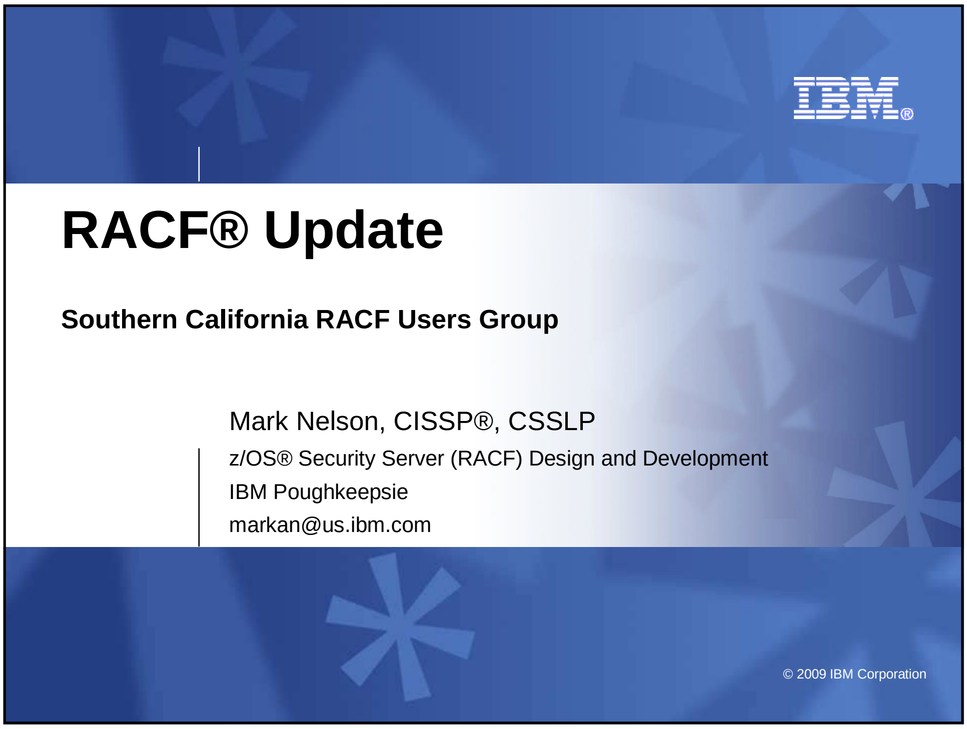

RACF® Update

Southern California RACF Users Group

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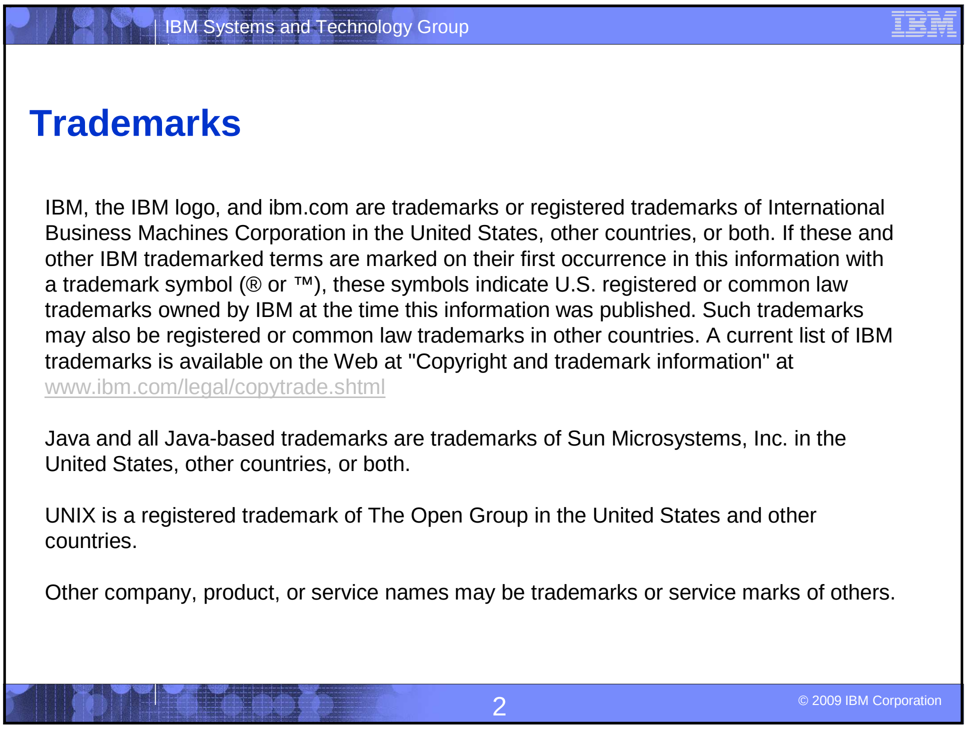

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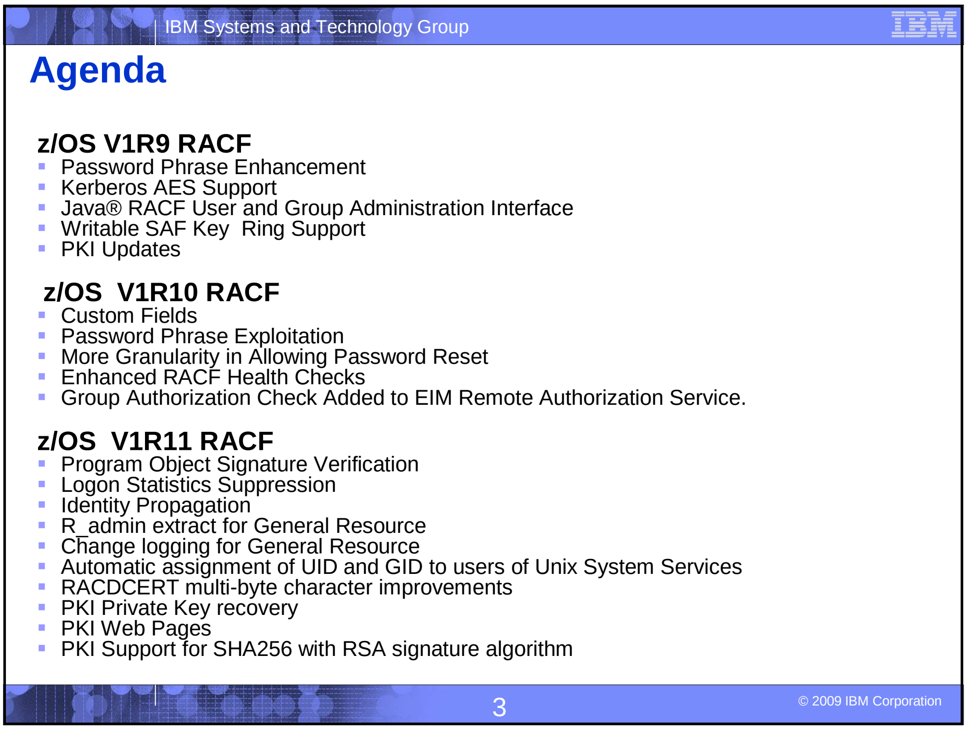
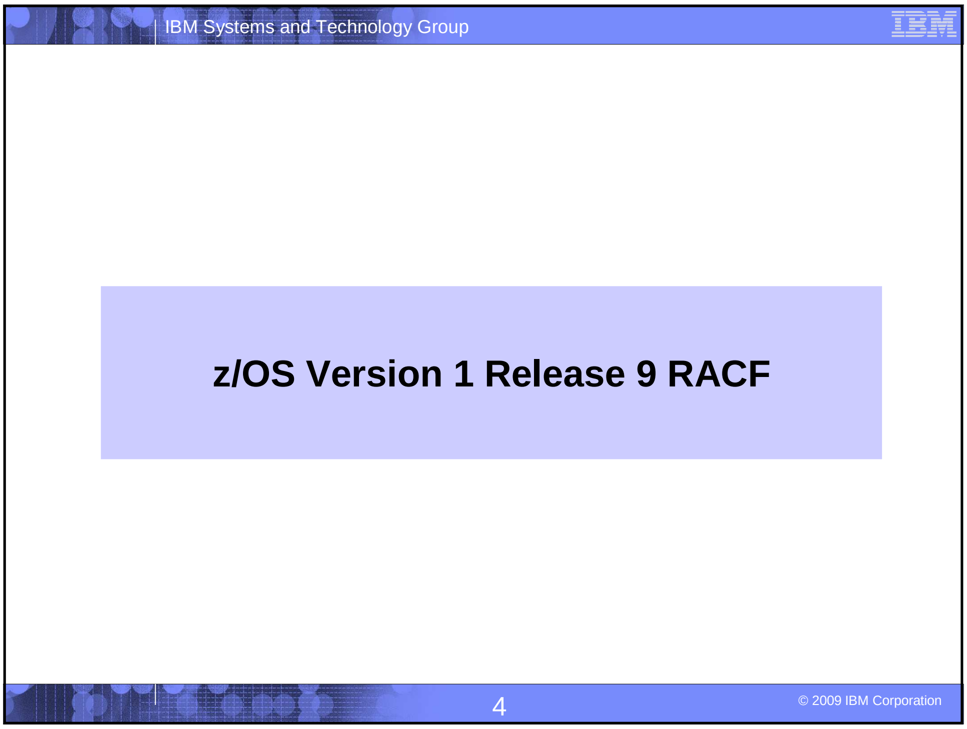


Agenda

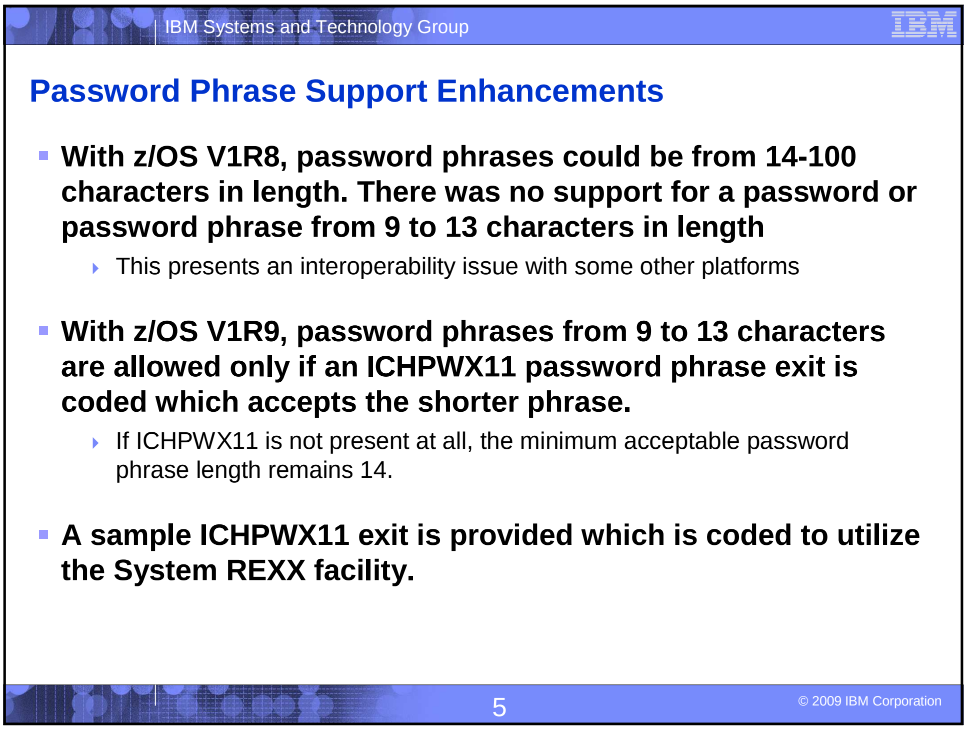
z/OS V1R9 RACF
- Password Phrase Enhancement
- Kerberos AES Support
- Java® RACF User and Group Administration Interface
- Writable SAF Key Ring Support
- PKI Updates

z/OS V1R10 RACF
- Custom Fields
- Password Phrase Exploitation
- More Granularity in Allowing Password Reset
- Enhanced RACF Health Checks
- Group Authorization Check Added to EIM Remote Authorization Service.

z/OS V1R11 RACF
- Program Object Signature Verification
- Logon Statistics Suppression
- Identity Propagation
- R_admin extract for General Resource
- Change logging for General Resource
- Automatic assignment of UID and GID to users of Unix System Services
- RACDCERT multi-byte character improvements
- PKI Private Key recovery
- PKI Web Pages
- PKI Support for SHA256 with RSA signature algorithm

