Firewall™

The Network Security Solution of

iSecurity

User Manual

Version 15

RAZ-LEE™
The iSeries Security Experts

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Record your Product Authorization Code Here:

Computer Model:	
Serial Number:	
Authorization Code	

About This Manual

Who Should Read This Book

This user guide is intended for system administrators and security administrators responsible for the implementation and management of security on System i. However, any user with basic knowledge of System i operations will be able to make full use of this product after reading this book.

Product Documentation Overview

Raz-Lee takes customer satisfaction seriously. Our products are designed for ease of use by personnel at all skill levels, especially those with minimal System i experience. The documentation package includes a variety of materials to familiarize the user with Firewall quickly and effectively.

Printed Materials

This user guide is the only printed documentation necessary for understanding **Firewall**. It is available in user-friendly PDF format and may be displayed or printed using Adobe Acrobat Reader version 4.0 or higher. Acrobat Reader is included on the product CD-ROM.

Firewall includes a single user guide that covers the following topics:

- Introduction
- Installation
- Start-up and Initial Configuration
- Using Firewall

This manual contains concise explanations of the various product features as well as step-by-step instructions for using and configuring the product.

Online Help

System i context-sensitive help is available at any time though the **F1** key. A help window appears containing explanatory text relating to the function or option currently in use. Online help will shortly be available in Windows help format for viewing on a PC with terminal emulation.

Typography Conventions

- Menu options, field names, and function key names are written in **Sans-Serif Bold**.
- References to chapters or sections are written in Italic.
- OS/400 commands and system messages are written in Bold Italic.
- Key combinations are separated by a dash, for example: **Shift-Tab**.
- Emphasis is written in **Times New Roman bold**.

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New Features in Firewall Versions

New Features for Firewall 15.6

New feature “Client Application Security”, option 18

New Features for Firewall 15.5

- Inherit in-product IFS authorities from higher directory or file (81→2)
- Skip SQL parsing if accept/reject network access decision was taken at global, IP or user level (81→2)
- Web application server performance improvements (2→1→1→1 “Skip Checks” options) dramatically improve performance when a high volume of requests originate from a well secured IP that uses SSL.
- Streamline rules support for multiple libraries (21→61) by using “model libraries” to define security rules
- SQL long names (up to 128) are now support for Table (File) and for Collection/Schema (Library)
- SQL and Wizards performance improvements
- In Users and Groups security, for %Group the number of members appears and Group Profiles are signified by *GRPPRF

New Features for Firewall 15.0

Inherited Authority for IFS objects (optional)

- Optional change in IFS object authorization determination
- The Best Fit algorithm has new variations: If selected, the change allows getting authority from the preceding directories, or even from any level of a higher generic name
- Enables easier distribution of authorities by directories

Chapter 1: Introducing Firewall

What is Firewall?

Firewall is a truly comprehensive network security solution that completely secures your System i (AS/400) against all known external threats, and also controls what users are permitted to do **after** access is granted. **Firewall** is a robust, cost-effective security solution.

Firewall is the by far the most intuitive and easy-to-use security software product on the market today. Its top-down functional design and intuitive logic creates a work environment that even System i novices can master in minutes. **Firewall** features a user-friendly, Java-based GUI and a System i Navigator (OpsNav) plug-in, in addition to the traditional green-screen interface.

Why is Firewall Necessary?

Previously, the System i was used almost exclusively in a closed environment, with host systems connected to remote data terminals via proprietary technologies. Within this closed environment, the security features of the OS/400 operating system provided the strongest data and system security in the world. User profiles, menus and object level security provided all the tools necessary to control what users were allowed to see and do.

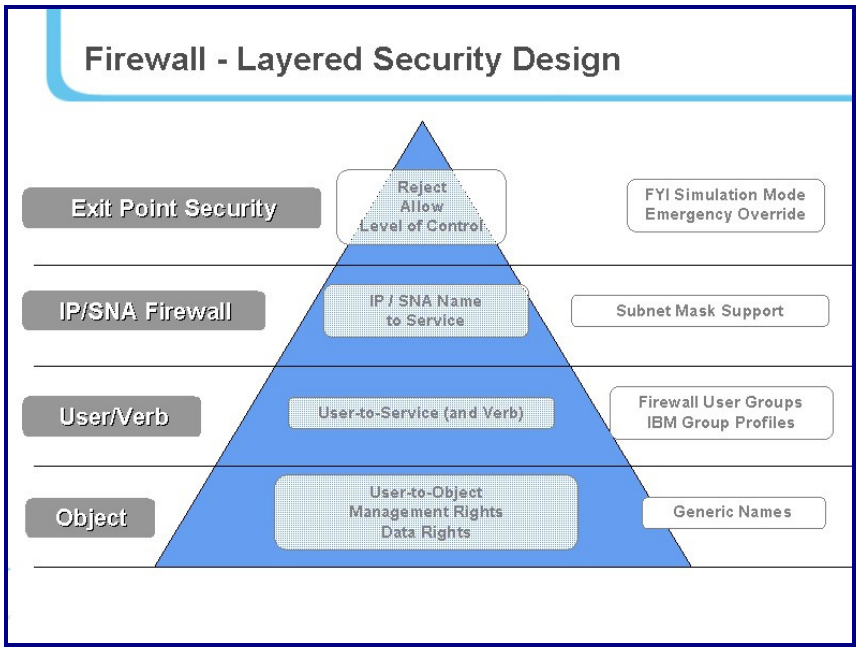
In today's world of enterprise networks, PCs, distributed databases, Internet and web technologies, closed computing environments are all but extinct. Technological advances compelled IBM to open up the System i and its OS/400 operating system to the rest of the world. This openness brought along many of the security risks inherent in distributed environments. System administrators need to equip themselves with a new generation of security tools to combat these evolving threats. **Firewall** is an advanced security tool which enhances native OS/400 by controlling access through all known external sources as well as controlling what users are permitted to do once access is granted.

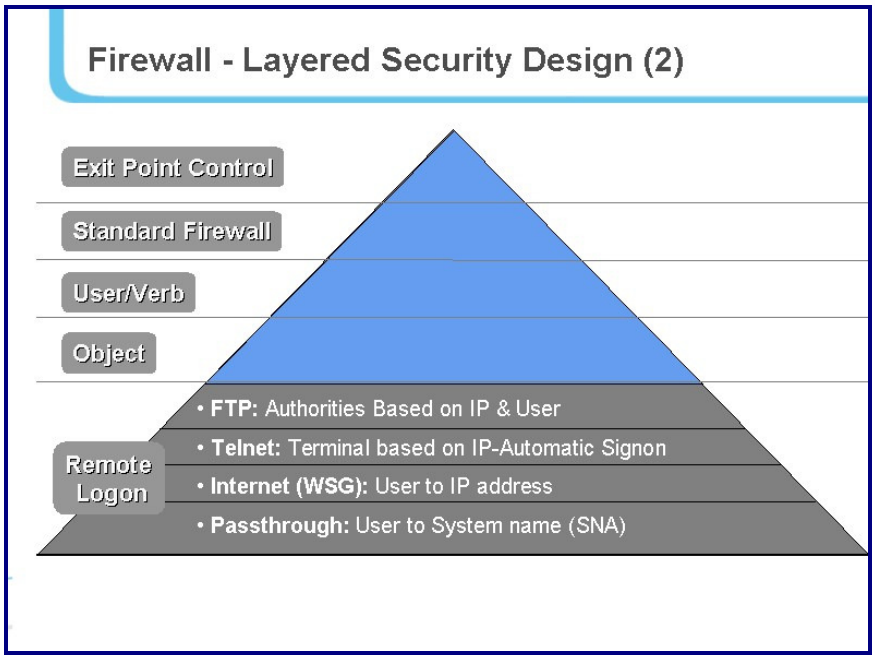
Feature Overview

Top-Down Security Design

Top-Down security design means that the process of designing and applying security rules follows the most efficient logical path possible. In other words, the user has to formulate a minimal number of rules in order to achieve maximum security and the System i has to process apply rules to far fewer transactions than many similar products. This saves planning and maintenance time as well as valuable system resources.

Top down security offers a simple hierarchy of rule types. When a higher level rule type fully meets a situation's security requirements, the user doesn't have to formulate any more rules for the said situation. The following drawing illustrates this concept.





System i security is based on five basic levels:

- Server/Exit Point Security
- TCP/IP Address Firewall Security
- User-to-Service Security
- Object Security
- Logon Security (provides additional security features once access has been granted)

Simply put, whenever a higher, less specific rule will suffice, you do not need any more specific rules. For example, if you do not need to use FTP, you simply reject all transactions at the FTP Server/Exit Point level. You do not need to define any rules that limit FTP access via specific IP addresses, by specific users, or to specific objects.

Multi Thread Support

Calling programs from a thread that is not the main one forces various limitations on the called programs. For example, the command Override with Data Base File (OVRDBF) cannot be used. This requires special programming in the called program.

Firewall secures network access by providing programs to be called by security related exit points. Firewall modules have been specifically treated to improve their capability to work in secondary threads. This support is not all-encompassing also because it is related to system API's abilities to function in such circumstances.

We recommend, when possible, working in single thread mode. Otherwise, perform a check, such as checking the log, in order to validate proper performance.

Firewall Rules and the Best-Fit Algorithm

Firewall is a rules-based security product. The user creates a wide variety of rules to cover many different situations and to counter different kinds of threats. Some rules will likely apply globally to all or most activity types while others will cover very specific situations.

The user can enable the FYI Simulation Mode globally for all activity regardless of server or user. The user can also enable FYI individually for specific function servers as a parameter in server security rules. In this manner, security rules can be tested for specific servers without affecting rules that apply to other servers.

FYI Simulation Mode

FYI Simulation Mode allows the user to simulate the application of security rules without physically rejecting any activity. All "rejected" transactions are recorded in the Activity Log as such but the activity is allowed to proceed without interruption. This feature allows you to test your rules under actual working conditions without adversely affecting user access.

The FYI Simulation Mode may be enabled globally for all activity or enabled for individual function servers. In this manner, one can test security rules for specific servers without affecting rules that apply to other servers.

Emergency Override

The Emergency Override feature allows the user to override all existing security rules temporarily by allowing or rejecting all activity. This feature is useful in order to respond quickly to emergencies such as critical transactions being rejected due to problems with **Firewall** security rules or a sudden security breach.

Rule Wizards

The unique Rule Wizards feature makes security rule definition a snap, even for non-technical system administrators. This user-friendly feature allows the user to view historical activity together with the security rule currently in effect on a single screen. One can even modify the existing rule or define a new rule without closing the wizard. The Rule Wizards are an invaluable tool for defining the initial set of rules after installing **Firewall** for the first time.

Log

The activity log provides complete details for every transaction captured as a result of a security rule. The user can select the activities to be included in the Activity Log and the conditions under which they are logged (average of 800 bytes per SQL statement). Users can display or print selected records from the Activity Log by entering the ***Display Firewall Log (DSPFWLOG)*** on any command line or from numerous locations on **Firewall** menus and data screens.

For REJECTS - The log entry shows the first level where the request is a violation to the Firewall rules.

For ALLOWED – The log entry shows the last test that was taken and found valid.

- QSECOFR as well as any other user CANNOT update or delete records from the file that contains the log. This is true even when using SQL, DFU, and CHGFC command and so on.

- Users that are authorized to option 82, 11 as Administrators can setup the number of days that data is kept online
- Users that are authorized to option 82, 11 as Administrators can use STRFW, 82, 51. Work with Collected Data and remove data of full days.
- QSECOFR as well as any other user who is authorized, can change the logging option in **Firewall** per service (exit point). Type: STRFW, 1, 1
- QSECOFR as well as any other user who is authorized can change the logging option per user in **Firewall**. Type STRFW, 1, 11

Query Wizard

The powerful Query Wizard allows users to design custom output reports that show exactly the necessary data without programming or technical knowledge. One can create query definitions by using a series of simple parameter definition screens. Output may be a printed report, a screen display or a text file saved on the System i.

Highly detailed filter criteria enables users to select only the necessary records by using Boolean operators and the ability to combine complex logical conditions. Firewall's flexibility enables users to specify the sort order according to multiple fields. All reports can run automatically and be e-mailed to the system administrator as HTML, PDF or CSV files.

The "User-Centric" Approach

Firewall has a "user-centric" approach set in the top-down model, which helps the security administrator to manage user security easily and efficiently and reduces the number of security rules.

Raz-Lee Security has created two new user groups in addition to the existing general Firewall group. Together they form three groups that enable organization of the users: General Groups, Application Groups, and Location Groups. See *Chapter 3: First Steps.*

User Security

Firewall offers optimized basic user security. Defining a single user security definition can be performed as described in the following table (see *Chapter 6: User-to-Service Security* for more detail).

Method	Description
%Groups	Assign a user to a user group (similar to the option of selecting members for each of the user groups).
Services	Same as the previous method of user-to-service definitions
IP	Same as the Location group rules, but only applicable to single users.
Device Names	Only for Telnet sign on. Same as Location group rules, but only applicable to single users

User Management

Originally an **Action** feature enabling user management abilities, User Management has been added to **Firewall**. It contains several powerful security tools that control access permissions. User Management enhances active system security by allowing users to perform the following tasks:

- View and modify security parameters in user profiles using a convenient wizard
- Automatically disable inactive users
- Restrict user sign-on to specific hours and days
- Prevent user sign-on during planned absences or following termination
- Analyze default passwords for effectiveness

See *Chapter 5: User-to-Service Security*.

Intrusion Detection

This feature enables **Firewall** to trigger proactive responses (similar to the ones available on the **Action** module but less flexible). Those responses, such as notification about intrusions to the admin by MSGQ and email are general, easy to use, yet important.

See *Chapter 10: Maintenance*.

Native OS/400 Text Based User Interface

Firewall is designed from the ground up to be a user-friendly product for auditors, managers, security personnel and system administrators. The user interface follows standard System i CUA conventions. All product features are available via the menus, so users are never required to memorize arcane commands.

Many features are also accessible via the command line, for the convenience of experienced users.

Menus

Product menus allow easy access to all features with a minimum number of clicks. Menu option numbering and terminology is consistent throughout this product and with other Raz-Lee products.

To select a menu option, simply type the option number and press **Enter**.

The command line is available from nearly all product menus. If the command line does not appear (and your user profile allows use of the command line), press **F10** to display it.

Commands

Many **Firewall** features are accessible from any command line simply by typing the appropriate commands. Some of the most commonly used commands appear below.

- Display **Firewall** log (***DSPFWLOG***)
- Run a **Firewall** query (***RUNFWQRY***)
- Run a predefined group of reports (***RUNRPTGRP***)
- Print user profile information report (***PRTFWUSRP***)

Data Entry Screens

Data entry screens include many convenient features such as:

- Pop-up selection windows
- Convenient option prompts
- Easy-to-read descriptions and explanatory text for all parameters and options
- Search and filter with generic text support

The following table describes the various data entry screen options.

Desired Procedure	Required Steps
Entering data in a field	Type the desired text and then press **Enter** or **Field Exit**
Moving from one field to another without changing the contents	Press the **Tab** or **Shift-Tab** keys
Viewing options for a data field together with an explanation	Press **F4**
Accepting the data displayed on the screen and continue	Press **Enter**

Function Keys

The following function keys may appear on data entry screens:

Function key	Description
F1 – Help	Display context-sensitive help
F3 – Exit	End the current task and return to the screen or menu from which the task was initiated
F4 – Prompt	Display a list of valid options for the current field or command. For certain data items, a pop-up selection window appears
F6 – Add New	Create a new record or data item
F8 – Print	Print the current report or data item
F9 – Retrieve	Retrieve the previously-entered command
F12 – Cancel	Return to the previous screen or menu without updating

Other iSecurity Products

Assessment checks your ports, sign-on attributes, user privileges, passwords, terminals, and more. Results are instantly provided, with a score of the current network security status with its present policy compared to the network if iSecurity were in place.

Audit is a security auditing solution that monitors System i events in real-time. It includes a powerful query generator plus a large number of predefined reports. Audit triggers customized responses to threats via the integrated script processor contained in Action.

Action automatically intercepts and responds to security breaches, system activity events, QHST contents, and other message queues. Inquiring messages can be automatically answered. Alerts are sent by e-mail, SMS, pagers, or the message queues. Easy-to-use Rule Wizard helps define rules and actions.

Capture silently captures and documents user screens for tracking and monitoring – without any effects on system performance. Capture can run in playback mode and can be used to search within texts. It also preserves job logs for subsequent review. Screen captures can be according to user name, IP address, time of day, and more.

View is a unique, patent-pending, field-level solution that hides sensitive fields and records from restricted users. This innovative solution hides credit card numbers, customer names, etc. Restricted users see asterisks or zeros instead of real values. View requires no modification to existing applications.

Anti-Virus provides virus detection and prevention. Anti-Virus scans, validates, and checks IFS files as they are enrolled or modified, authenticates them, and erases/quarantines infected files. Includes an updateable database and a simple interface.

Screen protects unattended terminals and PC workstations from unauthorized use. It provides adjustable, terminal- and user-specific timeout capabilities. Screen locking and signoff periods may be defined according to variable criteria such as date, time of day or user profile.

Password is a general-purpose password management product that ensures user passwords cannot be easily guessed or cracked. Password allows the user to manage a variety of password security parameters and maintains a history log of attempts to create passwords. This log can easily be displayed or printed.

AP-Journal automatically manages database changes by documenting and reporting exceptions made to the database journal.

Visualizer is an advanced data warehouse statistical tool with state-of-the-art technology. It provides security-related analysis in GUI and operates on summarized files; hence, it gives immediate answers regardless of the security data amount being accumulated.

Chapter 2: First Steps

This chapter covers the steps necessary to begin using **Firewall** for the first time. Also covered in this chapter are the basic procedures for configuring the product for day-to-day use.

Initial Setup and Definition Overview

Firewall is easy to set up and use right out of the box. The factory default parameters are adequate for many installations. You will likely need to configure only a few parameters to meet the specific needs of your organization.

It should be noted that, by default, protection is disabled for all servers, users and objects following initial installation. You must enable protection and define your security rules in order to begin enjoying the benefits of **Firewall** protection.

As with any computer security product, careful consideration should be given to defining security rules that will maximize protection for your organization against intrusion and user abuse - without adversely affecting legitimate user access and/or system response time. Before beginning the steps below, the user should complete the process of identifying which specific servers and objects are to be protected and which users should be granted access rights thereto.

This section is intended to help you with the process of configuring **Firewall** and defining your first security rules according to your organization's security policies. The process entails the following steps, in sequential order:

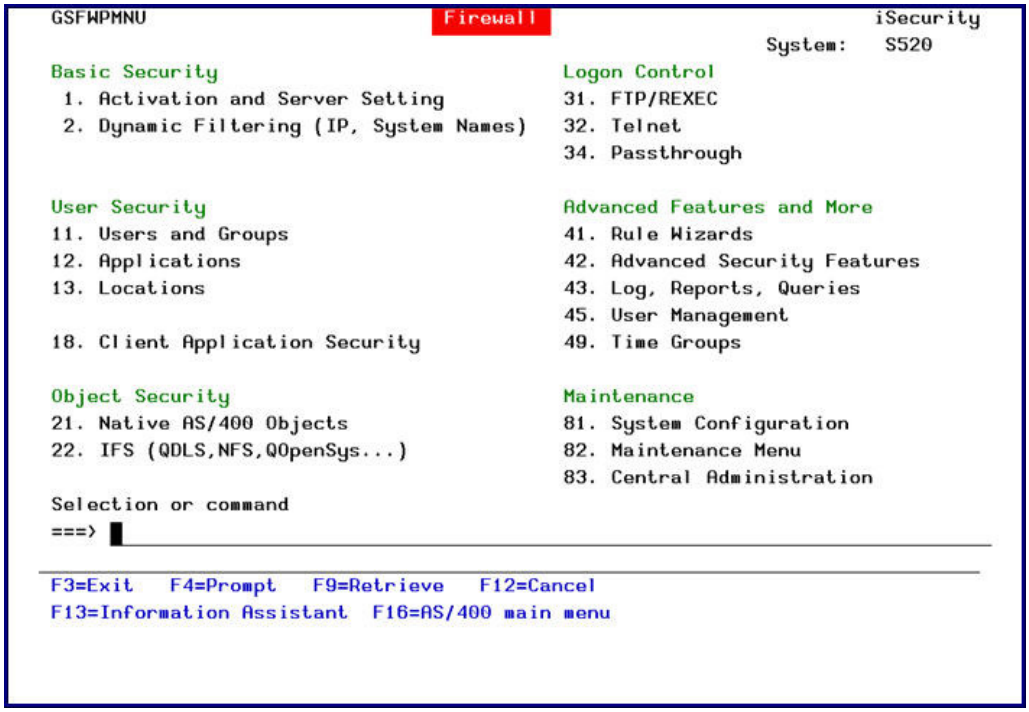
1. Obtain and enter the authorization code (temporary or permanent) if you have not already done so.
2. Start **Firewall**.
3. Change the **iSecurity** product password.
4. Enable the **FYI Simulation Mode** on a global basis using the **System Configuration** option on the main menu.
5. Review the basic system configuration parameters and change those necessary to meet your organizational needs.
6. Enable protection and logging for all activity on all servers. Make certain that the security level is set to **1** (Allow All) for all servers.
7. After a suitable period of activity (several days or weeks), use the **Rule Wizards** to analyze the logged activity and to define security rules based upon your organizational security policies.
8. Use the **Activity Log** and the **Query Wizard** to analyze activities not covered by the Rule Wizards. Define appropriate rules based on this analysis.
9. Create User Groups and Time Groups according to your organizational requirements.
10. After a suitable period of further activity, use the **Rule Wizards**, **Activity Logs** and queries to ensure that your new rules are effectively blocking unauthorized access, while not preventing legitimate user access.

11. Disable the **FYI Simulation Mode**. From this point forward unauthorized user access will be blocked.

Starting Firewall for the First Time

In order to use this product, the user must have the ***SECOFR** special authority. To start **Firewall**, type the ***STRFW*** command at the command line. The main menu appears after a few moments.

An additional product password is also required to access most product features. The default product password is ***QSECOFR***. We recommend that this password be changed as soon as possible, using the procedure described below.



Firewall Main Menu

Modifying Operators' Authorities

The Operators authorities' management is now maintained from one place for the entire **iSecurity** on all its modules.

There are three default groups:

- ***AUD#SECAD**- All users with both ***AUDIT** and ***SECADM** special authorities. By default, this group has full access (Read and Write) to all **iSecurity** components.
- ***AUDIT** - All users with ***AUDIT** special authority. By default, this group has only Read authority to **Audit**.
- ***SECADM**- All users with ***SECADM** special authority- By default, this group has only Read authority to **Firewall**.

iSecurity related objects are secured automatically by product authorization lists (named security1P). This strengthens the internal security of the product. It is essential that **Work with**

Operators be used to define all users who have ***SECADM**, ***AUDIT** or ***AUD#SECAD** privileges, but don't have all object authority. **Work with Operators** screen has Ussr (user management) and Adm for all activities related to starting, stopping subsystems, jobs, import/export and so on. **iSecurity** automatically adds all users listed in **Work with Operators** to the appropriate product authorization list.

Users may add more operators, delete them, and give them authorities and passwords according to their own judgment. Users can even make the new operators' definitions apply to all their systems; therefore, upon import, they will work on every system.

Password = *BLANK for the default entries. Use ***DSPPGM GSIPWDR*** to verify.
The default for other user can be controlled as well.

If the organization wishes to have a the default to be *BLANK than they have to enter:
CRTDTAARA SMZTMPC/DFTPWD *char 10

NOTE: *When installing* **iSecurity** *for the first time, certain user(s) might not have access according to the new authority method. Therefore, the first step you need to take after installing is to edit those authorities.*

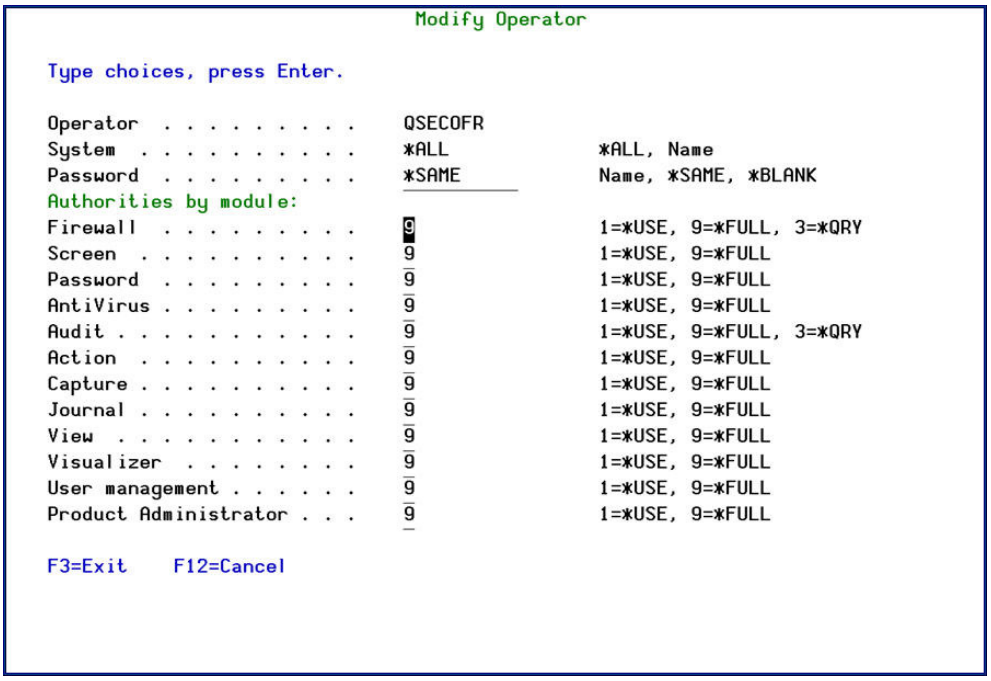
To modify operators' authorities, follow this procedure.

1. Select **82. Maintenance Menu** from the main menu. The **Maintenance Menu** appears.
2. Select **11. Work with Operators** from the **Maintenance Menu**. The **Work with Operators** screen appears.

```
                          Work with Operators

Type options, press Enter.
  1=Select   4=Delete

                              Authority level: 1=*USE, 9=*FULL
Opt User          System    FW  Scr Pwd AV  Aud Act Cpt Jrn Vw  Vsl Usr Adm
    *AUD#SECAD    S720       1   9   9   9   9   9   9   9   9   9   9   9
_   *AUDIT        S720                       9   9   9   9       9
    *SECADM       S720       9   9   9   9                       9   9   9
_   ELI           S720       9   9   9   9   9   9   9   9   9   9   9   9
_   FER           S720       1   1   1   1   1   1   1   1   1   1   1   1
_   FERNANDO      S720       1   1   1   1   1   1   1   1   1   1   1   1
_   GS            S720       9   9   9   9   9   9   9   9   9   9   9   9
_   IMA           S720       9   9   9   9   9   9   9   9   9   9   9   9
_   JAVA1         S720       9   9   9   9   9   9   9   9   9   9   9   9
_   NANDO         S720       9   9   9   9   9   9   9   9   9   9   9   9
_                                                                   More...
FW =Firewall   Pwd=Password   Aud=Audit      Cpt=Capture    Vw =View
Scn=Screen     AV =AntiVirus  Act=Action     Jrn=Journal    Vsl=Visualizer
Usr=User Mgt.  ADM=Admin.
F3=Exit    F6=Add new    F8=Print   F11=*SECADM/*AUDIT authority   F12=Cancel
```

Work with Operators

3. Type **1** next to the user to modify his authorities (or press **F6** to add a new user). The **Modify Operator** screen appears.



Modify Operator

Option	Description
Password	**Name** = Password **Same** = Same as previous password when edited **Blank** = No password
1 = *USE	Read authority only
9 = *FULL	Read and Write authority
3 = *QRY	Run Queries. For auditor use.

4. Set authorities and press **Enter**. A message is prompted informing that the user being added/modified was added to the Authority list that secures the product's objects; the user carries Authority *CHANGE and will be granted Object operational authority. The Authority list is created in the installation/release upgrade process. The SECURITY_P user profile is granted Authority *ALL whilst the *PUBLIC is granted Authority *EXCLUDE. All objects in the libraries of the product (except some restricted special cases) are secured via the Authority list.

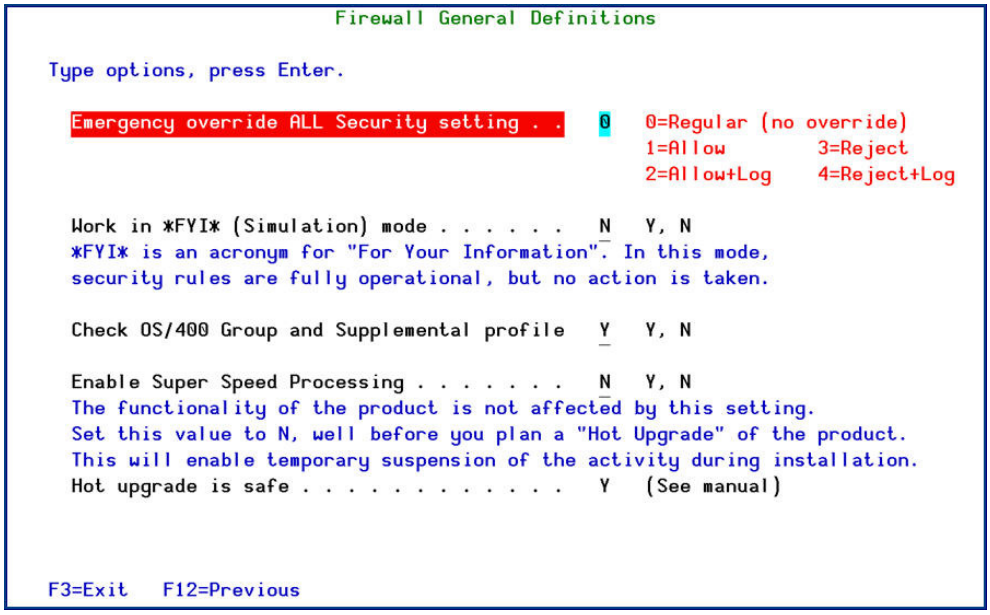
FYI Simulation Mode

The FYI Simulation Mode allows users to simulate the application of security rules without physically rejecting any activity. All "rejected" transactions are recorded in the Activity Log as such but the activity is allowed to proceed without interruption. This feature allows users to test your rules under actual working conditions without adversely affecting user access.

Users can enable the FYI Simulation Mode globally for all activity regardless of server or user. One can also enable FYI individually for specific function servers as a parameter in server security rules. In this manner, one can test security rules for specific servers without affecting rules that apply to other servers.

To enable **FYI** globally for all servers and users, perform the following steps:

1. Select **81. System Configuration** from the main menu. The **Global Parameters** screen appears.
2. Select **1** from the **Global Parameters** screen. The **General Definitions** screen appears.



Firewall General Definitions

3. Emergency override ALL Security Setting option allow you to override all of the Firewall security settings. Type 0 for regular Firewall settings.

Option	Description
0=Regular	No override, regular Firewall security definitions. Default setting.
1=Allow	Allow all users/groups for all services. None of the exit points is locked.
2=Allow+Log	Allow all users/groups for all services and log the activities.
3=Reject	Reject all users/groups from all services. All of the exit points are locked.
4=Reject+Log	Reject all users/groups from all services and log the activities.

4. Type a '**Y**' in the **Work in FYI (Simulation) Mode** field.

NOTE: You may leave the **Work in FYI (Simulation) Mode** field as '**N**', but configure certain servers to work in FYI (see *Modifying Server Security*).

5. Select '**Y**' at the **Check OS/400 Group and Supplemental profile** field to make sure both group profile and the supplemental groups' authorizations are checked. It is enough to have permission for a service in one of the groups.
6. Select 'Y' at the Enable Super Speed Processing to leave programs in memory between system IPLs, which will allow fast performances.

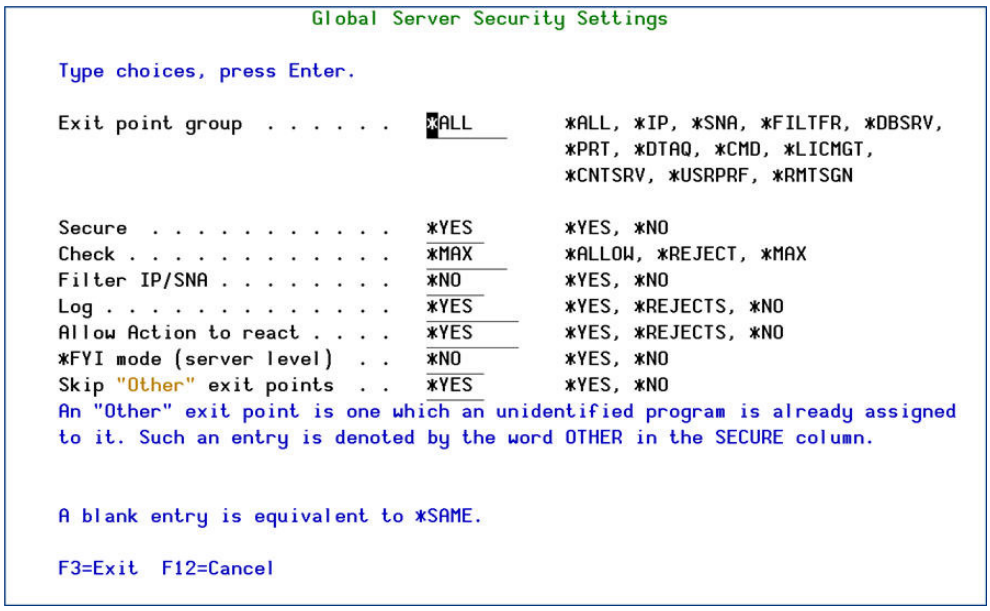
NOTE: Before an upgrade, set **Enable Super Speed Processing** to **'N'** and perform an IPL.

7. Hot upgrade is safe: this option will allow performing an update which is performed without first terminating Firewall. When Enable Super Speed Processing is set to Y, this may leave programs in memory between system IPLs. Therefore, a Hot Upgrade should not be attempted if Hot Upgrade is Safe is set to N.
8. Press **Enter** twice to return to the main menu.

Enabling Protection for all Servers

In order to gather activity data for subsequent analysis, users should enable protection for all servers (if only temporarily) and enable logging of all transactions into the Activity Log. To accomplish this, perform the following steps in order:

1. Select **1. Activation and Server Setting** from the main menu and **1. Work with Servers**. The **Work with Server Security** screen appears.
2. Press **F22**. The **Global Server Security Settings** screen appears.
3. Make certain that ***ALL** appears in the **Exit point group** field.
4. Type '***YES**' in the **Secure** field.
5. Type '***YES**' in the **Log** field.
6. Press **Enter** twice to return to the main menu.
7. Make absolutely certain that the **FYI Simulation Mode** is enabled as described above.



Global Server Security Settings

NOTE: *In some cases a restart of QSERVER is required for FULL implementation. This can be delayed until next IPL.*

When QSERVER is restarted, NETSERVER will be restarted automatically if it was active.

Using the Rule Wizards

The unique Rule Wizards feature makes security rule definition a snap, even for non-technical system administrators. This user-friendly feature allows users to view historical activity together with the security rule currently in effect on a single screen. One can even modify the existing rule or define a new rule without closing the wizard. The Rule Wizards are an invaluable tool for defining the initial set of rules after installing **Firewall** for the first time.

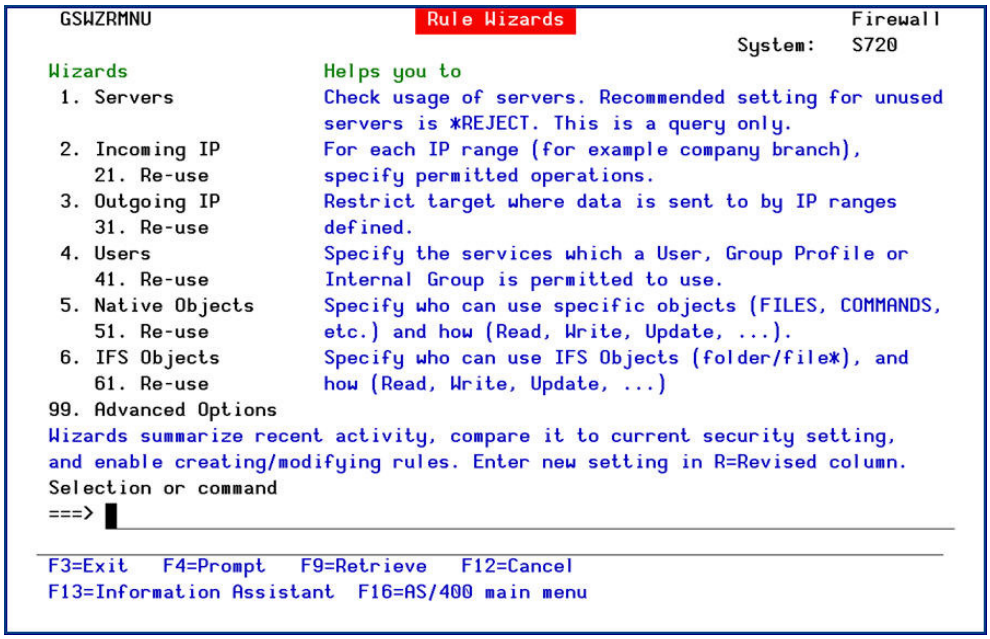
Rule Wizards are available for the following types of rules:

- Servers usage
- Native OS/400 object security
- IFS Object security
- Incoming IP Address Firewalls
- Outgoing IP Address Firewalls
- User-to-Service Security

Procedural Overview

The basic procedure for working with the rule wizards is as follows:

1. Select **41** from the main menu. Several different types of rule wizards are available, but the basic procedure is the similar for all of them.



Rule Wizards main menu

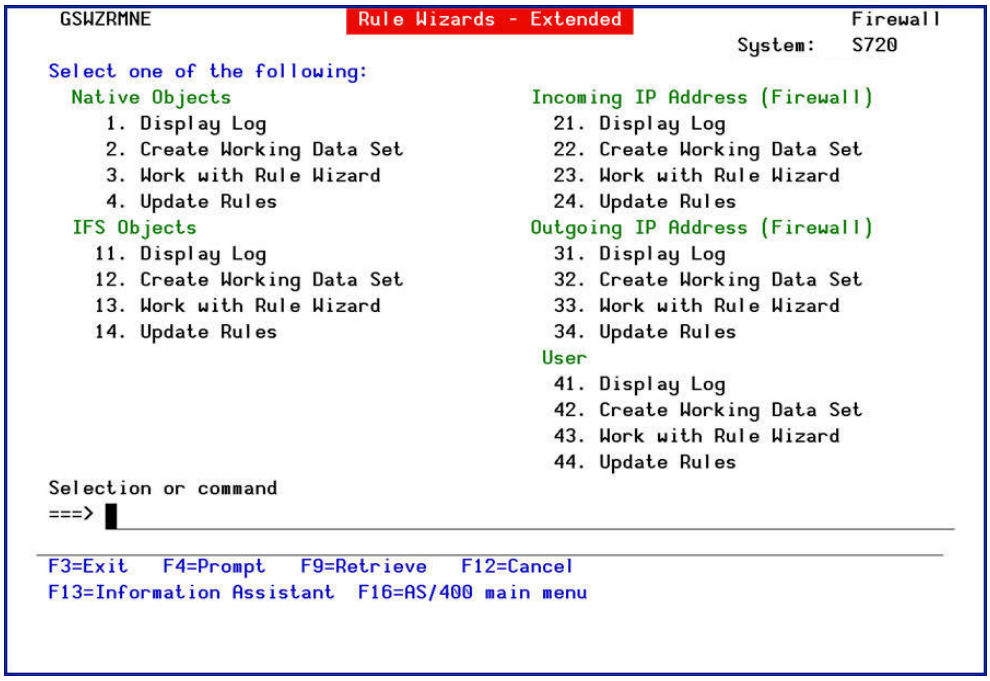
2. Select a wizard from one of the **Rule Wizards** to view summarize recent activity log for that rule type.

Options 1-6 on this screen initiate IBM system commands. Enter new or updated settings in the R=Revised column.

Options **2. Incoming IP** and **3. Outgoing IP** on this screen offer a new value, ***FAST**, for the Wizard Type option. ***FAST** automatically brings up the following screen when the IBM command completes.

The Re-use options (21, 31, 41, 51, and 61) reuse the output of the IBM command initiated (by options 1-6) to save processing time.

3. Select option **99. Advanced Options**, to customize the wizards' rules



Rule Wizards - Advanced Options

4. Select **Display Log** to view summarize recent activity log for that rule type.
5. Select **Create Working Data Set** to define the scope of the historical activity data to be examined by the wizard.
6. Select **Work with Rule Wizard** to display the **Plan Security** screen for the appropriate wizard. Use this screen to compare historical activity with the security rule currently in force and to revise this rule if appropriate.
7. Select **Update Security Rules** to apply the rule changes.

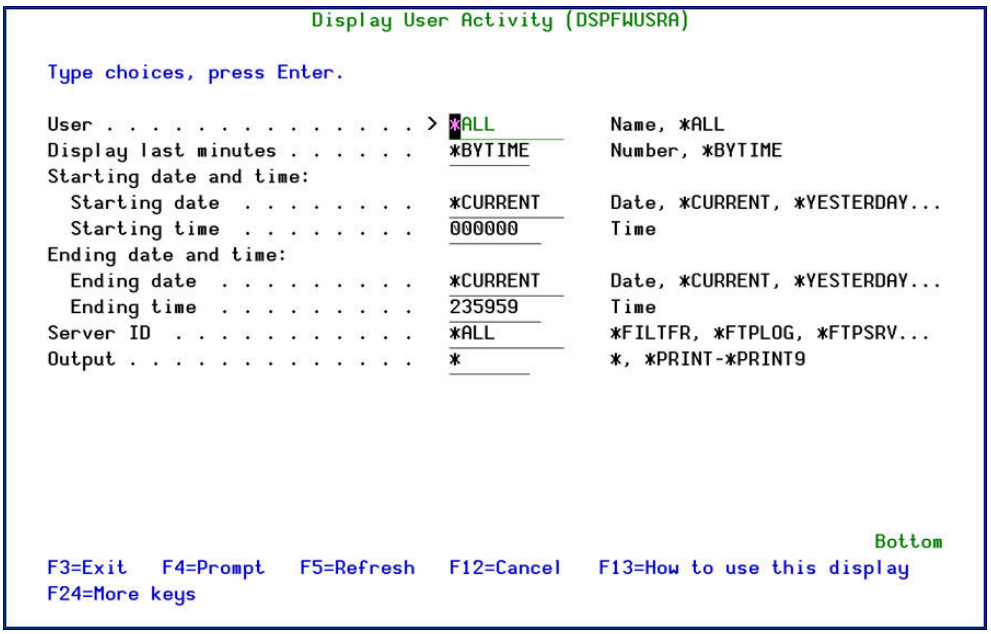
The example in the following procedure is taken from the **Servers** wizard, but is applicable to the other wizards as well.

Analyzing Historical Activity

The **Rule Wizard** enables the user to review the **Activity Log** as a first step in the process of analyzing activity. The **Activity Log** allows users to view details of historical activity. This step is optional and may be performed at any time during the wizard process.

To display the **Activity Log**, follow this procedure.

1. Select option **1. Servers** from the wizards menu. The **Display User Activity** screen appears.



Display User Activity

2. Choose the records that you wish to examine from this screen and press **Enter** to continue.

The table on the following page describes the record selection and display options

Parameter or Option	Description
User	Filter records by user profile
Display Last n Minutes	Select only the records occurring within the previous number of minutes as specified by the user **Number** = Enter the number of minutes ***BYTIME** = According the starting and ending time specified below
Starting Date & Time **Ending Date & Time**	Select only the records occurring within the range specified by the starting and ending date/time combination. **Date or Time** = Enter the appropriate date or time ***CURRENT** = Today (Current Date) ***YESTERDAY** = Previous date ***WEEKSTR/*PRVWEEKS** = Current week/Previous week start ***MONTHSTR/ *PRVMONTH** = Current month/Previous month start ***YEARSTR/ *PRVYEARS** = Current year/ Previous year start ***SUN -*SAT** = Day of week
Server ID	Filter records by server ID or display the user's activity in ALL servers
Output	* = Display ***Print** = Printed report ***PRINT1-*PRINT9** = select print option

Defining the Working Data Set

You can select the records from the Activity Log that will comprise the working data set that is summarized on the wizard screens.

The example in the following procedure is taken from the **Incoming IP Address** wizard, but is applicable to the other wizards as well.

1. To define the working data set, select **99. Advanced Options** -> choose a wizard type to work with and select **Create Working Data Set** from the wizard menu. The **Summarize** screen appears. Samples from two of the wizards are shown below. Refer to the table on the following page for an explanation of the required parameters.

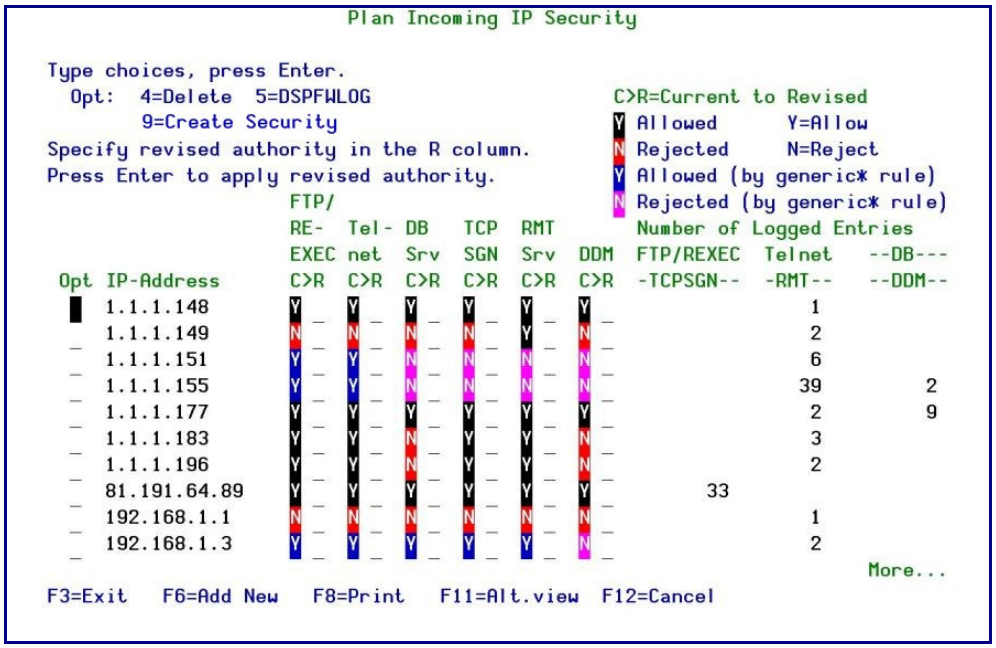
```
                Summarize Incoming IP Address (CPRIIPSEC)

Type choices, press Enter.

Allowed . . . . . .   *ALL          *YES, *NO, *ALL
Starting date and time:
  Starting date . . . . . .   *CURRENT      Date, *CURRENT, *YESTERDAY...
  Starting time . . . . . .   000000        Time
Ending date and time:
  Ending date . . . . . .   *CURRENT      Date, *CURRENT, *YESTERDAY...
  Ending time . . . . . .   235959        Time
Number of records to process . .   *NOMAX        Number, *NOMAX
Server ID . . . . . .   *ALL          *ALL, *FTP, *TELNET, *DDM...
Set to contain data:
  Set name . . . . . .   *TEMP         Name, *USER, *SELECT, *S...
  Replace or add records . . . .   *ADD          *ADD, *REPLACE
Wizard type . . . . . .   *FAST         *STD, *FAST, *NO

                                                                  Bottom
F3=Exit   F4=Prompt   F5=Refresh   F10=Additional parameters   F12=Cancel
F13=How to use this display        F24=More keys
```

Summarize Incoming IP Address

Working with the Plan Security Wizard Screens

The example described in this section refers to the outgoing IP address firewall activity type. The same principles apply to the other rule wizards.

