User Manual

MDSEC

Application Security Tool
for the IBM i
from
Midrange Dynamics

Version 8.0.2
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MDSEC - Table of Contents

1 Overview

The MDSEC Application-Security tool provides IT staff a user-friendly means to secure MDCMS, MDOpen, MDXREF and MDWorkflow, as well as their in-house applications, at a functional and object level. Security administrators then have a simple means to manage user authorities for application functions as well as easy management of IBMi authorization lists and DDM usage.

1.1 Terminology

Application
An application is a collection of functional security codes. MD product application codes are automatically opened in MDSEC and contain all security codes for the authorization to MDCMS and MDXREF functions. Application ***md*** contains the default and general authorizations for the MD products.

Additionally, applications can be created in MDSEC to manage the authorizations to in-house functions.

Level
The level represents an instance, or environment, of an application (development, test, production, etc.). The general application **md** doesn't contain levels, but each MDCMS/MDXREF level defined for an organization can have certain security functions limited to specific levels for a given user.

Code
The application code is a security code that represents a function that requires authorization within MDSEC. Codes for MDCMS and MDXREF are between 0 (general access) and 99. In-house codes for applications used in MDCMS or MDXREF are 100 or higher. Codes for in-house applications are 0 or higher.

In-house codes can also use limits so that a user only has authority when the run-time value being checked against is within the allowed limits.

User Role
A user role is a collection of authorities. When a role is granted authority to 1 or more codes, every user having the role is automatically granted the same authority to those codes.

A user may belong to multiple roles, thus having authority to all codes granted to each role that the user belongs to.

The standard list of User Roles and an overview of their default capabilities is available in Appendix A.

User
A user is a profile that exists on the IBMi system that should have authority to one or more application codes based on role memberships and personally granted authorities.

2 Starting MDSEC

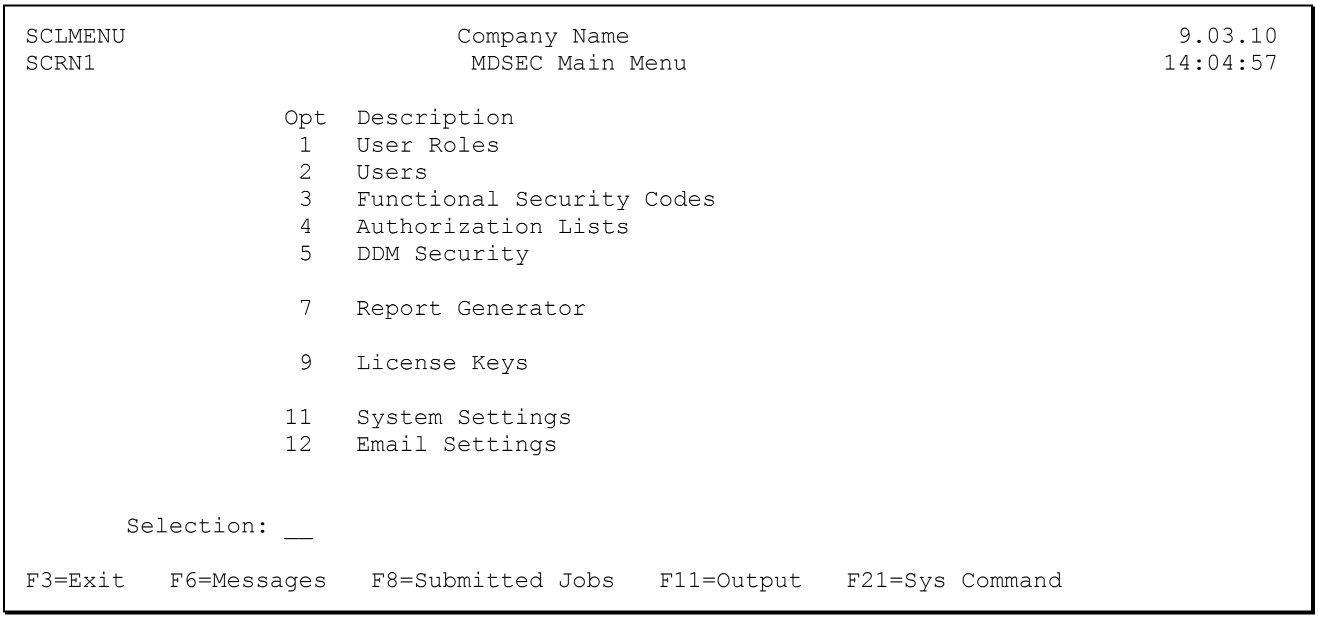
Type the command MDSEC from a command line. If using a suffix for a separate instance of MDSEC, then enter that value in the ENV parameter. For example, MDSEC ENV(XXXX).

MDSEC may also be accessed from the MDCMS Settings Menu option #8.

A user will only be able to view the current settings in MDSEC unless that user has either *SECOFR authority, *SECADM authority or has been granted security privileges within MDSEC.

2.1 MDSEC Menu

The Main menu for MDSEC. If the user does not have administration rights within MDSEC, then the menu will not be displayed and the user will automatically be shown the User listing screen.



```
SCLMENU                       Company Name                                9.03.10
SCRN1                          MDSEC Main Menu                           14:04:57

                  Opt  Description
                   1   User Roles
                   2   Users
                   3   Functional Security Codes
                   4   Authorization Lists
                   5   DDM Security

                   7   Report Generator

                   9   License Keys

                  11   System Settings
                  12   Email Settings


       Selection: __

F3=Exit   F6=Messages   F8=Submitted Jobs   F11=Output   F21=Sys Command
```

Option 1: User Roles
Manages the list of User Roles that have functional access to MDCMS, MDXREF, or in-house applications.

Option 2: Users
Manages the list of user profiles that have functional access to MDCMS, MDXREF, or in-house applications through user roles or personal authorities.

Option 3: Functional Security Codes
Manages the list of functional security codes to be used to secure in-house applications.

Option 4: Authorization Lists
Manages the authorization lists on the system as well as the user rights for users belonging to those lists.

Option 5: DDM Security
Manages the access rights and logging of DDM (Distributed Data Management) transactions.
This option is only available from the default instance of MDSEC.

Option 7: Report Generator
Allows the user to generate a variety of security reports for Users and Roles.

Option 9: License Keys
Allows for the update of the MD license keys in case the previous keys need to be adjusted or a new MD product license is to be added.

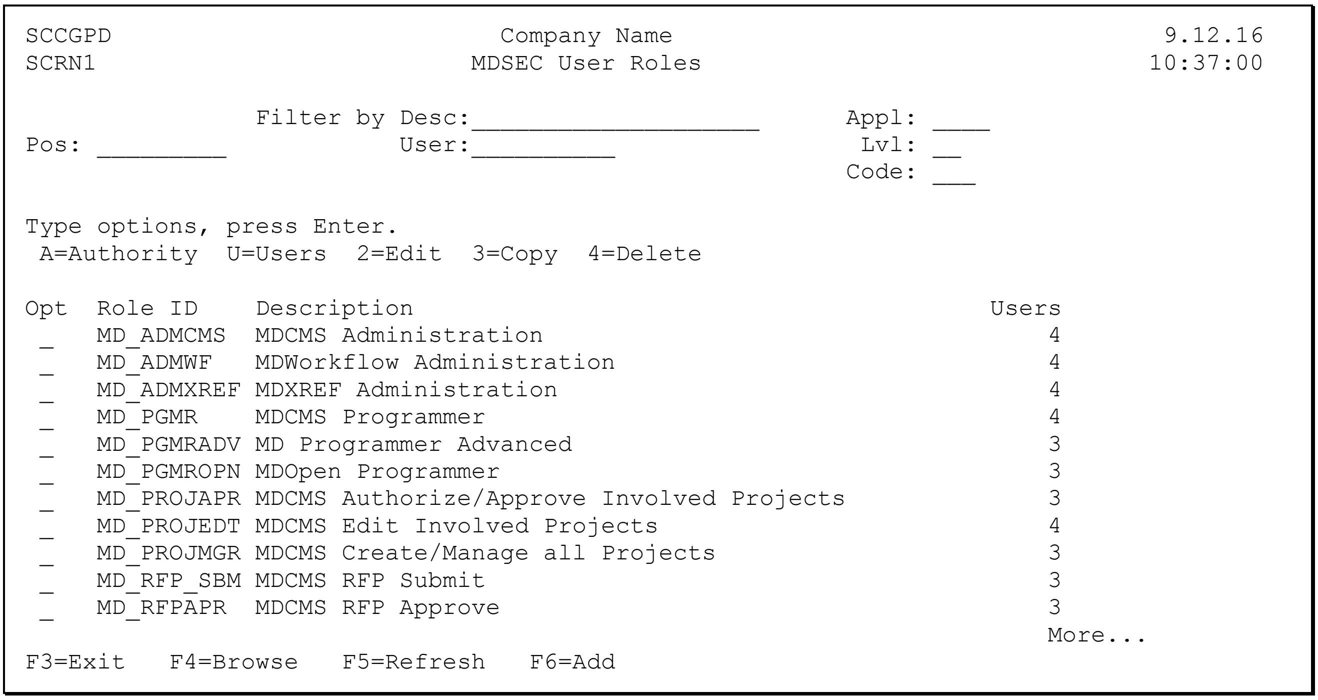
Option 11: System Settings
Defines various system-wide information for this instance of the MD Products.

Option 12: Email Settings
Defines the SMTP credentials and the list of recipient email addresses.

3 User Roles

3.1 User Role Listing

Option 1 from MDSEC Menu: all roles that are currently defined within MDSEC.



```
SCCGPD                           Company Name                              9.12.16
SCRN1                          MDSEC User Roles                           10:37:00

                Filter by Desc:____________________     Appl: ____
Pos: _________            User:__________                Lvl: __
                                                        Code: ___

Type options, press Enter.
 A=Authority  U=Users  2=Edit  3=Copy  4=Delete

Opt  Role ID    Description                                       Users
 _   MD_ADMCMS  MDCMS Administration                                  4
 _   MD_ADMWF   MDWorkflow Administration                             4
 _   MD_ADMXREF MDXREF Administration                                 4
 _   MD_PGMR    MDCMS Programmer                                      4
 _   MD_PGMRADV MD Programmer Advanced                                3
 _   MD_PGMROPN MDOpen Programmer                                     3
 _   MD_PROJAPR MDCMS Authorize/Approve Involved Projects             3
 _   MD_PROJEDT MDCMS Edit Involved Projects                          4
 _   MD_PROJMGR MDCMS Create/Manage all Projects                      3
 _   MD_RFP_SBM MDCMS RFP Submit                                      3
 _   MD_RFPAPR  MDCMS RFP Approve                                     3
                                                                      More...
F3=Exit   F4=Browse   F5=Refresh   F6=Add
```

Positioning and Filtering List

Pos	the cursor will be positioned to the closest match in the list
Desc	only roles that have matching text anywhere within their description will be listed
Appl	only roles with authorization to at least one code in the entered application will be listed
Lvl	only roles with authorization to at least one code in the entered level number will be listed
Code	only roles with authorization to the entered code will be listed. If application and/or level filter values are also entered, then only roles with the entered combination will be listed.
User	Only roles to which the entered user belongs will be listed

Fields

Role ID	A 10-Character value identifying a MDSEC Role
Description	Description of the role
Users	The number of users currently belonging to the role

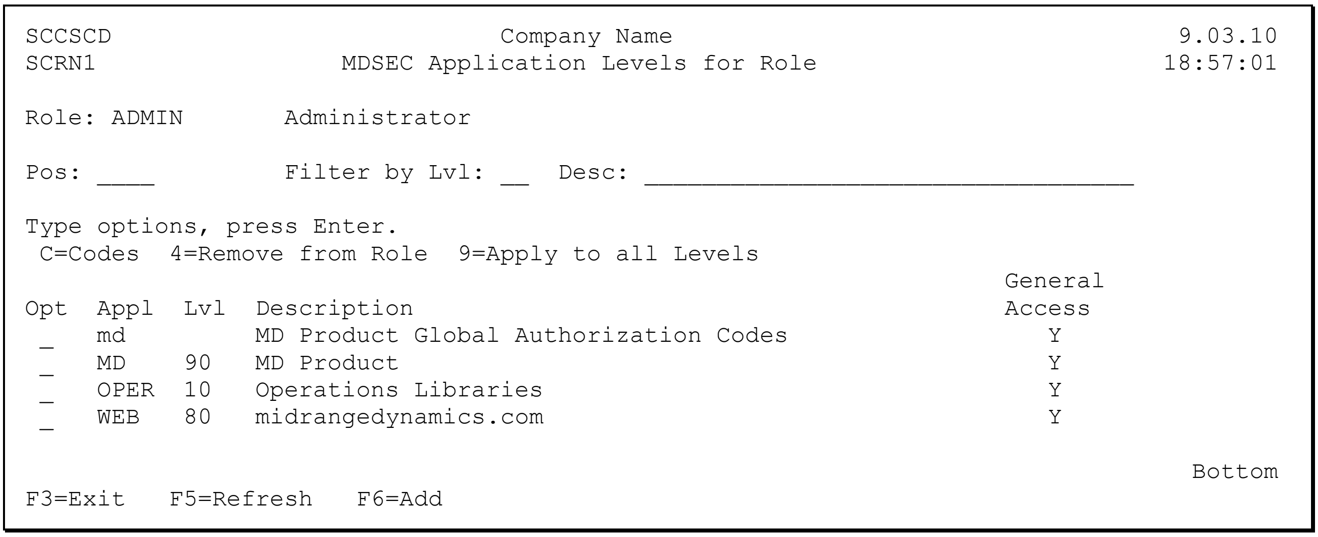
Options
A user may edit the role list if their profile belongs to User Class *SECOFR or *SECADM or if the MDSEC Edit Auth flag is set to Y for the user.

A	View/Edit the applications and codes that the role is authorized to
U	View/Edit the list of users belonging to the role
2	Edit the description for the role
3	Copy the role to a new role. Optionally copy the authorities and or the user list to the new role.
4	Delete the role from MDSEC

Function Keys:
F3=Exit – Return to previous panel
F4=Browse – Browse a list of available values for a field
F5=Refresh – Refresh the panel
F6=Add – Add a new role to MDSEC. The role ID can be any 10 character value
F12=Exit – Return to previous panel

3.2 MDSEC Application Levels for Role

Option A=Authority from the MDSEC Role Listing: all Application Levels for which the role is authorized



```
SCCSCD                           Company Name                              9.03.10
SCRN1                 MDSEC Application Levels for Role                   18:57:01

Role: ADMIN        Administrator

Pos: ____          Filter by Lvl: __   Desc: ___________________________________

Type options, press Enter.
 C=Codes   4=Remove from Role   9=Apply to all Levels
                                                                    General
Opt  Appl  Lvl  Description                                         Access
 _   md         MD Product Global Authorization Codes                  Y
 _   MD    90   MD Product                                             Y
 _   OPER  10   Operations Libraries                                   Y
 _   WEB   80   midrangedynamics.com                                   Y

                                                                         Bottom
F3=Exit   F5=Refresh   F6=Add
```

Positioning and Filtering List

Pos	the cursor will be positioned to the first application >= entered value
Lvl	only application levels for the entered number will be listed
Desc	only application levels containing the entered value in the description will be listed

Fields

Appl	An application defined either in MDCMS/MDXREF or from the Functional Security Codes list
Lvl	A level defined either in MDCMS/MDXREF or from the Functional Security Codes list
Description	Description of the application level
General Access	If general access (code 0) is granted to the level for the role. This allows for turning off authority for the level without removing codes for the level.

Options

A user may only edit the list if they have *SECOFR authority or if the MDSEC Edit Auth flag is set to Y for the user.