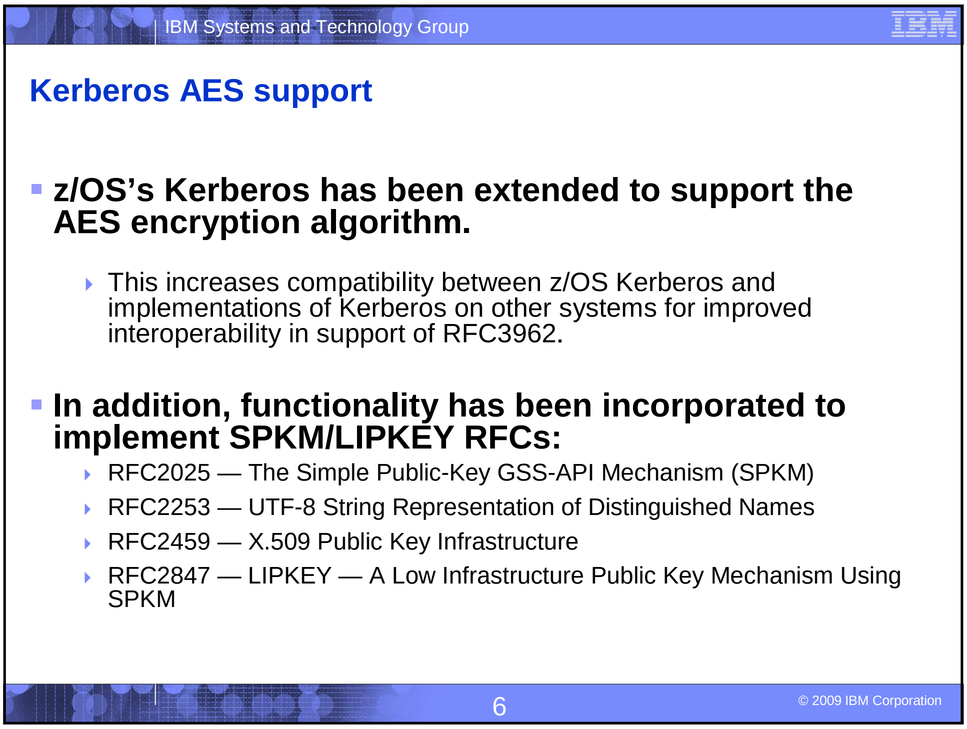


z/OS Version 1 Release 9 RACF



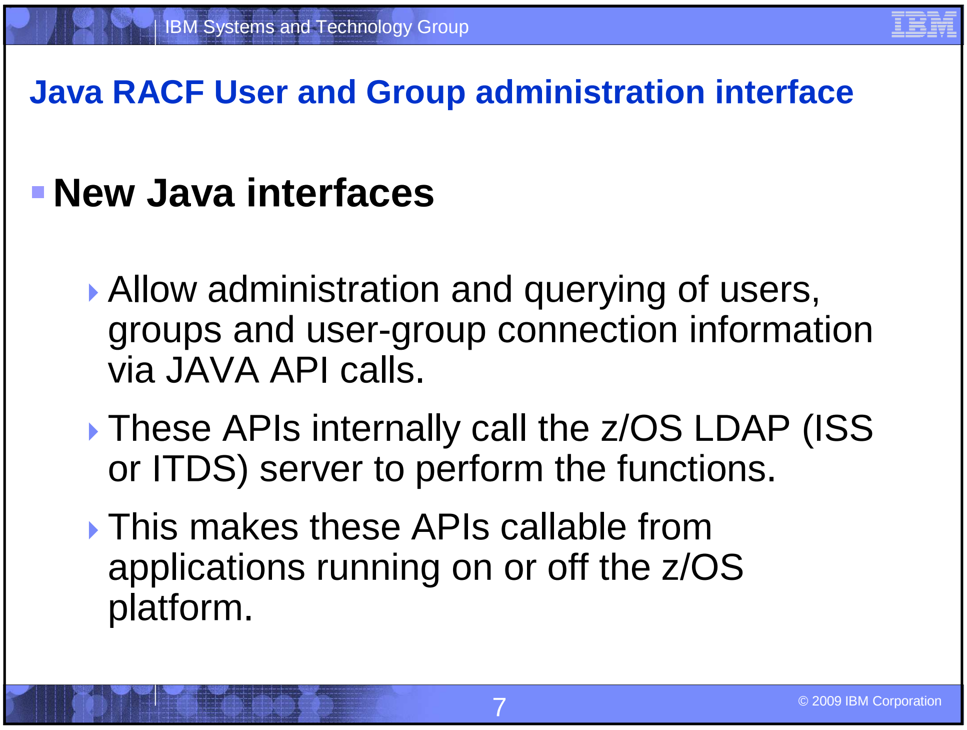
Password Phrase Support Enhancements

- **With z/OS V1R8, password phrases could be from 14-100 characters in length. There was no support for a password or password phrase from 9 to 13 characters in length**
  - This presents an interoperability issue with some other platforms
- **With z/OS V1R9, password phrases from 9 to 13 characters are allowed only if an ICHPWX11 password phrase exit is coded which accepts the shorter phrase.**
  - If ICHPWX11 is not present at all, the minimum acceptable password phrase length remains 14.
- **A sample ICHPWX11 exit is provided which is coded to utilize the System REXX facility.**



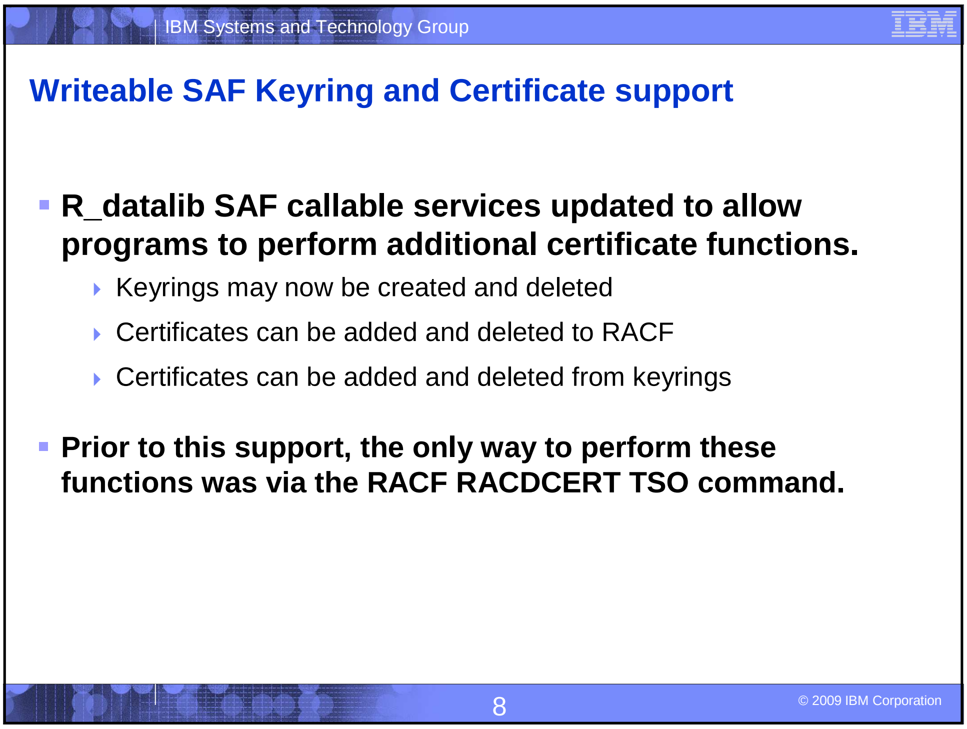
Kerberos AES support

- **z/OS's Kerberos has been extended to support the AES encryption algorithm.**
  - This increases compatibility between z/OS Kerberos and implementations of Kerberos on other systems for improved interoperability in support of RFC3962.
- **In addition, functionality has been incorporated to implement SPKM/LIPKEY RFCs:**
  - RFC2025 — The Simple Public-Key GSS-API Mechanism (SPKM)
  - RFC2253 — UTF-8 String Representation of Distinguished Names
  - RFC2459 — X.509 Public Key Infrastructure
  - RFC2847 — LIPKEY — A Low Infrastructure Public Key Mechanism Using SPKM



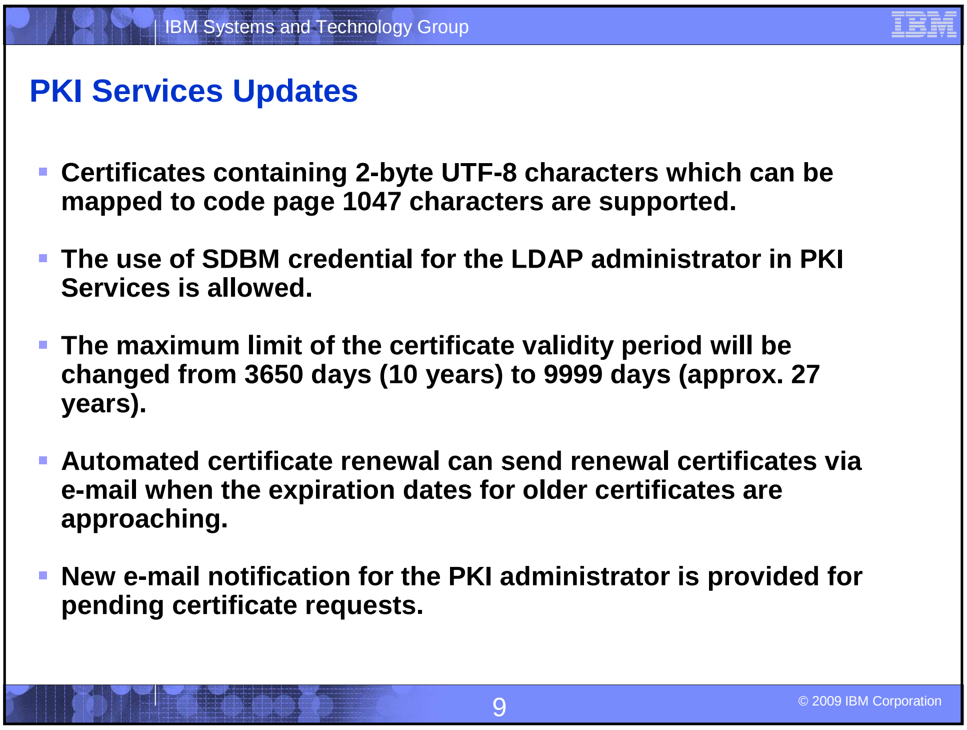
Java RACF User and Group administration interface

- **New Java interfaces**
  - Allow administration and querying of users, groups and user-group connection information via JAVA API calls.
  - These APIs internally call the z/OS LDAP (ISS or ITDS) server to perform the functions.
  - This makes these APIs callable from applications running on or off the z/OS platform.



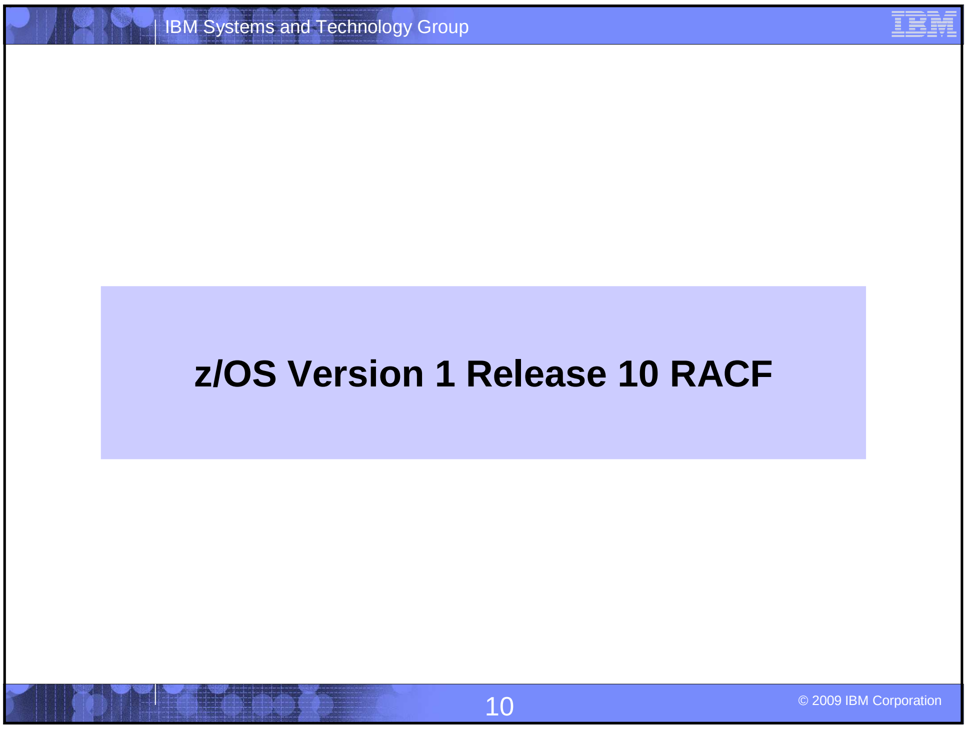
Writeable SAF Keyring and Certificate support

- **R_datalib SAF callable services updated to allow programs to perform additional certificate functions.**
  - Keyrings may now be created and deleted
  - Certificates can be added and deleted to RACF
  - Certificates can be added and deleted from keyrings
- **Prior to this support, the only way to perform these functions was via the RACF RACDCERT TSO command.**



PKI Services Updates

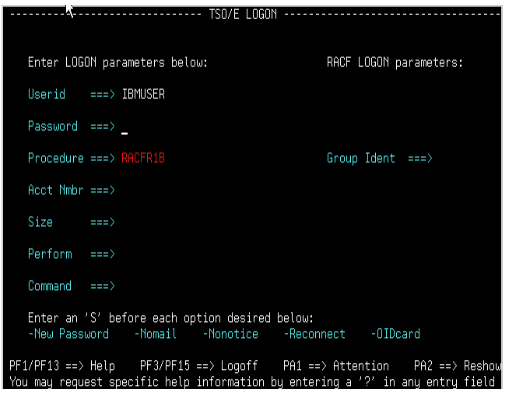
- Certificates containing 2-byte UTF-8 characters which can be mapped to code page 1047 characters are supported.
- The use of SDBM credential for the LDAP administrator in PKI Services is allowed.
- The maximum limit of the certificate validity period will be changed from 3650 days (10 years) to 9999 days (approx. 27 years).
- Automated certificate renewal can send renewal certificates via e-mail when the expiration dates for older certificates are approaching.
- New e-mail notification for the PKI administrator is provided for pending certificate requests.



z/OS Version 1 Release 10 RACF

z/OS V1R10: Password Phrase Exploitation

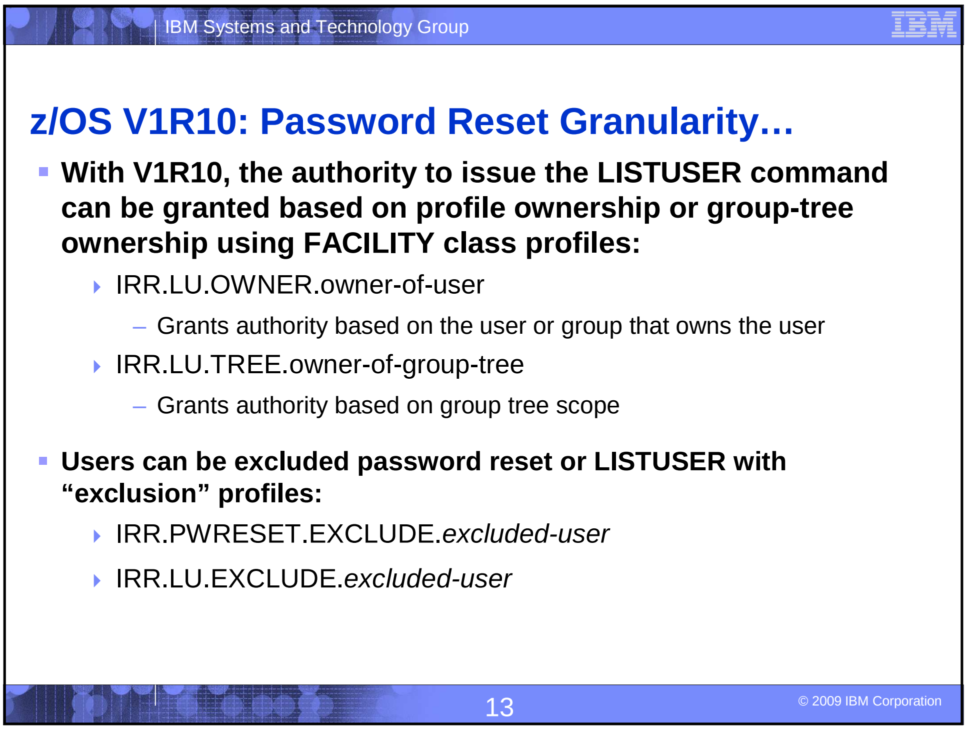
- **Password phrase exploitation**
  - TSO/E
  - z/OS UNIX® rlogin, BPX1PWD, BPX1SEC, BPX1TLS
  - z/OS UNIX su and passwd commands
  - z/OS Kerberos
  - z/OS LDAP for z/OS SDBM backend
  - OpenSSH (IBM Ported Tools for z/OS)



```
---------------------------- TSO/E LOGON -----------------------------------


   Enter LOGON parameters below:                    RACF LOGON parameters:

   Userid    ===> IBMUSER

   Password  ===> _

   Procedure ===> RACFR1B                           Group Ident  ===>

   Acct Nmbr ===>

   Size      ===>

   Perform   ===>

   Command   ===>

   Enter an 'S' before each option desired below:
   -New Password    -Nomail    -Nonotice    -Reconnect    -OIDcard

PF1/PF13 ==> Help    PF3/PF15 ==> Logoff    PA1 ==> Attention    PA2 ==> Reshow
You may request specific help information by entering a '?' in any entry field
```