The **Plan Incoming IP Security** screen displays activity statistics for the current working set together with currently defined rule settings (Column "**C**") and a place to enter revised rule settings (Column "**R**"). Enter revised rule setting as desired and press **Enter** to continue.



Plan Incoming IP Security

Each line in this screen represents activity for a single IP address. The quantities represent the number of actual transactions for each activity type for this IP address. Press **F11** to display the statistics for the bottom row of activity types (NDB, RMT, REXEC and WSG).

The "**C**" column shows the rule currently in effect for activity type on a line. A '**Y**' indicates that transactions will be allowed and a '**N**' indicates that transactions will be rejected. The background color of each letter indicates whether the rule currently in effect is **specific** to this line (IP Address) or is "**generic**", meaning that the current rule applies to more than one line.

For example, the rules for the first line (1.1.1.53) are relevant **for this IP address only**. The second line (1.1.1.55) is covered by a "generic" rule that applies to several IP addresses. This generic rule could be a default rule that covers all IP addresses that are not covered by a specific rule or it could be single rule that covers multiple IP addresses via the use of the subnet mask.

Background Color	Rule Source
Green (**Black** at the white display) or Red	Specific rule
Cyan (**Blue** at the white display) or Pink	"Generic" rule

Use the "**R**" column to modify the rule in effect for that line. If the line is covered by a generic rule, an entry in the "**R**" column has the effect of creating a new rule specific to that line.

Option	Description
'C' Columns	Display the rule currently in effect for each activity type (column). Refer to the previous page for a more detailed explanation. '**Y**' = allowed. '**N**' = rejected.
'R' Columns	Type '**Y**' (Allow) or '**N**' (Reject) to modify the rule currently in effect for each activity type. Refer to the previous page for a more detailed explanation.
Opt	**4** = Delete this rule **5** = Display the detailed Activity Log for this rule **9** = Create a new rule based on an existing one
F6	Create a new rule covering activity **NOT** shown on any line. For example, use **F6** to create a new rule for an IP address that does not appear on this screen.
F8	Print all activity and rules shown in this wizard
F11	Displays additional data for each line with fewer lines per screen

Native OS/400 Objects Log

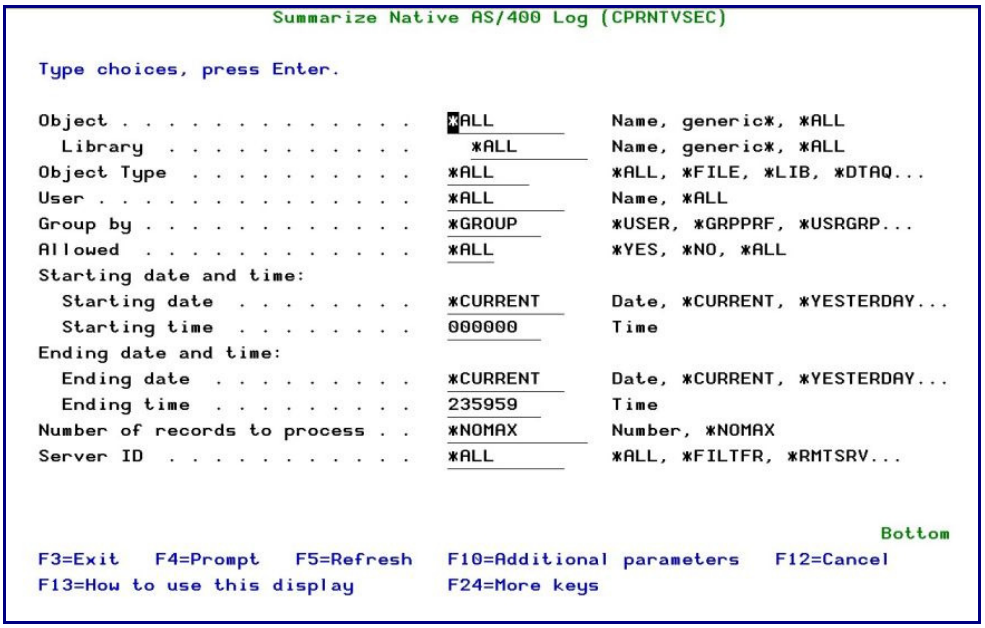
Options 4, 5 and 6 on **Firewall** Option 41 screen have a "Group by" parameter for summarizing log output data.

Value ***GRPPRF*** summarizes by system group profiles plus all users not defined in group profiles.

Value ***USRGRP*** summarizes by user groups and value ***GROUP*** first causes the product to attempt to associate the user with a relevant user group and then to attempt to associate the user with a relevant group profile.

If both fail, the user profile name appears in the report.

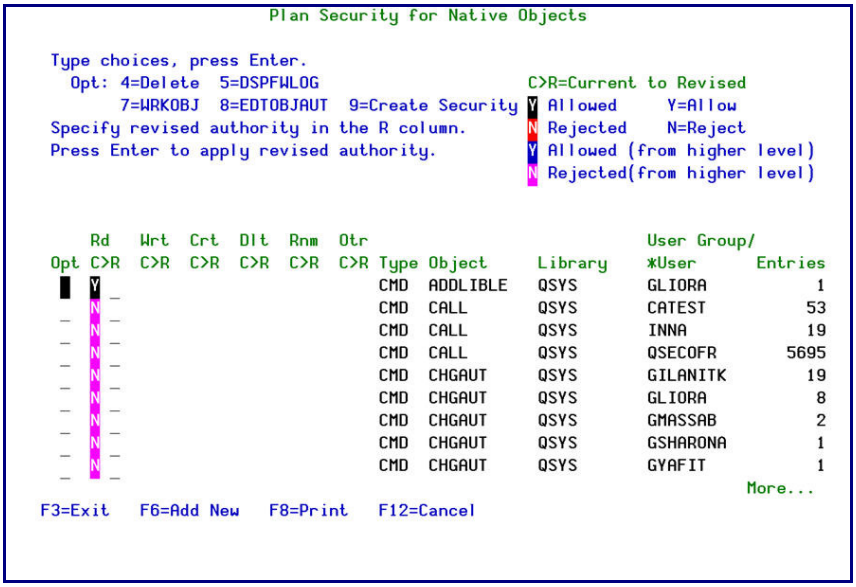
1. To see the Summarize Native AS/400 Log, select option **1. Create Working Data Set** from the **Native OS/400 Object Security** menu.
2. The **Summarize Native AS/400 Log (CPRNTVSEC)** screen appears



Summarize Native AS/400 Log

Option	Description
Object/Library	Object name and library path (**Native object and User wizards only**) **Generic*** = All objects/libraries beginning with the text string preceding the * ***ALL** = All objects/Libraries
Object Type	Object type (**Native object and User wizards only**) Press **F4** to select the object type from a list
User	Enter a user profile or press **F4** to select from a list (**not on all wizards**)
Group by	Select a group from a list Value *GRPPRF summarizes by system group profiles plus all users not defined in group profiles. Value *USRGRP summarizes by user groups and value *GROUP first causes the product to attempt to associate the user with a relevant user group and then to attempt to associate the user with a relevant group profile. If both fail, the user profile name appears in the report.
Allowed	***YES** = Include allowed transactions only ***NO** = Include rejected transactions only ***ALL** = Include all transactions
Starting date & time Ending date & time	Selects only the events occurring within the range specified by the start and end date/time combination **Date and time** = Enter the date and time or one of the following constants: ***CURRENT** = Current day ***YESTERDAY** = Previous day ***WEEKSTR/*PRVWEEKS** = Current week/Previous week start ***MONTHSTR/ *PRVMONTH** = Current month/Previous month start ***YEARSTR/ *PRVYEARS** = Current year/ Previous year start ***SUN** -***SAT** = Day of week
Server ID	Press **F4** to select a server ID from a list window or type ***ALL** to include activity for all servers.
Set name	Enter a name for this data set or use one of the following constants: ***USER** = Use your user profile as the data set name ***SELECT** or ***S** = Select a data set from the pop-up list
Replace or add records	***ADD** = Add records to an existing data set of one exists. ***REPLACE** = Replace an existing data set of the same name
Wizard type	***FAST** (**default**) = which allows to initiate a rule wizard immediately by pressing Enter. ***STD** (**standard**) ***NO**

2. Enter the required parameters and press **Enter** to begin the selection process and return to the **Wizard** menu.

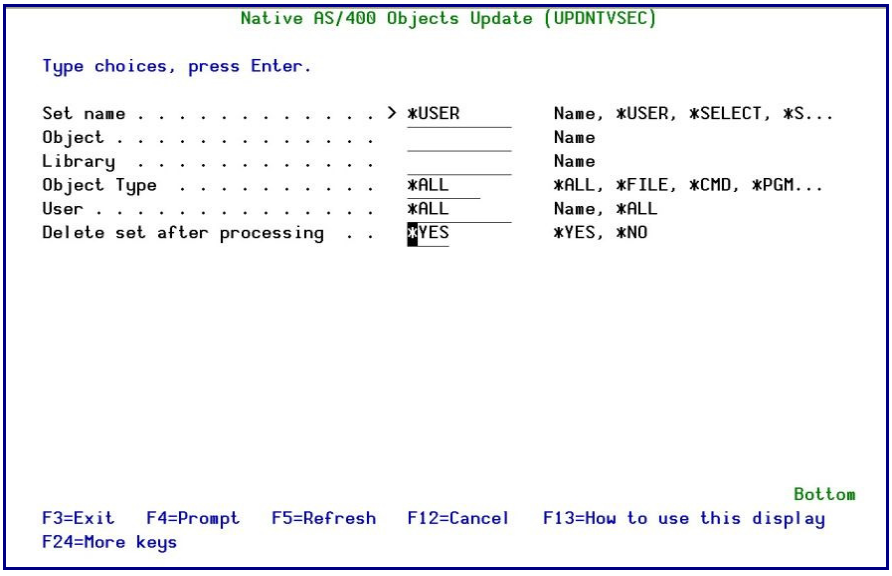


Plan Security for Native Objects

Update Rules

The final step is to apply the new and revised security rules that were created via the wizards.

1. To update rules, select **Update Security Rules** from the wizard menu. The **Update** screen appears. Samples from two of the wizards are shown below. Refer to the table on the following page for an explanation of the required parameters.



Native AS/400 Objects Update

2. Enter the required parameters and press **Enter** to begin the selection process and return to the **Wizard** menu.

User Groups

User groups allow you to apply security rules to predefined groups of users. User groups are also useful as filter criteria for queries and reports. The use of user groups greatly reduces the number of rules required to implement security policies as well as the time spent defining and maintaining rules.

Also note that User Groups are defined in **Firewall Option 11** and **Group Profiles** are defined in the system.

The benefit of this new feature is that instead of the report containing thousands of lines of user data, user groups, group profiles, and user profiles are listed.

Firewall supports the use of two types of user groups:

- OS/400 group profiles
- Firewall proprietary user groups

OS/400 Group Profiles

OS/400 group profiles are useful for a variety of System i administration and security tasks. Use the ***CRTUSRPRF*** or ***WRKUSRPRF*** commands to create OS/400 group profiles. To assign other user profiles to the group profile, simply enter the group profile name in the **Group Profile** field for each individual user profile that is a member of a group.

Firewall Proprietary User Groups

Overview

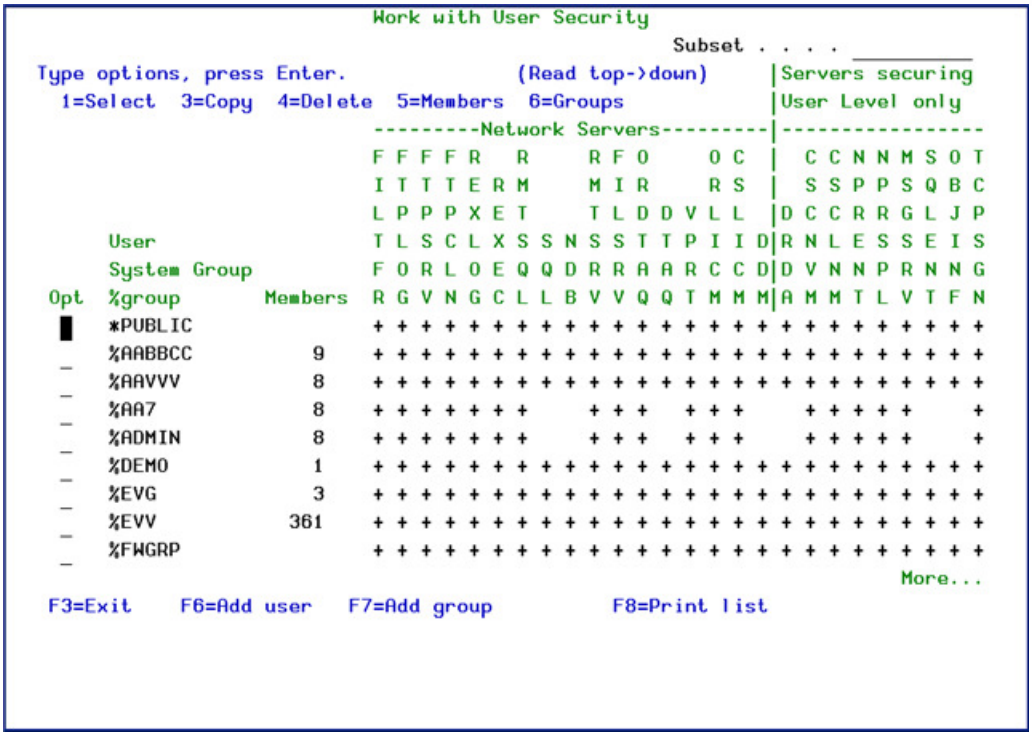
Firewall proprietary user groups offer greater flexibility when it comes to grouping users together for the purpose of minimizing security rules and query filtering. Since OS/400 group profiles are used for many other administrative tasks, they may not be as efficient for grouping users together for security purposes.

Firewall proprietary user groups are always identified by the '**%**' symbol as the first character (e.g. **%SALES**). These user groups are defined within **Firewall**, and they may include both individual user profiles and OS/400 group profiles.

The following section describes the procedures for defining **Firewall** user groups.

Defining User Groups

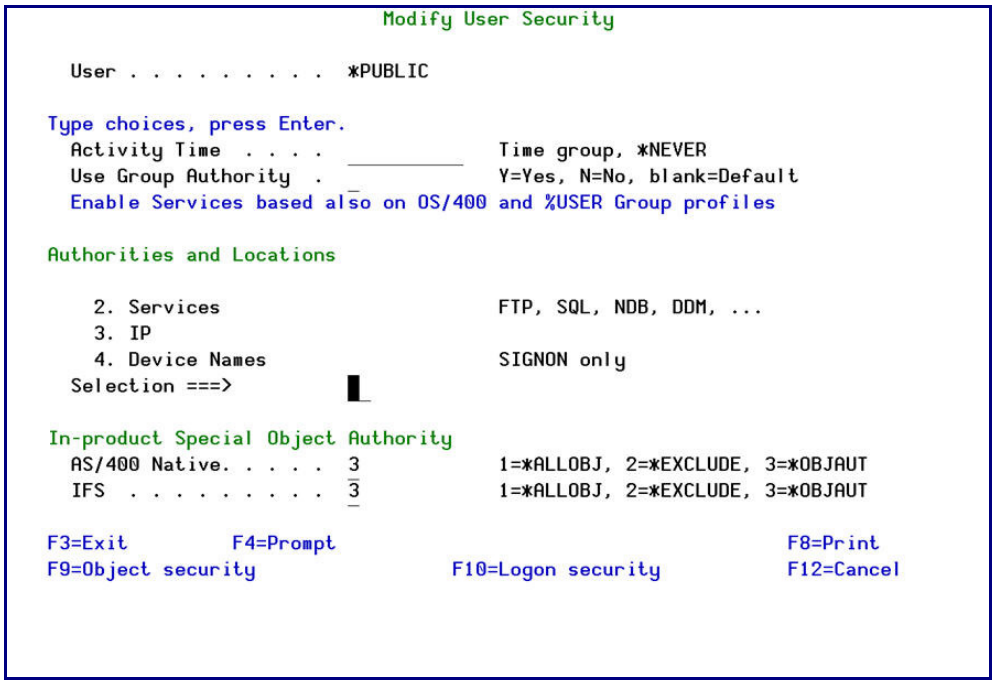
1. To work with **Firewall** proprietary user groups, select **11. Users and Groups** from the main menu. The **Work with User Security** screen appears.



Work with User Security

Option	Description
Opt	**1** = Modify user profile or group. The **Modify User Security** screen appears. 3 = Copy user profile or group definitions 4 = Delete user profile or group 5 = Edit the group's members
Servers	Displays the rule status for each server type: **+** = User-to-service rule overrides the global server security rule. Allow a user the access to a server and check for object authorizations. **V** = User-to-service rule overrides with verb (command) support **Blank** = Global server security rule governs activity for this server **S** = Allow a user to access a server and skip the check for object authorizations. This simplifies the test for some users (normally for batch applications, which are playing the role of servers and the desire to save performance in such cases).
F6	Add a new user. The **Add User Security** screen appears.
F7	Add a new group. The **Add User Group Security** screen appears.
F8	Print user group definitions
F3	Return to the main menu

1. To work with an existing rule, type **1** in the **Opt** field or press **F6** to create a new rule. Use the **PageUp** and **PageDown** keys to scroll through the list. Press **Enter** to continue.
2. Enter parameters on the **Add/Modify Parameters** screen and press **Enter** to confirm.



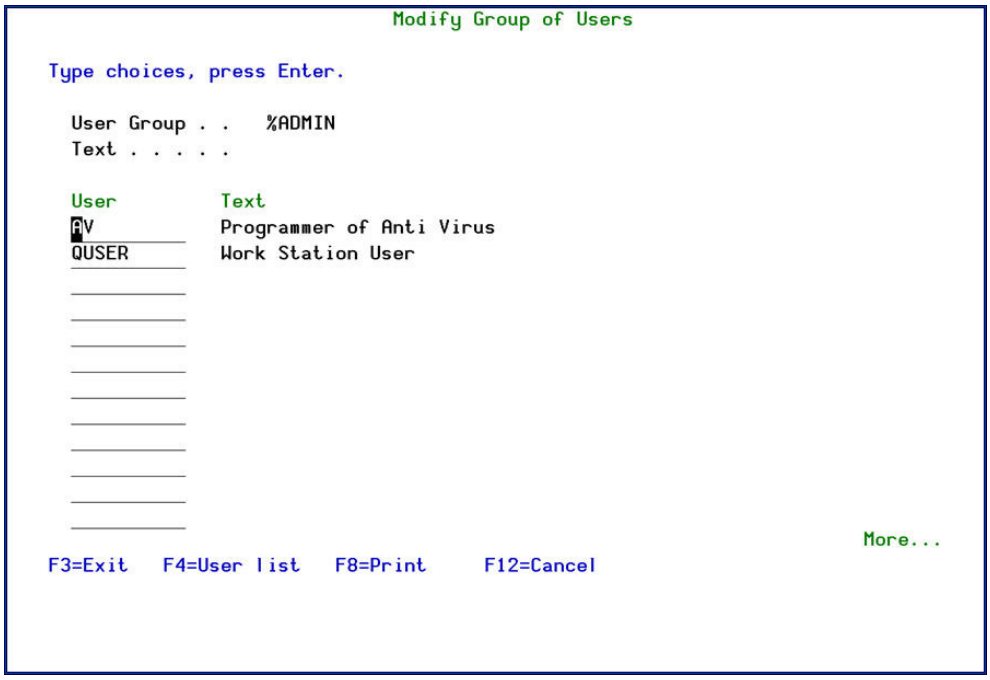
Modify User Security

Parameter or Option	Description
User	Displays the user profile or user group name
Activity Time	**Time Group** = type a time group name or press **F4** to select from a list. ***NEVER** =
Use Group Authorities	**Y** = use a specific group authorities **N** = don't use any specific group authorities
Authorities and Locations	**2. Services=** specify authorities and location by Services name **3. IP =** specify authorities and location by IP name **4. Device Names =** specify authorities and location by Device name
In-product Special Object Authority	Use this field to define object authority for the user/group for **AS/400 Native** and **IFS** objects.
F8	Print user-to-service security rules
F9	Work with object security rules
F10	Work with Logon security rules

Add User profiles to a Group

The Create/Modify screen allows you to define the users belonging to the group. A user group may contain individual user profiles or OS/400 group profiles.

1. To add a user to a group, type 5 to add a member and type in the user profile name in one of the **User** fields, or press **F4** to select a user profile from a list window.



Add a Member

2. Press **Enter** to accept the profiles and return to the **Work with User Security** screen.

NOTE: *A user can be in several* **Firewall** *user groups simultaneously.*

Time Groups

Overview

Many of the **Firewall** rules and reporting features take advantage of the unique Time Group feature. Time groups allow users to apply predefined sets of time-based filters to different queries without having to define complex criteria for each one. Time groups also work with the report scheduler and the display Activity Log features.

For example, one may be using a number of different queries and reports to audit the activities of certain employees during normal working hours and a different group of employees during nights and weekends. This can be accomplished with just one time group using the following guidelines:

1. Create a time group that defines normal working hours for each day of the week.
2. Use an inclusive time group filter (activities occurring during the time group periods) for each query or report covering activity during normal working hours.

3. Use an exclusive time group filter (activities **not** occurring during the time group periods) for each query or report covering activity outside of normal working hours.

Using Time Groups as Filter Criteria

One common use of time groups is as filter criteria in security rules, queries and reports. For example, time groups can be used to restrict application of a rule to specific times and days of the week.

Time group filters can be either:

- **Inclusive** – Including all activities occurring during the time group periods
- **Exclusive** – Including all activities **not** occurring during the time group periods

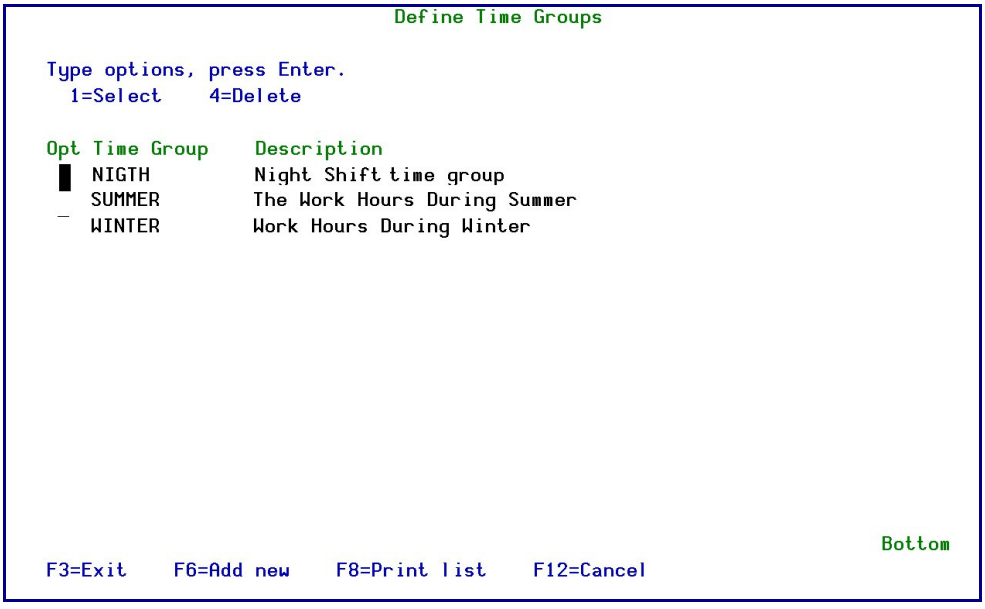
Generally, an exclusive time group filter is indicated by placing an '**N**' (NOT) in the field immediately preceding the time group name field on the rule definition or query definition screen.

For example, one can use an exclusive time group filter to apply a rule to any time occurring outside of days and hours specified in the time group.

Defining and/or Modifying Time Groups

Perform these steps to define a time group.

1. Select **49. Time Groups** from the main menu. The **Define Time Groups** screen appears.



Define Time Groups

2. Select a time group to modify or press **F6** to add a new group.
3. Press **Enter** to accept the definition and return to the **Define Time Groups** screen.

Option	Description
Opt	**1** = Modify a time group. The **Change Time Group** screen appears. **4** = Delete a time group
F6	Add a new time group.
F3	Return to the main menu

Application Groups

Overview

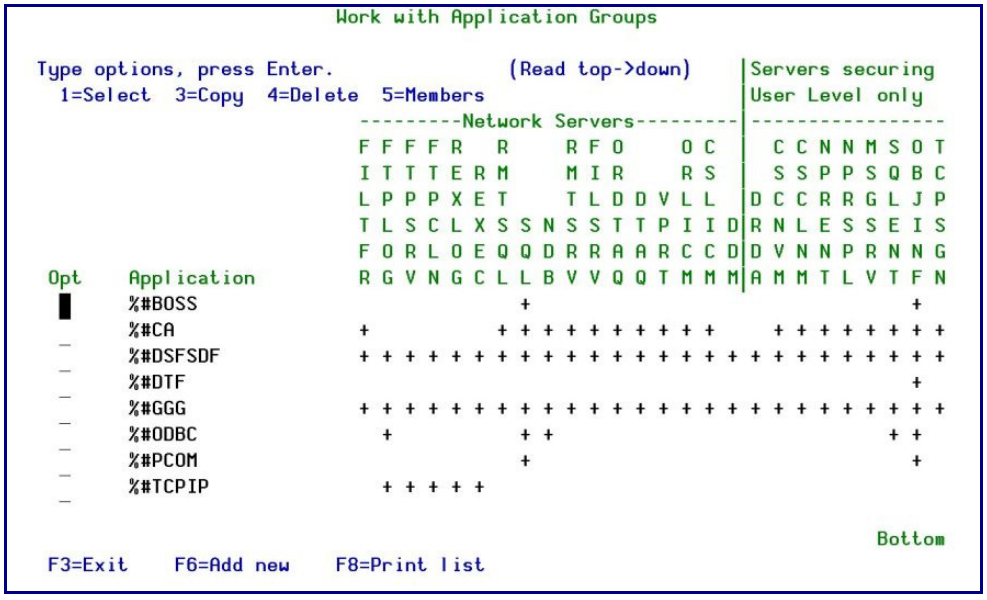
Application Groups consist of users whose access to certain applications is defined to be identical. The name of the group is the application itself (i.e. **%#Excel**, **%#OPSNAV**, etc). Define which servers are being used by the application and then select its members. Upcoming releases will include predefined application groups for widely used applications such as OPSNAV and FILE-SERVER.

Object level rules can be defined for application groups as well.

Defining and/or Modifying Application Groups

Perform these steps to define an application group.

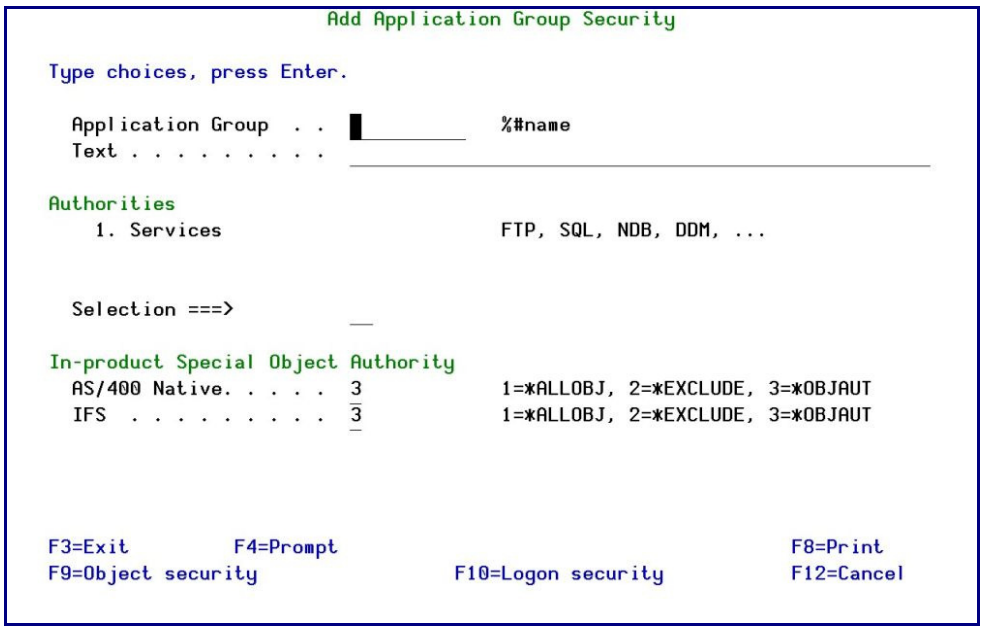
1. Select **12. Applications** from the main menu. The **Work with Application Groups** screen appears.



Work with Application Groups

Option	Description
Opt	**1** = Modify an application group. **3** = Copy an existing application group **4** = Delete an application group **5** = Edit the group members (OS400 Users and Group profiles)
Application	Name of application group
F3	Return to the main menu
F6	Add a new application group.
F8	Print application group definitions

2. Select **1** to modify a group or press **F6** to create a new group (as shown below).



Add Application Group Security

Option	Description
Application Group	Application group name
Text	Enter a description of the application group
Authorities	**Services** = choose server **Selections** = Enter your choice of service
In-product Special Object Authority	This feature defines the level of authority for both native and IFS objects. ***OBJAUT** = Object authority is subject to object security rules ***EXCLUDE** = All object authority is denied for this user ***ALLOBJ** = Users are granted ****ALLOBJ*** for IFS object
F3	Return to the main menu

3. Press **Enter** to accept the definition.

Location Groups

Overview

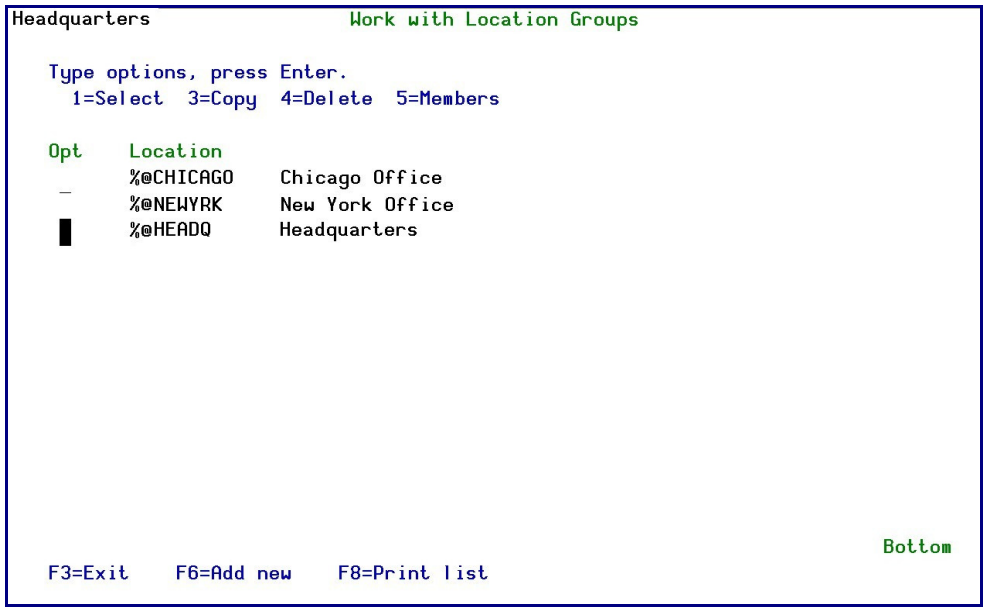
Location Groups are collections of users whose access to certain location is defined by IP and device name(s). For example, create a Chicago group in which all users have access to the System i only from the Chicago branch IP range. The location group, which even supports each Telnet sign-on, may be used only from OS V4R5 and fully complies on all the servers from OS V5R1.

You can define object level rules in location groups as well.

Perform the following steps to define and/or modify location groups

Defining and/or Modifying Location Groups

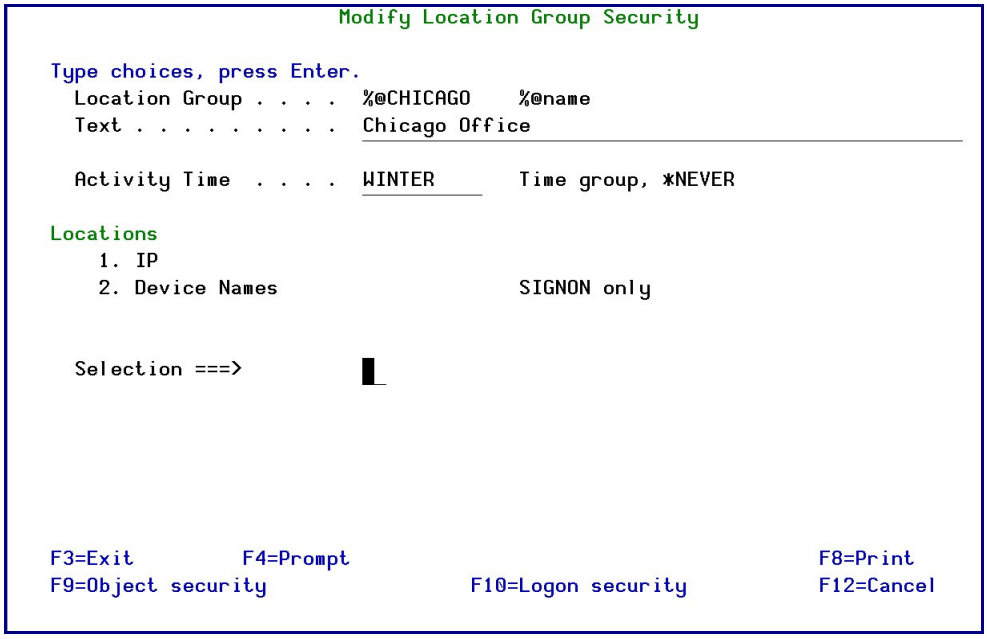
1. Select **13. Locations** from the main menu. The **Work with Location Groups** screen appears as below.



Work with Location Groups

Option	Description
Opt	**1** = Modify a location group. **3** = Copy an existing location group **4** = Delete a location group **5** = Edit the group members (OS400 Users and Group profiles)
Location	Location name
F3	Return to the main menu
F6	Add a new location group.
F8	Print location group definitions

Up to two separate time periods can be defined per day. Please note that if the "**To**" time is earlier than the "**From**" time, it will be considered to roll over to the following day. This is illustrated in the following screenshot.



Modify Location Group Security

Parameter or Option	Description
Location Group	Name of location group
Text	Enter descriptive text
Activity Time	**Time Group** = Select a time group ***NEVER** = If this option is selected, members of this group are disabled and cannot log in
Locations	**IP** = The IPs that are allowed to be accessed by this Location group **Device names** = Device names which are allowed to be accessed to telnet sign-on **Selection** = Enter which of the above are being defined (IP or device name)

Chapter 3: Basic Security

Server security is the topmost level, and most basic level of security provided by **Firewall**. Server security rules determine how each server is to be protected and what level of access control is desired. Rules include the following parameters:

- Enabling or disabling protection for each server
- Specifying the level of access control (allow all activity, reject all activity or allow activity subject to more specific rules regarding users, objects, or logon parameters)
- Determining which transactions are to be recorded in the Activity Log
- Determining whether or not **Action** can respond automatically to specific events by sending messages to key personnel or running proactive command scripts to prevent security breaches
- Allowing custom user exit programs to perform specific actions
- Whether the FYI simulation mode is active for each server

Firewall server security rules control access to the servers on a global basis for all users. You can also define **User-to-Service** security rules to control access to the servers for specific users or groups of users. User-to-Service security rules are discussed in *Chapter 5: User-to-Service Security*.

About Servers & Exit Points

Exit Points are components of the OS/400 API that manage the interface with various system resources. These **Exit Points** are govern the interface between the System i and various external access protocols and methodologies, such as FTP, Telnet, ODBC database access, DRDA database access, etc.

OS/400 employs a variety of logical **Servers** (sometimes referred to as **Function Servers**) that control activity between applications and the exit points. Each server controls one or more specific exit points.

Exit Programs are scripts or programs that run automatically whenever activity occurs via a particular exit point. Customized exit programs can provide additional security or functionality for specific types of activity.

Working with Server Security Rules

Firewall uses only one security rule for each server. Working with server security consists of modifying these rules. By default, protection is disabled for all servers and all activity is allowed.

To work with server security rules:

1. Select **1. Activation and Server Setting** from the main menu. Select option **1. Work with Servers**, the **Work with Server Security** screen appears.

The **Work with Server Security** screen lists the current rules for each server. The number of servers available is dependent on the version of OS/400 installed on the system. This screen displays the current status of each server security rule. One can select one or more rules for modification. The user can also view an explanation and display the Activity Log for each server directly from this screen.

2. Set rules according to the following table. To modify a rule, select **1**.
3. Press **Enter** to confirm and return to the **Work with Server Security** screen.

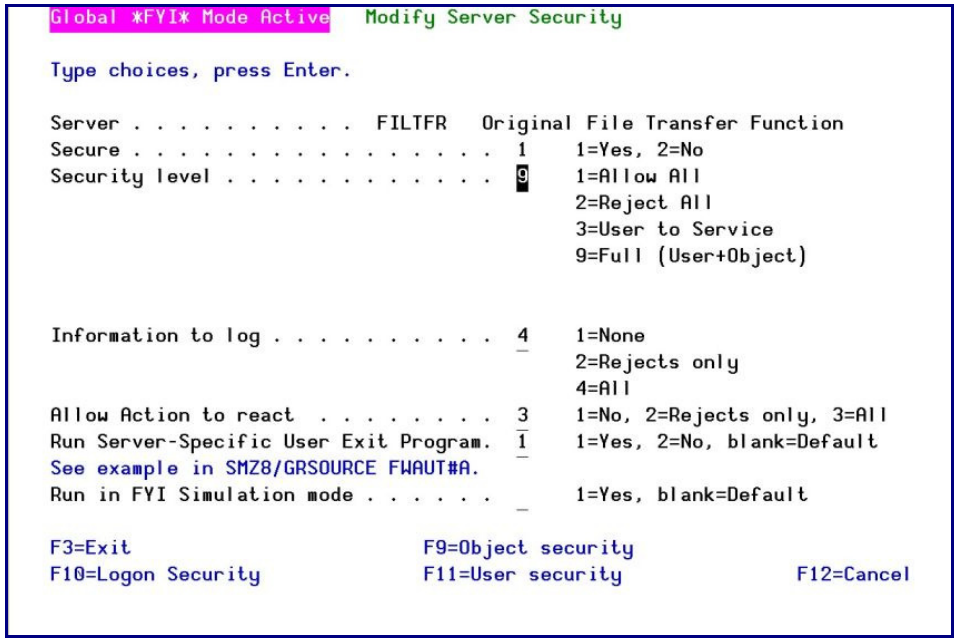
```
Global *FYI* Mode Active  Work with Server Security

Type options, press Enter.
  1=Select  5=About Server  6=Display FW Log

                                                                    User
                    Log FYI                                         Exit
Opt Secure Level     IP  Act  Server                                 Pgm
 _  No                        Original File Transfer Function       FILTFR
 _  No                        FTP Server Logon (*)                  FTPLOG
 _  No                        FTP Server-Incoming Rqst Validation (*) FTPSRV
 _  No                        FTP Client-Outgoing Rqst Validation (*) FTPCLN
 _  No                        TFTP Server Request Validation        TFTP
 _  No                        REXEC Server Logon                    REXLOG
 _  No                        REXEC Server Request Validation       REXEC
 _  No                        Original Remote SQL Server            RMTSQL
 _  No                        Database Server - SQL access & Showcase SQL
 _  No                        Database Server - data base access    NDB
                                                                     More...
(*) Changing the "Secure" parameter requires restarting Host Server or IPL
Modify data, or press Enter to confirm.
F3=Exit            F8=Print     F9=Object security   F10=Logon security
F11=User security  F12=Cancel   F22=Global setting   F23=FYI    F24=Emergency
```

Work with Server Security

NOTE: In some cases a restart of QSERVER is required for FULL implementation. This can be delayed until next IPL.

When QSERVER is restarted, NETSERVER will be restarted automatically if it was active.

Option	Description
Opt	**1** = Select a rule for modification. The **Modify Server Security** screen appears **5** = View a description of the server **6** = View the Activity Log for the server
Secure	***YES** = Secured ***NO** = Not secured
Level	This option is not available for exit points that deal with specific operations (such as Change User Profile and Pre-Power Down System) **1** = Allow all activity (available for all other exit points) **2** = Reject all activity (available for all other exit points) **3** = Allow activity subject to User-to-Service security rules (not available for exit points that are supported until the Logon level i.e. Telnet and Remote Sign-on) **9** = Full security – differs in **logon** and **user-to-object**. **Logon** activates the logon limitation rules (user to system name, IP and user name). **User-to-object** activates your user limitation rules.
Log FYI FW, Action	Shows if FYI mode is currently being logged for **Firewall** and **Action**
Server	Name/description of server
User Exit Pgm	Name of custom user exit program for this server
F8	Print all server security rules
F9	Work with object security rules
F10	Work with logon security rules
F11	Work with user-to-service security rules
F22	Define server security rules globally for predefined groups of servers **or** for all servers
F23	Enable or disable the FYI simulation mode globally for all servers
F24	Use the Emergency Override feature



Modify Server Security

Parameter or Option	Description
Server	Server name
Secure	***YES** = Secured ***NO** = Not secured
Security Level	This option is not available for exit points that deal with specific operations (such as Change User Profile and Pre-Power Down System) **1** = Allow all activity (available for all other exit points) **2** = Reject all activity (available for all other exit points) **3** = Allow activity subject to User-to-Service security rules (not available for exit points that are supported until the Logon level i.e. Telnet and Remote Sign-on) **9** = Full security – differs in **logon** and **user-to-object**. **Logon** activates the logon limitation rules (user to system name, IP and user name). **User-to-object** activates your user limitation rules.
Information to Log	**1** = Do not log any activity **2** = Log rejected transactions only **4** = Log all activity
Allow Action to React	**1** =No (disables the **Firewall** real-time detection rules for this server **2** = Rejects only (will activate **Firewall** real-time detection rules only on rejections from this server) **3** = All (will activate **Firewall** real-time detection rules for all accesses from this server)
Run Server-Specific User Exit Program	**Yes** =Run a specific exit program after passing **Firewall** rules for this server. The program ***SMZTMPA/UPyyyyyy*** will be called. (yyyyyy is the server short name). Write your own ***SMZTMPA/UPyyyyyy*** program according to the example in ***SMZ8/GRSOURCE FWAUT#A***. The program that initiates the call is ***GRCLUER***. This program runs in USER authority and therefore the user (i.e. every user in the system) will have the authority to run the program ***SMZTMPA/UPyyyyyy*** If the program ***SMZTMPA/UPyyyyyy*** is not accessible, the regular security applies. **No** = If there is a general exit program configured, it will not be activated for this server. **Blank** = global setting
Run in FYI Simulation Mode	**1** = Enable FYI Simulation mode for this server only **Blank** = Use global parameter for all servers (System Configuration)

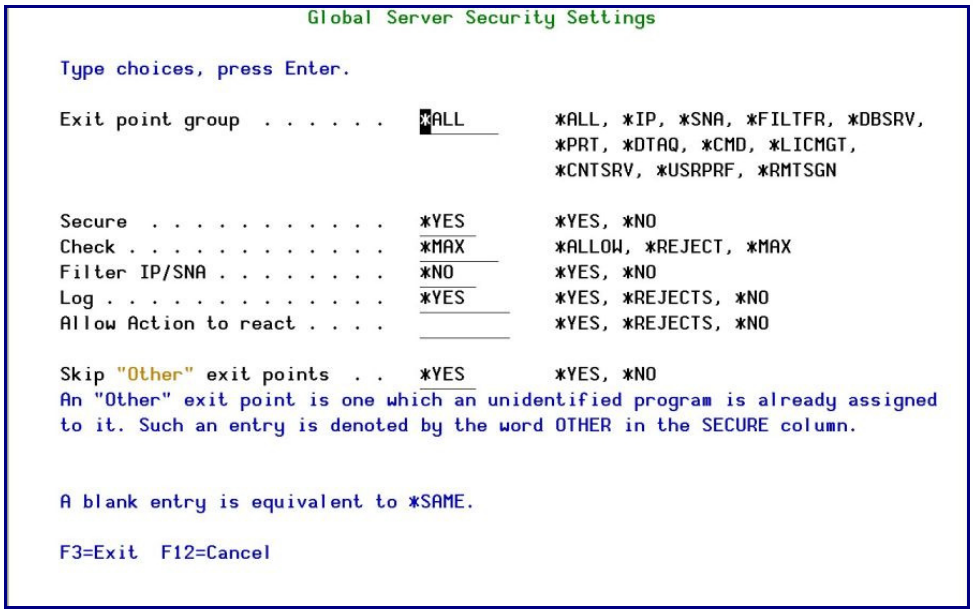
Using the Global Server Security Settings Feature

The global server security settings feature is a real time-saver that allows users to modify server security rules quickly for all servers or for predefined server groups. Server groups include several related servers, enabling definition of rules for all on a single screen. The following table describes the members of the server groups.

Server Group	Description	Server Group	Description
***IP**	FTP Server Logon FTP Server-Incoming Rqst Validation FTP Client-Outgoing Rqst Validation	***CMD**	REXEC Server Request Validation Remote Command/Program Call
***SNA**	DDM request access DRDA Distributed Relational DB access Remote sign-on (Passthrough)	***LICMGT**	Original License Mgmt Server Central Server - license mgmt
***FILTFR**	Original File Transfer Function FTP Server Logon (*) FTP Server-Incoming Rqst Validation FTP Client-Outgoing Rqst Validation TFTP Server Request Validation Original Remote SQL Server Database Server - SQL access & Showcase Database Server - data base access File Server	***CNTSRV**	Central Server - license mgmt Central Server - conversion map Central Server - client mgmt
***DBSRV**	Database Server – entry Database Server - object information	***USRPRF**	Change User Profile Create User Profile Delete User Profile - after delete Delete User Profile - before delete Restore User Profile
***PRT**	Network Print Server - entry Network Print Server - spool file Database Server – entry Database Server - object information	***RMTSGN**	Remote sign-on (Passthrough)
***DTAQ**	Original Data Queue Server Data Queue Server		

To work with server security rules globally:

1. Select **F22=Global setting** from the **Work with Server Security** screen. The **Global Server Security Settings** screen appears.
2. Press **Enter** to accept.



