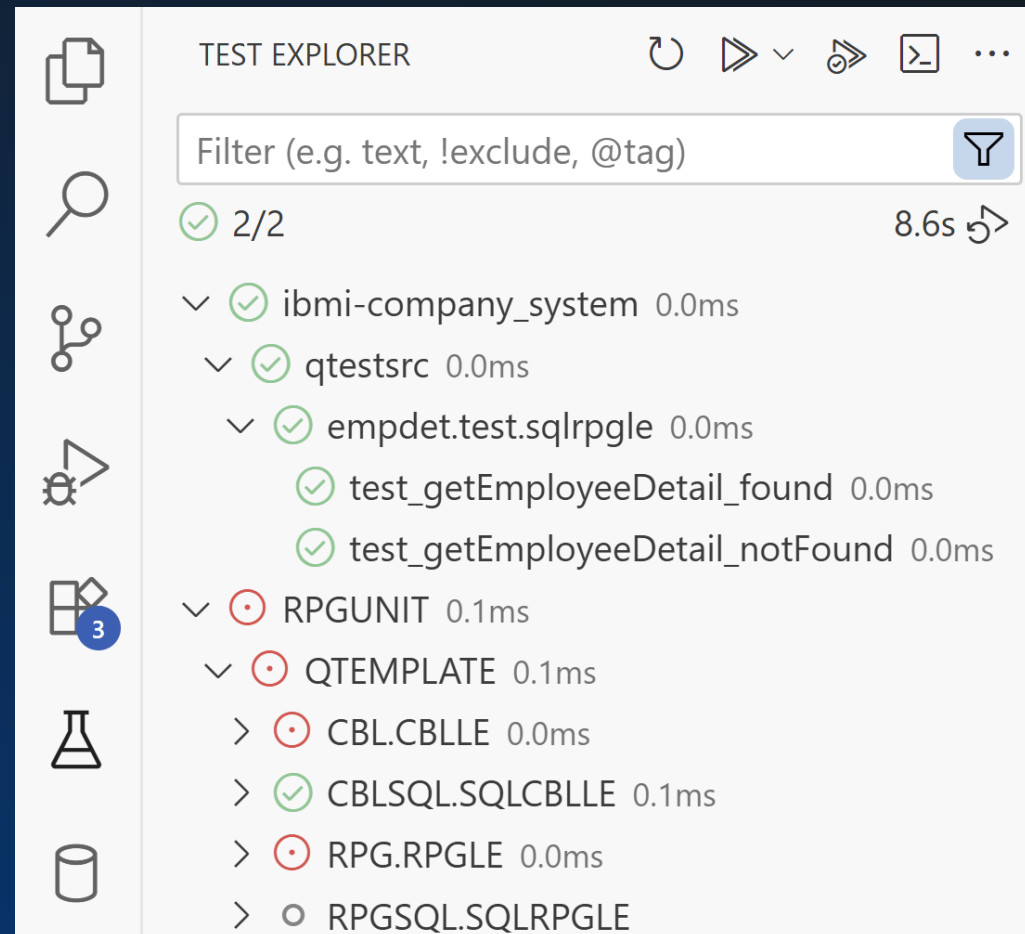
empdet.test.sqlrpgle M
qttestsrc > empdet.test.sqlrpgle
1  **free
2  ⚡
3  // ctl-opt nomain ccsidcvt(*excp) ccsid(*char : *jobrun);
4
5  // /include qinclude,TESTCASE
6  // /include 'qrpgleref/empdet.rpgleinc'
7
8  // dcl-proc test_getEmployeeDetail export;
9  //   dcl-pi *n extproc(*dclcase) end-pi;
10
11  //   dcl-s empno char(6);
12  //   dcl-ds actual likeDs(employee_detail_t) inz;
13  //   dcl-ds expected likeDs(employee_detail_t) inz;
14
15  //   empno = '..';
16  //
17  //   actual = getEmployeeDetail(empno);
18
19  //   expected.found = *off;
20  //   expected.name = '..';
21  //   expected.netincome = 0.0;
22
23  //   nEqual(expected.found : actual.found : 'found');
24  //   assert(expected.name = actual.name : 'name');
25  //   assert(expected.netincome = actual.netincome : 'netincome');
26  // end-proc;
  
```

# Write unit tests