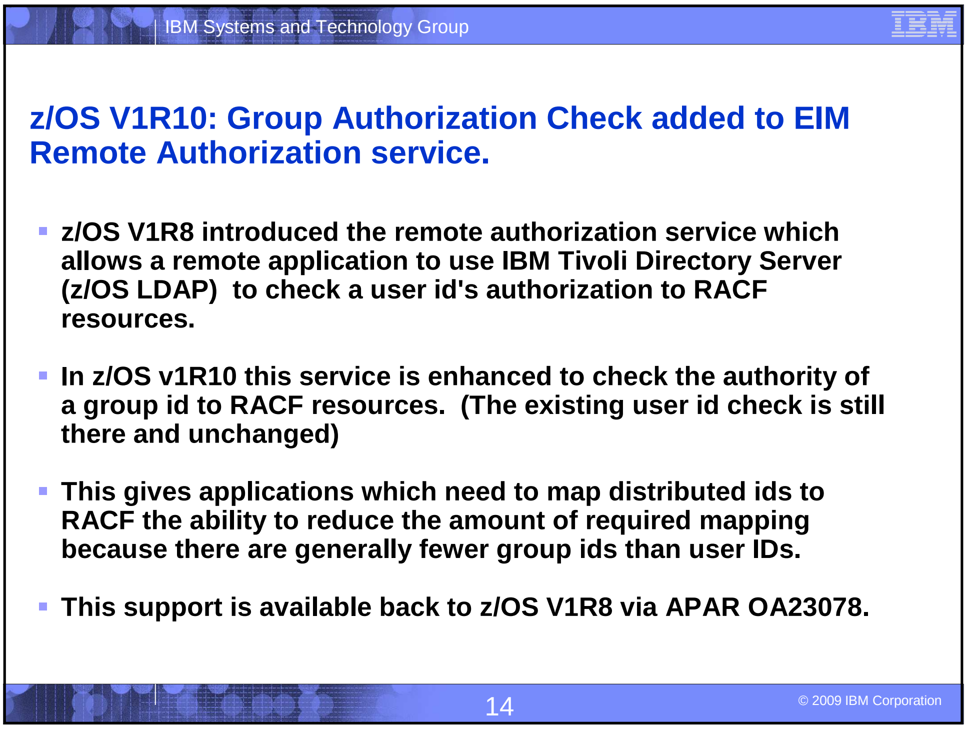
z/OS V1R10: Password Reset Granularity

- **More granularity for Password Reset and LISTUSER**
  - Before V1R10: The FACILITY resource IRR.PASSWORD.RESET allowed password resets for users without the SPECIAL, OPERATIONS, AUDITOR, or PROTECTED attribute**.** Access to the IRR.LISTUSER resource allowed the listing of a USER profile base segment.
- **With V1R10, the authority to reset a password can be granted based on profile ownership or group-tree ownership using FACILITY class profiles:**
  - IRR.PWRESET.OWNER.owner-of-user
    - Grants authority based on the user or group that owns the user
  - IRR.PWRESET.TREE.owner-of-group-tree
    - Grants authority based on group tree scope
    - That is, if “owner of group tree” owns the user being reset, or owns a group that owns the user, or owns a group that owns a group that ...



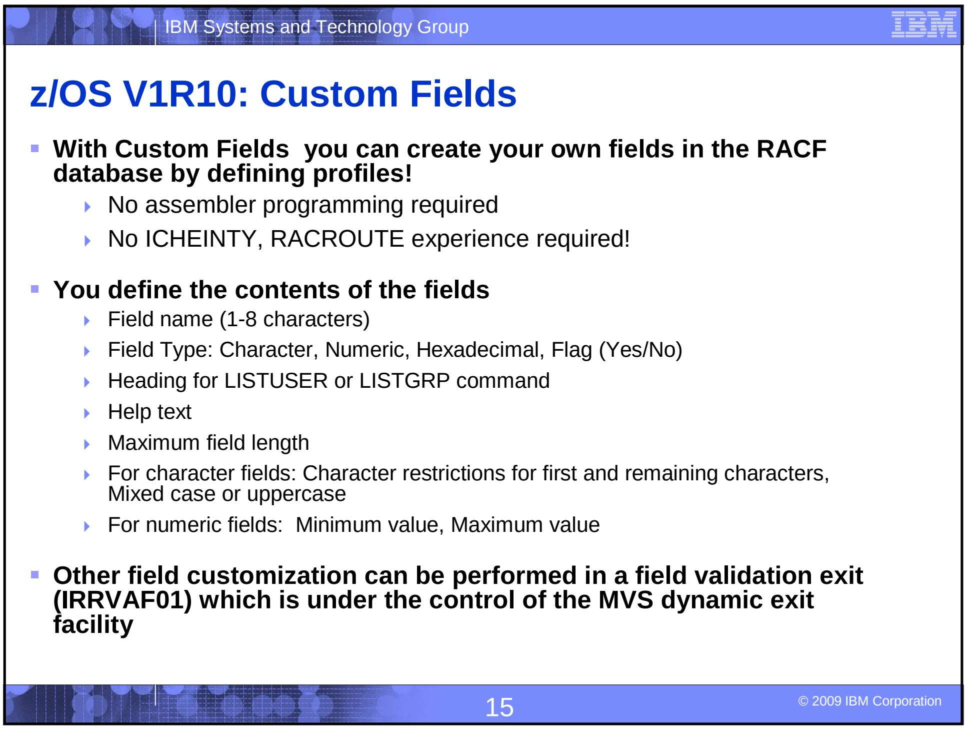
z/OS V1R10: Password Reset Granularity…

- **With V1R10, the authority to issue the LISTUSER command can be granted based on profile ownership or group-tree ownership using FACILITY class profiles:**
  - IRR.LU.OWNER.owner-of-user
    - Grants authority based on the user or group that owns the user
  - IRR.LU.TREE.owner-of-group-tree
    - Grants authority based on group tree scope
- **Users can be excluded password reset or LISTUSER with "exclusion" profiles:**
  - IRR.PWRESET.EXCLUDE.*excluded-user*
  - IRR.LU.EXCLUDE.*excluded-user*



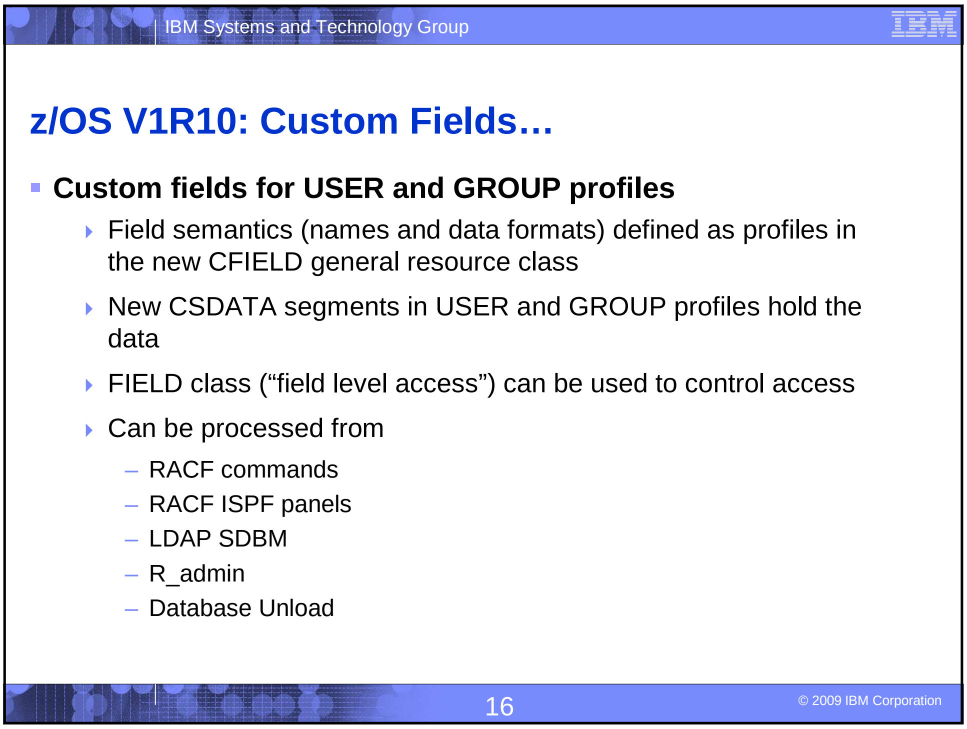
z/OS V1R10: Group Authorization Check added to EIM Remote Authorization service.

- **z/OS V1R8 introduced the remote authorization service which allows a remote application to use IBM Tivoli Directory Server (z/OS LDAP) to check a user id's authorization to RACF resources.**
- **In z/OS v1R10 this service is enhanced to check the authority of a group id to RACF resources. (The existing user id check is still there and unchanged)**
- **This gives applications which need to map distributed ids to RACF the ability to reduce the amount of required mapping because there are generally fewer group ids than user IDs.**
- **This support is available back to z/OS V1R8 via APAR OA23078.**



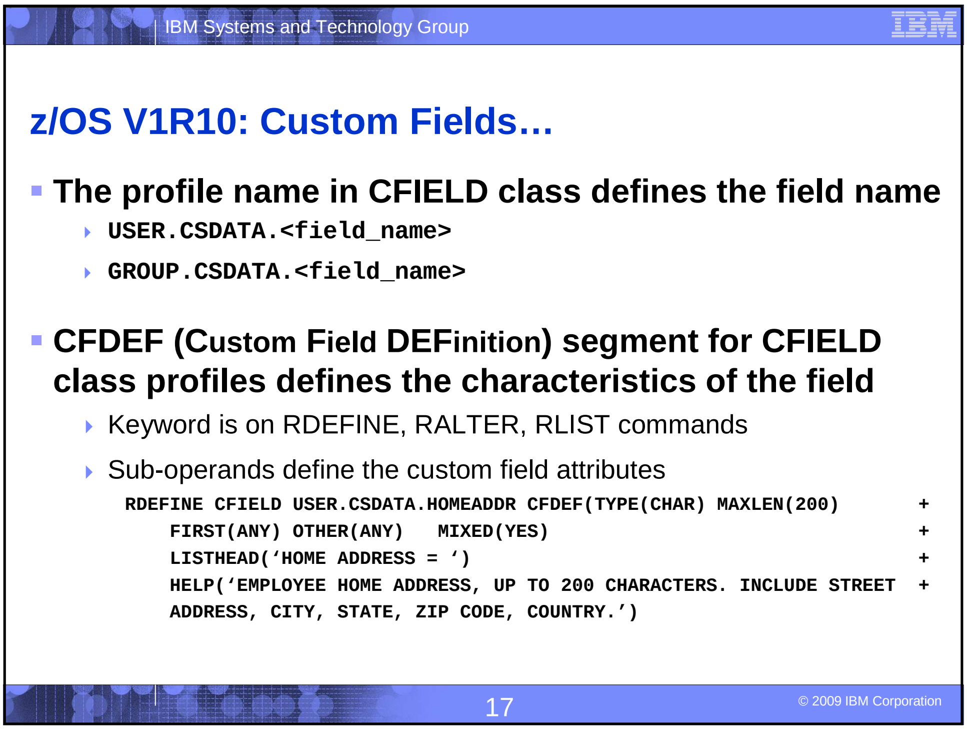
z/OS V1R10: Custom Fields

- **With Custom Fields you can create your own fields in the RACF database by defining profiles!**
  - No assembler programming required
  - No ICHEINTY, RACROUTE experience required!
- **You define the contents of the fields**
  - Field name (1-8 characters)
  - Field Type: Character, Numeric, Hexadecimal, Flag (Yes/No)
  - Heading for LISTUSER or LISTGRP command
  - Help text
  - Maximum field length
  - For character fields: Character restrictions for first and remaining characters, Mixed case or uppercase
  - For numeric fields: Minimum value, Maximum value
- **Other field customization can be performed in a field validation exit (IRRVAF01) which is under the control of the MVS dynamic exit facility**



z/OS V1R10: Custom Fields…

- **Custom fields for USER and GROUP profiles**
  - Field semantics (names and data formats) defined as profiles in the new CFIELD general resource class
  - New CSDATA segments in USER and GROUP profiles hold the data
  - FIELD class (“field level access”) can be used to control access
  - Can be processed from
    - RACF commands
    - RACF ISPF panels
    - LDAP SDBM
    - R_admin
    - Database Unload



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z/OS V1R10: Custom Fields…

- **The profile name in CFIELD class defines the field name**
  - **`USER.CSDATA.<field_name>`**
  - **`GROUP.CSDATA.<field_name>`**
- **CFDEF (Custom Field DEFinition) segment for CFIELD class profiles defines the characteristics of the field**
  - Keyword is on RDEFINE, RALTER, RLIST commands
  - Sub-operands define the custom field attributes

```
RDEFINE CFIELD USER.CSDATA.HOMEADDR CFDEF(TYPE(CHAR) MAXLEN(200)       +
    FIRST(ANY) OTHER(ANY)   MIXED(YES)                                 +
    LISTHEAD(‘HOME ADDRESS = ‘)                                        +
    HELP(‘EMPLOYEE HOME ADDRESS, UP TO 200 CHARACTERS. INCLUDE STREET  +
    ADDRESS, CITY, STATE, ZIP CODE, COUNTRY.’)
```

