Using CA Development Environment for z Systems with CA IDMS™

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CA Technologies

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Abstract

Your developers don’t need to use a green screen to develop mainframe database applications any more. Learn Eclipse-based Integrated Development Environments, such as CA Development Environment for z Systems, allow your developers to maintain, enhance, and extend your CA IDMS and CA Datacom applications. Whether coding in Java, COBOL, PL/1, or even assembler, developers can use the same full featured development environment, with rich text editing, integrated debugging, and source management integration.

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Agenda

1. CA DEVELOPMENT ENVIRONMENT FOR Z SYSTEMS
2. EDITING AND COMPILING CA IDMS PROGRAMS
3. DEBUGGING CA IDMS APPLICATIONS
4. EXPLORING CA IDMS DATABASES
5. DISPLAYING NETWORK SCHEMA DIAGRAMS
6. MAKING IT WORK

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CA Development Environment for z Systems

- CA Branded version of IBM Developer for z Systems
- Eclipse-based IDE for z Systems
  - Familiar environment for Java programmers
  - Edit, build, test z/OS applications
- Bundled with CA plugins
  - CA Endevor SCM
  - CA Intertest
  - CA Mainframe Application Tuner, CA File Master Plus, CA SymDump

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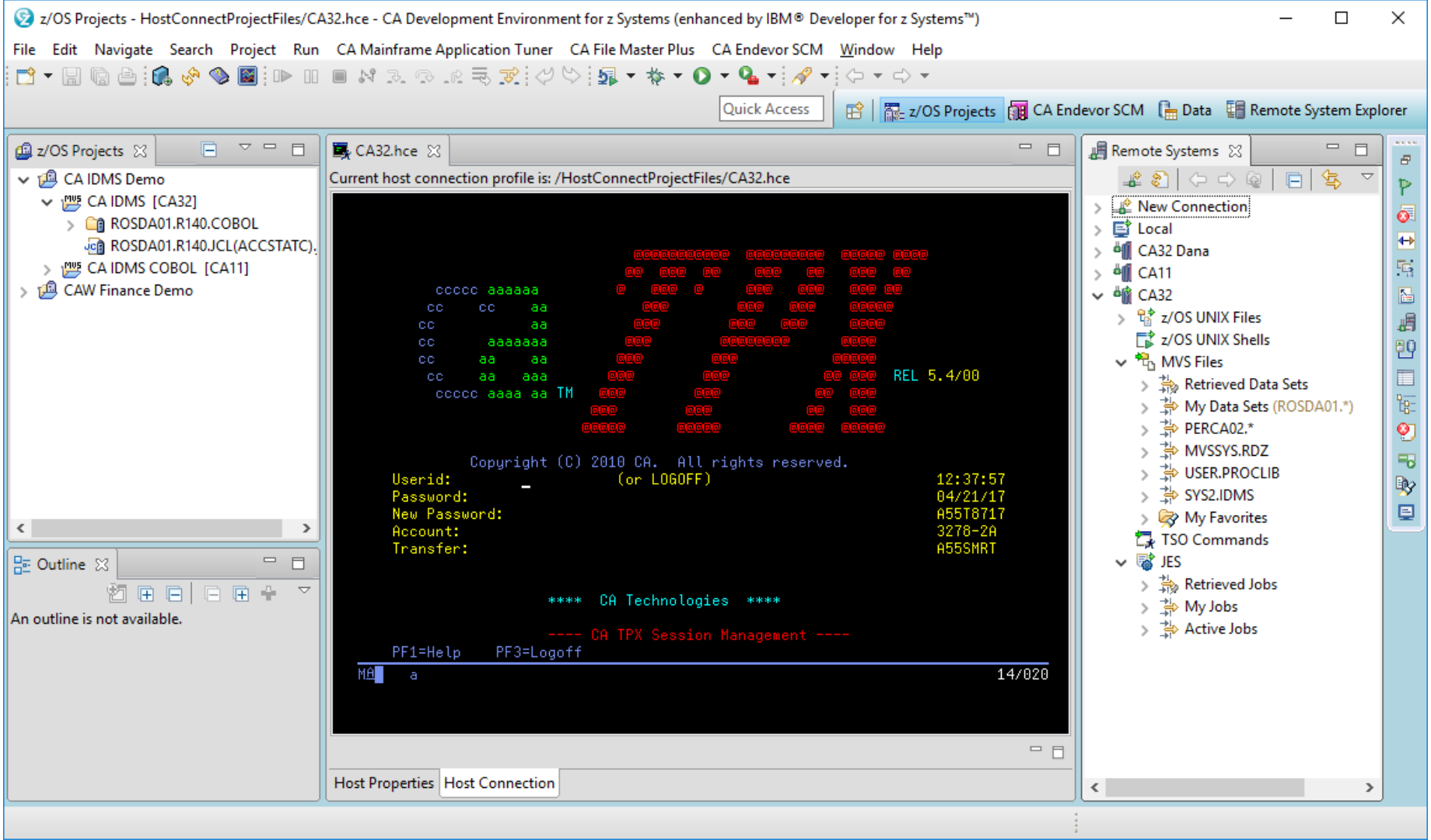
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File Edit Navigate Search Project Run CA Mainframe Application Tuner CA File Master Plus CA Endevor SCM Window Help
Quick Access
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CA Endevor SCM
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Remote System Explorer
z/OS Projects
CA IDMS Demo
CA IDMS [CA32]
ROSDA01.R140.COBOL
ROSDA01.R140.JCL(ACCSTATC).
CA IDMS COBOL [CA11]
CAW Finance Demo
Outline
An outline is not available.
CA32.hce
Current host connection profile is: /HostConnectProjectFiles/CA32.hce
REL 5.4/00
Copyright (C) 2010 CA. All rights reserved.
Userid:
(or LOGOFF)
12:37:57
Password:
04/21/17
New Password:
A55T8717
Account:
3278-2A
Transfer:
A55SMRT
**** CA Technologies ****
---- CA TPX Session Management ----
PF1=Help PF3=Logoff
14/020
Host Properties
Host Connection
Remote Systems
New Connection
Local
CA32 Dana
CA11
CA32
z/OS UNIX Files
z/OS UNIX Shells
MVS Files
Retrieved Data Sets
My Data Sets (ROSDA01.*)
PERCA02.*
MVSSYS.RDZ
USER.PROCLIB
SYS2.IDMS
My Favorites
TSO Commands
JES
Retrieved Jobs
My Jobs
Active Jobs

CA IDMS™ Use Cases

- Edit and build CA IDMS programs
  - COBOL and PL/I
- Debug CA IDMS programs
  - Batch local and CV
- Explore CA IDMS Databases
  - SQL and network defined
- Display network schema Bachman diagrams
  - Open source tool

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Editing and Building CA IDMS Programs

Editing CA IDMS Programs

- COBOL and PL/I
  - Rich editing
  - Remote pre-processor integration
  - Integrated with MF file system or SCM
- ADS
  - Standard editor
  - Extract from dictionary to file system first