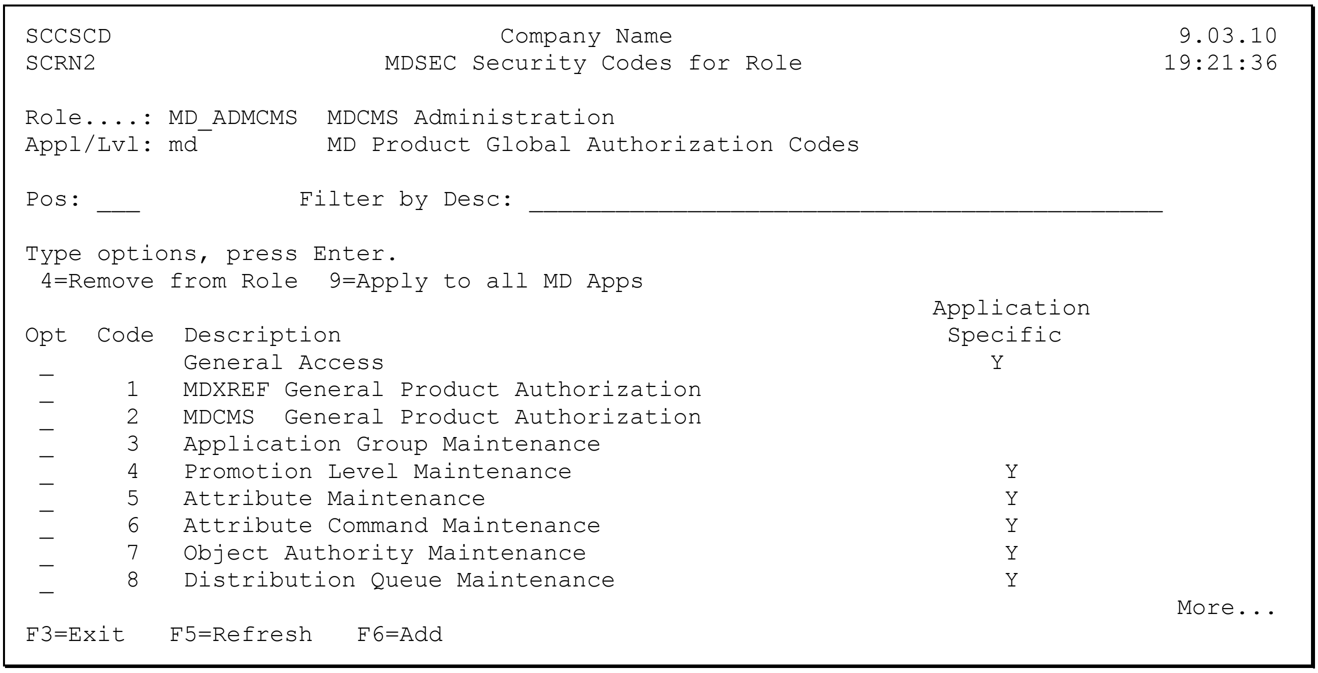
C	View/Edit the codes for the selected application level that the role is authorized to
4	Remove all authorizations for the application level from the role
9	Apply all code authorizations for application md to all MDCMS/MDXREF levels for the role. Option only valid for application md. The use of this option provides a rapid means to have the same authorizations regardless of the Application Level.

Function Keys:

F3=Exit – Return to previous panel
F5=Refresh – Refresh the panel
F6=Add – Add a new role to MDSEC. The role ID can be any 10 character value

3.3 MDSEC Security Codes for Role

Option C from the MDSEC Application Levels for Role Listing: all Security Codes for which the role is authorized within the selected Application Level



```
SCCSCD                           Company Name                                   9.03.10
SCRN2                    MDSEC Security Codes for Role                         19:21:36

Role....: MD_ADMCMS  MDCMS Administration
Appl/Lvl: md         MD Product Global Authorization Codes

Pos: ___           Filter by Desc: ____________________________________________

Type options, press Enter.
 4=Remove from Role  9=Apply to all MD Apps
                                                               Application
Opt  Code  Description                                          Specific
 _         General Access                                           Y
 _     1   MDXREF General Product Authorization
 _     2   MDCMS  General Product Authorization
 _     3   Application Group Maintenance
 _     4   Promotion Level Maintenance                               Y
 _     5   Attribute Maintenance                                     Y
 _     6   Attribute Command Maintenance                             Y
 _     7   Object Authority Maintenance                              Y
 _     8   Distribution Queue Maintenance                            Y
                                                                                More...
F3=Exit   F5=Refresh   F6=Add
```

Positioning and Filtering List

Pos	the cursor will be positioned to the first code >= entered value
Desc	only codes containing the entered value in the description will be listed

Fields

Code	An application code defined either in MDCMS/MDXREF or from the Function Security Codes list to define authorization to a specific function
Description	Description of the code
Application Specific	For application md only: Y – Authorization to the MDCMS or MDXREF function will be checked against the corresponding MDCMS/MDXREF at run-time. This allows a role to have authority to one application level but not another N – Authorization to the MDCMS or MDXREF function is checked against md and there is no differentiation amongst the application levels
Limits	For non-md codes only: N – Limits not used or user is unauthorized for all checked values U – Users in role have unlimited authority to function Y – Users in role have limited authority to values between minimum and maximum

Options

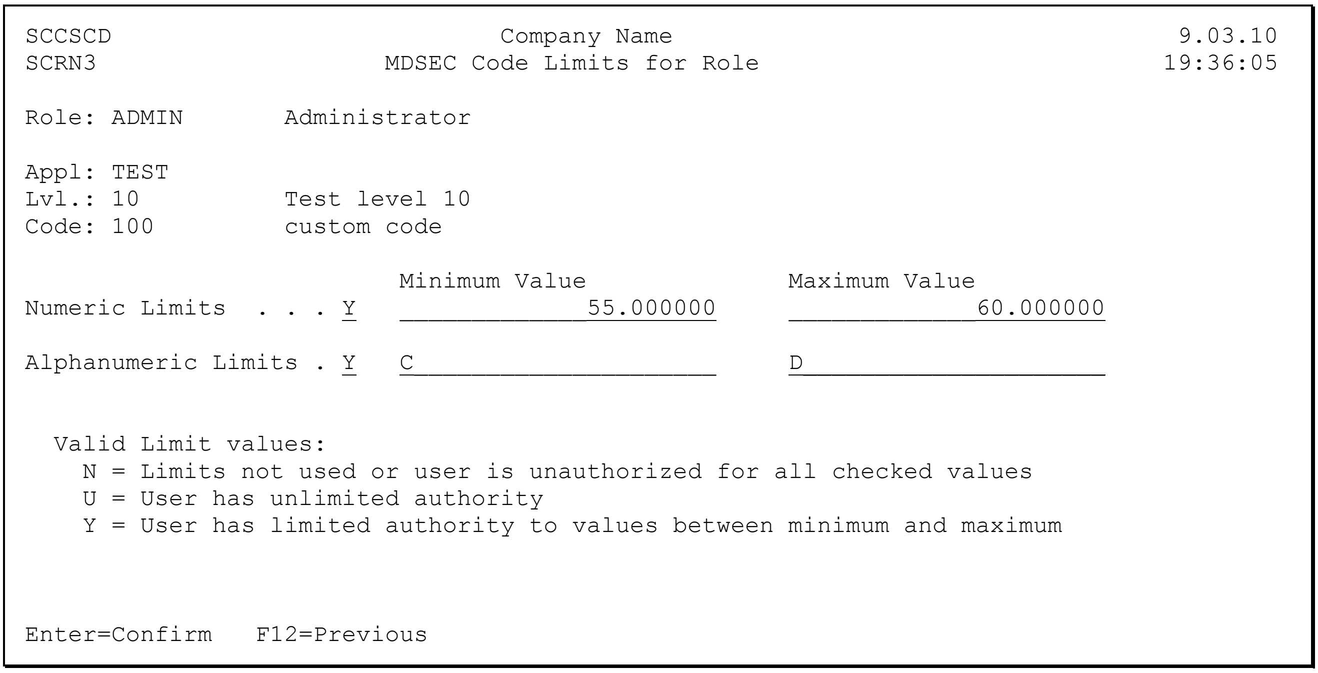
A user may only edit the list if they have *SECOFR authority or if the MDSEC Edit Auth flag is set to Y for the user.

L	View/Edit the limits for a non-md code
4	Remove authorization for the code from the role
9	Apply the code authorization for application md to all MDCMS/MDXREF application levels for the role. Option only valid for application ***md***.

Function Keys:
F3=Exit – Return to previous panel
F5=Refresh – Refresh the panel
F6=Add – Add a new role to MDSEC. The role ID can be any 10 character value

3.4 MDSEC Code Limits for Role

Option L from the MDSEC Code Listing: numeric or alphanumeric value limits for an internal function security code



```
SCCSCD                          Company Name                         9.03.10
SCRN3                      MDSEC Code Limits for Role               19:36:05

Role: ADMIN       Administrator

Appl: TEST
Lvl.: 10          Test level 10
Code: 100         custom code

                          Minimum Value              Maximum Value
Numeric Limits  . . . Y   _____________55.000000     _____________60.000000

Alphanumeric Limits . Y   C______________________    D______________________


  Valid Limit values:
    N = Limits not used or user is unauthorized for all checked values
    U = User has unlimited authority
    Y = User has limited authority to values between minimum and maximum



Enter=Confirm   F12=Previous
```

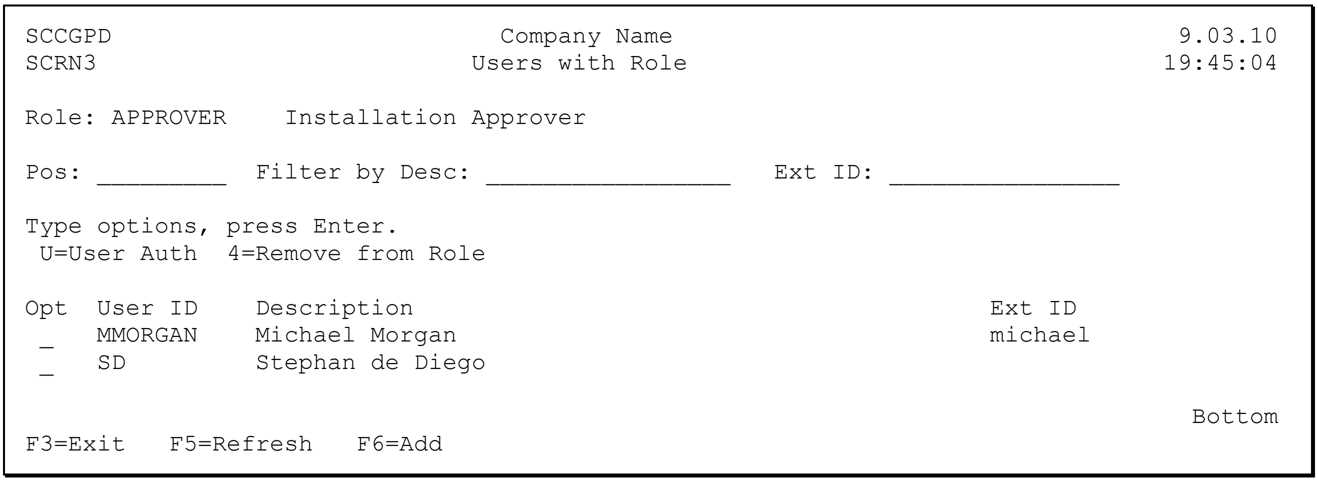
Fields

Limits	N – Limits not used or user is unauthorized for all checked values U – Users in role have unlimited authority to function Y – Users in role have limited authority to values between minimum and maximum
Minimum Value	The minimum value allowed for the role at run-time, if the calling program requests that limits are checked. Not applicable for unlimited or non-limited codes
Maximum Value	The maximum value allowed for the role at run-time, if the calling program requests that limits are checked. Not applicable for unlimited or non-limited codes

Function Keys:
Enter=Confirm
F12=Previous

3.5 Users with Role

Option U from the MDSEC Role Listing: all users belonging to the role



```
SCCGPD                           Company Name                                   9.03.10
SCRN3                          Users with Role                                 19:45:04

Role: APPROVER    Installation Approver

Pos: _________   Filter by Desc: _________________   Ext ID: ________________

Type options, press Enter.
 U=User Auth  4=Remove from Role

Opt  User ID    Description                                       Ext ID
 _   MMORGAN    Michael Morgan                                    michael
 _   SD         Stephan de Diego

                                                                                 Bottom
F3=Exit   F5=Refresh   F6=Add
```

Positioning and Filtering List

Pos	the cursor will be positioned to the closest match in the list
Desc	only users that have matching text anywhere within their description will be listed
Ext ID	only users that have matching text anywhere within their external ID will be listed

Fields

User ID	The system user profile ID for the user
Description	Description of the user
Ext ID	The external ID for the user. This is used for the mapping of LDAP network user ids to the internal system ID

Options

A user may only edit the list if they have *SECOFR authority or if the MDSEC Edit Auth flag is set to Y for the user.

U	View all authorities for the user, based on all roles that the user belongs to
4	Remove the user from the role

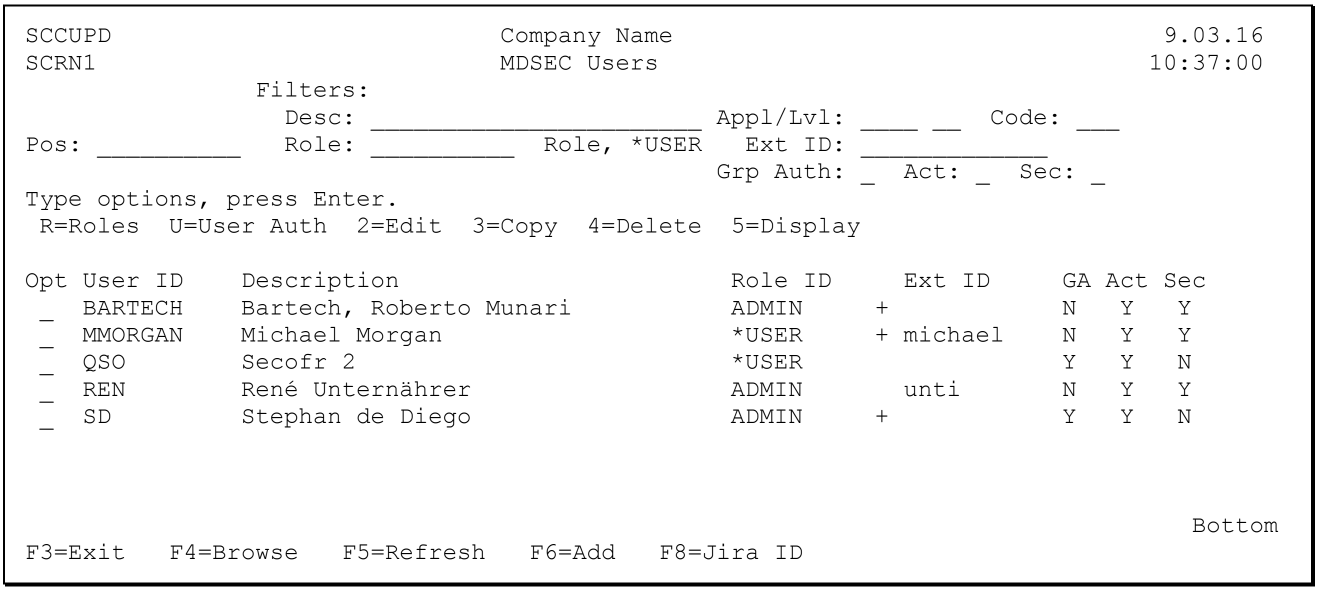
Function Keys:

F3=Exit – Return to previous panel
F5=Refresh – Refresh the panel
F6=Add – Add a new role to MDSEC. The role ID can be any 10 character value
F12=Exit – Return to previous panel

4 Users

4.1 User Listing

Option 2 from MDSEC Menu: all users that are currently defined within MDSEC.



```
SCCUPD                           Company Name                                  9.03.16
SCRN1                            MDSEC Users                                  10:37:00
                Filters:
                  Desc: _______________________ Appl/Lvl: ____ __  Code: ___
Pos: __________   Role: __________  Role, *USER   Ext ID: _____________
                                                Grp Auth: _  Act: _  Sec: _
Type options, press Enter.
 R=Roles  U=User Auth  2=Edit  3=Copy  4=Delete  5=Display

Opt User ID    Description                      Role ID     Ext ID      GA  Act  Sec
 _  BARTECH    Bartech, Roberto Munari          ADMIN     +              N   Y   Y
 _  MMORGAN    Michael Morgan                   *USER     + michael      N   Y   Y
 _  QSO        Secofr 2                         *USER                    Y   Y   N
 _  REN        René Unternährer                 ADMIN       unti         N   Y   Y
 _  SD         Stephan de Diego                 ADMIN     +              Y   Y   N



                                                                                 Bottom
F3=Exit   F4=Browse   F5=Refresh   F6=Add   F8=Jira ID
```

Positioning and Filtering List

Pos	the cursor will be positioned to the first user id >= entered value
Desc	only users containing the entered value in the description will be listed
Appl	only users with authorization to at least one code in the entered application will be listed
Lvl	only users with authorization to at least one code in the entered level number will be listed
Code	only users with authorization to the entered code will be listed. If application and/or level filter values are also entered, then only users with the entered combination will be listed.
Role	Only users that belong to the entered role will be listed
Ext ID	only users containing the entered value in their External User ID will be listed
Jira ID	only users containing the entered value in their JIRA Username will be listed
Grp Auth	Filter the users based on following group authority values: Y – MDSEC Authorities based on Group Profile N – MDSEC Authorities based on User Profile B – MDSEC Authorities based on the combination of the Group Profile and User Profile
Act	Filter the users based on the following Active status values Y – the user is active and the authorizations will be granted N – the user has been disabled within MDSEC and will not have authority to any codes in MDSEC
Sec	Filter the users based on the following Security Authority values: Y – the user may make changes within MDSEC N – the user is not permitted to make changes within MDSEC

Fields

User ID	The user profile of a user
Description	Description of the user
Role ID	The role that the user belongs to. If the user belongs to multiple roles, a + will be displayed
External User ID	The external ID for the user. This is used for the mapping of LDAP network user ids to the internal system ID when logging into MDWorkflow automatically. An IBMi user profile is not required when logging in over LDAP, but will be used if it exists.
Active	If the user profile is active in MDSEC Y – the user is active and the authorizations will be granted N – the user has been disabled within MDSEC and will not have authority to any codes in MDSEC
MDSEC Edit Auth	Edit Authority within MDSEC Y – the user may make changes within MDSEC N – the user is not permitted to make changes within MDSEC
Group Profile	The group profile that the user profile belongs to. This is a read-only parameter If the User ID (first parameter) is a valid user profile, but isn't defined in MDSEC, then that user id will have any authorities that the group profile attached to the user profile has within MDSEC. If the User ID is defined in MDSEC, and is attached to a group profile, then authority will be based on the Use Group Auth parameter
Use Group Auth	If the User Profile of the User ID is attached to a Group ID, the following values are possible: Y – MDSEC Authorities based on Group Profile N – MDSEC Authorities based on User Profile B – MDSEC Authorities based on the combination of the Group Profile and User Profile
CCSID Override	The Coded Character Set to use when communicating with this system using MDOpen or MDWorkflow. This ensures that characters are displayed in the form and order that is expected for the user's locale within those clients. A value is only necessary here if the user requires a different CCSID than the CCSID defined for the system in the MDCMS system settings.
JIRA Username	The user name for the user that is registered in JIRA. This is used for the mapping of JIRA user ids to the internal system ID when transferring task information between the 2 systems.
Workflow Password	The password to be used for MDWorkflow users that do not have an IBMi User Profile. This password is to be entered together with the MDSEC User ID at the MDWorkflow login prompt. If the user id exists as an IBMi user profile, then the password for the IBMi profile will be used by MDWorkflow rather than this password.
Password Expired	N – the password is not expired Y – the password is expired. The user will be prompted and required to change the password the next time that they login to MDWorkflow.