Global Server Security Settings

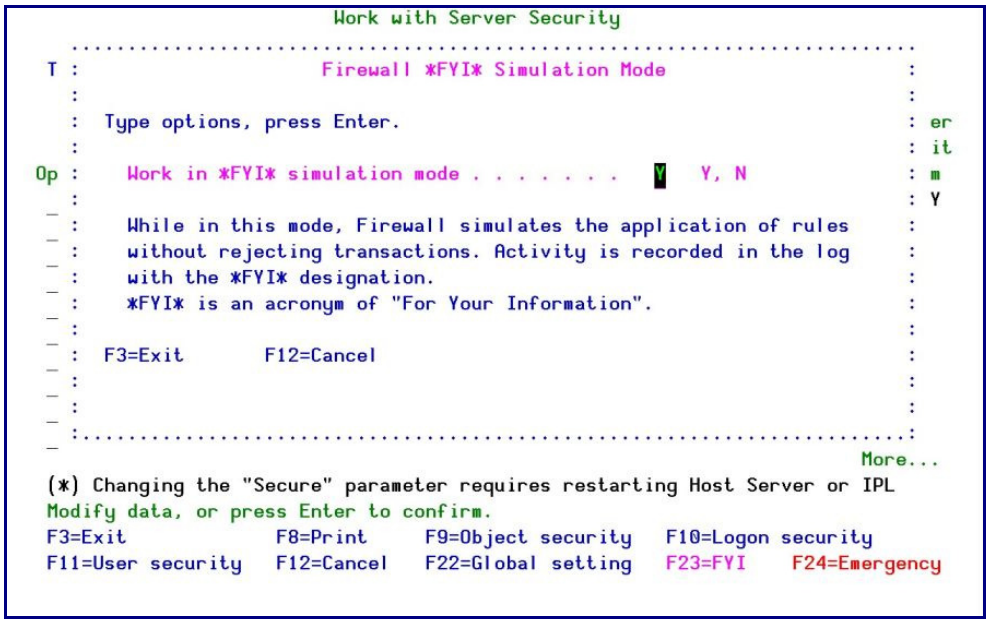
Parameter or Option	Description
Exit point group	Enter an exit point group from the list to the right
Secure	***YES** = Secured ***NO** = Not secured
Check	***ALLOW** = Allow all activity ***REJECT** = Reject all activity ***MAX** = Full security – allow activity subject to user-to-service, object and login security rules as appropriate
Filter IP/SNA	***YES** = Secured ***NO** = Not secured
Log	***YES** = Log all activity ***REJECTS** = Log rejected transactions only ***NO** = Do not log any activity
Allow Action to React	Allow **Action** to respond automatically to specific events by sending messages to key personnel or running proactive command scripts to prevent security breaches. ***YES** = Allow **Action** to respond for this server only ***REJECTS** = Allow **Action** to respond for rejected transactions only ***NO** = Do not allow **Action** to respond for this server only
Skip "other" exit points	An “Other” exit point is one to which an unidentified program is already assigned. Such an entry is denoted by the word **OTHER** in the **SECURED** column. ***YES** = skip ***NO** = Do not skip **NOTE:** *iSecurity* **Firewall** *and other Network Security products can work in parallel. For more information please contact Support.*

FYI Simulation Mode – Global Setting

The FYI Simulation Mode may be enabled or disabled globally for all activity or enabled for individual function servers. In this manner, users can test security rules for specific servers without affecting rules that apply to other servers. In addition, administrators can selectively activate FYI mode for individual function servers.

To change the global setting for the FYI Simulation Mode:

1. Press **F23** from the **Work with Server Security** screen. The **Firewall *FYI* Parameter** pop-up window appears.
2. Type '**Y**' to enable FYI globally or type '**N**' to disable FYI. Press **Enter** to continue.



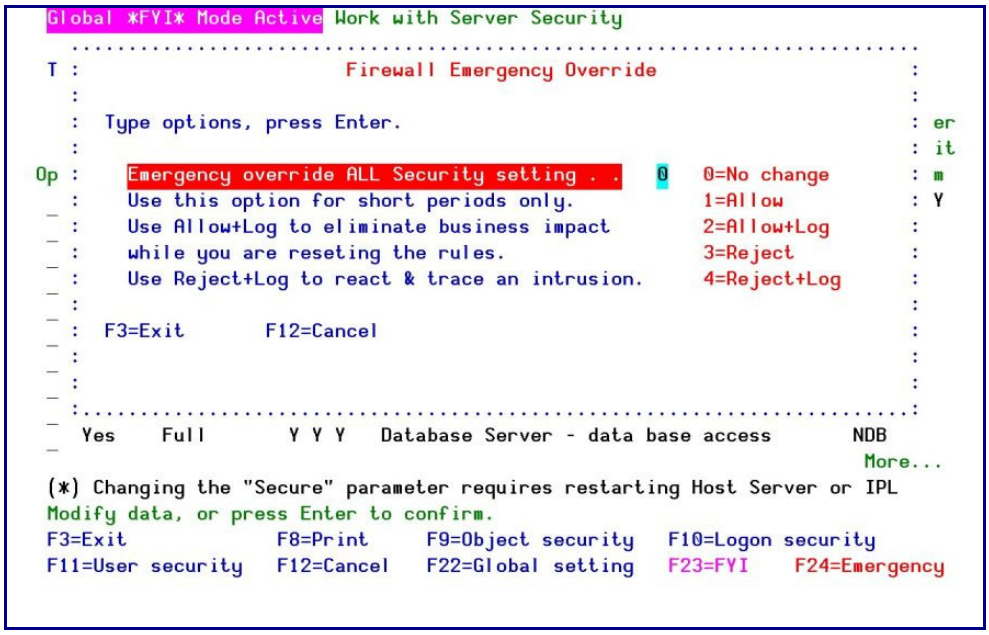
Work with Server Security: Firewall FYI* Parameter

Using the Emergency Override Feature

The Emergency Override feature allows users to override all existing security rules temporarily by allowing or rejecting all activity. This feature is useful in order to respond quickly to emergencies such as critical transactions being rejected due to problems with **Firewall** security rules or a sudden security breach.

To work with emergency override, follow the following procedure:

1. Press **F24** from the **Work with Server Security** window. The **Firewall Emergency Parameter** pop-up window appears.
2. Type a setting according to the below table.
3. Press **Enter** to confirm and return to the **Work with Server Security** window.



Work with Server Security: Firewall Emergency Parameter

Parameter or Option	Description
Setting	**0** = Disable emergence override – all rules function normally **1** = Allow all activity **2** = Allow and log all activity **3** = Reject all activity **4** = Reject and log all activity

.

Chapter 4: Dynamic Filtering Security

Firewall rules control activity originating from or outbound to specific IP addresses. Inbound activity from specific SNA system names may likewise be controlled.

Firewall also supports SSL restrictions on access to FTP, Telnet, Data Base Server (including ODBC), Sign-on, Remote Access and DDM servers.

IP Address Firewall Rules

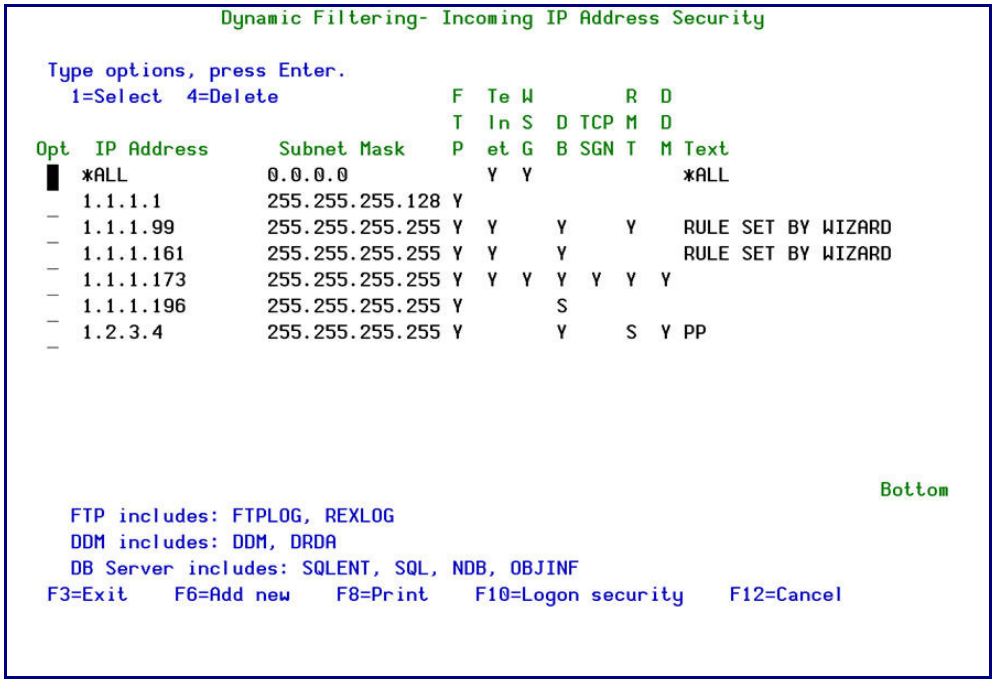
IP address firewall rules can apply to outbound and inbound activity. The definition procedure and data screens are the same for both activity types.

Rules control activity for individual IP addresses or ranges of IP addresses using standard subnet mask notation. For each address or range of addresses, one can choose to allow or reject activity for any of the following servers:

- FTP/REXEC (includes: FTPLOG, REXLOG)
- Telnet
- Internet WSG
- DB Server (includes: SQLENT, SQL, NDB, OBJINF)
- TCP Sign-on Server
- Remote Command/Program Call (RMTSRV)
- DDM (includes: DDM, DRDA)

To create or modify IP address firewall rules,

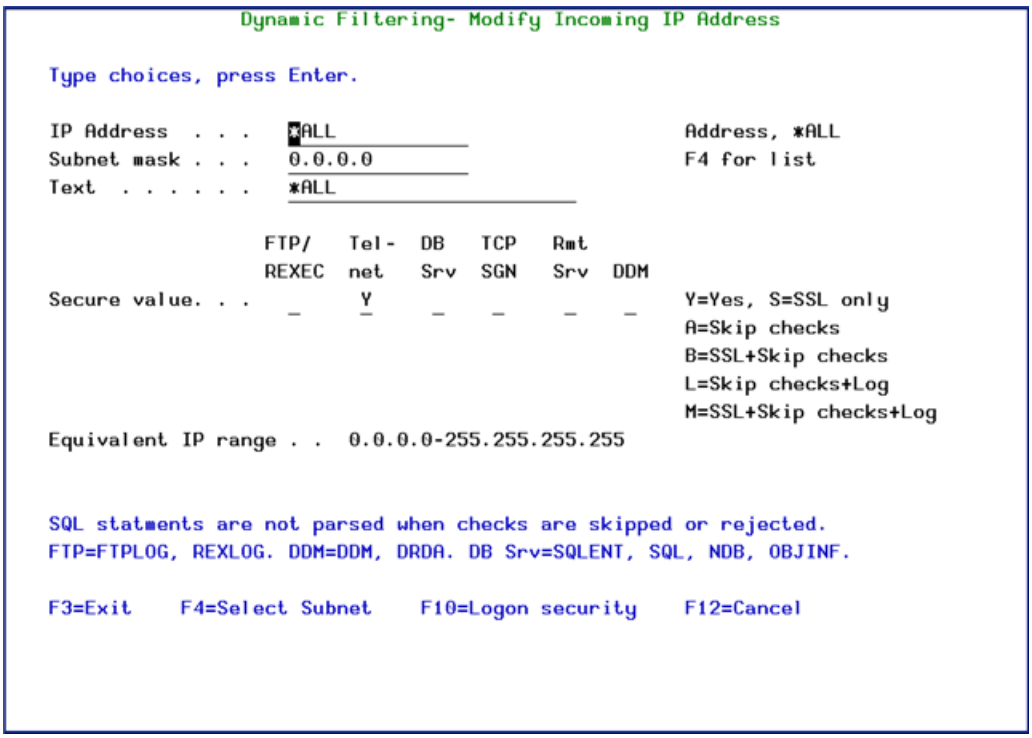
1. Select **2** from the main menu. The **Work with Dynamic Filtering** menu appears.
2. Select **1. Incoming IP Addresses** from the **Work with Dynamic Filtering** menu. To work with Outgoing activity, select **2** from the **Work with Dynamic Filtering** menu. In either case, the **Dynamic Filtering** screen appears. This screen lists all existing rules showing which communication protocols are allowed or rejected.
3. Type **1** to select an existing rule or press **F6** to create a new rule.



Work with Firewall – Incoming IP Address Security

Parameter or Option	Description
F6	Create a new firewall rule
F8	Print list of firewall rules
F10	Work with Logon security rules
Opt	**1** = Modify an existing rule **4** = Delete an existing rule

4. If you are creating or modifying a rule, the **Dynamic Filtering Incoming/Outgoing IP Address** screen appears. The table following the screen examples details the appropriate rule parameters.



Modify Firewall Incoming IP Address

Parameter or Option	Description
IP Address	Enter an IP address using standard decimal format.
Subnet Mask	Enter the subnet mask using standard decimal format to define a range of IP addresses. Refer to the examples or press **F4** to select an appropriate subnet mask range.
Text	Descriptive text
Secure value	**Y=Yes =** Type '**Y**' to allow activity or leave the field **Blank** to reject activity for each individual server. **S=SSL =** Type '**S**' to set SSL restrictions for the various types of access protocols. **A =** Allow always **B =** SSL+Skip checks **L =** Allow always and log **M =** SSL+Skip checks+Log Use of **B** and **L** can dramatically improve performance for situations such as high volume of requests that come from an already "confident" (well secured) IP that uses SSL, which doesn't require checking of the requests. An example can be a server connected via SSL which issues many SQL (ODBC) and/or Program calls.
Equivalent IP Range	Displays the range of IP addresses as defined by the subnet mask.
F10	Work with Logon security rules

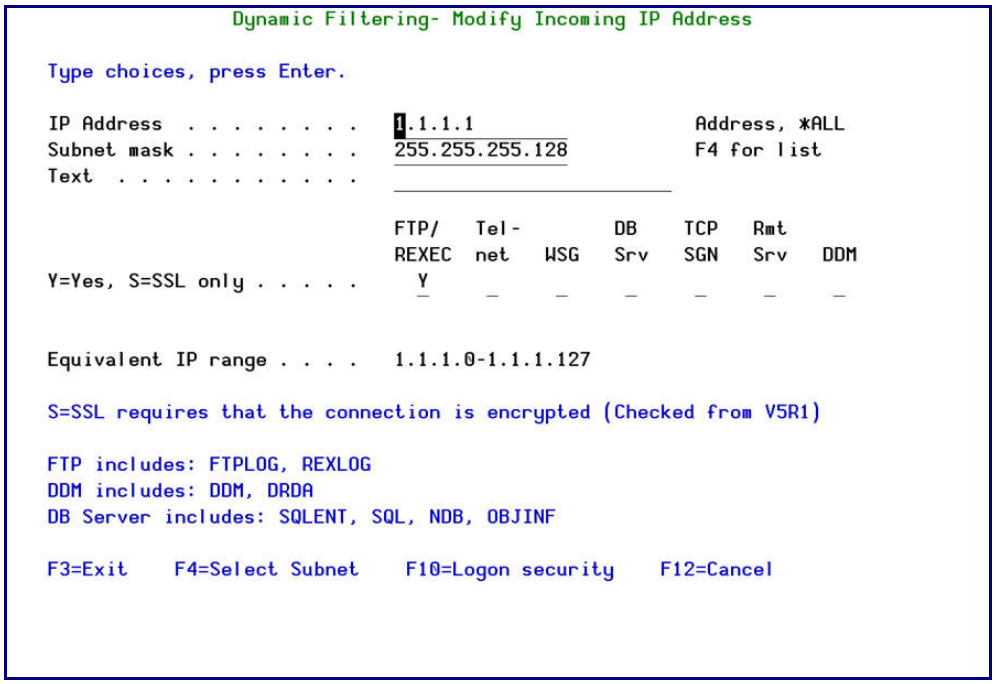
SSL Support:

iSecurity Firewall now supports SSL restrictions on access to FTP, Telnet, Data Base Server (including ODBC), Sign-on, Remote Access and DDM servers.

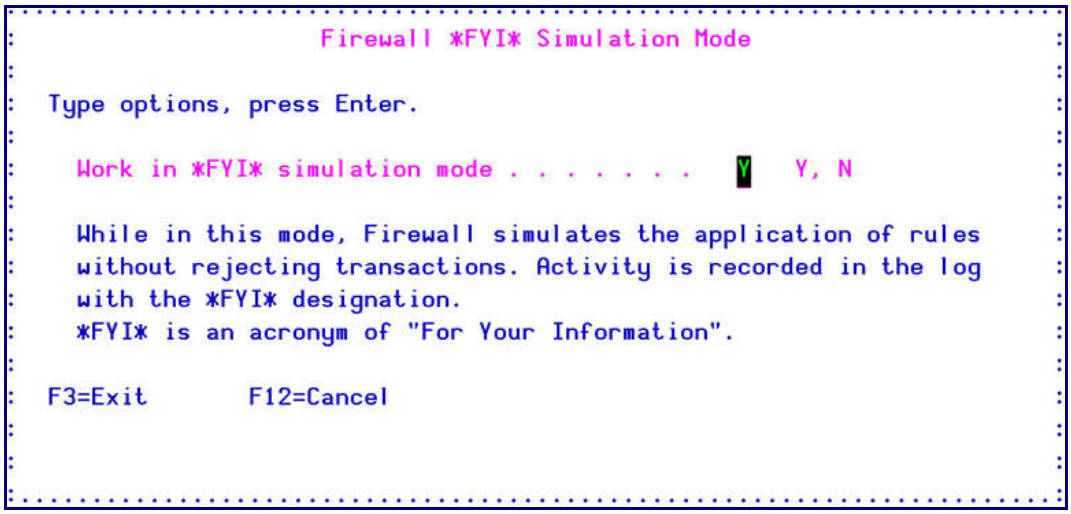
This feature is unique and unequaled in the System i security network access market.

The benefits of this feature are:

1. Simple, easy to use interface for defining SSL restrictions for the various types of access protocols (see Figure 1 below).
2. Full integration with iSecurity Firewall's capabilities, providing a "one-stop" solution for all of your company's security network access requirements (see Figure 2 below).
3. The ability to test SSL connectivity before "live" implementation using FYI (for-your information) simulation mode (see Figure 3 below).



Secure access protocols with SSL



Test SSL connectivity while using FYI mode

Why Raz-Lee developed the SSL Solution

A Raz-Lee customer wished to implement "port restriction" (to separate unsecured and SSL- and ODBC accesses for a specific IP range).

The customer has subsidiaries with specific IP ranges, some of which are capable of communicating via SSL, while others are not. The customer wanted to allow normal port access for specific IP ranges for the subsidiaries which are not capable of using SSL, and wanted to use SSL ports only for the SSL-capable IP range. All other IP addresses should be restricted.

The required solution must be implemented at the IP level and not at the user level, and has to be implemented for ODBC.

In the future, when the entire customer's subsidiaries use SSL, they will want to fully block unsecured ODBC servers. In short, they are not able to restrict unsecured ODBC on the OS/400 level at this time.

The Customer's Testing Methodology

In order to define their requirements, the company used iSeries Navigator and Microsoft Excel with the iSeries Navigator Data Access plug-in.

When Navigator was configured for non-SSL connections and data was imported via Excel, the customer saw the connections on the i5/OS with NETSTAT connections on ports 8470, 8471, and 8476. These are the normal (non-SSL) ports of host servers.

When Navigator was configured for SSL connections using the same data accessing method, connections were made on ports 9470, 9471, 9476. The customer understood these to be the secured ports of the host servers.

Based on these findings, the customer wanted to define IP address ranges that could access System i data only in secured mode.

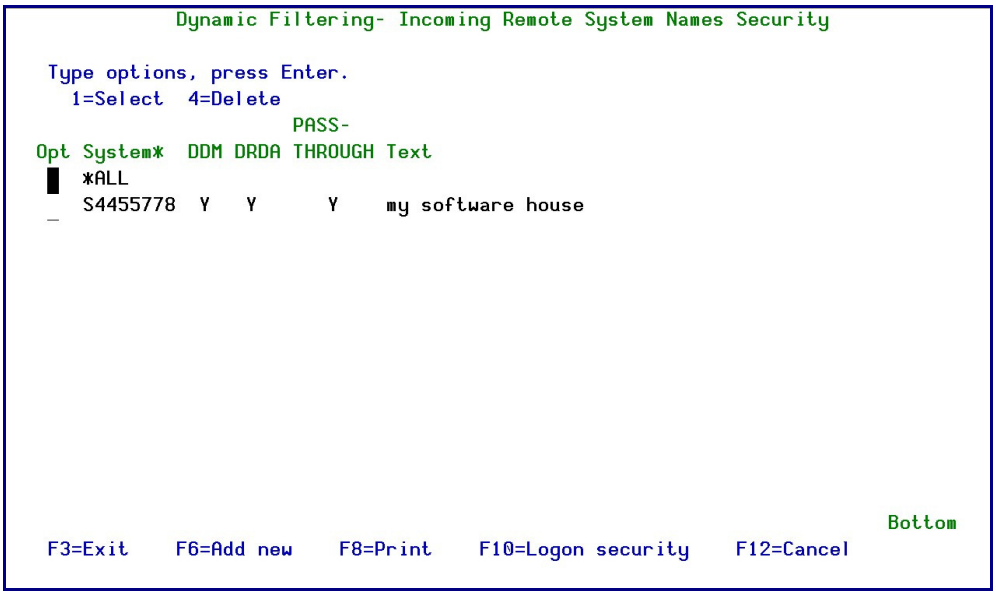
SNA Firewall Rules

SNA firewall rules govern incoming activity from other IBM systems conforming to the SNA system name protocol. Rules control incoming activity for individual system names. For each system name, you can choose to allow or reject activity for any of the following servers:

- DDM
- DRDA
- Passthrough

To work with SNA firewall rules:

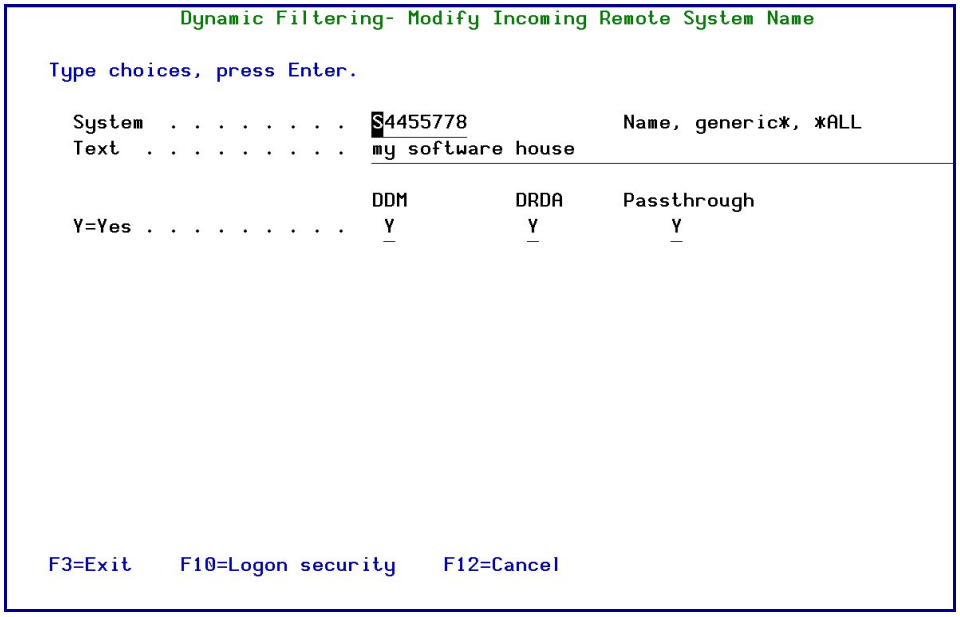
1. Select **2** from the main menu.
2. Select **11. Incoming Remote System Names** from the **Work with Dynamic Filtering** menu. The **Dynamic Filtering- Incoming Remote System Names Security** menu appears. This screen lists all existing rules showing which communication protocols are allowed or rejected.
3. Type **1** to select an existing rule or press **F6** to create a new rule.



Work with Firewall – Incoming Remote System Names

Parameter or Option	Description
F6	Create a new firewall rule
F8	Print list of firewall rules
F10	Work with Logon security rules
Opt	**1** = Modify an existing rule **4** = Delete an existing rule

If you are creating or modifying a rule, the **Dynamic Filtering- Modify Incoming Remote System Name** screen appears. The table following the screen example details the appropriate rule parameters.



Modify Incoming Remote System Name

Parameter or Option	Description
System	SNA system name
Text	Description of the SNA system
Y=Yes	Type '**Y**' to allow activity or leave the field **Blank** to reject activity for each individual server.
F10	Work with Logon security rules

Chapter 5: User Security

Conceptual Framework

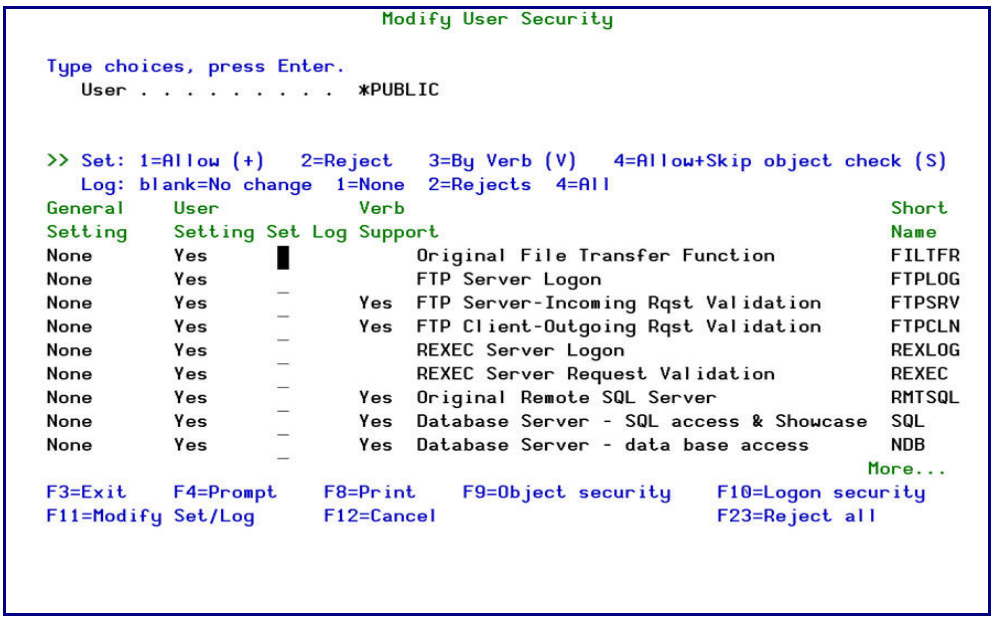
User-to-service security rules control the activity of specific users, profiles groups and **Firewall** user groups in individual servers. You can also use user-to-service rules to grant or deny users ***ALLOBJ** (all objects security) for native OS/400 and IFS objects.

Server security rules, as described in Chapter 4, control activity for each server on a global basis for all users. User-to-Service security rules allow users to control activity via these servers for individual users or groups of users. Group-based rules may be defined for OS/400 group profiles or **Firewall** User Groups.

User-to-service rules override the global server security rules, providing that the **Security Level** parameter is set to **3** or above. For example, if the **Security Level** parameter in the server security rule for the FTP server is set to **3** (user-to-service), user-to-server rules may allow activity for certain users and reject access for others. The ***PUBLIC** user profile serves (see screen example below) as a default user-to-server rule for all users not explicitly covered by a rule.

Verb Support

User-to-server rules can also restrict activity on certain servers according to specific remote commands, known as **Verbs** in the System i world. This feature enables limiting user ability to execute specific remote commands. For example, members of the user group **%PGMR** are not permitted to execute the SQL delete command as shown in the following screen.



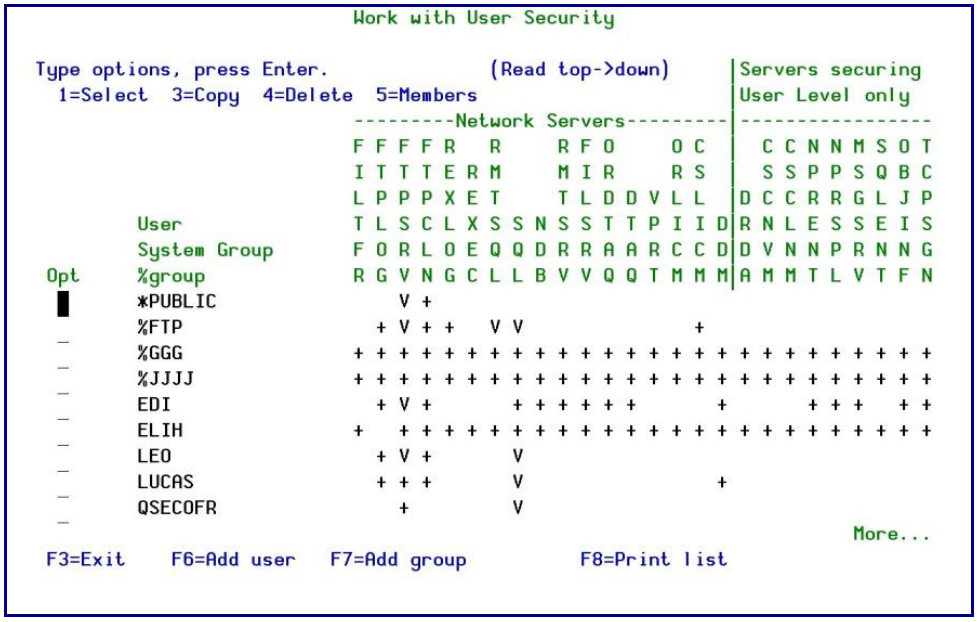
Modify User Security

Verb (command) rule support is available for the FTP, SQL, and Database and DDM servers.

Rule Definition Procedure

To work with user-to-service security, select **11. Users and Groups** from the main menu. The **Work with User Security** screen appears. This screen lists provide a quick glance at the user-to-service rules currently in effect.

3. To work with an existing rule, type **1** in the **Opt** field or press **F6** to create a new rule. Use the **PageUp** and **PageDown** keys to scroll through the list. Press **Enter** to continue.



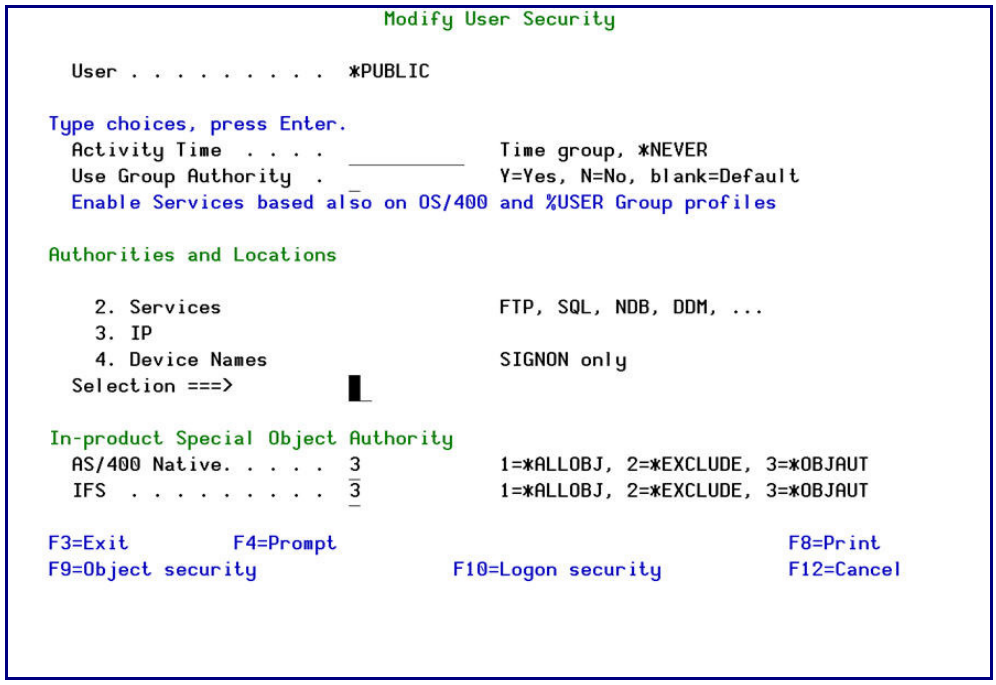
Work with User Security

The following table explains the options and information on **Work with User Security** screen.

Parameter or Option	Description
Opt	**1** = Select this rule for modification **3** = Copy this rule for another user/group **4** = Delete this rule **5** = Modify group members
Servers	Displays the rule status for each server type: **+** = User-to-service rule overrides the global server security rule. Allow a user the access to a server and check for object authorizations. **V** = User-to-service rule overrides with verb (command) support **Blank** = Global server security rule governs activity for this server **S** = Allow a user to access a server and skip the check for object authorizations. This simplifies the test for some users (normally for batch applications, which are playing the role of servers and the desire to save performance in such cases).

F6	Create a rule for a new User
F7	Create a rule for a new Group
F8	Print user-to-service security rules

4. Enter parameters on the **Add/Modify Parameters** screen and press **Enter** to confirm.



Modify User Security

Parameter or Option	Description
User	Displays the user profile or user group name
Activity Time	**Time Group** = type a time group name or press **F4** to select from a list.
Use Group Authorities	**Y** = use a specific group authorities **N** = don't use any specific group authorities
Authorities and Locations	**2. Services=** specify authorities and location by Services name **3. IP =** specify authorities and location by IP name **4. Device Names =** specify authorities and location by Device name
In-product Special Object Authority	Use this field to define object authority for the user/group for **AS/400 Native** and **IFS** objects.
F8	Print user-to-service security rules
F9	Work with object security rules
F10	Work with Logon security rules

Client Application Security

Client Application Security is an alternative way to set network security.

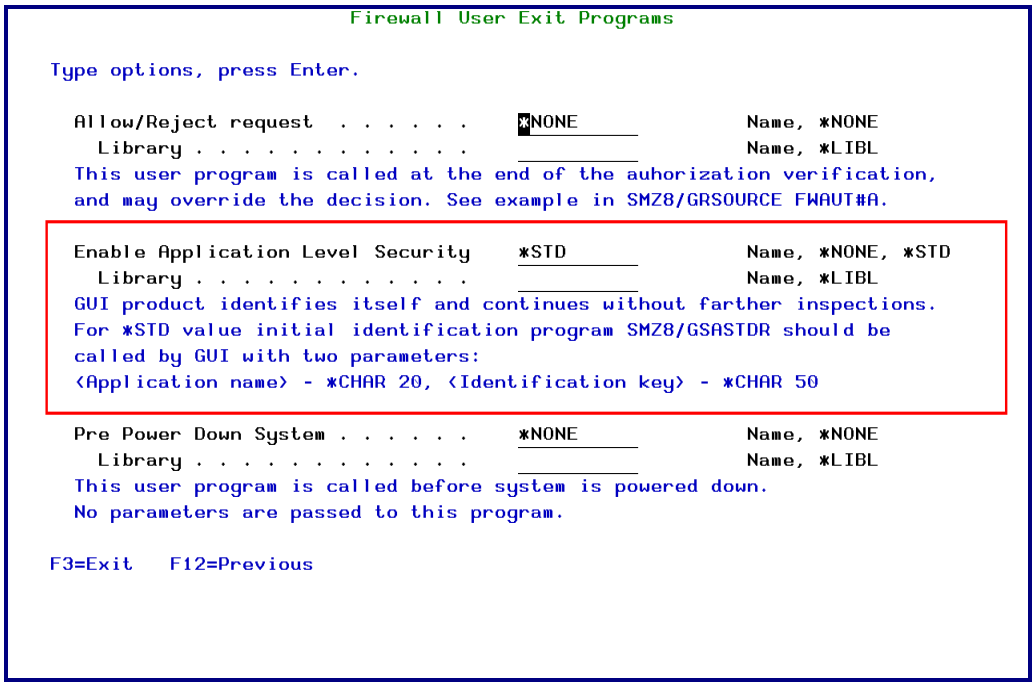
Until now, most IBM i network access products focused on the Database being accesses, Commands and Program calls in order to determine if the access should be accepted or rejected.

Client Application Security provides the ability to allow a Client Application to be authorized as a whole rather than by the ways in which it accesses the Database, Commands and Program calls.

Once the application is verified for use by a specific user (including Group/Supplemental profiles), from a specific IP, within a specific time frame, etc., all the network access activities of this application will be considered "authorized", requiring no specific detailed authority to be defined.

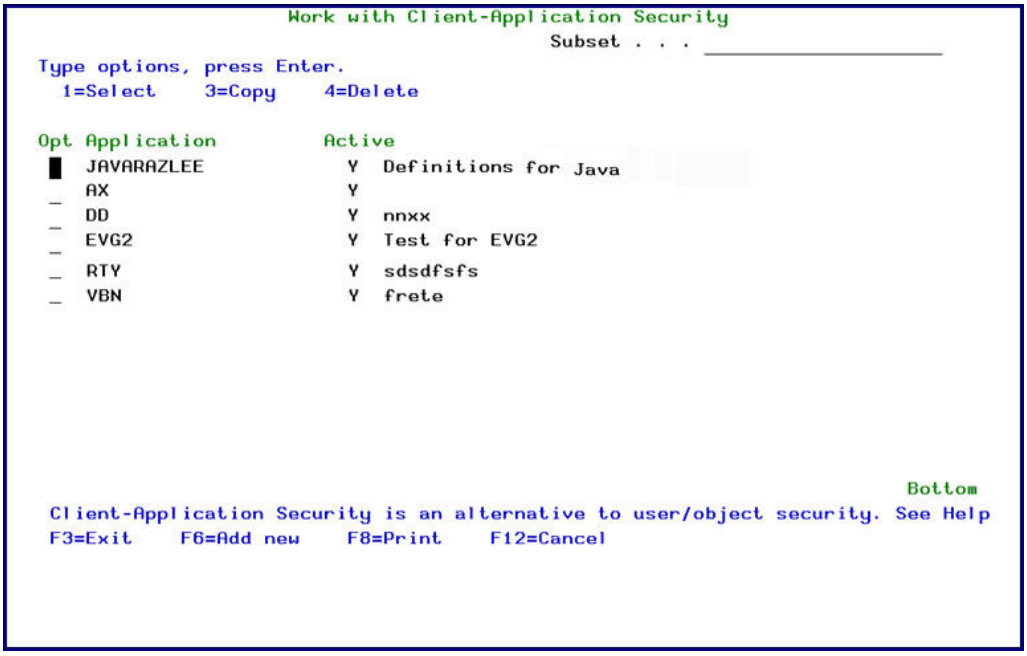
Client Access Security is, indeed, a revolution in defining and benefiting from network access security.

In order to activate the **Client Application Security** feature, select option **81 →3. User Exit Programs** and ensure that the **Enable Application Level Security** field is set to ***STD**.



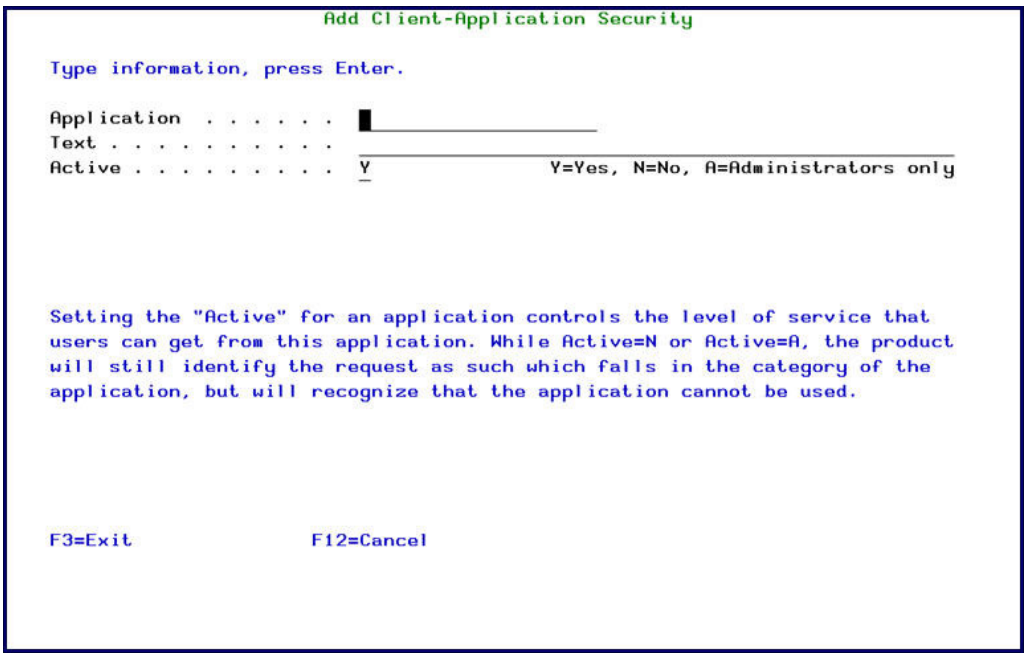
Firewall User Exit Programs

1. To work with **Client Application Security** go to option **18. Client Application Security** from the main menu



Work with Client-Application Security

2. Press **F6** to add a new client-application



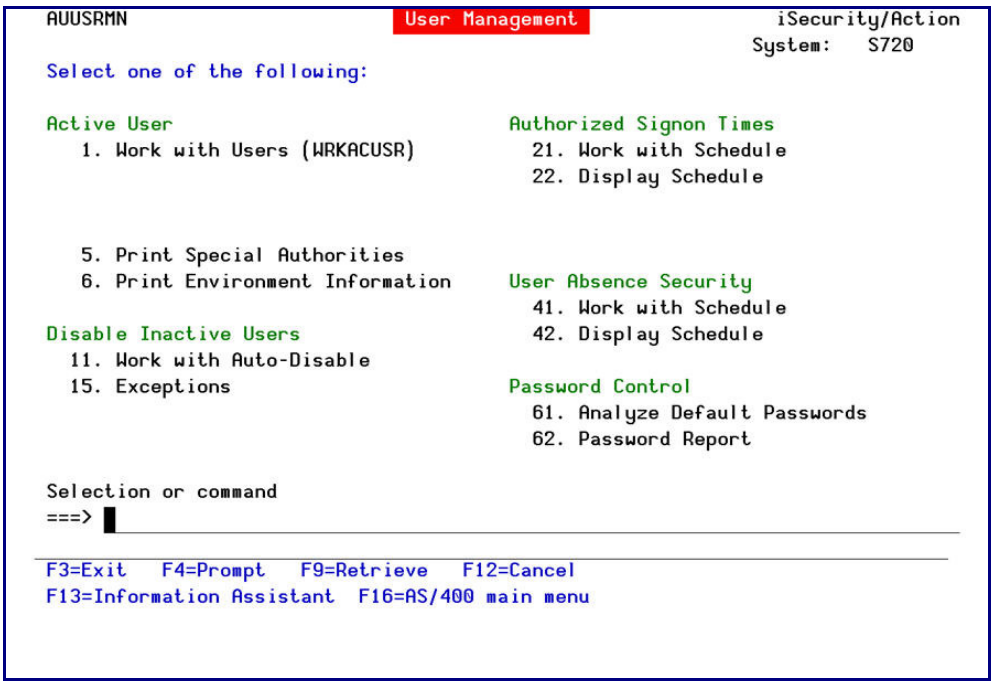
Add Client-Application Security

User Management

This chapter presents several powerful security tools that **Firewall** shares with **Action**. These control the ability of users to sign-on to the system and enhance active system security by allowing users to perform the following tasks:

- View and modify security parameters in user profiles using a convenient wizard interface
- Automatically disable inactive users
- Restrict user sign-on to specific hours and days
- Prevent user sign-on during planned absences or following termination
- Analyze default passwords for effectiveness

To work with the user sign-on control tools, select **15. User Management** from the main menu. The **User Management Sign-on** menu appears. Select the desired function from this menu.



User Management

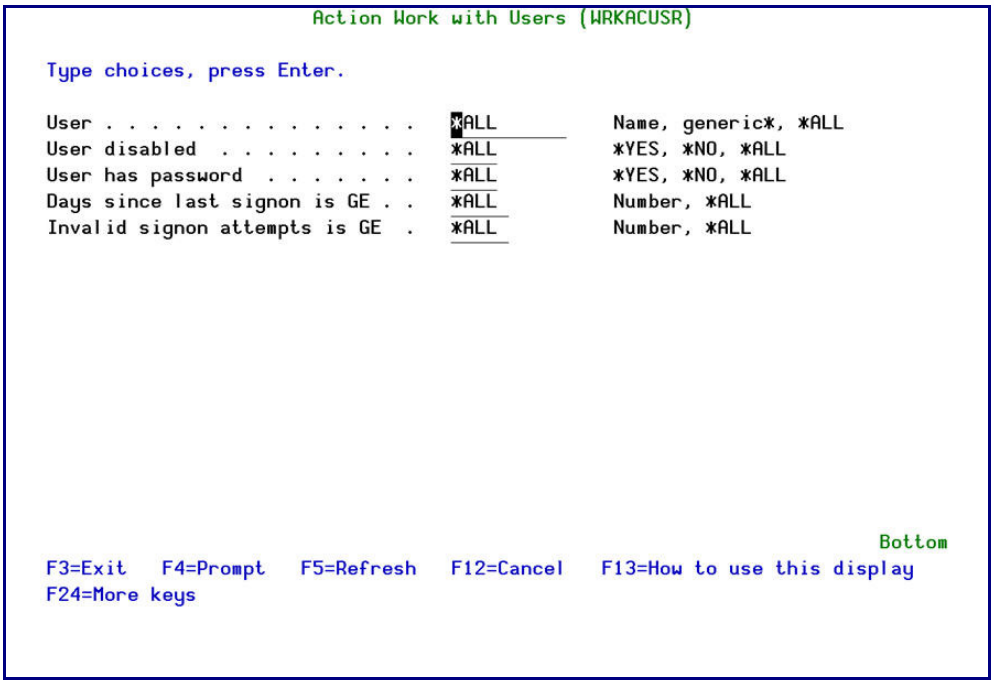
Work with Users

The **Work with Users Wizard** enables viewing and modifying several security-related parameters in the user profile by using a user-friendly wizard interface. One can view and work with many different users at once and compare settings between different users.

The security officer can use this tool to review all users at-a-glance and immediately disable suspicious users. One-key access is provided to many of the other user sign-on tools.

To start the **Work with Users** wizard, follow this procedure.

1. Select **1** from the **User Management** menu. The **Action Work with Users** screen appears, offering you several options to display filtered subsets of users.



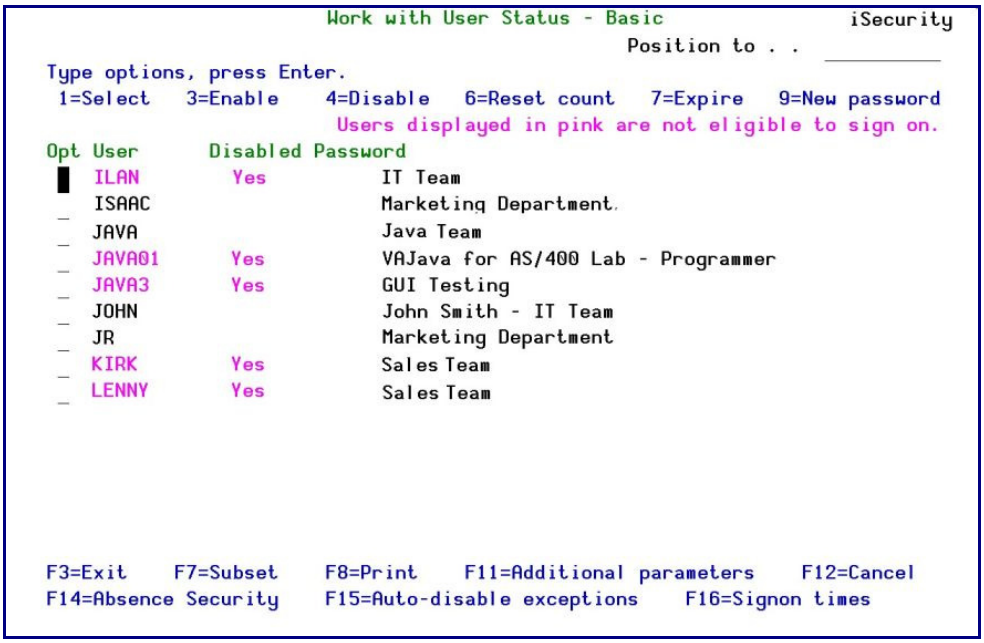
Action Work with Users

Parameter or Option	Description
User	***ALL** = Display all users **Generic*** = Display all users beginning with text preceding the * **Name** = Display a specific user profile
User enabled	***YES** = Display enabled users, with passwords, who can sign-on ***NO** = Display disabled users and those who cannot sign-on ***ALL** = Display users irrespective of status
User has password	***YES** = Display only users whose password has expired ***NO** = Display only users whose password has not expired ***ALL** = Display users irrespective of password expiration
Days since last sign-on is GE	***Number** = Display only users who have not signed on for at least the specified number of days ***ALL** = Display users irrespective days since last sign-on
Invalid sign-on attempts is GE	***Number** = Display only users who have not signed on for at least the specified number of days ***ALL** = Display users irrespective days since last sign-on

2. The **Work with Users Wizard** consists of three screens – **Basic**, **Sign-on**, and **Password**. Each containing several related parameters. The same function key options are available on all screens. On each of these screens, users that cannot sign-on to the system are displayed in **pink**. Use **F11** to navigate between screens.