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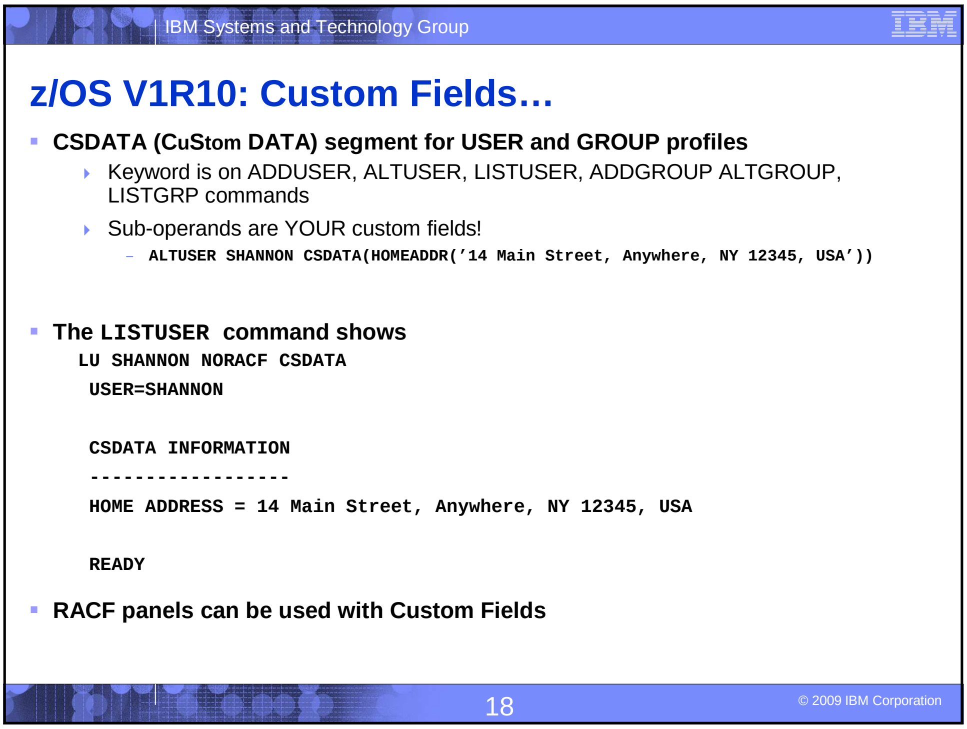

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z/OS V1R10: Custom Fields…

- **CSDATA (CuStom DATA) segment for USER and GROUP profiles**
  - Keyword is on ADDUSER, ALTUSER, LISTUSER, ADDGROUP ALTGROUP, LISTGRP commands
  - Sub-operands are YOUR custom fields!
    - `ALTUSER SHANNON CSDATA(HOMEADDR(’14 Main Street, Anywhere, NY 12345, USA’))`
- **The `LISTUSER` command shows**

```
LU SHANNON NORACF CSDATA
 USER=SHANNON

 CSDATA INFORMATION
 ------------------
 HOME ADDRESS = 14 Main Street, Anywhere, NY 12345, USA

 READY
```

- **RACF panels can be used with Custom Fields**

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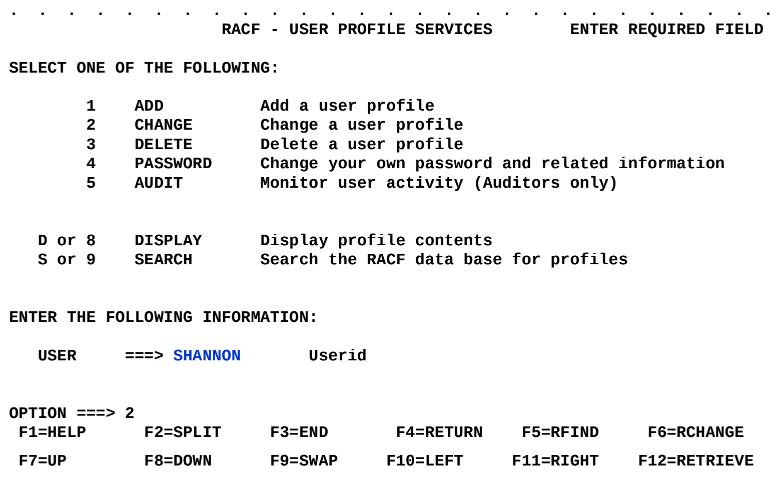
z/OS V1R10: Custom Fields…



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                      RACF - USER PROFILE SERVICES        ENTER REQUIRED FIELD

 SELECT ONE OF THE FOLLOWING:

         1     ADD          Add a user profile
         2     CHANGE       Change a user profile
         3     DELETE       Delete a user profile
         4     PASSWORD     Change your own password and related information
         5     AUDIT        Monitor user activity (Auditors only)


    D or 8     DISPLAY      Display profile contents
    S or 9     SEARCH       Search the RACF data base for profiles

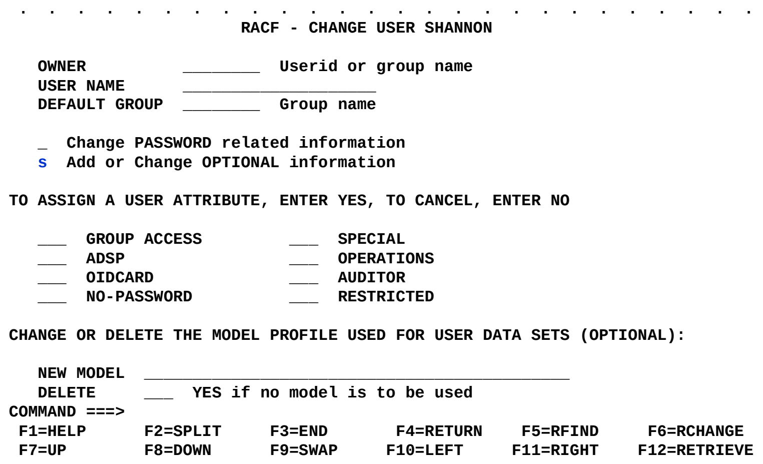

 ENTER THE FOLLOWING INFORMATION:

    USER     ===> SHANNON       Userid


 OPTION ===> 2
  F1=HELP      F2=SPLIT     F3=END       F4=RETURN    F5=RFIND     F6=RCHANGE

  F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

z/OS V1R10: Custom Fields…



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                       RACF - CHANGE USER SHANNON

   OWNER          ________  Userid or group name
   USER NAME      ____________________
   DEFAULT GROUP  ________  Group name

   _  Change PASSWORD related information
   s  Add or Change OPTIONAL information

 TO ASSIGN A USER ATTRIBUTE, ENTER YES, TO CANCEL, ENTER NO

   ___  GROUP ACCESS          ___  SPECIAL
   ___  ADSP                  ___  OPERATIONS
   ___  OIDCARD               ___  AUDITOR
   ___  NO-PASSWORD           ___  RESTRICTED

 CHANGE OR DELETE THE MODEL PROFILE USED FOR USER DATA SETS (OPTIONAL):

   NEW MODEL  ____________________________________________
   DELETE     ___  YES if no model is to be used
 COMMAND ===>
  F1=HELP      F2=SPLIT     F3=END       F4=RETURN    F5=RFIND     F6=RCHANGE
  F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```
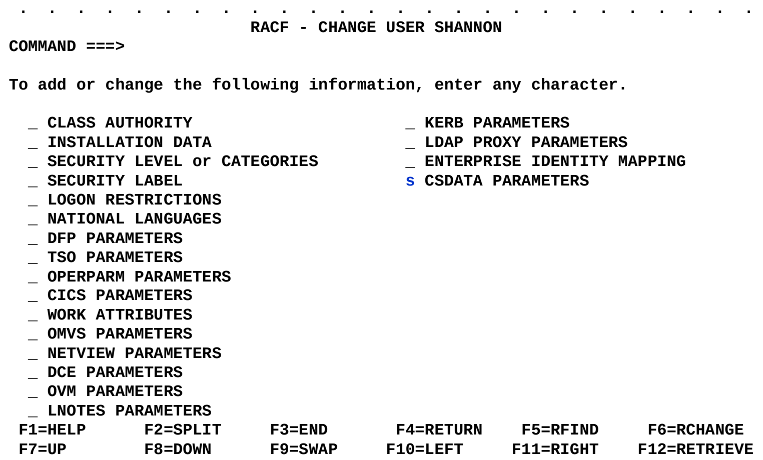

z/OS V1R10: Custom Fields…



```
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                         RACF - CHANGE USER SHANNON
COMMAND ===>

To add or change the following information, enter any character.

  _ CLASS AUTHORITY                       _ KERB PARAMETERS
  _ INSTALLATION DATA                     _ LDAP PROXY PARAMETERS
  _ SECURITY LEVEL or CATEGORIES          _ ENTERPRISE IDENTITY MAPPING
  _ SECURITY LABEL                        s CSDATA PARAMETERS
  _ LOGON RESTRICTIONS
  _ NATIONAL LANGUAGES
  _ DFP PARAMETERS
  _ TSO PARAMETERS
  _ OPERPARM PARAMETERS
  _ CICS PARAMETERS
  _ WORK ATTRIBUTES
  _ OMVS PARAMETERS
  _ NETVIEW PARAMETERS
  _ DCE PARAMETERS
  _ OVM PARAMETERS
  _ LNOTES PARAMETERS
 F1=HELP      F2=SPLIT     F3=END       F4=RETURN    F5=RFIND     F6=RCHANGE
 F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```
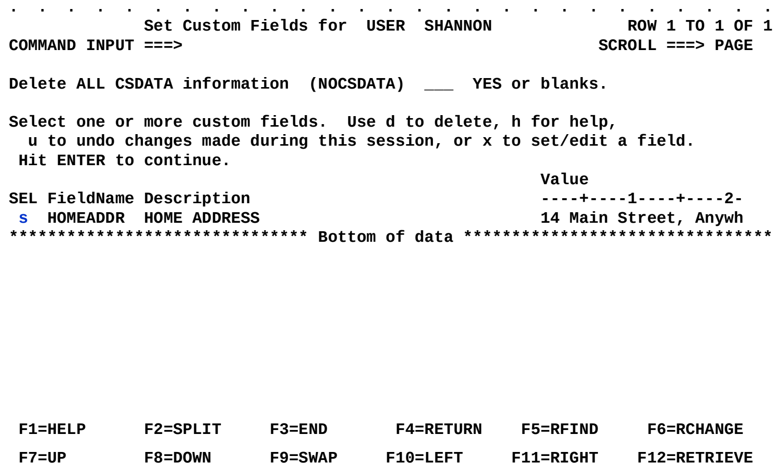
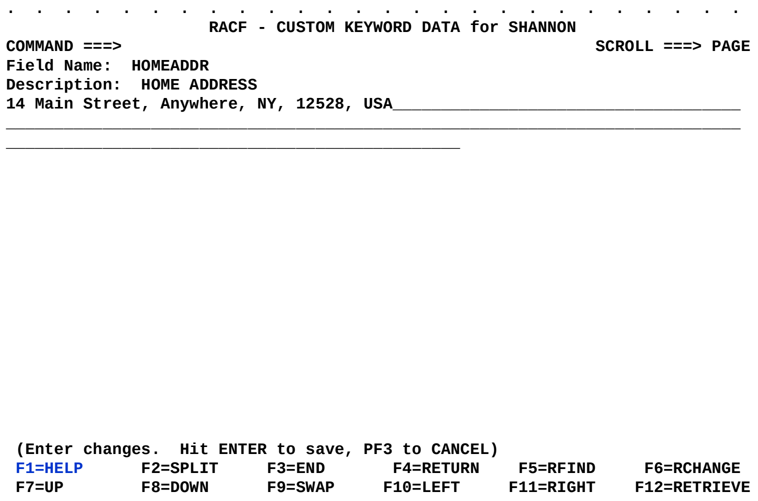

z/OS V1R10: Custom Fields…



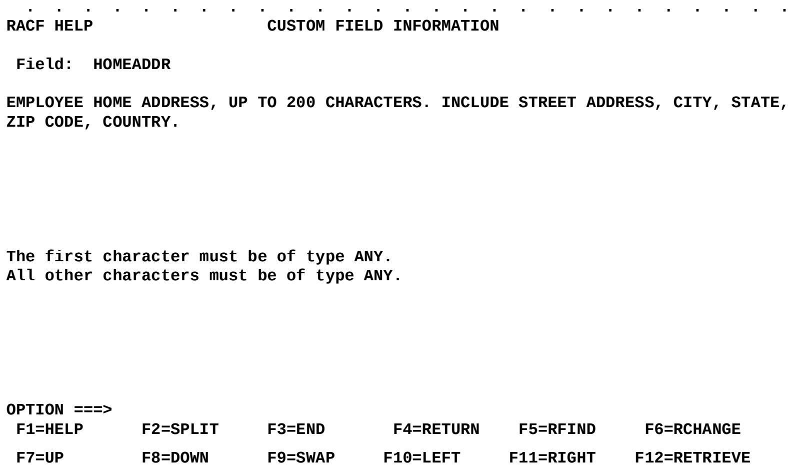
```
.  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
              Set Custom Fields for  USER  SHANNON            ROW 1 TO 1 OF 1
COMMAND INPUT ===>                                         SCROLL ===> PAGE

Delete ALL CSDATA information  (NOCSDATA)  ___  YES or blanks.

Select one or more custom fields.  Use d to delete, h for help,
  u to undo changes made during this session, or x to set/edit a field.
 Hit ENTER to continue.
                                                      Value
SEL FieldName Description                             ----+----1----+----2-
 s  HOMEADDR  HOME ADDRESS                            14 Main Street, Anywh
******************************* Bottom of data ********************************




 F1=HELP      F2=SPLIT     F3=END       F4=RETURN    F5=RFIND     F6=RCHANGE

 F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

z/OS V1R10: Custom Fields…



```
 .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
                     RACF - CUSTOM KEYWORD DATA for SHANNON
COMMAND ===>                                                    SCROLL ===> PAGE
Field Name:  HOMEADDR
Description:  HOME ADDRESS
14 Main Street, Anywhere, NY, 12528, USA____________________________________
____________________________________________________________________________
_______________________________________________



 (Enter changes.  Hit ENTER to save, PF3 to CANCEL)
 F1=HELP      F2=SPLIT     F3=END       F4=RETURN    F5=RFIND     F6=RCHANGE
 F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

z/OS V1R10: Custom Fields…



```
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RACF HELP                  CUSTOM FIELD INFORMATION

 Field:  HOMEADDR

EMPLOYEE HOME ADDRESS, UP TO 200 CHARACTERS. INCLUDE STREET ADDRESS, CITY, STATE,
ZIP CODE, COUNTRY.