Options

A user may edit the user list if their profile belongs to User Class *SECOFR or *SECADM or if the MDSEC Edit Auth flag is set to Y for the user.

R	View/Edit the list of roles that the user belongs to
U	View all authorities for the user, based on all roles that the user belongs to
2	Edit the properties for the user. The authorities for the user are edited using option R
3	Copy the user to a new user. Optionally copy the authorities to the new user.
4	Delete the user from MDSEC
5	Display the User properties

Function Keys:

F3=Exit – Return to previous panel

F4=Browse – Browse a list of valid values for a field

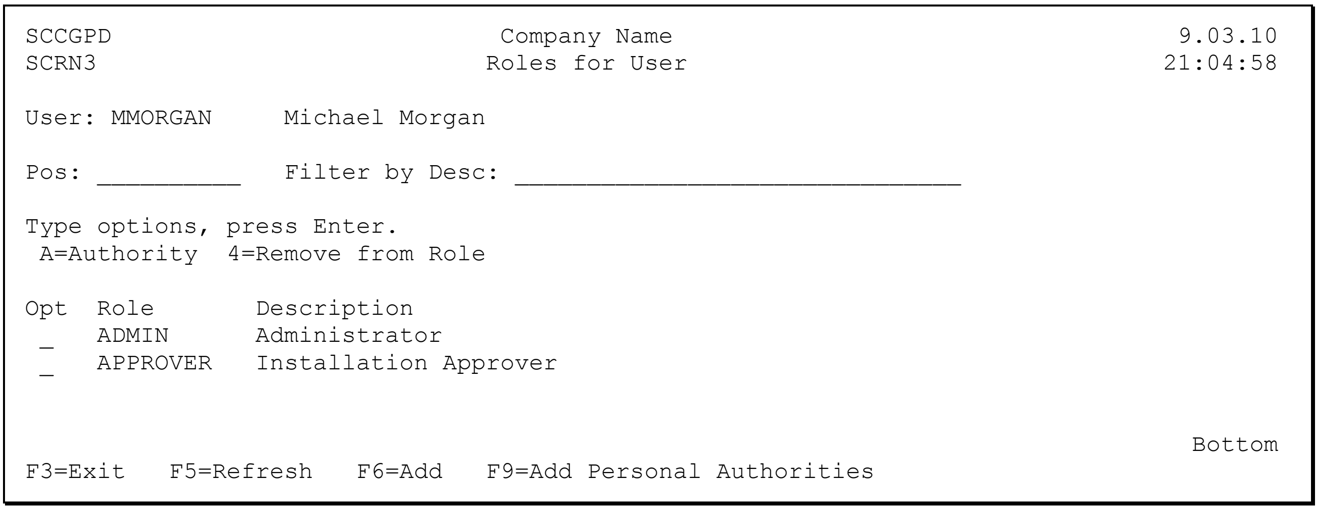
F5=Refresh – Refresh the panel

F6=Add – Add a new user to MDSEC. If the user requires access to MDCMS or MDOpen, then the user must be a valid IBMi user profile. If only MDWorkflow access is necessary, then a User Profile does not have to exist for the ID.

F8=Jira ID/External ID – toggle the listing and filter field between the External User ID and the JIRA Username

4.2 Roles for User

Option R from the MDSEC User Listing: all roles that the user belongs to



```
SCCGPD                           Company Name                             9.03.10
SCRN3                           Roles for User                           21:04:58

User: MMORGAN     Michael Morgan

Pos: __________   Filter by Desc: _______________________________

Type options, press Enter.
 A=Authority  4=Remove from Role

Opt  Role       Description
 _   ADMIN      Administrator
 _   APPROVER   Installation Approver


                                                                           Bottom
F3=Exit   F5=Refresh   F6=Add   F9=Add Personal Authorities
```

Positioning and Filtering List

Pos	the cursor will be positioned to the closest match in the list
Desc	only users that have matching text anywhere within their description will be listed

Fields

Role	A 10-Character value identifying a MDSEC Role
Description	Description of the role

Options

A user may only edit the list if they have *SECOFR authority or *SECADM authority or if the MDSEC Edit Auth flag is set to Y for the user.

A	View/Edit the application levels and codes that the role is authorized to
4	Remove the user from the role

Function Keys:

F3=Exit – Return to previous panel
F5=Refresh – Refresh the panel
F6=Add – Add 1 or more Roles for the User
F9=Add Personal Authorities – Add Application Level and Code authorities for a User. These can be in addition to, or instead of, Role authorities for the User

Adding Personal User Authority

The use of the F9=Add Personal Authorities function key will enable the MDCMS administrator to add, maintain, or remove a user's personal authorities. These authorities are in addition to authorities obtained through membership in other roles.

To grant an individual personal authority to specific codes follow these steps:

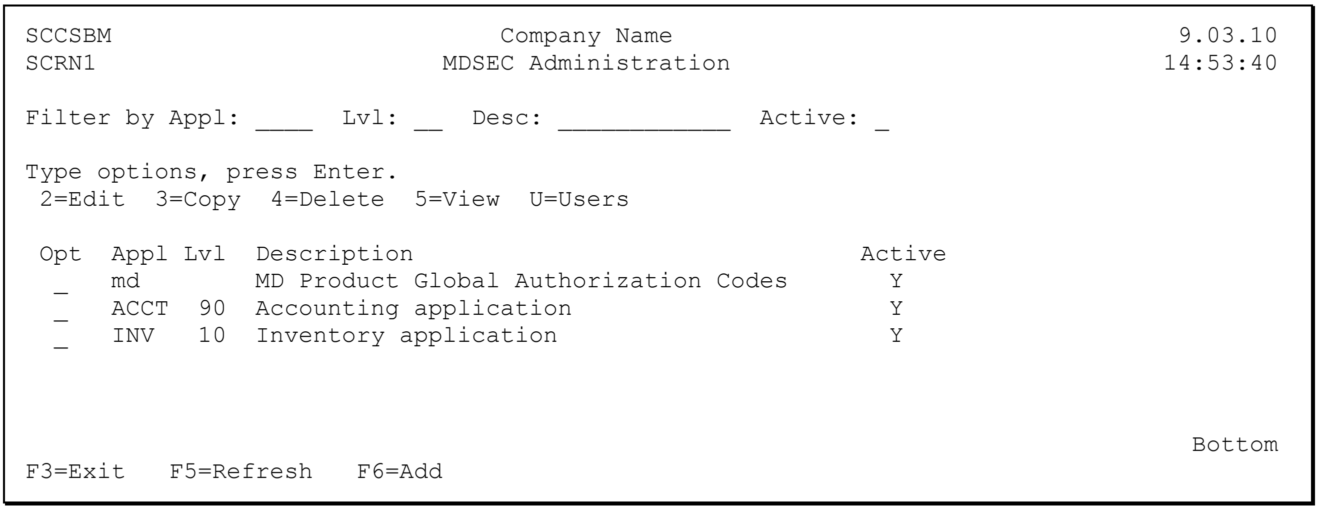
1. Go to the MDSEC Main Menu
2. Select Option 2 – Users
3. Take option R=Roles for a selected user
4. Press F9=Add Personal Authorities function key (see NOTE below). On the ***MDSEC Application Levels for Role*** panel, press the ***F6=Add*** function key. On the ***Unauthorized MDSEC Application Levels*** panel, select all Application Levels that the user will require personal authority to and press Enter. That action will result in the Application Levels selected being returned to the ***MDSEC Security Codes for Role*** panel. Use the F6=Add function key to display the ***Unauthorized MDSEC Codes*** panel and proceed to use option 1=Select one or more Codes for each of the selected Applications. After completing the update and returning to the Roles for User panel the user will have a *USER Role value with a Description of Personal Authorities.
5. Use the A=Authority option from the ***Roles for User*** panel to maintain a user's personal authority

NOTE: If the ***F9=Add Personal Authorities*** function key is not displayed on the ***Roles for User*** panel the user will already have a Role entry of *USER. Once the *USER role is created, it can be maintained using the A=Authority option from within the ***Roles for User*** panel.

5 Functional Security Codes

5.1 Application Level Listing

Option 3 from MDSEC Menu: all application levels to be functionally secured by MDSEC



```
SCCSBM                          Company Name                            9.03.10
SCRN1                        MDSEC Administration                      14:53:40

Filter by Appl: ____  Lvl: __  Desc: ____________  Active: _

Type options, press Enter.
 2=Edit  3=Copy  4=Delete  5=View  U=Users

 Opt  Appl Lvl  Description                           Active
  _   md        MD Product Global Authorization Codes   Y
  _   ACCT  90  Accounting application                  Y
  _   INV   10  Inventory application                   Y



                                                                         Bottom
F3=Exit   F5=Refresh   F6=Add
```

Filtering List

Appl	filter rows by application ID
Lvl	filter rows by level number
Desc	only levels containing the entered value in the description will be listed
Active	filter rows based on following Active values: N – Authorizations for all codes for this level have been disabled Y – Authorizations for all codes for this level are enabled

Fields

Appl	An application defined either in MDCMS/MDXREF or from this screen
Lvl	the application level defined either in MDCMS/MDXREF or from this screen
Description	Description of the application level
Active	N – Authorizations for all codes for this level have been disabled Y – Authorizations for all codes for this level are enabled

Options

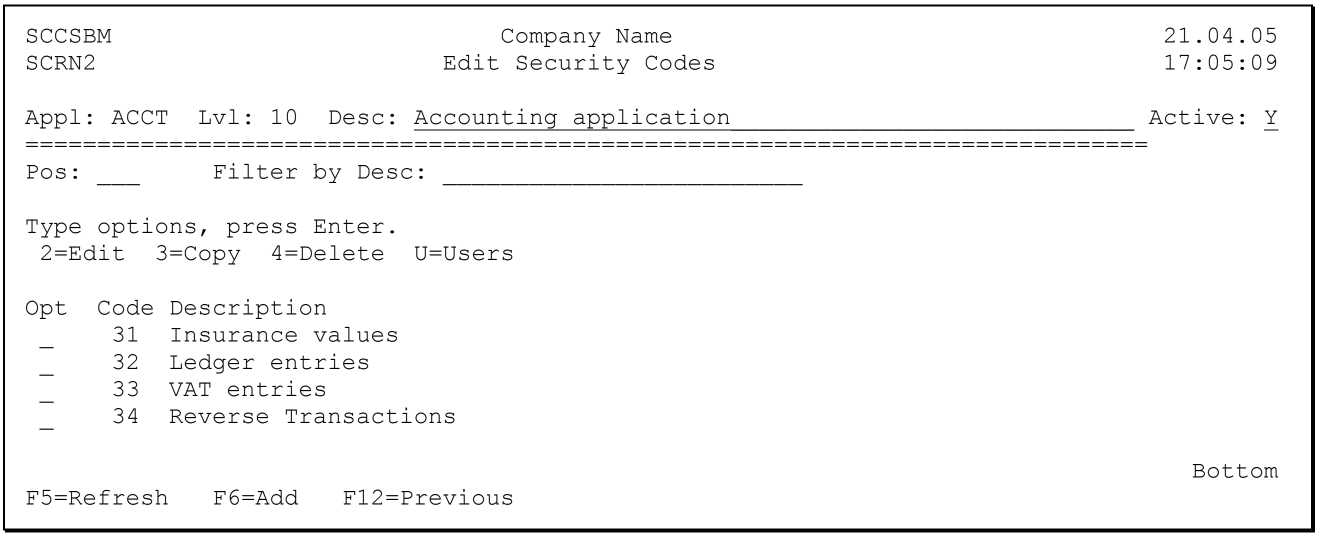
A user may only edit the list if they have *SECOFR authority or *SECADM authority or if the MDSEC Edit Auth flag is set to Y for the user.

2	Edit the properties and codes for the application level
3	Copy the level to a new application level and optionally copy the non-md codes to the new level too
4	Remove the Application Level from MDSEC – only allowed for applications that are not managed by MDCMS or MDXREF
5	View the properties and Codes for the Application Level

Function Keys:

F3=Exit – Return to previous panel
F5=Refresh – Refresh the panel
F6=Add – Add a new Application Level to MDSEC that will not be managed by MDCMS or MDXREF

5.2 Application Code Listing



```
SCCSBM                           Company Name                                 21.04.05
SCRN2                        Edit Security Codes                              17:05:09

Appl: ACCT  Lvl: 10  Desc: Accounting application______________________________ Active: Y
==============================================================================
Pos: ___      Filter by Desc: _________________________

Type options, press Enter.
 2=Edit  3=Copy  4=Delete  U=Users

Opt  Code Description
 _     31  Insurance values
 _     32  Ledger entries
 _     33  VAT entries
 _     34  Reverse Transactions

                                                                                 Bottom
F5=Refresh   F6=Add   F12=Previous
```

Positioning and Filtering List

Pos	the cursor will be positioned to the closest match in the list
Desc	only codes that have matching text anywhere within their description will be listed

Application Fields

Appl	An application defined either in MDCMS/MDXREF or from this screen
Description	Description of the Security Code
Active	N – Authorizations for all codes for this application level have been disabled Y – Authorizations for all codes for this application level are enabled

Code Fields

Code	A 3 digit number to identify a function to be secured. For applications that are managed by MDCMS or MDXREF, the number will be between 1 and 99 and custom codes for in-house applications must have a value between 100 and 999.
Description	Description of the code

Options

A user may only edit the list if they have *SECOFR authority or *SECADM authority or if the MDSEC Edit Auth flag is set to Y for the user.

2	Edit the code description – only allowed for in-house codes
3	Copy the code to a new code for this application or to a new code in another application
4	Remove the code from MDSEC – only allowed for in-house codes

Function Keys:

F3=Exit – Return to previous panel

F5=Refresh – Refresh the panel

F6=Add – Add a new Code to the Application Level. The Code must be higher than 99 if the Application is managed by MDCMS or MDXREF

6 Embedding MDSEC into your Applications

In order to check if a user is authorized to a function, program **MDSECAUT** is to be called. It is necessary to have library MDSEC in the library list for every job that contains a program call to MDSECAUT.