Screen 1: Work with User Status - Basic

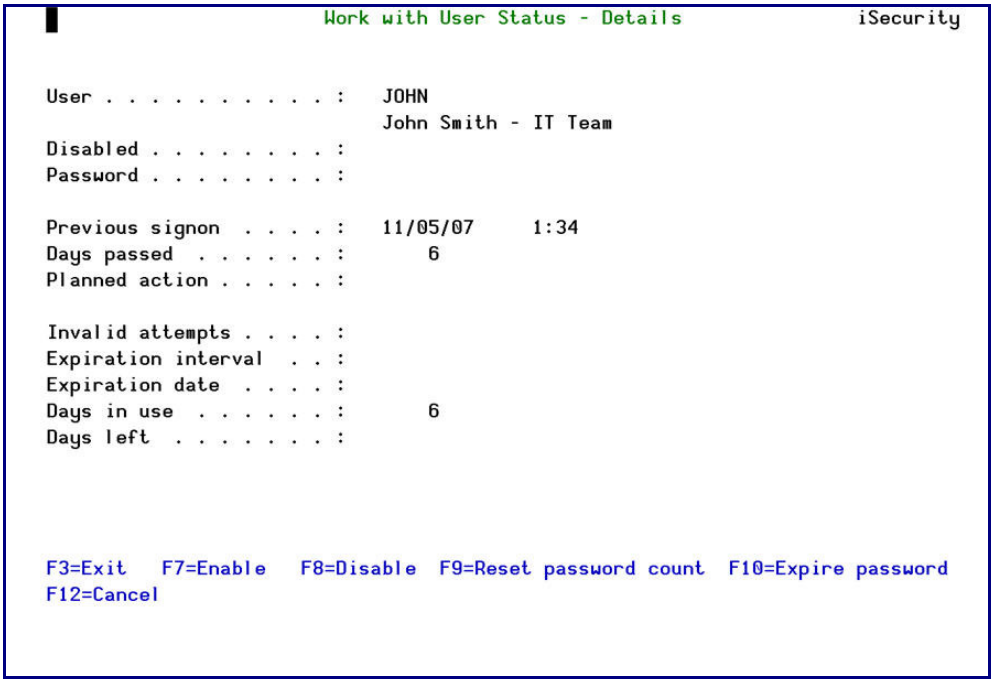
This screen shows whether individual users can sign-on to the System i. In order to sign-on, users must be enabled and have a valid, non-expired password.



Work with User Status - Basic

Parameter or Option	Description
Opt	**1** = Display all parameters for the selected user profile (see below) **3** = Enable user profile **4** = Disable user profile **6** = Reset invalid sign-on attempt counter – prevents automatic disabling of this user due to excessive sign-on errors **7** = Set password to 'expired' – this user must change password at next sign-on
Enabled	**Blank** = User profile is enabled **No** = User profile is disabled
Password	**Blank** = User profile has a valid password and can sign-on **None** = No password is associated with this user profile and he cannot sign-on
F7	Display a subset of user profiles filtered according to status parameters (available on all screens)
F11	Display the next of the three parameter screens for the currently displayed user profiles
F14	Temporarily disable users during planned absences (e.g. vacation, sick, leave of absence), or permanently delete users leaving the organization
F15	Specify users that should never be disabled automatically, even if they have not signed on for a long period of time (inactive user)
F16	Restrict user sign-on to predefined working hours

In order to display all the parameters for a single user, type **1** in the **Opt** field to the left of the desired user. The following screen appears:



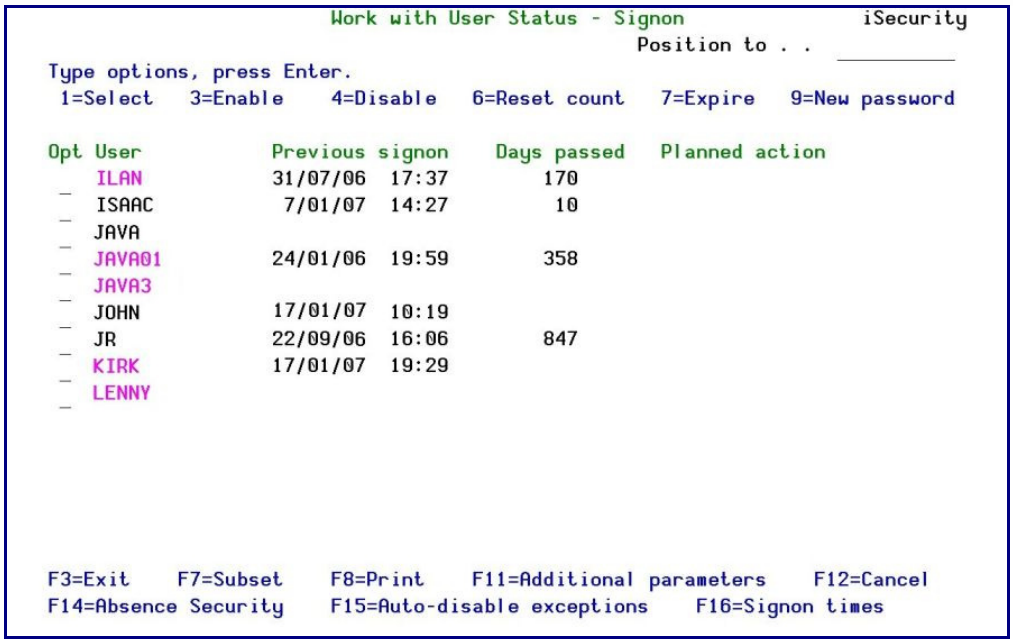
Work with User Status – Details

Use the function keys to modify parameters as shown at the following table:

Parameter or Option	Description
F7	Enable user profile
F8	Disable user profile
F9	Reset invalid sign-on attempt counter – prevents automatic disabling of this user due to excessive sign-on errors
F10	Set password to 'expired' – user must change password at next sign-on

Screen 2: Work with User Status - Sign-on

This screen displays recent sign-on statistics for each user profile. In addition, the scheduled date of any automatic actions (disable or delete) by the **Action** absence control feature is displayed.

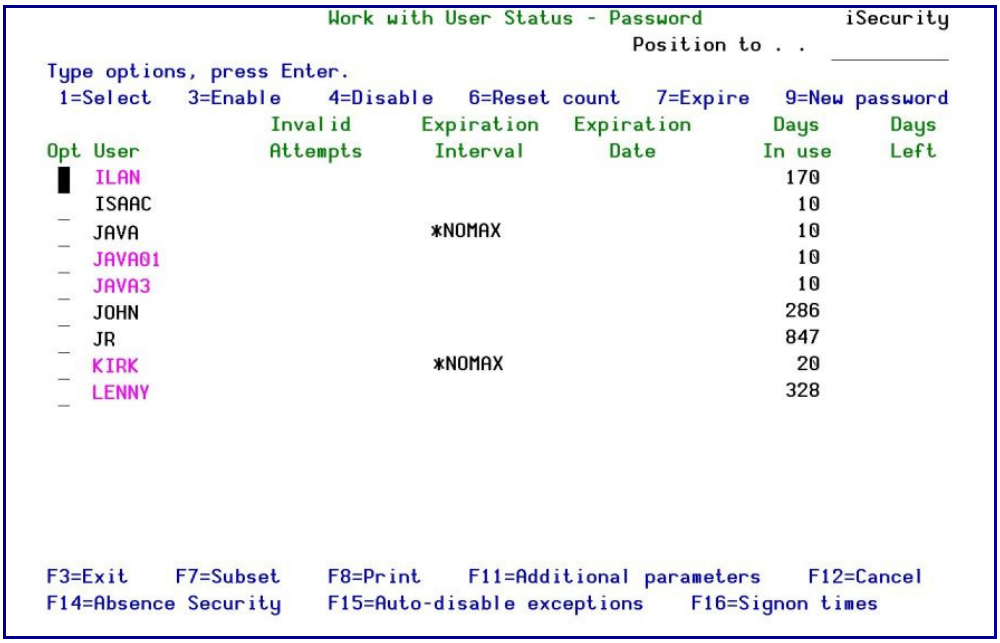


Work with User Status – Sign-on

Parameter or Option	Description
Opt	**1** = Display all parameters for selected user profile **3** = Enable user profile **4** = Disable user profile **6** = Reset invalid sign-on attempt counter – prevents automatic disabling of this user due to excessive sign-on errors **7** = Set password to '**expired**' – this user must change password at next sign-on
Previous Sign-on	Date and time of previous sign-on for this user profile
Days Passed	Days since previous sign-on for this user profile
Planned Action	Displays the date of planned **absence control** actions (Delete or disable) for this user profile

Screen 3: Work with User Status - Password

This screen displays the number of invalid sign-on attempts and the expiration status of user passwords. This information makes it possible for the security officer to verify that users change their passwords in accordance with the security policy.



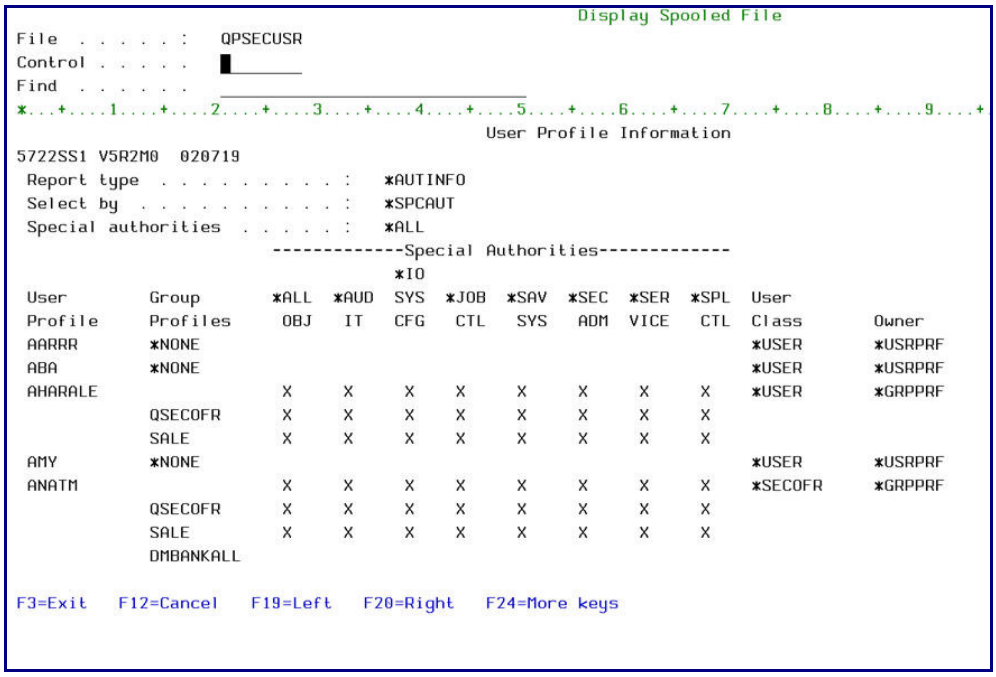
Work with User Status – Password

Parameter or Option	Description
Opt	**1** = Display all parameters for selected user profile **3** = Enable user profile **4** = Disable user profile **6** = Reset invalid sign-on attempt counter – prevents automatic disabling of this user due to excessive sign-on errors **7** = Set password to 'expired' – this user must change password at next sign-on
Invalid Attempts	**Blank** = User profile is enabled **No** = User profile is disabled
Expiration Interval	Number of days between required password changes
Expiration Date	Next password expiration date
Days in Use	Number of days the current password has been in use
Days Left	Number of days before the current password expires

Reports

User Management offers two reports that show user profile information.

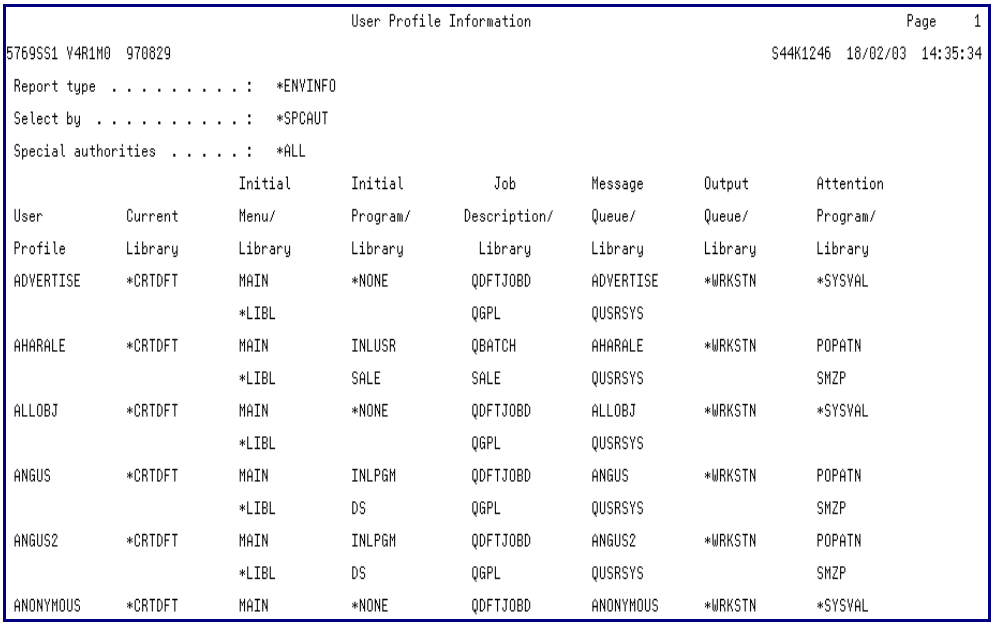
- Option **5. Print Special Authorities**: the **Special Authorities** report shows details of special authorities assigned to users individually or as part of a group authority. Another parameter that is displayed is a user's limited capabilities.



```
                                                Display Spooled File
File  . . . . . :   QPSECUSR
Control . . . . .   _
Find  . . . . . .   _____________________________
*...+....1....+....2....+....3....+....4....+....5....+....6....+....7....+....8....+....9....+
                                        User Profile Information
5722SS1 V5R2M0  020719
 Report type  . . . . . :   *AUTINFO
 Select by  . . . . . :   *SPCAUT
 Special authorities  . . . . . :   *ALL
                        -------------Special Authorities-------------
                                      *IO
 User        Group       *ALL  *AUD  SYS  *JOB  *SAV  *SEC  *SER  *SPL  User
 Profile     Profiles     OBJ   IT   CFG   CTL   SYS   ADM  VICE   CTL  Class       Owner
 AARRR       *NONE                                                      *USER       *USRPRF
 ABA         *NONE                                                      *USER       *USRPRF
 AHARALE                   X     X    X     X     X     X     X     X   *USER       *GRPPRF
             QSECOFR       X     X    X     X     X     X     X     X
             SALE          X     X    X     X     X     X     X     X
 AMY         *NONE                                                      *USER       *USRPRF
 ANATM                     X     X    X     X     X     X     X     X   *SECOFR     *GRPPRF
             QSECOFR       X     X    X     X     X     X     X     X
             SALE          X     X    X     X     X     X     X     X
             DMBANKALL

F3=Exit    F12=Cancel    F19=Left    F20=Right    F24=More keys
```

User Profile Information (Special Authorities Report)

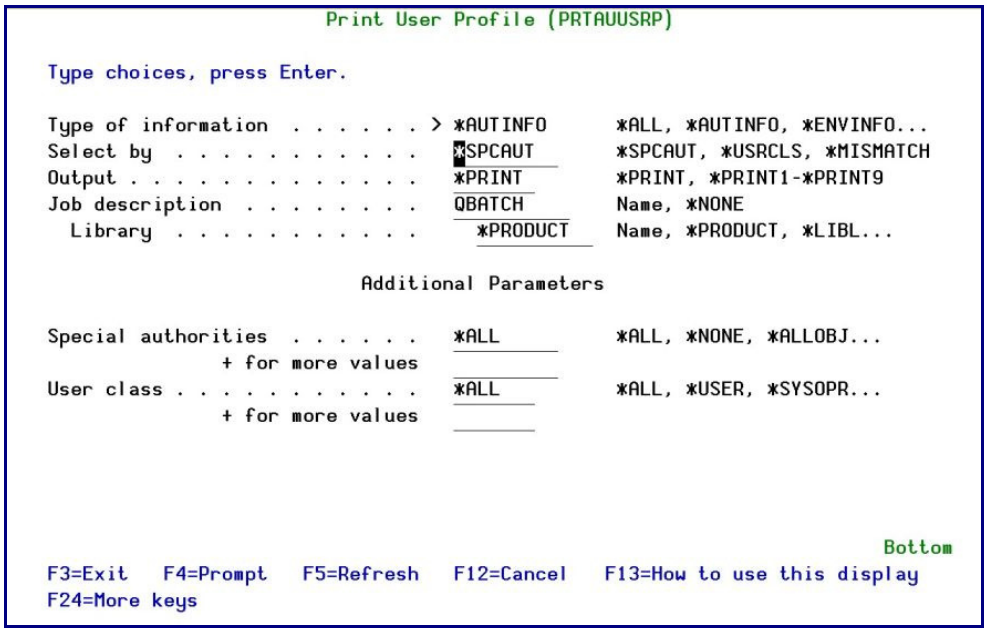
- Option **6. Print Environment Information**: the **Environment Info** report shows environment details including the current library and various default libraries.



```
                                        User Profile Information                                        Page     1
5769SS1 V4R1M0  970829                                                                  S44K1246  18/02/03  14:35:34
Report type  . . . . . :   *ENVINFO
Select by  . . . . . :   *SPCAUT
Special authorities  . . . . . :   *ALL
                                Initial       Initial          Job          Message       Output        Attention
User            Current         Menu/         Program/         Description/ Queue/        Queue/        Program/
Profile         Library         Library       Library          Library      Library       Library       Library
ADVERTISE       *CRTDFT         MAIN          *NONE            QDFTJOBD     ADVERTISE     *WRKSTN       *SYSVAL
                                *LIBL                          QGPL         QUSRSYS
AHARALE         *CRTDFT         MAIN          INLUSR           QBATCH       AHARALE       *WRKSTN       POPATN
                                *LIBL         SALE             SALE         QUSRSYS                     SMZP
ALLOBJ          *CRTDFT         MAIN          *NONE            QDFTJOBD     ALLOBJ        *WRKSTN       *SYSVAL
                                *LIBL                          QGPL         QUSRSYS
ANGUS           *CRTDFT         MAIN          INLPGM           QDFTJOBD     ANGUS         *WRKSTN       POPATN
                                *LIBL         DS               QGPL         QUSRSYS                     SMZP
ANGUS2          *CRTDFT         MAIN          INLPGM           QDFTJOBD     ANGUS2        *WRKSTN       POPATN
                                *LIBL         DS               QGPL         QUSRSYS                     SMZP
ANONYMOUS       *CRTDFT         MAIN          *NONE            QDFTJOBD     ANONYMOUS     *WRKSTN       *SYSVAL
```

User Profile Information (Environmental Info Report)

- To print these reports, select **5** or **6** from the **User Management** menu. Enter the report type and filter parameters as shown on the following screen.



Print User Profile

Parameter or Option	Description
Select by	***SPCAUT** = User profiles are selected based on special authorities ***USRCLS** = User profiles are selected based on user class ***MISMATCH** = User profiles are selected based on the fact that their special authorities are not the default values assigned to their user class
Job description	Date and time of previous sign-on for this user profile

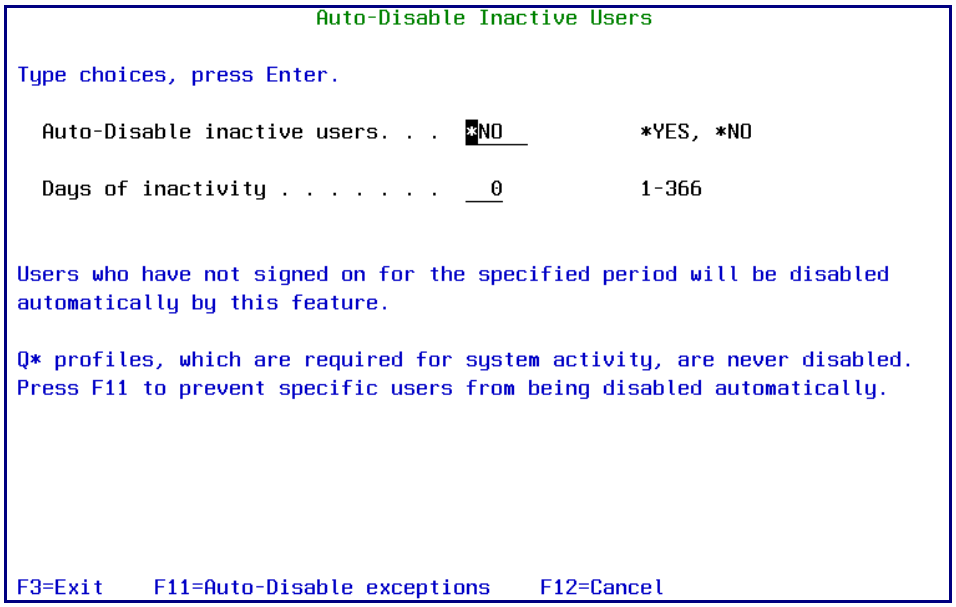
Disable Inactive Users

The presence of valid but inactive user profiles can pose a potentially serious security threat. Hackers can exploit these profiles to gain access to critical data via FTP, ODBC connectivity or other methods even without knowing the password.

For this reason, it is always a good idea to periodically audit your system and disable any users who have not signed on recently. The Work with Users Wizard, discussed in the previous section, is an excellent tool for performing such a review and manually disabling inactive users.

Action includes the **Auto-Disable** feature, which allows for disabling of inactive user profiles automatically after a specified period. Automatic disabling applies to any user who has not signed on for the specified number of days. One can also designate specific users as exceptions, who cannot be disabled automatically. OS/400 system-generated profiles (prefixed by the letter '**Q**') are never automatically disabled.

- To enable the Auto-Disable feature, select **11. Work with Auto-Disable** from the **User Management** menu. Set the **Auto-Disable inactive users** parameter to ***YES** and specify the number of days of inactivity in the appropriate field.
- To disable this feature, set the **Auto-Disable inactive users** parameter to ***NO**.



Auto-Disable Inactive Users

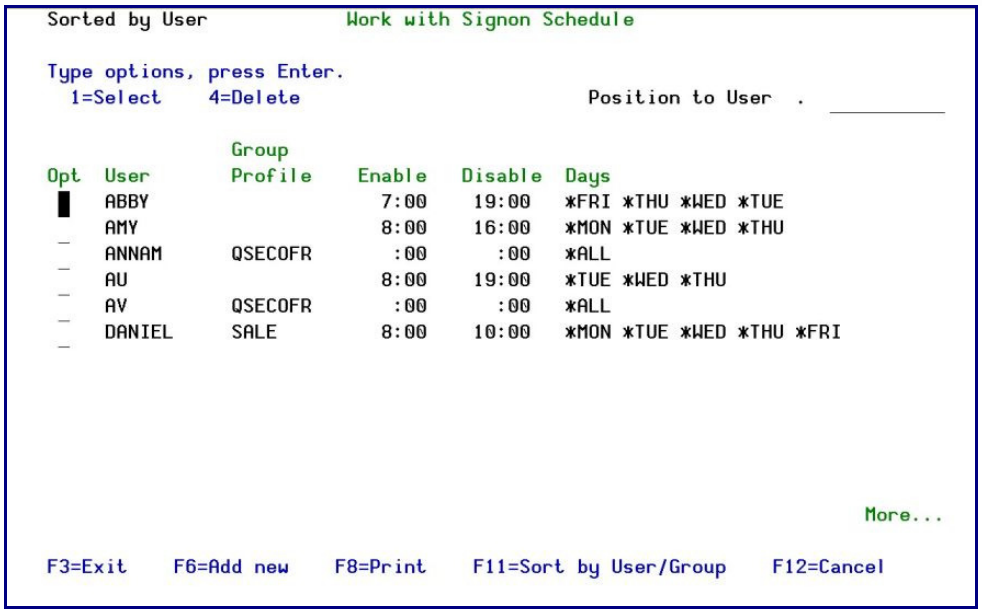
- To define exceptions from the Auto-Disable default, select **15. Exceptions** from the **User Management** menu. The **Auto-Disable Exceptions** screen appears. Press **F6** and type the user profile name(s) that should not be disabled automatically.
- To delete a user profile from this exception list, type **4** next to the name and press **Enter**.

Restricting User Sign-on Times

Even valid user profiles have the potential for abuse. A common hacker trick is to obtain a user's password and use it to sign-on after the user has left work in order to access programs and data with that user's authorities. Using this method, a dishonest employee can bypass object level security and remain invisible to subsequent audit.

An effective defense against this scenario would be to restrict user sign-on to authorized working hours. **Action** includes a user-friendly tool for defining authorized sign-on periods for users, by time and day of the week.

1. To define authorized sign-on times for users, select **21. Work with Schedule** from the **User Management** menu. The following screen appears (a table of explanation follows).

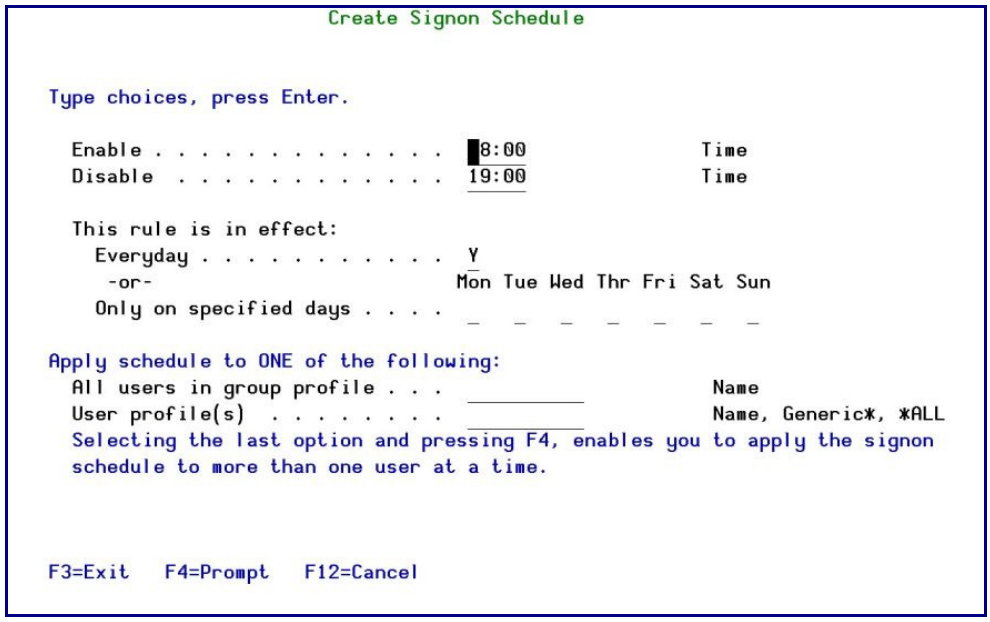


Work with Sign-on Schedule

Parameter or Option	Description
Opt	**1** = Select to modify **4** = Delete the selected user
Position to	Position the cursor at the first item beginning with the text string typed in this space
F8	Print a report showing sign-on schedules for all users

NOTE: *You can create only one sign-on schedule for each user profile.*

2. Select a user from the list or press **F6** to define a new user schedule. The **Create Sign-on Schedule** screen appears.



Create Sign-on Schedule

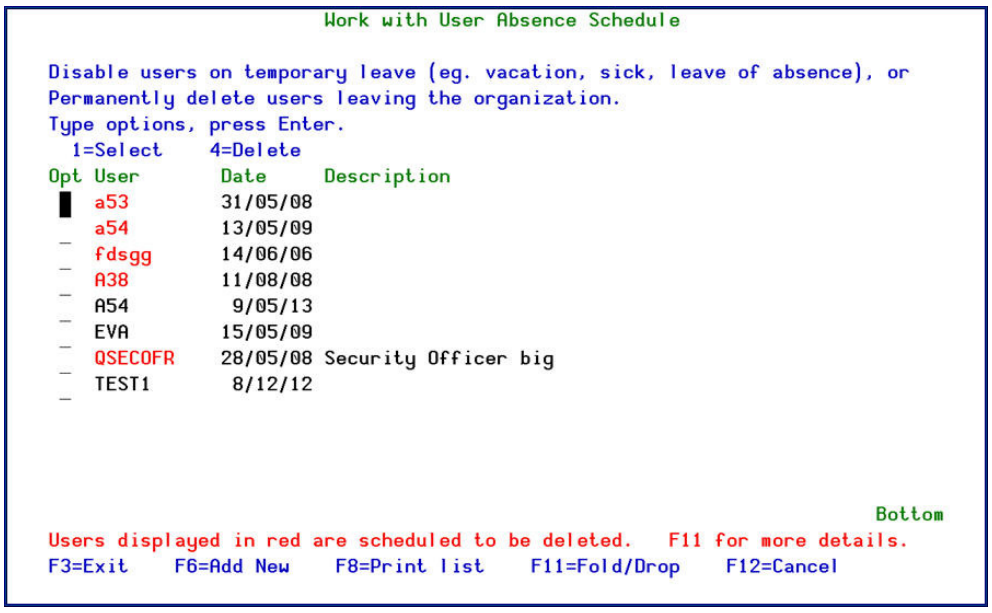
Parameter or Option	Description
Enable/Disable	Time of day using a 24-hour format
This rule is in effect	**Everyday** = Type "**Y**" to apply schedule to every day of the week **Specified days** = Type "**Y**" on the desired week days
Apply Schedule to	**User profile** = Enter user profile name or a generic text string to create a schedule for all user profiles beginning with the text string preceding the " * " (i.e. ***R**** applies to all users beginning with the letter ***R***) **All users in group profile** = Enter a group profile name to create a schedule for all users contained in the group profile **Select users from list =** Enter a generic text string to select user profiles from a list of all user profiles beginning with the text string preceding the " * " (i.e. ***R**** displays all users beginning with the letter ***R***). You may then select one or more of them

User Absence Security

Another common security risk occurs when an authorized user is away on temporary leave (e.g. vacation, sick leave, maternity leave, business trips, etc.) or leaves the organization. **Action** allows you make certain that nobody can sign on with specific user profiles during such scheduled absences by disabling or deleting user profiles automatically on a specific date.

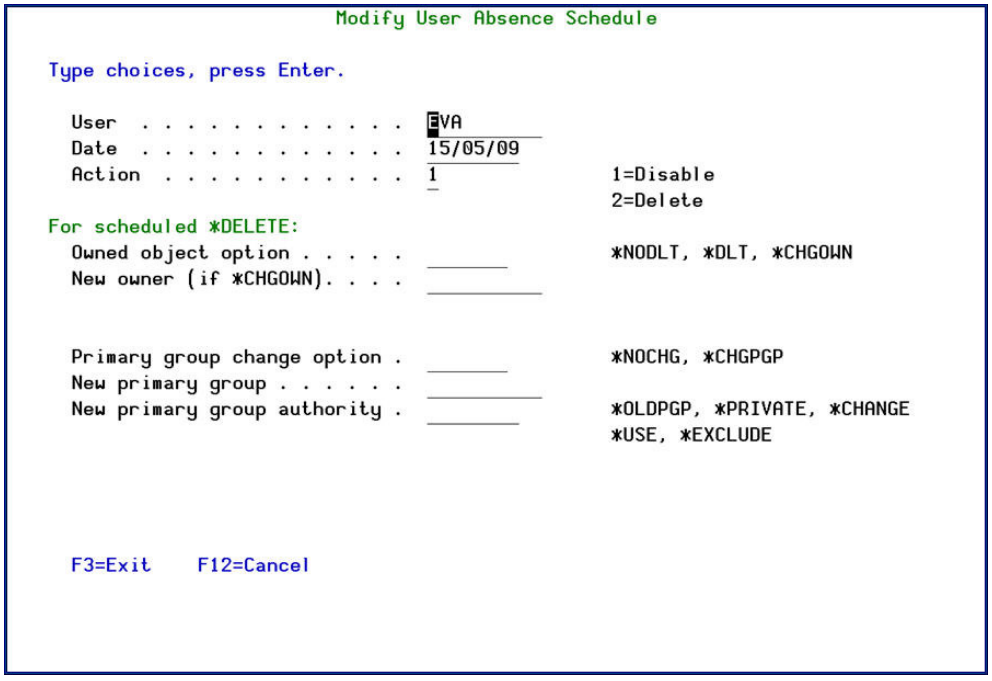
To work with user absence security,

1. Select **41. Work with Schedule** from the **User Management** menu. The following screen appears.



Work with User Absence Schedule

2. Select a user from the list or press **F6** to add a new user. The **Modify User Absence Schedule** screen appears.



Modify User Absence Schedule

3. Enter the appropriate parameters as described in the following table.

Parameter or Option	Description
User	User profile to be disabled or deleted

Parameter or Option	Description
Date	Date on which the user profile will be disabled or deleted
Action	**1** = Disable user profile **2** = Delete user profile
The following parameters apply to scheduled deletions only	
Owned object action	Specify the action to be performed when a user profile scheduled for deletion owns one or more objects: ***NODLT** = If the user profile owns any objects, neither the user profile nor the objects are deleted ***DLT** = Both the user profile and any objects owned by it are deleted ***CHGOWN** = The user profile is deleted and ownership of all objects is transferred to the alternate user profile specified in the **New Owner** parameter
New owner	User profile name of the new owner when object ownership is transferred by the ***CHGOWN** parameter
New primary group	Name of the user profile that will become new the primary group
New primary group authority	***OLDPGP** = The new primary group inherits the same authority as the old primary group ***PRIVATE** = The new primary group inherits the same private authority as previously defined for all owned objects ***ALL** = The new primary group assumes the ***ALL** authority ***CHANGE** = The new primary group assumes the ***CHANGE** authority ***USE** = The new primary group assumes the ***USE** authority ***EXCLUDE** = The new primary group assumes the ***EXCLUDE** authority

NOTE: *Refer to IBM documentation for a complete discussion regarding the concepts of object ownership and primary groups.*

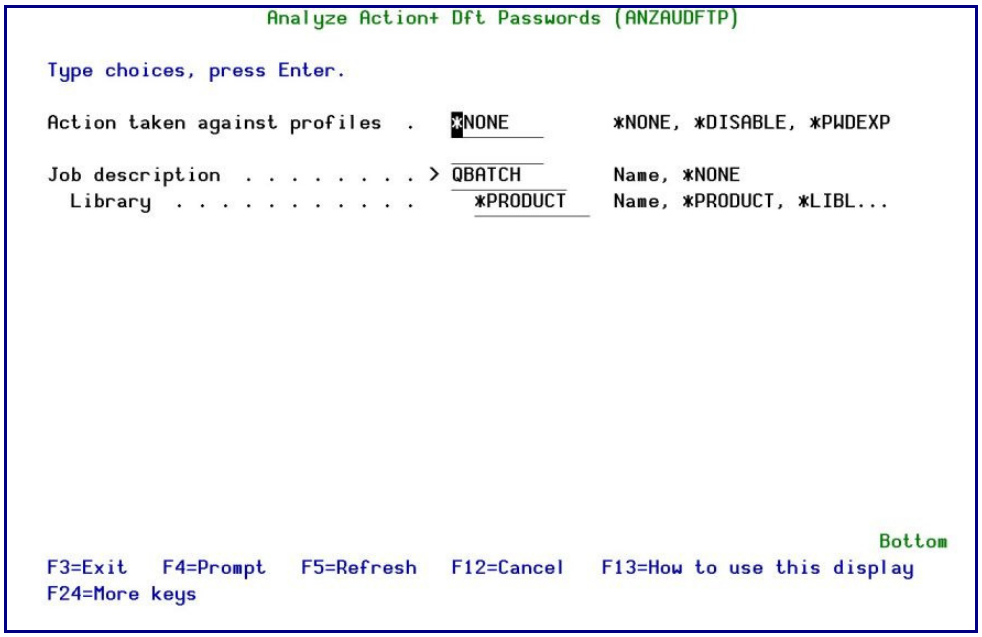
Password Control Tools

This section describes two tools that help you correct potential security risks caused by easy to guess passwords.

Analyze Default Passwords

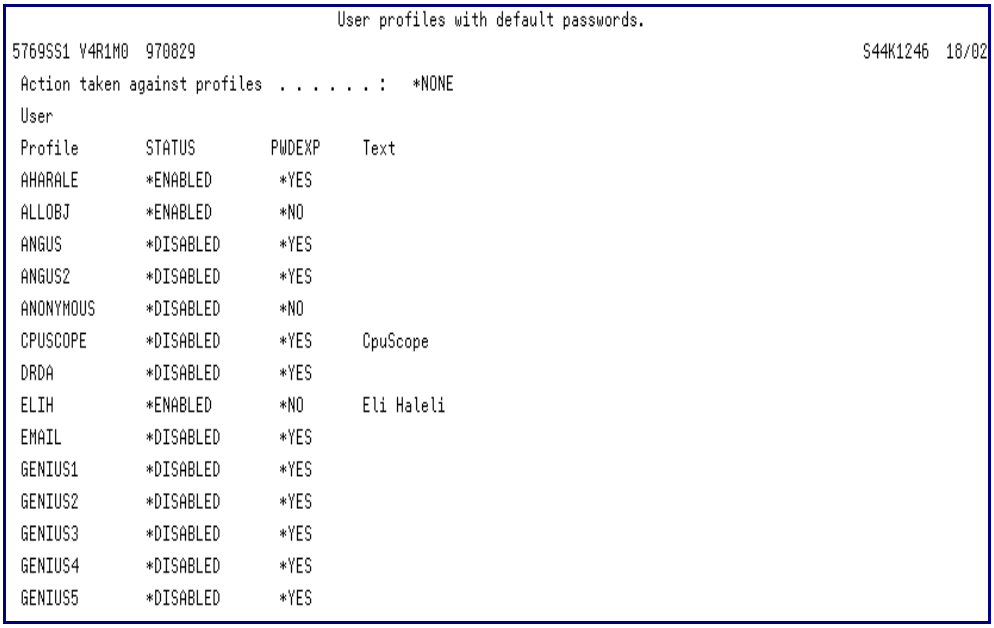
A profile is said to have a **default password** whenever the password is the same as the profile name. Obviously, this is dangerous because it is so easy to guess. This feature allows users to print a report of all the user profiles on the system that have a default password and optionally disable those profiles or expire their passwords.

To perform the analysis, select **61. Analyze Default Passwords** from the **User Management menu**. The **Analyze Action + Default Passwords** screen appears.



Analyze Default Passwords

The system prints the following report.



User profiles with default passwords.

5769SS1 V4R1M0 970829 S44K1246 18/02

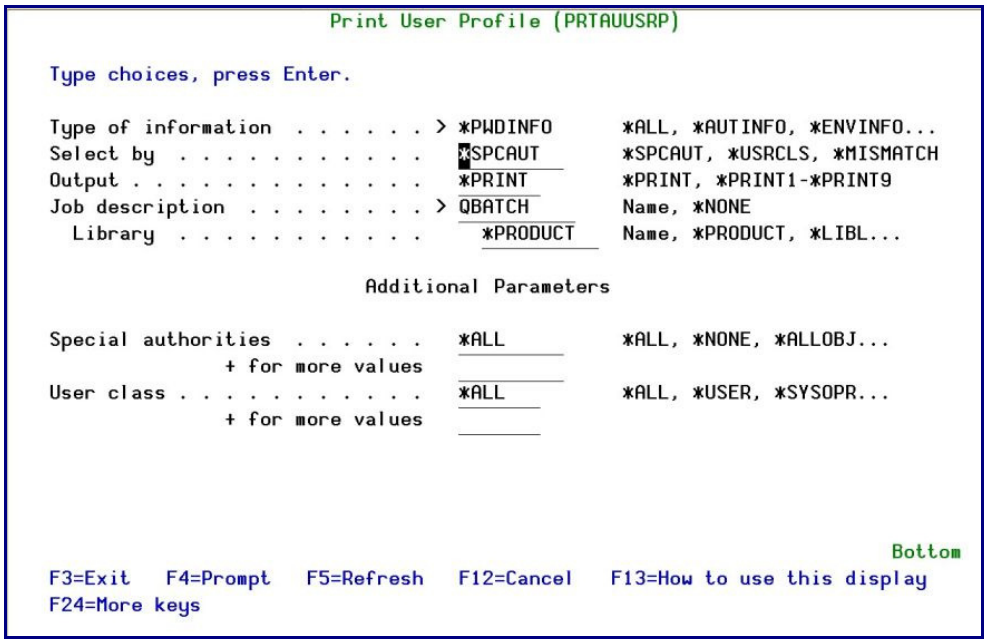
Action taken against profiles . . . . . : *NONE

User Profile	STATUS	PWDEXP	Text
AHARALE	*ENABLED	*YES	
ALLOBJ	*ENABLED	*NO	
ANGUS	*DISABLED	*YES	
ANGUS2	*DISABLED	*YES	
ANONYMOUS	*DISABLED	*NO	
CPUSCOPE	*DISABLED	*YES	CpuScope
DRDA	*DISABLED	*YES	
ELIH	*ENABLED	*NO	Eli Haleli
EMAIL	*DISABLED	*YES	
GENIUS1	*DISABLED	*YES	
GENIUS2	*DISABLED	*YES	
GENIUS3	*DISABLED	*YES	
GENIUS4	*DISABLED	*YES	
GENIUS5	*DISABLED	*YES	

User Profiles with Default Passwords

Password Statistical Report

This feature allows users to print a report showing information similar to that displayed on the **Work with Users Wizard**.



Print User Profile

Parameter or Option	Description
Select by	***SPCAUT** = User profiles will be selected for the report based on special authorities ***USRCLS** = User profiles will be selected for the report based on user class ***MISMATCH** = User profiles will be selected for this report only if their special authorities are not the same as the default authorities assigned to their user class
Job description	Batch job subsystem and library
Special authorities	Filter according to one or more special authority types
User class	Filter according to one or more user class types

Chapter 6: Object Security

Object security controls access to objects originating from specific external sources such as FTP, ODBC, etc. The user can specify the operations an external user is allowed to perform on these objects. Rules may be defined for the following object types: files, libraries, data queues, printer files, programs, commands and IFS objects.

Firewall can restrict a user's ability to perform specific actions, such as read, write, create, delete, rename, and run, etc., on protected objects.

Firewall offers an efficient system in which the user needs to create only a small number of general rules restricting the use of commands for all or most users, and then creates a few exceptions to these rules. This feature is discussed later on in its own section.

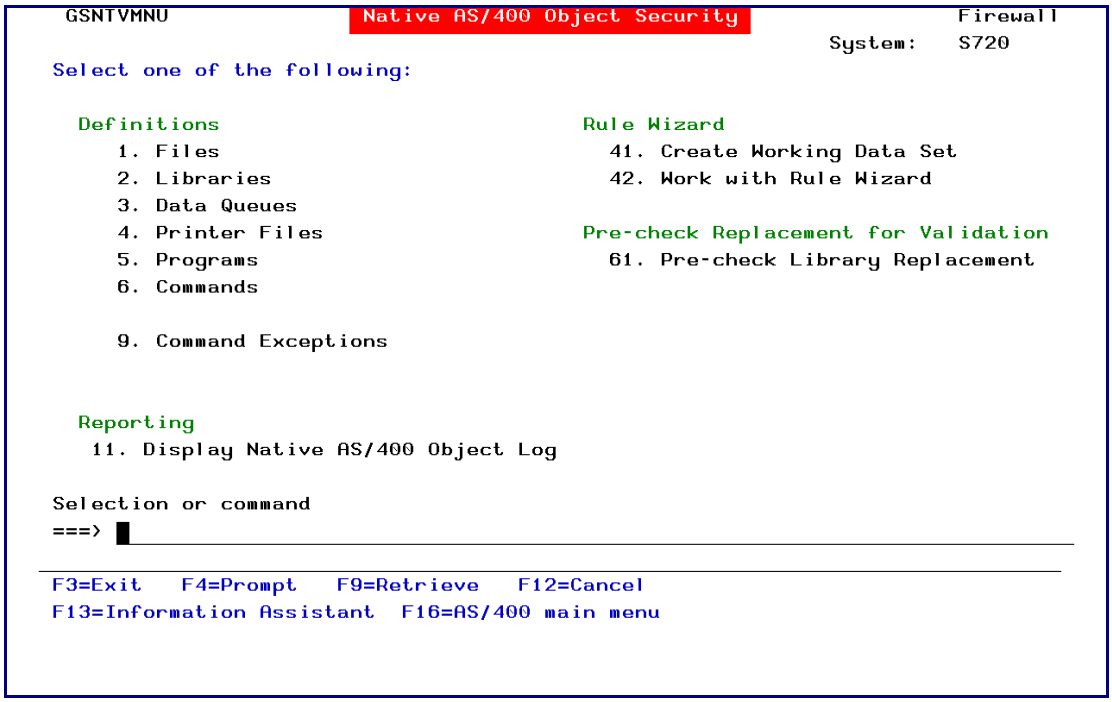
Procedural Overview

The basic procedure for defining any of the object security rules is similar. The following sections provide details and explanations regarding the specific parameters and definitions for each type of logon security rule.

1. Select **21** from the main menu. The **Native AS/400 Object Security** menu appears.
2. Choose the object type from the **Native AS/400 Object Security** menu.
   a. Select **1** for files.
   b. Select **2** for libraries.
   c. Select **3** for data queues.
   d. Select **4** print files.
   e. Select **5** for programs.
   f. Select **6** for commands.
   g. Select **7** command exceptions.
3. The appropriate **Work with Object Security** screen appears. Refer to the appropriate rule type section for details regarding that screen.
4. Type **1** to select an existing rule for editing or press **F6** to create a new rule. The relevant **ADD/Modify** screen appears.
5. Enter or modify the parameters for the appropriate rule type. Refer to the appropriate rule type section for details and explanations regarding the screen and its parameters
6. Press **Enter** to confirm and return to the **Work with Object Security** screen.
7. Press **Enter** to confirm and return to the main menu.

Native OS/400 Objects

This section describes the screens used to work with native OS/400 objects. Select **21. Native AS/400 Objects** from the main menu. The **Native AS/400 Object Security** menu appears.