```

empdet.test.sqlrpgle (Working Tree) M x
qttestsrc > empdet.test.sqlrpgle > ...
1 1 **free
2 2
3 3 - ctl-opt nomain ccsidcvt(*excp) ccsid(*char : *jobrun);
3+ 3+ ctl-opt nomain ccsidcvt(*excp) ccsid(*char : *jobrun) bnddir('APP');
4 4
5 5 /include qinclude,TESTCASE
6 6 /include 'qrppleref/empdet.rpgleinc'
7 7
8 8 dcl-proc test_getEmployeeDetail export;
9 9 | dcl-pi *n extproc(*dclcase) end-pi;
10 10
11 11 | dcl-s empno char(6);
12 12 | dcl-ds actual likeDs(employee_detail_t) inz;
13 13 | dcl-ds expected likeDs(employee_detail_t) inz;
14 14
15 15 - empno = '';
15+ 15+ empno = '000010';
16 16
17 17 | actual = getEmployeeDetail(empno);
18 18
19 19 - expected.found = *off;
20 20 - expected.name = '';
21 21 - expected.netincome = 0.0;
19+ 19+ expected.found = *on;
20+ 20+ expected.name = 'CHRISTINE I HAAS';
21+ 21+ expected.netincome = 57970;
22 22
23 23 | nEqual(expected.found : actual.found : 'found');
24 24 | assert(expected.name = actual.name : 'name');
25 25 | assert(expected.netincome = actual.netincome : 'netincome');
26 26 end-proc;
  
```

# Visualize tests in centralized view



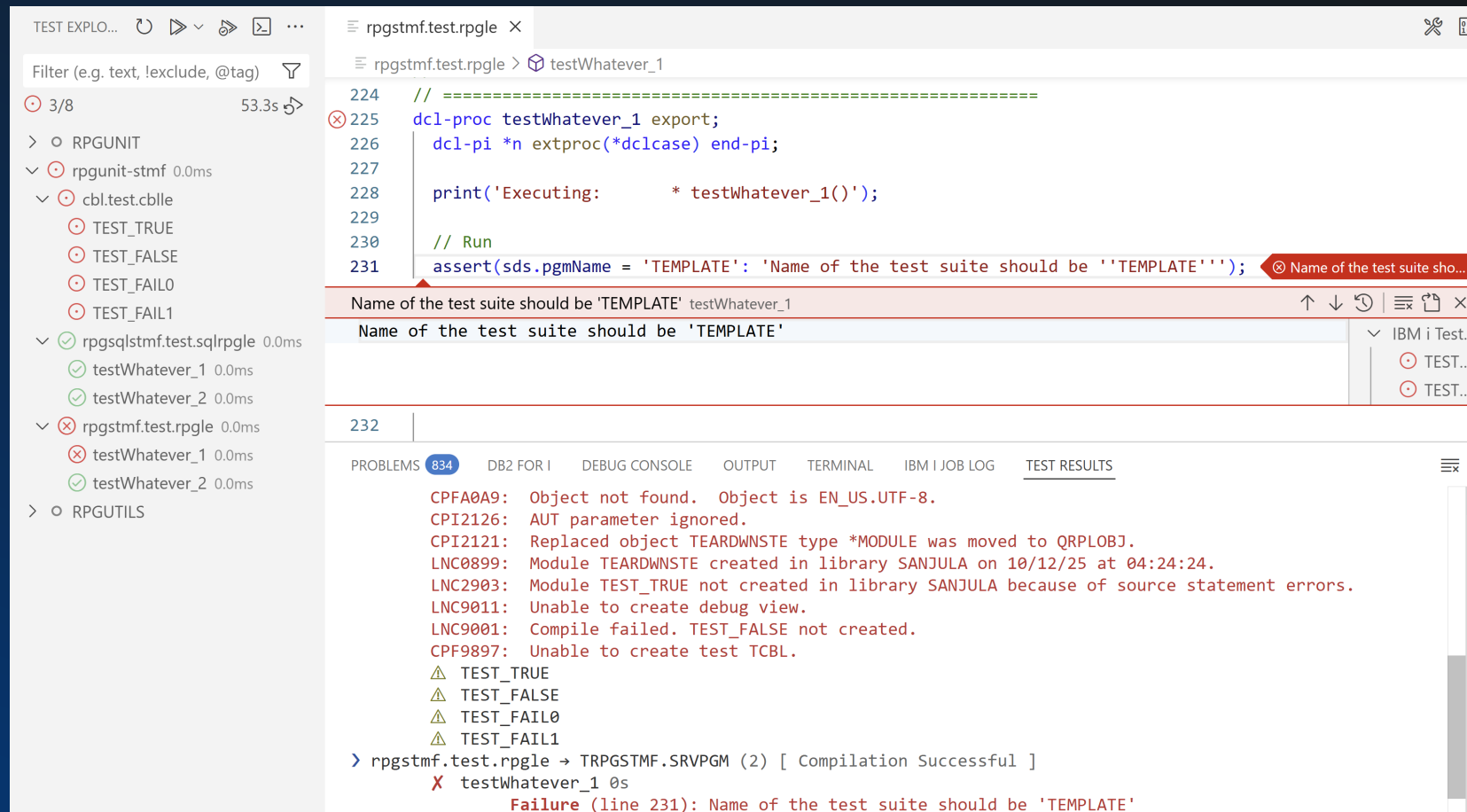
The screenshot shows the TEST EXPLORER window with a search filter and a list of test results. The filter is set to "Filter (e.g. text, !exclude, @tag)". The results are as follows:

- 2/2 (8.6s)
- ibmi-company\_system 0.0ms
  - qttestsrc 0.0ms
    - empdet.test.sqlrpgle 0.0ms
      - test\_getEmployeeDetail\_found 0.0ms
      - test\_getEmployeeDetail\_notFound 0.0ms
- RPGUNIT 0.1ms
  - QTEMPLATE 0.1ms
    - CBL.CBLLE 0.0ms
    - CBLSQL.SQLCBLLE 0.1ms
    - RPG.RPGLE 0.0ms
    - RPGSQL.SQLRPGLE

# Run tests and view results

The screenshot displays the IBM i Test Explorer interface. On the left, the 'TEST EXPLORER' sidebar shows a tree view of test projects: 'ibmi-company\_system' (0.0ms), 'qtestsrc' (0.0ms), and 'empdet.test.sqlrpgle' (0.0ms). Under 'empdet.test.sqlrpgle', four test cases are listed, all with green checkmarks: 'test\_getEmployeeDetail\_found' (0.0ms), 'test\_getEmployeeDetail\_notFound' (0.0ms), 'test\_getDeptDetail\_found' (0.0ms), and 'test\_getDeptDetail\_notFound' (0.0ms). The main editor shows the source code for 'test\_getEmployeeDetail\_found', which is a DCLPROC program with several DCLPI and DCLDS statements. Below the code, the 'TEST RESULTS' tab is active, showing a summary of the execution: 'Deployment Successful', 'Compilation Successful', and a list of four passed test cases with their durations. A detailed summary box is also visible, showing 'EXECUTION' (1 successful deployment, 0 failed, 0 skipped), 'RESULTS' (1 test file passed, 0 failed, 0 errored; 4 test cases passed, 0 failed, 0 errored; 9 assertions), and a final 'PASS' status. The bottom status bar indicates the system is 'Demo System' and the project is 'ibmi-company\_system'.

# View failures and errors



TEST EXPLO... 3/8 53.3s

Filter (e.g. text, !exclude, @tag)

- RPGUNIT
  - rpgunit-stmf 0.0ms
    - cbl.test.cbllc
      - TEST\_TRUE
      - TEST\_FALSE
      - TEST\_FAIL0
      - TEST\_FAIL1
    - rpgsqlstmf.test.sqlrpgle 0.0ms
      - testWhatever\_1 0.0ms
      - testWhatever\_2 0.0ms
    - rpgstmf.test.rpgle 0.0ms
      - testWhatever\_1 0.0ms
      - testWhatever\_2 0.0ms
  - RPGUTILS

```

224 // =====
225 dcl-proc testWhatever_1 export;
226   dcl-pi *n extproc(*dclcase) end-pi;
227
228   print('Executing:      * testWhatever_1()');
229
230   // Run
231   assert(sds.pgmName = 'TEMPLATE': 'Name of the test suite should be 'TEMPLATE'');
    
```

Name of the test suite should be 'TEMPLATE' testWhatever\_1

Name of the test suite should be 'TEMPLATE'

232

PROBLEMS 834 DB2 FOR I DEBUG CONSOLE OUTPUT TERMINAL IBM I JOB LOG TEST RESULTS

CPFA0A9: Object not found. Object is EN\_US.UTF-8.  
 CPI2126: AUT parameter ignored.  
 CPI2121: Replaced object TEARDWNSTE type \*MODULE was moved to QRPLOBJ.  
 LNC0899: Module TEARDWNSTE created in library SANJULA on 10/12/25 at 04:24:24.  
 LNC2903: Module TEST\_TRUE not created in library SANJULA because of source statement errors.  
 LNC9011: Unable to create debug view.  
 LNC9001: Compile failed. TEST\_FALSE not created.  
 CPF9897: Unable to create test TCBL.

△ TEST\_TRUE  
 △ TEST\_FALSE  
 △ TEST\_FAIL0  
 △ TEST\_FAIL1

> rpgstmf.test.rpgle → TRPGSTMF.SRVPGM (2) [ Compilation Successful ]  
 X testWhatever\_1 0s  
 Failure (line 231): Name of the test suite should be 'TEMPLATE'



# Run tests with code coverage

The screenshot displays an IDE interface with a Test Explorer on the left and a code editor on the right. The Test Explorer shows a tree view of tests under 'TEST EXPLORER' and 'TEST COVERAGE'. The code editor shows the source code for 'rpgsqlstmf.test.sqlrpgle' with inline coverage bars and a 'Rerun' button. The code includes comments for SQL codes and conditional logic for handling warnings and errors.