6.1 MDSECAUT Parameter Table

Parameter	Usage	Type	Length	Short Description
User ID	Input	String	10	User ID, *USER, blank
Application	Input	String	4	MDSEC Application Code
Level	Input	Number	2	MDSEC Application Level
Code	Input	Number	3	Security Code within Level
Return Code	Output	String	1	0=ok, 1-9=not ok
Check Numeric Value	Input	String	1	Flag for checking numeric limits
Numeric Value	Input	Number	18,6	Value to check against limits
Check Alphanumeric Value	Input	String	1	Flag for checking alphanumeric limits
Alphanumeric Value	Input	String	25	Value to check against limits

6.2 Detailed Description of MDSECAUT Parameters

User ID: Optional value to be passed to indicate which user is to be checked for authorization. If the value is *USER or blank, MDSEC uses the job's user.

Application: The 4-character MDSEC code for the application that the function belongs to.

Level: The 2-digit MDSEC level (environment) of the application that the function belongs to. This value may be 0 if the application isn't split into multiple levels.

Code: The 3-digit MDSEC code within the application level that designates the function itself.

Return Code: The 1-character return code to tell your application whether or not the user is authorized. The values and their meaning:

0	user is authorized to function
1	user not defined in MDSEC
2	user deactivated
3	application not defined in MDSEC
4	application deactivated
5	code not defined in MDSEC
6	user not authorized
7	numeric value outside limits for user
8	alphanumeric value outside limits for user
9	system failure

Check Numeric Value: A flag specifying if the passed numeric value is to be checked against the authorized limits for the user. Y = check limits, N = do not check limits.

Numeric Value: The value to be checked against the authorized limits for the user.

Check Alphanumeric Value: A flag specifying if the passed alphanumeric value is to be checked against the authorized limits for the user. Y = check limits, N = do not check limits.

Alphanumeric Value: The value to be checked against the authorized limits for the user.

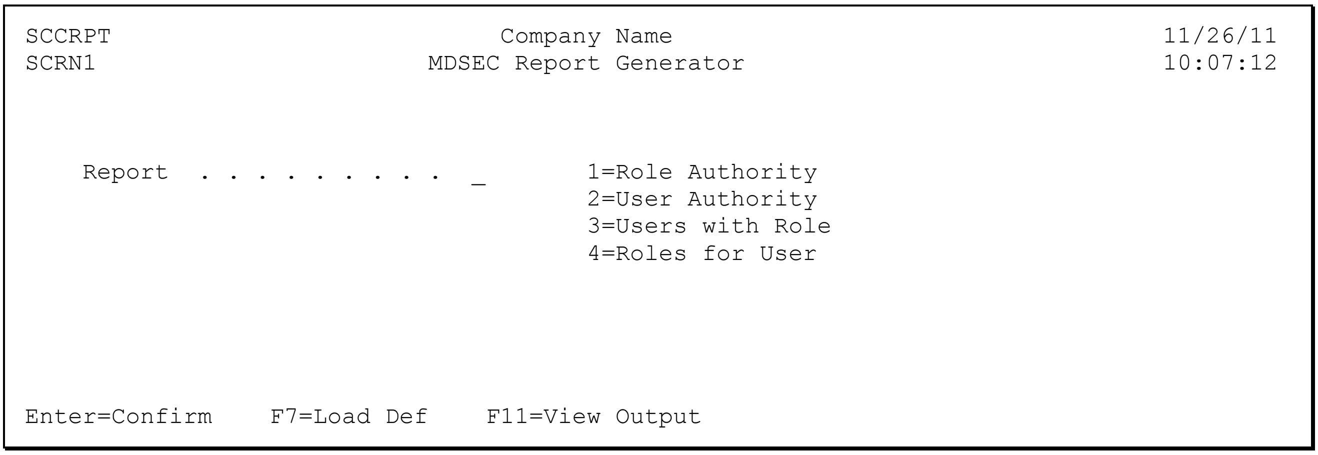
6.3 Programming Examples and Copybooks

Within file QCPYSRC in library MDSEC are coding examples in COBOL, CL, RPG and ILE RPG. The examples are located in separate members all starting with EXAMP.

QCPYSRC in library MDSEC also contains copybooks for the MDSECAUT parameter data structure. Copybooks are available for the languages COBOL, RPG and ILE RPG. The copybooks are located in separate members all starting with MDSEC.

7 MDSEC Report Generator

Option 7 from the MDSEC Main Menu gives the user access to a variety of security reports for Users and Roles.

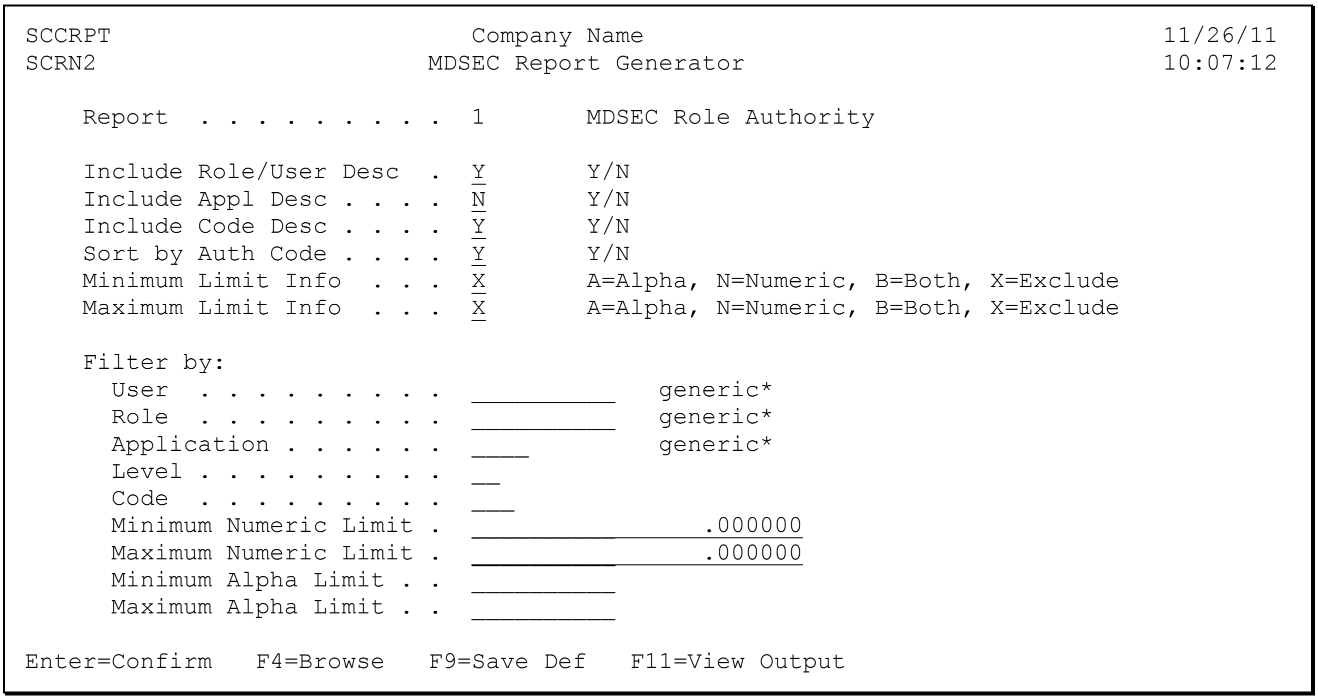


```
SCCRPT                          Company Name                              11/26/11
SCRN1                      MDSEC Report Generator                         10:07:12



    Report  . . . . . . . . .  _        1=Role Authority
                                        2=User Authority
                                        3=Users with Role
                                        4=Roles for User






Enter=Confirm    F7=Load Def    F11=View Output
```

Each report is customizable based on the set of criteria available for User and Role authorities to your application's functions and can be run or scheduled using the ***MDRUNRPT*** API.

Function Keys:
F3=Exit – Return to previous panel
Enter=Confirm – Confirm selection with Enter key
F7=Load Def – Load a saved Report Definition
F11=View Output – Work with MD Output

7.1 Role Authority



```
SCCRPT                          Company Name                          11/26/11
SCRN2                        MDSEC Report Generator                   10:07:12

    Report  . . . . . . . . . .  1       MDSEC Role Authority

    Include Role/User Desc  .  Y       Y/N
    Include Appl Desc . . . .  N       Y/N
    Include Code Desc . . . .  Y       Y/N
    Sort by Auth Code . . . .  Y       Y/N
    Minimum Limit Info  . . .  X       A=Alpha, N=Numeric, B=Both, X=Exclude
    Maximum Limit Info  . . .  X       A=Alpha, N=Numeric, B=Both, X=Exclude

    Filter by:
      User  . . . . . . . . .  __________     generic*
      Role  . . . . . . . . .  __________     generic*
      Application . . . . . .  ____           generic*
      Level . . . . . . . . .  __
      Code  . . . . . . . . .  ___
      Minimum Numeric Limit .  ________________.000000
      Maximum Numeric Limit .  ________________.000000
      Minimum Alpha Limit . .  __________
      Maximum Alpha Limit . .  __________

Enter=Confirm   F4=Browse   F9=Save Def   F11=View Output
```

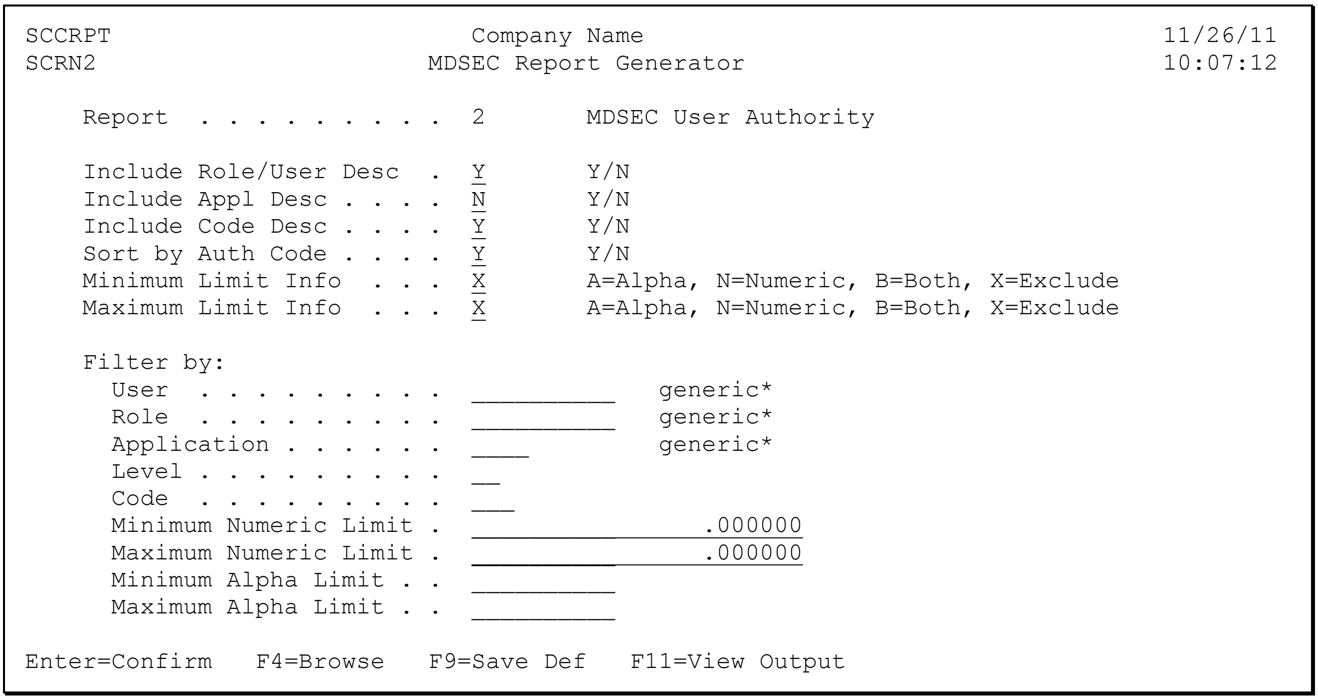
Criteria Selection:

Include Role/User Desc	Y – include the column for the Role or User Description in the report N – do not include
Include Appl Desc	Y – include the column Appl Description in the report N – do not include
Include Code Desc	Y – include the column Code Description in the report N – do not include
Sort by Auth Code	Y – the Application/Code is the primary sort for the report N – the Role or User is the primary sort for the report
Minimum Limit Info	A – include the column for minimum alphanumeric limits N – include the column for minimum numeric limits B – include the column for minimum alphanumeric and numeric limits X – exclude any columns for minimum limits from the report
Maximum Limit Info	A – include the column for maximum alphanumeric limits N – include the column for maximum numeric limits B – include the column for maximum alphanumeric and numeric limits X – exclude any columns for maximum limits from the report
Filter by:	
User	limit the rows to a user or users matching generic value
Role	limit the rows to a role or roles matching generic value
Application	limit the rows to an application or applications matching generic value
Level	limit the rows to a specific level
Code	limit the rows to a specific code
Minimum Numeric Limit	Limit rows to unlimited authorizations or to authorizations limited to at least the value entered
Maximum Numeric Limit	Limit rows to non-limited authorizations or to authorizations limited to no more than the value entered. If the Minimum Limit filter is also used, the

	range for the role or user must be between the minimum and maximum filter values.
Minimum Alpha Limit	Limit rows to unlimited authorizations or to authorizations limited to at least the value entered
Maximum Alpha Limit	Limit rows to non-limited authorizations or to authorizations limited to no more than the value entered. If the Minimum Limit filter is also used, the range for the role or user must be between the minimum and maximum filter values.

Function Keys:
F3=Exit – Return to previous panel
Enter=Confirm – Confirm selection with Enter key
F4=Browse – Browse a list of available values
F9=Save Def – Save a Report Definition
F11=View Output – Work with MD Output

7.2 User Authority



```
SCCRPT                          Company Name                          11/26/11
SCRN2                      MDSEC Report Generator                     10:07:12

    Report  . . . . . . . . .  2       MDSEC User Authority

    Include Role/User Desc  .  Y       Y/N
    Include Appl Desc . . . .  N       Y/N
    Include Code Desc . . . .  Y       Y/N
    Sort by Auth Code . . . .  Y       Y/N
    Minimum Limit Info  . . .  X       A=Alpha, N=Numeric, B=Both, X=Exclude
    Maximum Limit Info  . . .  X       A=Alpha, N=Numeric, B=Both, X=Exclude

    Filter by:
      User  . . . . . . . . .  __________   generic*
      Role  . . . . . . . . .  __________   generic*
      Application . . . . . .  ____         generic*
      Level . . . . . . . . .  __
      Code  . . . . . . . . .  ___
      Minimum Numeric Limit .  ________________.000000
      Maximum Numeric Limit .  ________________.000000
      Minimum Alpha Limit . .  __________
      Maximum Alpha Limit . .  __________

Enter=Confirm   F4=Browse   F9=Save Def   F11=View Output
```

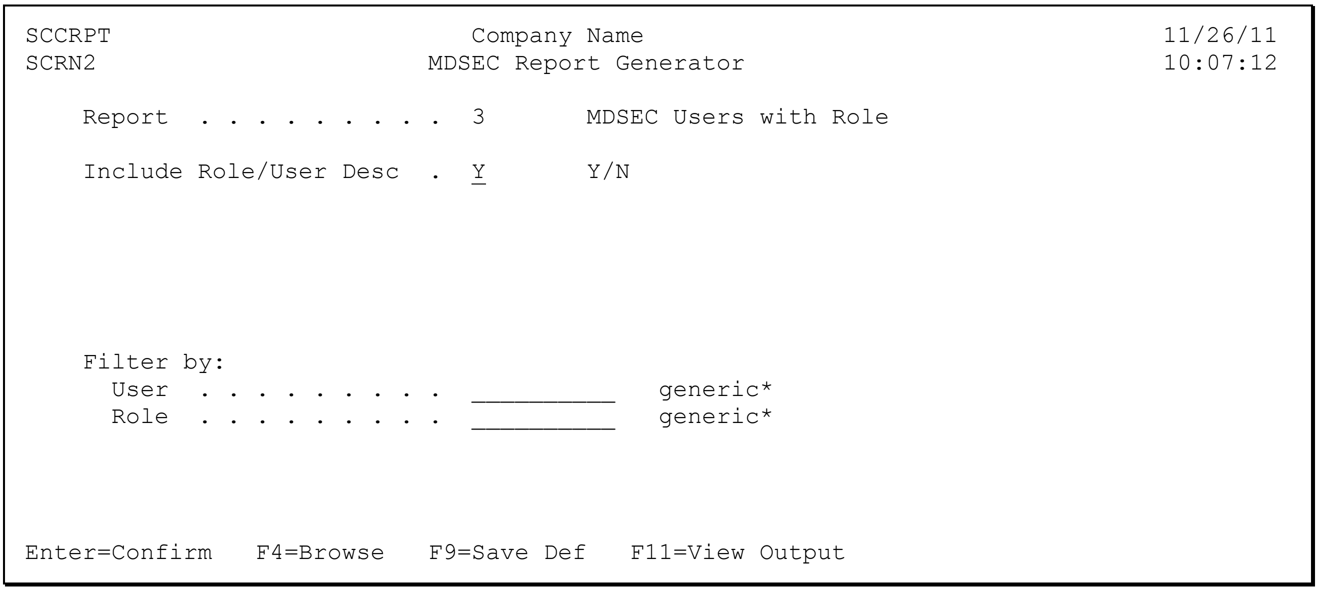
Criteria Selection:

Include Role/User Desc	Y – include the column for the Role or User Description in the report N – do not include
Include Appl Desc	Y – include the column Appl Description in the report N – do not include
Include Code Desc	Y – include the column Code Description in the report N – do not include
Sort by Auth Code	Y – the Application/Code is the primary sort for the report N – the Role or User is the primary sort for the report
Minimum Limit Info	A – include the column for minimum alphanumeric limits N – include the column for minimum numeric limits B – include the column for minimum alphanumeric and numeric limits X – exclude any columns for minimum limits from the report
Maximum Limit Info	A – include the column for maximum alphanumeric limits N – include the column for maximum numeric limits B – include the column for maximum alphanumeric and numeric limits X – exclude any columns for maximum limits from the report
Filter by:	
User	limit the rows to a user or users matching generic value
Role	limit the rows to a role or roles matching generic value
Application	limit the rows to an application or applications matching generic value
Level	limit the rows to a specific level
Code	limit the rows to a specific code
Minimum Numeric Limit	Limit rows to unlimited authorizations or to authorizations limited to at least the value entered
Maximum Numeric Limit	Limit rows to non-limited authorizations or to authorizations limited to no more than the value entered. If the Minimum Limit filter is also used, the

	range for the role or user must be between the minimum and maximum filter values.
Minimum Alpha Limit	Limit rows to unlimited authorizations or to authorizations limited to at least the value entered
Maximum Alpha Limit	Limit rows to non-limited authorizations or to authorizations limited to no more than the value entered. If the Minimum Limit filter is also used, the range for the role or user must be between the minimum and maximum filter values.