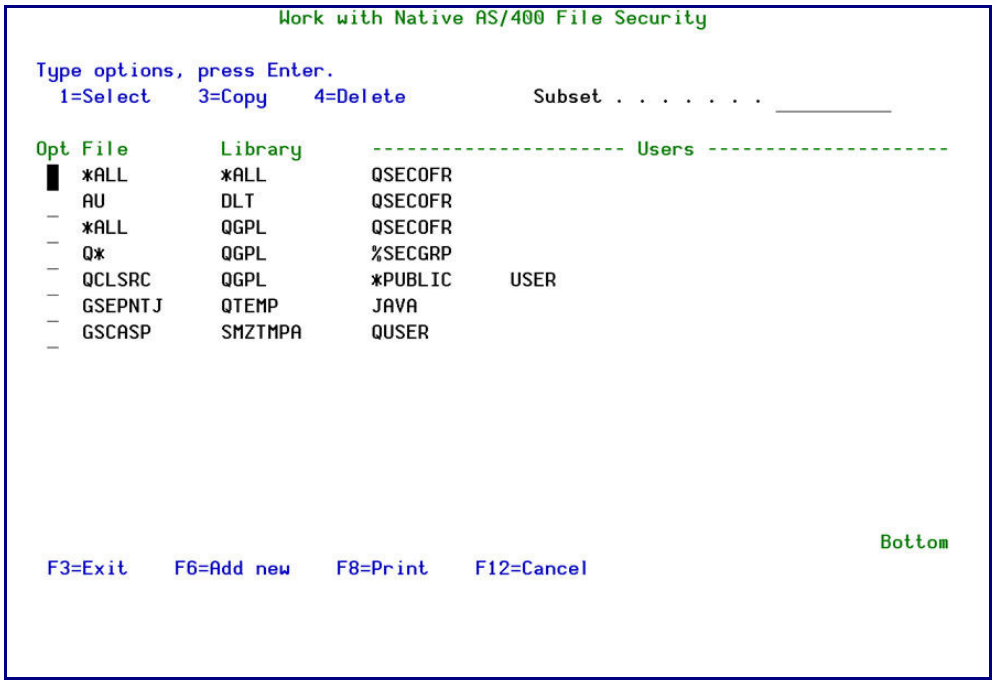


Native AS/400 Object Security

The specific details of each object type are discussed in the following sections.

Files

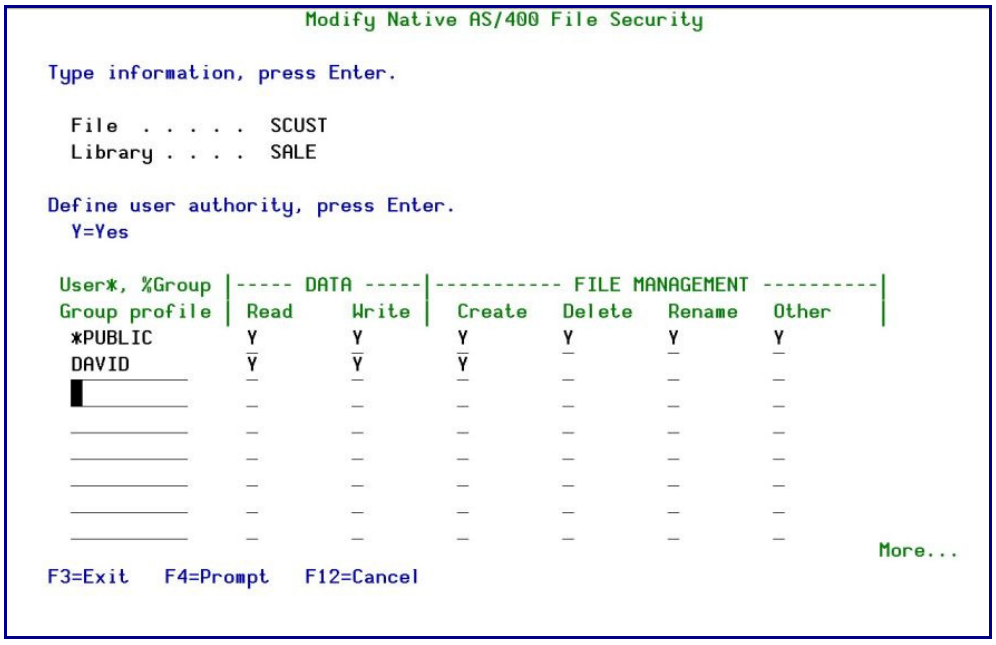
2. From the **Native AS/400 Object Security** screen, select **1. Files**. The **Work with Native AS/400 File Security** screen appears. This screen lists all the rules currently in effect.
3. Type **1** to modify an existing rule or press **F6** to create a new rule.
4. Press **Enter** to return to the **Native OS/400 Object Security** menu.



Work with Native AS/400 File Security

Parameter or Option	Description
Opt	**1** = Select this rule for modification **3** = Copy this rule for another user **4** = Delete this rule
F6	Add new rule
F8	Print rules
Subset	Search a file or library whose names contain the subset

Add/Modify Native AS/400 File Security



Modify Native AS/400 File Security

In the **Modify Native AS/400 File Security** screen, define permissions for one user profile, profile group or **Firewall** user group on each line. Use the **PageUp** and **PageDown** keys to scroll through a long list.

For each activity type, '**Y**' = Activity allowed and **Blank** = Activity rejected. ***Public** is the default rule for all users not explicitly covered by an object security rule.

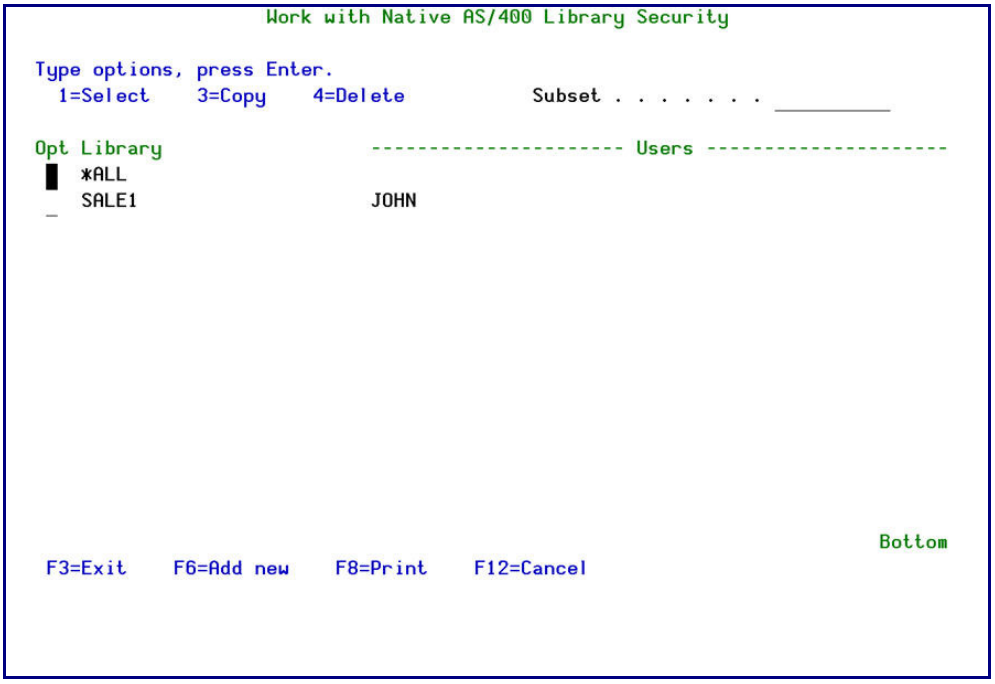
NOTE: *Always make certain that the* ***Public** *rule contains sufficient permissions to allow access of ordinary users to objects.*

Parameter or Option	Description
File/Library	File name and library path of the file(s) included in this rule.
User, Group	Enter user profile or press **F4** to select a user profile or group name from list.
Read	'**Y**' = Users may read the specified file
Write	'**Y**' = Users may write, edit or update the specified file
Create	'**Y**' = Users may create a new file
Delete	'**Y**' = Users may delete the specified file
Rename	'**Y**' = Users may rename the specified file
Other	'**Y**' = Users may perform other actions on the specified file.

Press **Enter** to return to the **Work with Native Object Security** screen.

Libraries

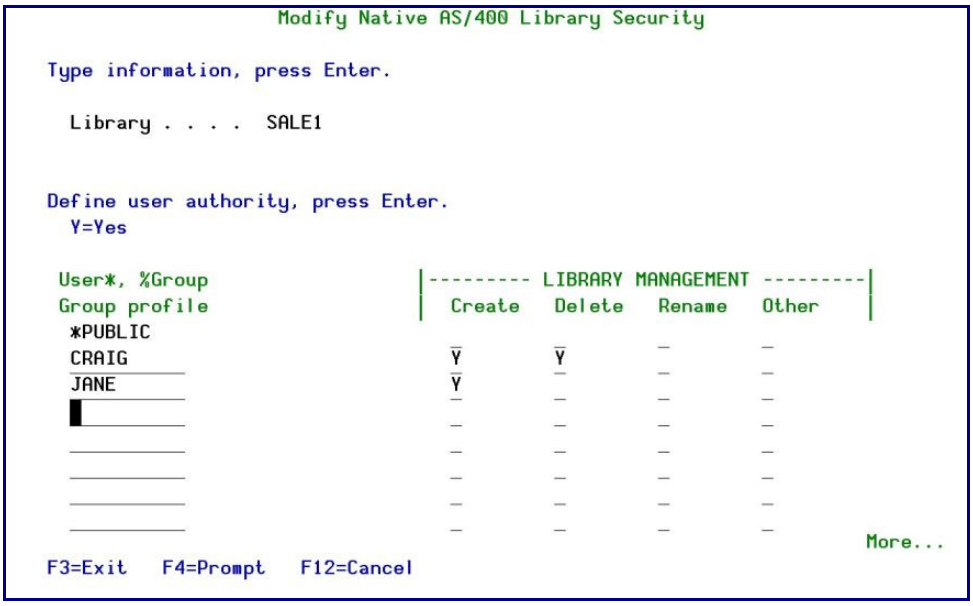
1. From the **Native AS/400 Object Security** screen, select **2. Libraries**. The **Work with Native AS/400 Library Security** screen appears. This screen lists all the rules currently in effect.
2. Type **1** to modify an existing rule or press **F6** to create a new rule.
3. Press **Enter** to return to the **Native OS/400 Object Security** menu.



Work with Native AS/400 Library Security

Parameter or Option	Description
Opt	**1** = Select this rule for modification **3** = Copy this rule for another user **4** = Delete this rule
F6	Add new rule
F8	Print rules
Subset	Search a file or library whose names contain the subset

Add/Modify Native AS/400 Library Security



Modify Native AS/400 Library Security

In the **Modify Native AS/400 Library Security** screen, define permissions for one user profile, profile group or **Firewall** user group on each line. Use the **PageUp** and **PageDown** keys to scroll through a long list.

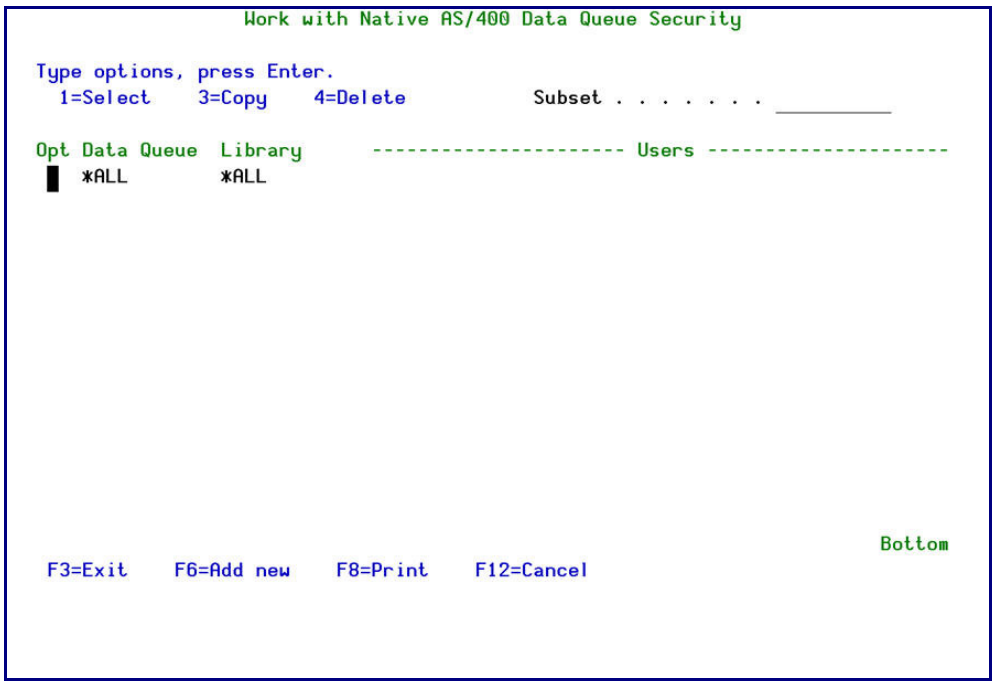
For each activity type, '**Y**' = Activity allowed and **Blank** = Activity rejected. ***Public** is the default rule for all users not explicitly covered by an object security rule. Always make certain that the ***Public** rule contains sufficient permissions for ordinary users to access objects.

Parameter or Option	Description
Library	Shows the libraries covered by the rule
Create	'**Y**' = Users may create a new file
Delete	'**Y**' = Users may delete the specified file
Rename	'**Y**' = Users may rename the specified file
Other	'**Y**' = Users may perform other actions on the specified file.

Press **Enter** to return to the **Work with Native Object Security** screen.

Data Queues

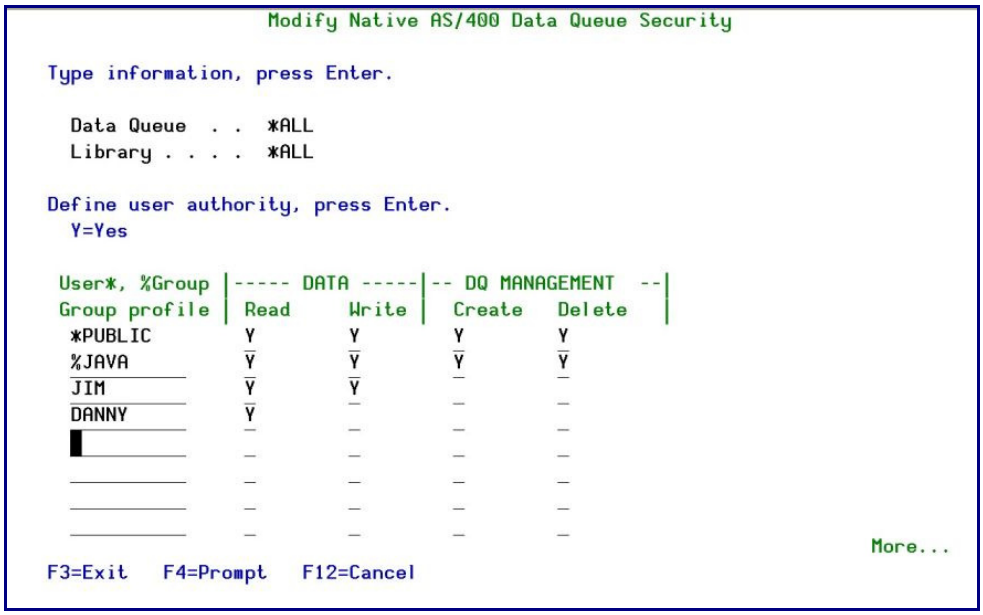
1. From the **Native AS/400 Object Security** screen, select **3. Data Queues**. The **Work with Native AS/400 Data Security** screen appears. This screen lists all the rules currently in effect.
2. Type **1** to modify an existing rule or press **F6** to create a new rule.
3. Press **Enter** to return to the **Native OS/400 Object Security** menu.



Work with Native AS/400 Data Queue Security

Parameter or Option	Description
Opt	**1** = Select this rule for modification **3** = Copy this rule for another user **4** = Delete this rule
F6	Add new rule
F8	Print rules
Subset	Search a data queue or library whose names contain the subset

Add/Modify Object Data Queue Security



Modify Native AS/400 Data Queue Security

Define permissions for one user profile, profile group or **Firewall** user group on each line. Use the **PageUp** and **PageDown** keys to scroll through a long list.

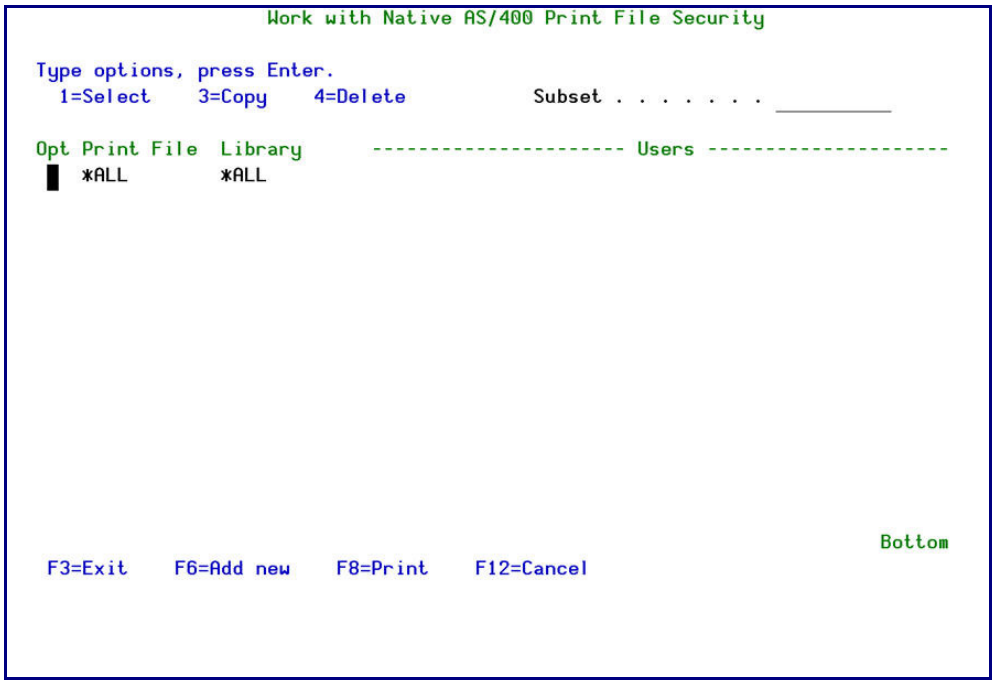
For each activity type, '**Y**' = Activity allowed and **Blank** = Activity rejected. ***Public** is the default rule for all users not explicitly covered by an object security rule. Always make certain that the ***Public** rule contains sufficient permissions for ordinary users to access objects.

Parameter or Option	Description
Data Queue	Shows the data queue(s) included in this rule.
User, Group	Enter user profile or press **F4** to select a user profile or group name from list.
Read	'**Y**' = Users may read the specified file
Write	'**Y**' = Users may write, edit or update the specified file
Create	'**Y**' = Users may create a new file
Delete	'**Y**' = Users may delete the specified file

Press **Enter** to return to the **Work with Native Object Security** screen.

Printer Files

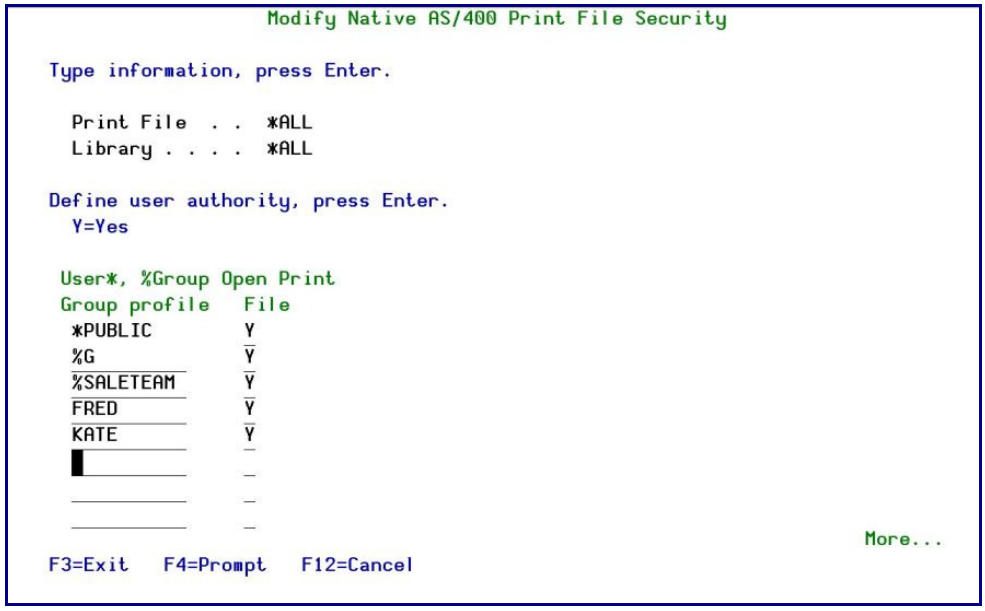
1. From the **Native AS/400 Object Security** screen, select **4. Printer Files**. The **Work with Native AS/400 Print File Security** screen appears. This screen lists all the rules currently in effect.
2. Type **1** to modify an existing rule or press **F6** to create a new rule.
3. Press **Enter** to return to the **Native OS/400 Object Security** menu.



Work with Native AS/400 Print File Security

Parameter or Option	Description
Opt	**1** = Select this rule for modification **3** = Copy this rule for another user **4** = Delete this rule
F6	Add new rule
F8	Print rules
Subset	Search a print file or library whose names contain the subset

Add/Modify Print File Security



Modify Native AS/400 Print File Security

Define permissions for one user profile, profile group or **Firewall** user group on each line. Use the **PageUp** and **PageDown** keys to scroll through a long list.

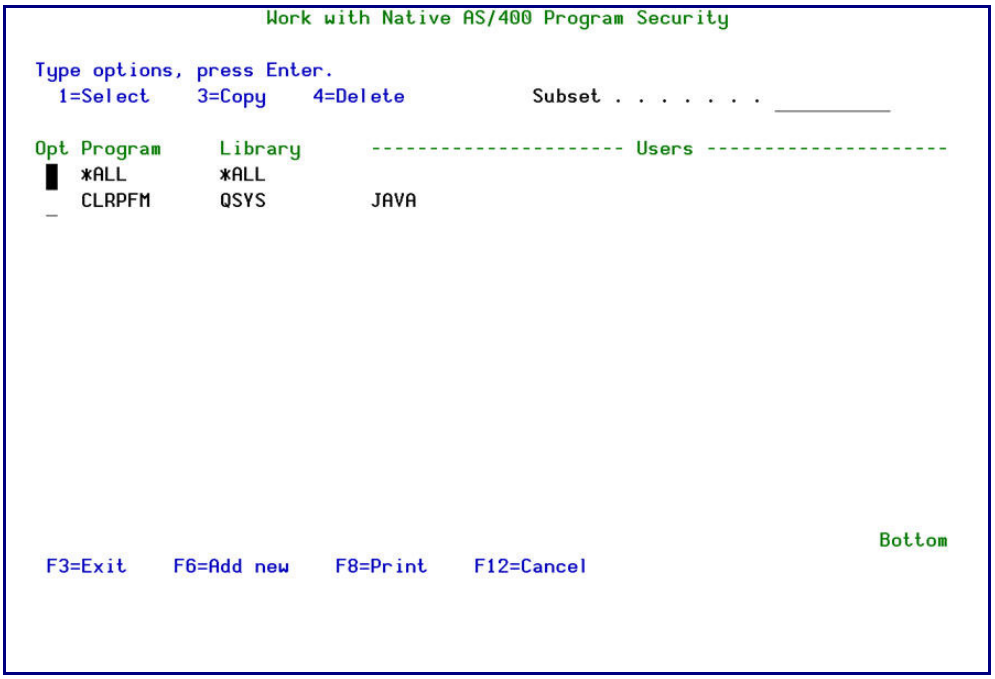
For each activity type, '**Y**' = Activity allowed and **Blank** = Activity rejected. ***Public** is the default rule for all users not explicitly covered by an object security rule. You should always make certain that the ***Public** rule contains sufficient permissions to allow access to objects by ordinary users.

Parameter or Option	Description
Print File/Library	Shows the print file(s) and library path included in this rule
User, Group	Enter user profile or press **F4** to select a user profile or group name from list.
Open Print file	'**Y**' = Users may use the specified file

Press **Enter** to return to the **Work with Native Object Security** screen.

Programs

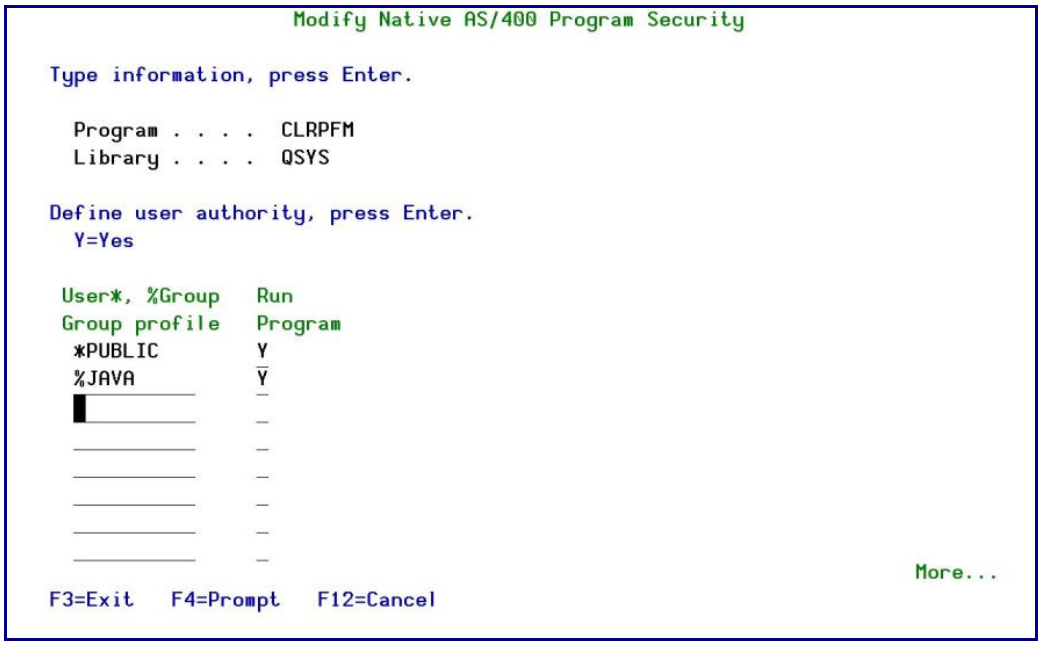
1. From the **Native AS/400 Object Security** screen, select **5. Programs**. The **Work with Native AS/400 Program Security** screen appears. This screen lists all the rules currently in effect.
2. Type **1** to modify an existing rule or press **F6** to create a new rule.
3. Press **Enter** to return to the **Native OS/400 Object Security** menu.



Work withAS/400 Program Security

Parameter or Option	Description
Opt	**1** = Select this rule for modification **3** = Copy this rule for another user **4** = Delete this rule
F6	Add new rule
F8	Print rules
Subset	Search a program or library whose names contain the subset

Add/Modify Object Security Screen



Modify Native AS/400 Program Security

Define permissions for one user profile, profile group or **Firewall** user group on each line. Use the **PgUp** and **PgDn** keys to scroll through a long list.

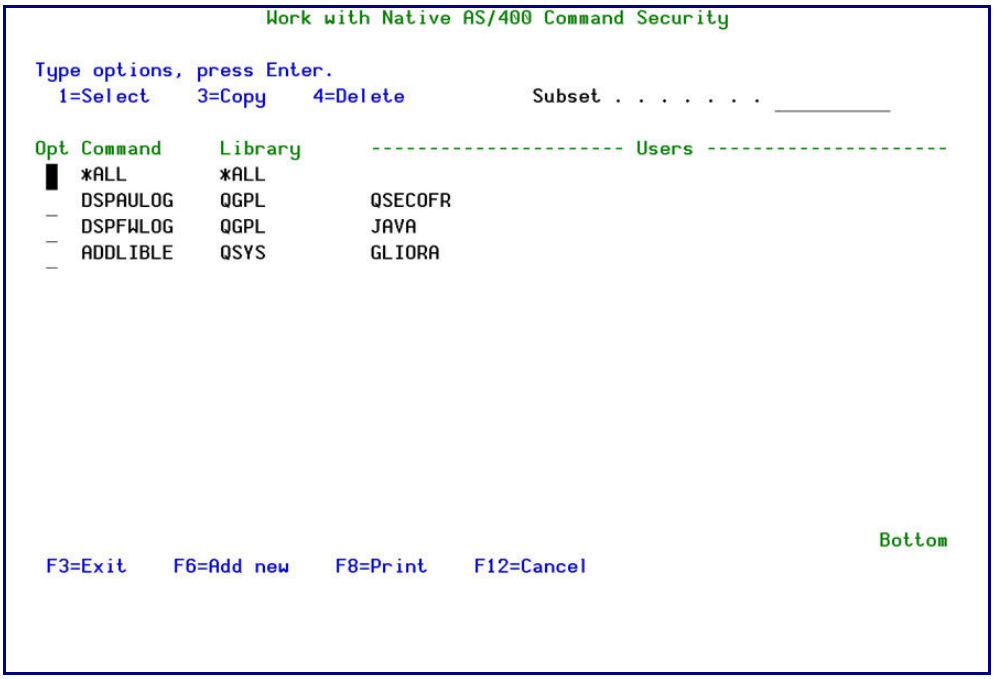
For each activity type, '**Y**' = Activity allowed and **Blank** = Activity rejected. ***Public** is the default rule for all users not explicitly covered by an object security rule. You should always make certain that the ***Public** rule contains sufficient permissions for ordinary users to access objects.

Parameter or Option	Description
Program/Library	Name and library path of the program(s) included in this rule
User, Group	Enter user profile or press **F4** to select a user profile or group name from list.
Run Program	'**Y**' = Users may run the specified program

Press **Enter** to return to the **Work with Native Object Security** screen.

Commands

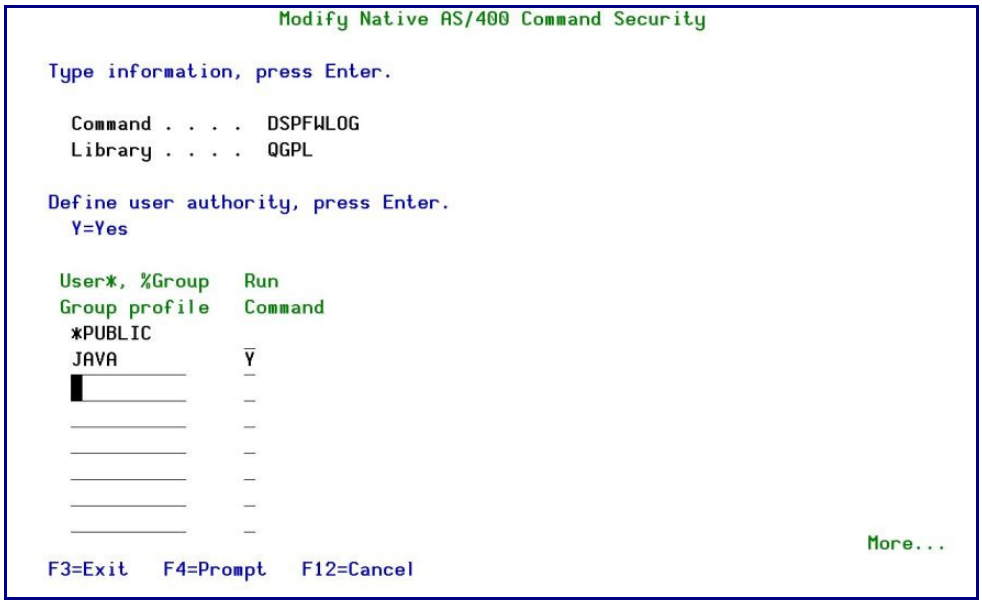
1. From the **Native AS/400 Object Security** screen, select **6. Commands**. The **Work with Native AS/400 Command Security** screen appears. This screen lists all the rules currently in effect.
2. Type **1** to modify an existing rule or press **F6** to create a new rule.
3. Press **Enter** to return to the **Native OS/400 Object Security** menu.



Work with Native AS/400 Command Security

Parameter or Option	Description
Opt	**1** = Select this rule for modification **3** = Copy this rule for another user **4** = Delete this rule
F6	Add new rule
F8	Print rules
Subset	Search a command or library whose names contain the subset

Add/Modify Command Security



Modify Native AS/400 Command Security

Define permissions for one user profile, profile group or **Firewall** user group on each line. Use the **PageUp** and **PageDown** keys to scroll through a long list.

For each activity type, '**Y**' = Activity allowed and **Blank** = Activity rejected. ***Public** is the default rule for all users not explicitly covered by an object security rule. Always make certain that the ***Public** rule contains sufficient permissions to allow ordinary users to access objects.

Parameter or Option	Description
Command /Library	Name and library path of the command(s) included in this rule
User, Group	Enter user profile or press **F4** to select a user profile or group name from list.
Run Command	'**Y**' = Users may execute the specified command

Press **Enter** to return to the **Work with Native Object Security** screen.

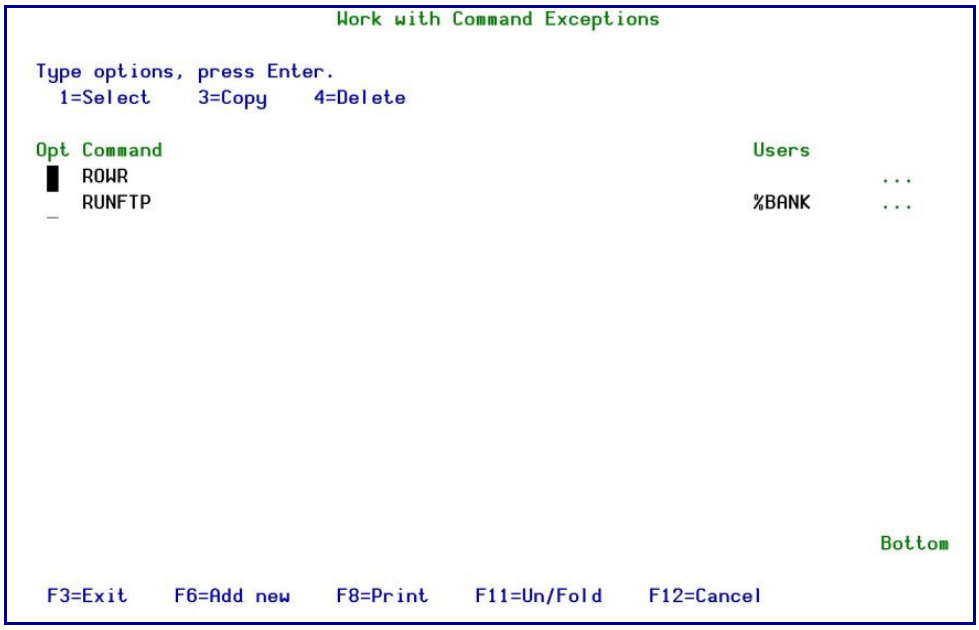
Command Exceptions

When working with command rules, it is easier to define restrictions globally for all users or for large groups of users. Unfortunately, there are usually only a few users who truly need permission to execute certain commands. **Firewall** provides the ability to create one rule that prevents all or most users from using certain commands and then to create a few exceptions to that rule for the select few who are authorized to use the relevant commands.

One can define exceptions that will permit commands to be executed via the command line, within programs, FTP, REXEC (Remote Command Execution), and/or DDM.

The procedure for working with exceptions is quite simple:

1. Define the global or general command security rules as described in the previous section.
2. Select **9** from the **Native AS/400 Object Security** menu. The following screen appears.
3. This screen lists all the rules currently in effect. Type **1** to work with an existing rule or press **F6** to create a new rule.

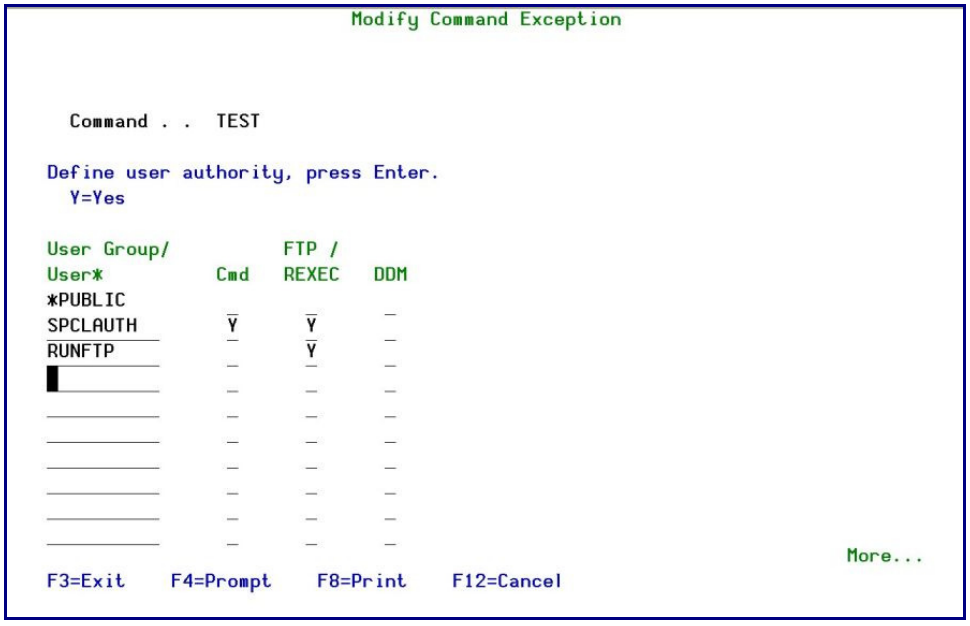


Work with Command Exceptions

Parameter or Option	Description
Opt	**1** = Select this rule for modification **3** = Copy this rule for another user **4** = Delete this rule

4. Press **Enter** to return to the **Native OS/400 Object Security** menu.

Modify Command Exception



Modify Command Exception

Define permissions for one user profile, profile group or **Firewall** user group on each line. Use the **PageUp** and **PageDown** keys to scroll through a long list.

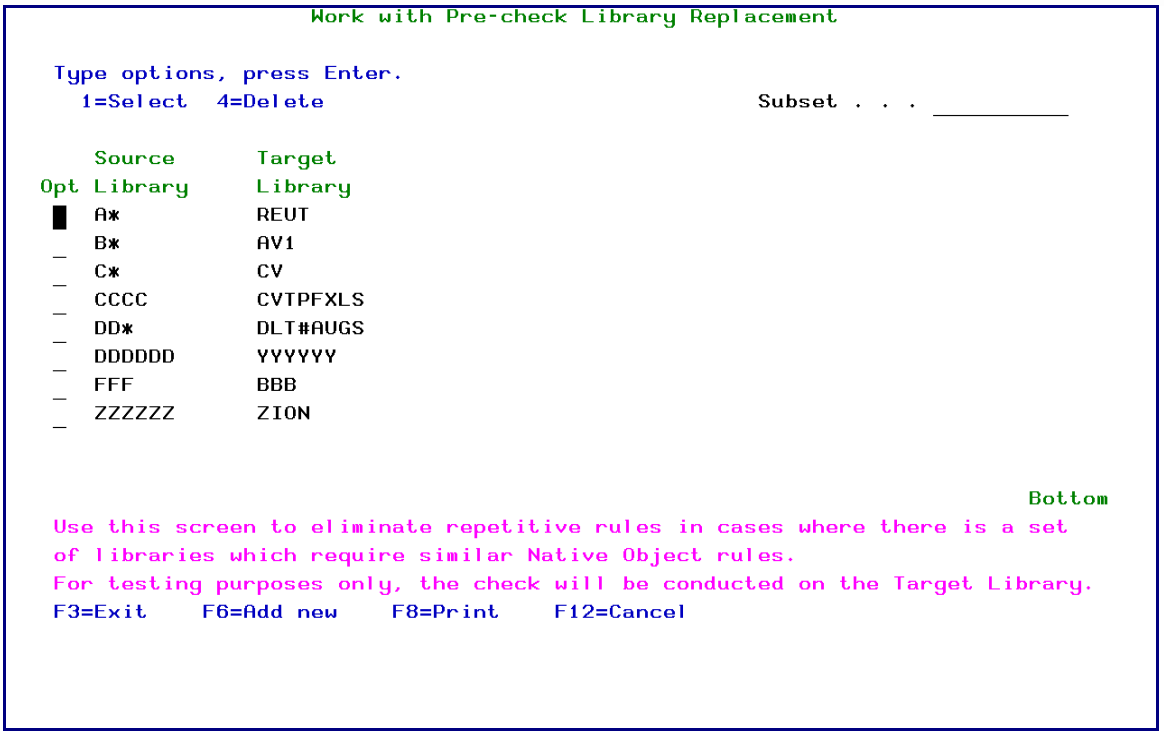
For each activity type, '**Y**' = Activity allowed and **Blank** = Activity rejected. ***Public** is the default rule for all users not explicitly covered by an object security rule. You should always make certain that the ***Public** rule contains sufficient permissions to allow access to objects by ordinary users.

Parameter or Option	Description
Command /Library	Name and library path of the command(s) included in this rule
User/User Group	Enter user profile or press **F4** to select a user profile from list.
Command	'**Y**' = Users may execute OS/400 commands
FTP/REXEC	'**Y**' = Users may execute commands via FTP or REXEC
DDM	'**Y**' = Users may execute commands via DDM

Press **Enter** to return to the **Native OS/400 Object Security** screen.

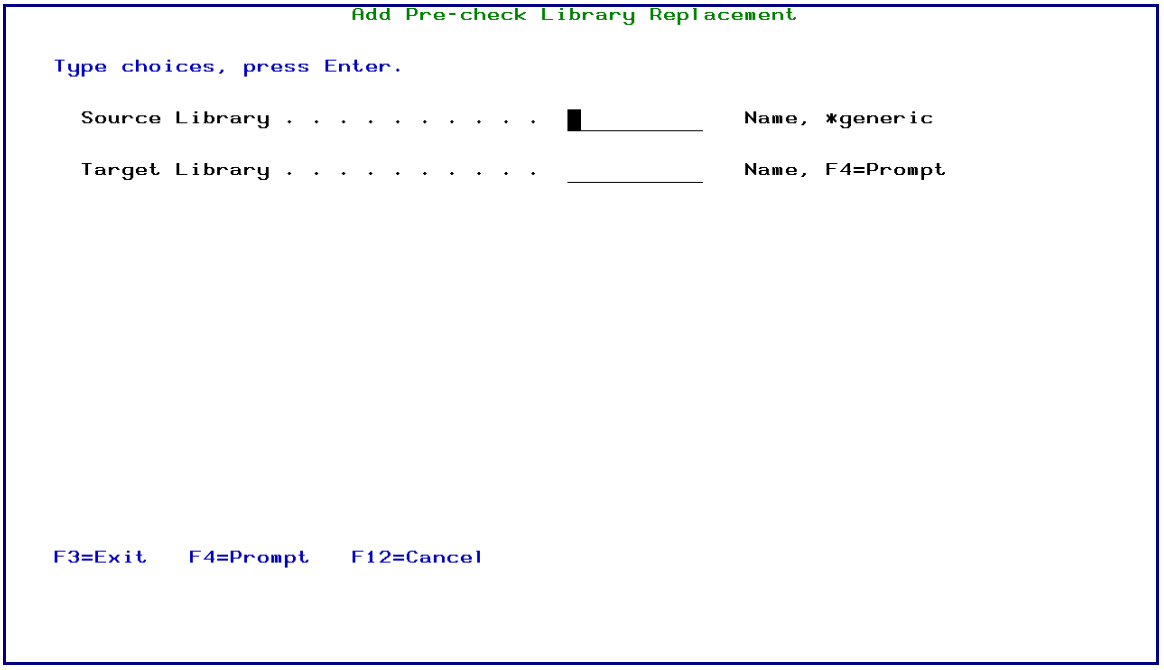
Work with Pre-check Library Replacement

In case there are many libraries that require the same authorities, select option 61 to create one library of authorization rules to be applied to the list of libraries.



Work with Pre-check Library Replacement

Press F6 to add a new library of rules. This will be the "Target Library"

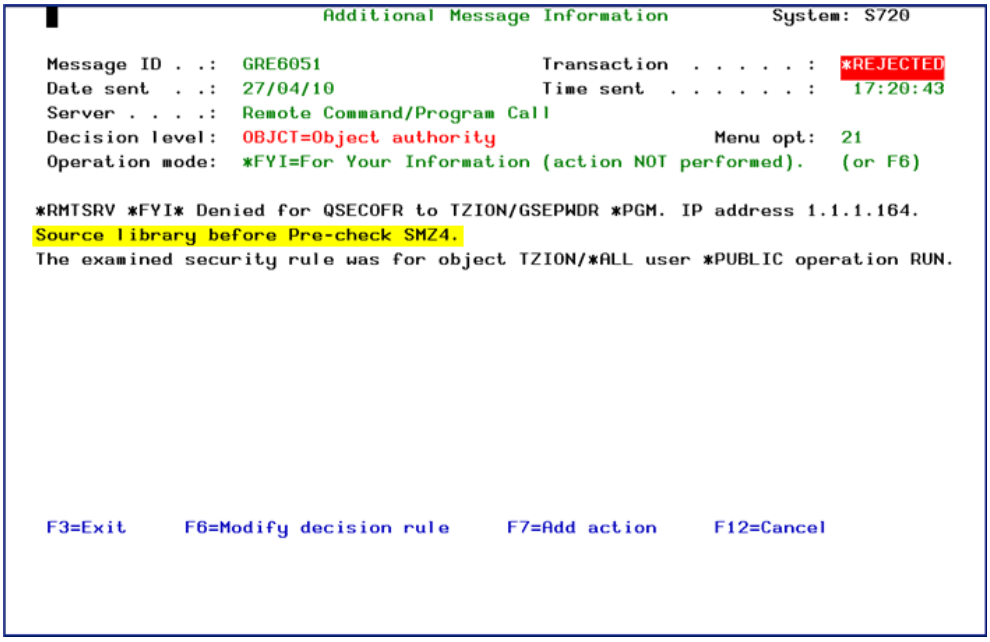


Add a new Target Library

Enter the "Source Library" of the objects you wish to apply the authorization rule. Enter a "Target Library" that will contain a single set of rules to be applied.

In the specific object screen (option 1-9) define the original rules to be applied trough the "Target Library".

The massage will appear in the Firewall log as follows:

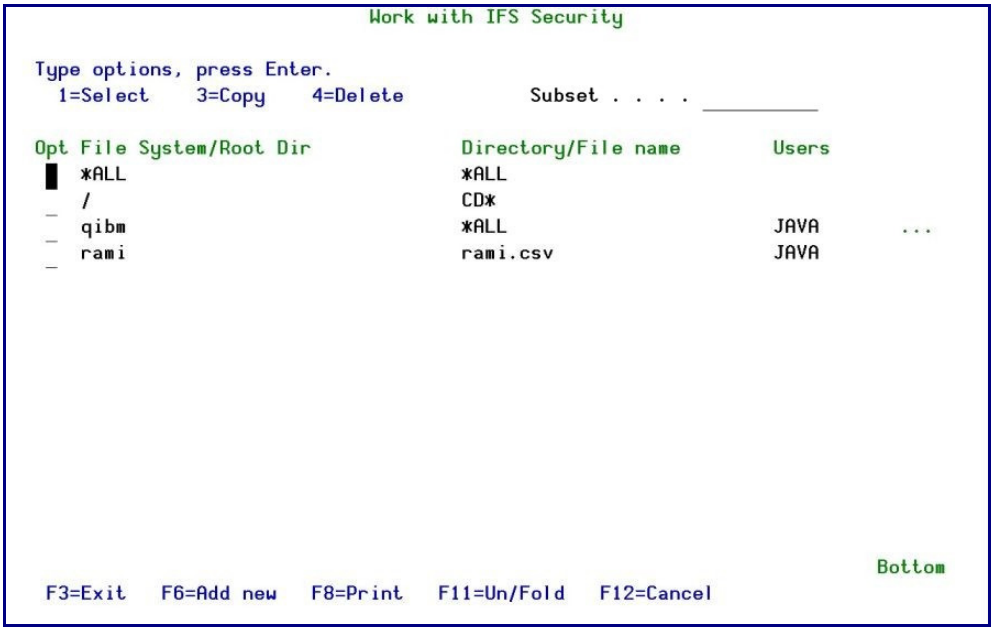


IFS Objects

To work with IFS Object Security:

1. Select **22** from the main menu. The **IFS Security** menu appears.
2. Select **1** from the **IFS Security** menu. The **Work with IFS Security** screen appears.
3. This screen lists all the IFS rules currently in effect. Type **1** to work with an existing rule or press **F6** to create a new rule.
4. Press **Enter** to return to the **IFS Security** menu.