```
127 dcl-proc isSQLError;
139     sqlState = i_state;
140     sql = g_status.sql;
141
142     reset g_status.sql;
143
144     select;
145     // SQL code 00: Unqualified Successful Completion
146     when (sqlState = '00000');
147     // Execution of the operation was successful and did not
148     // result in any type of warning or exception condition.
149     return *off;
150
151     // SQL code 01: Warning
152     When (sqlState.class = '01');
153     // Valid warning SQLSTATES returned by an SQL routine.
154     // Also used for RAISE_ERROR and SIGNAL.
155     if (sql.ignSQLWarn);
156     return *off;
157     else;
158     return *on;
159     endif;
160
161     // SQL code 02: No data
162     When (sqlState = '02000');
163     return *off;
```



# IBM i Testing CLI – itest

<https://www.npmjs.com/package/@ibm/itest>

The screenshot shows the npm package page for `@ibm/itest`. At the top, there is a search bar with the text "Search packages" and a "Search" button. To the right are "Sign Up" and "Sign In" buttons. Below the search bar, the package name `@ibm/itest` is displayed with a TypeScript (TS) tag. Underneath, it shows the version `1.2.3`, the package is `Public`, and it was published `a month ago`. A horizontal navigation bar contains links for `Readme`, `Code` (with a `Beta` tag), `5 Dependencies`, `0 Dependents`, and `2 Versions`. The main heading is `IBM i Testing CLI`. Below this, there are two badges: `version v1.2.3` and `downloads 70/month`. The description states: "The **IBM i Testing CLI** ( `itest` ) is a companion to the **IBM i Testing** VS Code extension, which allows you to run unit tests and generate code coverage results for RPG and COBOL programs on IBM i. With this CLI, you can run tests in your terminal on your local PC or in PASE on IBM i. This enables you to even script the execution of tests in a CI/CD pipeline." To the right of the text is a hexagonal icon containing a flask. On the right side of the page, there is an "Install" section with a terminal snippet: `> npm i @ibm/itest`. Below that is a "Repository" section with a link to `github.com/IBM/vscode-ibmi-testing/b...`. At the bottom right is a "Homepage" section with a link to `codefori.github.io/docs/developing/te...`.

# Pull request reviews made easy

ibmi  
succeeded 4 days ago in 47s

- > ✓ Set up job
- > ✓ Checkout
- > ✓ Setup Node.js 18
- > ✓ Install CLI Tools
- > ✓ Generate Impact Analysis
- > ✓ Adding Impact Analysis to Markdown
- > ✓ Post Impact Analysis Comment
- > ✓ Generate makefile
- > ✓ Run Build
- > ✓ Run Unit Tests
- > ✓ Add Summary Report to Markdown
- > ✓ Post Unit Test Comment
- > ✓ Upload Test and Coverage Logs
- Check Test Result
- > ✓ Post Setup Node.js 18
- > ✓ Post Checkout
- > ✓ Complete job

github-actions bot commented on Aug 5

### Test and Code Coverage Report

test passing coverage 76%

#### Test Result

Total Tests	✓ Passed	✗ Failed	⚠ Errored	🎯 Assertions	🕒 Duration
1	1	0	0	4	0.03s

#### Code Coverage

File	Coverage	Uncovered Lines	Covered Lines	Executable Lines
empdet.sqlrpgle	<span>53%</span>	9	10	19
empdet.test.sqlrpgle	<span>93%</span>	2	25	27

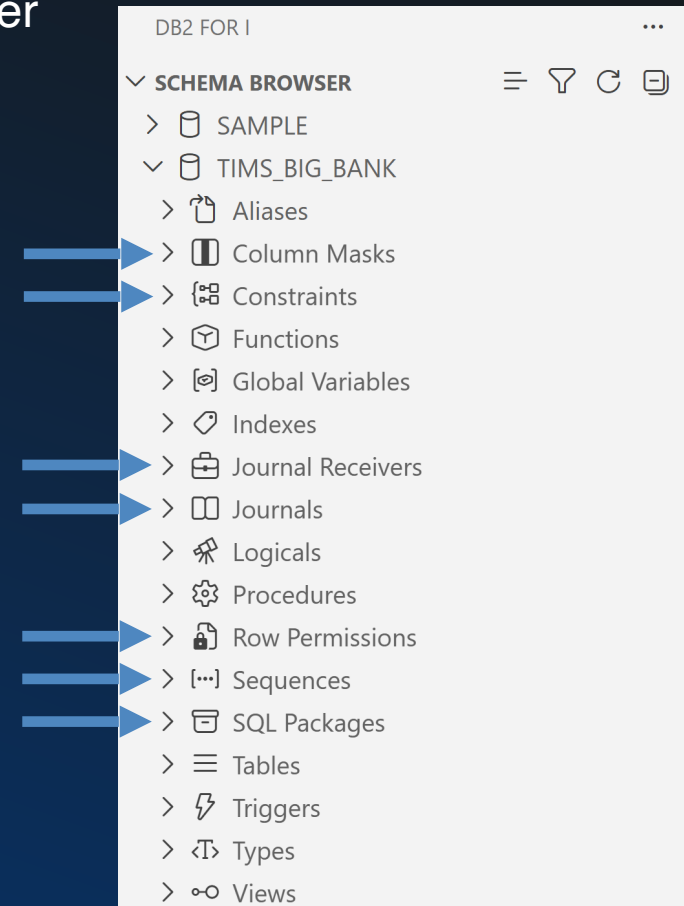


# What's new in Db2 for IBM i?

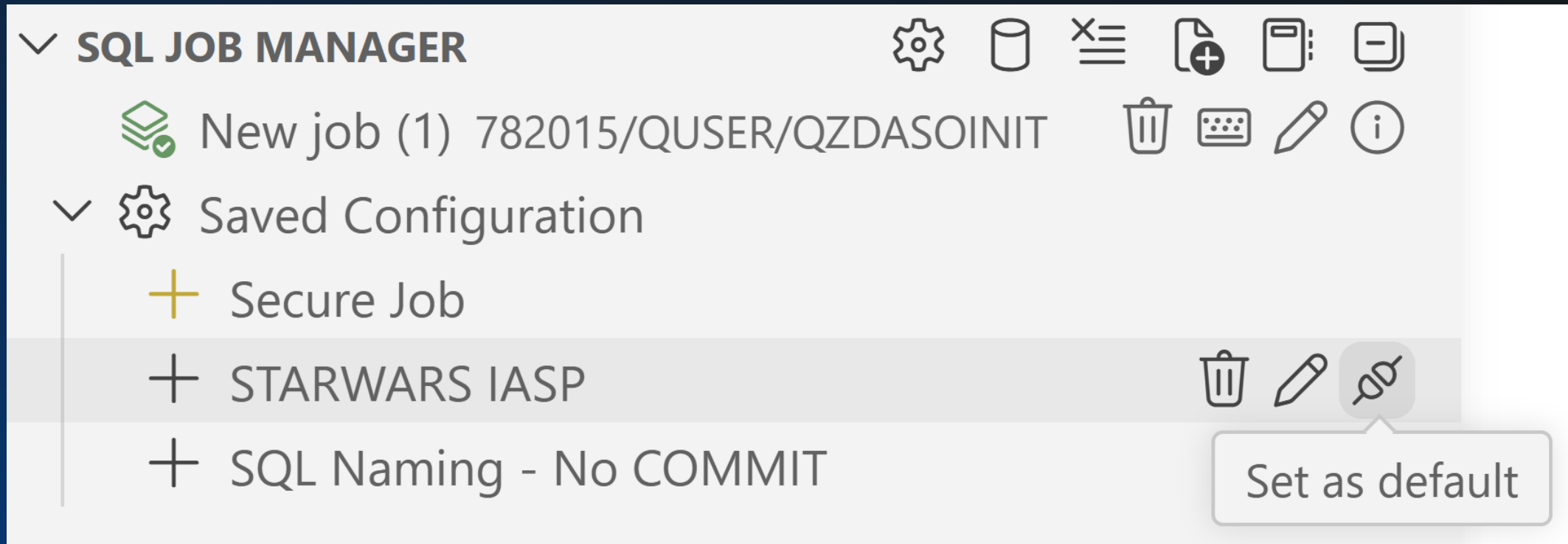


# All database object types in the Schema Browser

Added many new database object types to the schema browser



# Set your default JDBC configuration



The screenshot shows the 'SQL JOB MANAGER' interface. At the top, there is a title bar with a dropdown arrow and the text 'SQL JOB MANAGER'. To the right of the title bar are several icons: a gear, a cylinder, a list with an 'x', a document with a plus sign, a document with a list, and a document with a minus sign. Below the title bar, there is a list of items. The first item is 'New job (1) 782015/QUSER/QZDASOINIT' with a green cube icon and a green checkmark. To its right are icons for delete, keyboard, edit, and info. The second item is 'Saved Configuration' with a gear icon and a dropdown arrow. Below it are three sub-items: 'Secure Job' with a yellow plus icon, 'STARWARS IASP' with a grey plus icon, and 'SQL Naming - No COMMIT' with a grey plus icon. The 'STARWARS IASP' item is highlighted with a grey background. To its right are icons for delete, edit, and a 'Set as default' icon (a gear with a plus sign). A tooltip box with the text 'Set as default' is positioned over the 'Set as default' icon.

# New prefix to generate UDTFs