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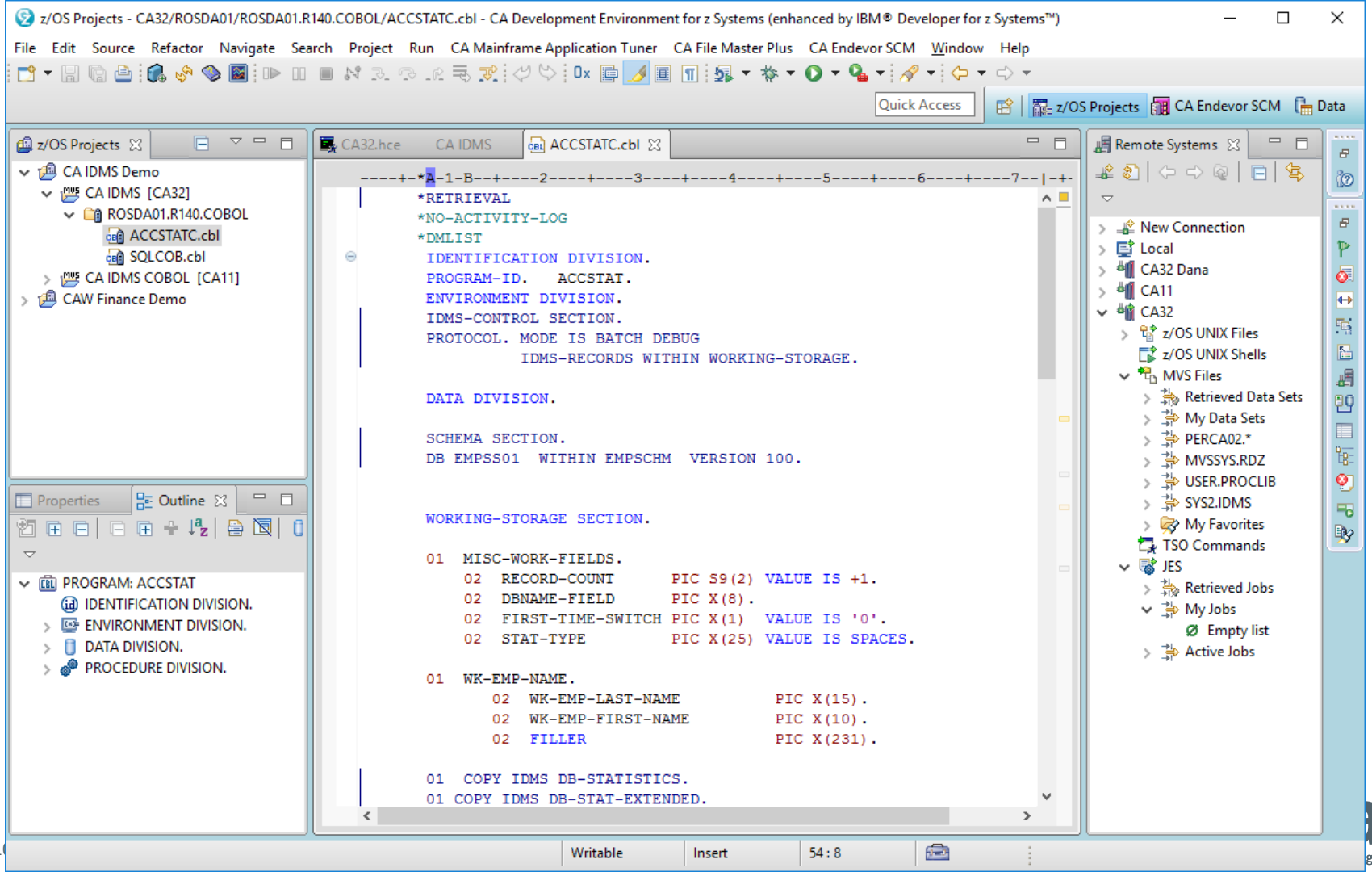
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CA IDMS [CA32]
ROSDA01.R140.COBOL
ACCSTATC.cbl
SQLCOB.cbl
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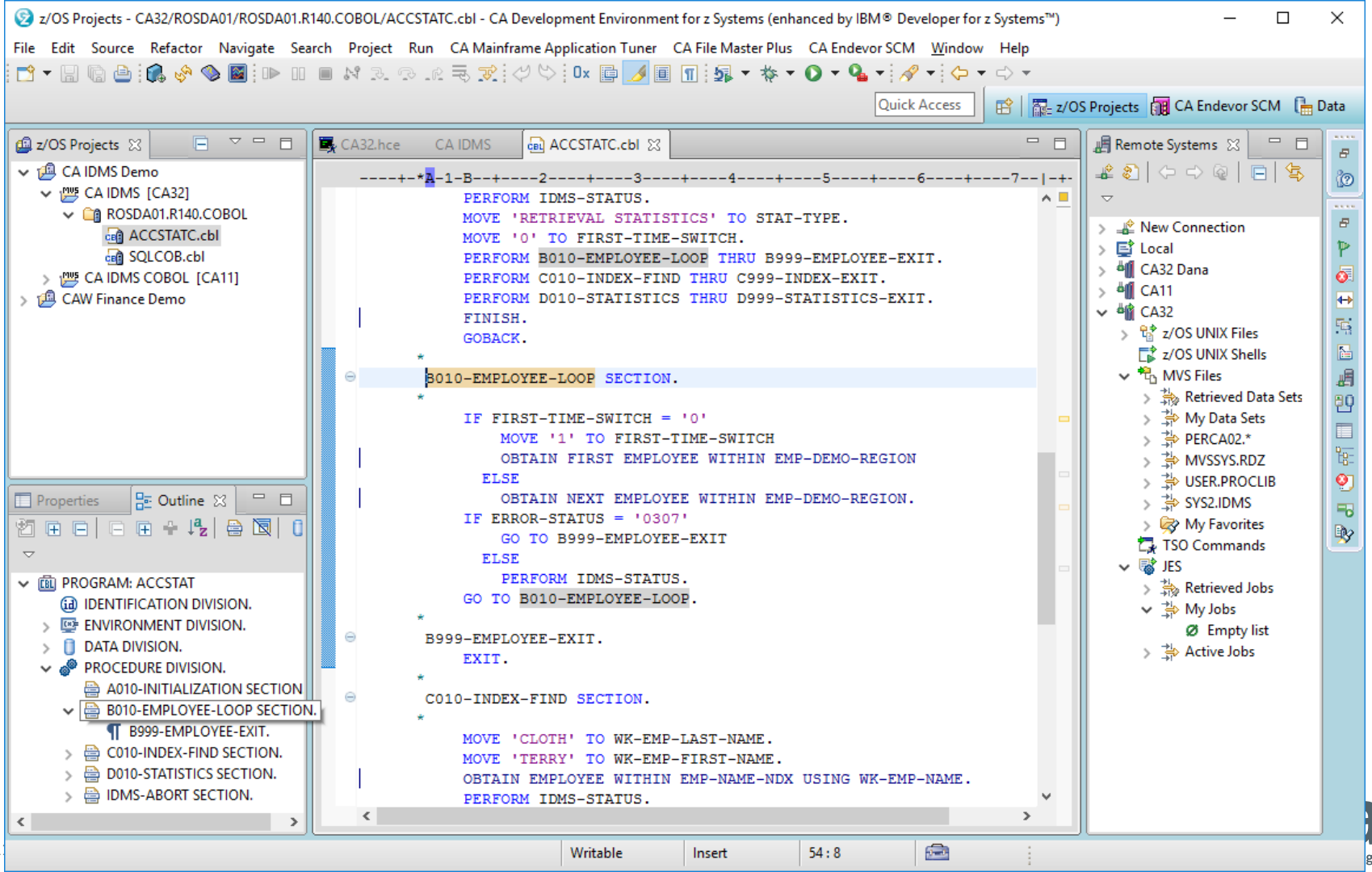
Properties
Outline
PROGRAM: ACCSTAT
IDENTIFICATION DIVISION.
ENVIRONMENT DIVISION.
DATA DIVISION.
PROCEDURE DIVISION.
CA32.hce
CA IDMS
ACCSTATC.cbl
----+-*A-1-B--+----2----+----3----+----4----+----5----+----6----+----7--|-+-
*RETRIEVAL
*NO-ACTIVITY-LOG
*DMLIST
IDENTIFICATION DIVISION.
PROGRAM-ID. ACCSTAT.
ENVIRONMENT DIVISION.
IDMS-CONTROL SECTION.
PROTOCOL. MODE IS BATCH DEBUG
IDMS-RECORDS WITHIN WORKING-STORAGE.
DATA DIVISION.
SCHEMA SECTION.
DB EMPSS01 WITHIN EMPSCHM VERSION 100.
WORKING-STORAGE SECTION.
01 MISC-WORK-FIELDS.
02 RECORD-COUNT PIC S9(2) VALUE IS +1.
02 DBNAME-FIELD PIC X(8).
02 FIRST-TIME-SWITCH PIC X(1) VALUE IS '0'.
02 STAT-TYPE PIC X(25) VALUE IS SPACES.
01 WK-EMP-NAME.
02 WK-EMP-LAST-NAME PIC X(15).
02 WK-EMP-FIRST-NAME PIC X(10).
02 FILLER PIC X(231).
01 COPY IDMS DB-STATISTICS.
01 COPY IDMS DB-STAT-EXTENDED.
Remote Systems
New Connection
Local
CA32 Dana
CA11
CA32
z/OS UNIX Files
z/OS UNIX Shells
MVS Files
Retrieved Data Sets
My Data Sets
PERCA02.*
MVSSYS.RDZ
USER.PROCLIB
SYS2.IDMS
My Favorites
TSO Commands
JES
Retrieved Jobs
My Jobs
Empty list
Active Jobs
Writable
Insert
54 : 8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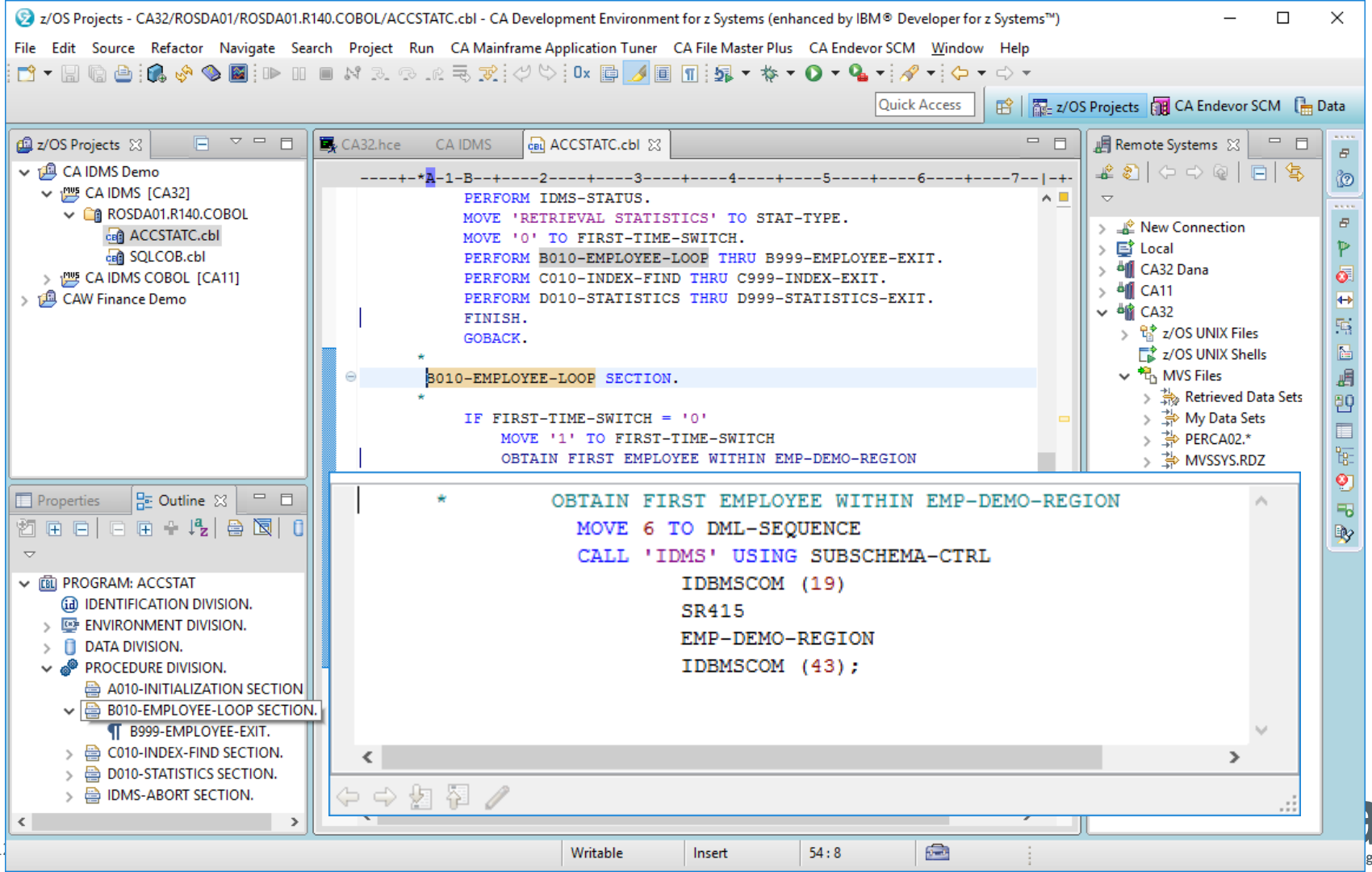
CA IDMS COBOL [CA11]
CAW Finance Demo
CA32.hce
CA IDMS
ACCSTATC.cbl
PERFORM IDMS-STATUS.
MOVE 'RETRIEVAL STATISTICS' TO STAT-TYPE.
MOVE '0' TO FIRST-TIME-SWITCH.
PERFORM B010-EMPLOYEE-LOOP THRU B999-EMPLOYEE-EXIT.
PERFORM C010-INDEX-FIND THRU C999-INDEX-EXIT.
PERFORM D010-STATISTICS THRU D999-STATISTICS-EXIT.
FINISH.
GOBACK.
B010-EMPLOYEE-LOOP SECTION.
IF FIRST-TIME-SWITCH = '0'
MOVE '1' TO FIRST-TIME-SWITCH
OBTAIN FIRST EMPLOYEE WITHIN EMP-DEMO-REGION
ELSE
OBTAIN NEXT EMPLOYEE WITHIN EMP-DEMO-REGION.
IF ERROR-STATUS = '0307'
GO TO B999-EMPLOYEE-EXIT
ELSE
PERFORM IDMS-STATUS.
GO TO B010-EMPLOYEE-LOOP.
B999-EMPLOYEE-EXIT.
EXIT.
C010-INDEX-FIND SECTION.
MOVE 'CLOTH' TO WK-EMP-LAST-NAME.
MOVE 'TERRY' TO WK-EMP-FIRST-NAME.
OBTAIN EMPLOYEE WITHIN EMP-NAME-NDX USING WK-EMP-NAME.
PERFORM IDMS-STATUS.
Properties
Outline
PROGRAM: ACCSTAT
IDENTIFICATION DIVISION.
ENVIRONMENT DIVISION.
DATA DIVISION.
PROCEDURE DIVISION.
A010-INITIALIZATION SECTION
B010-EMPLOYEE-LOOP SECTION.
B999-EMPLOYEE-EXIT.
C010-INDEX-FIND SECTION.
D010-STATISTICS SECTION.
IDMS-ABORT SECTION.
Remote Systems
New Connection
Local
CA32 Dana
CA11
CA32
z/OS UNIX Files
z/OS UNIX Shells
MVS Files
Retrieved Data Sets
My Data Sets
PERCA02.*
MVSSYS.RDZ
USER.PROCLIB
SYS2.IDMS
My Favorites
TSO Commands
JES
Retrieved Jobs
My Jobs
Empty list
Active Jobs
Writable
Insert
54 : 8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CA IDMS [CA32]
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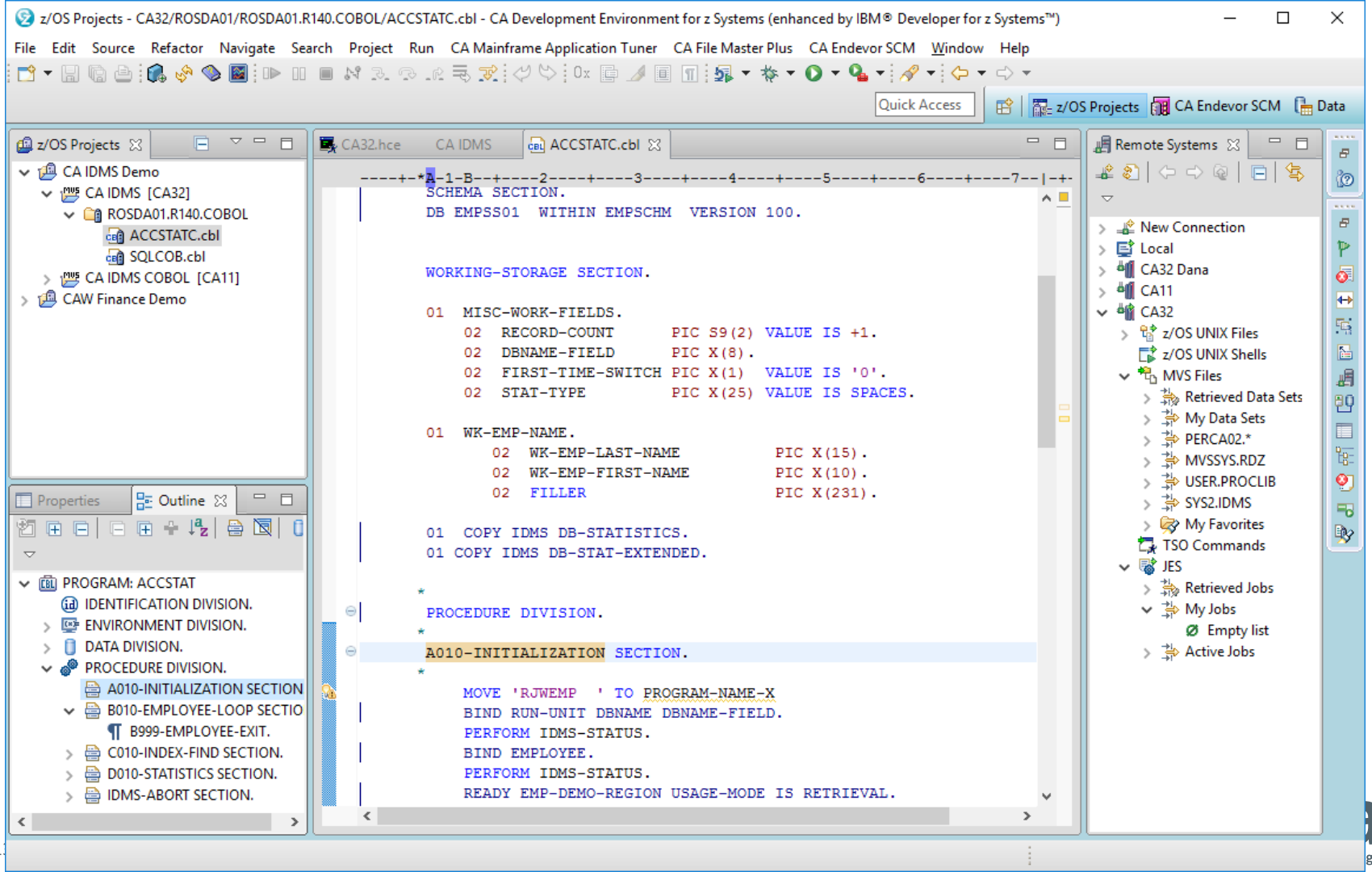
CAW Finance Demo
CA32.hce
CA IDMS
ACCSTATC.cbl
PERFORM IDMS-STATUS.
MOVE 'RETRIEVAL STATISTICS' TO STAT-TYPE.
MOVE '0' TO FIRST-TIME-SWITCH.
PERFORM B010-EMPLOYEE-LOOP THRU B999-EMPLOYEE-EXIT.
PERFORM C010-INDEX-FIND THRU C999-INDEX-EXIT.
PERFORM D010-STATISTICS THRU D999-STATISTICS-EXIT.
FINISH.
GOBACK.
B010-EMPLOYEE-LOOP SECTION.
IF FIRST-TIME-SWITCH = '0'
MOVE '1' TO FIRST-TIME-SWITCH
OBTAIN FIRST EMPLOYEE WITHIN EMP-DEMO-REGION
Remote Systems
New Connection
Local
CA32 Dana
CA11
CA32
z/OS UNIX Files
z/OS UNIX Shells
MVS Files
Retrieved Data Sets
My Data Sets
PERCA02.*
MVSSYS.RDZ
Properties
Outline
PROGRAM: ACCSTAT
IDENTIFICATION DIVISION.
ENVIRONMENT DIVISION.
DATA DIVISION.
PROCEDURE DIVISION.
A010-INITIALIZATION SECTION
B010-EMPLOYEE-LOOP SECTION.
B999-EMPLOYEE-EXIT.
C010-INDEX-FIND SECTION.
D010-STATISTICS SECTION.
IDMS-ABORT SECTION.
OBTAIN FIRST EMPLOYEE WITHIN EMP-DEMO-REGION
MOVE 6 TO DML-SEQUENCE
CALL 'IDMS' USING SUBSCHEMA-CTRL
IDBMSCOM (19)
SR415
EMP-DEMO-REGION
IDBMSCOM (43);
Writable
Insert
54 : 8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D010-STATISTICS SECTION.
IDMS-ABORT SECTION.
CA32.hce
CA IDMS
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SCHEMA SECTION.
DB EMPSS01 WITHIN EMPSCHM VERSION 100.
WORKING-STORAGE SECTION.
01 MISC-WORK-FIELDS.
02 RECORD-COUNT PIC S9(2) VALUE IS +1.
02 DBNAME-FIELD PIC X(8).