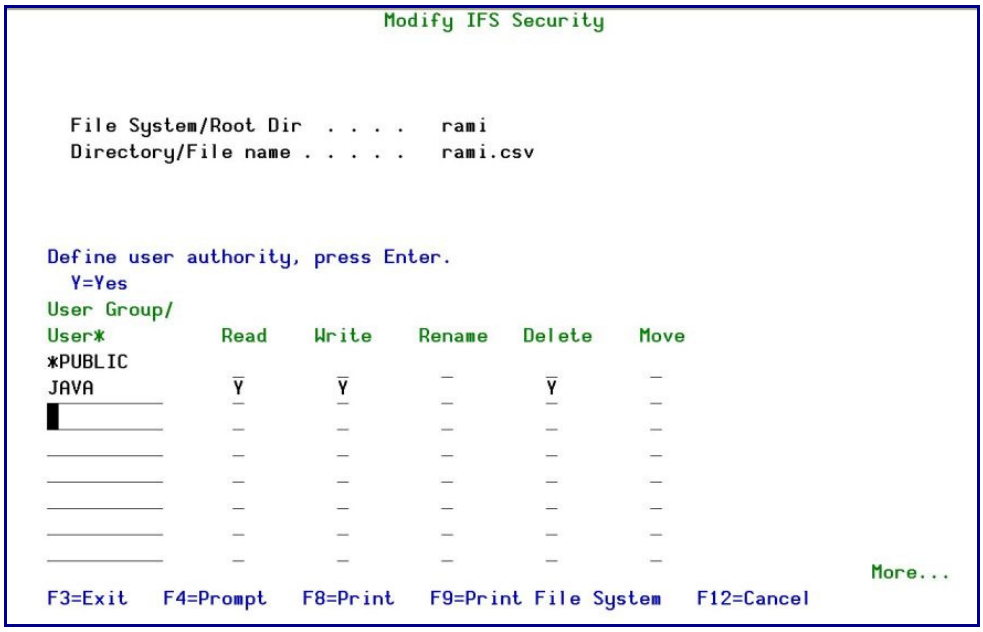
NOTE: *File names for IFS objects may be entered with upper or lower case letters.*



Work with IFS Security

Parameter or Option	Description
Opt	**1** = Select this rule for modification **3** = Copy this rule for another user **4** = Delete this rule
F6	Add new rule
F8	Print rules
Subset	Search a print file or library whose names contain the subset

Add/Modify IFS Security



Modify IFS Security

Define permissions for one user profile, profile group or **Firewall** user group on each line. Use the **PageUp** and **PageDown** keys to scroll through a long list.

For each activity type, '**Y**' = Activity allowed and **Blank** = Activity rejected. ***Public** is the default rule for all users not explicitly covered by an object security rule. You should always make certain that the ***Public** rule contains sufficient permissions to allow access to objects by ordinary users.

Parameter or Option	Description
File System	Shows the IFS file system to which this rule apples
Directory/File	Shows the file name(s) and directory path(s) included in this rule
User/User Group	Enter user profile or press **F4** to select a user profile from list.
Read	'**Y**' = Users may read the specified file
Write	'**Y**' = Users may write, edit or update the specified file
Delete	'**Y**' = Users may delete the specified file
Rename	'**Y**" = Users may rename the specified file
Other	'**Y**' = Users may perform other actions on the specified file.

Press **Enter** to return to the **Work with IFS Object Security** screen.

Chapter 7: Logon Security

Logon security rules define logon attributes for specific combinations of IP addresses (or SNA names) and user profiles. In addition, logon security rules can control what a user is permitted to do subsequent to logon. For example:

- Modify a logon request by automatically assigning an alternate user profile having different, presumably more restrictive, permissions and authorities
- Assign different initial menus, current libraries and initial auto-run programs than those specified in the user profile (Telnet only)
- Rename Telnet terminal names to (and thereby the system job name) in order to facilitate easy tracking of remote access requests, real time auditing and **Action** proactive responses.
- Overriding default system settings to force the appearance of the sign-on screen.

Logon security rules are available for the following server types:

- Incoming FTP requests
- Outgoing FTP requests
- REXEC (Remote Command Execution)
- Telnet
- Sign-on requests via the Internet (WSG)
- Passthrough

Subsequent sections discuss the options and parameters for each individual rule type.

NOTE: *The* **Security Level** *parameter in the server security rule must be set to* **'9'** *(full) in order to enable logon security for the appropriate servers. Refer to*

Chapter 3: for details.

Procedural Overview

The basic procedure for defining any of the logon security rules is similar. The following sections provide details and explanations regarding the specific parameters and definitions for each type of logon security rule.

3. Choose the logon type from the main menu.
   - Select **31** for FTP and REXEC
   - Select **32** for Telnet and Sign-on
   - Select **33** for Internet logon (WSG)
   - Select **34** Passthrough
4. Set definitions.
   - Each **Logon Security** menu follows the same principles. Select the definition you want to set. For example, in the **FTP/REXEC Logon Security** screen, choose **1** for Incoming FTP, and **2** for Outgoing FTP. The appropriate **Work with Logon Security** screen appears. Refer to the appropriate rule type section for details of the screen.
   - Type **1** to select an existing rule for editing or press **F6** to create a new rule. The **Add/Modify** screen appears. The screen parameters and options are the same.
   - Enter modify the parameters for the appropriate rule type. Refer to the appropriate rule type section or for details and explanations regarding the screen and its parameters
   - Press **Enter** to confirm and return to the **Work with Logon Security** screen.
5. Choose your desired reporting (logs) option by selecting options **11** (and optionally **12** and **13**) for display logs
6. Press **Enter** to confirm and return to the main menu.

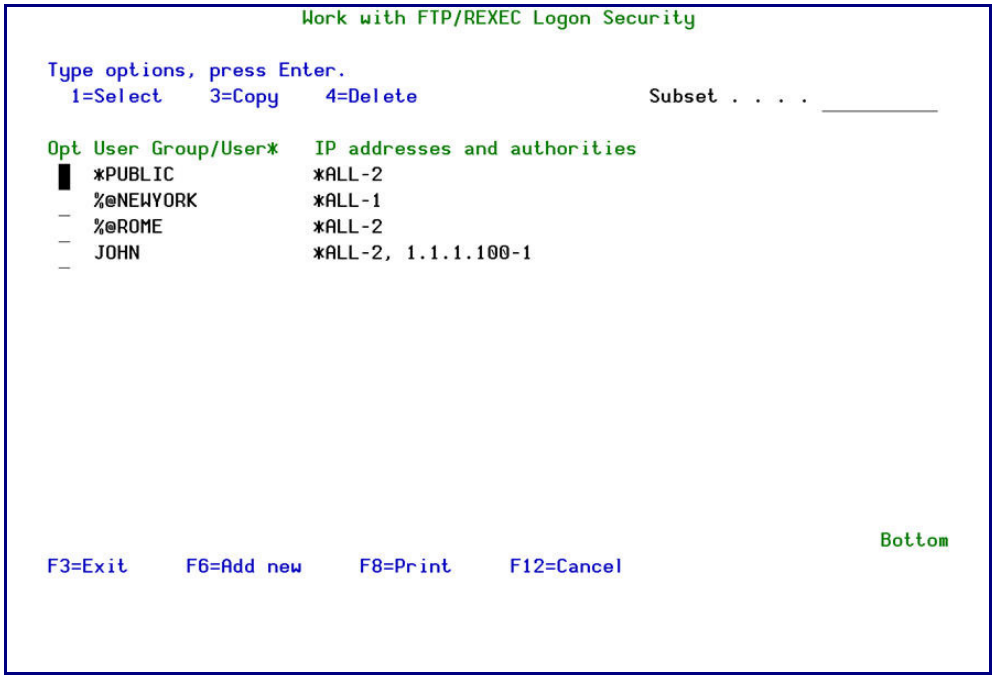
Basic options for screens are given in the table below.

Option	Description
Opt	**1** = Select this rule for modification **3** = Copy this rule for another user **4** = Delete this rule **5** = IP Range (WSG Only) **F6** = Add new rule **F8** = Print rules **F9** = Add new rule **F11** = Alternate view (changes display by reducing the amount of lines on screen)

FTP/REXEC (Incoming)

This server is called when clients make requests to connect to the AS/400 by FTP or REXEC server.

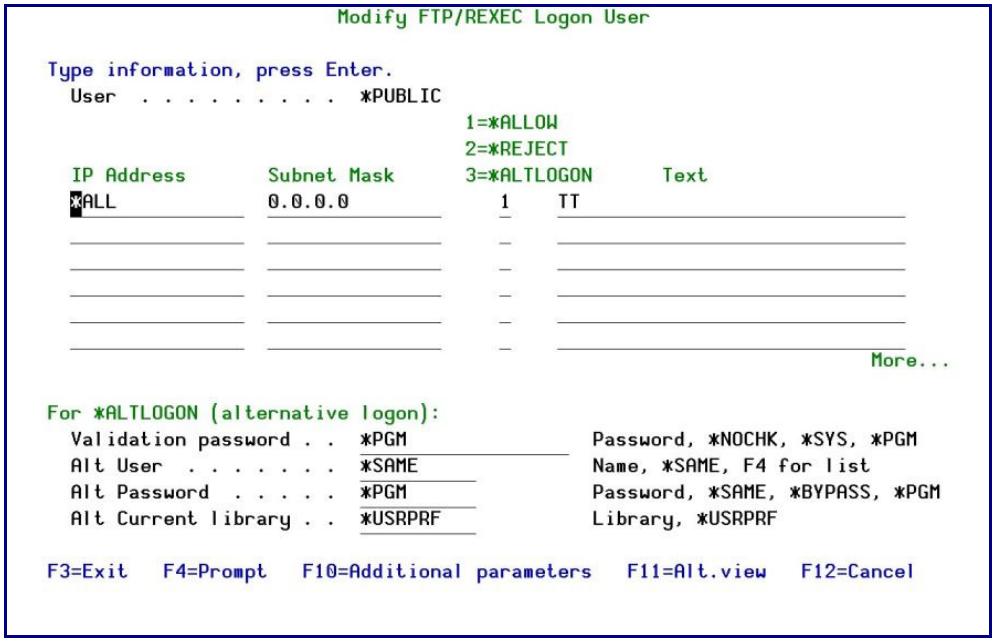
1. To set Logon security rules for FTP/REXEC, select **31. FTP/REXEC** from the main menu.
2. From the FTP/REXEC Logon Security screen, select option **1**. The **Work with FTP/REXEC Logon Security** screen appears.
3. To add a new rule, press **F6**. The **Add FTP/REXEC Logon User** screen appears (screen and parameters are the same as Modify FTP/REXEC Logon User, seen on the following page).
4. Set parameters according to the following table and press **Enter**. FTP rules are according to user and IP.



Work with FTP/REXEC Logon Security

Parameter or Option	Description
Opt	**1** = Select this rule for modification **3** = Copy this rule for another user **4** = Delete this rule
F6	Add new rule
F8	Print rules
Subset	Search a user group/user or IP addresses/authorities whose names contain the subset
User Group/ User	User and/or user group for whom the rules are set

IP addresses and authorities	**1** = Allowed **2** = Rejected **3** = Alternative Sign-on (see *Alternative Logon* in the following table for more details)



Modify FTP/REXEC Logon User

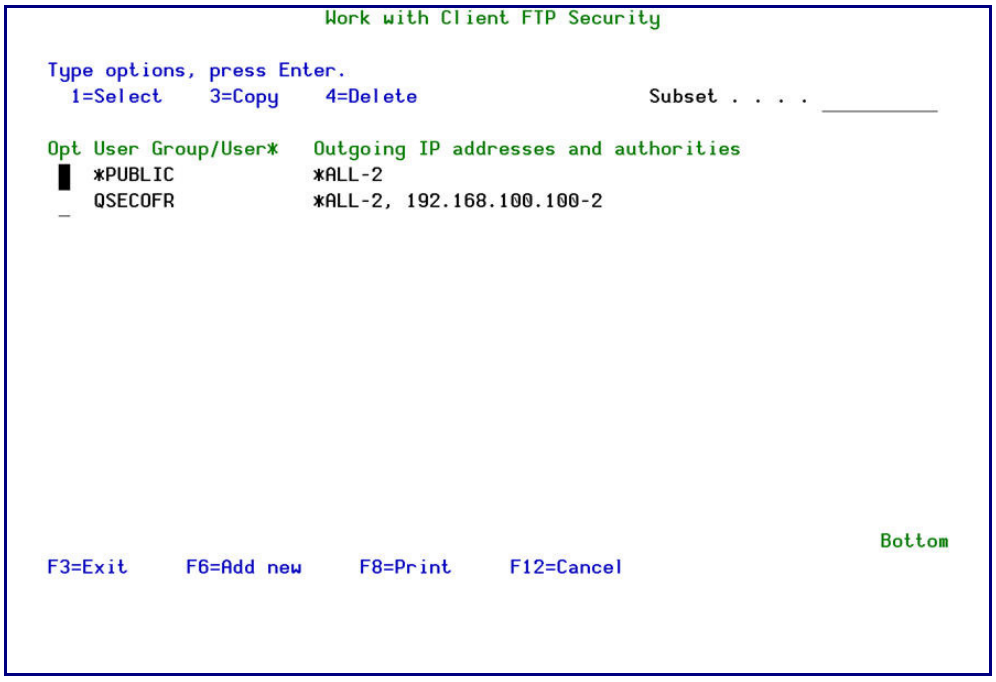
Parameter	Description
User	Enter the user profile
IP Address/Subnet Mask	Enter IP address and subnet mask in decimal format. You must enter the IPs from which you allow this user to access or be denied FTP to your AS/400. **TIP**: Press **F4** and select the subnet mask from a list.
Logon	**1** = Allow logon request **2** = Reject logon request **3** = Sign-on automatically if permitted by System i configuration
Time group	Enter time group name or press **F4** to select from list.
Text	Enter descriptive text
Alternative Logon	The user can access FTP from this IP but without the usual authorities. He will be changed into an "alternative" (shadow) user with limited capabilities. This "alternative" user needs to be configured in advance (***CRTUSRPRF***). This is done without that user's knowledge.
Validation Password	This is the password used to validate the incoming user profile. **Password** = Type the password that is to be required for sign-on ***NOCHK** = password is not checked

	***SYS** = Validation performed according to password in user profile ***PGM** = Use password presented by calling program
Alt User	Automatically sign-on with specified replacement user profile
Alt Password	This is the password to be assigned to the alternate user. Use the specified password for logon instead of that in the user profile ***Same or Blank** = Do not replace password for alternate user ***BYPASS** = Bypass password validation at sign-on for alternate user ***PGM** = Use password presented by calling program for alternate user
Alt Current Library	Automatically replace the default current library with specified library

Client FTP (Outgoing)

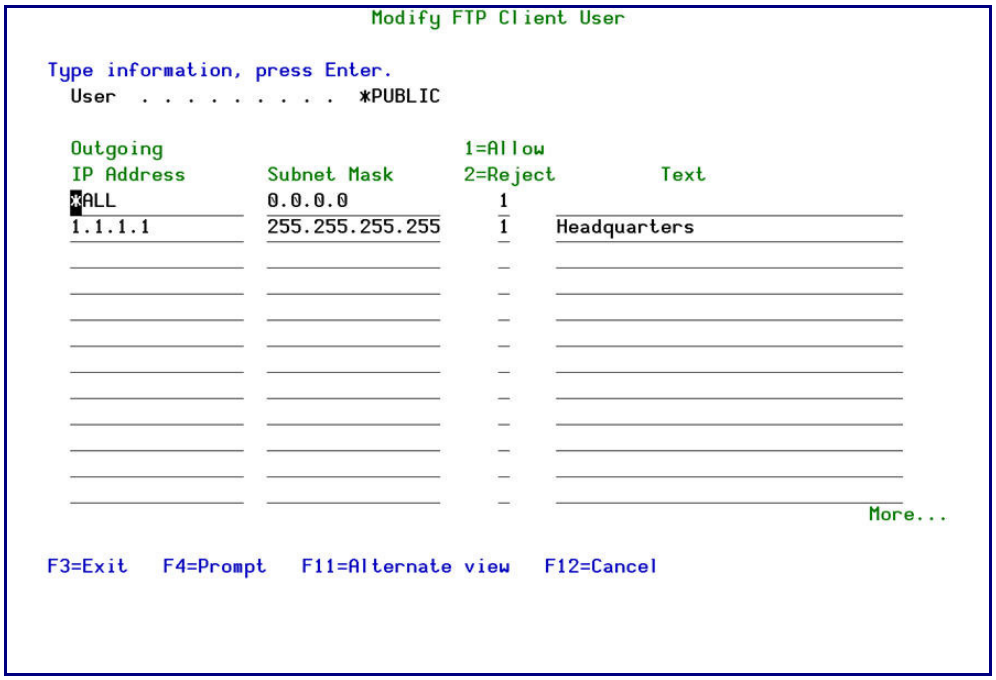
This server is used when the AS/400 issues FTP (sub) commands as a client to another system.

1. To work with Client FTP Security, select **2. Client FTP (Outgoing)** from the **FTP/REXEC Logon Security** screen. The **Work with Client FTP Security** screen appears.
2. Set parameters according to the following table and press **Enter**. Select **F6** to add a new rule or option **1** to modify.



Work with Client FTP Security

Parameter or Option	Description
Opt	**1** = Select this rule for modification **3** = Copy this rule for another user **4** = Delete this rule
F6	Add new rule
F8	Print rules
Subset	Search a user group/user or outgoing IP address whose names contain the subset
Outgoing IP addresses and authorities	IP of the system that the user tries to communicate from your AS/400. **1** = Allowed **2** = Rejected



Modify FTP Client User

Parameter	Description
User	Enter the user profile
Outgoing IP Address/Subnet Mask	Enter the outside system IP address and subnet mask in decimal format. Enter which IPs this user can connect to and which are to be rejected from your AS/400. **TIP**: Press **F4** and select the subnet mask from a list.
Allow/Reject	**1** = Allow logon request **2** = Reject logon request
Text	Enter descriptive text

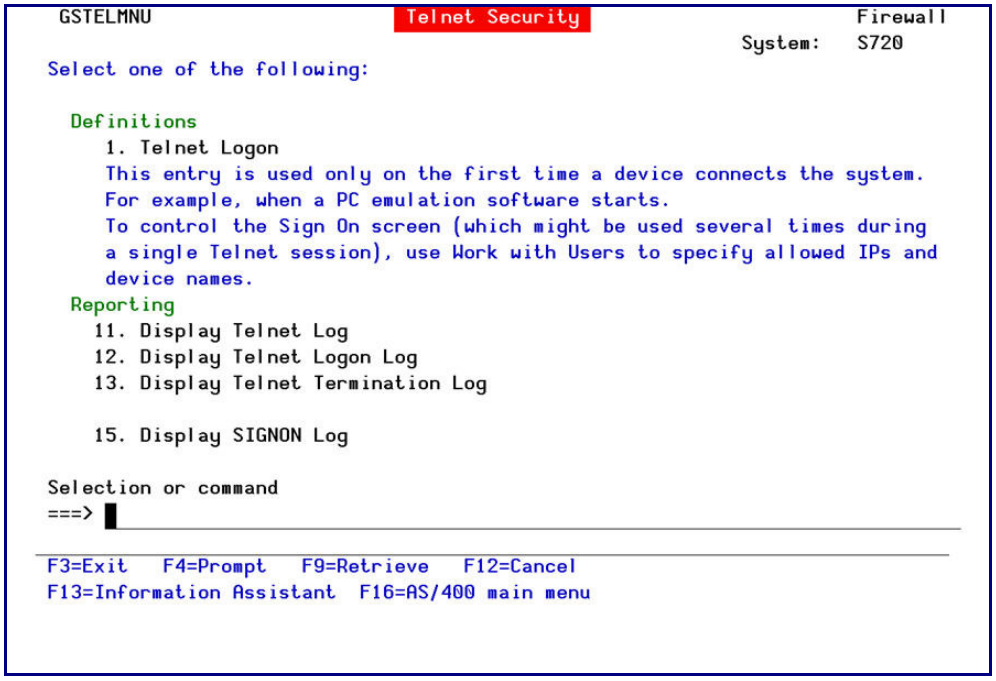
Telnet and Sign-on

This logon control manages two features

Option	Description
Telnet Logon (option 1)	Auto Sign-on configuration as well as IP address and password type restrictions. This entry is used only on the first time a device connects the system (for example, when PC emulation software starts).
Sign-on Validation (option 5)	Sign-on configurations per user with IP, terminal name, and number-of-sessions restrictions. This entry is used for each time a user attempts Sign-On from the Telnet server (for example, when the "Enter Password" screen is used).

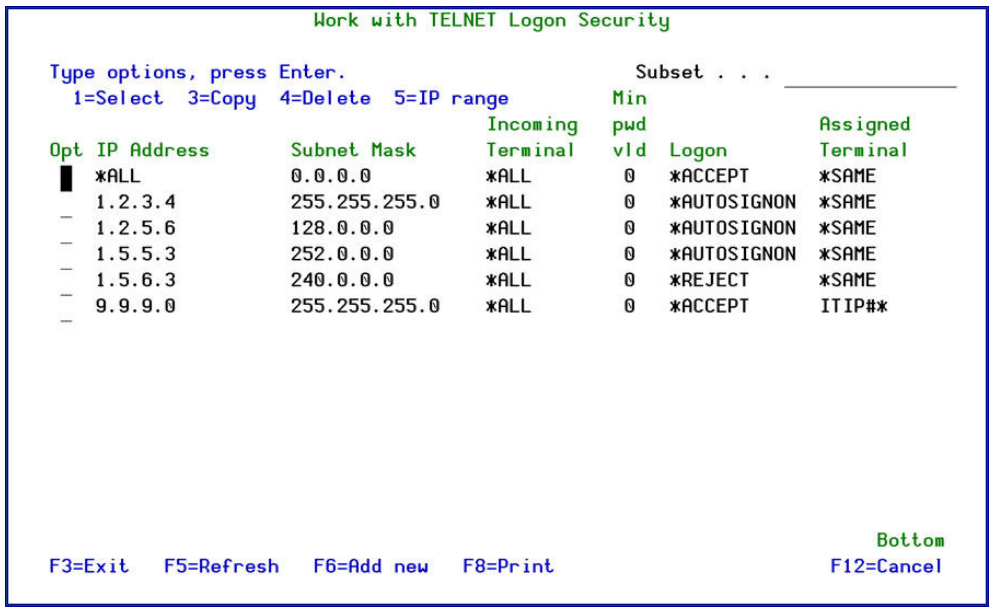
Telnet Logon

1. To work with Telnet and Sign-on, select **32. Telnet** from the **Firewall Main** menu. The **Telnet Security** screen appears.



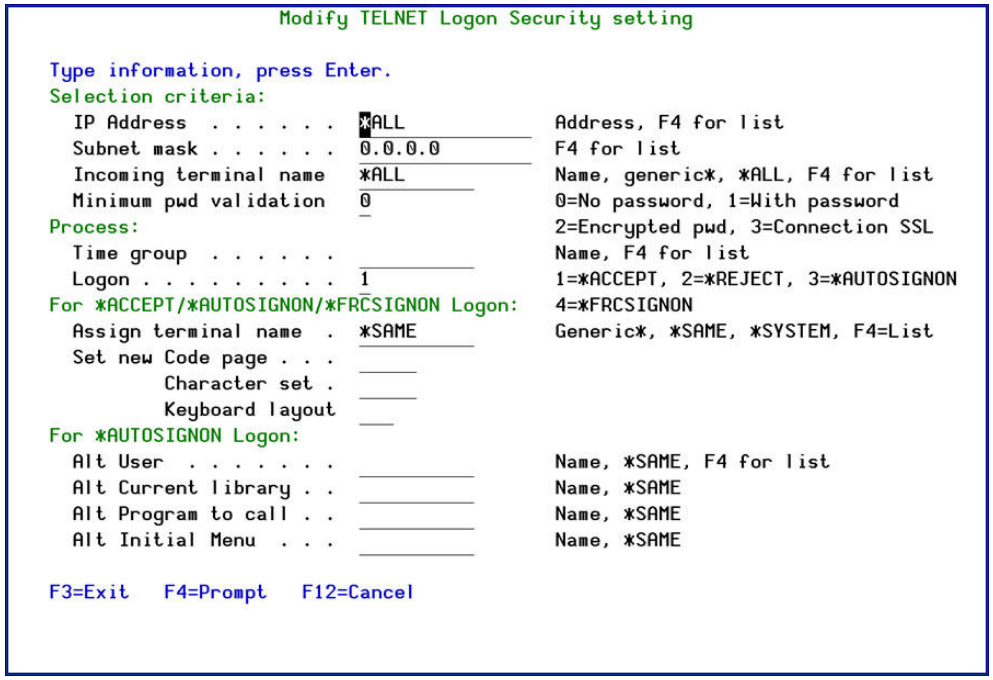
Telnet Security

2. Select **1. Telnet Logon** from the Telnet Security screen. The **Work with TELNET Logon Security** screen appears.



Work with Telnet Logon Security

3. Set parameters according to the following table and press **Enter**. Select **F6** to add a new rule or option **1** to modify.



Modify Telnet Logon Security Setting

Parameter	Description
IP Address/Subnet Mask	IP address and subnet mask in decimal format. **TIP**: Press **F4** and select the subnet mask from a list.
Incoming Terminal Name	Terminal name assigned by the System i or emulation software
Minimum Pwd Validation	This is the method used to validate the incoming user profile. Apply rule according to password validation level: **0** = No password validation **1** = Use password **2**= Use encrypted password **3** = Connection is using SSL
Time group	Enter time group name or press **F4** to select from list.
Logon	**1** = Accept logon request **2** = Reject logon request **3** = Sign-on automatically if permitted by System i configuration **4** = Force sign-on even if System i is configured for automatic sign-on
Assigned terminal name	Enter the name to optionally replace the incoming terminal name **Generic*** = Text before "*" plus sequentially assigned number ***SAME** or **Blank** = Do not replace the income terminal name ***SYSTEM** = Use terminal name assigned by OS/400
Set new	Define Code page, Character set and Keyboard layout
Alt User	Automatically sign-on with specified replacement user profile
Alt Current Library	Automatically replace the default current library with specified library
Alt Program	Automatically replace the default program to be run at sign-on
Alt Initial menu	Automatically replace the default initial user menu at sign-on

SSL Control in Firewall

Firewall can be set up to request SSL on Telnet and FTP session, based on the IP or User.

To set up SSL control in **Firewall**, follow this procedure.

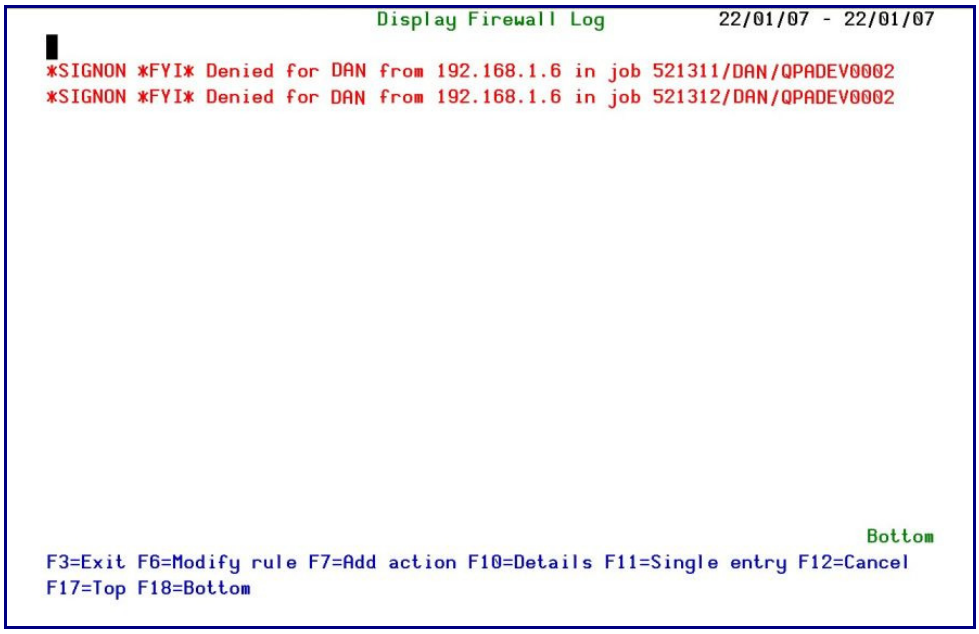
1. Select **32. Telnet** from the **Firewall** main menu. The **Telnet Security** screen appears.
2. Select **1. Telnet Logon** to access the **Work with TELNET Logon Security** screen.
3. Press **F6** to access the **Add TELNET Logon Security Setting** screen.

Sign-on

Firewall Telnet Sign-on feature enables limiting a user to sign-on from a specific IP or terminal name (for each sign-on), as well as limiting the number of sessions the user will be allowed to work in.

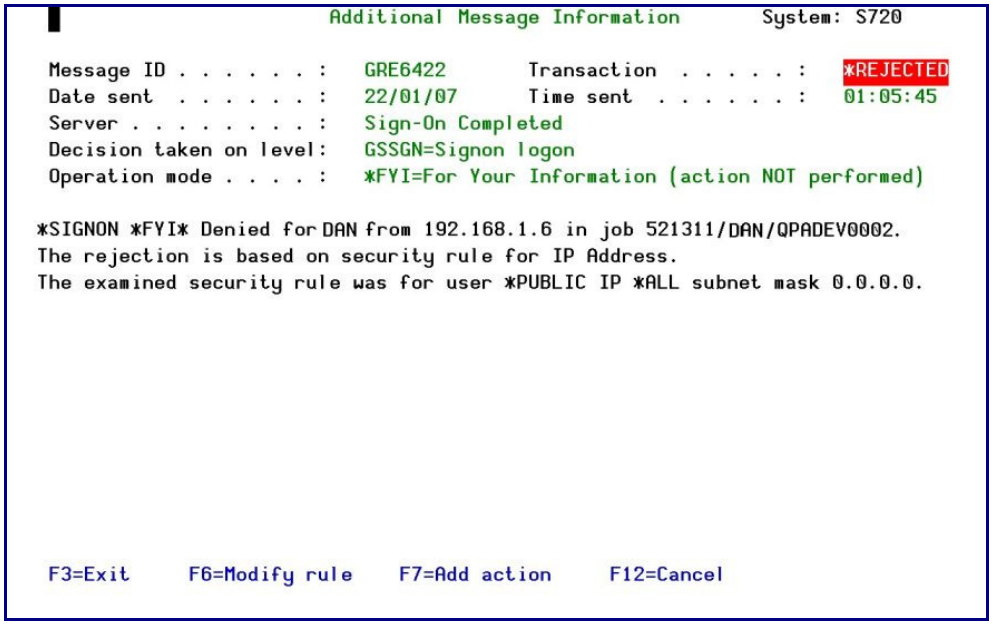
To work with sign-on security, select **15. Display SIGNON Log** from the **Telnet Security** screen.

1. Set the parameters and press **Enter**. The **Display Firewall Log** screen appears, with all the transactions that used the **Sign-On** server.

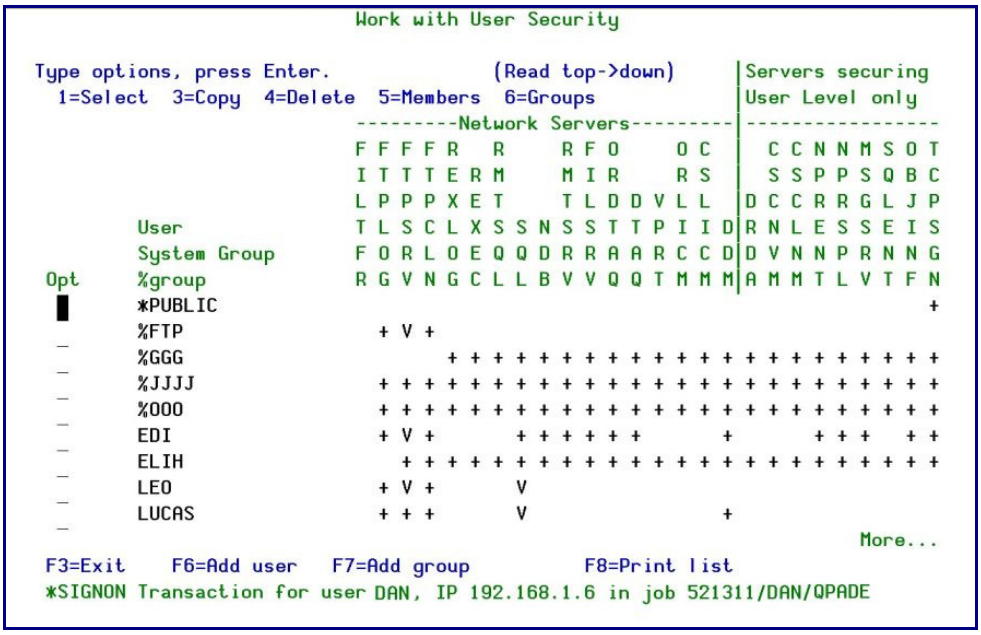


Display Firewall Log

2. Select **F10** for additional message information or **F6** to modify the rule.

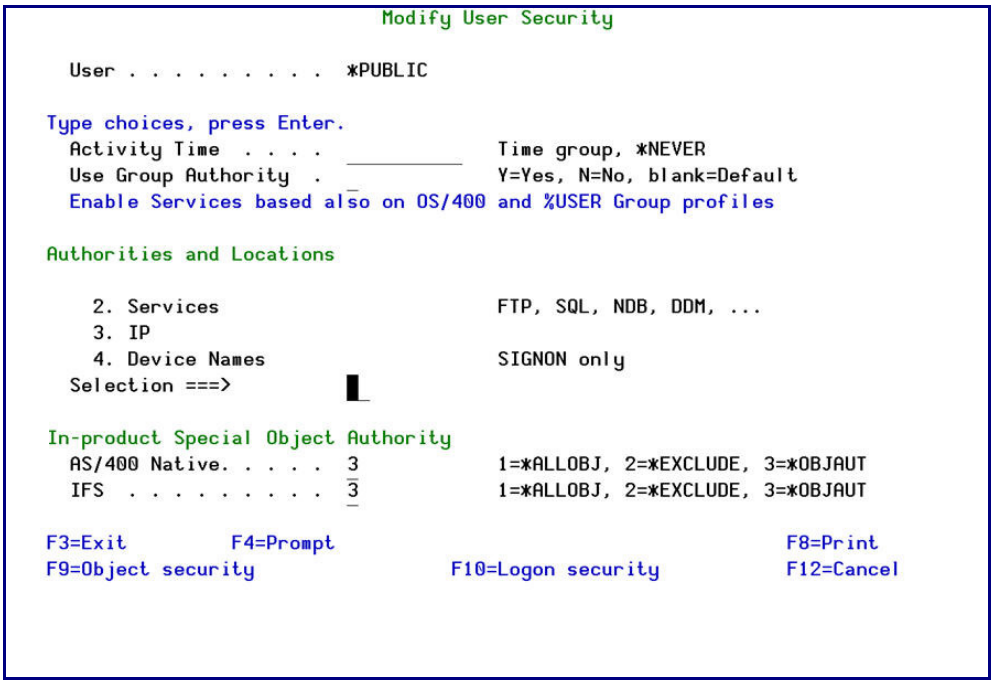


Additional Message Information

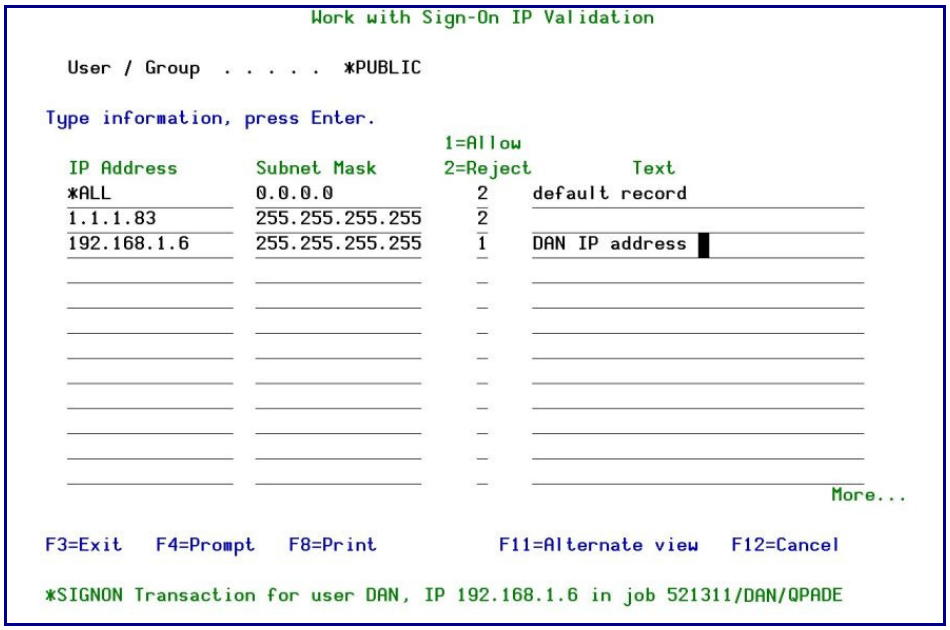


Work with User Security

3. Type **1=Select** to modify the rule



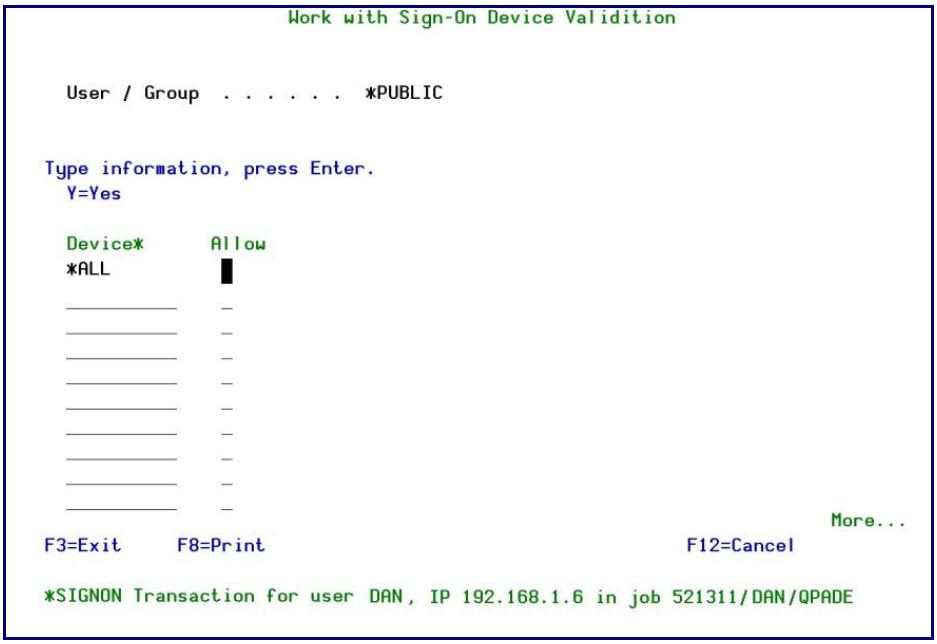
Modify User Security



Work with Sign-on IP Validation

Parameter	Description
IP Address /Subnet Mask	IP address and subnet mask in decimal format. **TIP**: Press **F4** and select the subnet mask from a list.
Allow/Reject	**1=ALLOW** = Allow logon request **2=REJECT** = Reject logon request
Text	Descriptive text

4. Select **4. Device Names** from the **Modify User Security** screen to add or modify sign-on device names.

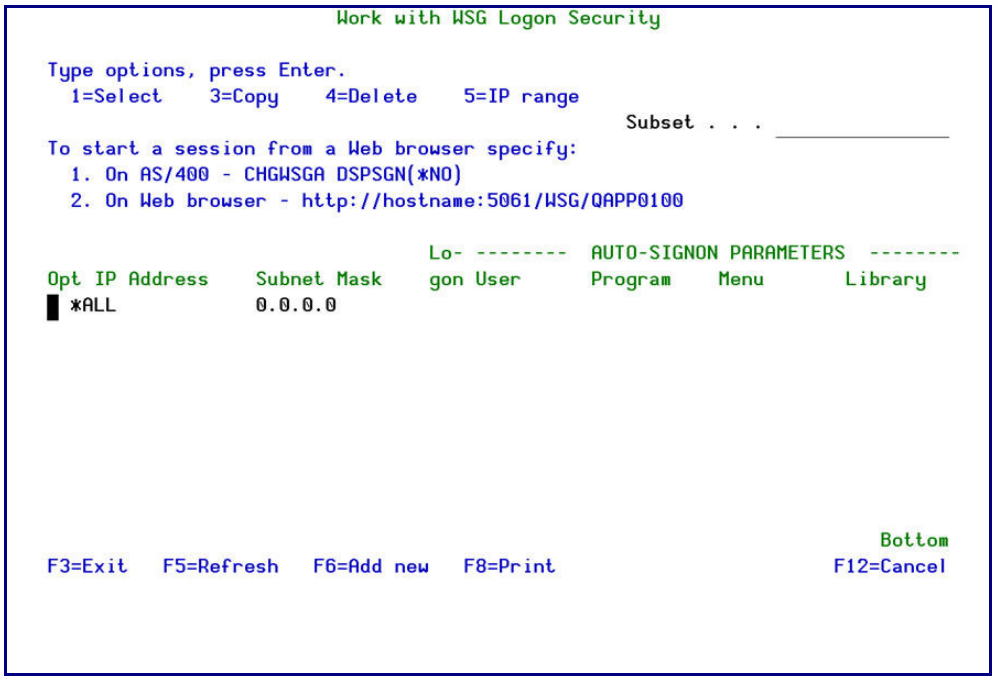


Work with Sign-on Device validation

Internet (WSG)

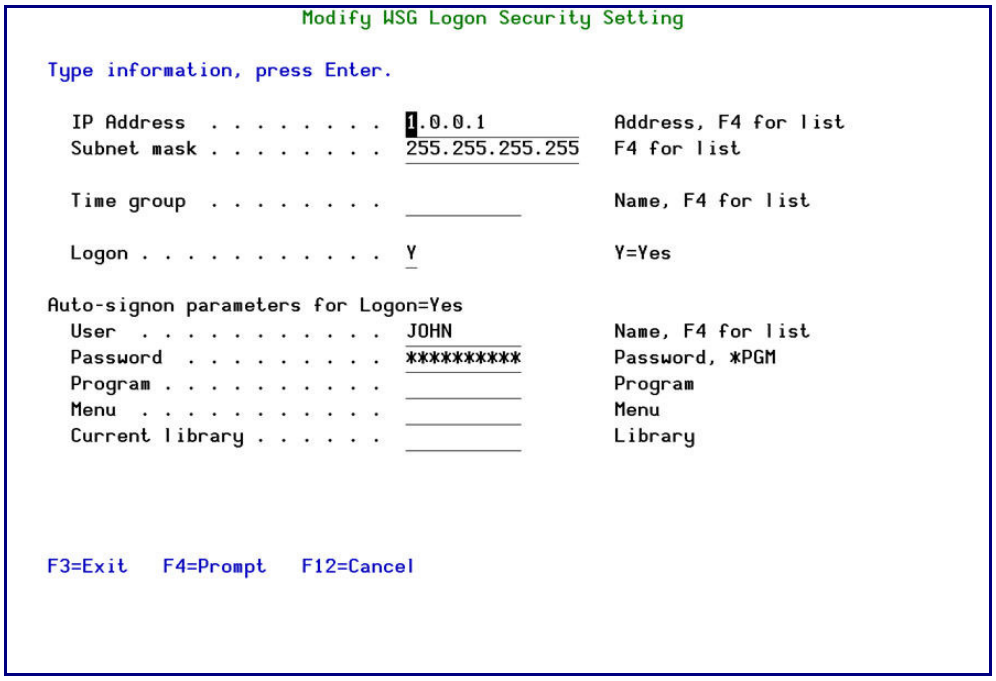
This server provides sign-on for client browser (such as Internet Explorer or Netscape Navigator) bypassing AS/400 sign-on panel.

1. To work with WSG logon security, select **33. Internet (WSG)** from the **Firewall Main** menu. The **Internet-WSG Logon Security** screen appears.
2. Select **1. Internet-WSG Logon**. The **Work with WSG Logon Security** screen appears.
3. Set parameters according to the following table and press **Enter**. Select **F6** to add a new rule or option **1** to modify.



Work with WSG Logon Security

Parameter or Option	Description
IP Address and Subnet Mask	IP address and subnet mask in decimal format. **TIP**: Press **F4** and select the subnet mask from a list.
Logon	**Y** = Allow logon request and use auto-sign-on
User	User profile
Auto-Sign-on Parameters (only if Logon is yes)	**Program** = initial program to be called upon sign-on **Menu** = menu to be called upon sign-on that will initialize the screen **Library** = first library to be checked upon sign-on



Modify WSG Logon Security Setting

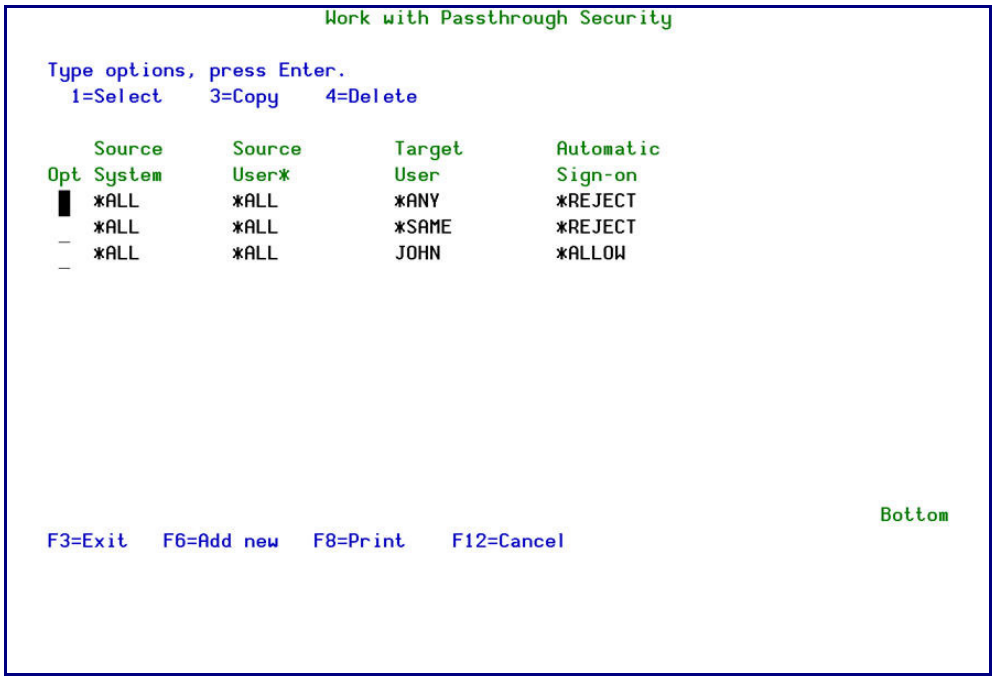
Parameter	Description
IP Address/Subnet Mask	IP address and subnet mask in decimal format.
Time group	Enter time group name or press **F4** to select from list.
Logon	**Y** = Allow logon request and use auto-sign-on **Blank** = Reject logon request
User (only if Logon is yes)	Automatically performs sign-on with specified replacement user profile
Password	Requires the specified password for logon instead of the password in the user profile (This is the password to be assigned to the "alternate" user). ***PGM** = Use password presented by calling program for alternate user
Program	Automatically replace the default program to be run at sign-on
Initial menu	Automatically replace the default initial user menu at sign-on
Current Library	Automatically replace the default current library with specified library

NOTE: *To work with WSG security, select* **11. Display WSG Logon Log** *from the* **Internet-WSG Logon Security** *screen.*

Passthrough

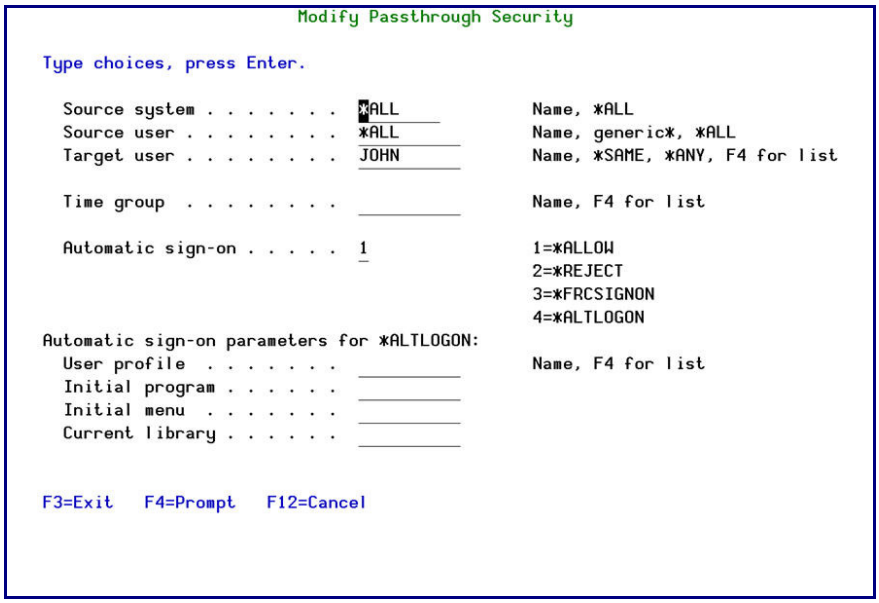
This server specifies how the outside systems handle remote sign-on requests. It may alter sign-on information

1. To work with Passthrough security, select **34. Passthrough** from the **Firewall** main menu. The Passthrough Security screen appears.
2. Select **1. Passthrough Logon**. The **Work with Passthrough Security** screen appears.
3. Set parameters according to the following table and press **Enter**. Select **F6** to add a new rule or option **1** to modify.