```
Untitled-1 ●
1  udtf: select
2      partkey, suppkey, linenumber, quantity
3      from toystore3.item_fact
4      order by discount
5      desc limit 3;
```

Generate

```
Untitled-1 ●  Untitled-2 ●
1  -- statement:
2  -- select
3  --     partkey, suppkey, linenumber, quantity
4  --     from toystore3.item_fact
5  --     order by discount
6  --     desc limit 3
7
8  -- User-defined table function
9  CREATE OR REPLACE FUNCTION MyFunction()
10 RETURNS TABLE (
11     PARTKEY INTEGER,
12     SUPPKEY INTEGER,
13     LINENUMBER INTEGER,
14     QUANTITY DECIMAL(15,2)
15 )
16 NOT DETERMINISTIC
17 NO EXTERNAL ACTION
18 READS SQL DATA
19 SET OPTION COMMIT = *NONE,
20     DBGVIEW = *SOURCE,
21     DYNUSRPRF = *USER,
22     USRPRF = *USER
23 BEGIN
24     RETURN select
25         partkey, suppkey, linenumber, quantity
26         from toystore3.item_fact
27         order by discount
28         desc limit 3;
29 END;
```

# New prefix to generate markdown tables

```
Untitled-1 ●  
1 md: select  
2   empno as "Employee #",  
3   firstnme as "First Name",  
4   lastname as "Last Name",  
5   salary as "Salary"  
6   from sample.employee  
7   where salary > 30000;
```

Generate

```
Untitled-1 ●  Untitled-2 ●  
1 | Employee # | First Name | Last Name | Salary |  
2 | ----- | ----- | ----- | ----- |  
3 | 000010 | CHRISTINE | Bob | 52750 |  
4 | 000020 | MICHAEL | THOMPSON | 41250 |  
5 | 000030 | SALLY | KWAN | 38250 |  
6 | 000050 | JOHN | GEYER | 40175 |  
7 | 000060 | IRVING | STERN | 32250 |  
8 | 000070 | EVA | PULASKI | 36170 |  
9 | 000110 | VINCENZO | LUCCHESSI | 46500 |  
10 | 200010 | DIAN | HEMMINGER | 46500 |
```

Preview