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01 WK-EMP-NAME.
02 WK-EMP-LAST-NAME PIC X(15).
02 WK-EMP-FIRST-NAME PIC X(10).
02 FILLER PIC X(231).
01 COPY IDMS DB-STATISTICS.
01 COPY IDMS DB-STAT-EXTENDED.
PROCEDURE DIVISION.
A010-INITIALIZATION SECTION.
MOVE 'RJWEMP ' TO PROGRAM-NAME-X
BIND RUN-UNIT DBNAME DBNAME-FIELD.
PERFORM IDMS-STATUS.
BIND EMPLOYEE.
PERFORM IDMS-STATUS.
READY EMP-DEMO-REGION USAGE-MODE IS RETRIEVAL.
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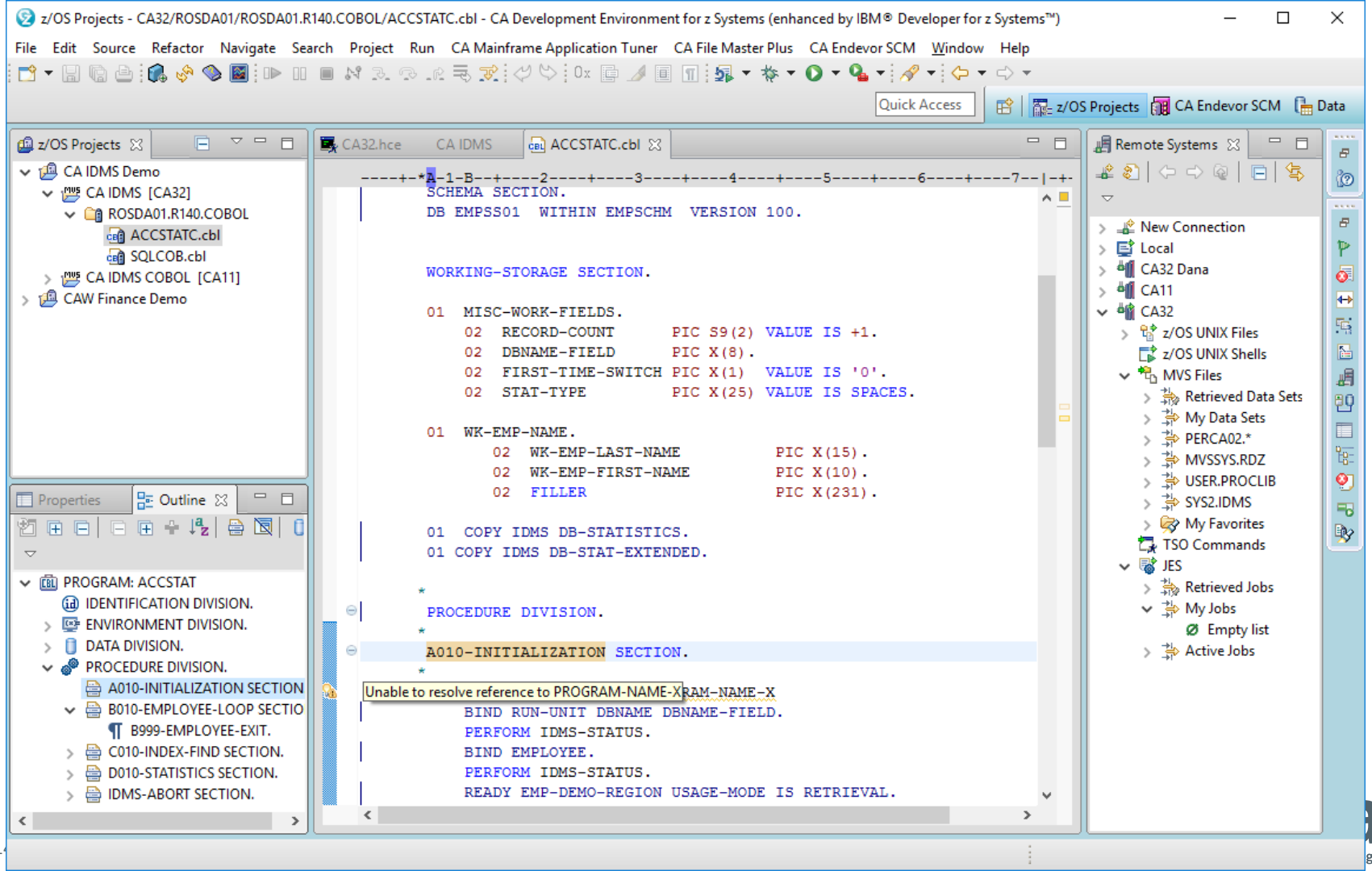
New Connection
Local
CA32 Dana
CA11
CA32
z/OS UNIX Files
z/OS UNIX Shells
MVS Files
Retrieved Data Sets
My Data Sets
PERCA02.*
MVSSYS.RDZ
USER.PROCLIB
SYS2.IDMS
My Favorites
TSO Commands
JES
Retrieved Jobs
My Jobs
Empty list
Active Jobs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02 WK-EMP-LAST-NAME PIC X(15).
02 WK-EMP-FIRST-NAME PIC X(10).
02 FILLER PIC X(231).
01 COPY IDMS DB-STATISTICS.
01 COPY IDMS DB-STAT-EXTENDED.
PROCEDURE DIVISION.
A010-INITIALIZATION SECTION.
Unable to resolve reference to PROGRAM-NAME-X
BIND RUN-UNIT DBNAME DBNAME-FIELD.
PERFORM IDMS-STATUS.
BIND EMPLOYEE.
PERFORM IDMS-STATUS.
READY EMP-DEMO-REGION USAGE-MODE IS RETRIEVAL.
Properties
Outline
PROGRAM: ACCSTAT
IDENTIFICATION DIVISION.
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PROCEDURE DIVISION.
A010-INITIALIZATION SECTION
B010-EMPLOYEE-LOOP SECTIO
B999-EMPLOYEE-EXIT.
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D010-STATISTICS SECTION.
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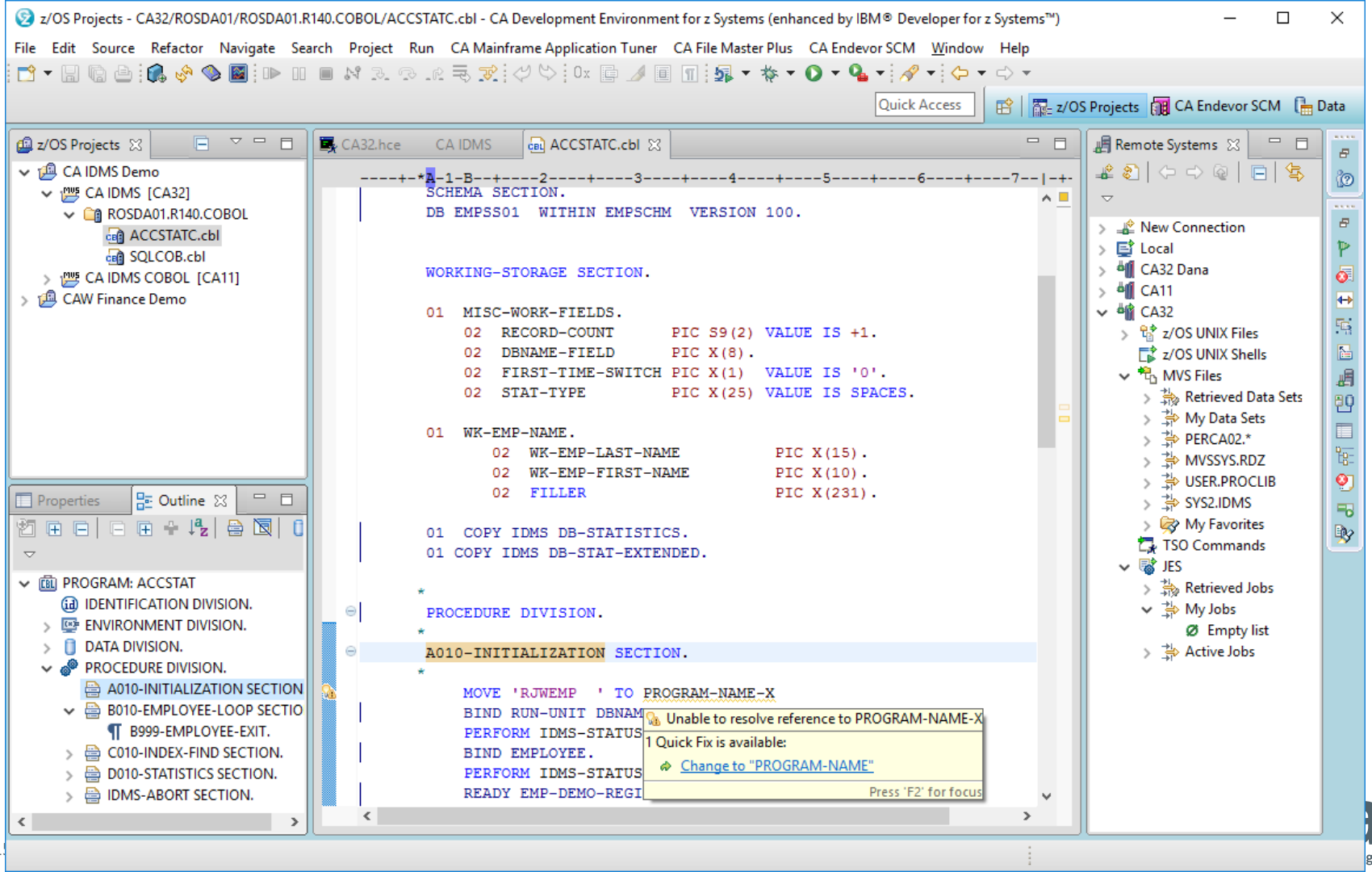
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02 WK-EMP-LAST-NAME PIC X(15).
02 WK-EMP-FIRST-NAME PIC X(10).
02 FILLER PIC X(231).
01 COPY IDMS DB-STATISTICS.
01 COPY IDMS DB-STAT-EXTENDED.
PROCEDURE DIVISION.
A010-INITIALIZATION SECTION.
MOVE 'RJWEMP ' TO PROGRAM-NAME-X
BIND RUN-UNIT DBNAM
PERFORM IDMS-STATUS
BIND EMPLOYEE.
PERFORM IDMS-STATUS
READY EMP-DEMO-REGI
Unable to resolve reference to PROGRAM-NAME-X
1 Quick Fix is available:
Change to "PROGRAM-NAME"
Press 'F2' for focus
Properties
Outline
PROGRAM: ACCSTAT
IDENTIFICATION DIVISION.
ENVIRONMENT DIVISION.
DATA DIVISION.
PROCEDURE DIVISION.
A010-INITIALIZATION SECTION
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B999-EMPLOYEE-EXIT.
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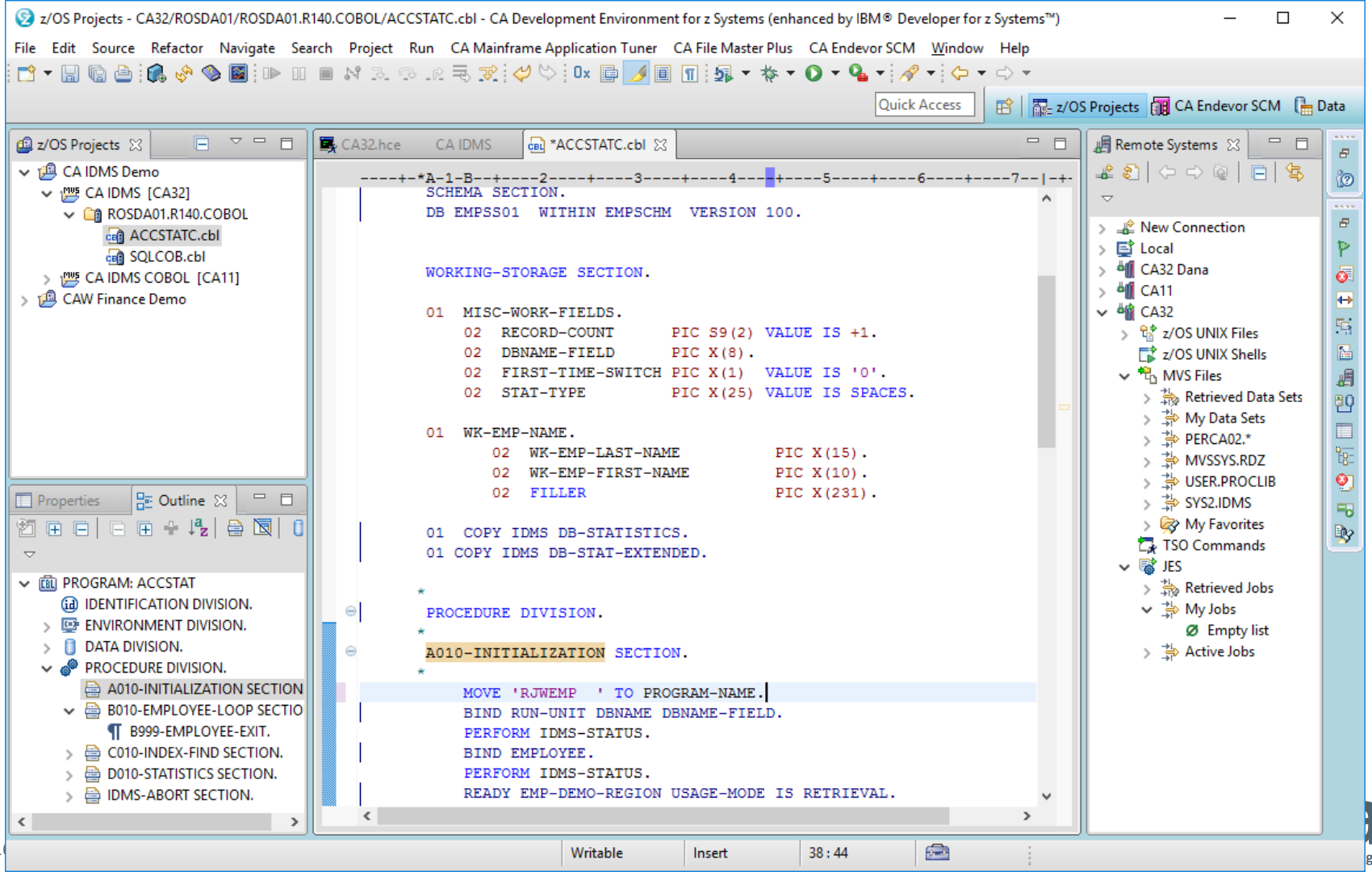
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01 WK-EMP-NAME.
02 WK-EMP-LAST-NAME PIC X(15).
02 WK-EMP-FIRST-NAME PIC X(10).
02 FILLER PIC X(231).
01 COPY IDMS DB-STATISTICS.
01 COPY IDMS DB-STAT-EXTENDED.
PROCEDURE DIVISION.
A010-INITIALIZATION SECTION.
MOVE 'RJWEMP ' TO PROGRAM-NAME.
BIND RUN-UNIT DBNAME DBNAME-FIELD.
PERFORM IDMS-STATUS.
BIND EMPLOYEE.
PERFORM IDMS-STATUS.
READY EMP-DEMO-REGION USAGE-MODE IS RETRIEVAL.
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Empty list
Active Jobs
Writable
Insert
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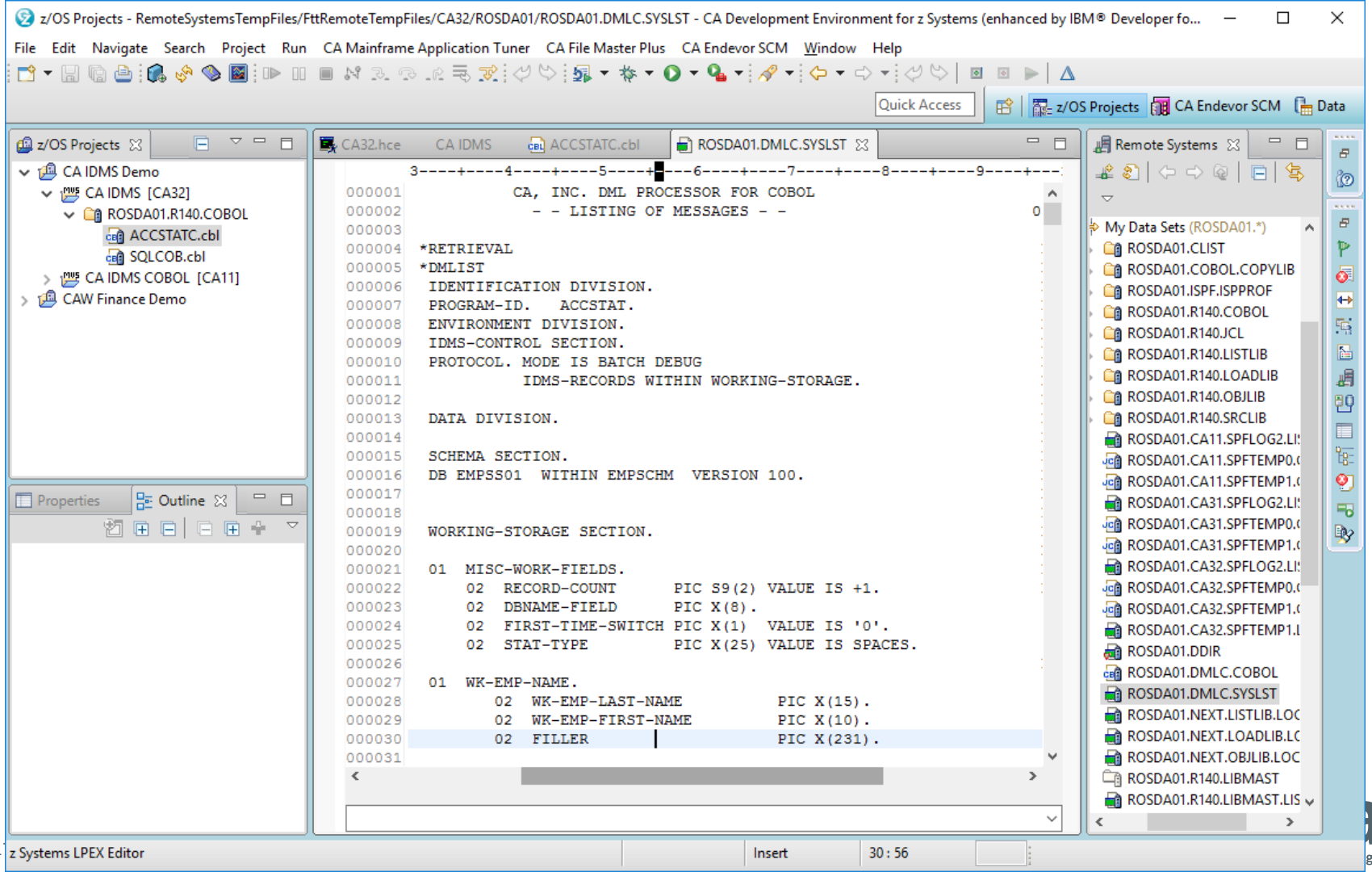
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CA32.hce
CA IDMS
ACCSTATC.cbl
ROSDA01.DMLC.SYSLST
3----+----4----+----5----+----6----+----7----+----8----+----9----+---
000001 CA, INC. DML PROCESSOR FOR COBOL
000002 - - LISTING OF MESSAGES - - 0
000003
000004 *RETRIEVAL
000005 *DMLIST
000006 IDENTIFICATION DIVISION.
000007 PROGRAM-ID. ACCSTAT.
000008 ENVIRONMENT DIVISION.
000009 IDMS-CONTROL SECTION.
000010 PROTOCOL. MODE IS BATCH DEBUG
000011 IDMS-RECORDS WITHIN WORKING-STORAGE.
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000013 DATA DIVISION.
000014
000015 SCHEMA SECTION.
000016 DB EMPSS01 WITHIN EMPSCHM VERSION 100.
000017
000018
000019 WORKING-STORAGE SECTION.
000020
000021 01 MISC-WORK-FIELDS.
000022 02 RECORD-COUNT PIC S9(2) VALUE IS +1.
000023 02 DBNAME-FIELD PIC X(8).
000024 02 FIRST-TIME-SWITCH PIC X(1) VALUE IS '0'.
000025 02 STAT-TYPE PIC X(25) VALUE IS SPACES.
000026
000027 01 WK-EMP-NAME.
000028 02 WK-EMP-LAST-NAME PIC X(15).
000029 02 WK-EMP-FIRST-NAME PIC X(10).
000030 02 FILLER PIC X(231).
000031
Remote Systems
My Data Sets (ROSDA01.*)
ROSDA01.CLIST
ROSDA01.COBOL.COPYLIB
ROSDA01.ISPF.ISPPROF
ROSDA01.R140.COBOL
ROSDA01.R140.JCL
ROSDA01.R140.LISTLIB
ROSDA01.R140.LOADLIB
ROSDA01.R140.OBJLIB
ROSDA01.R140.SRCLIB
ROSDA01.DDIR
ROSDA01.DMLC.COBOL
ROSDA01.DMLC.SYSLST
ROSDA01.R140.LIBMAST
z Systems LPEX Editor
Insert
30 : 56