Function Keys:
F3=Exit – Return to previous panel
Enter=Confirm – Confirm selection with Enter key
F4=Browse – Browse a list of available values
F9=Save Def – Save a Report Definition
F11=View Output – Work with MD Output

7.3 Users with Role



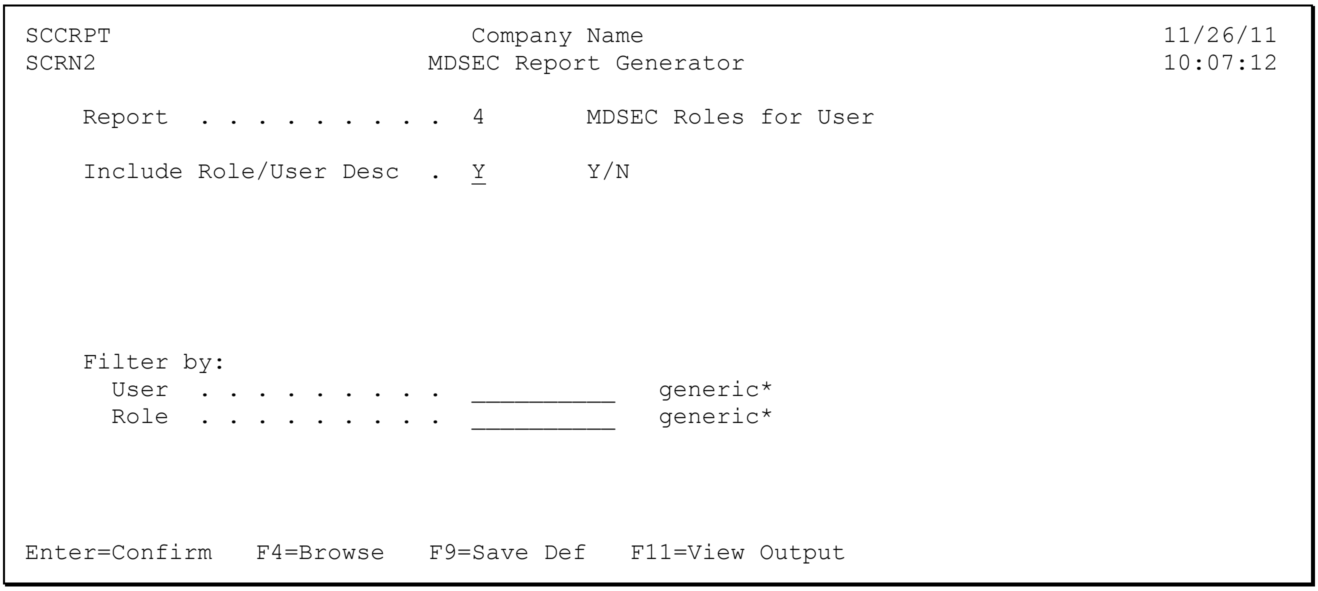
```
SCCRPT                         Company Name                         11/26/11
SCRN2                       MDSEC Report Generator                  10:07:12

    Report  . . . . . . . . .  3       MDSEC Users with Role

    Include Role/User Desc  .  Y       Y/N




    Filter by:
      User  . . . . . . . . .  __________   generic*
      Role  . . . . . . . . .  __________   generic*



Enter=Confirm   F4=Browse   F9=Save Def   F11=View Output
```

Criteria Selection:

Include Role/User Desc	Y – include the column for the Role or User Description in the report N – do not include
Filter by:	
User	Limit the rows to a user or users matching generic value.
Role	Limit the rows to a role or roles matching generic value.

Function Keys:
F3=Exit – Return to previous panel
Enter=Confirm – Confirm selection with Enter key
F4=Browse – Browse a list of available values
F9=Save Def – Save a Report Definition
F11=View Output – Work with MD Output

7.4 Roles for User



```
SCCRPT                         Company Name                               11/26/11
SCRN2                       MDSEC Report Generator                        10:07:12

    Report  . . . . . . . . .  4       MDSEC Roles for User

    Include Role/User Desc  .  Y       Y/N




    Filter by:
      User  . . . . . . . . .  __________   generic*
      Role  . . . . . . . . .  __________   generic*



Enter=Confirm   F4=Browse   F9=Save Def   F11=View Output
```

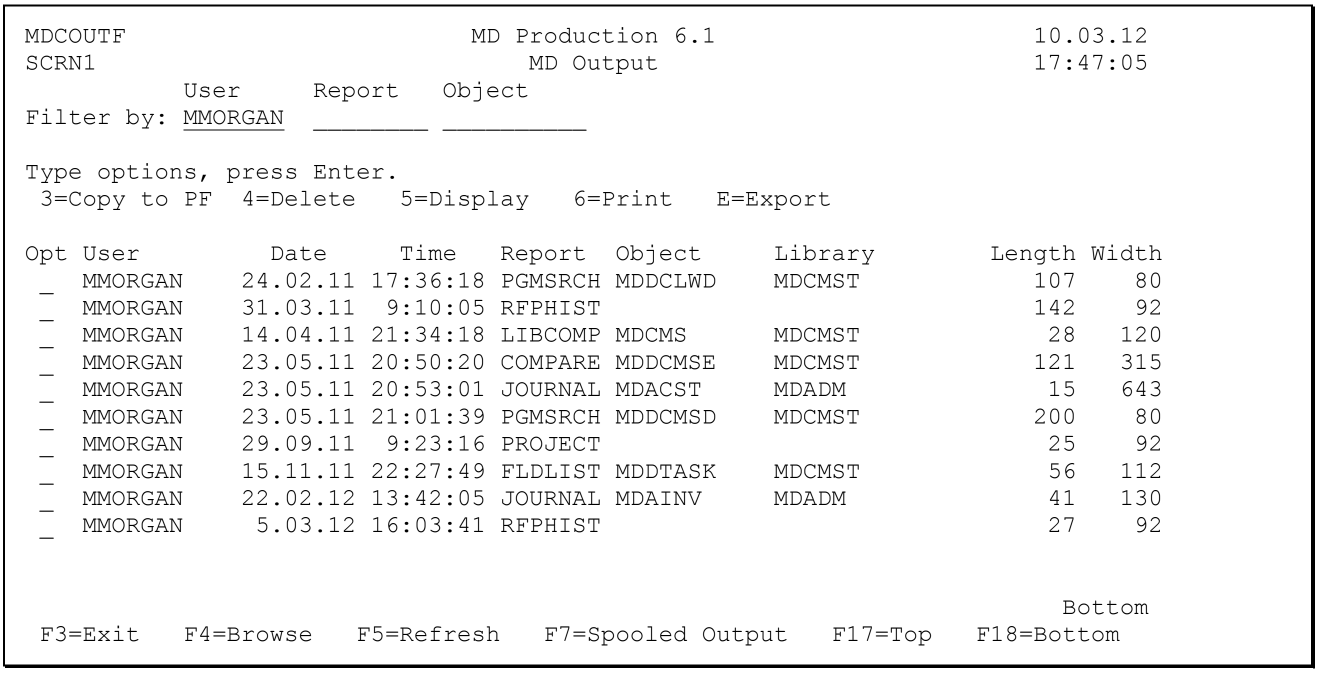
Criteria Selection:

Include Role/User Desc	Y – include the column for the Role or User Description in the report N – do not include
Filter by:	
User	Limit the rows to a user or users matching generic value.
Role	Limit the rows to a role or roles matching generic value.

Function Keys:
F3=Exit – Return to previous panel
Enter=Confirm – Confirm selection with Enter key
F4=Browse – Browse a list of available values
F9=Save Def – Save a Report Definition
F11=View Output – Work with MD Output

7.5 Report Output

Reports (MD Output) generated within MDSEC, MDXREF and MDCMS can be viewed, printed, exported or emailed by pressing **F11** from most screens.



```
MDCOUTF                        MD Production 6.1                        10.03.12
SCRN1                              MD Output                            17:47:05
           User      Report   Object
Filter by: MMORGAN   ________ __________

Type options, press Enter.
 3=Copy to PF  4=Delete   5=Display   6=Print   E=Export

Opt User         Date      Time    Report  Object     Library        Length Width
 _  MMORGAN    24.02.11 17:36:18 PGMSRCH MDDCLWD    MDCMST            107    80
 _  MMORGAN    31.03.11  9:10:05 RFPHIST                              142    92
 _  MMORGAN    14.04.11 21:34:18 LIBCOMP MDCMS      MDCMST             28   120
 _  MMORGAN    23.05.11 20:50:20 COMPARE MDDCMSE    MDCMST            121   315
 _  MMORGAN    23.05.11 20:53:01 JOURNAL MDACST     MDADM              15   643
 _  MMORGAN    23.05.11 21:01:39 PGMSRCH MDDCMSD    MDCMST            200    80
 _  MMORGAN    29.09.11  9:23:16 PROJECT                               25    92
 _  MMORGAN    15.11.11 22:27:49 FLDLIST MDDTASK    MDCMST             56   112
 _  MMORGAN    22.02.12 13:42:05 JOURNAL MDAINV     MDADM              41   130
 _  MMORGAN     5.03.12 16:03:41 RFPHIST                               27    92


                                                                       Bottom
 F3=Exit   F4=Browse   F5=Refresh   F7=Spooled Output   F17=Top   F18=Bottom
```

Filters
Enter a value into a filter field to limit the listing to items matching the filter(s). Possible values may be selected by pressing **F4=Browse** while the cursor is positioned on the filter field.

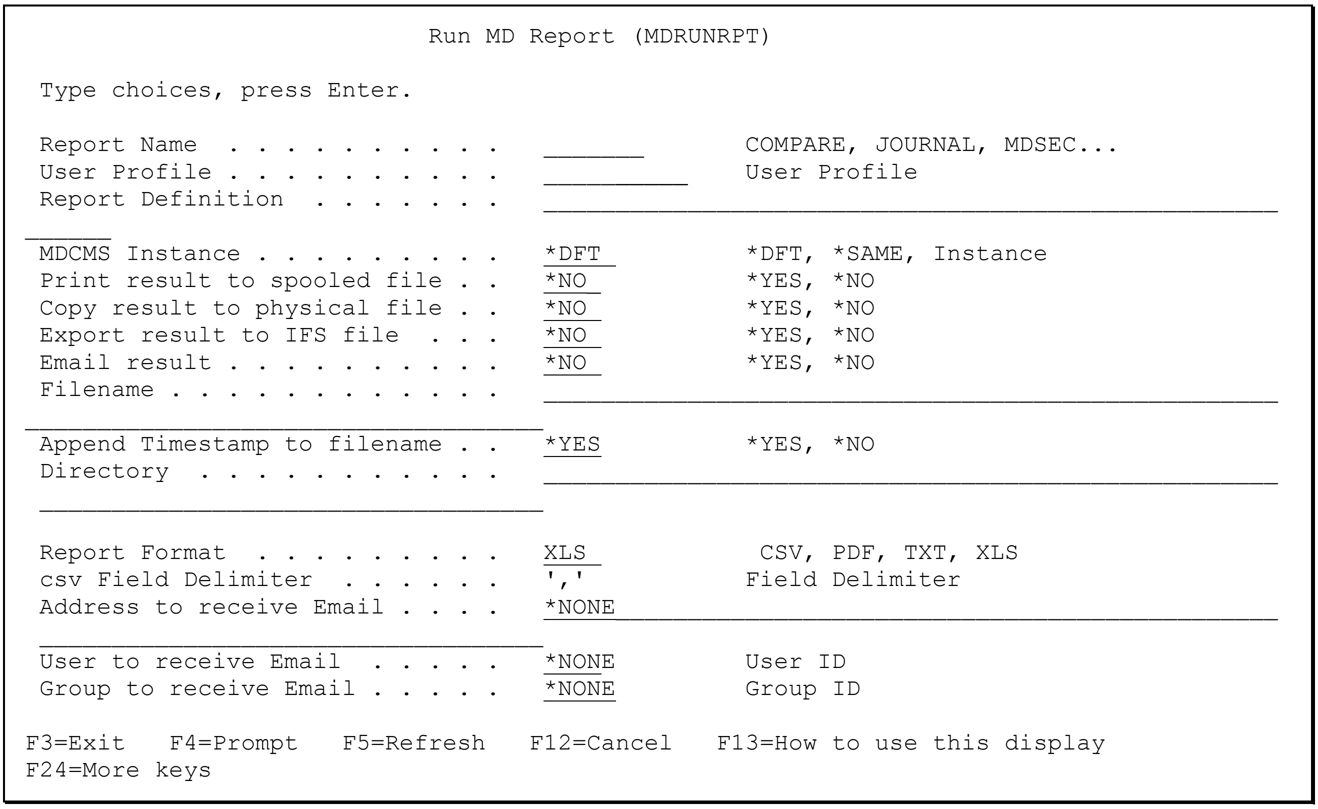
Options
3=Copy to PF – Copy the detail contents of the report into a formatted table (DDS Physical File). This provides a simple means to extract information out of the MD database for use in SQL, Queries or programs.
4=Delete – permanently delete the report
5=Display – view the report contents directly in the screen
6=Print – print the report contents to a spooled file
E=Export – Export the report to a CSV, PDF, TXT or XLS formatted file. The file can be placed in IFS or emailed to one or more recipients. See the parameters for command MDRUNRPT for more information.

Function Keys:
F4=Browse – Browse possible values for a filter field
F5=Refresh
F7=Spooled Output – Display and manage spooled files
F17=Top – Position Cursor to the first entry in the list
F18=Bottom – Position Cursor to the last entry in the list

7.6 MDRUNRPT – Run Report command

Certain reports within MDSEC, MDXREF and MDCMS allow for saved report definitions to be run directly from a command line. This gives the users the ability to schedule reports to be run on a periodic basis and to have the output automatically printed or exported. This is also helpful during Project testing to allow the same parameters to be quickly used after each phase of a test.