```
Untitled-1 ●  Untitled-2 ●  Preview Untitled-2 X  
  
Employee #  First Name  Last Name  Salary  
-----  
000010     CHRISTINE   Bob        52750  
000020     MICHAEL     THOMPSON   41250  
000030     SALLY       KWAN       38250  
000050     JOHN        GEYER      40175  
000060     IRVING      STERN      32250  
000070     EVA         PULASKI    36170  
000110     VINCENZO    LUCCHESSI  46500  
200010     DIAN        HEMMINGER  46500
```



IT Training and Solutions GmbH

# New extension released!

## *IBM i FileSystem*



Shout out to Andrea Buzzi! 🇮🇹

# View and manage objects with ease

Message Files

Binding  
Directories

Save Files

Programs

Service Programs

Data Areas

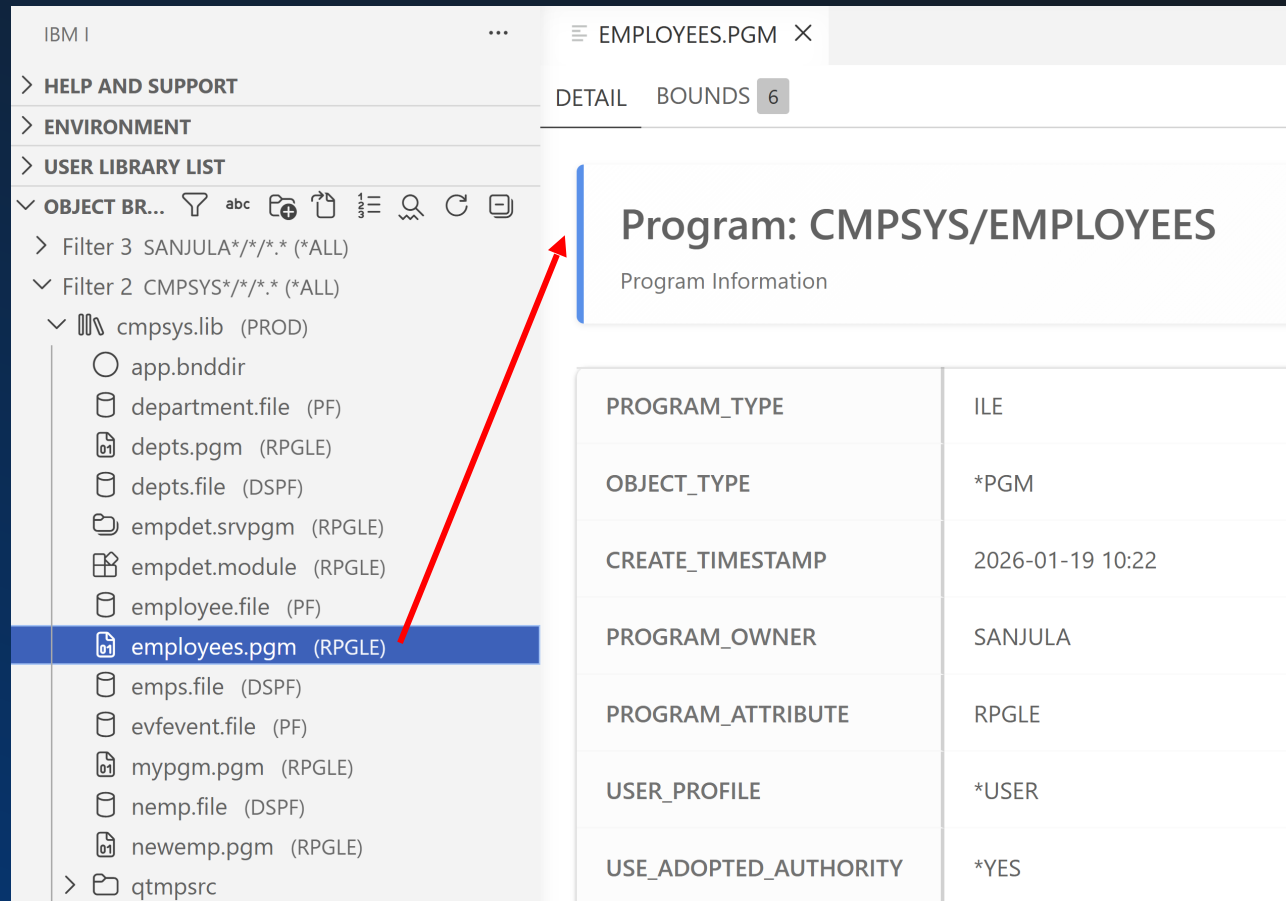
Data Queues

and more!

# Without the IBM i FileSystem extension ☹️

The screenshot shows the IBM i interface with a file browser on the left and an editor window on the right. The file browser shows a tree structure under 'cmpslib (PROD)' with 'employees.pgm (RPGLE)' selected. The editor window, titled 'EMPLOYEES.PGM', displays an error message: 'The editor could not be opened due to an unexpected error. Please consult the log for more details.' Below the message are 'Try Again' and 'Show Logs' buttons. A red box highlights the error message, and a red arrow points from the selected file in the browser to the error message.

# View program information



IBM I

EMPLOYEES.PGM X

DETAIL BOUNDS 6

Program: CMPSYS/EMPLOYEES  
Program Information

PROGRAM_TYPE	ILE
OBJECT_TYPE	*PGM
CREATE_TIMESTAMP	2026-01-19 10:22
PROGRAM_OWNER	SANJULA
PROGRAM_ATTRIBUTE	RPGLE