Building CA IDMS Programs

- COBOL and PL/I
  - Compile and link from project context menu
  - Integrated with MF file system or SCM
  - Configure in properties group
- ADS
  - 3270 emulator

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Debugging CA IDMS Programs

Debugging CA IDMS Programs

- Debug Perspective
- CA Intertest™
- Batch
  - Local/CV
  - COBOL, PL/I, Assembler
- On-line
  - ADS via 3270 window
  - CICS

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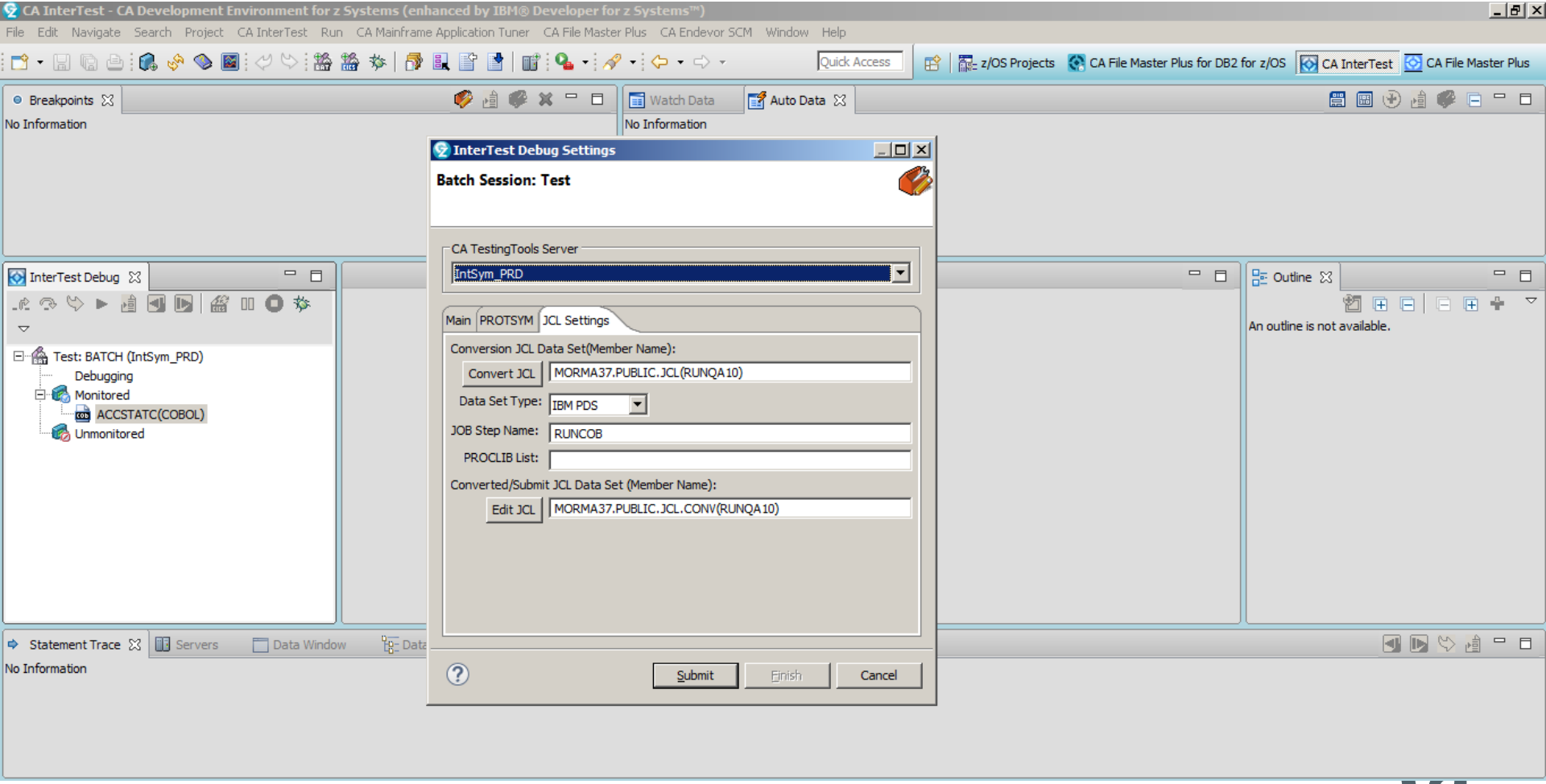

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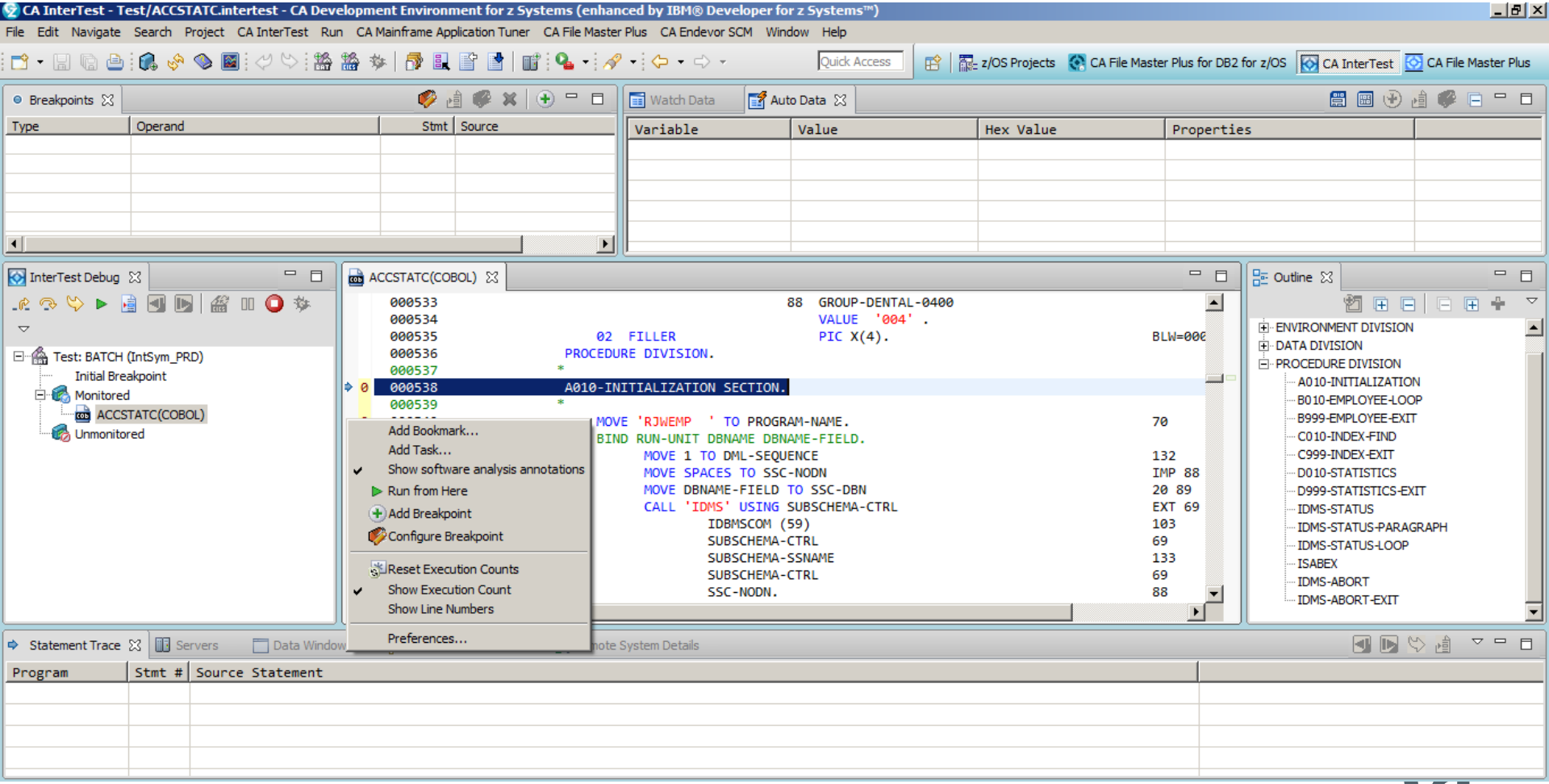

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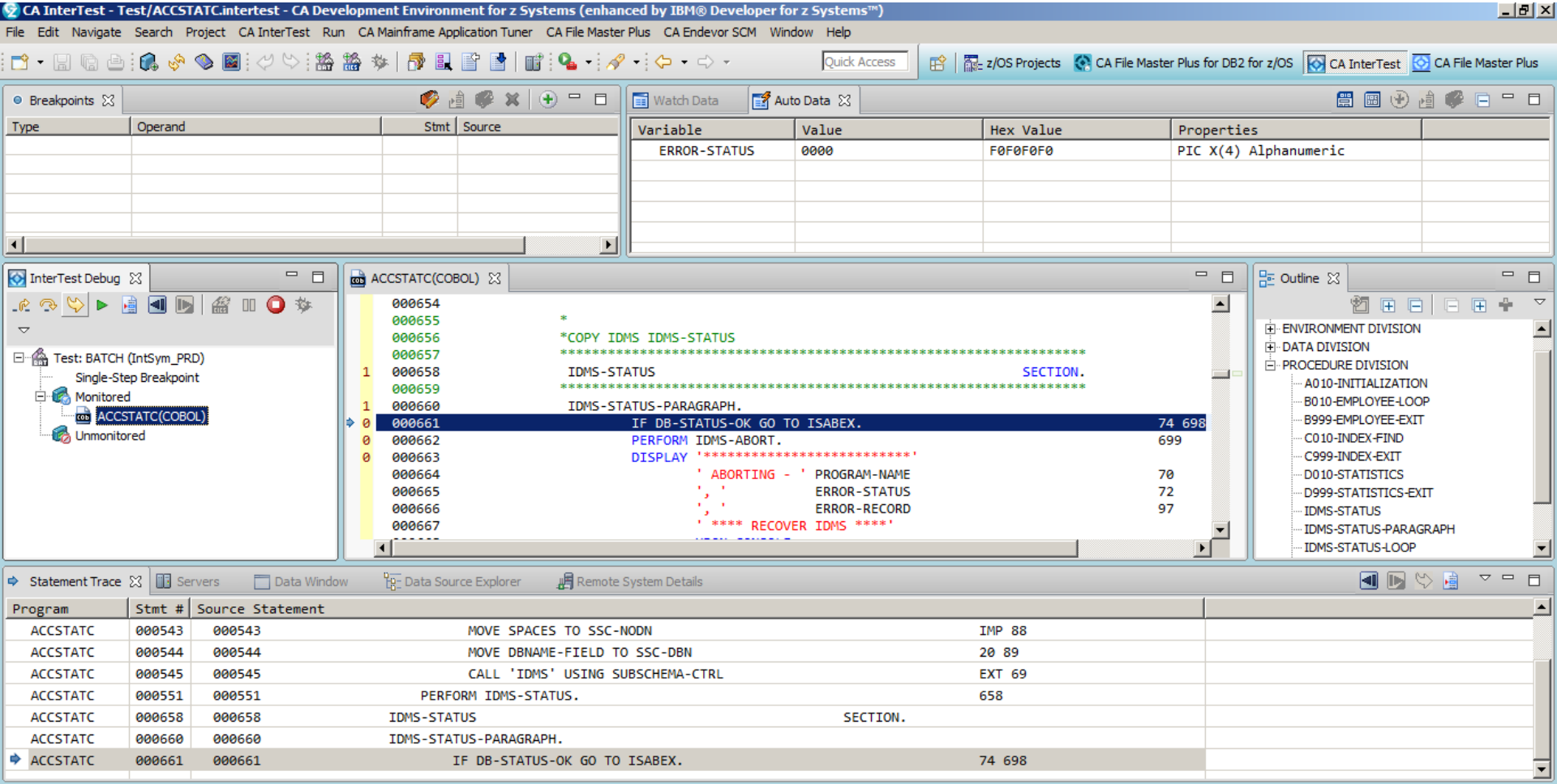

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Exploring CA IDMS Databases

Database Development Perspective

- Database Explorer
- Discover and query databases
  - CA IDMS JDBC Driver
  - SQL defined databases
  - Network databases via SQL schema
  - Enhanced by CA IDMS 19.0 Virtual Foreign Keys
- Some features optimized for DB2

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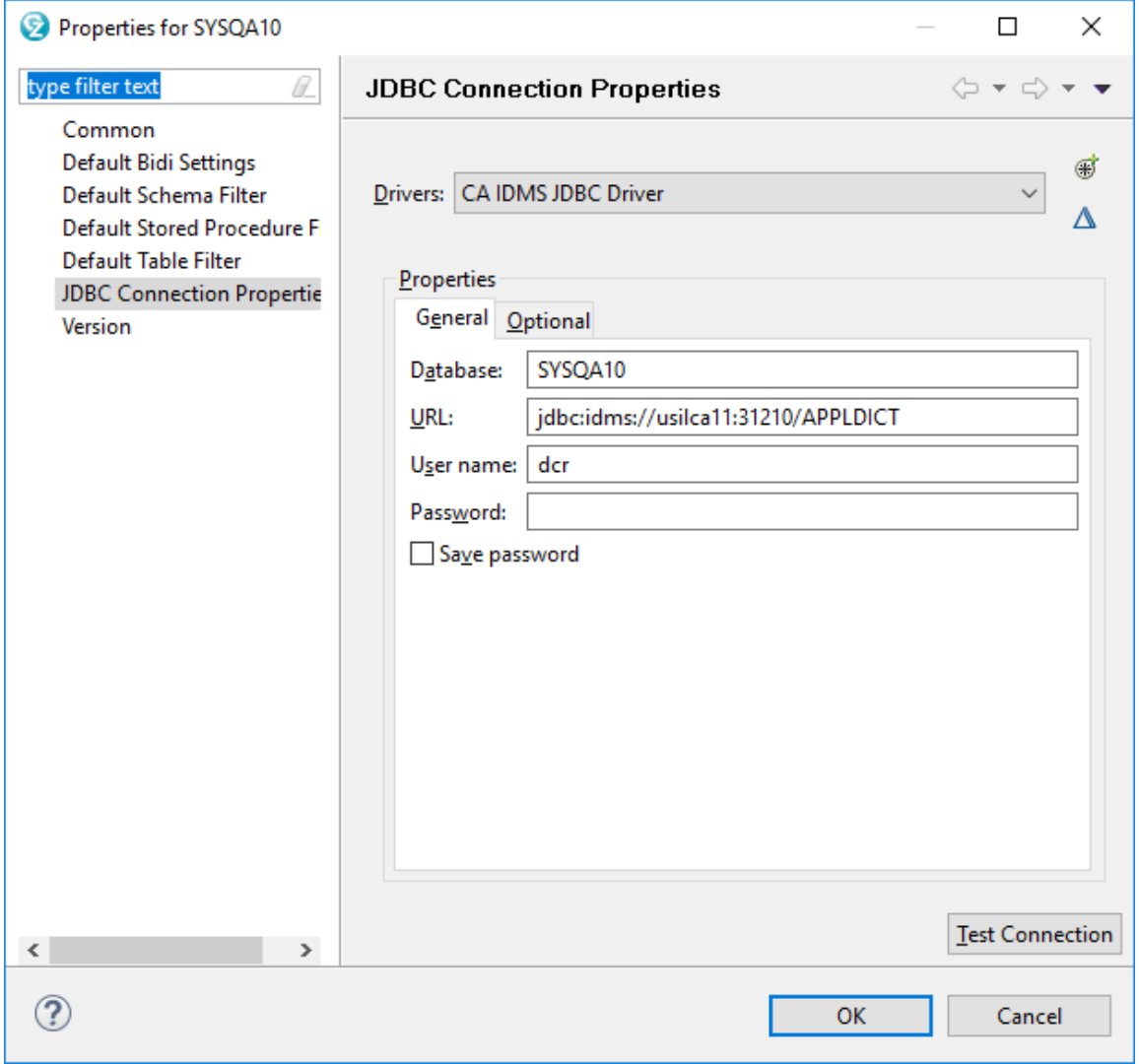