The following screen is displayed to get the report run parameters.



```
                              Run MD Report (MDRUNRPT)

  Type choices, press Enter.

  Report Name  . . . . . . . . . .   _______        COMPARE, JOURNAL, MDSEC...
  User Profile . . . . . . . . . .   __________     User Profile
  Report Definition  . . . . . . .   ___________________________________________________
 ______
  MDCMS Instance . . . . . . . . .   *DFT           *DFT, *SAME, Instance
  Print result to spooled file . .   *NO            *YES, *NO
  Copy result to physical file . .   *NO            *YES, *NO
  Export result to IFS file  . . .   *NO            *YES, *NO
  Email result . . . . . . . . . .   *NO            *YES, *NO
  Filename . . . . . . . . . . . .   ___________________________________________________
 ____________________________________
  Append Timestamp to filename . .   *YES           *YES, *NO
  Directory  . . . . . . . . . . .   ___________________________________________________
  ___________________________________

  Report Format  . . . . . . . . .   XLS             CSV, PDF, TXT, XLS
  csv Field Delimiter  . . . . . .   ','            Field Delimiter
  Address to receive Email . . . .   *NONE______________________________________________
  ___________________________________
  User to receive Email  . . . . .   *NONE          User ID
  Group to receive Email . . . . .   *NONE          Group ID

 F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
 F24=More keys
```

Use **F9=All parameters** to see all available parameters for command.

Report Name
COMPARE – the MDXREF Data Comparison Report
JOURNAL – the MD Journal Analysis Report
MDSEC – the MDSEC Authorization Report
NOTCMS – the MDCMS Audit Report listing object changes made outside of MDCMS
PROJECT – the MDCMS Project Report
PRJTASK – the MDCMS Project Task Report
RFPHIST – the MDCMS Audit Report listing object changes made within MDCMS

User Profile
The name of the user profile that defined the report definition

Report Definition
The name of the report definition

Print result to spooled file
*NO – the resulting report will not be automatically printed to a spooled file
*YES – the resulting report will be automatically printed to a spooled file

Copy result to physical file
*NO – the resulting report will not be automatically exported to a physical file
*YES – the resulting report will be automatically exported to a physical file (table)

Export result to IFS file
*NO – the resulting report will not be automatically exported to an IFS file
*YES – the resulting report will be automatically exported to an IFS file

Email result
*NO – the resulting report will not be automatically emailed to recipients
*YES – the resulting report will be automatically emailed to recipients

Copy to Physical file
The name of the physical file (table) to contain the detail contents of the report. Each column in the report will be placed in a separate formatted field. If the file already exists, it will be replaced.

Copy to Library
The IBM i library that is to contain the Physical file

Filename
If the results are to be exported or emailed, this is the name of the IFS file to receive the results. The file type (.CSV, .PDF, .TXT or .XLS) will be automatically appended to the end of the name.

Timestamp
*NO – a timestamp will not be appended to the file name
*YES – a timestamp in the format of YYYMMDD_HHMMSS will be appended to the file name

Directory
If the results are to be exported, this is the name of the IFS directory to receive the results. The directory path should begin with the root character "/".

Report Format
CSV – the exported report will be placed in a comma separated value file which can then be opened in Microsoft excel or similar spreadsheet programs.
PDF - the exported report will be converted to PDF. JVM 1.5 or higher is required
TXT – the exported report will be placed in a text file with the same layout as the on-line report.
XLS – the exported report will be converted to the excel format. JVM 1.4 or higher is required

csv Field Delimiter
The character to be used to separate fields in a csv file

Address to receive Email
A specific email address to receive the report

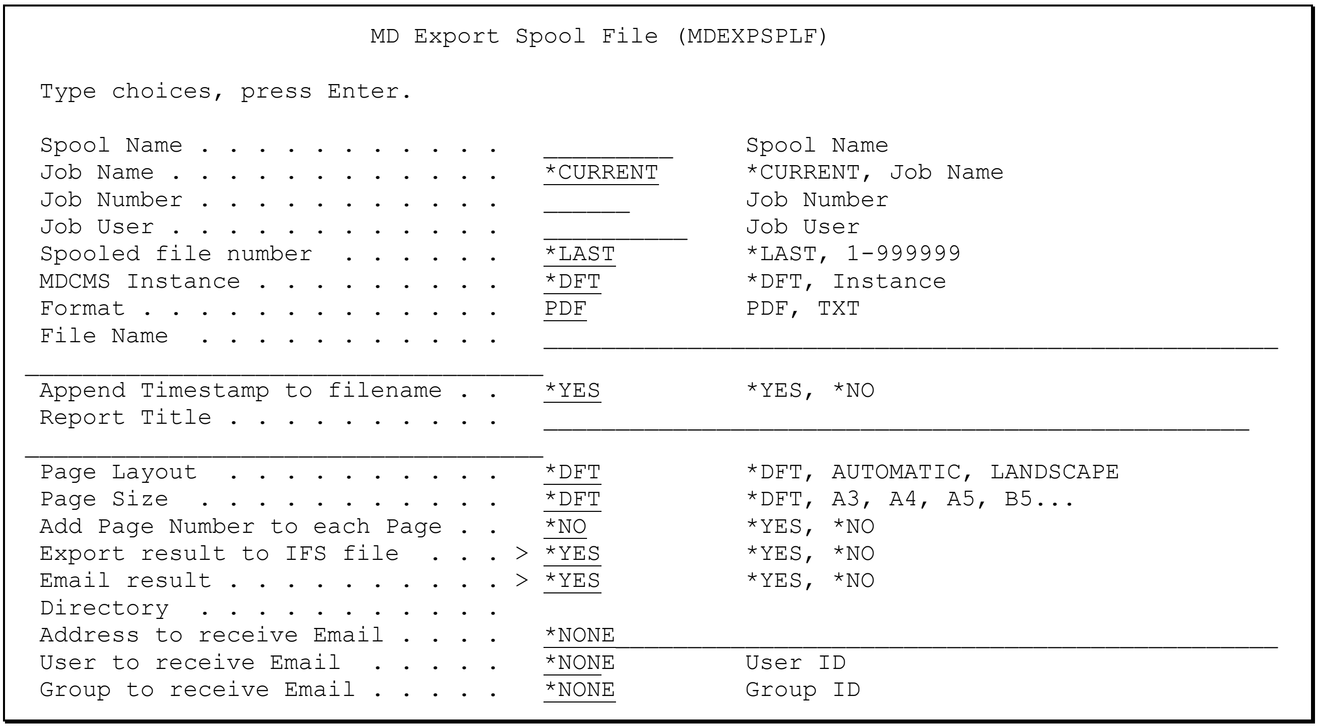
User to receive Email
A user id to receive the report - the address for the user will be retrieved from the MDCMS email address table.

Group to receive Email
All users for the entered group id to receive the report – this parameter requires MDWorkflow groups to be present.

7.7 MDEXPSPLF – Export Spooled File command

The MDEXPSPLF command provides the functionality to export any spooled file to a text or PDF file.

The following screen is displayed to get the parameters.



```
                          MD Export Spool File (MDEXPSPLF)

 Type choices, press Enter.

 Spool Name . . . . . . . . . . .   __________     Spool Name
 Job Name . . . . . . . . . . . .   *CURRENT       *CURRENT, Job Name
 Job Number . . . . . . . . . . .   ______         Job Number
 Job User . . . . . . . . . . . .   __________     Job User
 Spooled file number  . . . . . .   *LAST          *LAST, 1-999999
 MDCMS Instance . . . . . . . . .   *DFT           *DFT, Instance
 Format . . . . . . . . . . . . .   PDF            PDF, TXT
 File Name  . . . . . . . . . . .   ____________________________________________________
____________________________________
 Append Timestamp to filename . .   *YES           *YES, *NO
 Report Title . . . . . . . . . .   __________________________________________________
____________________________________
 Page Layout  . . . . . . . . . .   *DFT           *DFT, AUTOMATIC, LANDSCAPE
 Page Size  . . . . . . . . . . .   *DFT           *DFT, A3, A4, A5, B5...
 Add Page Number to each Page . .   *NO            *YES, *NO
 Export result to IFS file  . . . > *YES           *YES, *NO
 Email result . . . . . . . . . . > *YES           *YES, *NO
 Directory  . . . . . . . . . . .
 Address to receive Email . . . .   *NONE_______________________________________________
 User to receive Email  . . . . .   *NONE          User ID
 Group to receive Email . . . . .   *NONE          Group ID
```

Spool Name
The name of a spooled file

Job Name
The name of the job that generated the spooled file or *CURRENT to look for the spooled file in the current job

Job Number
The number of the job that generated the spooled file

Job User
The user profile of the job that generated the spooled file Report Header

Spooled File Number
The number of the spooled file within the job or *LAST to use the most recently generated spooled file of the given name for the given job.

MDCMS Instance
A 1-4 character string of the suffix for an existing instance of MDXREF or *DFT to use MDXREF

Format
PDF – the spooled file will be converted to the PDF format. JVM 1.5 and MDCMS is required
TXT – the spooled file will be converted to a text file

File Name
If the results are to be exported or emailed, this is the name of the IFS file to receive the results. The file type (.pdf or .txt) will be automatically appended to the end of the name.

Append Timestamp
*NO – a timestamp will not be appended to the file name
*YES – a timestamp in the format of YYYMMDD_HHMMSS will be appended to the file name

Report Title
The title to place in the header of the PDF file and in the subject line of the email

Page Layout
Values for PDF format:
*DFT – the layout defined in data area MDSEC(instance)/MDPDFLOUT
AUTOMATIC – the layout is determined automatically based on the width of the spooled file
LANDSCAPE – the paper is rotated so that the wide edge is horizontal
PORTRAIT – the paper is rotated so that the wide edge is vertical

Page Size
Values for PDF format:
*DFT – the size defined in data area MDSEC(instance)/MDPDFSIZE
A3, A4, A5, B5, LEGAL, LETTER

Add Page Number to each Page
*NO – a page number will not be added to each page
*YES – a page number will be added to each page in the bottom right corner

Export result to IFS file
*NO – the resulting report will not be automatically exported to an IFS file
*YES – the resulting report will be automatically exported to an IFS file

Email result
*NO – the resulting report will not be automatically emailed to recipients
*YES – the resulting report will be automatically emailed to recipients. MDCMS is required.

Directory
If the results are to be exported, this is the name of the IFS directory to receive the results. The directory path should begin with the root character "/".

Address to receive Email
A specific email address to receive the report

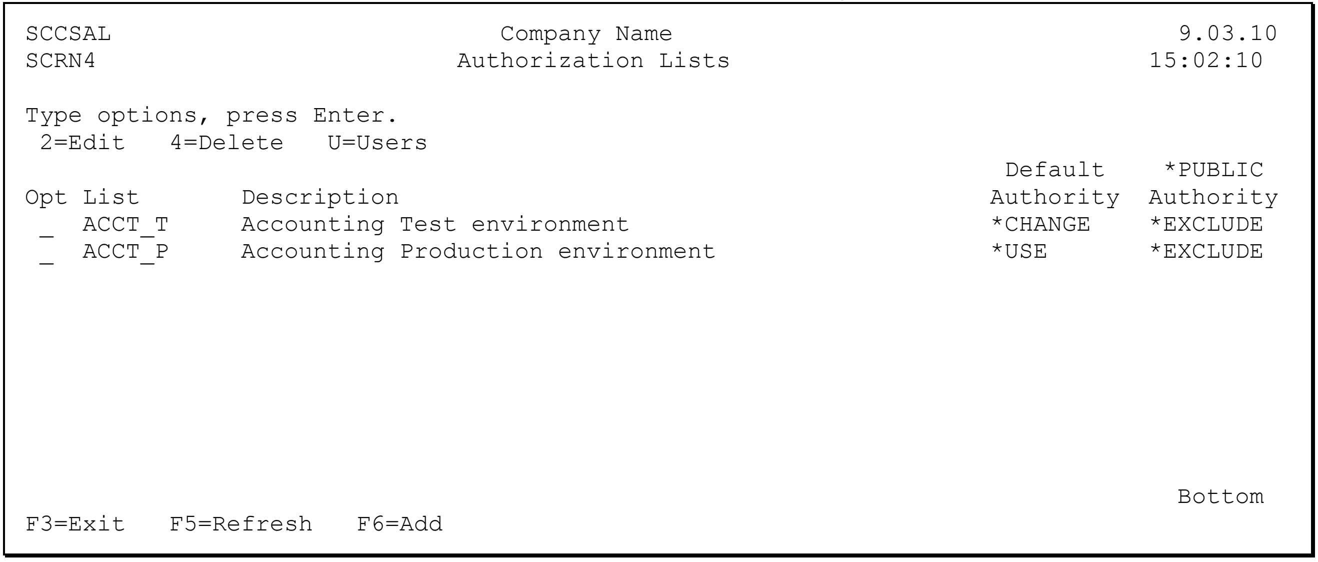
User to receive Email
A user id to receive the report - the address for the user will be retrieved from the MDCMS email address table.

Group to receive Email
All users for the entered group id to receive the report – this parameter requires that MDWorkflow groups are present.

8 Authorization Lists

8.1 Listing of Authorization Lists

Option 4 from MDSEC Menu: IBM i Authorization Lists to be managed by MDSEC



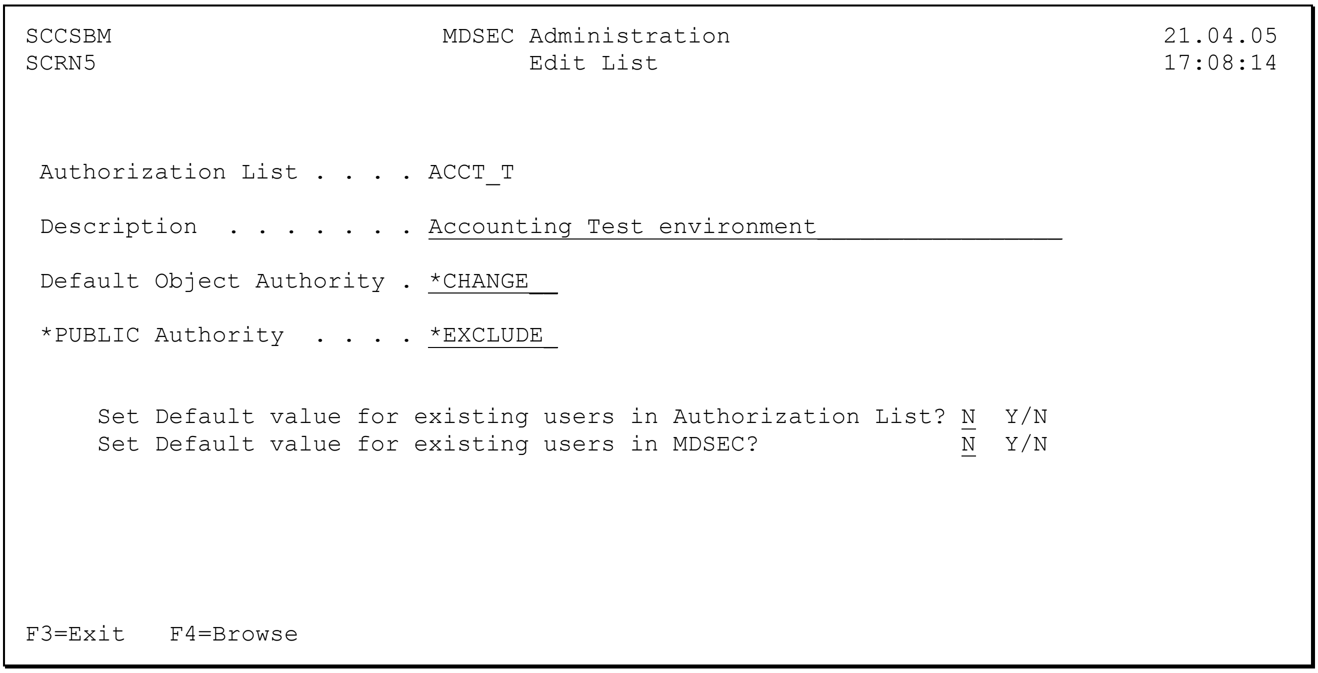
```
SCCSAL                        Company Name                                 9.03.10
SCRN4                      Authorization Lists                            15:02:10

Type options, press Enter.
 2=Edit   4=Delete   U=Users
                                                                  Default    *PUBLIC
Opt List       Description                                       Authority  Authority
 _  ACCT_T     Accounting Test environment                       *CHANGE    *EXCLUDE
 _  ACCT_P     Accounting Production environment                 *USE       *EXCLUDE









                                                                              Bottom
F3=Exit   F5=Refresh   F6=Add
```

Authorization List Options

2	Edit the description, default authority, and *PUBLIC authority for the Authorization List
4	Delete the Authorization List from MDSEC and may also optionally be removed from the IBM i system
U	View/Edit the list of user that are specified for the Authorization List

Function Keys:
F3=Exit – Return to previous panel
F5=Refresh – Refresh the panel
F6=Add – Add a new Authorization List to MDSEC/IBM i system
F12=Exit – Return to previous panel

8.2 Authorization List Maintenance



```
SCCSBM                          MDSEC Administration                          21.04.05
SCRN5                                 Edit List                               17:08:14



 Authorization List . . . . ACCT_T

 Description  . . . . . . . Accounting Test environment_________________

 Default Object Authority . *CHANGE__

 *PUBLIC Authority  . . . . *EXCLUDE_


     Set Default value for existing users in Authorization List? N  Y/N
     Set Default value for existing users in MDSEC?              N  Y/N






F3=Exit   F4=Browse
```

Authorization List Fields

Description: The description of the Authorization List object, which is stored on the IBMi System.