The first character must be of type ANY.
All other characters must be of type ANY.



OPTION ===>
 F1=HELP      F2=SPLIT     F3=END       F4=RETURN    F5=RFIND     F6=RCHANGE

 F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```
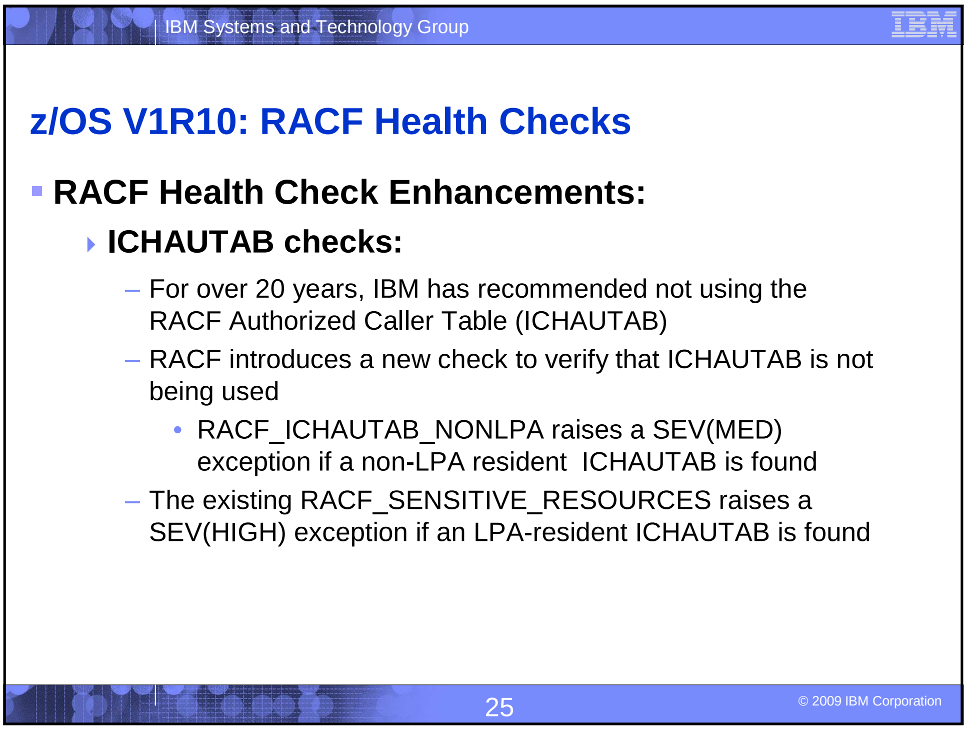
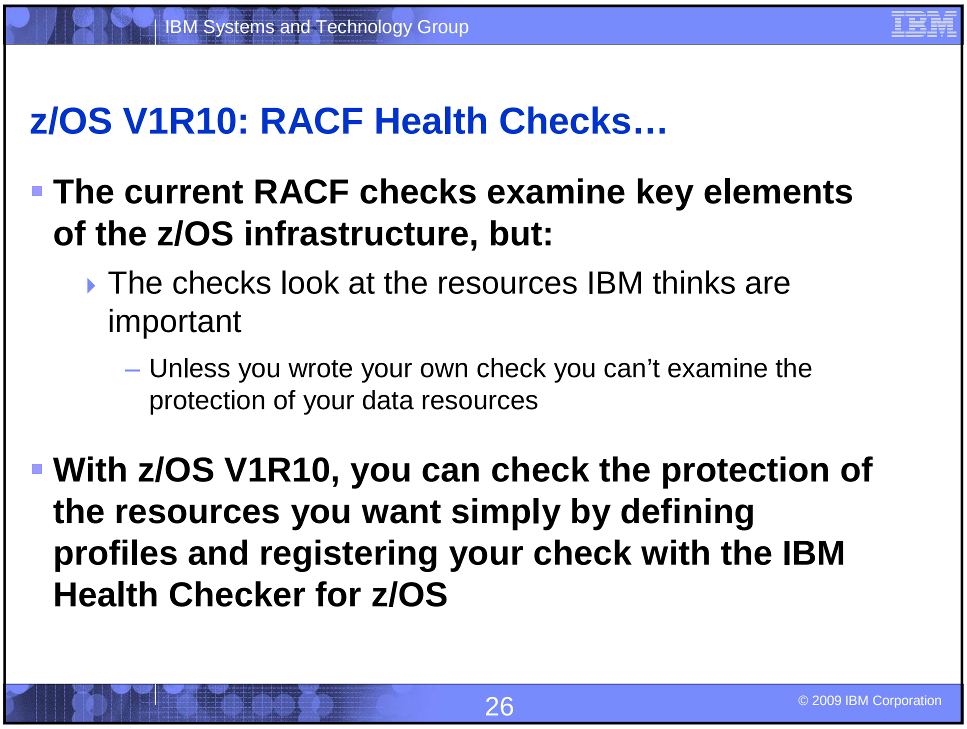



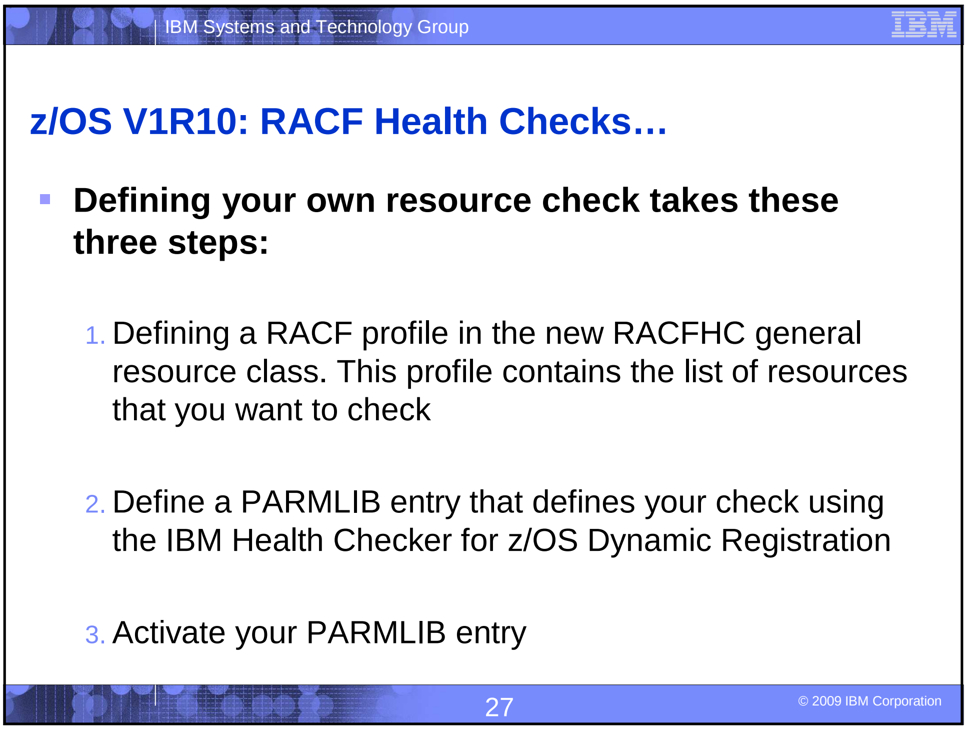
z/OS V1R10: RACF Health Checks

- **RACF Health Check Enhancements:**
  - **ICHAUTAB checks:**
    - For over 20 years, IBM has recommended not using the RACF Authorized Caller Table (ICHAUTAB)
    - RACF introduces a new check to verify that ICHAUTAB is not being used
      - RACF_ICHAUTAB_NONLPA raises a SEV(MED) exception if a non-LPA resident ICHAUTAB is found
    - The existing RACF_SENSITIVE_RESOURCES raises a SEV(HIGH) exception if an LPA-resident ICHAUTAB is found



z/OS V1R10: RACF Health Checks…

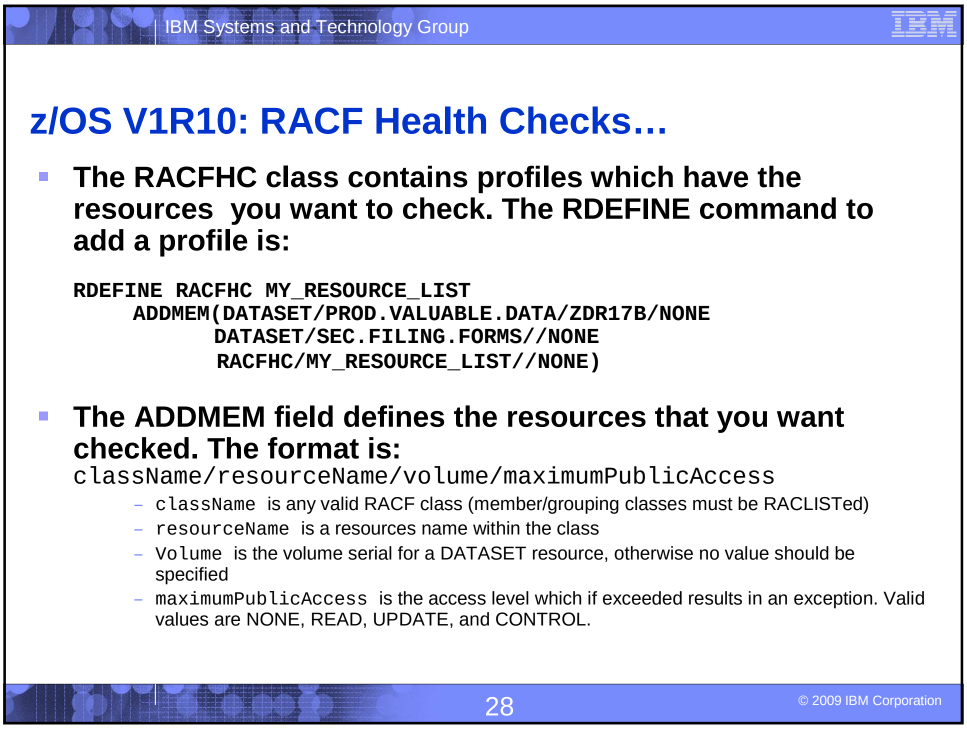
- **The current RACF checks examine key elements of the z/OS infrastructure, but:**
  - The checks look at the resources IBM thinks are important
    - Unless you wrote your own check you can't examine the protection of your data resources
- **With z/OS V1R10, you can check the protection of the resources you want simply by defining profiles and registering your check with the IBM Health Checker for z/OS**



z/OS V1R10: RACF Health Checks…

- **Defining your own resource check takes these three steps:**

  1. Defining a RACF profile in the new RACFHC general resource class. This profile contains the list of resources that you want to check
  2. Define a PARMLIB entry that defines your check using the IBM Health Checker for z/OS Dynamic Registration
  3. Activate your PARMLIB entry

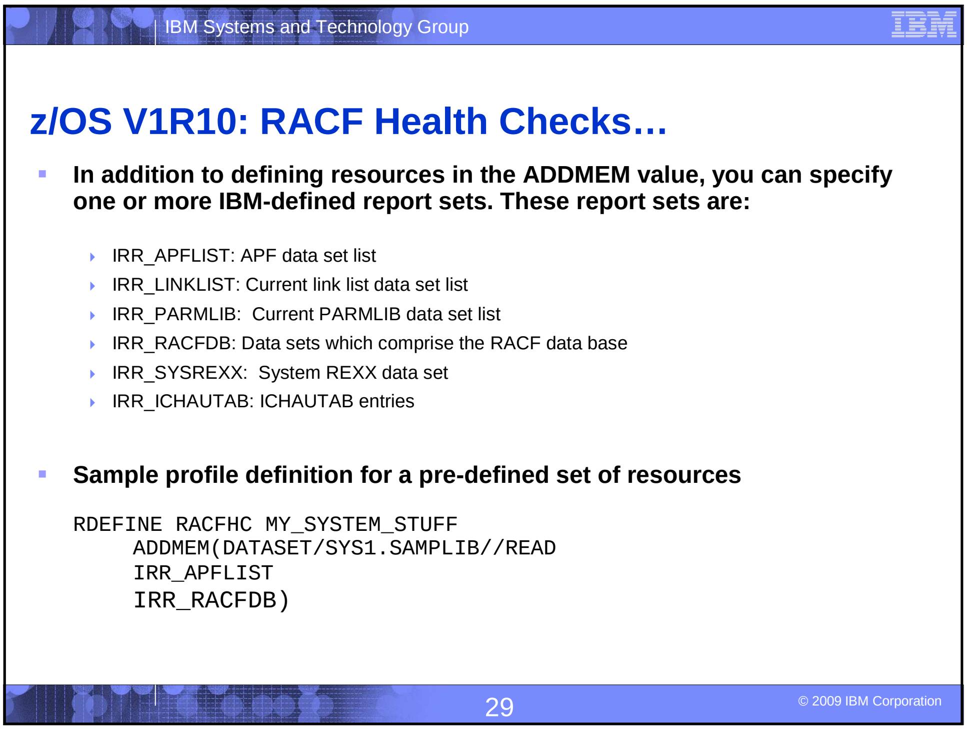


z/OS V1R10: RACF Health Checks…

- **The RACFHC class contains profiles which have the resources you want to check. The RDEFINE command to add a profile is:**

```
RDEFINE RACFHC MY_RESOURCE_LIST
     ADDMEM(DATASET/PROD.VALUABLE.DATA/ZDR17B/NONE
            DATASET/SEC.FILING.FORMS//NONE
            RACFHC/MY_RESOURCE_LIST//NONE)
```

- **The ADDMEM field defines the resources that you want checked. The format is:**
  `className/resourceName/volume/maximumPublicAccess`
  - `className` is any valid RACF class (member/grouping classes must be RACLISTed)
  - `resourceName` is a resources name within the class
  - `Volume` is the volume serial for a DATASET resource, otherwise no value should be specified
  - `maximumPublicAccess` is the access level which if exceeded results in an exception. Valid values are NONE, READ, UPDATE, and CONTROL.