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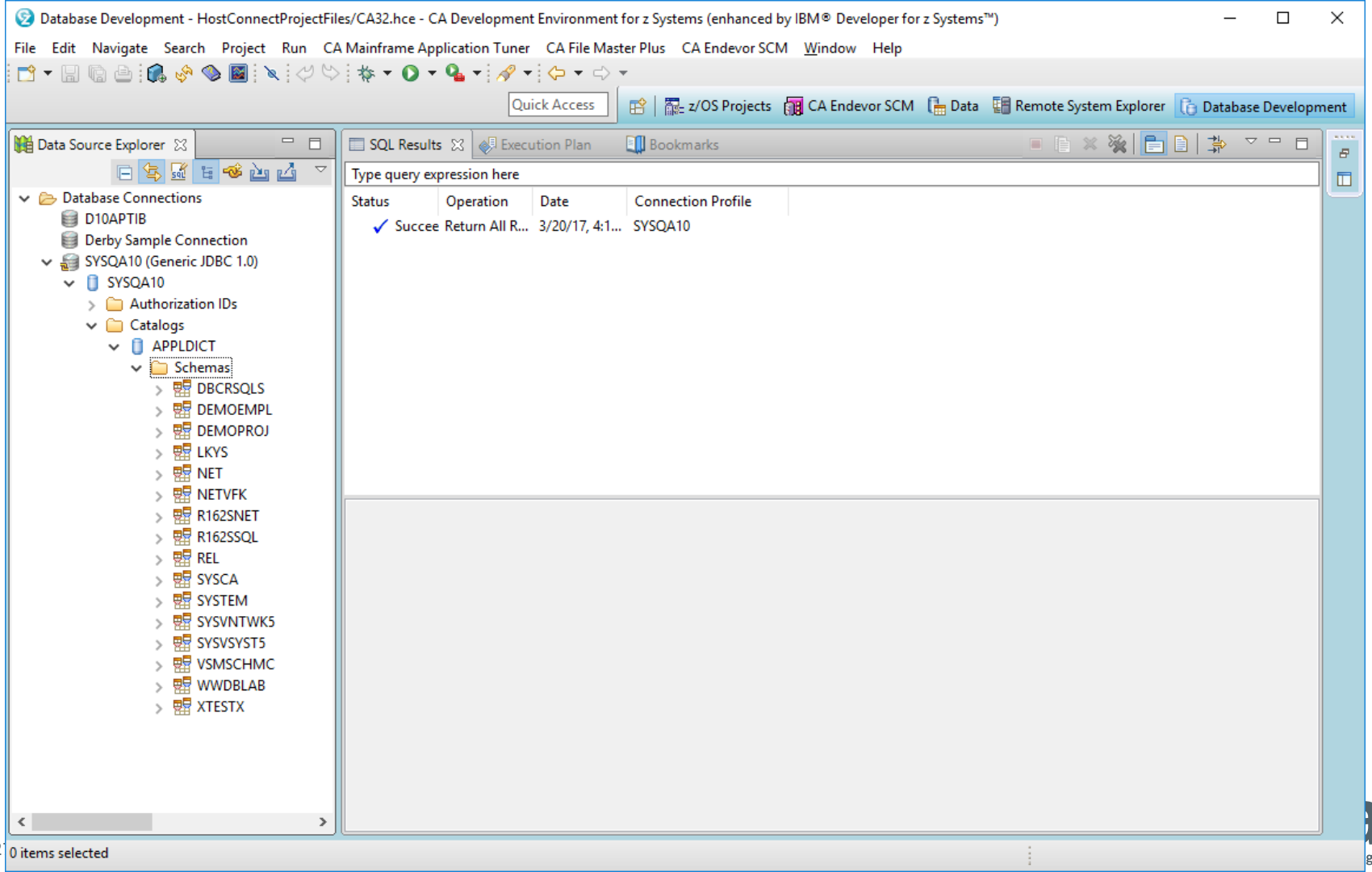
Database Development - HostConnectProjectFiles/CA32.hce - CA Development Environment for z Systems (enhanced by IBM® Developer for z Systems™)
File Edit Navigate Search Project Run CA Mainframe Application Tuner CA File Master Plus CA Endevor SCM Window Help
Quick Access
z/OS Projects
CA Endevor SCM
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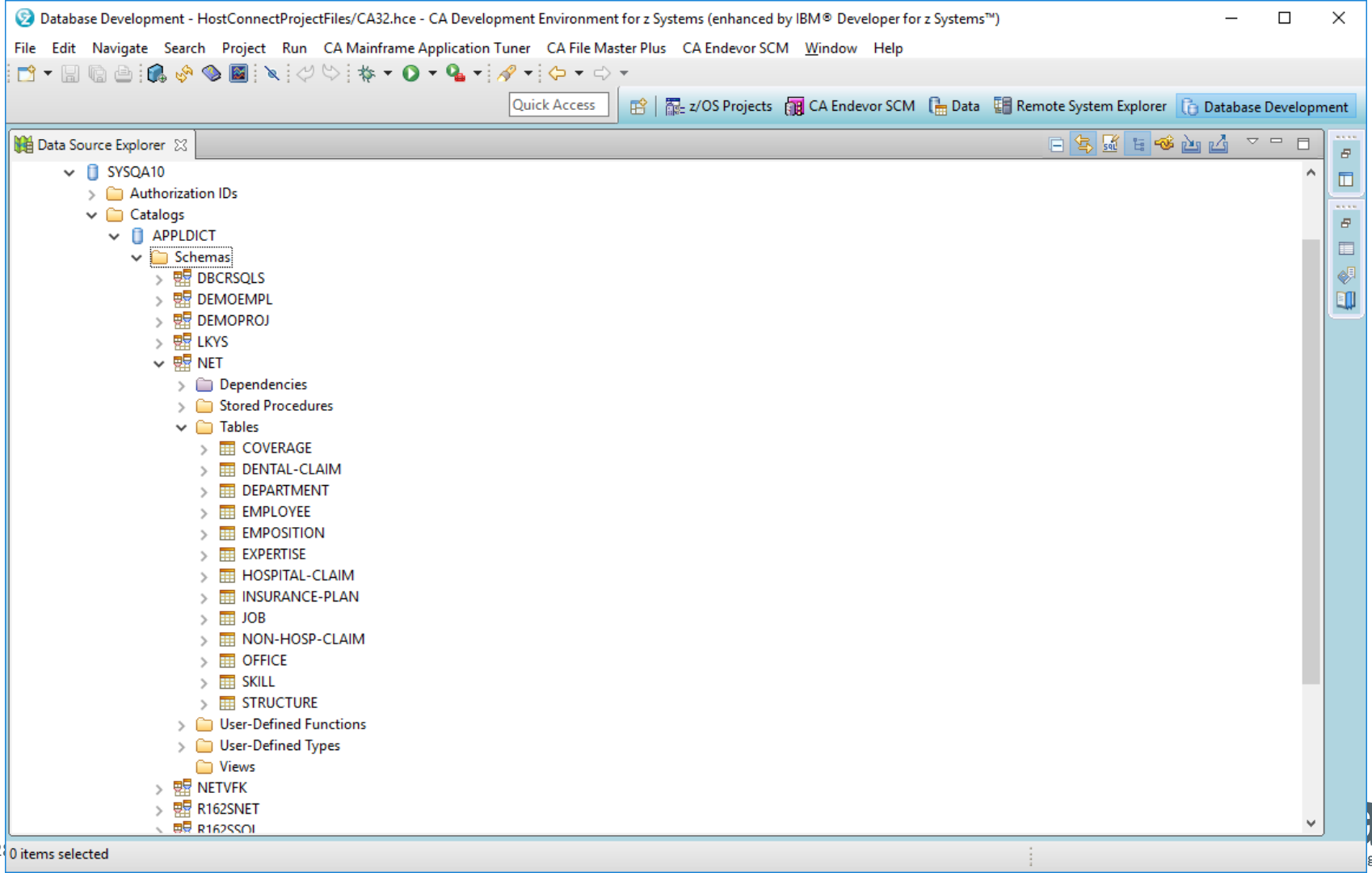
Remote System Explorer
Database Development
Data Source Explorer
Database Connections
D10APTIB
Derby Sample Connection
SYSQA10 (Generic JDBC 1.0)
SYSQA10
Authorization IDs
Catalogs
APPLDICT
Schemas
DBCRSQLS
DEMOEMPL
DEMOPROJ
LKYS
NET
NETVFK
R162SNET
R162SSQL
REL
SYSCA
SYSTEM
SYSVNTWK5
SYSVSYST5
VSMSCHMC
WWDBLAB
XTESTX
SQL Results
Execution Plan
Bookmarks
Type query expression here
Status
Operation
Date
Connection Profile
Succee
Return All R...
3/20/17, 4:1...
SYSQA10
0 items selected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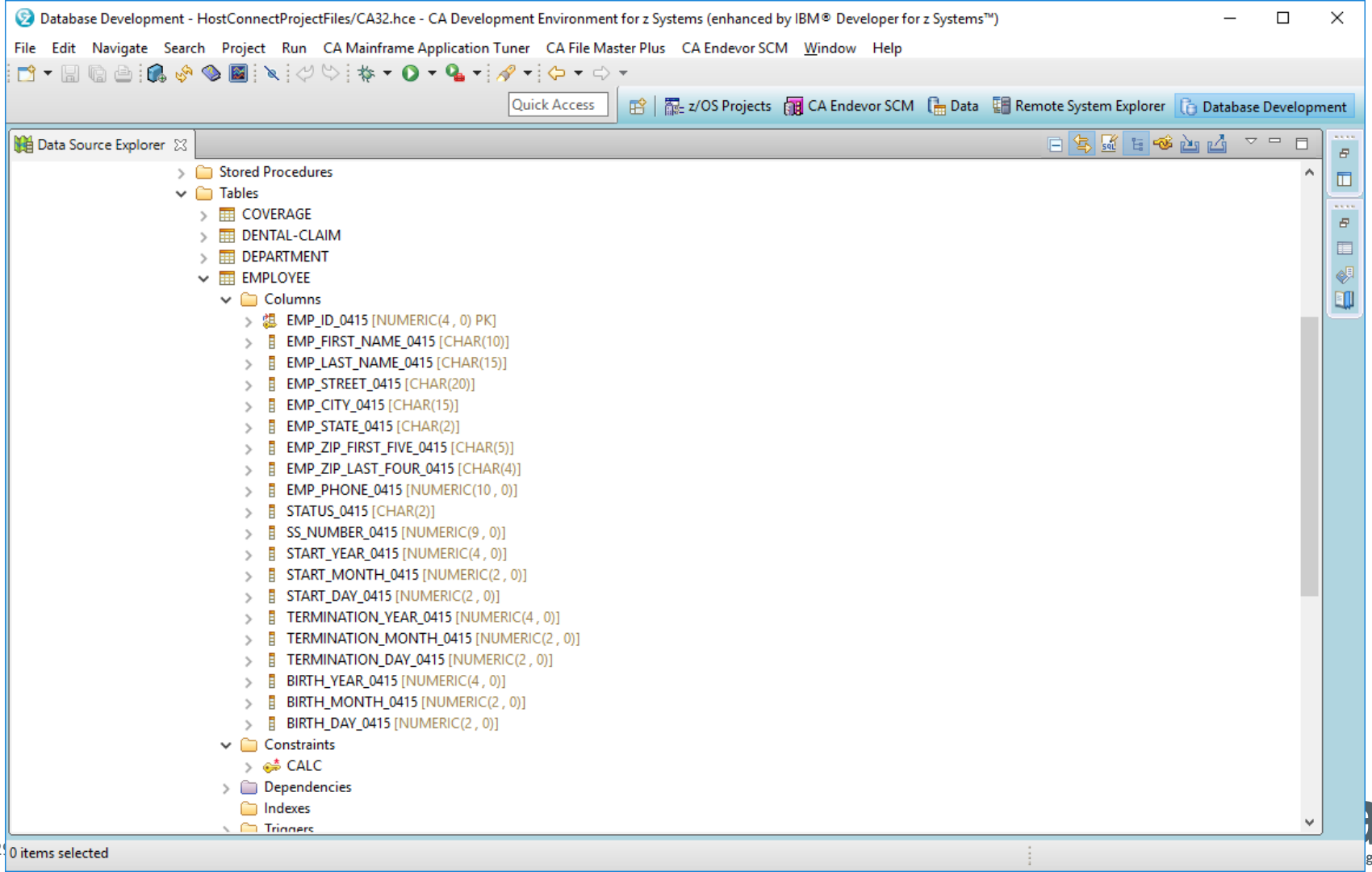
EMPLOYEE
EMPOSITION
EXPERTISE
HOSPITAL-CLAIM
INSURANCE-PLAN
JOB
NON-HOSP-CLAIM
OFFICE
SKILL
STRUCTURE
User-Defined Functions
User-Defined Types
Views
NETVFK
R162SNET
R162SSQL
0 items selected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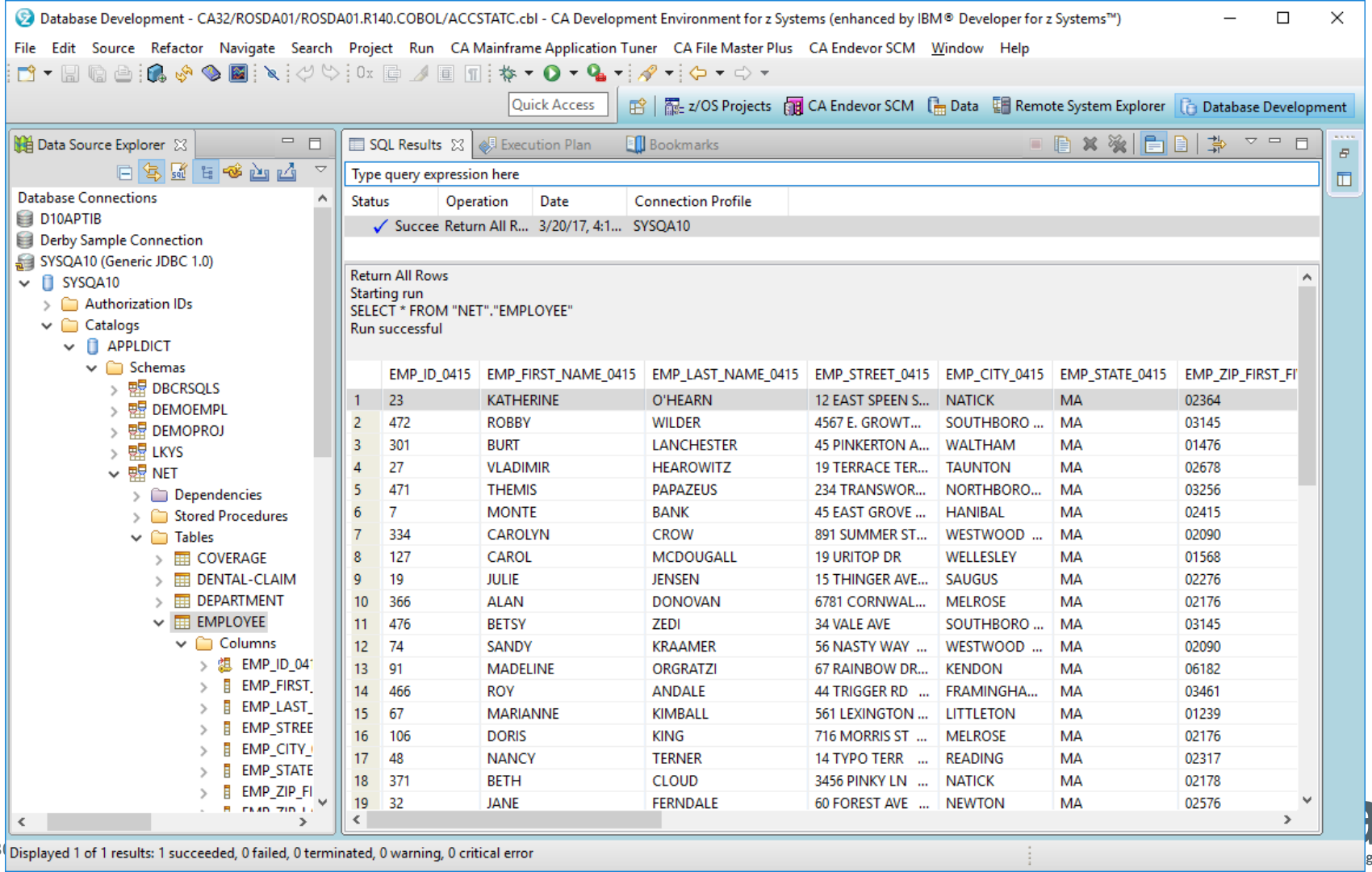
CA Endevor SCM
Data
Remote System Explorer
Database Development
Data Source Explorer
Stored Procedures
Tables
COVERAGE
DENTAL-CLAIM
DEPARTMENT
EMPLOYEE
Columns
EMP_ID_0415 [NUMERIC(4 , 0) PK]
EMP_FIRST_NAME_0415 [CHAR(10)]
EMP_LAST_NAME_0415 [CHAR(15)]
EMP_STREET_0415 [CHAR(20)]
EMP_CITY_0415 [CHAR(15)]
EMP_STATE_0415 [CHAR(2)]
EMP_ZIP_FIRST_FIVE_0415 [CHAR(5)]
EMP_ZIP_LAST_FOUR_0415 [CHAR(4)]
EMP_PHONE_0415 [NUMERIC(10 , 0)]
STATUS_0415 [CHAR(2)]
SS_NUMBER_0415 [NUMERIC(9 , 0)]
START_YEAR_0415 [NUMERIC(4 , 0)]
START_MONTH_0415 [NUMERIC(2 , 0)]
START_DAY_0415 [NUMERIC(2 , 0)]
TERMINATION_YEAR_0415 [NUMERIC(4 , 0)]
TERMINATION_MONTH_0415 [NUMERIC(2 , 0)]
TERMINATION_DAY_0415 [NUMERIC(2 , 0)]
BIRTH_YEAR_0415 [NUMERIC(4 , 0)]
BIRTH_MONTH_0415 [NUMERIC(2 , 0)]
BIRTH_DAY_0415 [NUMERIC(2 , 0)]
Constraints
CALC
Dependencies
Indexes
Triggers
0 items selected