Default Object Authority: The default authority to objects for users. The default value may be applied at any time to all relevant users. The possible values are:

*ALL	complete authority to objects
*CHANGE	update authority to objects
*USE	objects may by viewed/used, but not changed
*EXCLUDE	no authority to objects
*PUBLIC	user not explicitly in list – has public authority. If user is in the List when this value is applied, then the user will be removed from the list.

***PUBLIC Authority:** The authority to objects for users that are not specified in the authorization list.

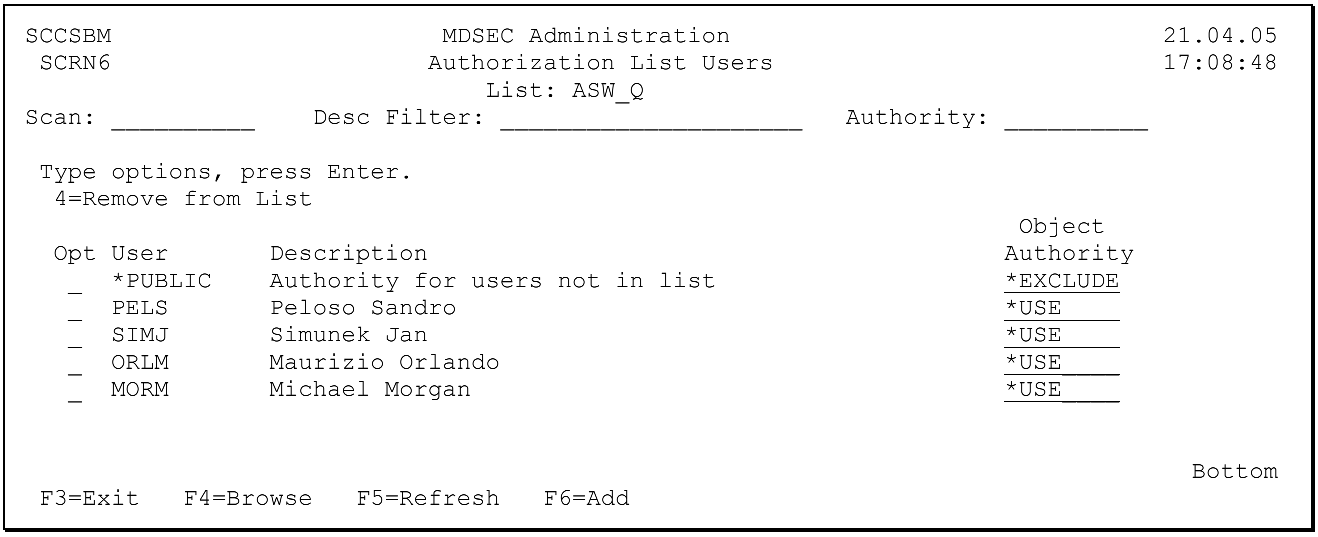
Set Default value for existing users in Authorization List?: If the answer to this question is Y (Yes), then all existing users in the Authorization List will obtain the new default authority.

Set Default value for existing users in MDSEC?: If the answer to this question is Y (Yes), then all existing users in the MDSEC User List will obtain the new default authority within the specific Authorization List.

Function Keys:
F3=Exit – Return to previous panel
F4=Browse – Browse the list of possible Authority values
F12=Exit – Return to previous panel

8.3 Authorization List User Maintenance

The list of authorization lists may be modified by pressing F10 from the administration screen which is reached by pressing F9 from the initial screen within MDSEC.



```
SCCSBM                       MDSEC Administration                        21.04.05
 SCRN6                      Authorization List Users                     17:08:48
                                List: ASW_Q
Scan: __________    Desc Filter: _____________________   Authority: __________

 Type options, press Enter.
  4=Remove from List
                                                                   Object
  Opt User       Description                                      Authority
   _  *PUBLIC    Authority for users not in list                  *EXCLUDE
   _  PELS       Peloso Sandro                                    *USE
   _  SIMJ       Simunek Jan                                      *USE
   _  ORLM       Maurizio Orlando                                 *USE
   _  MORM       Michael Morgan                                   *USE


                                                                         Bottom
 F3=Exit   F4=Browse   F5=Refresh   F6=Add
```

Positioning and Filtering List

If text is entered in the Scan field, the cursor will be positioned to the closest match in the list of users.
If text is entered in the Desc Filter field, only users that have matching text in their user description will be listed. For example, if MICHAEL would be entered in the above screen, only the user MORM will be displayed, because the string Michael is in the description.
If an Authority value is entered in the Authority filter, then only users with the matching authority will be listed.

User Options

4	The “Remove from List” option will remove the user from the IBM i Authorization List. The users authority to object secured by the list will be limited to *PUBLIC authority

Object Authority: The authority to objects for the specific user. The possible values are:

*ALL	complete authority to objects
*CHANGE	update authority to objects
*USE	objects may by viewed/used, but not changed
*EXCLUDE	no authority to objects

Function Keys:
F3=Exit – Return to previous panel
F4=Browse – Browse the list of possible Authority values
F5=Refresh – Refresh the panel
F6=Add – Add a new user to the Authorization List
F12=Exit – Return to previous panel

9 DDM Security

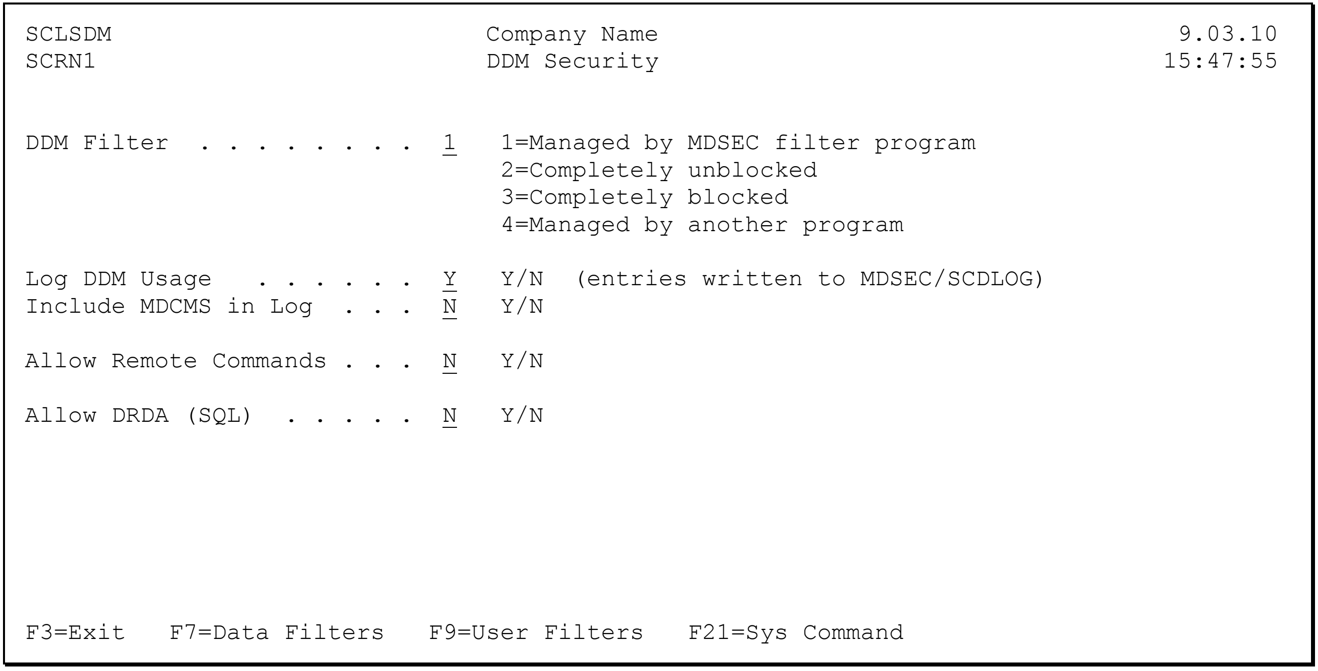
9.1 Overview

DDM stands for Distributed Data Management and provides a simple means for accessing and updating data on a target IBMi system using programs running on a local IBMi system. MDCMS, for example, uses DDM for synchronizing Project and Workflow information as well as for tracking object migrations across systems.

If DDM is allowed to be used without sufficient security measures in place, then a significant risk exists that data could be read and manipulated by otherwise unauthorized persons. The DDM Security feature of MDSEC can be used to exclude unauthorized users as well as to manage which Data objects may be accessed or manipulated via DDM.

9.2 General Configuration

Option 5 from MDSEC Menu: DDM Security



```
SCLSDM                         Company Name                             9.03.10
SCRN1                          DDM Security                            15:47:55


DDM Filter  . . . . . . . . .  1   1=Managed by MDSEC filter program
                                   2=Completely unblocked
                                   3=Completely blocked
                                   4=Managed by another program

Log DDM Usage   . . . . . . .  Y   Y/N  (entries written to MDSEC/SCDLOG)
Include MDCMS in Log  . . . .  N   Y/N

Allow Remote Commands . . . .  N   Y/N

Allow DRDA (SQL)  . . . . . .  N   Y/N








F3=Exit   F7=Data Filters   F9=User Filters   F21=Sys Command
```

<u>Configuration Options</u>

DDM Filter

1) The MDSEC DDM filter program is used as the exit point program for the DDM listener. (Network Attribute DDMACC = MDSEC/MDLDDMF)
2) No filtering is performed (Network Attribute DDMACC = *OBJAUT)
3) DDM completely blocked (Network Attribute DDMACC = *REJECT)
4) Another program is used is the exit point program for the DDM listener. It is displayed for informational purposes only and cannot be selected.

Log DDM Usage

Y – DDM transactions will be logged to file MDSEC/SCDLOG
N – DDM transactions will not be logged

Include MDCMS in Log
Y – DDM transactions for files in MDCMS* or MDXREF* will be included in the log
N – DDM transactions for files in MDCMS* or MDXREF* will not be included in the log

Allow Remote Commands
Y – Commands sent from a remote system via DDM are allowed
N – Commands sent from a remote system via DDM are not allowed

Allow DRDA (SQL)
Y – Remote SQL clients using Application Requester Driver (ARD) programs are allowed access to the local database
N – Remote SQL clients using Application Requester Driver (ARD) programs are not allowed access to the local database

Function Keys:
F3=Exit – Return to previous panel
F7=Data Filters – Manage the list of Data Objects that may be accessed using DDM
F9=User Filters – Manage the list of local User Profiles that may be used to connect to the Database using DDM
F21=Sys Command

9.3 Data Filters

If the MDSEC filter program is used, the data filters are checked to see if a transaction for a particular file, data queue, or data area may take place. By default, if the library and/or object are not defined in the list, then the transaction will be blocked.

Field Information

Library
The name of a library on the local system

Object
The name of an object within the library or *ALL to indicate the default allowed usage for any objects in the library that are not specifically defined in the list.

For example: ALIB/*ALL *UPDATE could be defined to allow updates to all data objects in library ALIB. A second entry of ALIB/AFILE *EXCLUDE could be defined to exclude file AFILE.

Usage
*INPUT – a DDM transaction may only view the data. Updates are not allowed.
*UPDATE – DDM transactions may view or update the data.
*EXCLUDE – DDM transactions are not allowed

Function Keys
F3: Return to the Configuration Screen
F4: Browse list of Libraries or Objects (if MDXREF is also installed)

9.4 User Filters

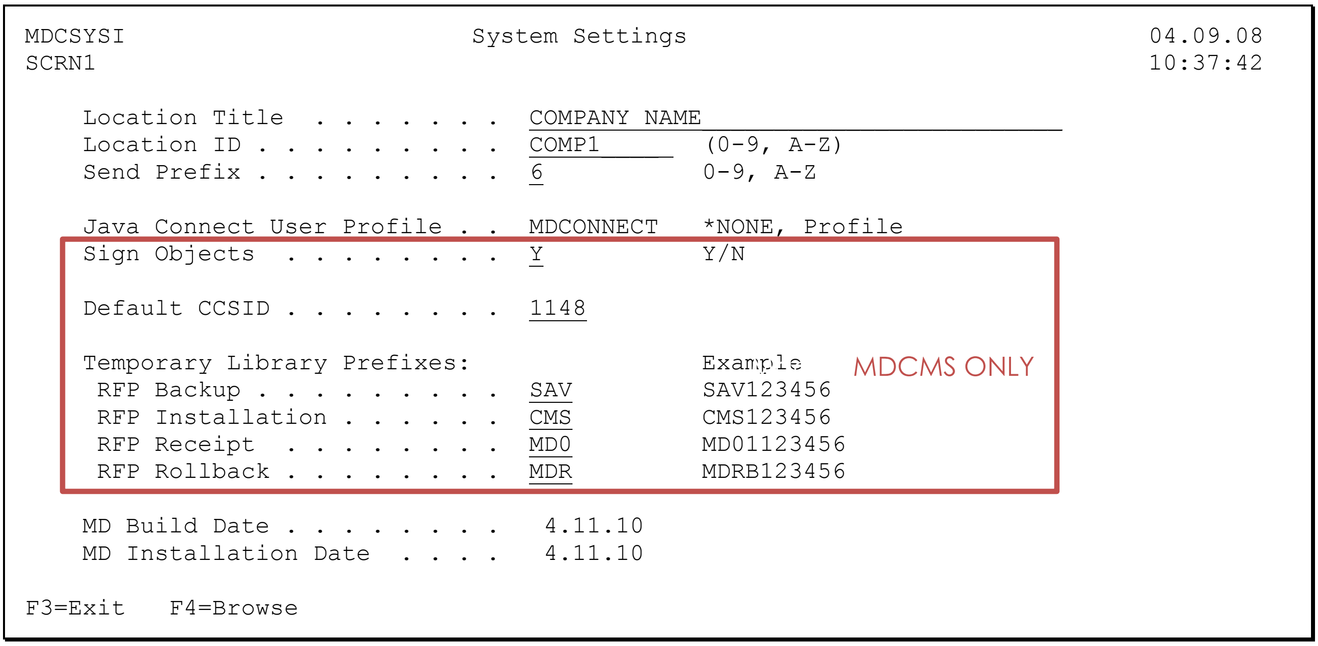
If the MDSEC filter program is used, the user filters are checked to see if the locally utilized user profile may be used to connect to the database via DDM. By default, if the user is not defined in the list, then the transaction will be blocked.

Field Information

User
The name of a user profile on the local system or *ALL to indicate that any user profile may be used

Function Keys
F3: Return to the Configuration Screen
F4: Browse list of user profiles

10 System Settings



```
MDCSYSI                         System Settings                          04.09.08
SCRN1                                                                    10:37:42

    Location Title  . . . . . . .   COMPANY NAME
    Location ID . . . . . . . . .   COMP1_____   (0-9, A-Z)
    Send Prefix . . . . . . . . .   6            0-9, A-Z

    Java Connect User Profile . .   MDCONNECT    *NONE, Profile
    Sign Objects  . . . . . . . .   Y            Y/N

    Default CCSID . . . . . . . .   1148

    Temporary Library Prefixes:                  Example
     RFP Backup . . . . . . . . .   SAV          SAV123456
     RFP Installation . . . . . .   CMS          CMS123456
     RFP Receipt  . . . . . . . .   MD0          MD01123456
     RFP Rollback . . . . . . . .   MDR          MDRB123456

    MD Build Date . . . . . . . .    4.11.10
    MD Installation Date  . . . .    4.11.10

F3=Exit   F4=Browse
```

The system settings can be managed from MDSEC menu option 11.

Location Title
The title to be displayed at the top of nearly all MD Product screens to help the user identify which system they are currently working on.

Location ID
A 10-Character ID to uniquely identify this system. The ID for this system must match the ID defined in the OS/400 location settings for any partition that will be connecting to this system.

Send Prefix
A 1-Character ID to uniquely identify distributions from this system. This is used to avoid conflicts in case multiple systems send Promotions to the same remote system. The temporary receiving library on the remote system will use this character in the 4th position of the library name.

Java Connect User Profile
The technical user profile on this system to be used to run MD java modules.
Java is used in MD for Excel and PDF report generation, sending emails, and Zip compression. F4 may be used to browse user profiles.

*NONE – java modules should not be used on this system. Recommended only if a JVM with minimum version of 1.4 is not present on the system.