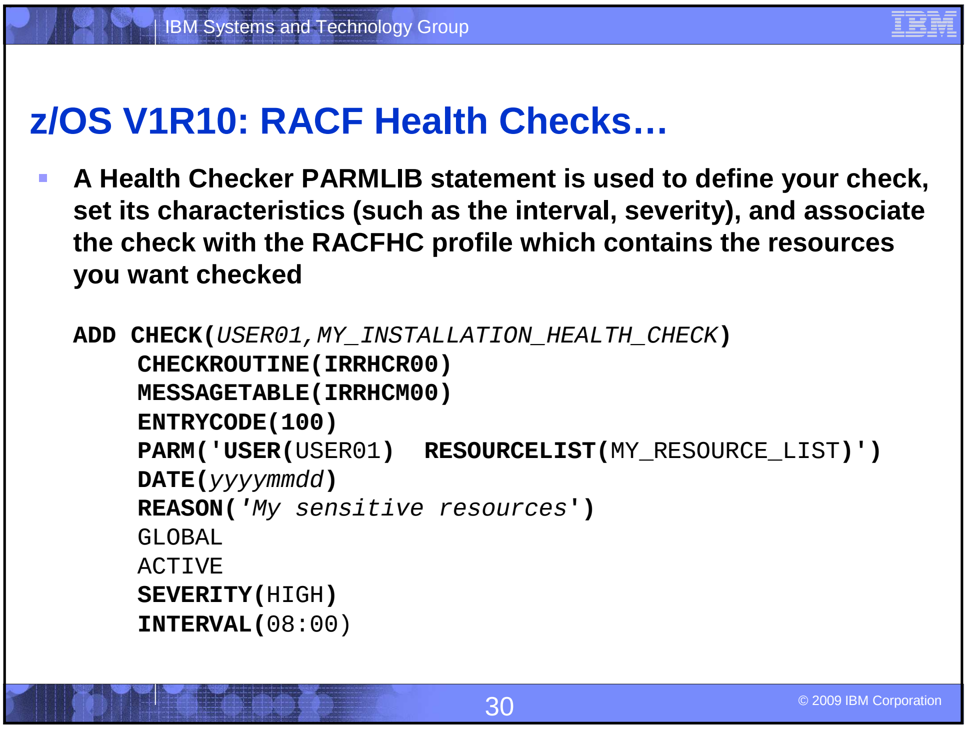


z/OS V1R10: RACF Health Checks…

- **In addition to defining resources in the ADDMEM value, you can specify one or more IBM-defined report sets. These report sets are:**
  - IRR_APFLIST: APF data set list
  - IRR_LINKLIST: Current link list data set list
  - IRR_PARMLIB: Current PARMLIB data set list
  - IRR_RACFDB: Data sets which comprise the RACF data base
  - IRR_SYSREXX: System REXX data set
  - IRR_ICHAUTAB: ICHAUTAB entries

- **Sample profile definition for a pre-defined set of resources**

```
RDEFINE RACFHC MY_SYSTEM_STUFF
     ADDMEM(DATASET/SYS1.SAMPLIB//READ
     IRR_APFLIST
     IRR_RACFDB)
```



z/OS V1R10: RACF Health Checks…

- **A Health Checker PARMLIB statement is used to define your check, set its characteristics (such as the interval, severity), and associate the check with the RACFHC profile which contains the resources you want checked**

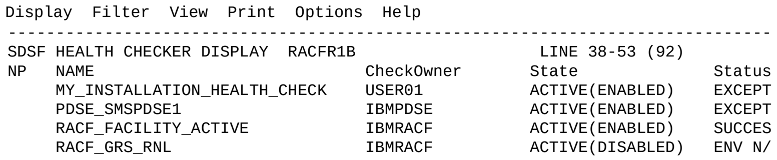
```
ADD CHECK(USER01,MY_INSTALLATION_HEALTH_CHECK)
     CHECKROUTINE(IRRHCR00)
     MESSAGETABLE(IRRHCM00)
     ENTRYCODE(100)
     PARM('USER(USER01)  RESOURCELIST(MY_RESOURCE_LIST)')
     DATE(yyyymmdd)
     REASON('My sensitive resources')
     GLOBAL
     ACTIVE
     SEVERITY(HIGH)
     INTERVAL(08:00)
```

z/OS V1R10: RACF Health Checks…

- **The final step is to activate your check. After adding it to a member (HZSPRMMN in this example) activate the PARMLIB entry using the MVS modify command for the Health Checker address space:**

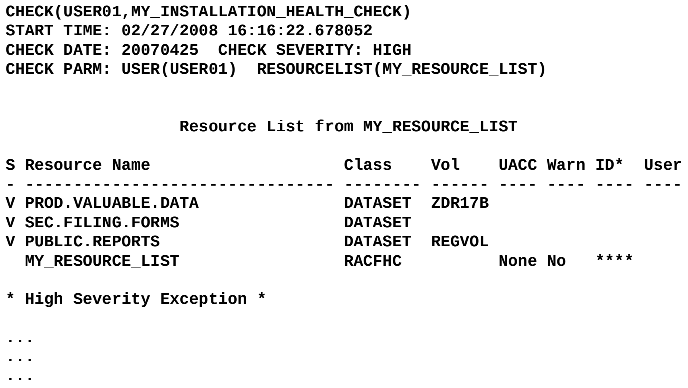
```
F HC,ADD,PARMLIB=MN
```

- **Your check is now registered with the IBM Health Checker for z/OS!**

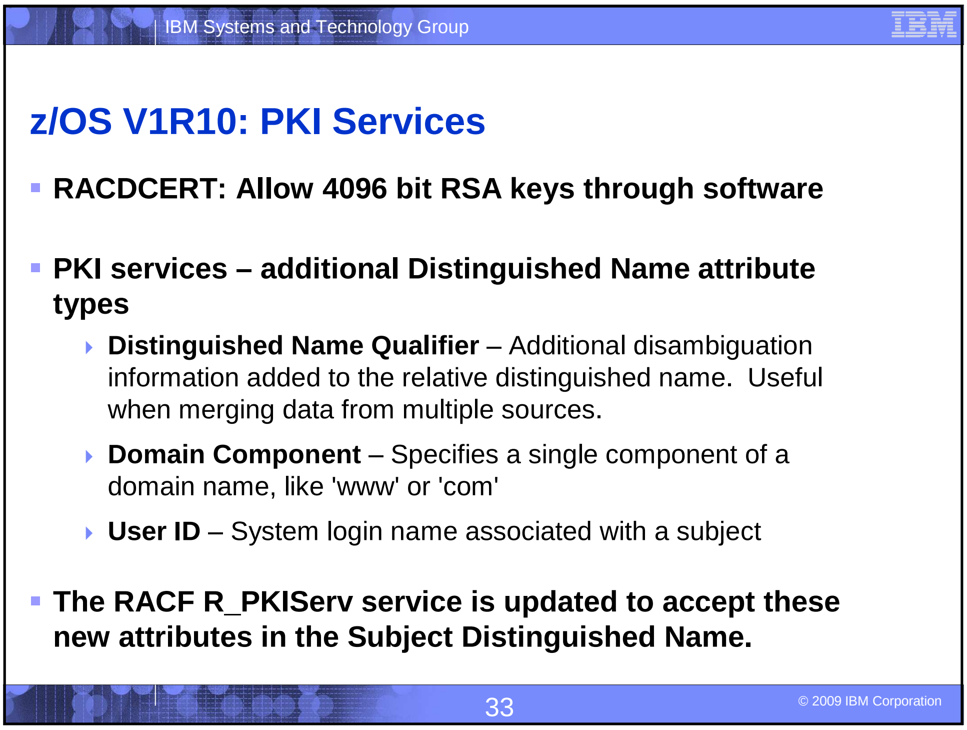


```
Display  Filter  View  Print  Options  Help
-------------------------------------------------------------------------------
SDSF HEALTH CHECKER DISPLAY  RACFR1B                  LINE 38-53 (92)
NP   NAME                           CheckOwner       State              Status
     MY_INSTALLATION_HEALTH_CHECK   USER01           ACTIVE(ENABLED)    EXCEPT
     PDSE_SMSPDSE1                  IBMPDSE          ACTIVE(ENABLED)    EXCEPT
     RACF_FACILITY_ACTIVE           IBMRACF          ACTIVE(ENABLED)    SUCCES
     RACF_GRS_RNL                   IBMRACF          ACTIVE(DISABLED)   ENV N/
```

z/OS V1R10: RACF Health Checks…

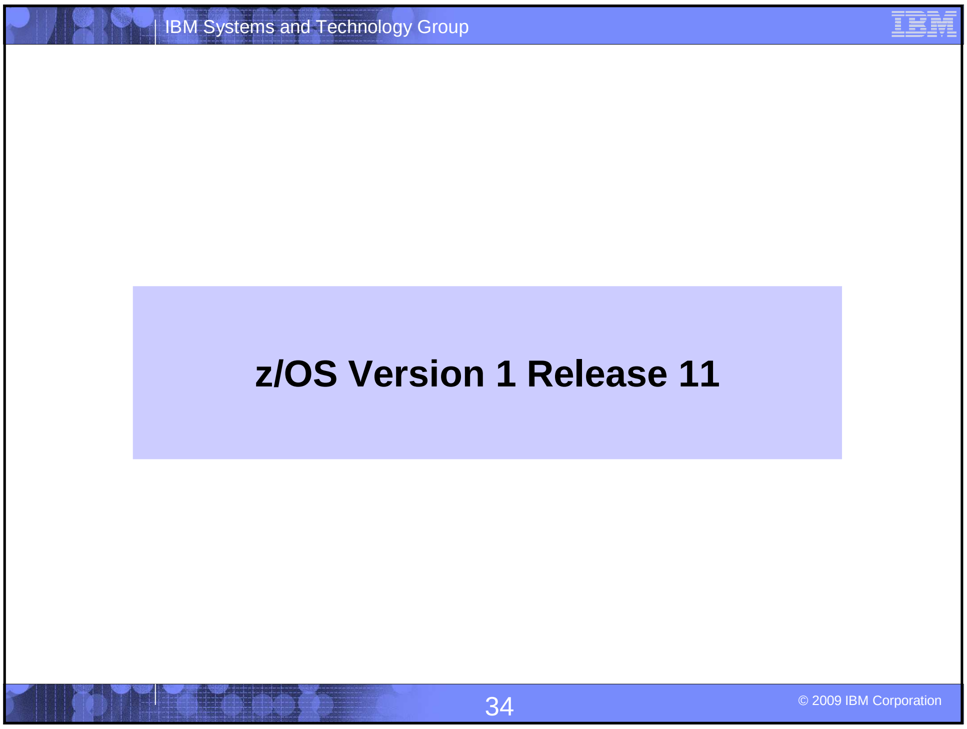


```
CHECK(USER01,MY_INSTALLATION_HEALTH_CHECK)
START TIME: 02/27/2008 16:16:22.678052
CHECK DATE: 20070425  CHECK SEVERITY: HIGH
CHECK PARM: USER(USER01)  RESOURCELIST(MY_RESOURCE_LIST)


                  Resource List from MY_RESOURCE_LIST

S Resource Name                    Class    Vol    UACC Warn ID*  User
- -------------------------------- -------- ------ ---- ---- ---- ----
V PROD.VALUABLE.DATA               DATASET  ZDR17B
V SEC.FILING.FORMS                 DATASET
V PUBLIC.REPORTS                   DATASET  REGVOL
  MY_RESOURCE_LIST                 RACFHC          None No   ****

* High Severity Exception *

...
...
...
```



z/OS V1R10: PKI Services

- **RACDCERT: Allow 4096 bit RSA keys through software**
- **PKI services – additional Distinguished Name attribute types**
  - **Distinguished Name Qualifier** – Additional disambiguation information added to the relative distinguished name. Useful when merging data from multiple sources.
  - **Domain Component** – Specifies a single component of a domain name, like 'www' or 'com'
  - **User ID** – System login name associated with a subject
- **The RACF R_PKIServ service is updated to accept these new attributes in the Subject Distinguished Name.**



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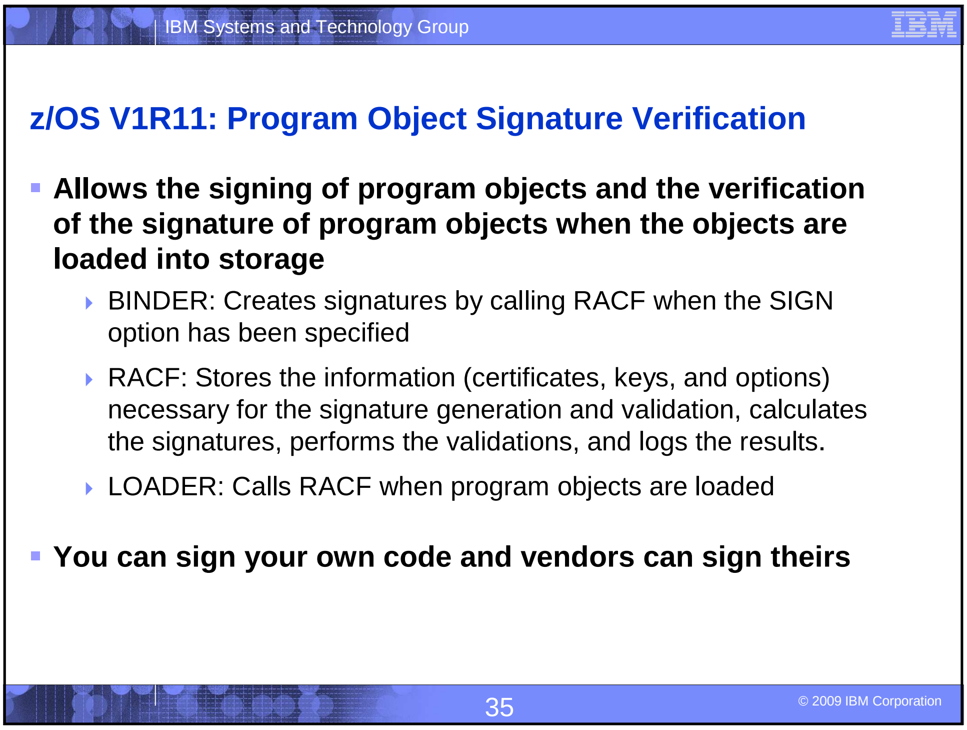
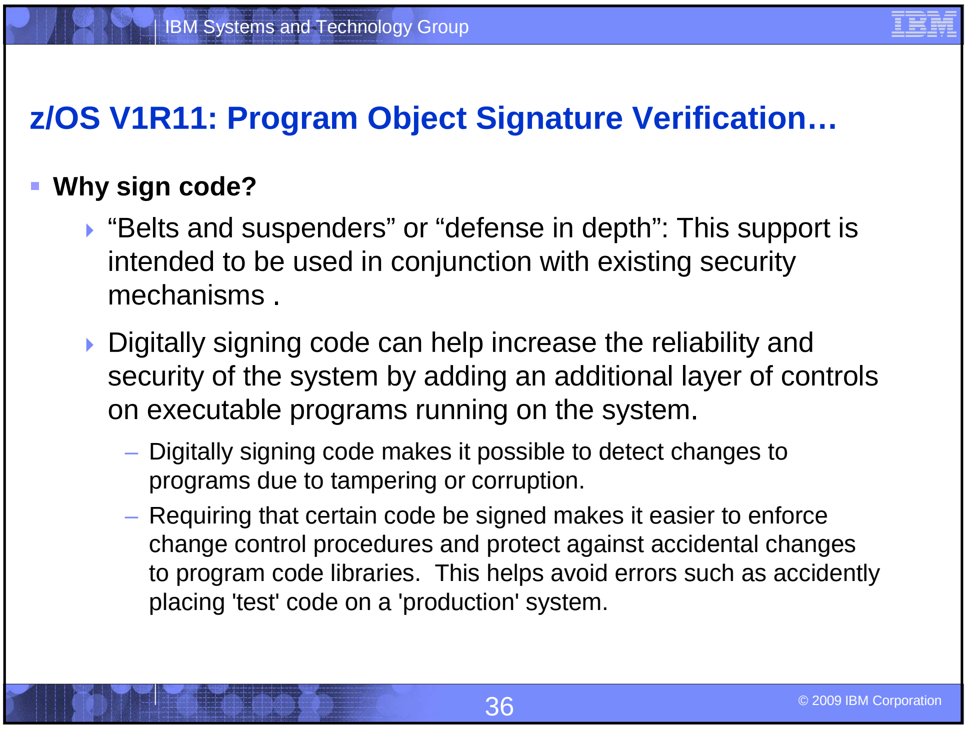