Database Development - CA32/ROSDA01/ROSDA01.R140.COBOL/ACCSTATC.cbl - CA Development Environment for z Systems (enhanced by IBM® Developer for z Systems™)
File Edit Source Refactor Navigate Search Project Run CA Mainframe Application Tuner CA File Master Plus CA Endevor SCM Window Help
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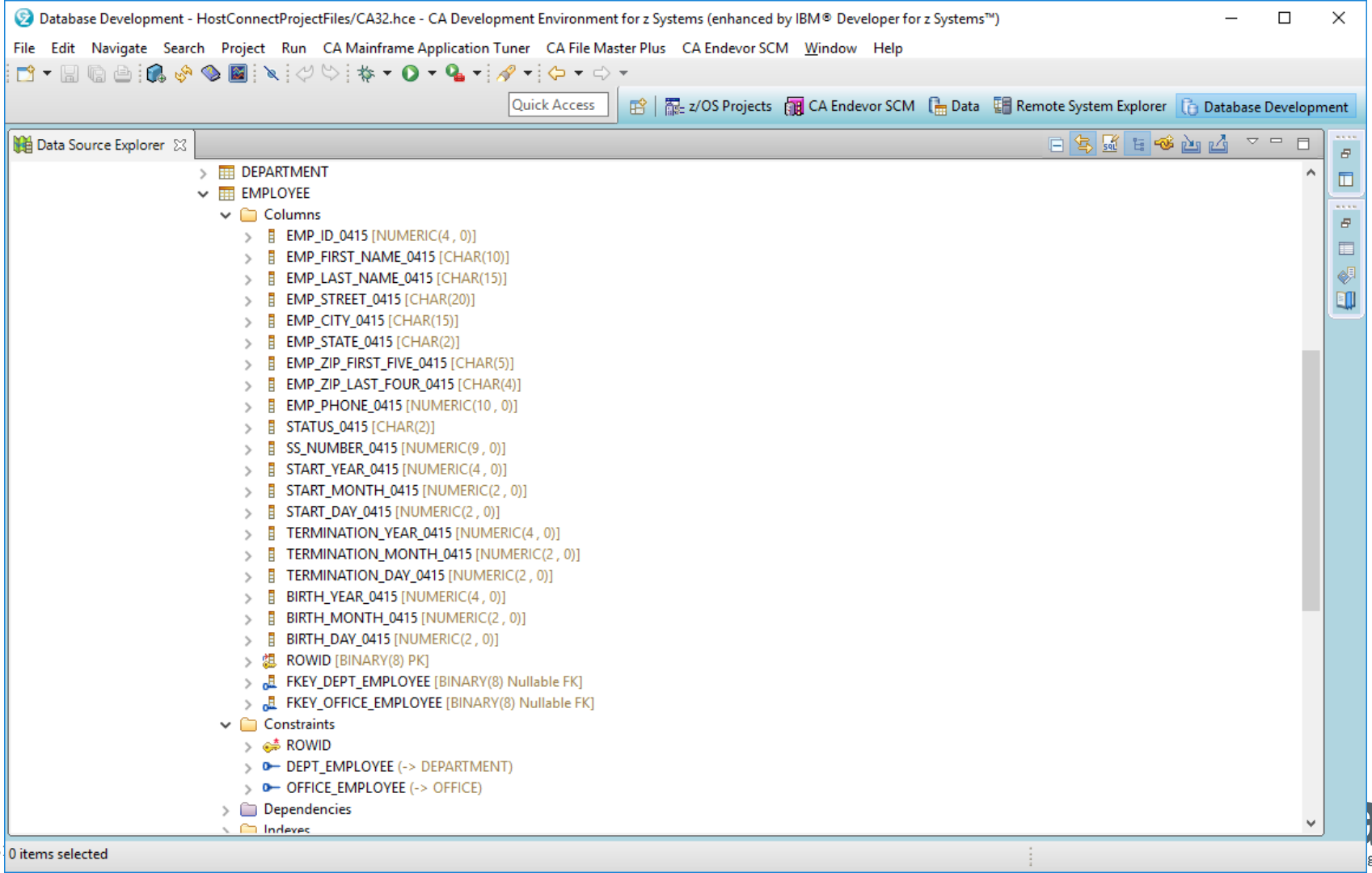
Data Source Explorer
Database Connections
D10APTIB
Derby Sample Connection
SYSQA10 (Generic JDBC 1.0)
SYSQA10
Authorization IDs
Catalogs
APPLDICT
Schemas
DBCRSQLS
DEMOEMPL
DEMOPROJ
LKYS
NET
Dependencies
Stored Procedures
Tables
COVERAGE
DENTAL-CLAIM
DEPARTMENT
EMPLOYEE
Columns
EMP_ID_04
EMP_FIRST_
EMP_LAST_
EMP_STREE
EMP_CITY_
EMP_STATE
EMP_ZIP_FI
SQL Results
Execution Plan
Bookmarks
Type query expression here
Status Operation Date Connection Profile
Succee Return All R... 3/20/17, 4:1... SYSQA10
Return All Rows
Starting run
SELECT * FROM "NET"."EMPLOYEE"
Run successful
EMP_ID_0415 EMP_FIRST_NAME_0415 EMP_LAST_NAME_0415 EMP_STREET_0415 EMP_CITY_0415 EMP_STATE_0415 EMP_ZIP_FIRST_FI
1 23 KATHERINE O'HEARN 12 EAST SPEEN S... NATICK MA 02364
2 472 ROBBY WILDER 4567 E. GROWT... SOUTHBORO ... MA 03145
3 301 BURT LANCHESTER 45 PINKERTON A... WALTHAM MA 01476
4 27 VLADIMIR HEAROWITZ 19 TERRACE TER... TAUNTON MA 02678
5 471 THEMIS PAPAZEUS 234 TRANSWOR... NORTHBORO... MA 03256
6 7 MONTE BANK 45 EAST GROVE ... HANIBAL MA 02415
7 334 CAROLYN CROW 891 SUMMER ST... WESTWOOD ... MA 02090
8 127 CAROL MCDOUGALL 19 URITOP DR WELLESLEY MA 01568
9 19 JULIE JENSEN 15 THINGER AVE... SAUGUS MA 02276
10 366 ALAN DONOVAN 6781 CORNWAL... MELROSE MA 02176
11 476 BETSY ZEDI 34 VALE AVE SOUTHBORO ... MA 03145
12 74 SANDY KRAAMER 56 NASTY WAY ... WESTWOOD ... MA 02090
13 91 MADELINE ORGRATZI 67 RAINBOW DR... KENDON MA 06182
14 466 ROY ANDALE 44 TRIGGER RD ... FRAMINGHA... MA 03461
15 67 MARIANNE KIMBALL 561 LEXINGTON ... LITTLETON MA 01239
16 106 DORIS KING 716 MORRIS ST ... MELROSE MA 02176
17 48 NANCY TERNER 14 TYPO TERR ... READING MA 02317
18 371 BETH CLOUD 3456 PINKY LN ... NATICK MA 02178
19 32 JANE FERNDALE 60 FOREST AVE ... NEWTON MA 02576
Displayed 1 of 1 results: 1 succeeded, 0 failed, 0 terminated, 0 warning, 0 critical error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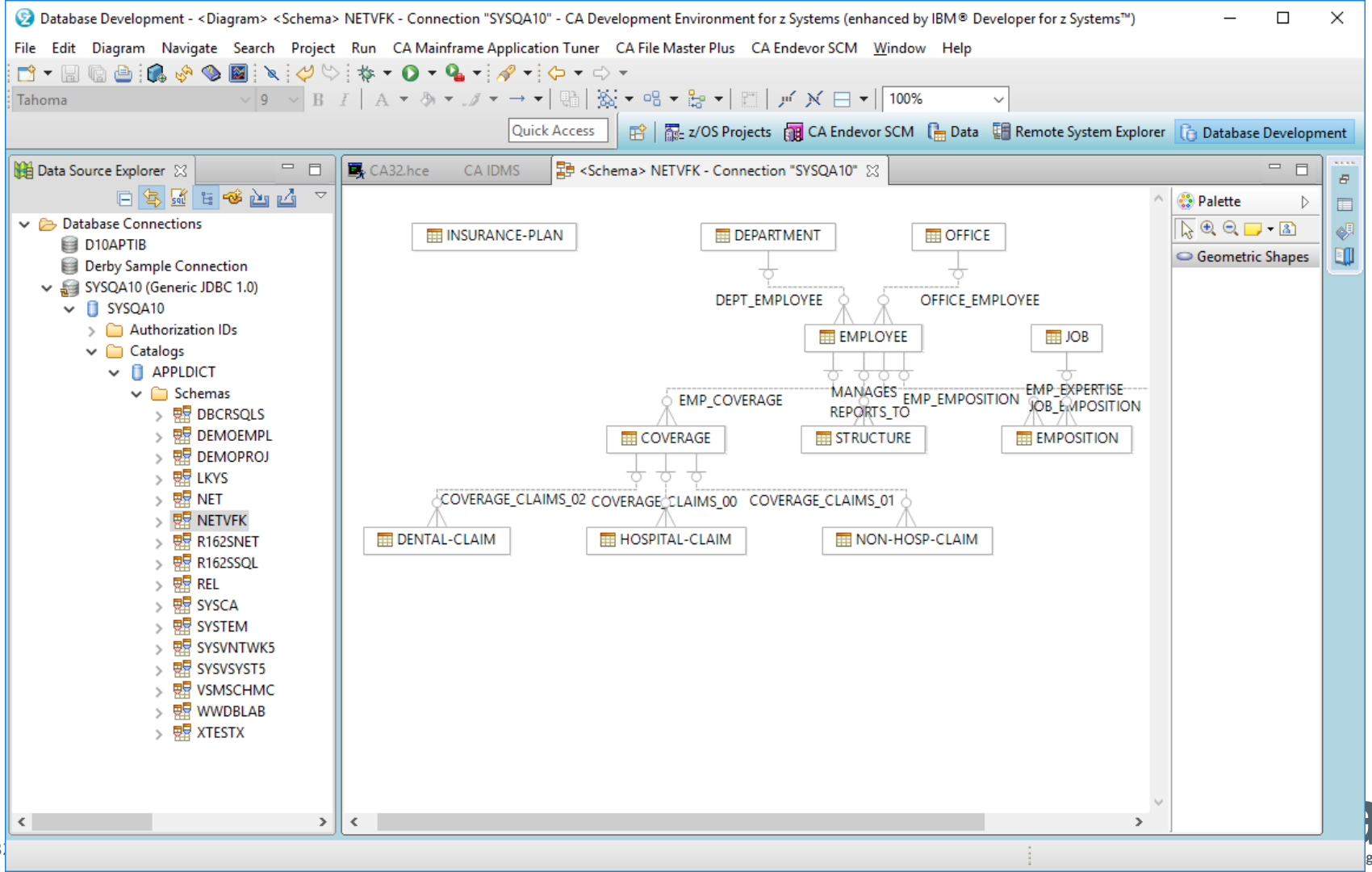
Quick Access
z/OS Projects
CA Endevor SCM
Data
Remote System Explorer
Database Development
Data Source Explorer
DEPARTMENT
EMPLOYEE
Columns
EMP_ID_0415 [NUMERIC(4 , 0)]
EMP_FIRST_NAME_0415 [CHAR(10)]
EMP_LAST_NAME_0415 [CHAR(15)]
EMP_STREET_0415 [CHAR(20)]
EMP_CITY_0415 [CHAR(15)]
EMP_STATE_0415 [CHAR(2)]
EMP_ZIP_FIRST_FIVE_0415 [CHAR(5)]
EMP_ZIP_LAST_FOUR_0415 [CHAR(4)]
EMP_PHONE_0415 [NUMERIC(10 , 0)]
STATUS_0415 [CHAR(2)]
SS_NUMBER_0415 [NUMERIC(9 , 0)]
START_YEAR_0415 [NUMERIC(4 , 0)]
START_MONTH_0415 [NUMERIC(2 , 0)]
START_DAY_0415 [NUMERIC(2 , 0)]
TERMINATION_YEAR_0415 [NUMERIC(4 , 0)]
TERMINATION_MONTH_0415 [NUMERIC(2 , 0)]
TERMINATION_DAY_0415 [NUMERIC(2 , 0)]
BIRTH_YEAR_0415 [NUMERIC(4 , 0)]
BIRTH_MONTH_0415 [NUMERIC(2 , 0)]
BIRTH_DAY_0415 [NUMERIC(2 , 0)]
ROWID [BINARY(8) PK]
FKEY_DEPT_EMPLOYEE [BINARY(8) Nullable FK]
FKEY_OFFICE_EMPLOYEE [BINARY(8) Nullable FK]
Constraints
ROWID
DEPT_EMPLOYEE (-> DEPARTMENT)
OFFICE_EMPLOYEE (-> OFFICE)
Dependencies
Indexes
0 items selected


Database Development - <Diagram> <Schema> NETVFK - Connection "SYSQA10" - CA Development Environment for z Systems (enhanced by IBM® Developer for z Systems™)
File Edit Diagram Navigate Search Project Run CA Mainframe Application Tuner CA File Master Plus CA Endevor SCM Window Help
Tahoma 9 100%
Quick Access
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Data Source Explorer
Database Connections
D10APTIB
Derby Sample Connection
SYSQA10 (Generic JDBC 1.0)
SYSQA10
Authorization IDs
Catalogs
APPLDICT
Schemas
DBCRSQLS
DEMOEMPL
DEMOPROJ
LKYS
NET
NETVFK
R162SNET
R162SSQL
REL
SYSCA
SYSTEM
SYSVNTWK5
SYSVSYST5
VSMSCHMC
WWDBLAB
XTESTX
CA32.hce
CA IDMS
<Schema> NETVFK - Connection "SYSQA10"
INSURANCE-PLAN
DEPARTMENT
OFFICE
DEPT_EMPLOYEE
OFFICE_EMPLOYEE
EMPLOYEE
JOB
EMP_COVERAGE
MANAGES
REPORTS_TO
EMP_EMPOSITION
EMP_EXPERTISE
JOB_EMPOSITION
COVERAGE
STRUCTURE
EMPOSITION
COVERAGE_CLAIMS_02
COVERAGE_CLAIMS_00
COVERAGE_CLAIMS_01
DENTAL-CLAIM
HOSPITAL-CLAIM
NON-HOSP-CLAIM
Palette
Geometric Shapes