USER_PROFILE	*USER
USE_ADOPTED_AUTHORITY	*YES

Left pane contents:

- HELP AND SUPPORT
- ENVIRONMENT
- USER LIBRARY LIST
- OBJECT BR...
  - Filter 3 SANJULA\*/\*\*.\* (\*ALL)
  - Filter 2 CMPSYS\*/\*\*.\* (\*ALL)
  - cmphys.lib (PROD)
    - app.bnddir
    - department.file (PF)
    - depts.pgm (RPGLE)
    - depts.file (DSPF)
    - empdet.srvpgm (RPGLE)
    - empdet.module (RPGLE)
    - employee.file (PF)
    - employees.pgm (RPGLE)**
    - emps.file (DSPF)
    - evfevent.file (PF)
    - mypgm.pgm (RPGLE)
    - nemp.file (DSPF)
    - newemp.pgm (RPGLE)
  - qtmpsrc



# View all bound modules and service programs

EMPLOYEES.PGM X

DETAIL BOUNDS 6

### Modules

MODULE	TYPE	CREATION	SOURCE	SOURCE CHANGE	DEB UG DAT A	CREA TION RELE ASE	TAR GET ASE	RTVCLSR C
QTEMP/EMPLOYEES	RPGL E	2026-01-19 10:22	qrpglesrc/employees.pgm.sqlrpgle	2025-11-01 20:19	*YES	V7R4 M0	V7R4 M0	*NO

### Service Programs

SERVICE PROGRAM	SIGNATURE	ACTIVATION
*LIBL/EMPDET	E5F14040404040404040404040404040	*IMMED
QSYS/QRNXIE	D8D9D5E7C9C5404040404040404040	*IMMED
QSYS/QRNXIO	D8D9D5E7C9D6404040404040404040	*IMMED



# View messages on a message queue

MANZANQ.MSGQ X

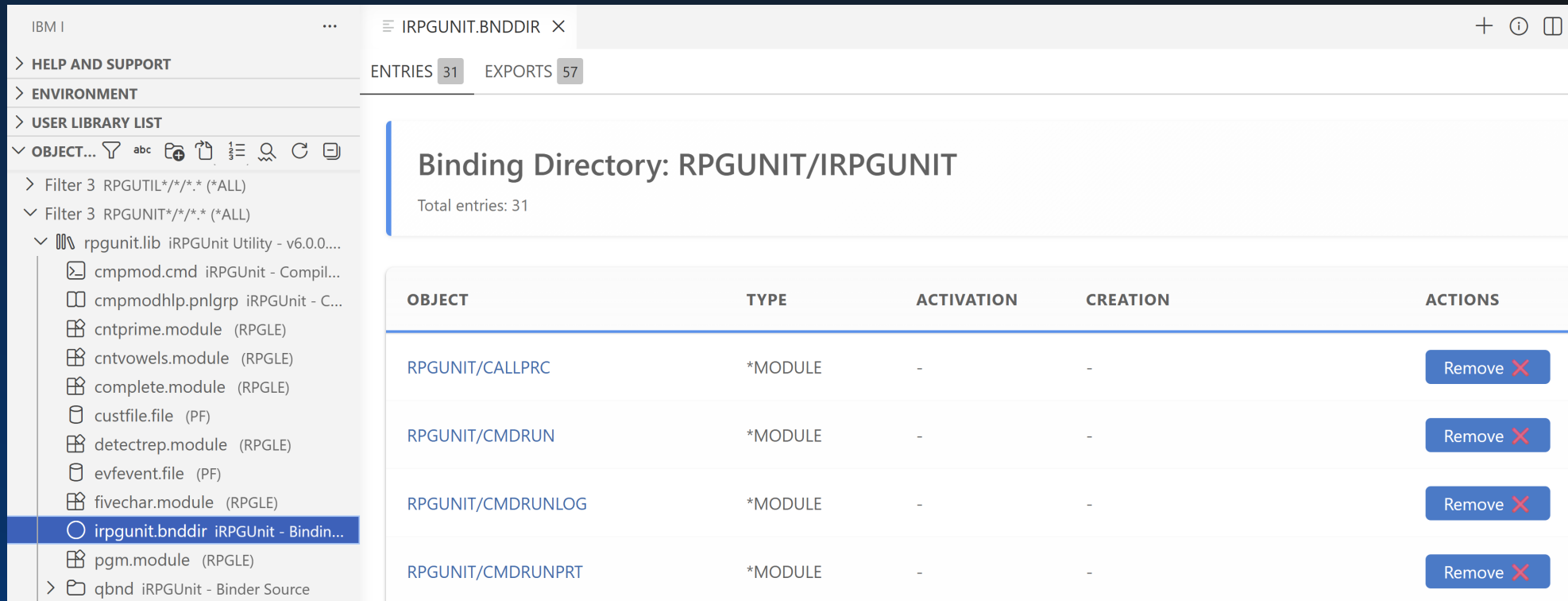
Message Queue: SANJULA/MANZANQ  
Total Messages: 4

SEARCH  
Search messages...





MSGID	FIRST LEVEL	SECOND LEVEL	TIMESTAMP	JOB	USER
-	Anyone there?	-	2026-04-23 20:37	571818/QUSER/QZD ASOINIT	SANJUL A
-	Hello its me	-	2026-04-23 20:37	571818/QUSER/QZD ASOINIT	SANJUL A
-	Manzan are you working?	-	2026-04-23 20:37	571818/QUSER/QZD ASOINIT	SANJUL A
-	Hello world!	-	2026-04-23 20:33	571818/QUSER/QZD ASOINIT	SANJUL A