Sign Objects (MDCMS Only)
Y – Sign Objects as they are being installed to ensure that they are not manually changed during the promotion process
N – Do not sign objects. Recommended only if the necessary IBM Java Encryption Libraries are not present on the system.

Default CCSID (MDCMS Only)
The Coded Character Set to use by default when communicating with this system using MDOpen or MDWorkflow. This ensures that characters are displayed in the form and order that is expected for the user's locale within those clients. If certain users require a different CCSID, that value can be defined for the user in MDSEC. F4 may be used to browse the list of CCSIDs defined for use in MDCMS.

Temporary Library Prefixes (MDCMS Only)
The prefix string to add to the front of each type of temporary library in MDCMS. The prefix may be changed so that conflicts can be avoided when multiple instances of MDCMS exist on the same system.

MD Build Date
The date that this version of MD was built by Midrange Dynamics

MD Install Date
The date that this version of MD was installed onto this system

10.1 Setting the JVM to be used for MD Java Modules

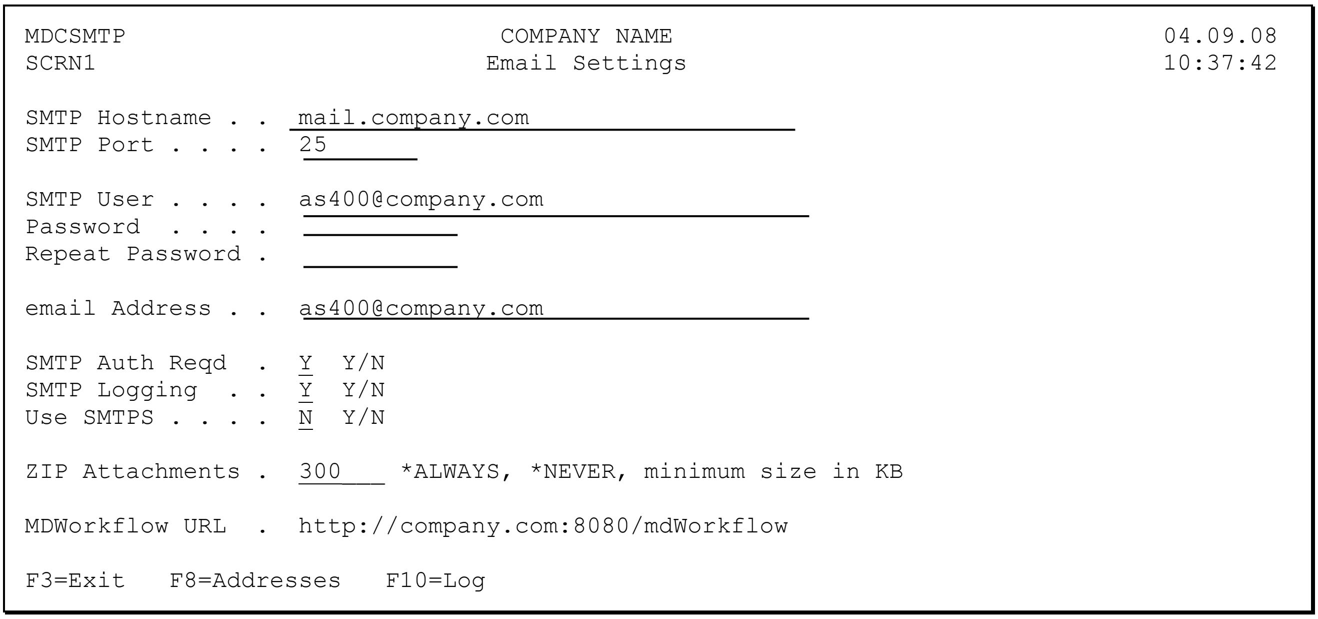
MD uses Java for various processes relating to Excel generation, PDF generation, SMTP, and Zipping. In order to carry out these processes, a JVM (minimum 1.4) must be installed on each system partition where MD will be used. If PDF generation will be utilized, the JVM must be a minimum of 1.5.

Data area MDSEC(instance)/MDJAVAHOME designates which installed JVM is to be used.

The valid values for this data area are:
*DFT – use the default JVM
*PROPFILE – load the JVM based on the settings in property file /mdcms/JAVA/mdcms.properties
A pathname pointing to a JVM (for example: /QOpenSys/QIBM/ProdData/JavaVM/jdk50/32bit)

If a JVM is not available on the system, *NONE can be specified for the Java Connect User in the System Settings (MDSEC Menu Option 11). This will disable all java-related functionality, while still allowing all MD core functionality to be performed.

11 Email Settings



```
MDCSMTP                          COMPANY NAME                           04.09.08
SCRN1                           Email Settings                          10:37:42

SMTP Hostname . .  mail.company.com
SMTP Port . . . .  25

SMTP User . . . .  as400@company.com
Password  . . . .
Repeat Password .

email Address . .  as400@company.com

SMTP Auth Reqd  .  Y  Y/N
SMTP Logging  . .  Y  Y/N
Use SMTPS . . . .  N  Y/N

ZIP Attachments .  300___  *ALWAYS, *NEVER, minimum size in KB

MDWorkflow URL  .  http://company.com:8080/mdWorkflow

F3=Exit   F8=Addresses   F10=Log
```

The Email settings can be managed from MDSEC menu option 12.

SMTP Hostname
The IP address or domain name of the SMTP server which will send emails to recipients

SMTP Port
The SMTP server Port number, which normally is 25 for SMTP and 465 for SMTPS

SMTP User
The ID of the user to connect to the SMTP server

Password
The password for the SMTP user

email Address
The sender address to use for the system

SMTP Auth Reqd
Y – The SMTP Server requires user authorization to occur
N – The SMTP Server does not require user authorization to occur

SMTP Logging
Y – A QPRINT console log will be kept for the MDMAIL SMTP client job
N – A console log will not be kept

Use SMTPS
Y – Connect to the SMTP Server using SMTP Secure (SSL)
N – Connect to the SMTP Server in unsecured mode

ZIP Attachments
*ALWAYS – attached files will be always be zipped to reduce the size of the emails
*NEVER – attached files will never be zipped
n KB – an attached file will only be zipped if it is larger than the entered number of Kilobytes

MDWorkflow URL
The context path for links to the MDWorkflow application. This must include http or https, the server address, port number if not 80 and the name of the web application.

This URL is used within MDMAILF email bodies to allow the user to navigate directly to a specific RFP and is used when generating Project, Task or Subtask mails out of MDWorkflow.

11.1 Email Addresses

The email addresses of the recipients can be maintained by pressing F8 from the Email Settings screen. If DDM connections are defined, the updates will be synced to all locations.

User ID
The user profile of the user. If the user does not have a profile on the system, any other ID of up to 10 characters can be used.

Name
The Name to be recipient to be displayed in the mail header

Address
The email address of the recipient

11.2 Email Log

Each time the MDMAIL job is used to send an email, a log entry will be written to MDSEC file MDDEMLL with the following information:
Date
Time
Job
Recipients
Subject
Attachments
Error Message

F10 can be pressed from the Email Settings screen to view/search log entries

11.3 MDSTRMAIL - Running MDMAIL SMTP Client

In order for MDWorkflow, the MDMAIL API or the MDMAILF API to send an email, the MDMAIL SMTP client must be running. Command MDSEC(Instance)/MDSTRMAIL can be added to a scheduled job for a fixed starting time.

MDSTRMAIL Parameters

Environment ID	The name of the MD instance (or suffix) - *DFT refers to MD being used in library MDXREF. For a different library suffix, this would be entered for the environment ID.
Submit Job	*YES – a job named MDMAIL(instance) will be submitted to the entered Job Queue *NO – the MDMAIL process will run within the current job
Job Queue	*DFT – submit to the queue defined for the MDMAIL service *JOBD – submit to the default queue for the running job profile The name of the job queue to submit MDMAIL to
Job Queue Library	The library of the job queue to submit MDMAIL to or *LIBL if the job queue is located in the current library list
Time of Day to auto-end Job	*DFT – end at the time defined for the MDMAIL service *NEVER – the MDMAIL job shouldn't end automatically – it should run until the job is forcibly ended or command MDENDMAIL is invoked. A specific time to end in format HH:MM:SS

11.4 MDENDMAIL - Ending MDMAIL SMTP Client

The MDMAIL job can be ended at any time using command MDSEC(Instance)/MDENDMAIL. Once MDENDMAIL is run, MDMAIL will cleanly stop within 30 seconds.

MDENDMAIL Parameters

Environment ID	The name of the MD instance (or suffix) - *DFT refers to MD being used in library MDXREF. For a different library suffix, this would be entered for the environment ID.

Appendix A – Standard User Roles

The following table explains the primary (in **bold**) and secondary functional authorities for each role that are shipped as defaults when MDSEC is installed.

Role	Overview
MD_ADMCMS	**Administrative Authority** for all configuration settings in the **MDCMS** Setup Menu or MDOpen Settings section
MD_ADMWF	**Administrative Authority** for all settings in the **MDWorkflow** Settings Menu and corresponding Workflow settings in MDOpen
MD_ADMXREF	**Administrative Authority** for MDCMS or **MDXREF** Applications and Levels (intended when MDXREF used as Standalone product)
MD_PGMR	**Request to add, modify or delete Objects in MDCMS** (green screen). This is security code 28, which also requires that the MDCMS license key allows for as many developers as have been given access to this code within MDSEC. Request to recompile or update Objects Retrieve Archived Source or Object Create and Edit RFPs Submit RFPs for Promotion (installation preparation step) Edit RFP in Send List Receive RFP Set involved Projects to Test-Ready Comment on involved Projects Edit involved Tasks Edit involved Subtasks
MD_PGMRADV	**Edit other user's Object Requests** Change programmer for Object Request Request Source from a different location than defined path or search template for attribute Ignore Existing Objects in other Versions Edit involved Projects Create Tasks for involved Projects Edit any Task for involved Projects Edit any Subtask for involved Tasks
MD_PGMROPN	**Request to add, modify or delete Objects in MDOpen**. This is security code 29, which also requires that the MDOpen license key allows for as many developers as have been given access to this code within MDSEC. Request to recompile or update Objects Retrieve Archived Source or Object Create and Edit RFPs Submit RFPs for Promotion (installation preparation step) Edit RFP in Send List Receive RFP Set involved Projects to Test-Ready Comment on involved Projects Edit involved Tasks Edit involved Subtasks
MD_PROJAPR	**Confirm RFP Test Acceptance/Rejection** Comment on any Project View any Project Edit involved Projects

MD_PROJAPR (continued)	**Authorize involved Projects** **Approve involved Projects** Comment on involved Projects Create Tasks for involved Projects Edit any Task for involved Projects Edit involved Tasks Edit any Subtask for involved Tasks Edit involved Subtasks
MD_PROJEDT	**Edit involved Projects** Comment on involved Projects Create Tasks for involved Projects Edit any Task for involved Projects
MD_PROJMGR	Create and Edit RFPs **Create Projects** Authorize any Project Set any Project to Test-Ready Approve any Project Close any Project Comment on any Project View any Project Create any Task **Edit any Task** MDWorkflow Report Settings Manage Time Entry for other Users
MD_RFP_SBM	Request to Recompile or Update Objects Ignore Requirement to Request Related Objects RFP Maintenance **RFP Submission** Receive RFP from Remote System Set involved Projects to Test-Ready Comment on involved Projects Edit involved Tasks Edit involved Subtasks
MD_RFPAPR	Create and Edit RFPs **RFP Approval when submitted by different user** **RFP Approval for manually changed Objects** Edit RFP Reserve Date after Install **RFP Approval when submitted by same user**
MD_RFPINS	Create and Edit RFPs **RFP Installation when approved by different user** Edit RFP Reserve Date after Install RFP Rollback Receive RFP from Remote System **RFP Installation when approved by same user**
MD_RFPSND	Edit RFP in Send List **Send RFP** Send Data to Remote System Close/Ignore Unsent RFP in Send List
MD_USER	Read-Only access to MDCMS and MDXREF

Appendix B – MD Product Security Codes

Column Definitions

Code

The MDSEC Functional Security Code for MDSEC Application "md"

Appl Specific

Y – The code value for a role or user is defaulted in application md, but can be refined by the organization's MDCMS application code and level – in other words, a user may have authority to a function in application ABC, level 10 but not in application XYZ, level 10 or in application ABC, level 20.

N – The code value is in effect across all applications

Description

Describes the function for which the Code provides authorization.
Any authority granted for MDCMS is also valid for MDOpen, except for code 28.
Code 29 is only valid for MDOpen.

Administrative, RFP and Project-Specific codes are valid in MDCMS, MDOpen and MDWorkflow.

Code	Appl Specific	Description
1	N	Read Access to the MDXREF product
2	N	Read Access to the MDCMS product
3	N	Manage Application Codes in MDCMS (or MDXREF if MDXREF is installed without MDCMS)
4	Y	Manage Application Promotion Levels in MDCMS (or MDXREF if MDXREF is installed without MDCMS)
5	Y	Manage MDCMS Attributes
6	Y	Manage Attribute and *RFP Commands or Scripts
7	Y	Manage MDCMS Templates
8	Y	Manage Distribution Levels
9	N	Manage list of target OS/400 locations
10	N	Manage MDOpen Server Locations
11	N	Manage System Settings
12	N	Manage Email Settings
13	N	Manage Email Addresses
14	N	View MD Output generated by other Users
15	N	Delete MD Output generated by other Users
20	Y	Send Entire Application Settings to other Systems
21	Y	Send Attribute Settings to other Systems
28	Y	Request to add, modify or delete Objects in MDCMS (green screen). The use of this code also requires that the MDCMS license key allows for as many developers as have been given access to this code within MDSEC.
29	Y	Request to add, modify or delete Objects in MDOpen. The use of this code also requires that the MDOpen license key allows for as many developers as have been given access to this code within MDSEC.
30	Y	Request to recompile or update objects
31	Y	Edit or Delete the Request Records of other users
32	Y	Change the User assigned to an Object Request
33	Y	Request (check out) source from a different location than the location that MDCMS recommends to the user
34	Y	Retrieve Source or Object from the MDCMS archive

Code	Appl Specific	Description
35	Y	Allows ignoring the pre-submit Warning when files are changed and not all programs that access records in the file are included in the RFP
36	Y	Allow the option Ignore in the Version Conflict view for objects in a dependent level
40	Y	Create and Edit RFPs
41	Y	Submit RFP for Promotion (pre-installation step)
42	Y	Approve RFP for Installation, if RFP was submitted by different user
43	Y	Approve RFP for Installation, even if Source or Objects in the RFP were manually modified since installation into prior level. User must also have authority to code 42 or 52 depending on submit user
44	Y	Install RFP approved by different user
45	Y	Edit RFP Reserve Date in MDWorkflow after Installation complete in order to expand Installation Test window
46	Y	Confirm RFP Test Acceptance or Rejection in MDWorkflow
47	Y	Roll Back previously installed RFP
48	Y	Edit contents of RFP in Send List
49	Y	Send RFP to another System
50	Y	Send Data (*DATA/*DTAGRP requests) to another System User must also have authority to code 49
51	N	Receive RFP on target System
52	Y	Approve RFP for Installation, if RFP was submitted by same user
53	Y	Install RFP approved by same user
54	Y	Close/Ignore Unsent RFP in Send List
60	N	Create Projects
61	N	Edit any Project
62	N	Authorize work to be performed for any Project. An object can't be assigned to a project if it isn't already authorized, unless the developer has authority to this code.
63	N	Set any Project to status "Ready to Test"
64	N	Approve any Project
65	N	Close any Projects
66	N	Comment on any Project
67	N	View any Project. If not authorized to this code, only projects that the user is involved with (either directly or part of a group) will be visible.
69	N	Create a Task for any Project
70	N	Edit Tasks for any Project
71	N	Manage MDWorkflow Group Types
72	N	Manage MDWorkflow Groups
73	Y	Manage MDWorkflow Group Types Required for Test Acceptance for specific Application Levels
74	N	Manage Custom Field, Custom Status and Task Type settings for Projects or Tasks
75	N	Manage MDWorkflow Object Group settings
76	N	Manage MDWorkflow Public Report settings
77	N	Manage MDWorkflow Conflict List settings
78	N	Manage Project Cost settings
81	N	Edit involved Projects
82	N	Authorize involved Projects
83	N	Set involved Projects to Test-Ready
84	N	Approve involved Projects
85	N	Close involved Projects

Code	Appl Specific	Description
86	N	Comment on involved Projects
87	N	Create Tasks for involved Projects
88	N	Edit any Task for involved Projects
89	N	Edit involved Tasks
90	N	Edit any Subtask for involved Tasks
91	N	Edit involved Subtasks
92	N	Manage Time Entry for other Users