Displaying Network Schema Diagrams

CA IDMS Schema Diagram Editor for Eclipse

- Open Source Eclipse plug-in
- Luc Hermans
  - Developer
  - BIUA co-president
- https://sites.google.com/site/idmsschemasineclipse/home
- Install within Eclipse form Eclipse Market Place

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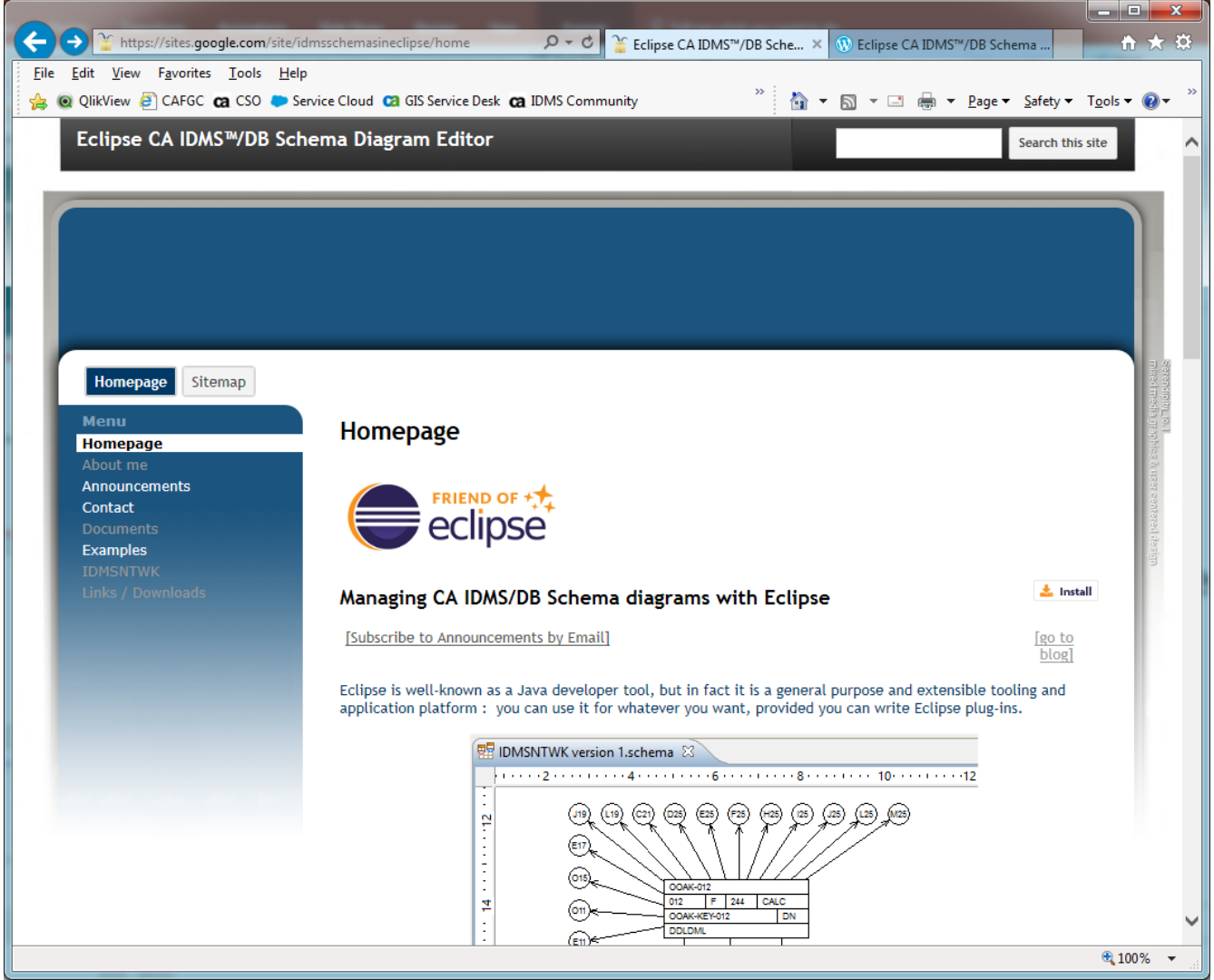

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Java EE - Schema/EmpDemo.schema - Eclipse

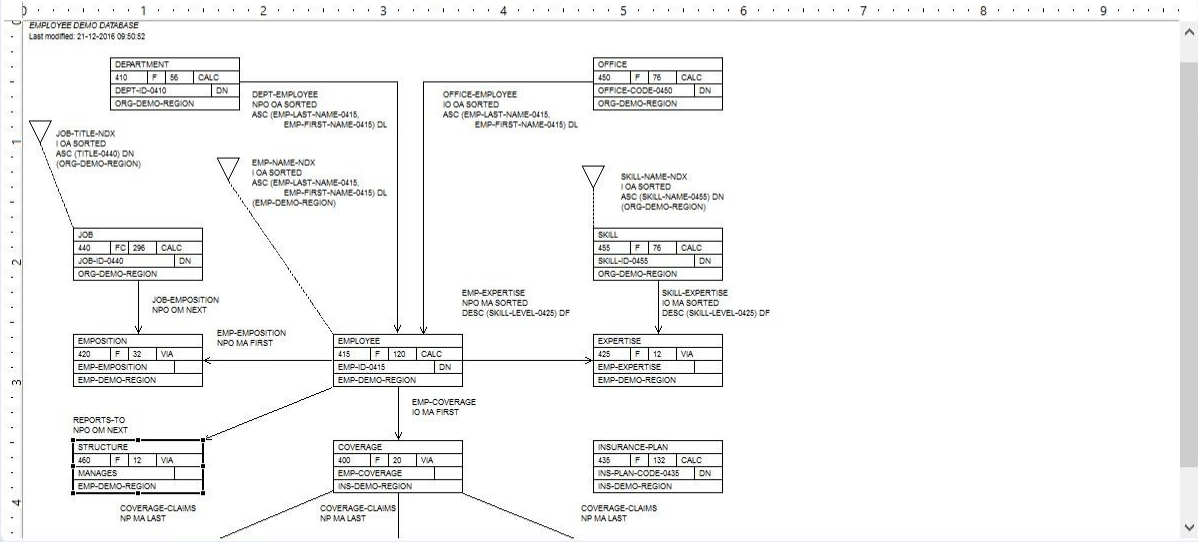
File Edit Diagram Navigate Search Project Run Window Help

Quick Access | Java EE | Java | Debug

Project Explorer

- Carros
- IDMS_Access
- Schema
  - AGD.schema
  - API.schema
  - EmpDemo.schema
  - EMPSCHM version 100.schema
  - Fabiana.schema
  - FGTS.schema
  - HLP.schema
  - IDMSNTWK version 1 (Release
  - MSG.schema
  - SSG.schema
  - Teste
  - Teste2.schema
- Servers2
- ServidorWeb2
- Socket_Client

IDMSNTWK version 1 (Release 18.5).schema | EmpDemo.schema



Palette

- General
  - Label
- Records
  - Record
- Sets
  - Chained Set
  - Multiple-member Set
  - Indexed Set
  - Index
  - VSAM Index
  - Connector

Outline | JUnit

Runs: 0/ Errors: Failures:

Failure Trace

Problems | Tasks | Properties | Servers | Data Source Explorer | Snippets | Console | Error Log

General
Dictionary
Length
Procedures
VIA
Prefix
Syntax
DSL

```
    ADD
    RECORD NAME IS STRUCTURE
        SHARE STRUCTURE OF RECORD STRUCTURE VERSION 100
        RECORD ID IS 460
        LOCATION MODE IS VIA MANAGES SET
        WITHIN AREA EMP-DEMO-REGION OFFSET 5 PAGES FOR 95 PAGES
*+      MEMBER OF SET MANAGES
*+          NEXT DBKEY POSITION IS 1
*+          PRIOR DBKEY POSITION IS 2
*+          OWNER DBKEY POSITION IS 3
*+      MEMBER OF SET REPORTS-TO
*+          NEXT DBKEY POSITION IS 4
*+          PRIOR DBKEY POSITION IS 5
*+          OWNER DBKEY POSITION IS 6
```

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Making It Work

Configuring for CA IDMS

- CA IDMS pre-processer integration
  - Configure in COBOL Editor in Property Group
  - Customize sample Rexx script on MF
  - <HLQ>.#CUST.CNTL(FEKRNPLI)
- Compile and link
  - Configure COBOL Procedures in Property Group
  - Customize sample JCL procedures on MF
  - <HLQ>.#CUST.CNTL(ELAXFCOC), …