Showing 1-4 of 4 items Page 1 of 1

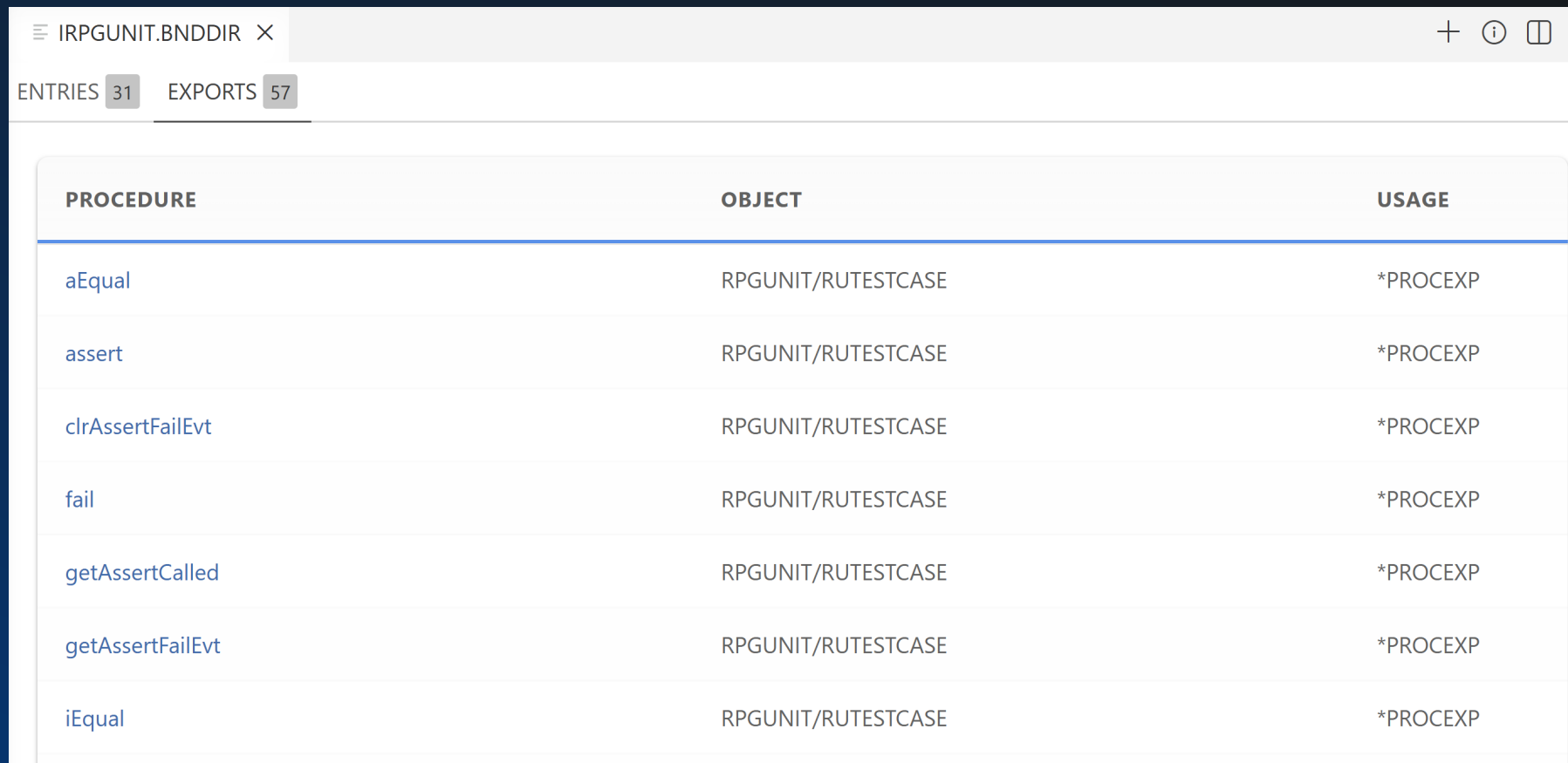
# View entries in a binding directory



The screenshot shows the IBM I interface for the binding directory IRPGUNIT.BNDDIR. The left sidebar contains a navigation menu with categories like 'HELP AND SUPPORT', 'ENVIRONMENT', and 'USER LIBRARY LIST'. Under 'USER LIBRARY LIST', the 'irpgunit.bnmdir' entry is selected. The main area displays the title 'Binding Directory: RPGUNIT/IRPGUNIT' and 'Total entries: 31'. Below this is a table with columns for OBJECT, TYPE, ACTIVATION, CREATION, and ACTIONS.

OBJECT	TYPE	ACTIVATION	CREATION	ACTIONS
RPGUNIT/CALLPRC	*MODULE	-	-	Remove 
RPGUNIT/CMDRUN	*MODULE	-	-	Remove 
RPGUNIT/CMDRUNLOG	*MODULE	-	-	Remove 
RPGUNIT/CMDRUNPRT	*MODULE	-	-	Remove 

# View exported symbols in a binding directory

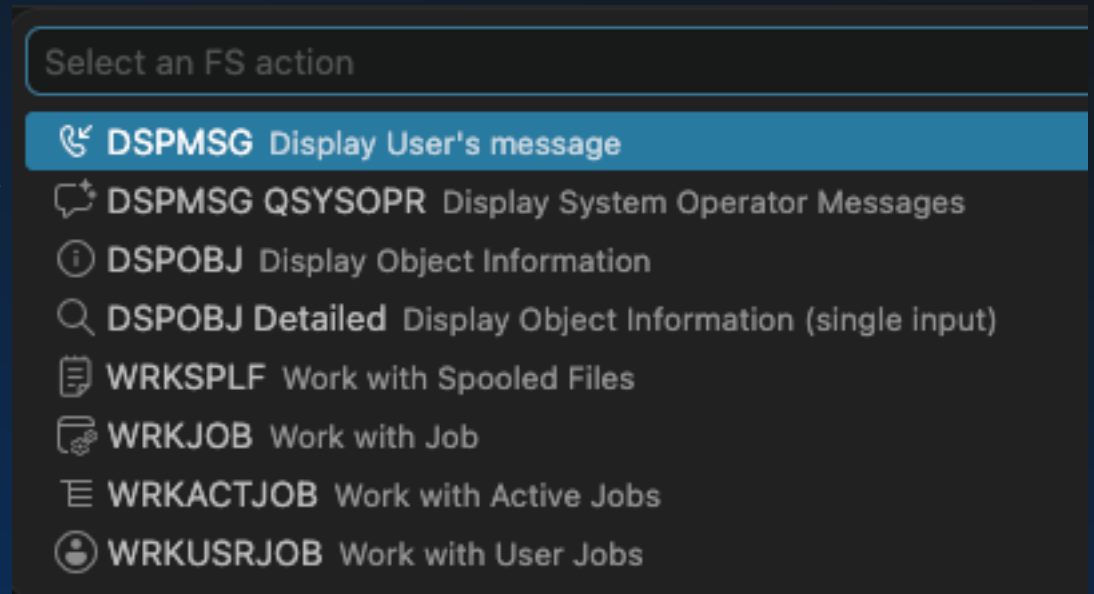
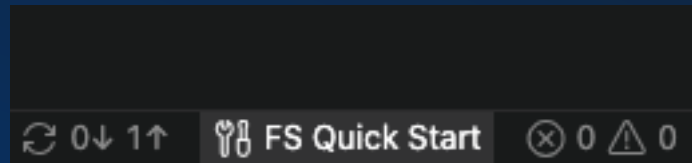


IRPGUNIT.BNDDIR ×

ENTRIES 31 EXPORTS 57

PROCEDURE	OBJECT	USAGE
aEqual	RPGUNIT/RUTESTCASE	*PROCEXP
assert	RPGUNIT/RUTESTCASE	*PROCEXP
clrAssertFailEvt	RPGUNIT/RUTESTCASE	*PROCEXP
fail	RPGUNIT/RUTESTCASE	*PROCEXP
getAssertCalled	RPGUNIT/RUTESTCASE	*PROCEXP
getAssertFailEvt	RPGUNIT/RUTESTCASE	*PROCEXP
iEqual	RPGUNIT/RUTESTCASE	*PROCEXP

# Quick access to dashboards





# Debug running jobs

CPU TIME	TOTAL I/O	ACTIONS
4	80	—
1,858	65,376	—
6	33	<a href="#">Details</a> <a href="#">Hold</a> <a href="#">End</a> <a href="#">Debug</a>





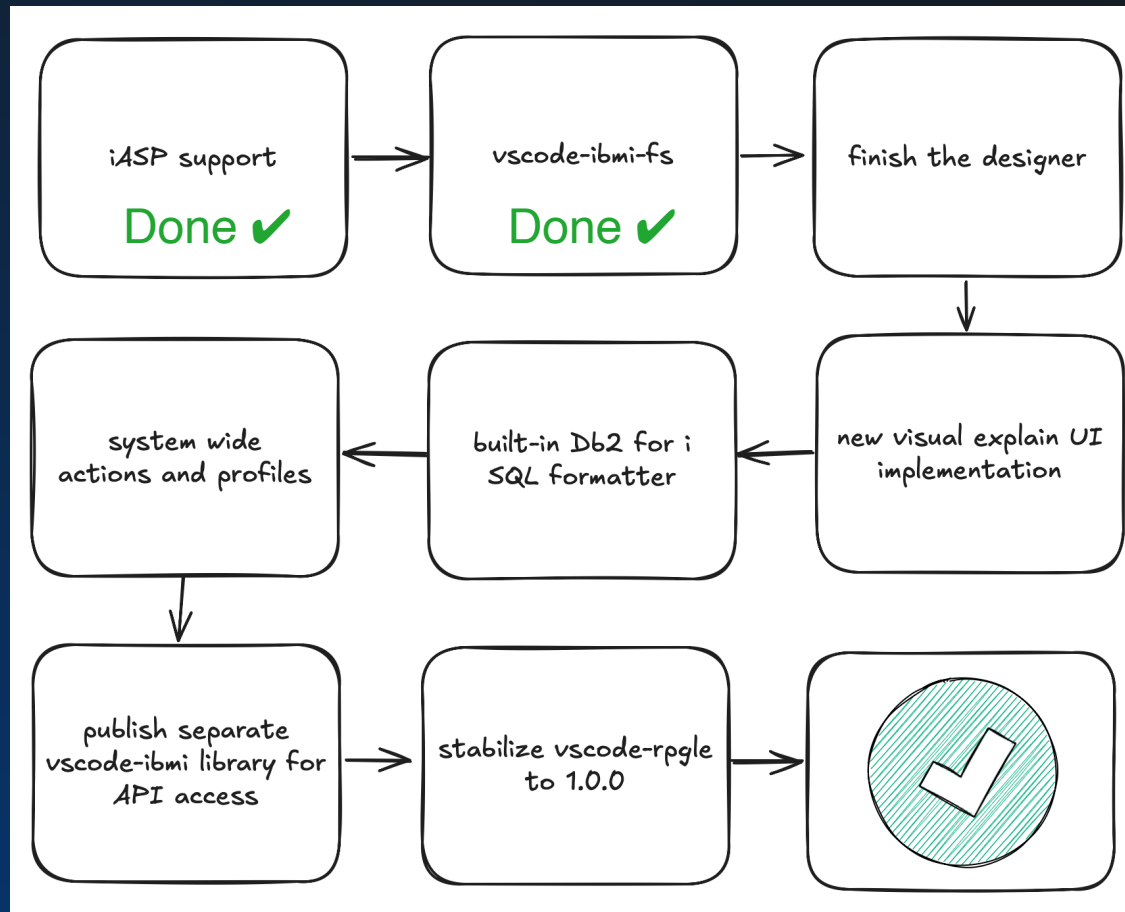
IT Training and Solutions GmbH



# 2026 Ideas



# Ideas for 2026







# Server-side actions

Share your compile commands!