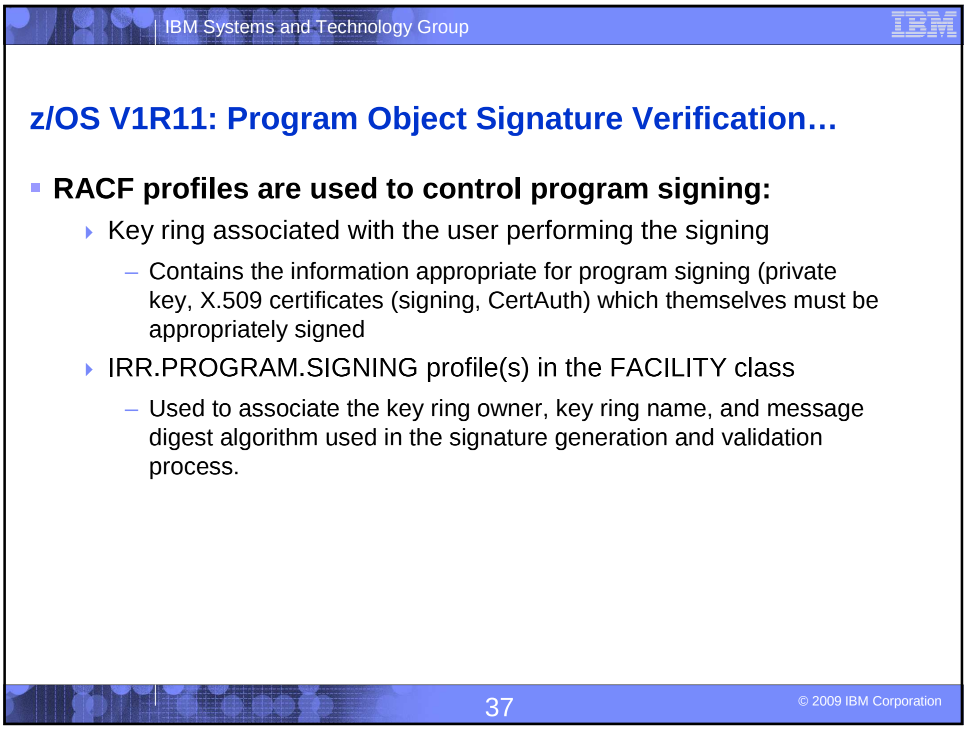
z/OS V1R11: Program Object Signature Verification

- **Allows the signing of program objects and the verification of the signature of program objects when the objects are loaded into storage**
  - BINDER: Creates signatures by calling RACF when the SIGN option has been specified
  - RACF: Stores the information (certificates, keys, and options) necessary for the signature generation and validation, calculates the signatures, performs the validations, and logs the results.
  - LOADER: Calls RACF when program objects are loaded
- **You can sign your own code and vendors can sign theirs**



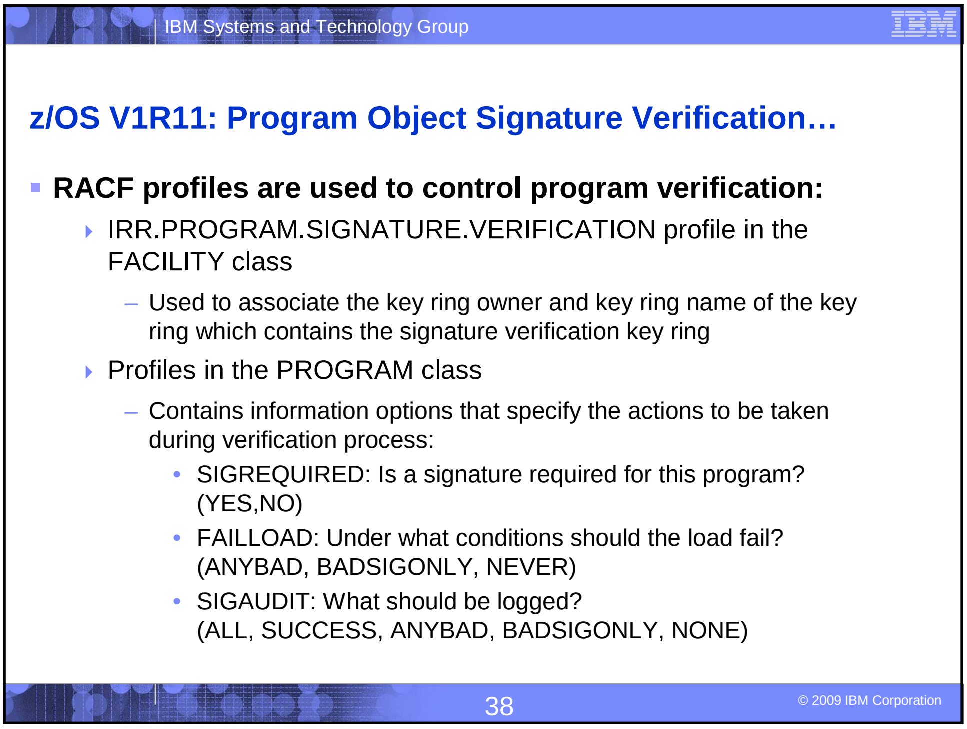
z/OS V1R11: Program Object Signature Verification…

- **Why sign code?**
  - “Belts and suspenders” or “defense in depth”: This support is intended to be used in conjunction with existing security mechanisms .
  - Digitally signing code can help increase the reliability and security of the system by adding an additional layer of controls on executable programs running on the system.
    - Digitally signing code makes it possible to detect changes to programs due to tampering or corruption.
    - Requiring that certain code be signed makes it easier to enforce change control procedures and protect against accidental changes to program code libraries. This helps avoid errors such as accidently placing 'test' code on a 'production' system.



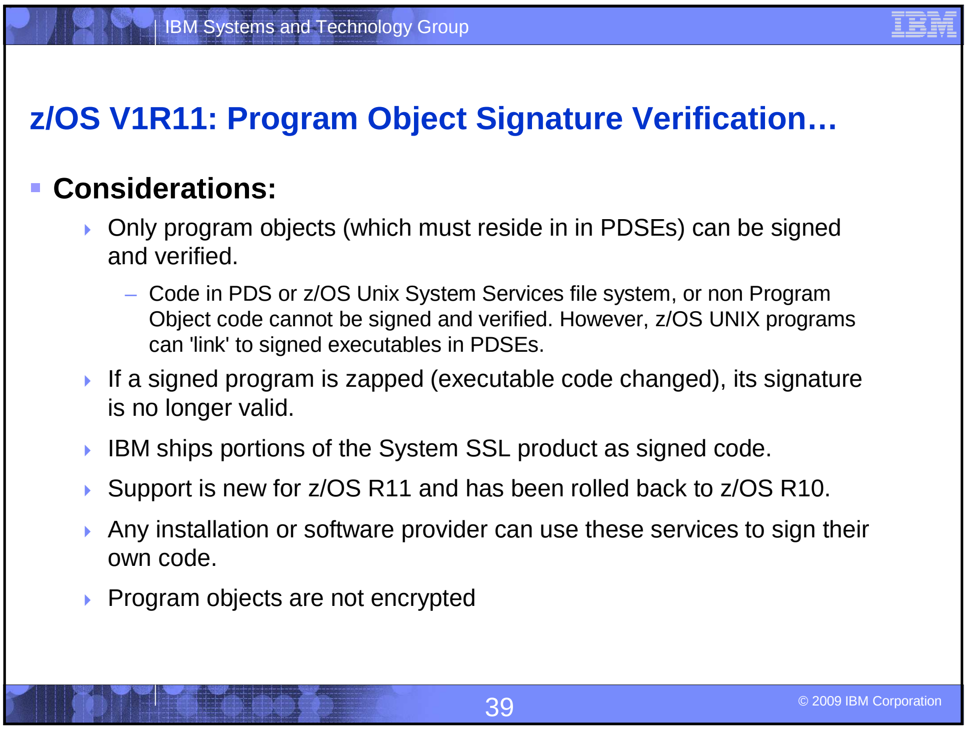
z/OS V1R11: Program Object Signature Verification…

- **RACF profiles are used to control program signing:**
  - Key ring associated with the user performing the signing
    - Contains the information appropriate for program signing (private key, X.509 certificates (signing, CertAuth) which themselves must be appropriately signed
  - IRR.PROGRAM.SIGNING profile(s) in the FACILITY class
    - Used to associate the key ring owner, key ring name, and message digest algorithm used in the signature generation and validation process.



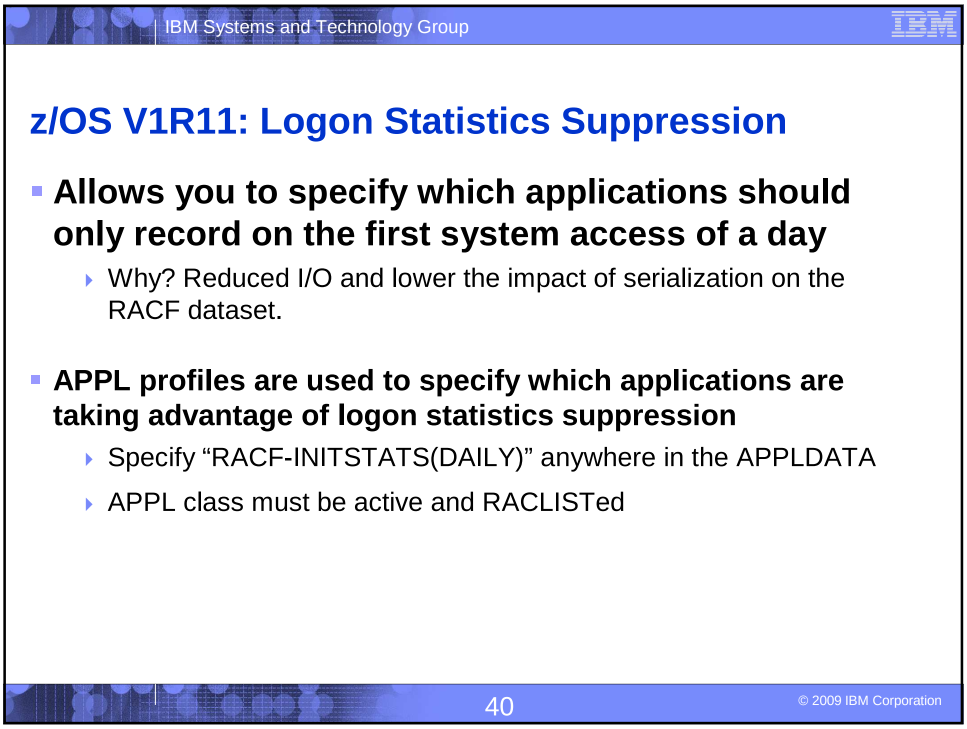
z/OS V1R11: Program Object Signature Verification…

- **RACF profiles are used to control program verification:**
  - IRR.PROGRAM.SIGNATURE.VERIFICATION profile in the FACILITY class
    - Used to associate the key ring owner and key ring name of the key ring which contains the signature verification key ring
  - Profiles in the PROGRAM class
    - Contains information options that specify the actions to be taken during verification process:
      - SIGREQUIRED: Is a signature required for this program? (YES,NO)
      - FAILLOAD: Under what conditions should the load fail? (ANYBAD, BADSIGONLY, NEVER)
      - SIGAUDIT: What should be logged? (ALL, SUCCESS, ANYBAD, BADSIGONLY, NONE)



z/OS V1R11: Program Object Signature Verification…

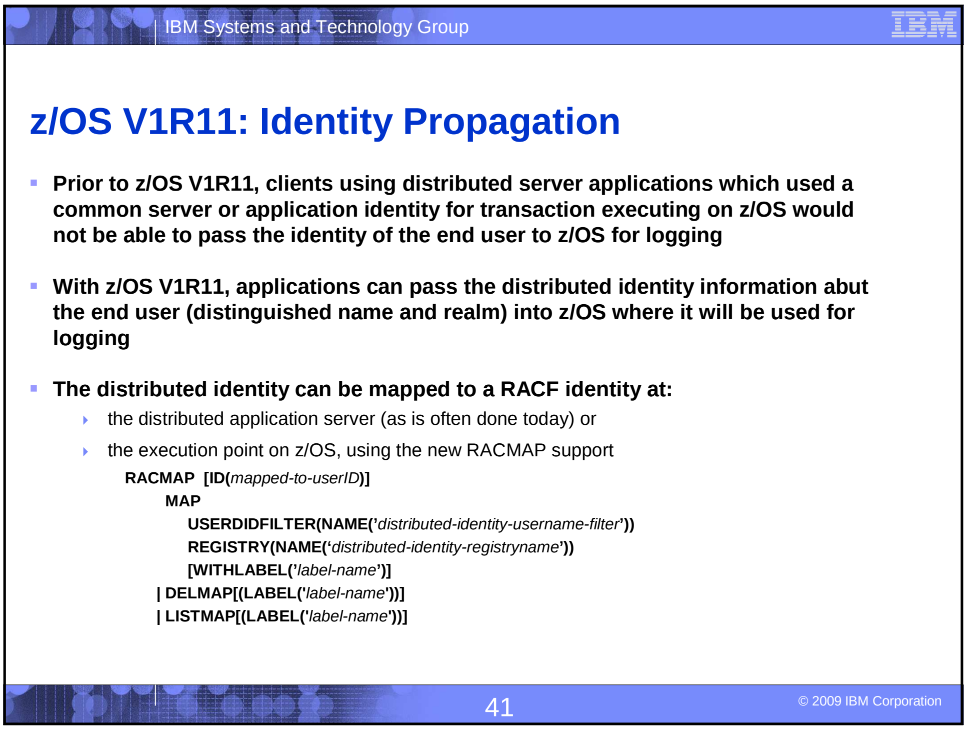
- **Considerations:**
  - Only program objects (which must reside in in PDSEs) can be signed and verified.
    - Code in PDS or z/OS Unix System Services file system, or non Program Object code cannot be signed and verified. However, z/OS UNIX programs can 'link' to signed executables in PDSEs.
  - If a signed program is zapped (executable code changed), its signature is no longer valid.
  - IBM ships portions of the System SSL product as signed code.
  - Support is new for z/OS R11 and has been rolled back to z/OS R10.
  - Any installation or software provider can use these services to sign their own code.
  - Program objects are not encrypted



z/OS V1R11: Logon Statistics Suppression

- **Allows you to specify which applications should only record on the first system access of a day**
  - Why? Reduced I/O and lower the impact of serialization on the RACF dataset.