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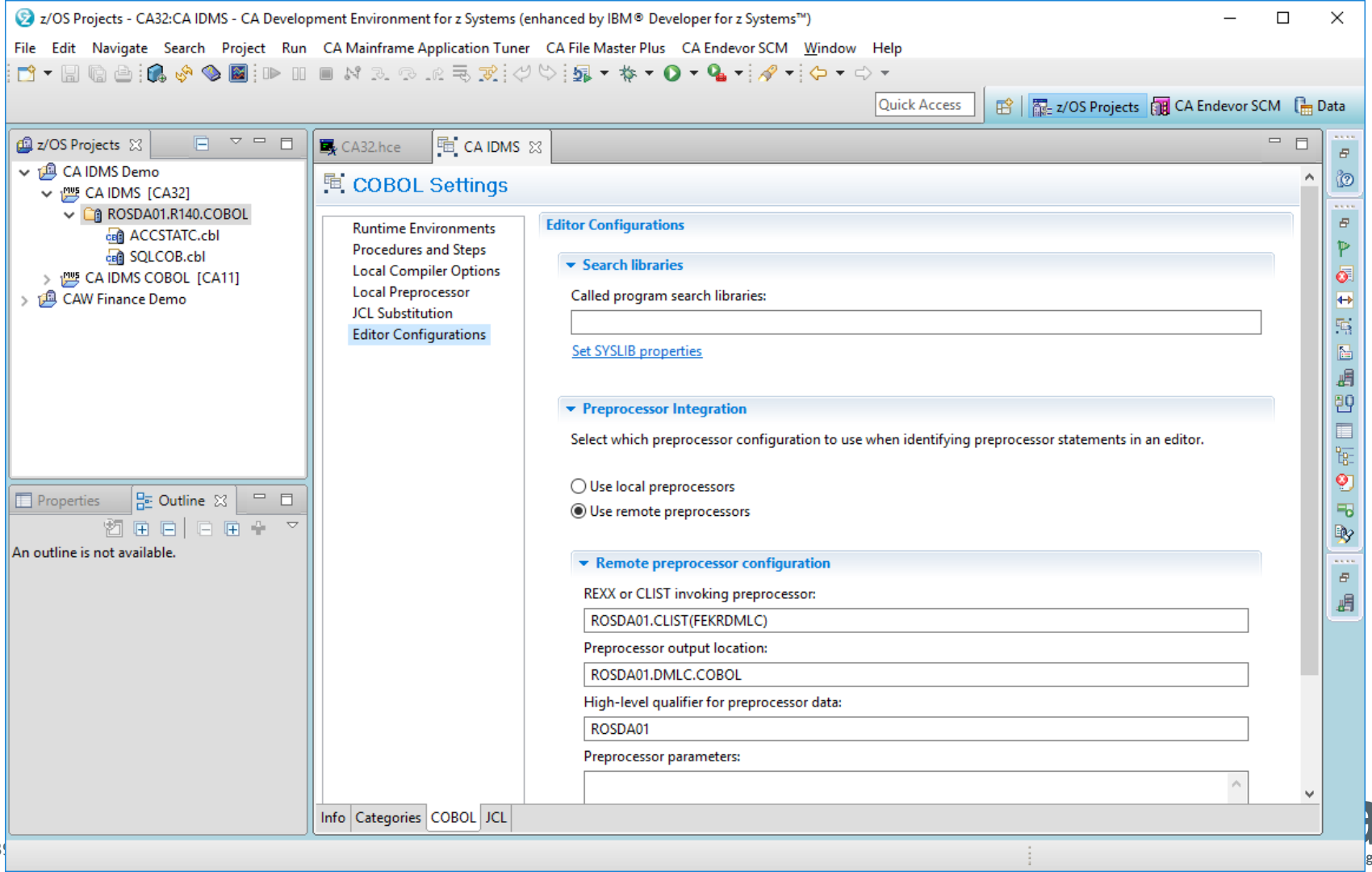
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CA Endevor SCM
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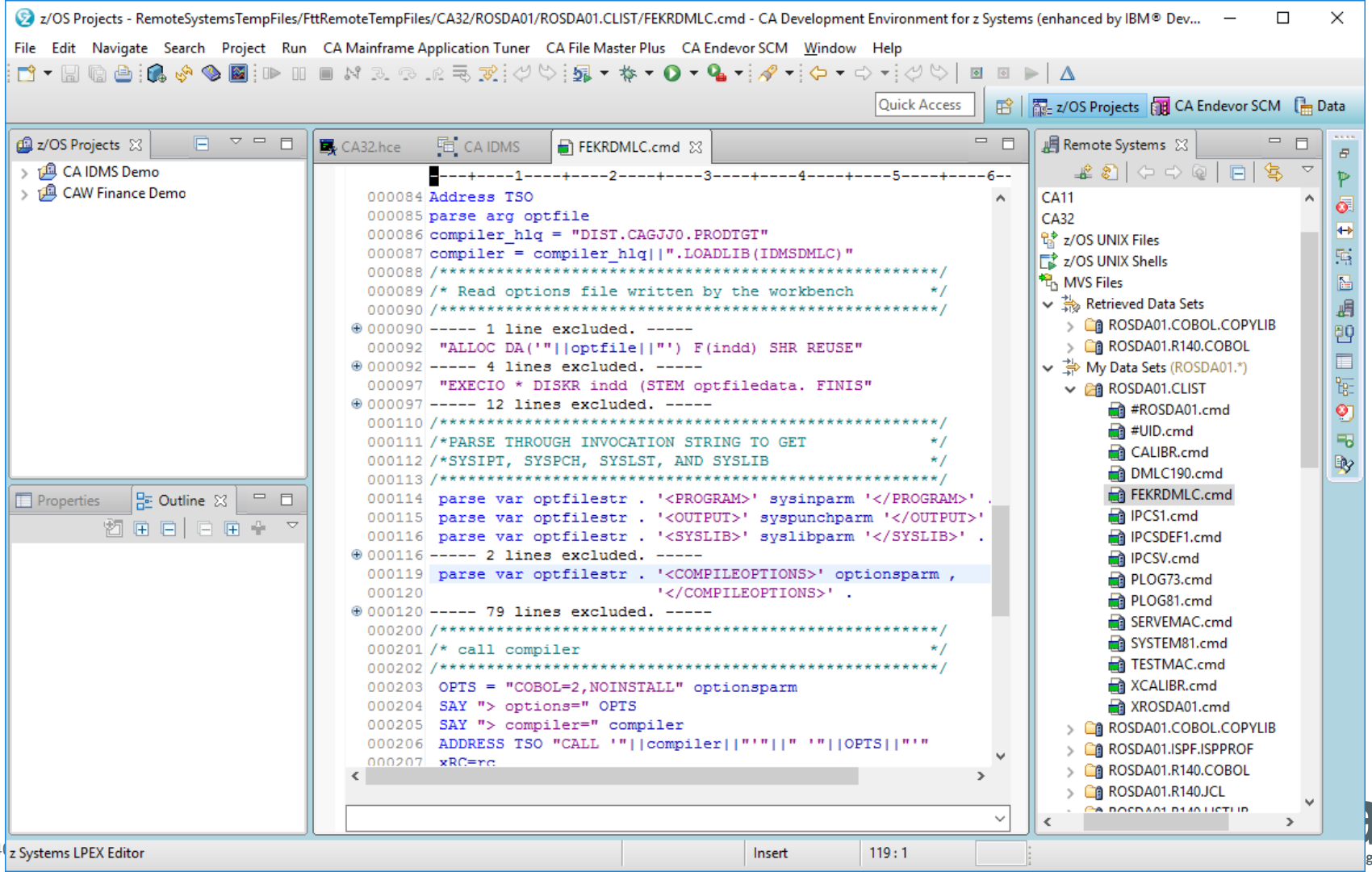
z/OS Projects
CA IDMS Demo
CA IDMS [CA32]
ROSDA01.R140.COBOL
ACCSTATC.cbl
SQLCOB.cbl
CA IDMS COBOL [CA11]
CAW Finance Demo
Properties
Outline
An outline is not available.
CA32.hce
CA IDMS
COBOL Settings
Runtime Environments
Procedures and Steps
Local Compiler Options
Local Preprocessor
JCL Substitution
Editor Configurations
Editor Configurations
Search libraries
Called program search libraries:
Set SYSLIB properties
Preprocessor Integration
Select which preprocessor configuration to use when identifying preprocessor statements in an editor.
Use local preprocessors
Use remote preprocessors
Remote preprocessor configuration
REXX or CLIST invoking preprocessor:
ROSDA01.CLIST(FEKRDMLC)
Preprocessor output location:
ROSDA01.DMLC.COBOL
High-level qualifier for preprocessor data:
ROSDA01
Preprocessor parameters:
Info
Categories
COBOL
JCL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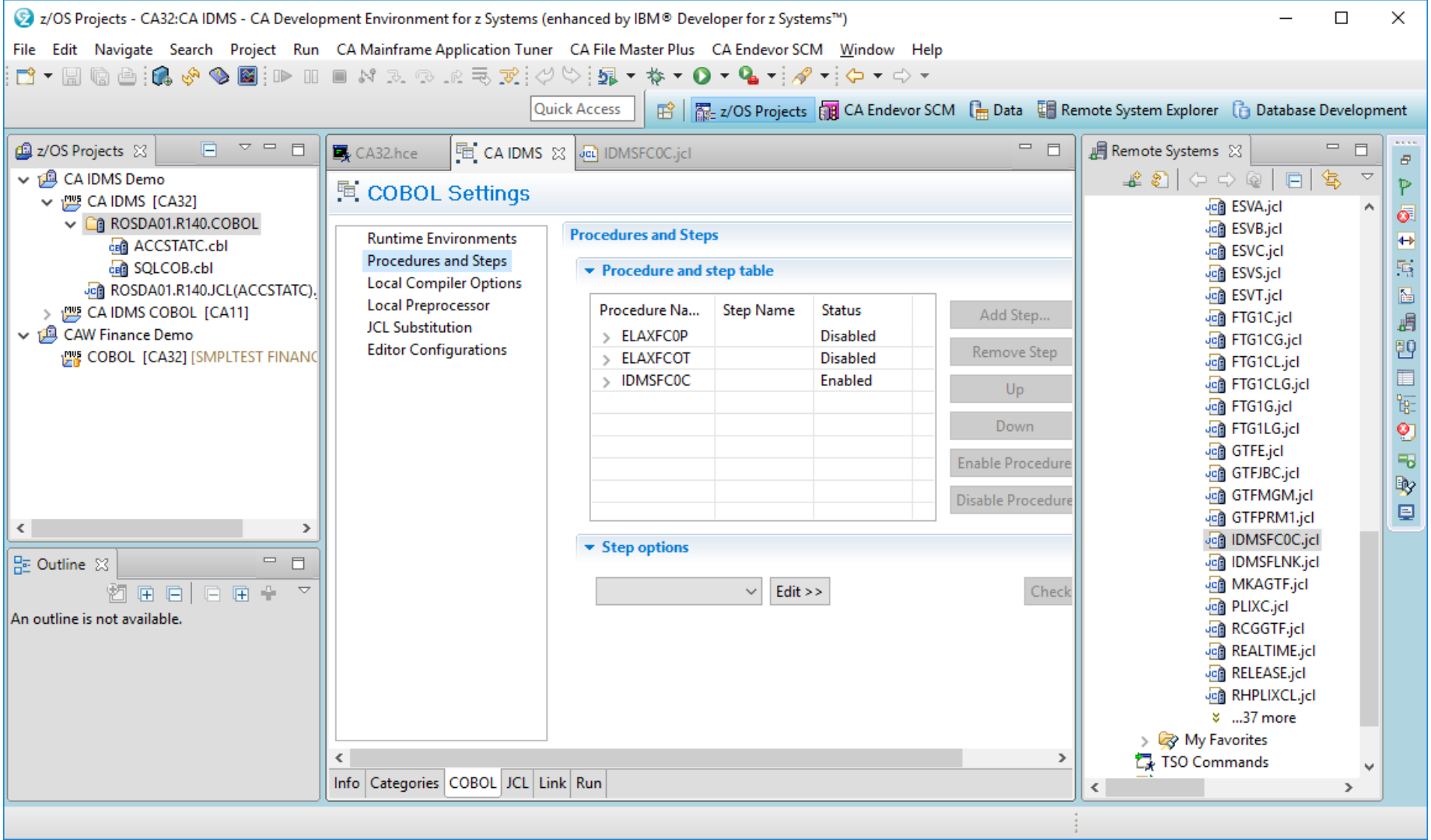
Data
z/OS Projects
CA IDMS Demo
CAW Finance Demo
Properties
Outline
CA32.hce
CA IDMS
FEKRDMLC.cmd
000084 Address TSO
000085 parse arg optfile
000086 compiler_hlq = "DIST.CAGJJ0.PRODTGT"
000087 compiler = compiler_hlq||".LOADLIB(IDMSDMLC)"
000088 /***/
000089 /* Read options file written by the workbench */
000090 /***/
000090 ----- 1 line excluded. -----
000092 "ALLOC DA('"||optfile||"') F(indd) SHR REUSE"
000092 ----- 4 lines excluded. -----
000097 "EXECIO * DISKR indd (STEM optfiledata. FINIS"
000097 ----- 12 lines excluded. -----
000110 /***/
000111 /*PARSE THROUGH INVOCATION STRING TO GET */
000112 /*SYSIPT, SYSPCH, SYSLST, AND SYSLIB */
000113 /***/
000114 parse var optfilestr . '<PROGRAM>' sysinparm '</PROGRAM>' .
000115 parse var optfilestr . '<OUTPUT>' syspunchparm '</OUTPUT>'
000116 parse var optfilestr . '<SYSLIB>' syslibparm '</SYSLIB>' .
000116 ----- 2 lines excluded. -----
000119 parse var optfilestr . '<COMPILEOPTIONS>' optionsparm ,
000120 '</COMPILEOPTIONS>' .
000120 ----- 79 lines excluded. -----
000200 /***/
000201 /* call compiler */
000202 /***/
000203 OPTS = "COBOL=2,NOINSTALL" optionsparm
000204 SAY "> options=" OPTS
000205 SAY "> compiler=" compiler
000206 ADDRESS TSO "CALL '"||compiler||"'"||" '"||OPTS||"'"
000207 xRC=rc
Remote Systems
CA11
CA32
z/OS UNIX Files
z/OS UNIX Shells
MVS Files
Retrieved Data Sets
ROSDA01.COBOL.COPYLIB
ROSDA01.R140.COBOL
My Data Sets (ROSDA01.*)
ROSDA01.CLIST
#ROSDA01.cmd
#UID.cmd
CALIBR.cmd
DMLC190.cmd
FEKRDMLC.cmd
IPCS1.cmd
IPCSDEF1.cmd
IPCSV.cmd
PLOG73.cmd
PLOG81.cmd
SERVEMAC.cmd
SYSTEM81.cmd
TESTMAC.cmd
XCALIBR.cmd
XROSDA01.cmd
ROSDA01.COBOL.COPYLIB
ROSDA01.ISPF.ISPPROF
ROSDA01.R140.COBOL
ROSDA01.R140.JCL
z Systems LPEX Editor
Insert
119 : 1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ACCSTATC.cbl
SQLCOB.cbl
ROSDA01.R140.JCL(ACCSTATC).
CA IDMS COBOL [CA11]
CAW Finance Demo
COBOL [CA32] [SMPLTEST FINANC
Outline
An outline is not available.
CA32.hce
CA IDMS
IDMSFC0C.jcl
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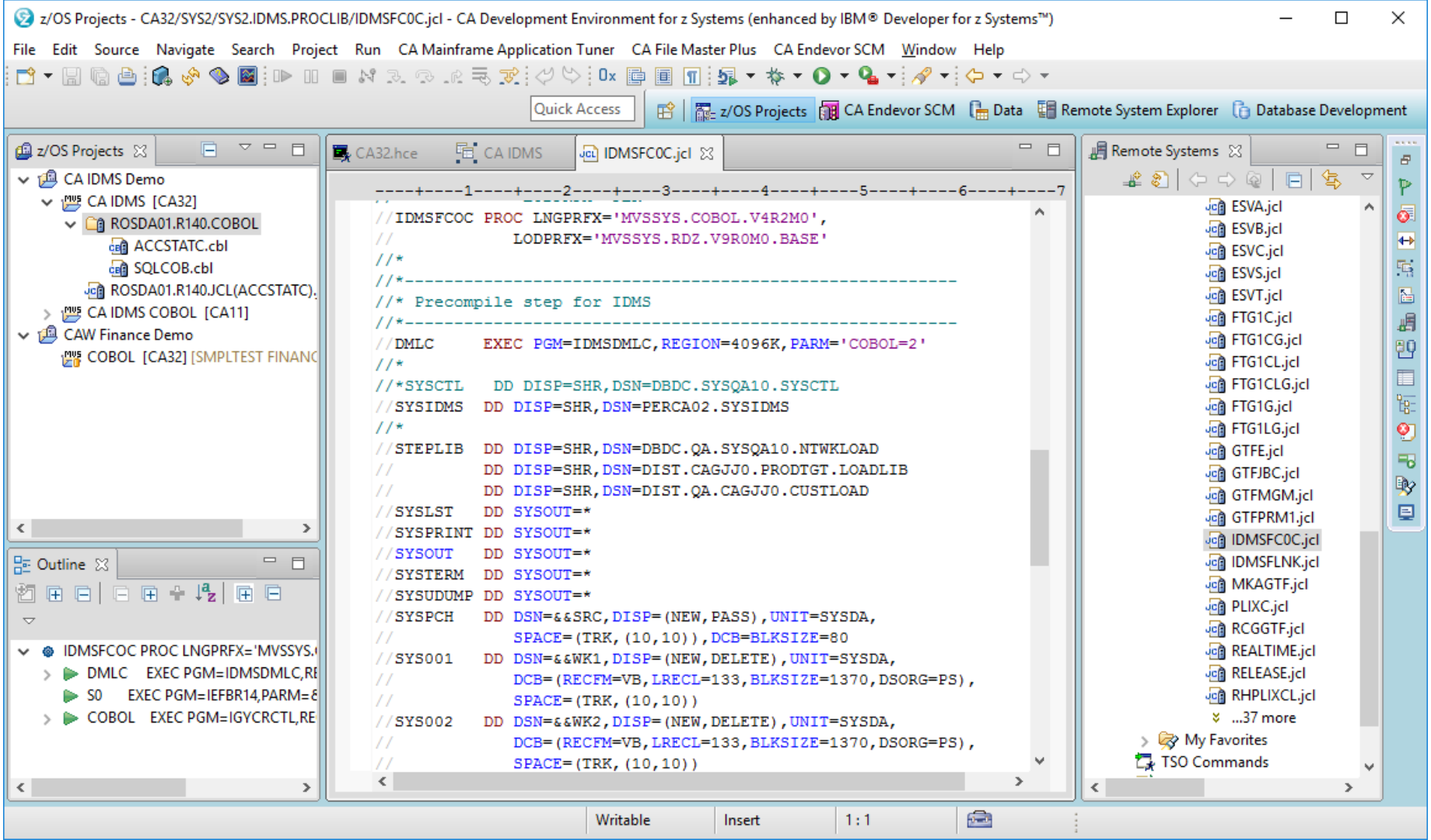
Local Preprocessor
JCL Substitution
Editor Configurations
Procedures and Steps
Procedure and step table
Procedure Na...
Step Name
Status
ELAXFC0P
Disabled
ELAXFCOT
Disabled
IDMSFC0C
Enabled
Add Step...
Remove Step
Up
Down
Enable Procedure
Disable Procedure
Step options
Edit >>
Check
Info
Categories
COBOL
JCL
Link
Run
Remote Systems
ESVA.jcl
ESVB.jcl
ESVC.jcl
ESVS.jcl
ESVT.jcl
FTG1C.jcl
FTG1CG.jcl
FTG1CL.jcl
FTG1CLG.jcl
FTG1G.jcl
FTG1LG.jcl
GTFE.jcl
GTFJBC.jcl
GTFMGM.jcl
GTFPRM1.jcl
IDMSFC0C.jcl
IDMSFLNK.jcl
MKAGTF.jcl
PLIXC.jcl
RCGGTF.jcl
REALTIME.jcl
RELEASE.jcl
RHPLIXCL.jcl
...37 more
My Favorites
TSO Commands


z/OS Projects - CA32/SYS2/SYS2.IDMS.PROCLIB/IDMSFC0C.jcl - CA Development Environment for z Systems (enhanced by IBM® Developer for z Systems™)
File Edit Source Navigate Search Project Run CA Mainframe Application Tuner CA File Master Plus CA Endevor SCM Window Help
Quick Access
z/OS Projects
CA Endevor SCM
Data
Remote System Explorer
Database Development
z/OS Projects
CA IDMS Demo
CA IDMS [CA32]
ROSDA01.R140.COBOL
ACCSTATC.cbl
SQLCOB.cbl
ROSDA01.R140.JCL(ACCSTATC).
CA IDMS COBOL [CA11]
CAW Finance Demo
COBOL [CA32] [SMPLTEST FINANC
Outline
IDMSFCOC PROC LNGPRFX='MVSSYS.
DMLC EXEC PGM=IDMSDMLC,RE
S0 EXEC PGM=IEFBR14,PARM=8
COBOL EXEC PGM=IGYCRCTL,RE
CA32.hce
CA IDMS
IDMSFC0C.jcl
----+----1----+----2----+----3----+----4----+----5----+----6----+----7
//IDMSFCOC PROC LNGPRFX='MVSSYS.COBOL.V4R2M0',
// LODPRFX='MVSSYS.RDZ.V9R0M0.BASE'
//*
//*---
//* Precompile step for IDMS
//*---
//DMLC EXEC PGM=IDMSDMLC,REGION=4096K,PARM='COBOL=2'
//*
//*SYSCTL DD DISP=SHR,DSN=DBDC.SYSQA10.SYSCTL
//SYSIDMS DD DISP=SHR,DSN=PERCA02.SYSIDMS
//*
//STEPLIB DD DISP=SHR,DSN=DBDC.QA.SYSQA10.NTWKLOAD
// DD DISP=SHR,DSN=DIST.CAGJJ0.PRODTGT.LOADLIB
// DD DISP=SHR,DSN=DIST.QA.CAGJJ0.CUSTLOAD
//SYSLST DD SYSOUT=*
//SYSPRINT DD SYSOUT=*
//SYSOUT DD SYSOUT=*
//SYSTERM DD SYSOUT=*
//SYSUDUMP DD SYSOUT=*
//SYSPCH DD DSN=&&SRC,DISP=(NEW,PASS),UNIT=SYSDA,
// SPACE=(TRK,(10,10)),DCB=BLKSIZE=80
//SYS001 DD DSN=&&WK1,DISP=(NEW,DELETE),UNIT=SYSDA,
// DCB=(RECFM=VB,LRECL=133,BLKSIZE=1370,DSORG=PS),
// SPACE=(TRK,(10,10))
//SYS002 DD DSN=&&WK2,DISP=(NEW,DELETE),UNIT=SYSDA,
// DCB=(RECFM=VB,LRECL=133,BLKSIZE=1370,DSORG=PS),
// SPACE=(TRK,(10,10))
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RELEASE.jcl
RHPLIXCL.jcl
...37 more
My Favorites
TSO Commands
Writable
Insert
1 : 1

CA IDMS Integration Roadmap - Planned

- Available for evaluation and feedback
  - Configuration samples and documentation
  - COBOL and PL/1
  - Rich editor pre-processor integration REXX scripts
  - Compile and link JCL procedures
- In progress
  - Rich editor integration for Assembler
  - CICS integration

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CA IDMS Integration Roadmap

- Under Consideration
  - More advanced integration
  - ADS support
  - Rich editing
  - Dictionary integration

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ca technologies

Summary

- Modern development environment for CA IDMS
  - CA Development Environment for System Z
  - IBM version too
- Edit, compile, and debug CA IDMS programs
- Explore and diagram CA IDMS databases
- Guidelines for configuring to work with CA IDMS

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ca technologies

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