```
actions.json ×
.vscode > {} actions.json > {} 3 > command
11 {
12   "name": "Create RPGLE Program",
13   "command": "CRTBNDRPG PGM(&CURLIB/&NAME) SRCSTMF('&RELATIVEPATH') OPTION
14   (*EVENTF) DBGVIEW(*SOURCE) TGTCCSID(*JOB)",
15   "deployFirst": true,
16   "environment": "ile",
17   "extensions": [
18     "RPGLE"
19   ],
20 },
21 {
22   "name": "Create RPGLE Module",
23   "command": "CRTRPGMOD MODULE(&CURLIB/&NAME) SRCSTMF('&RELATIVEPATH') OPTION
24   (*EVENTF) DBGVIEW(*SOURCE) TGTCCSID(*JOB)",
25   "deployFirst": true,
26   "environment": "ile",
27   "extensions": [
28     "RPGLE"
29   ],
30 },
31 }
```

# Server-side RPG lint configuration

Share your RPG lint configuration!

```
{ } rpglint.json M ×
.vscode > { } rpglint.json > ...
1 {
2   "indent": 2,
3   "BlankStructNamesCheck": true,
4   "QualifiedCheck": false,
5   "PrototypeCheck": true,
6   "ForceOptionalParens": true,
7   "NoOCCURS": true,
8   "NoSELECTAll": true,
9   "UppercaseConstants": true,
10  "IncorrectVariableCase": true,
11  "StringLiteralDupe": true,
12  "NoSQLJoins": true,
13  "NoCTDATA": true,
14  "PrettyComments": true,
15  "NoGlobalSubroutines": true,
16  "NoUnreferenced": false,
17  "NoExternalTo": ["qsygetph"],
18  "NoExtProgramVariable": true
19 }
20 }
```



# Graph-based visual explain

The screenshot displays the Visual Explain interface for a query. The main area shows a graph-based execution plan with the following components:

- Radix Index Scan** (sample.q\_sample\_em...) feeding into a **Table Probe** (sample.employee).
- Radix Index Probe** (sample.q\_sample\_de...) feeding into a **Table Probe** (sample.department).
- The two **Table Probe** nodes feed into a **Nested Loop Join**.
- The **Nested Loop Join** feeds into another **Table Probe** (sample.department).
- The final **Table Probe** feeds into the **Final Select**.

A tooltip on the left provides details for the index used:

- Name of Index Used: EMPLOYEE
- Library of Index Used: SAMPLE
- Name of Table Being Queried: EMPLOYEE
- Library of Table Being Queried: SAMPLE
- Cumulative Time(ms): .011
- CPU Cost(ms): .011
- I/O Cost(ms): 0
- I/O Count: 1

The bottom panel shows the **VISUAL EXPLAIN** tree and **IBM I: VISUAL EXPLAIN DETAILS** for the selected operation:

```

VISUAL EXPLAIN
├── Final Select
│   ├── Table Probe sample.department 1
│   └── Nested Loop Join
│       ├── Table Probe sample.employee 1
│       │   ├── Radix Index Scan sample.q_sample_employee_empno_00001
│       │   └── Radix Index Probe sample.q_sample_department_deptno_00001 1
    
```

**IBM I: VISUAL EXPLAIN DETAILS**

- Number of Child ICONs
- Table name, base table name, index name
  - Name of Index Used EMPLOYEE
  - Library of Index Used SAMPLE
  - Member of Index Used EMPLOYEE
  - Long Name of Index Used Q\_SAMPLE\_EMPLOYEE\_EMPNO\_00001
  - Long Library of Index Used SAMPLE



# Join Code for IBM i Fridays!

<https://www.seidengroup.com/fridays>

The screenshot shows the top navigation bar of the Seiden Group website. The logo 'SEIDEN GROUP' is on the left, followed by the tagline 'Modern Development & Open Source for IBM i'. On the right, there are social media icons for LinkedIn and an email icon. Below the navigation bar is a dark blue menu with links: Home, Seiden PHP+, IBM i Services, Support, VS Code for i, Free Stuff, Blog, About, Contact, and a phone number 201.447.2437. The main content area has a search icon in the top right corner. The main heading is 'CODE FOR IBM i FRIDAYS'. Below it is a paragraph: 'Seiden Group hosts regular community gatherings for VS Code for i users to ask questions, share tips, and discuss open issues and enhancements.' To the right of this text is a hexagonal icon with a light blue border and a black and white geometric design. Below the paragraph is the text 'NEXT MEETING: May 8, 2026, 2:30 pm ET'. Underneath that is a paragraph: 'Sign up using the form on this page to 1) receive invitations to this and future meetings and 2) receive a link to the recordings of those meetings.' To the right of this text is a yellow box with the heading 'Join Us for Code for i Fridays' and a list of three bullet points: 'About two Fridays per month', 'Bring your Code for i questions, problems, and tips, or just listen', and 'We review open issues, and'.

**SEIDEN GROUP** Modern Development & Open Source for IBM i

Home | Seiden PHP+ | IBM i Services | Support | VS Code for i | Free Stuff | Blog | About | Contact | 201.447.2437

## CODE FOR IBM i FRIDAYS

Seiden Group hosts regular community gatherings for VS Code for i users to ask questions, share tips, and discuss open issues and enhancements.

**NEXT MEETING: May 8, 2026, 2:30 pm ET**

Sign up using the form on this page to 1) receive invitations to this and future meetings and 2) receive a link to the recordings of those meetings.

### Join Us for Code for i Fridays

- ▶ About two Fridays per month
- ▶ Bring your Code for i questions, problems, and tips, or just listen
- ▶ We review open issues, and



# Stay up to date on Code for IBM i!

<https://codefori.github.io/docs/>

<https://github.com/codefori/vscode-ibmi/releases>

<https://chat.ibmioss.org/>



Mastering the future - together.

# THANK YOU

For your attention.

Any Question? [info@iandme.rocks](mailto:info@iandme.rocks)

[www.iandme.rocks](http://www.iandme.rocks)