RACF for z/OS Systems Programmers Training

Duration: **3 Day**

BILGINC
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This advanced, three-day course is designed, written and presented by specialist RACF consultants.
It provides a detailed insight into the technical architecture of RACF and z/OS for z/OS Systems Programmers. The course describes and explains how RACF is implemented and how it can be customised using standard RACF facilities.

This course is also available for one-company, on-site presentations and for live presentation over the Internet, via the Virtual Classroom Environment service.

Prerequisites

Attendees should have a full understanding of RACF at a conceptual level and be familiar with all of the RACF commands and how they are utilised. This can be achieved by attending the courses **RACF Administration & Auditing** and **Advanced RACF Administration**.

What You Will Learn

- describe the RACF architecture, its components and facilities
- customise RACF to meet the requirements of their organisation and its environment
- describe how RACF interacts with USS, DB2 for z/OS and CICS
- describe and use all of the RACF Utilities, using JCL and REXX
- identify how the operation of RACF changes when running in a parallel sysplex
- describe and explain the IPL process and the security issues associated with facilities such as APF, PPT, System Exits and Linklist
- describe the components of the RACF database.

Training Outline

What is RACF?

Why do we need security?; What does security provide?; How does RACF work?; RACF Profiles; RACF classes; How many RACF classes?; Controlling access; RACF commands.

z/OS Technical Overview

z/OS controls & drivers; The IPL process; PARMLIB & IPLPARM; Display IPLINFO; LOADxx & IODF; System parameter list IEASYSxx; What is APF?; Defining an APF authorised library; Program Properties Table; Linklist; Dynamic changes; SMFPRMxx; System exits; In-storage profiles; RACLIST & GENLIST; Group tree in storage; ACEE data in memory.

The RACF Database

The RACF database; Database format; Database templates; RACF templates; Issues; Dynamic template objectives; New template support; RACF initialisation; IRRMIN00; Multiple database support; RACF database sharing; The RVARY command; RVARY passwords; RACF FAILSOFT processing; Database backup & recovery.

RACF Modules

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RACF control tables; Modules everywhere!; ICHRDSNT; ICHRRNG; Class Descriptor Table (CDT); Dynamic CDT; Defining a Dynamic CDT; Rules; POSIT values; New segment CDTINFO; CDTINFO options; Managing Dynamic CDTs; Migration Utility (CDT2DYN); ICHRFR01; ICHRIN03; ICHAUTAB; ICHNCV00.

RACF in a Sysplex

Types of Sysplex; basic Sysplex; Parallel Sysplex; RACF and Sysplex; RACF communication; RACF data sharing; RACF data sharing problems; the four Sysplex modes; the RACF database name table; Coupling Facility structures; defining Coupling Facility structures; in-storage profiles; RACLISTed profiles via RACROUTE; in-storage profiles and Sysplex; introducing RACGLIST; RACGLIST and REFRESH; using RACGLIST.

RACF and Other Subsystems

RACF and UNIX System Services
What is 'UNIX System Services (USS)'?; How is it related to RACF?; Userids; UNIX identity; UNIX user definition; User definition example; User definition - system resource limits; Default UNIX User & Group identity.
RACF and DB2
DB2/RACF security overview; Sign-on security; Connection security; DB2 internal security; Other options; Security strategy (Transaction Manager or DB2); Security strategy (centralised or decentralised); Using remote applications.
RACF & CICS
The CICS-RACF interface; The role of CICS in security control; Region wide requirements; Interface implementation; CICS-RACF interfaces.

RACF Utilities

RACF utilities; IRRUT100; IRRUT100 examples: output (Group), output (User); IRRUT200; IRRUT200 example JCL; IRRUT200 example output; IRRUT400; IRRUT400 example JCL; IRRADU00; IRRADU00 example JCL; ICHDSM00; ICHDSM00 example JCL; IRRDBU00; IRRDBU00 example; IRRRID00; IRRRID00 JCL; BLKUPD; IRRBRW00; IRRRID00 JCL; SMF unload utility using XML; ICETOOL; IRRICE package; The Audit Reporting tool.

RACF Control Blocks

RACF control blocks; RACF Communications Vector Table (RCVT); Finding the RCVT; Understanding the RCVT; Data in the RCVT; RCVT vs ICB; SAF Vector Table (SAFV); Finding the SAFV; Accessor Environment Element (ACEE); Where's my ACEE?; ASXBSENV; TCBSENV; Local Control Block; Which ACEE is used?; Which ACEE do I need?; Caveat ACEE; Finding the active ACEE; Security Token; Security Token contents; Security Token uses; ACEE versus Token.

RACF Macros

RACF macros; Macro interfaces; The MVS router (SAF); RACF macros; What do they DO?; RACF macros: RACHECK, RACINIT, RACLIST, FRACHECK, RACDEF, RACSTAT; RACROUTE additions; ICHEINTY; The RACROUTE interface; RACROUTE MF= styles; SAF Parameter list (SAFP); Initialising SAFP; SAFP setup; SAF Work Area (SAFW); SAFW setup; History of REQSTOR & SUBSYS; Using REQSTOR & SUBSYS; Setting up REQSTOR and SUBSYS; Other RACROUTE information; The ACEE - AGAIN!; Return codes;

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REQUEST=Verify; RACINIT ENVIR= options; RACINIT ENVIR=CREATE; Who do you create?; RACINIT STAT=; ENVIR=CREATE ACEE=; Sample user/password=; Sample with PASSCHK=NO; Sample with Token; Create SESSION=; Create with TERMINAL=; POE=; TERMINAL= vs POE=; Sample with POE=; What about IP addresses?; RACINIT ENVIR=DELETE; ENVIR=DELETE ACEE=; Sample DELETE; REQUEST=AUTH; CLASS=; ENTITY/ENTITYX; ENTITY(X) examples; Sample RACHECK.

RACF Exits

RACF exits; RACF exits; RACF exits; ICHRTX00/01; Pre-processing for ICHRTX00; ICHRTX00: input, output; Pre-exit commonalities; Post-exit commonalities; Pre- to post- communication; Work area pointer; From post- to pre-; 'Gotchas' for SVC exits; Need some input; Finding the parameter list; Coding RACF exits; RACF command exit (IRREVX01); What's a 'dynamic exit'?; RACF IRREVX01 dynamic exit; What can you do in the exit?; IRREVX01 parameter list; The exit command buffer; Using the ACEE passed in exit; Testing your command exit; Sample SETPROG command; Dynamic exit security.

Question & Answer Session