Work with Passthrough Security

Parameter or Option	Description
Source System	SNA system name of the source (incoming) computer
Source User	User profile of the source system
Target User	User profile for logon at the target system
Automatic Sign-on	**1** = Accept logon request **2** = Reject logon request **3** = Force sign-on even if System i is configured for automatic sign-on **4** = Sign-on automatically with an alternate user profile



Modify Passthrough Security

Parameter	Description
Source System	SNA system name of the source (incoming) computer
Source User	User profile at the source system **Generic*** = Any user profile beginning with the text before the '*' ***ALL** = All users
Target user	User profile for logon at the target system ***SAME** = Use the source user profile **Generic*** = Any user profile beginning with the text before the '*'
Time group	Enter time group name or press **F4** to select from list.
Automatic Sign-on	**1** = Accept logon request **2** = Reject logon request **3** = Force sign-on even if System i is configured for automatic sign-on **4** = Sign-on automatically with an alternate user profile
User Profiler	Automatically sign-on with specified replacement user profile
Initial Program	Automatically replace the default program to be run at sign-on
Initial menu	Automatically replace the default initial user menu at sign-on
Current Library	Automatically replace the default current library with specified library

NOTE: *To work with Passthrough security, select* **11. Display Passthrough Logon Log** *from the* **Passthrough Security** *screen.*

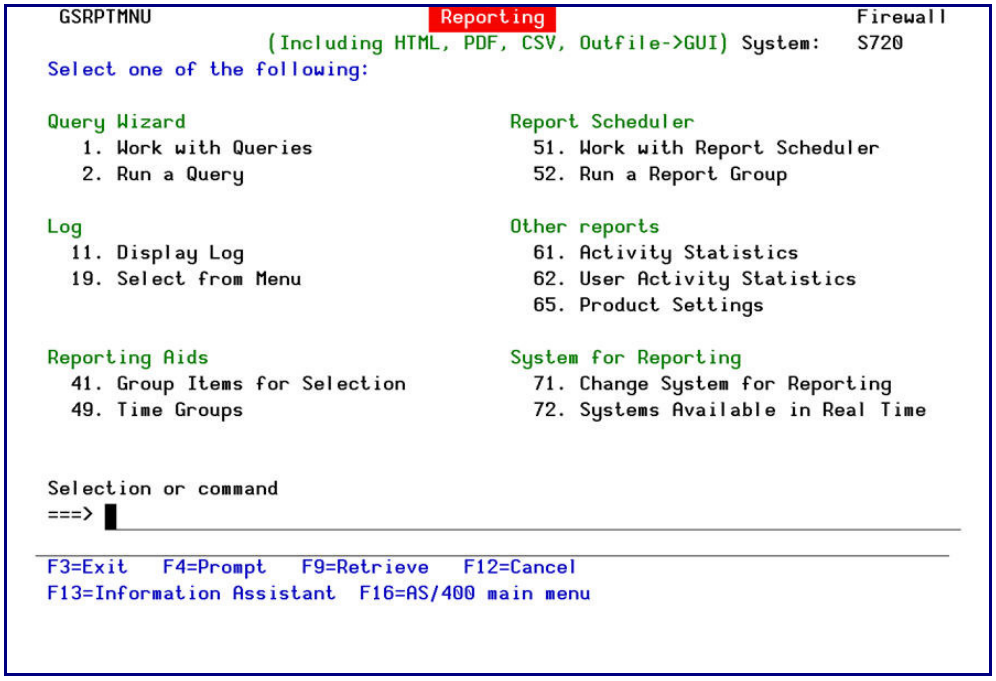
Chapter 8: Queries, Reports and Logs

This chapter presents the reporting features that are built into **Firewall**. An effective security policy relies on queries and reports to provide traceability for system activity. All **Firewall** queries and reports work with data contained in the Activity Log.

Firewall offers several powerful, but user-friendly, tools that create output containing only relevant data, in a useful format. All of this can be accomplished without programming, with the following tools:

- Query Wizard - Selects the events that need to be audited using powerful filter criteria, and creates screen-based or printed reports that present the data in a customized format
- **Activity Log** - Displays or prints the contents of the **Firewall** Activity Log quickly and easily in a standard format using basic filter criteria
- **Report Scheduler** - Automatically runs queries and reports at user-specified times

In addition to these tools, **Firewall** contains with over 100 predefined reports and queries that are ready to run at any time. All reporting features are available via the **Reporting** menu. To access this menu, select **43. Log, Reports, Queries** from the main menu.



Reporting

In addition, the Activity Log display feature is available directly from several screens throughout **Firewall** as well as by using the ***DSPFWLOG*** command from any command line.

Query Wizard

The powerful Query Wizard allows you to design custom output reports that show only the necessary data, without programming and with no requirement for technical knowledge.

Query definitions are created by using a series of simple parameter definition screens. Output can be a printed report, a screen display or a text file saved on the System i.

Highly detailed filter criteria enable selection of only the required records using Boolean operators, as well as the ability to combine logical conditions. You have full flexibility to specify the sort order according to multiple fields.

The wizard allows you to output only the relevant data fields and to specify the order in which they appear on the report. You can design tabular summary reports showing one line for each record or detail reports showing record data on multiple lines.

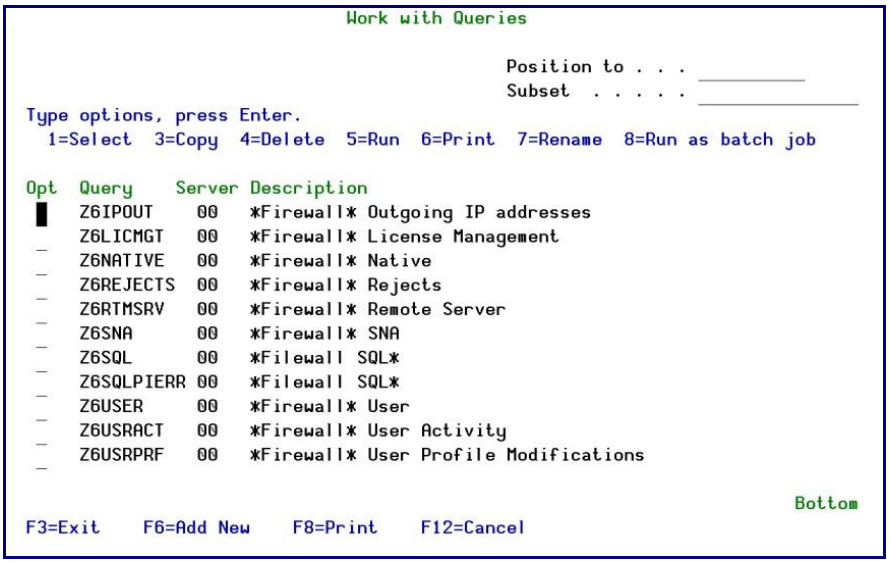
Procedural Overview

The procedure for defining queries consists of the following steps:

1. Select an existing query to work with or create a new query.
2. Define general query parameters specifying the activity type(s) to be included and the output format.
3. Define the record selection (filter) criteria.
4. Select the data fields to be included in the report and the order in which they appear.
5. Define the record sort criteria according to one or more data fields.
6. Run the query with the option to specify additional run-time filter criteria.

Working with Queries

1. To work with queries, select **1** from the **Reporting** menu. The **Work with Queries** screen appears.
2. Type the desired option next to a query. Type **1** to modify a query, **3** to copy or press **F6** to create a new query.
3. Press **Enter** to proceed to the definition screens.



Work with Queries

The following table lists the selection options.

Option	Description
F6	Create a new query.
1	Select a query for modification.
3	Copy a query. Type the new query name and description in the pop-up window and press **Enter** to continue.
4	Delete a query. Press **Enter** to confirm deletion when the warning message appears.
5	Run the selected query as an interactive job.
6	Print the selected query to the standard output device and file type **(*PDF, *HTML, *CSV …)**
7	Rename a query. Type the new query name in the pop-up window and press **Enter**.
8	Run the selected query as a batch job.

General Query Parameters (Add/Modify Screen)

This screen contains several basic query definition parameters.

1. To work with query parameters, enter the required parameters and press **Enter** to continue.

```
                              Modify Query

Type choices, press Enter.

Query name  . . . . .  Z6IPOUT
Description . . . . .  *Firewall* Outgoing IP addresses

Query type  . . . . .  1             1=All servers -or- Single server
                                     2=List of servers (selected later)
If query type=1
 Server Id (00=All) .  00  Generic entry type (00-99)

Restrict to subject .  *IPOUT
                       Not Name
Time group  . . . . .  _ _________   N=Not included in time group
Output format . . . .  1            1=Tabular, 2=Tabular (no fold), 9=Log
If format=1 in print
  Continue vertically   0           Field number, 0=*AUTO
Add Header / Total  .  1            1=Both, 2=Header, 3=Total, 9=None
Sort  . . . . . . . .  1            1=By all fields, 2=By header, 3=No sort

F3=Exit              F8=Print                        F12=Cancel
```

Modify Query

Parameter or Option	Description
Query Name	Name of query
Description	Free text query description
Query Type	**1** = Single server type query or all servers **2** = Multiple server types to be selected on a subsequent screen. (see below)
Not	**N** = Select records **not included** in the specified time group (Exclusive) **Blank** = Select records included in the specified time group (Inclusive)
Time Group	**Name** =Enter the name of the time group to use as a filter **Blank** = Do not use a time group
Output Format	**1** = Detailed tabular format with option for multi-line field display (Fold) **2** = Summary tabular format – one line per record **9** = Log display **output** format
Sort Options	**1** = Sort using all log record fields **2** = Sort using only generic fields **3** = No sorting (time sequence)

2. When defining a multiple server type query, it is necessary to select the server types and to define record selection criteria parameters separately for each server type. When the **Query Type** field is set to **2**, the following screen automatically appears, allowing you to add and work with server types.

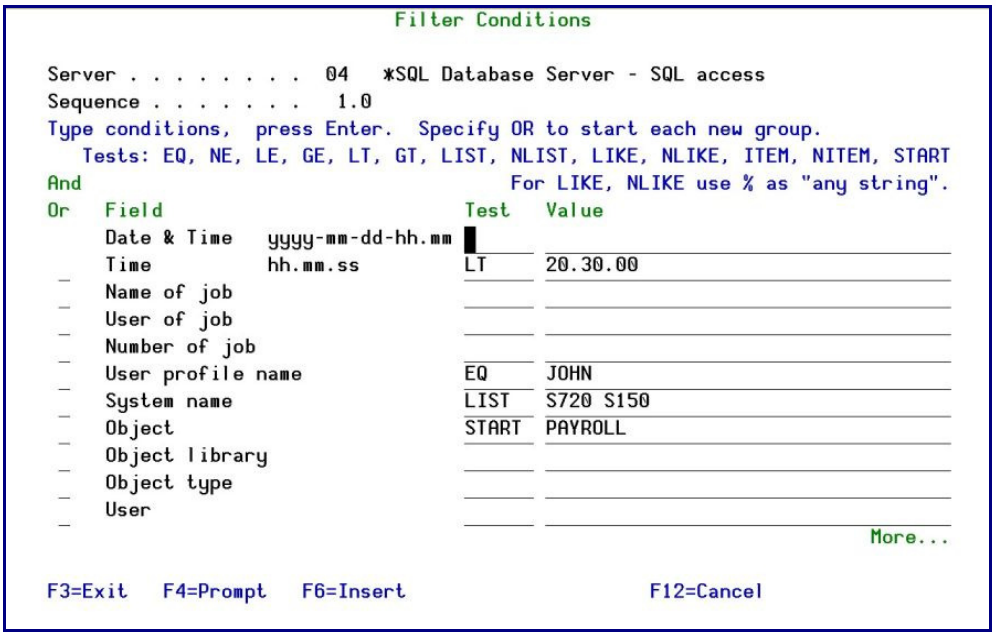
NOTE: *In Multiple server type queries, you can only display the fields that are common to all server types. You must use a single server type query to display the fields which are specific to a particular server type.*

3. Press **Enter** from the **Modify Query** screen to add a server type **or** select an existing filter type to modify. You may add the same server type more than once with different record selection criteria. The **Filter Conditions** screen appears immediately afterwards.

You may include multiple filter conditions in your definition. Each filter condition consists of a comparison test applied to one of the fields in the Activity Log record.

Define filter criteria and press **Enter**.

NOTE: *Filter conditions are optional. If no filter conditions are defined, your query will include all events for the specified audit type or types.*



Filter Conditions

Parameter or Option	Description
And/Or	**A** or **Blank** = And **O** = Or
Field	Data field in the Activity Log
Test	Comparison test type – see table on following page for details
Value	Value to be used as the comparison test
F4	Displays explanatory information and/or options applicable to the data field on the line where the cursor is located
F6	Select another comparison test from a pop-up window and insert it at the current cursor position

Comparison Test Operators

Several different types of comparison test operators are available as shown in the following table:

Test	Description	Value Field Data
EQ, NE	Equal to, Not equal to	Value
LT, LE	Less than, Less than or equal to	Value
GT,GE	Greater than, Greater than or equal to	Value
LIST, NLIST	Included in list, Not included in list	Values separated by a space
LIKE, NLIKE	Substring search	Value preceded and/or followed by %
ITME, NITEM	Item in a group checks if the value is among the groups' members. The General group is an external value list that can be extended by creating	***USER** – Check that the value is a user in a **%GROUP** of users ***GRPPRF** – Check that the value is a user in an **OS/400 Group**

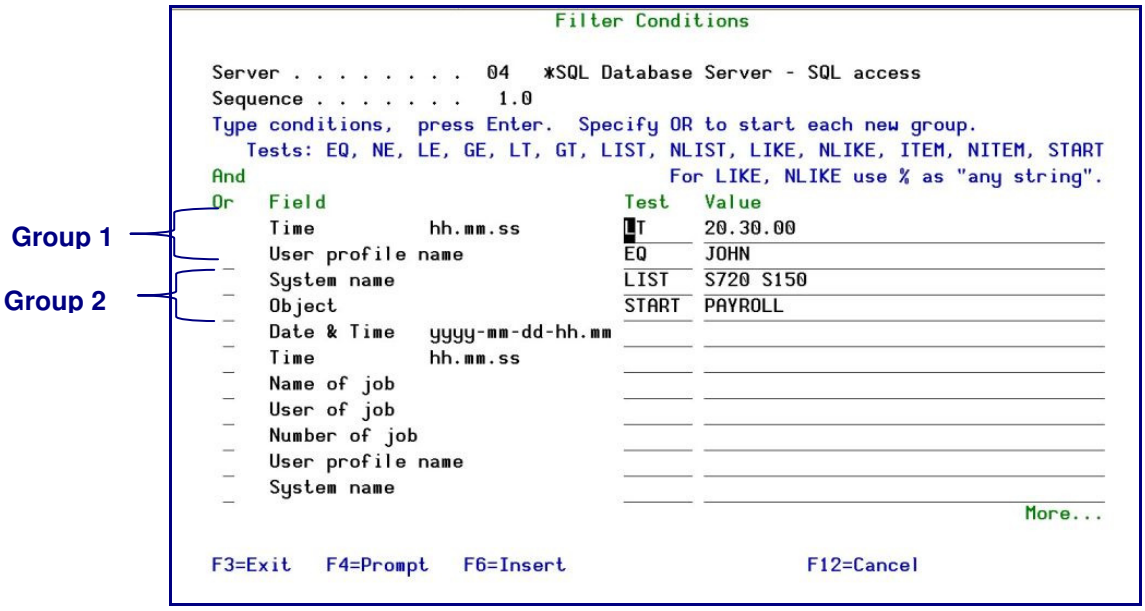
Test	Description	Value Field Data
	new types.	**Profile** ***USRGRP** – USER and all user profiles which are members of same user groups as USER ***ALL** – For both ***GRPPRF** and ***USRGRP** cases If the **TYPE** is missing, ***USER** or ***USRGRP** is assumed based on the appearance of % sign as the first character in the **GROUP**. ***SPCAUT** – Check that the value is in the users Special-Authority
START	Starts with	Starting characters of string

And/Or Boolean Operators

You may combine multiple filter conditions in one query using Boolean AND/OR operators. This allows you to create complex queries that produce precise results.

When using 'Or' operators in your filter conditions, the order in which each condition appears in the list conditions is critical. The 'Or' operator allows you to group several conditions together because it includes all the 'And' conditions that follow it until the next 'Or' operator or until the end of the list.

The following example illustrates this principle. This query will apply to all events meeting **either** the conditions listed in Group 1 **or** the conditions listed in Group 2. Group 2 includes the 'Or' condition and all of the 'And' conditions that follow it.



Filter Conditions

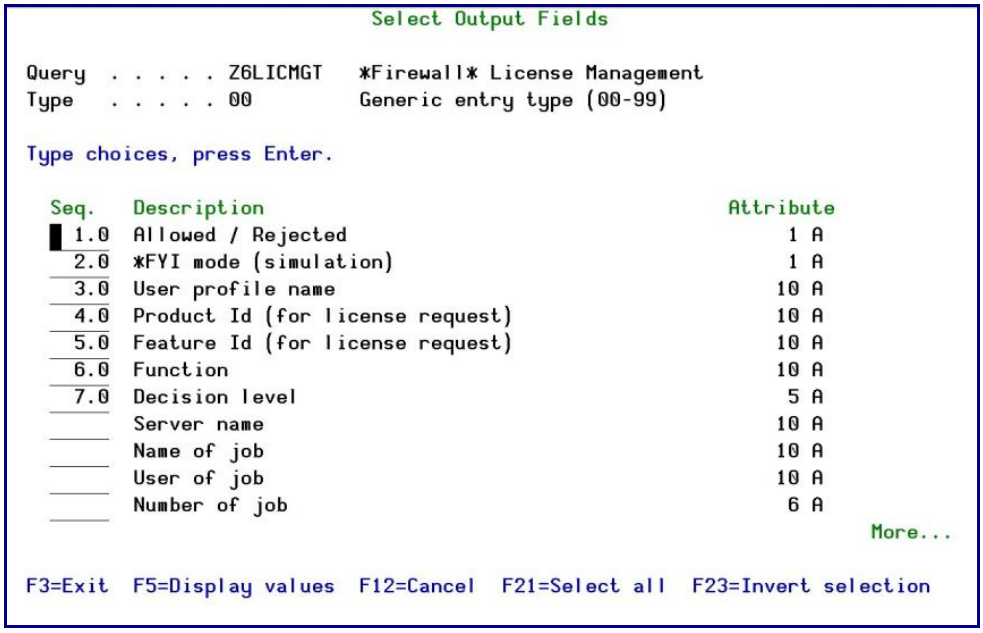
Defining Output Fields

The **Select Output Fields** screen allows selection of the fields from the Activity Log that will appear in the query output as well as the order in which they should appear from left to right. Fields appear in ascending order on the screen, with the top field corresponding to the left-hand field in the query report. The second field corresponds to the field located to the right of the left-hand field, and so on.

The user can change the order of the fields simply by modifying the sequence numbers. Any field can be deleted from the query report by deleting the sequence number. When pressing **Enter**, the new field sequence appears on the screen, with deleted (blank sequence number) fields appearing at the bottom.

You must select at least one field for output.

Fields shown in pink are part of the generic header and are common to the Activity Log record for all audit types. Fields shown in **green** (on the screen) are specific to the Activity Log record for the currently selected audit type only.



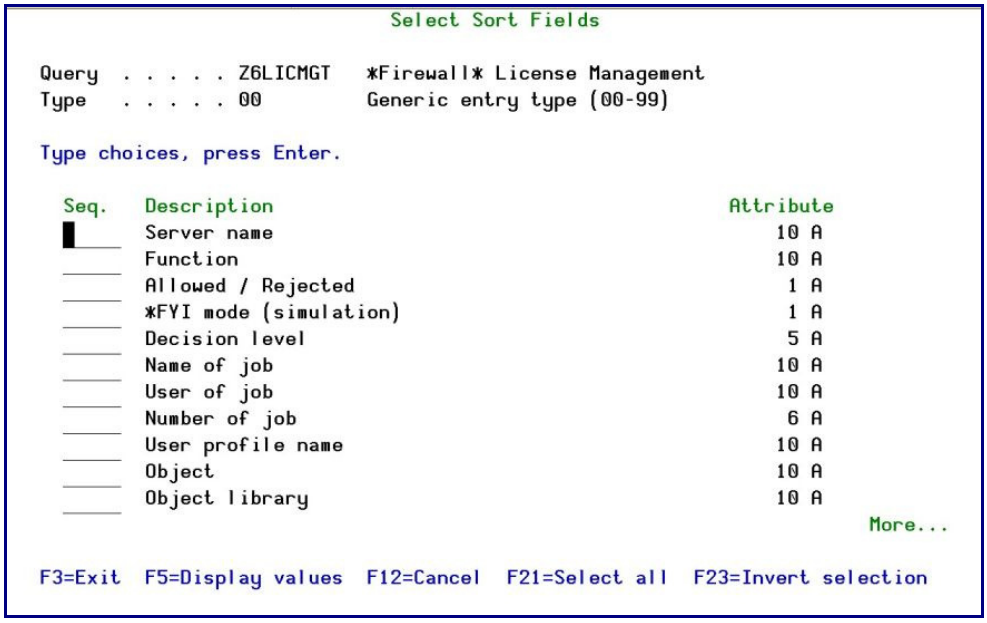
Select Output Fields

Option	Description
F5	Displays field values
F21	Selects all options
F23	**Invert selection** – All selected items will be deselected and all items that are not selected will become selected **NOTE**: You may wish to change the sequence numbers after using this command.
Seq.	Enter the sequence in which you wish this field to appear in the query output. Lower numbers appear toward the left and higher numbers appear toward the right.

Sort Criteria

You may sort records in your query output according to any combination of fields in the Activity Log record. The lowest sequence number (normally 1.0) represents the primary sort field. The second lowest number (normally 2.0) represents the secondary sort field, and so on.

Fields shown in **pink** are part of the generic header and are common to the Activity Log record for all audit types. Fields appearing in **green** (on the screen) are specific to the Activity Log record for the currently selected audit type.



Select Sort Fields

Parameter or Option	Description
F5	Displays field values
F21	Selects all options
F23	**Invert selection** – All selected items will be deselected and all items that are not selected will become selected **NOTE**: You may wish to change the sequence numbers after using this command.
Seq.	Enter a number representing the sort sequence

Running Queries

The final screen in the definition procedure allows you to run your query immediately. If you do not wish to run your query at this time, press **F3** to exit. All query definition parameters will be preserved.

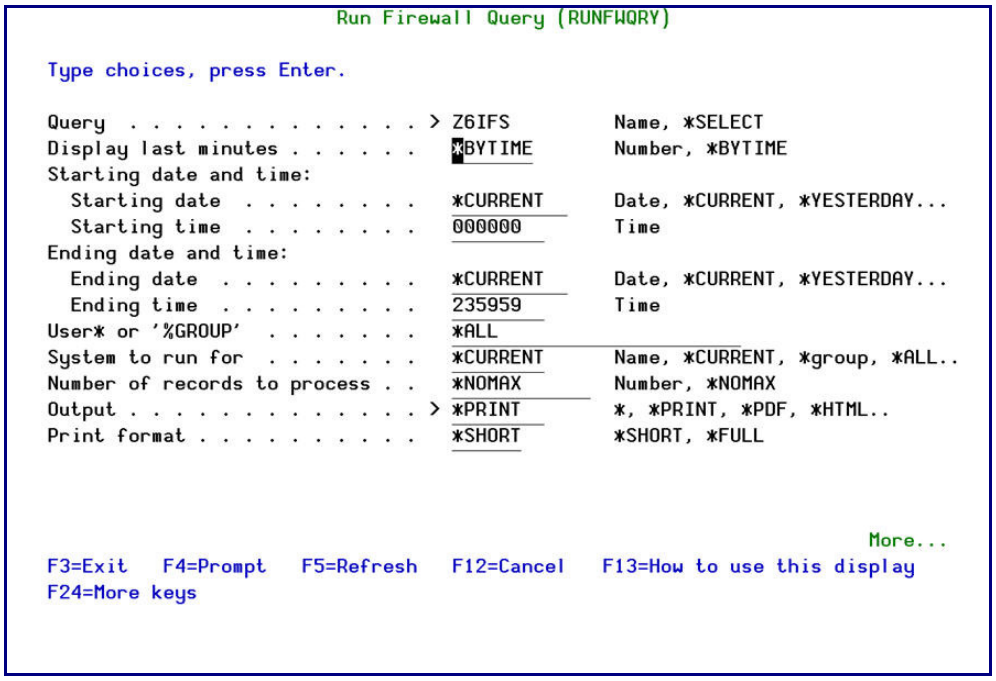
Firewall provides you with several different options for running queries:

- **During Query Definition** – You can run queries as the final step in the definition procedure. This is useful for testing and debugging queries.
- **Work with Queries Screen** – Run a query by typing **5** to the left of one or more queries in the list. This option is especially useful for running several queries sequentially.
- **Report Scheduler** – This powerful feature automatically runs queries according to a pre-defined schedule. This option is typically used for generating periodic audit reports.
- **Query Menu** – Select one of the following options from the **Query** menu:
  - **11. Display** – Display query results on the screen
  - **12. Print** – Print a hard copy of the query as an interactive job
  - **13. Submit as Batch Job** – Submit the query as a batch job. This is recommended for large, resource intensive queries.
- **Command Line – Enter the Run Firewall Query command (*RUNFWQRY*) from any command line. This allows you to run a query at any time, even if you are working on other tasks.**
- **Display Log – Queries can also be used to filter data when viewing Activity Log data. This is useful** for applying sophisticated filter criteria that are unavailable with the display log command.

  You may specify **run-time filter criteria** that apply only to the current instance of the query. Run-time filter criteria allow you to display or print only a **subset** of the data extracted by the query definition. For example, if your query definition does not filter records according to user profile, you may specify run-time criteria that will display activity only for specific user.

  However, run-time filter criteria will not return data that is excluded from the actual query definition. For example, if your query definition includes filter criteria only for the user profile ***JOHNKERRY*** and you enter run-time criteria for the user ***GEORGEW***, no events will be displayed.

  The procedure for running queries is virtually identical for all of the above options. Each method involves entering several run-time parameters on the **Run Audit Query** screen.



Run Firewall Query

Parameter or Option	Description
Query	**Name** = Name of Query ***SELECT** = Select from list at run time
Display Last Minutes	Select only the records occurring within the previous number of minutes as specified by the user **Number** = Enter the number of minutes ***BYTIME** = According the starting and ending time specified below
Starting Date & Time **Ending Date & Time**	Select only the records occurring within the range specified by the start and end date/time combination. **Date or Time** = Enter the appropriate date or time ***CURRENT** = Today (Current Date) ***YESTERDAY** = Previous date ***WEEKSTR/*PRVWEEKS** = Current week/Previous week start ***MONTHSTR/ *PRVMONTH** = Current month/Previous month start ***YEARSTR/ *PRVYEARS** = Current year/ Previous year start ***SUN -*SAT** = Day of week
Type	Filter records by audit type ***All** = All types as specified in the query definition **F4** = Select server type from a list
User* or '%Group'	Filter records by a user profile or group name
System to run for	The system to report information from ***CURRENT** = the current system ***Name** = a group of systems as defined in STRAUD, 83, 1 ***ALL** = all the systems defined in STRAUD, 83, 1
Job Name - User	Filter records by OS/400 job name.
Job Name - Number	Filter records by OS/400 job number.

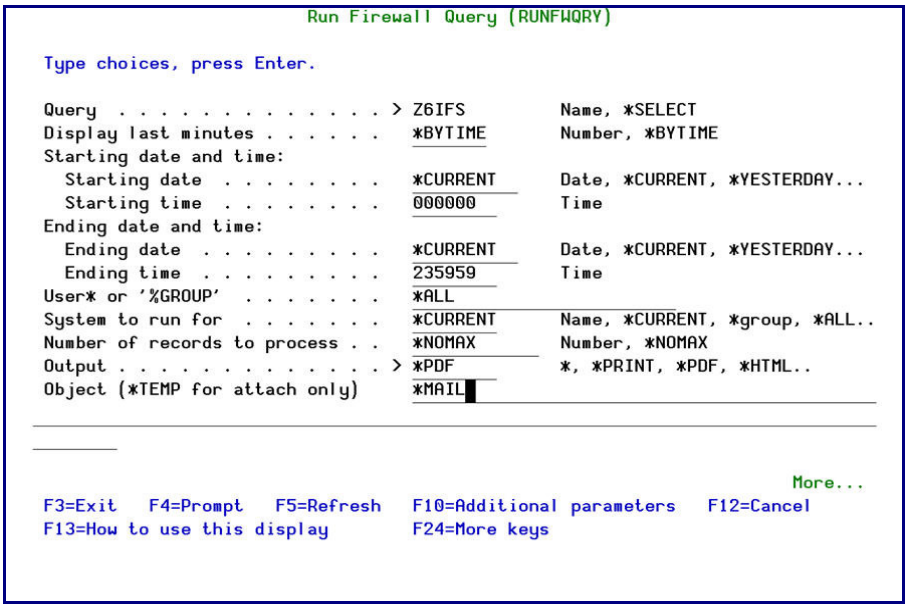
Parameter or Option	Description
Number of Records to Process	Maximum number of records to process ***NOMAX** = No maximum (Default)
Output	* = Display ***Print** = Printed report ***PDF** = Print report to PDF outfile ***HTML** = Print report to HTML outfile ***CSV** = Print report to CSV outfile ***Outfile** = Print report to view from the GUI
User Profile	Filter records by user
Filter by Time Group - Relationship	Filter records by time group ***IN** = Include all records in time group ***OUT** = Include all records **not** in time group ***NONE** = Do not use time group, even if included in query definition ***QRY** = Use time group as specified in query definition
Type	Filter records by audit type ***All** = All types as specified in the query definition **F4** = Select server type from a list
Program Name	Filter records by the name of the program that created the journal record.
Filter by Time Group - Time Group	**Name** = Name of time group ***SELECT** = Select time group from list at run time

Press **Enter** to continue. You may press **F18** at any time during the data retrieval process to display a pop-up status window. This window continuously displays the number of records processed and selected. Press **Esc** at any time to halt retrieval and immediately display the query or log.

Print Query to Output File and Send Via Email

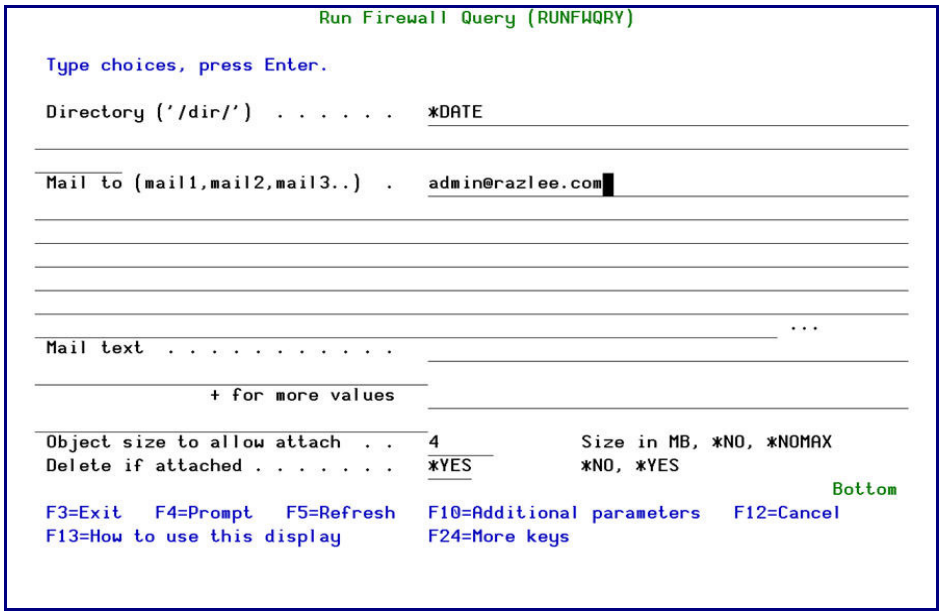
NOTE: To ensure you always receive iSecurity reports emails, please add DONOT@REPLY.COM and NOREPLY@ISECURITY.COM to your email contact list.

1. Select preferred **Output** file type (***PDF, *HTML, *CSV …**) and press **Enter**



Run Firewall Query

2. Type ***MAIL** in the **Object** field, press **Page Down** and enter the email address you want the file to be sent to in the **Mail to** field.



Run Firewall Query

3. Press **Enter** to run the print

Working with the Activity Log

You can use the **Display Firewall Log** (***DSPFWLOG***) command to display the contents of the Activity Log quickly and easily in a standard format using basic filter criteria. You can even use previously defined queries as filter criteria for the log display. This feature is best suited for investigating immediate problems such as program failures, errors or suspicious activity.

Firewall includes many ready-to-use log display sets. Just enter a few parameters on a simple data screen and the specified data appears in seconds. A hard copy of the Activity Log results can be printed as well.

The "Backward Glance" Feature

This unique feature lets the user view the last several minutes of activity without having to define specific time or date parameters. The user can specify a period (in minutes), press **Enter**, and transactions occurring that period of time quickly appear. Backward Glance really comes in handy when assisting users with error massages that pop up or verifying that a batch job has successfully been completed.

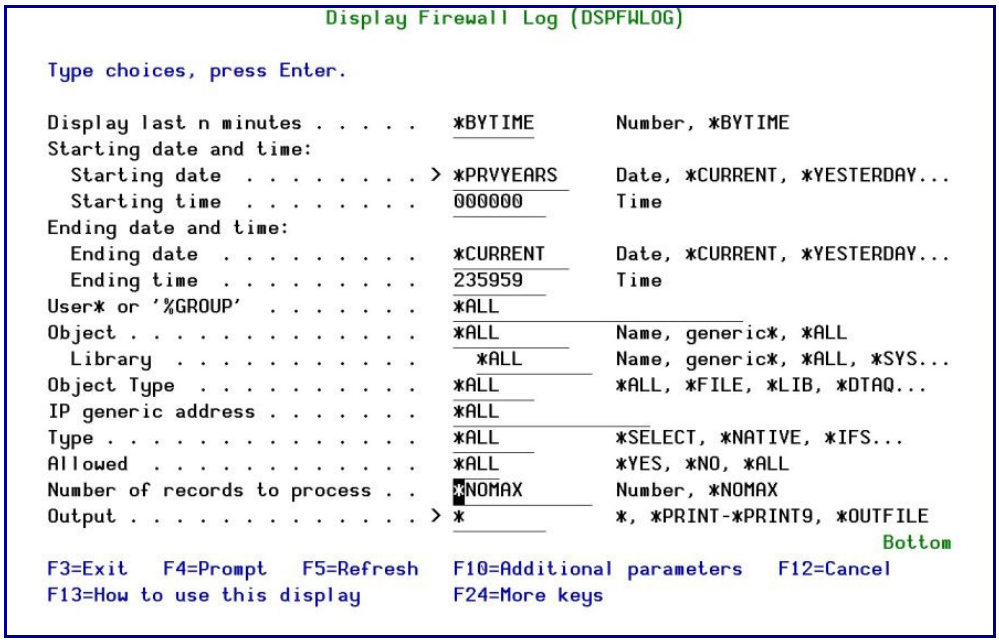
Using Time Groups

The Activity Log display makes full use of the convenient time group feature. This timesaving feature further enhances the ability to get to important data quickly.

Basic Procedure

A few simple steps are all that is necessary in order to view your data:

1. Select **43. Log, Reports, Queries** from the main menu. The **Reporting** menu appears.
2. Select **19. Select from menu** and choose one of the many pre-defined log display options. Examples of these selections are:
   - **1. Entire Log** – Display all entries in the Activity Log. This option is useful when examining all activities over a period of time, perhaps in conjunction with the Backward Glance feature.
   - **2. Rejects Only** – Display only activities that have been rejected
   - **5. Entire Log** – Display only occurrences from the last 5 minutes
3. Enter run-time filter and other parameters on the **Display Firewall Log** Entries screen.



Display Firewall Log

Parameter or Option	Description
Display last n minutes	Selects only the events occurring within the previous number of minutes as specified by the user **Number** = Enter the desired number of minutes ***BYTIME** = According to starting and ending times specified below
Starting date & time **Ending date & time** **Starting date & time** **Ending date & time** **(Continued)**	Selects only the events occurring within the range specified by the starting and ending date/time combination **Date and time** = Enter the appropriate date or time ***CURRENT** = Current day ***YESTERDAY** = Previous day ***WEEKSTR/*PRVWEEKS** = Current week/Previous week start ***MONTHSTR/ *PRVMONTH** = Current month/Previous month start ***YEARSTR/ *PRVYEARS** = Current year/ Previous year start ***SUN -*SAT** = Day of week
IP generic address	Filter by IP address
Type	Server type ***All** = All server types **F4** = Select server type group from a list ***UP** = lists all output operations over files: WRITE / CREATE / MOVE / DELETE / RENAME ***DOWN** = lists all Read operations over files
Allowed	***YES** = Allowed ***NO** = Rejected ***ALL** = All activity
Number of records to process	Maximum number of records to process ***NOMAX** = No maximum (Default)

Parameter or Option	Description
Output	***PRINT** = prints to local printer ***PRINT1**= prints to remote printer ***PRINT 2** = prints to both remote and local printers ***PRINT 3-9** = user modifiable
Filter by Time Group - Relationship	***IN** = Include all records in time group (Inclusive) ***OUT** = Include all records **not** in time group (Exclusive) ***NONE** = Do not use time group, even if included in query definition
Filter by time group - Time group	**Name** = Name of time group ***SELECT** = Select time group from list at run time
Filter using query rules	Use an existing query to filter Activity Log entries. This is useful for applying complex filter criteria. **Name** = Name of an existing query ***None** = Do not use query rules (Default)

4. Press **Enter** to display the Activity Log.

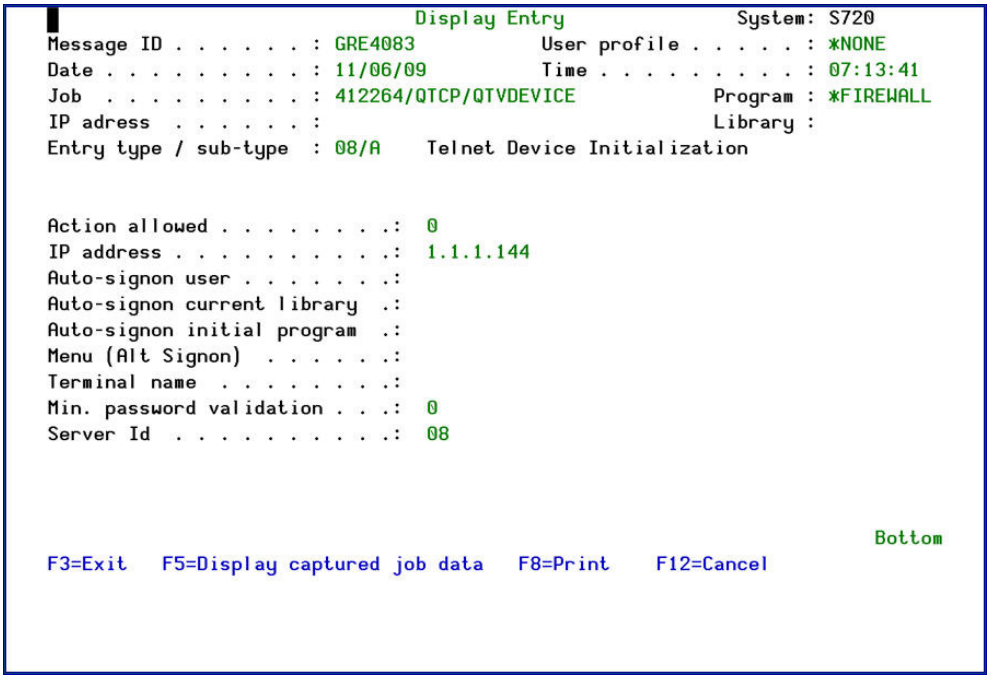
   - You may press **F18** at any time during the data retrieval process to display a pop-up status window. This window continuously displays the number of records processed and selected.
   - Press **Esc** at any time to halt retrieval and immediately display the query or log. An example of the audit log display appears as follows.

```
                          Display Firewall Log          11/06/09 - 11/06/09

*TELOFF *FYI* Telnet session ended to device QPADEV000V.
*TELOFF *FYI* Telnet session ended to device QPADEV000R.
*TELNET Allowed 1.1.1.1.
*TELNET Allowed 1.1.1.1.
*TELNET Allowed 1.1.1.1.
*SIGNON *FYI* Allowed for JAVA1 from *LCL-QZSOSIGN in job //   .
*SQL *FYI* Denied for JAVA1 to SMZODTA/ODPRVD *FILE. SQL: SELECT PRPRVD,PRTEXT
*SQL *FYI* Denied for JAVA1 to SMZODTA/ODPRVD *FILE. SQL: SELECT PRTEXT,PRINFM
*SQL *FYI* Denied for JAVA1 to SMZODTA/ODPRVD *FILE. SQL: SELECT PRPRVD,PRTEXT
*SQL *FYI* Denied for JAVA1 to SMZODTA/ODPRVD *FILE. SQL: UPDATE SMZODTA/ODPRV
*SQL *FYI* Denied for JAVA1 to SMZODTA/ODPRVD *FILE. SQL: SELECT PRPRVD,PRTEXT
*TELNET Denied 1.1.1.144.
*TELNET Denied 1.1.1.178.
*TELNET Denied 1.1.1.178.
*TELNET Denied 1.1.1.178.
*TELNET Denied 1.1.1.178.
*TELNET Denied 1.1.1.178.
*SQL *FYI* Denied for JAVA1 to SMZ8/PROCGSEPNT *PGM. SQL: CALL SMZ8/PROCGSEPNT
                                                                      More...
F3=Exit F6=Modify rule F7=Add action F10=Details F11=Single entry F12=Cancel
F17=Top F18=Bottom
```

Display Firewall Log

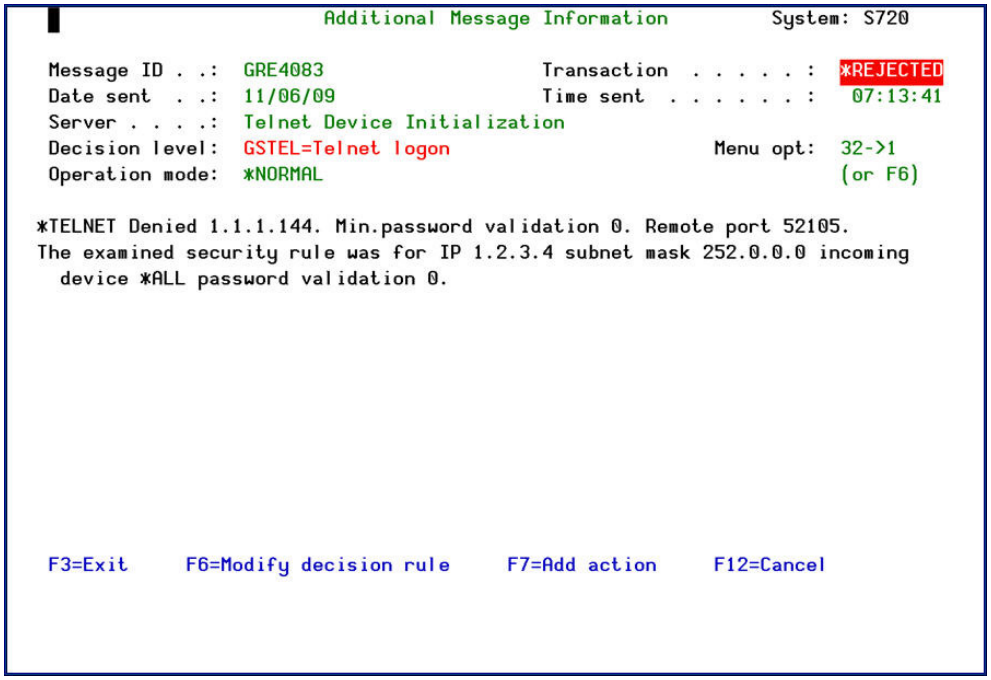
5. Press **F6** to modify the applicable rule based on an entry in the log. The rule definition screen for the applicable rule type opens. This feature allows the user to respond proactively to a situation discovered while reviewing the log, and leads the user to the exact screen where modification is required.

6. To view the details of an individual entry, move the cursor to the desired line and press **Enter** or **F11**. An example of an activity log entry appears below.



Additional Message Information

7. When pressing **F1** on a display log entry and viewing the **Additional Message Information** screen, displaying 'Decision Level' now informs you how to correct the problem, for example: Menu option: 2, 1 or 2 means enter 2 from the main menu, and then enter either option 1 or 2.