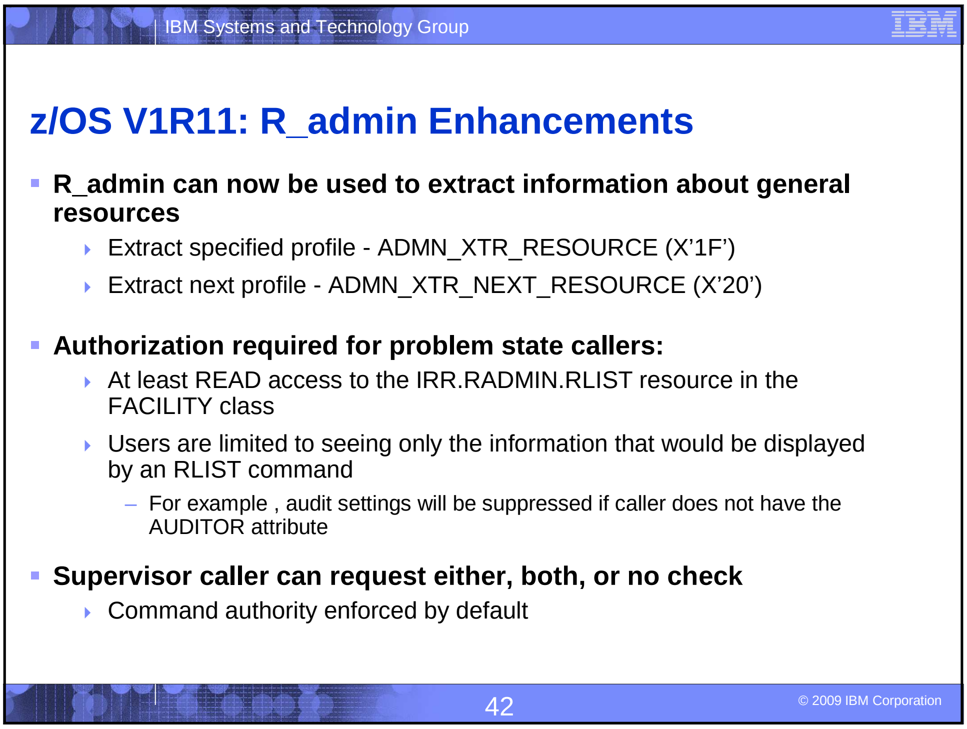
- **APPL profiles are used to specify which applications are taking advantage of logon statistics suppression**
  - Specify “RACF-INITSTATS(DAILY)” anywhere in the APPLDATA
  - APPL class must be active and RACLISTed



z/OS V1R11: Identity Propagation

- **Prior to z/OS V1R11, clients using distributed server applications which used a common server or application identity for transaction executing on z/OS would not be able to pass the identity of the end user to z/OS for logging**
- **With z/OS V1R11, applications can pass the distributed identity information abut the end user (distinguished name and realm) into z/OS where it will be used for logging**
- **The distributed identity can be mapped to a RACF identity at:**
  - the distributed application server (as is often done today) or
  - the execution point on z/OS, using the new RACMAP support

```
RACMAP  [ID(mapped-to-userID)]
      MAP
         USERDIDFILTER(NAME('distributed-identity-username-filter'))
         REGISTRY(NAME('distributed-identity-registryname'))
         [WITHLABEL('label-name')]
     | DELMAP[(LABEL('label-name'))]
     | LISTMAP[(LABEL('label-name'))]
```



z/OS V1R11: R_admin Enhancements

- **R_admin can now be used to extract information about general resources**
  - Extract specified profile - ADMN_XTR_RESOURCE (X'1F')
  - Extract next profile - ADMN_XTR_NEXT_RESOURCE (X'20')
- **Authorization required for problem state callers:**
  - At least READ access to the IRR.RADMIN.RLIST resource in the FACILITY class
  - Users are limited to seeing only the information that would be displayed by an RLIST command
    - For example , audit settings will be suppressed if caller does not have the AUDITOR attribute
- **Supervisor caller can request either, both, or no check**
  - Command authority enforced by default

z/OS V1R11: R_admin Enhancements…

- **R_admin SETROPTS option extraction (ADMN_XTR_SETR (X’16’)) may now be called from problem state**
- **Authorization required for problem state caller:**
  - At least READ access to IRR.RADMIN.SETROPTS.LIST in the FACILITY class
  - Authority as enforced by the SETROPTS command
    - For example, audit settings will be suppressed if caller does not have the AUDITOR attribute
- **No changes required to existing programs other than to remove MODESET into supervisor state**

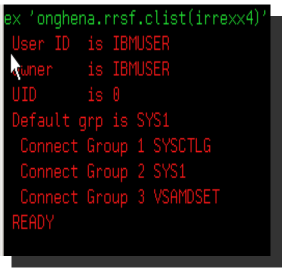
z/OS V1R11: LDAP Change Logging of General Resources

- **You can now tell RACF to create change log entries for changes to general resources by defining the profile NOTIFY.LDAP.*class-name* in the RACFEVNT class and activate the class**
- **Events which are logged:**
  - Resource additions made using the **RDEFINE** command
  - Resource modifications made using the **RALTER** command
  - Changes to the resource’s access list using the **PERMIT** command
  - Resource deletions made using the **RDELETE** command
- **ICHEINTY/RACROUTE applications can create their own change log entries using R_proxyserv (IRRSPY00)**

z/OS V1R11: REXX Interface to R_admin Extract Functions

- **IRRXUTIL allows you to extract information from the RACF database using the REXX programming language**
- **Data is returned as stem variables**

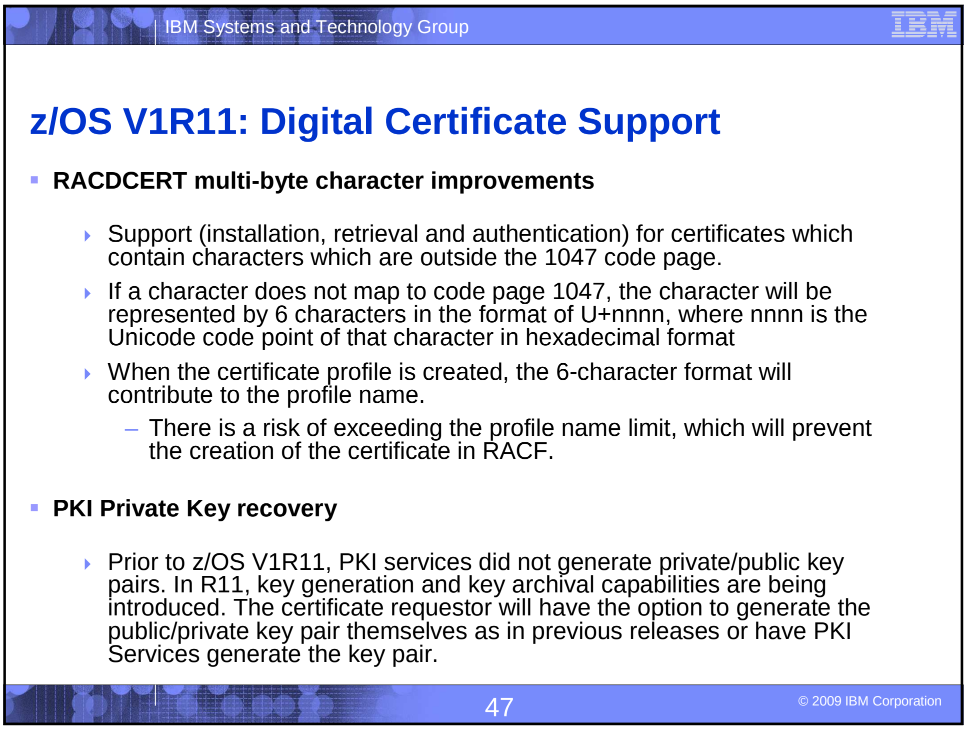
```
/* REXX */
myrc=IRRXUTIL("EXTRACT","USER","IBMUSER","RACF")
  if (word(myrc,1)=0) then do
    say "User ID  is "RACF.PROFILE
    say "Owner    is "RACF.BASE.OWNER.1
    say "UID      is "RACF.OMVS.UID.1
    say "Default grp is "RACF.BASE.DFLTGRP.1
    do i=1 to RACF.BASE.CGROUP.0
       say " Connect Group "i" "RACF.BASE.CGROUP.i
    end
  end
```



```
ex 'onghena.rrsf.clist(irrexx4)'
 User ID  is IBMUSER
 Owner    is IBMUSER
 UID      is 0
 Default grp is SYS1
  Connect Group 1 SYSCTLG
  Connect Group 2 SYS1
  Connect Group 3 VSAMDSET
 READY
```

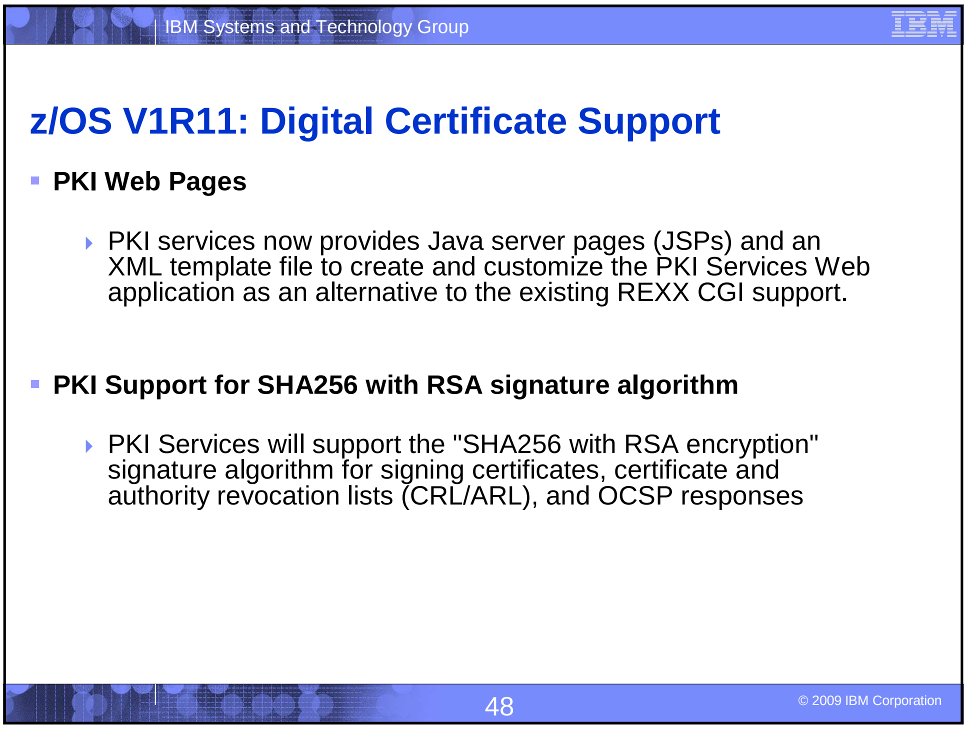
z/OS V1R11: Automatic UID/GID Assignment

- **z/OS UNIX System Services tasks are associated with user and group identifiers (UIDs & GIDs)**
  - Can be assigned explicitly in RACF profiles (preferred)
    - AUTOUID/AUTOGID can be specified to generate a unique UID/GID
  - Can default from BPX.DEFAULT.USER profile
- **New option to assign permanent unique UIDs/GIDs is enabled by BPX.UNIQUE.USER profile in FACILITY class. Once enabled, RACF and UNIX System Services:**
  - Create a unique UID/GID and
  - Generates an OMVS segment for the user/group if none exists
    - APPLDATA specifies a default user profile from which the other segment information is copied.
  - Uses the existing BPX.NEXT.USER processing (from AUTOUID/AUTOGID)
- **Implemented in initUSP, getUMAP, & getGMAP, which are invoked by various UNIX system services**



z/OS V1R11: Digital Certificate Support

- **RACDCERT multi-byte character improvements**
  - Support (installation, retrieval and authentication) for certificates which contain characters which are outside the 1047 code page.
  - If a character does not map to code page 1047, the character will be represented by 6 characters in the format of U+nnnn, where nnnn is the Unicode code point of that character in hexadecimal format
  - When the certificate profile is created, the 6-character format will contribute to the profile name.
    - There is a risk of exceeding the profile name limit, which will prevent the creation of the certificate in RACF.
- **PKI Private Key recovery**
  - Prior to z/OS V1R11, PKI services did not generate private/public key pairs. In R11, key generation and key archival capabilities are being introduced. The certificate requestor will have the option to generate the public/private key pair themselves as in previous releases or have PKI Services generate the key pair.



z/OS V1R11: Digital Certificate Support

- **PKI Web Pages**
  - PKI services now provides Java server pages (JSPs) and an XML template file to create and customize the PKI Services Web application as an alternative to the existing REXX CGI support.
- **PKI Support for SHA256 with RSA signature algorithm**
  - PKI Services will support the "SHA256 with RSA encryption" signature algorithm for signing certificates, certificate and authority revocation lists (CRL/ARL), and OCSP responses