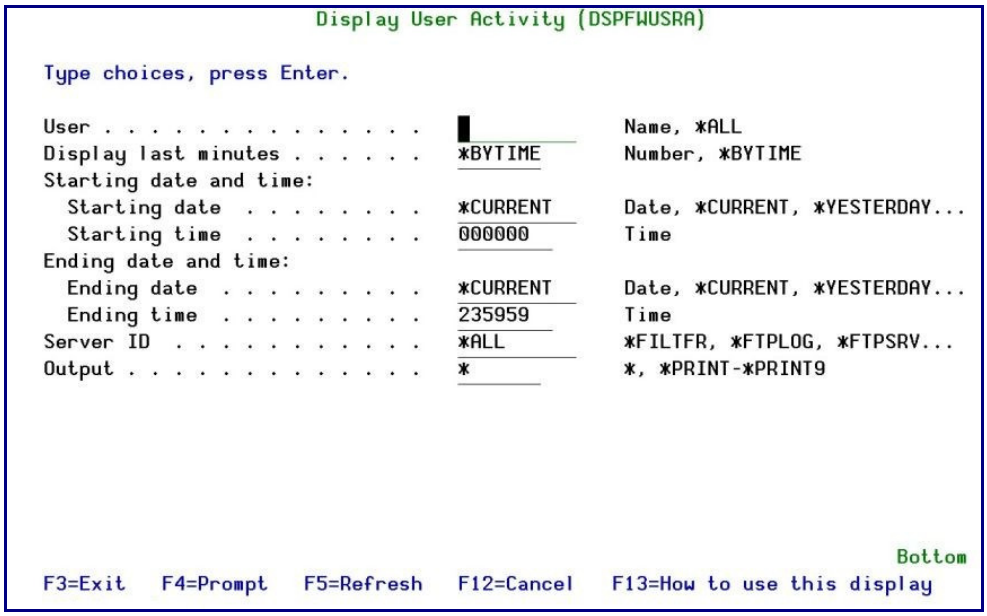


Additional Message Information

Statistics

This option provides statistics on access via a specific server or all servers, for all users. **Activity Summary** is for groups of users and **User Activity Summary** is for a specific user. The screens are the same.

Select option **62. User Activity Statistics**, the **Display User Activity** screen appears



Display User Activity

Parameter or Option	Description
Display last minutes	Selects only the events occurring within the previous number of minutes as specified by the user **Number** = Enter the desired number of minutes ***BYTIME** = According to starting and ending times specified below
Starting date & time **Ending date & time** **Starting date & time** **Ending date & time** **(Continued)**	Selects only the events occurring within the range specified by the starting and ending date/time combination **Date and time** = Enter the appropriate date or time ***CURRENT** = Current day ***YESTERDAY** = Previous day ***WEEKSTR/*PRVWEEKS** = Current week/previous week start ***MONTHSTR/ *PRVMONTH** = Current month/previous month start ***YEARSTR/ *PRVYEARS** = Current year/ previous year start ***SUN** -***SAT** = Day of week
Server ID	Choose servers you want to examine. To examine all servers, choose ***ALL.**

Parameter or Option	Description
Output	***PRINT** = prints to local printer ***PRINT1**= prints to remote printer ***PRINT2** = prints to both remote and local printers ***PRINT3-9** = user modifiable

Group Items for Selection

Define assorted groups of reports in line with your requirements, to schedule a particular group of reports to run as one unit sometime in the future.

%GROUP is used for defining a group of user-profiles that all share the same authorities.

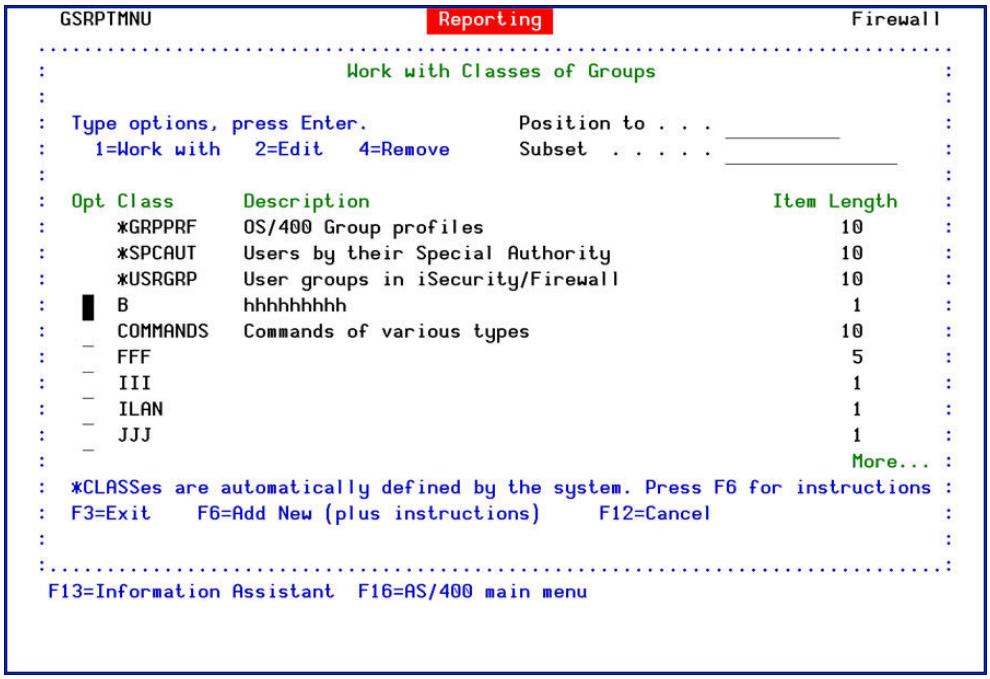
This solution enables defining GROUPS by GROUP-TYPES. These GROUP-TYPES can be any system entity such as files, libraries, applications, identification numbers, etc.

For each GROUP-TYPE, one can define an unlimited number of GROUPS and within GROUPS any number of items. For example, all identification numbers of the PCs in the organization can be defined as one group in the GROUP-TYPE defined as MACHINE_ADDRESS. Another group in MACHINE_ADDRESS may contain all identification numbers of the PCs in a sister organization.

In all comparison tables, for defining rules, for generating and selecting queries, or for defining the items in reports, the ITEM GROUP-TYPE/GROUP syntax can be used to include only those transactions which contain the GROUP-TYPE/GROUP specified. Likewise, NITEM GROUP-TYPE/GROUP can be used to include only those transactions which do not contain the GROUP-TYPE/GROUP defined.

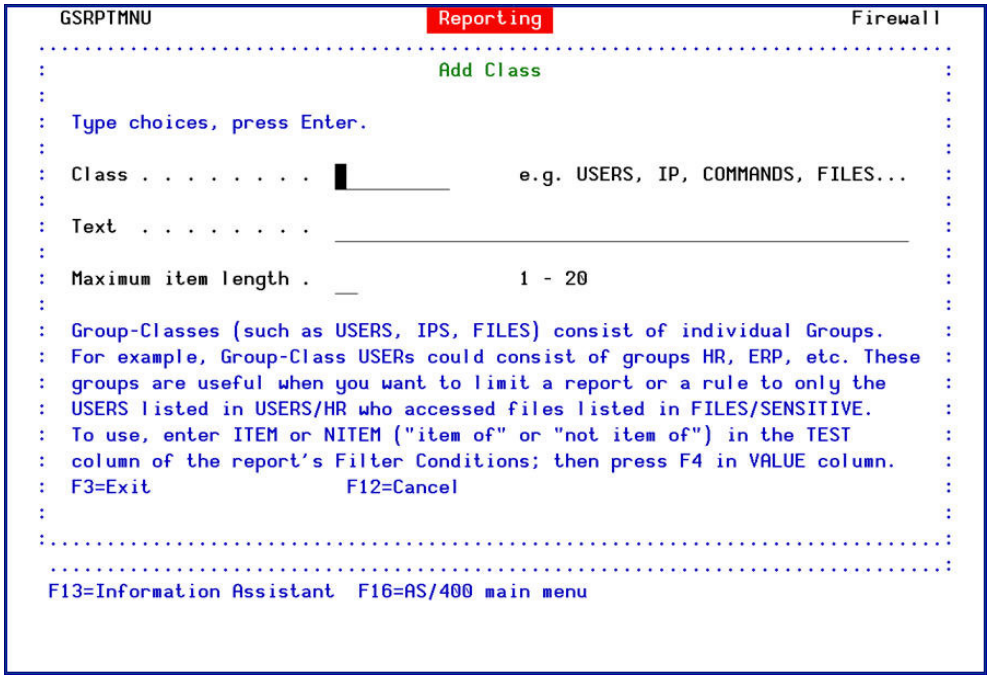
In addition, special GROUPS such as groups of users already defined on the system, all of which have a common identifying characteristic. For example, the group profile of the system, group profiles defined in **Firewall**, and virtual groups of users named *SECADM, *SAVESYS etc. which are the users who have this particular privilege defined in their special authority.

1. To define Groups and Items, select option **43. Log, Reports, Queries** from the main menu, and option **41. Group Items for Selection** from the **Reporting** menu. The **Work with Classes of Groups** screen appears.



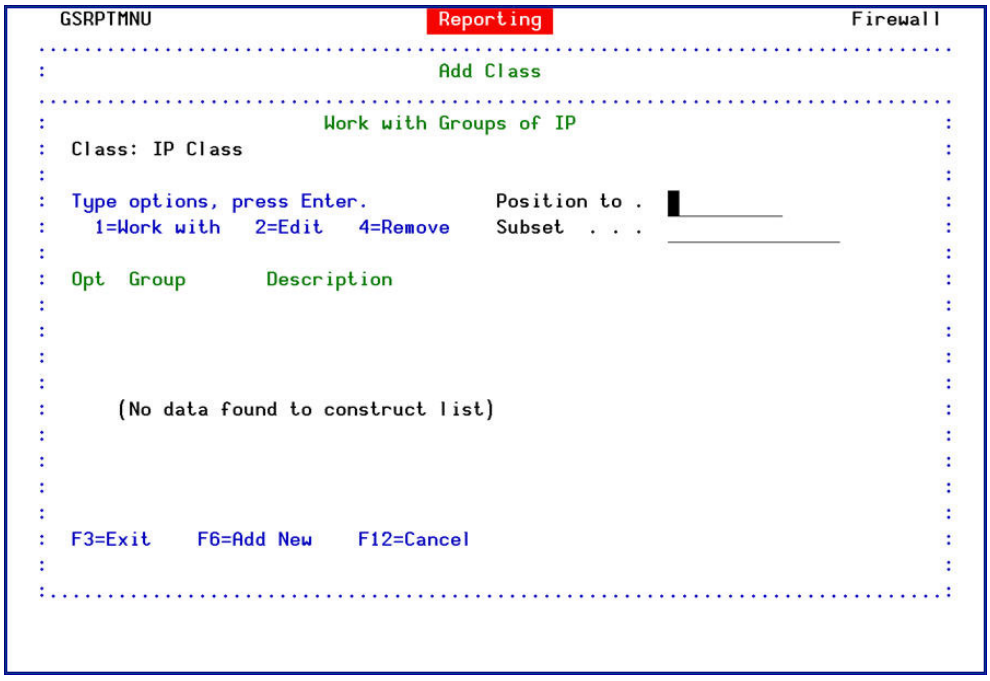
Work with Classes of Groups

2. Press **F6** to add a new class or type **1** to modify an existing class to your needs.



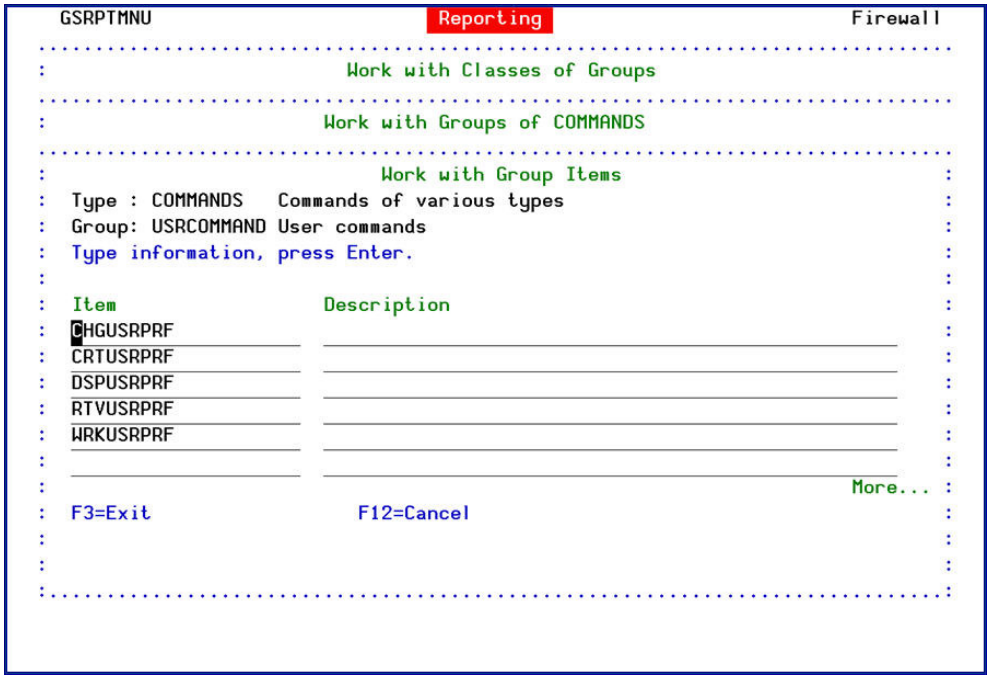
Add Class

3. Press Enter. The **Work with Groups** screen appears.



Work with Groups

4. Press **F6** to add a new Group or **1** to modify items in existing group to your needs.



Work with Group Items

The supported TYPES are:

*USER – Check that the value is a user in a %GROUP of users

*GRPPRF – Check that the value is a user in an OS/400 Group Profile

*USRGRP – USER and all user profiles which are members of same user groups as USER

*ALL – For both *GRPPRF and *USRGRPs

NOTE: *If the TYPE is missing, *USER or *USRGRP is assumed based on the appearance of the percentage symbol ("%") as the first character in the GROUP.*

Using the Report Scheduler

This section describes the Report Scheduler feature and provides step-by-step instructions for its use.

Overview

The Report Scheduler allows you to run pre-defined "report groups" automatically according to a fixed schedule. A **report group** is comprised of one or more individual queries, reports or Activity Log inquiries that are executed together at a designated time. Grouping reports in this manner is more efficient because the scheduling details and other run-time parameters need to be defined only once for the entire group.

The most common application of the Report Scheduler is automatically running periodic audit reports based on queries. A schedule can be set up to run reports on a daily, weekly or monthly basis. Additional schedule parameters are provided to enable the user to specify the day of the week, day of the month and time of day that your report will run.

The Report Scheduler can print several different types of reports, such as:

- Queries
- **Firewall** Activity Logs reports
- **Action** Activity Logs, which contain records of actions actually performed
- User Profile Reports

The Report Scheduler is based on the native OS/400 scheduling facility, but with added support for the report group feature and an improved user interface.

The Definition Process

The Report Scheduler incorporates a wizard-based interface to make the definition process simple and user friendly.

To define and schedule reports to run automatically, perform the following steps in order:

1. Create any queries to be included in the relevant report group.
2. Create or modify the report group as follows:
   - Assign a report group name and description.
   - Enter schedule data and run-time parameters for the group.
3. Create the individual reports to be included in the report group as follows:
   - Assign a report name and select the report type.
   - Define the run-time parameters for each the report.

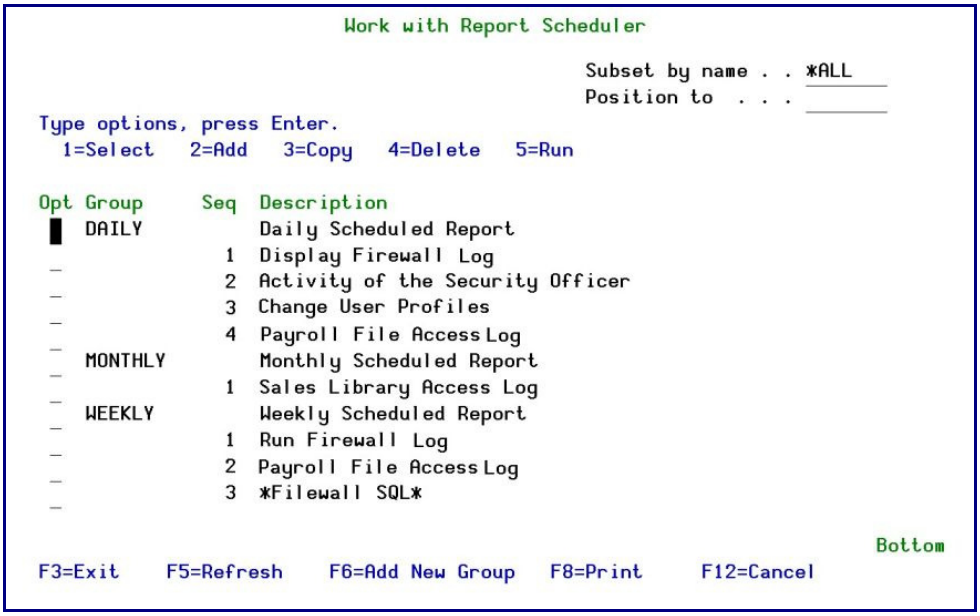
4. Run the report group, if desired.

These steps are explained in detail in the following sections.

Working with Report Groups

The first step in the Report Scheduler definition process is to define the report group. The report group definition consists of a group name, description and several run time parameters that apply to each report in the group.

1. Select **51** from the **Log, Reports, Queries** menu. The **Work with Report Scheduler** screen appears.
2. Press **F6** to create a new report group or type **1** to select an existing group.

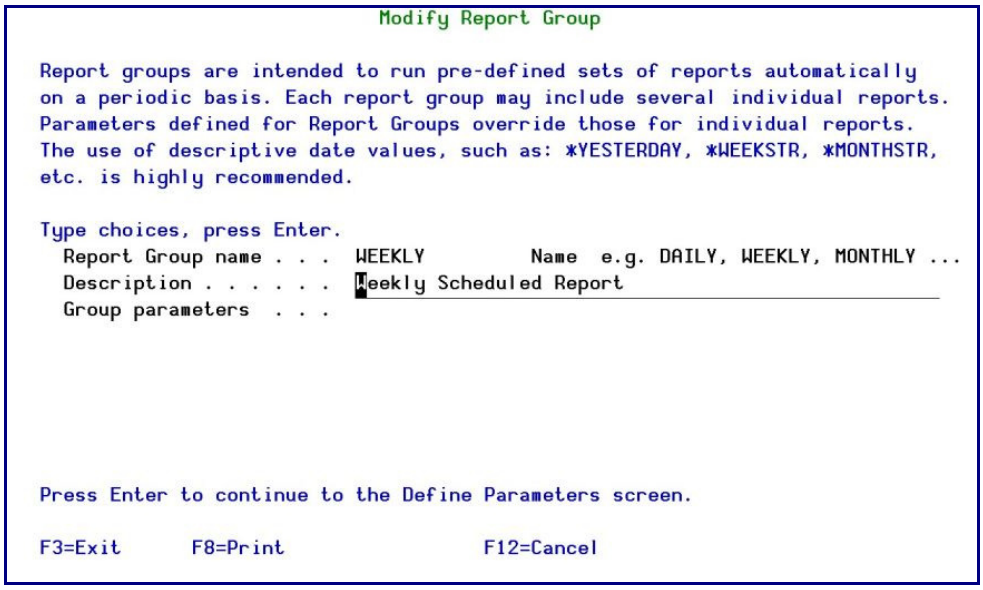


Work with Report Scheduler

Report groups appear on the screen sorted in alphabetical order by the group name. The individual reports contained in each group appear directly below the group name arranged according to a user-modifiable sequence.

Parameter or Option	Description
F6	Create new report group
Opt	**1** = Select group for modification **2** = Add a new report to the selected group **3** = Copy the group along with all its reports, or Copy an individual report from one group to another **4** = Delete the group along with all of its reports, or Delete an individual report

3. The **Modify Report Group** screen appears. Assign a name to the report group and enter a brief description.



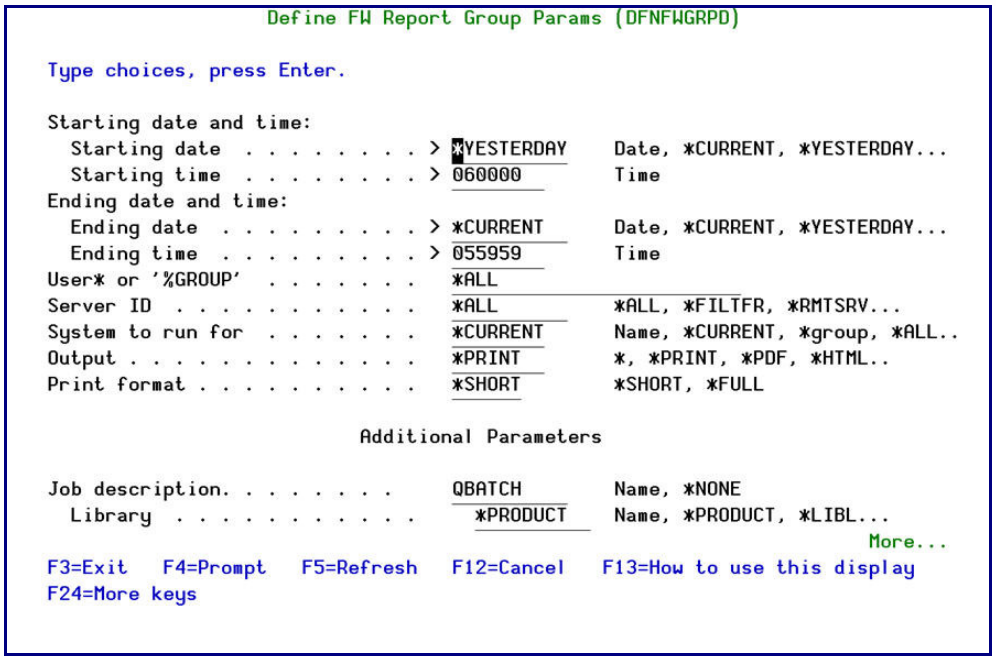
Modify Report Group

Option	Description
Report Group Name	Enter a name with a maximum of **7** alphanumeric characters. The name must begin with a letter.
Description	Free text description of the report group
Group Parameters	Command string automatically generated by **Firewall** based on run-time parameters specified for the report group

4. Press **Enter** to continue.

This screen allows the user to define **run-time filters** that apply to all reports in the group. Run-time filter criteria allow the user to display or print only a **subset** of the data extracted by the query definition. For example, if a query definition does not include filter criteria for a user profile (i.e. includes all user profiles), this screen can be used to print only activity associated with a specific user profile.

Run-time filter criteria will not extract data that is not included in the query definition itself. For example, if a query definition includes filter criteria only for the user profile ***RICH*** and one enters run-time criteria for the user ***GEORGEW***, no records will be displayed.

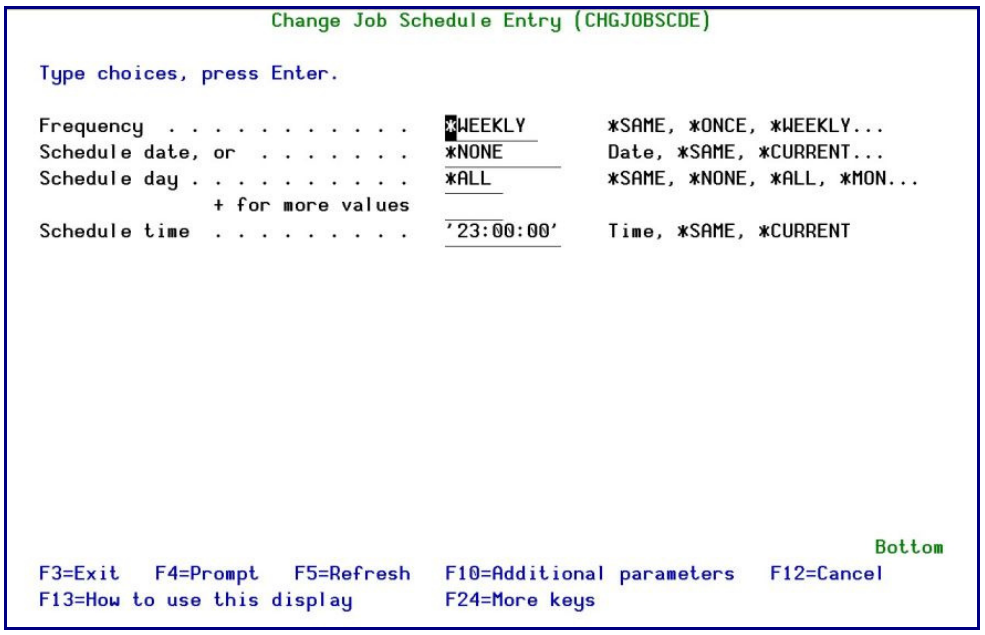


Define FW Report Group Details

Option	Description
Starting/Ending Date	Enter a fixed date or use one of the following constants: ***CURRENT** = The current date (day the report runs) ***YESTERDAY** = The day before the current date ***WEEKSTR** = Beginning of the current week ***PRVWEEKS** = Beginning of the previous week ***MONTHSTR** = Beginning of the current month ***PRVMONTHS** = Beginning of the previous month ***YEARSTR** = Beginning of the current year ***PRVYEARS** = Beginning of the previous year ***MON - *SUN** = Day of the current (or previous) week **NOTE**: *All constants are relative to the day on which the report runs.*
Starting/Ending Time	Time of day using the 24 hour clock (HH:MM:SS)
User* or '%GROUP'	User profile or Group name that instigated the event being audited
Server ID	Choose servers you want to examine. To examine all servers, choose ***ALL.**
System to run for	The system to report information from ***CURRENT** = the current system ***Name** = a group of systems as defined in STRAUD, 83, 1 ***ALL** = all the systems defined in STRAUD, 83, 1
Output	***PRINT** = prints to local printer ***PRINT1**= prints to remote printer ***PRINT2** = prints to both remote and local printers ***PRINT3-9** = user modifiable
Print Format	***SHORT** = Short format ***FULL** = Full report format
Results	***BOTH** = display rejected and accepted transactions

Option	Description
	***REJECT** = display rejected transactions ***ACCEPT** = display accepted transactions
Object/Library	Object and library path
Object Type	One of the available objects types from option **21. Native AS/400 Objects** (Firewall Main menu)

5. Press **Enter** to continue to the **Change Job Schedule Entry** screen.



Change Job Schedule Entry

Option	Description
Frequency	***SAME** = Value does not change ***ONCE** = Run the report group once only ***WEEKLY** = Run on the same day or days of each week ***MONTHLY** = Run on the same day or days of each month
Schedule Date	**Date** = The specific day on which the report will run ***SAME** = Value does not change ***CURRENT** = The current date (day the report runs) ***MONTHSTR** = First day of the next month ***MONTHEND** = Last day of the current month ***NONE** = Use day of week value in the **Schedule Day** field below
Schedule Day	***ALL** = Run every day (Overrides frequency parameter) ***MON** ***TUE** ***WED** ***THU** ***FRI** ***SAT** ***SUN** ***NONE** = Use day of week value in the **Schedule Date** field above.
Schedule Time	Time of day using the 24 hour clock (HH:MM:SS)

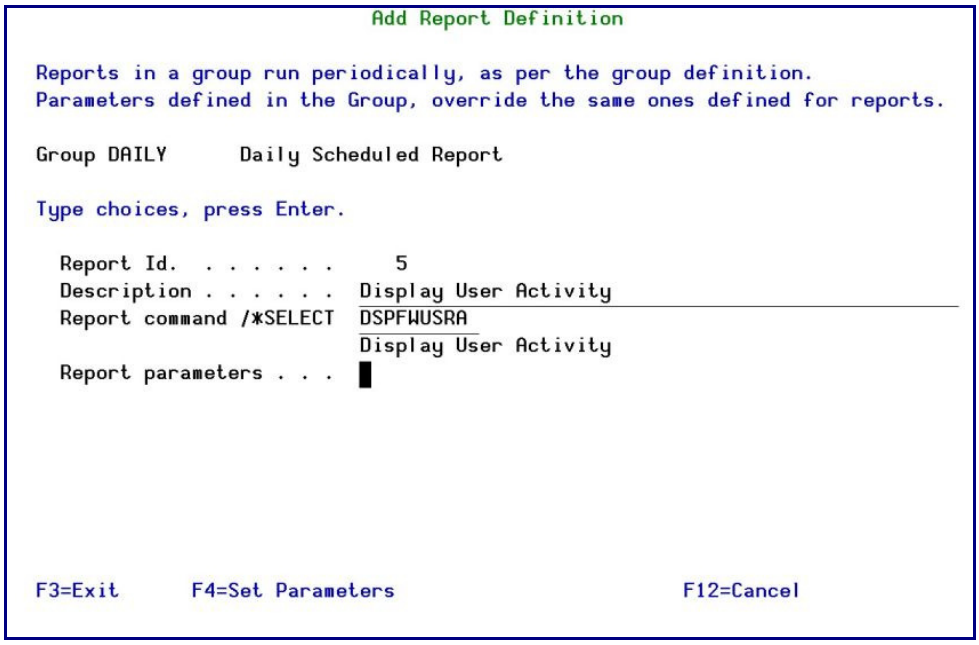
The **Schedule Date** and **Schedule Day** fields are mutually exclusive. If one is used, the other must be set to the value '***NONE***'. Other fields may appear on this screen, which is associated with the OS/400 ***CHGJOBSCDE*** command. These fields are not relevant under most circumstances.

6. Press **Enter** to complete the definition and return to the **Work with Report Scheduler** screen.

Working with Individual Reports

The next step in the definition process is to define the individual reports that are contained in the report group.

1. To add a new report to a group, type **2** next to the group name, or type **2** next an individual report to modify it. The **Modify Report Definition** screen appears.



Modify Report Definition

Option	Description
Report ID	Numeric identification automatically assigned by the **Firewall**
Description	Free text description of the report
Report Command (F4)	Press **F4** to select report type from a pop-up window

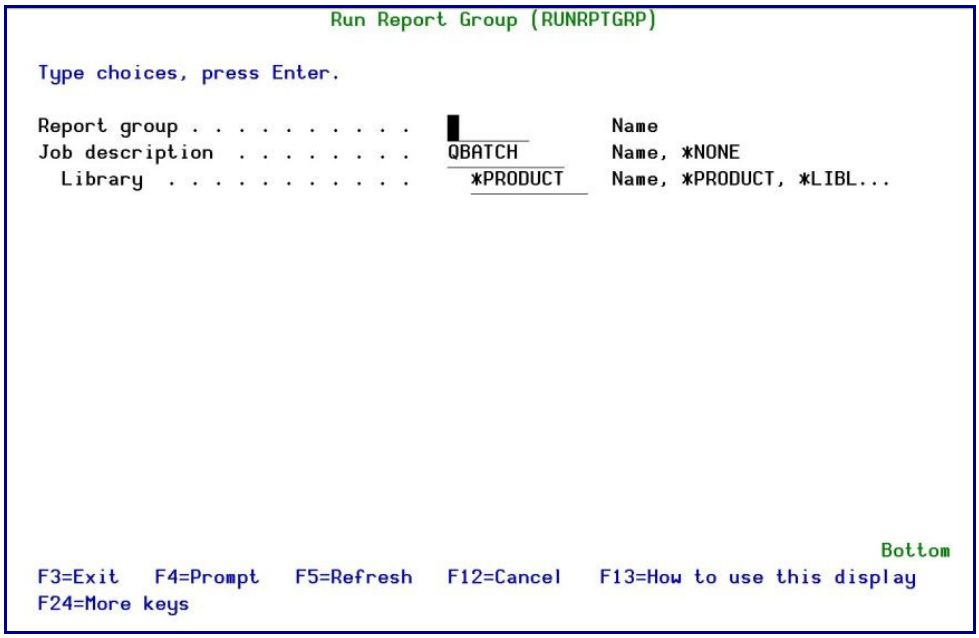
2. Define run time parameters for this report. The actual parameters available are specific to the report type.
3. Press **Enter** to finish the definition and return to the **Work with Report Scheduler** screen.

Running Reports

The Report Scheduler submits all scheduled reports as batch jobs automatically on the day and time as specified in the definition. A report can be run manually at any time.

To run a report manually:

1. Select **52** from the **Log, Reports, Queries** menu. The **Run Report Group** screen appears.
2. Set parameters according to the following table.

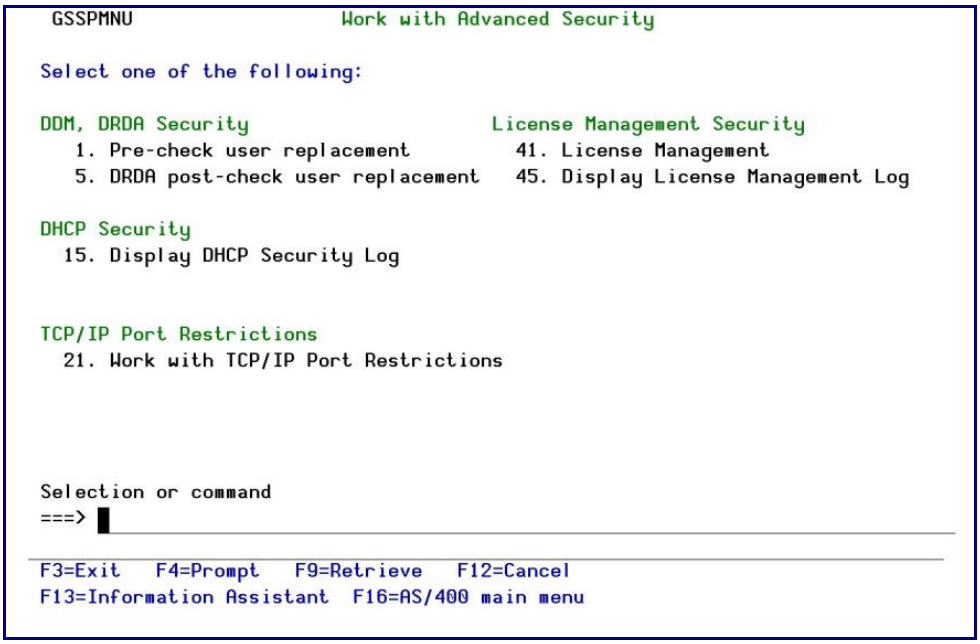


Run Report Group

Parameters	Description
Report Group	Enter the report group name
Job Description	Your batch job subsystem – normally ***QBATCH***
Library	**Name** = Library name ***Product** = ***SMZ4*** or the default product library ***LIBL** = Current library list ***CURLIB** = Current Library

Chapter 9: Advanced Security Features

The Work with Advanced Security Screen enables the user to configure powerful security settings. To access these settings, select **42. Advanced Security Features** from the **Firewall** main menu. The **Work with Advanced Security** screen appears.



Work with Advanced Security

DDM, DRDA Security

Distributed Data Management (DDM) is a function of the operating system that allows an application program or user on one system to use database files stored on a remote system. The system must be connected by a communications network, and the remote system must also use DDM. The term also applies to the underlying communications architecture.

Distributed Relational Database Architecture(TM) (DRDA(R)) is the architecture that defines formats and protocols for providing transparent access to remote data. DRDA defines two types of functions: the application requester function and the application server function.

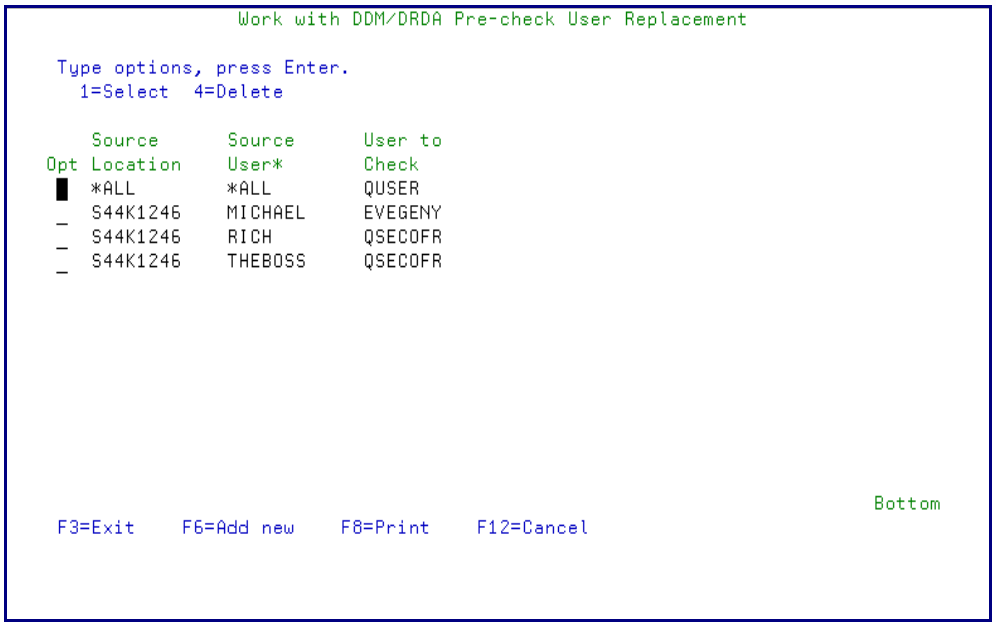
Both of these are integrated into the **Firewall** advanced security features.

Pre-Check User Replacement

This feature applies to both DDM and DRDA. **Firewall** performs a "pre-check" whenever a certain user enters from a certain location. **Firewall** "invents" an entity that does the checking.

To work with Pre-Check User Replacement:

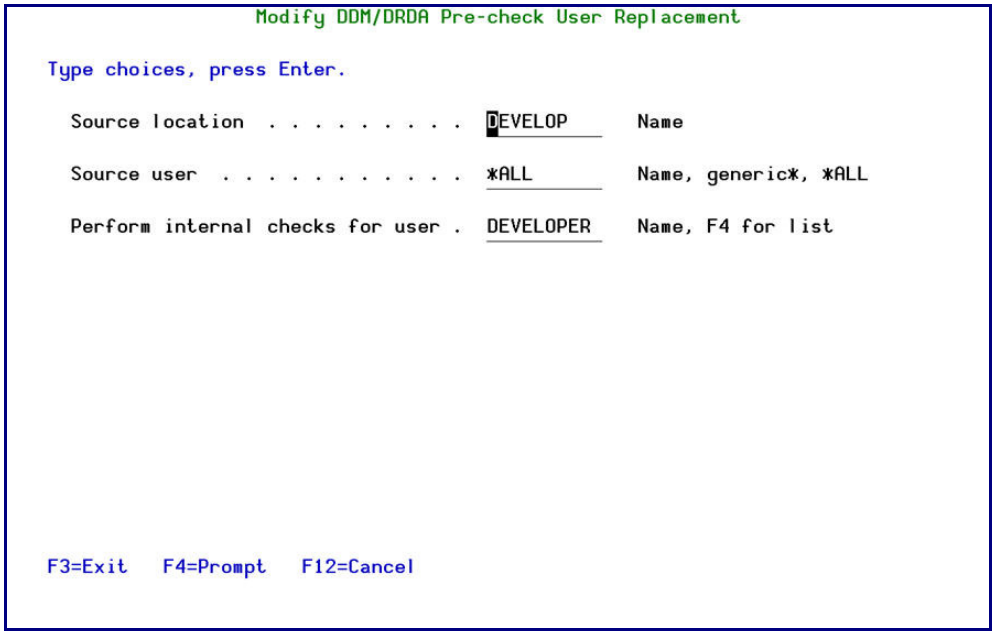
1. Select **1. Pre-check user replacement** from the **Work with Advanced Security** screen. The Work with DDM/DRDA Pre-check User Replacement screen appears.
2. Set the correct parameters and press **Enter**.



Work with DDM/DRDA Pre-check User Replacement

Parameters	Description
Source Location	System name of remote server
Source User	User profile name of target DDM job
User to Check	User for which internal check is performed

NOTE: *Add* **DDM/DRDA Pre-check User Replacement** *and* **Modify DDM/DRDA Pre-check User Replacement** *share the same settings.*



Modify DDM/DRDA Pre-check User Replacement

Parameters	Description
Source location	System name of remote server
Source user	User profile name of target DDM job
Perform internal checks for user	**Name** = name of user being checked **F4 for list**=press this option to

DRDA Post-Check User Replacement

This is a "post-check" only applicable for DRDA. In this option, **Firewall** replaces restricted users with someone who has the correct authority.

1. To work with **DRDA Post-Check User Replacement**, select **5. DRDA post-check user replacement** from the **Work with Advanced Security** screen. The **Work with DRDA Post-check User Replacement** screen appears.
2. Set your desired parameters and press **Enter**. To modify, select **1**. To add, select **F6**.

```
                  Work with DRDA Post-check User Replacement

 Type options, press Enter.
   1=Select  4=Delete

    Source      Source      User for OS/400
Opt Location    User*       Security checks
 _  *ALL        *ALL          QUSER
 _  S44K1246    %ACCT         RICH
 _  S44K1246    %PRGMR        EVEGENY
 _  S44K1246    QSECOFR       QSECOFR
 _  S44K1246    THEBOSS       QSECOFR

                                                                  Bottom
 F3=Exit     F6=Add new     F8=Print     F12=Cancel
```

Work with DDM/DRDA Post-check User Replacement

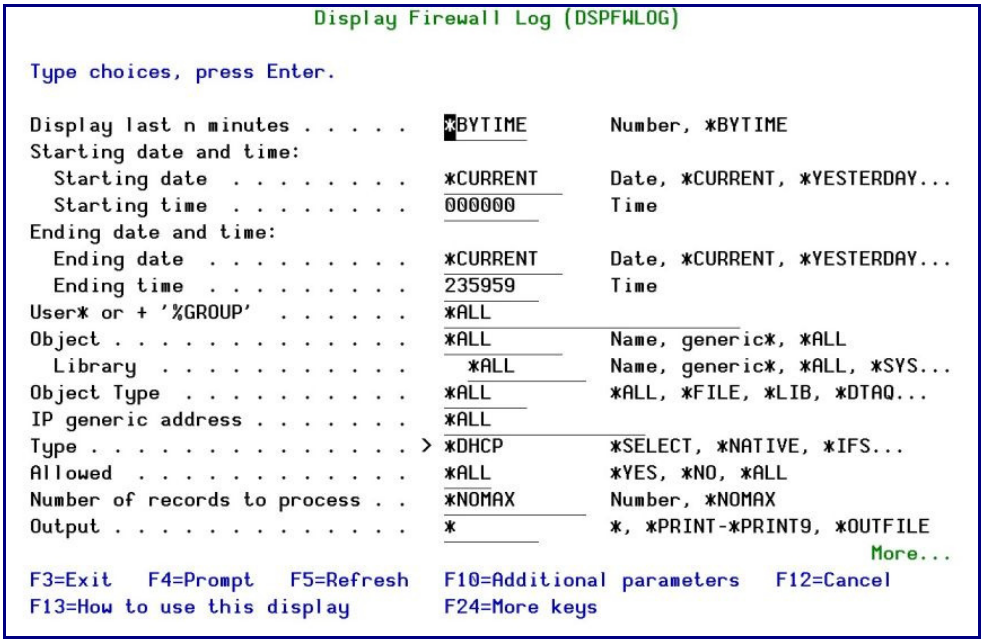
Parameters	Description
Source location	System name of remote server
Source user	User profile name of target DRDA job

DHCP Security

DHCP (Dynamic Host Configuration Protocol) is a communications protocol that is used to centrally manage configuration information. For example, DHCP automatically assigns IP addresses to computers in a network. DHCP is defined by the Internet Engineering Task Force (IETF).

The AS/400 may essentially play the role of a DHCP server. If so, it records the activities and transactions in a log. This option allows the user to view and inspect that log.

1. Select **15. Display DHCP Security Log** from the **Work with Advanced Security** screen. The **Display Firewall Log** screen appears.
2. Type options and press **Enter**.



Display Firewall Log

Parameter or Option	Description
Display last n minutes	Select only the events occurring within the previous number of minutes as specified by the user **Number** = Enter the desired number of minutes ***BYTIME** = According to starting and ending times specified below
Starting date & time **Ending date & time** **Starting date & time** **Ending date & time** **(Continued)**	Select only the events occurring within the range specified by the start and end date/time combination **Date and time** = Enter the appropriate date or time ***CURRENT** = Current day ***YESTERDAY** = Previous day ***WEEKSTR/*PRVWEEKS** = Current week/Previous week start ***MONTHSTR/ *PRVMONTH** = Current month/Previous month start ***YEARSTR/ *PRVYEARS** = Current year/ Previous year start ***SUN -*SAT** = Day of week
User* or '%Group'	Filter records by user profile or group
Object	Filter records by object **Name** = Specific object by name **Generic*** = All objects/libraries beginning with the text string preceding the * ***ALL** = All types as specified in the query definition

Parameter or Option	Description
Object Type	Filter records by object type.
Type	Server type ***All** = All server types **F4** = Select server type group from a list
Allowed	***YES** = Allowed ***NO** = Rejected ***ALL** = All activity
Number of records to process	Maximum number of records to process ***NOMAX** = No maximum (Default)
Output	***PRINT** = prints to local printer ***PRINT1**= prints to remote printer ***PRINT2** = prints to both remote and local printers ***PRINT3-9** = user modifiable
Additional Parameters	
Filter by Time Group - Relationship	***IN** = Include all records in time group (Inclusive) ***OUT** = Include all records **not** in time group (Exclusive) ***NONE** = Do not use time group, even if included in query definition
Filter by time group - Time group	**Name** = Name of time group ***SELECT** = Select time group from list at run time
Filter using query rules	Use an existing query to filter Activity Log entries. This is useful for applying complex filter criteria. **Name** = Name of an existing query ***None** = Do not use query rules (Default)

TCP/IP Port Restrictions

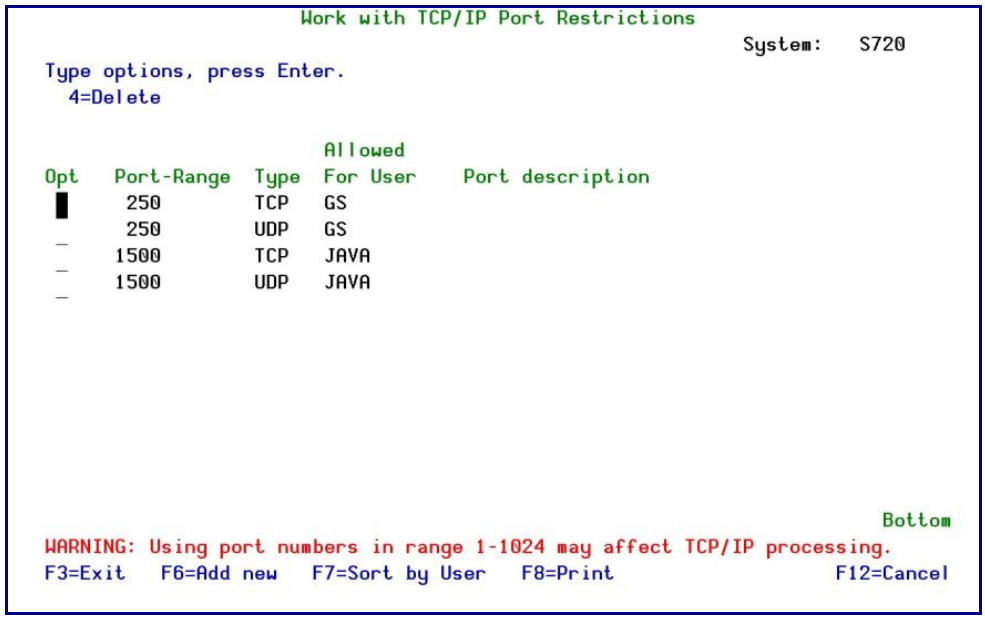
Work with TCP/IP Port Restrictions

Transmission Control Protocol/Internet Protocol is an industry-standard, non-proprietary set of communications protocols that provide reliable end-to-end connections between applications over interconnected networks of different types.

In the world of TCP/IP, an IP address is necessary in order to reach a destination. At the destination, a port, which serves as a virtual door or window, is required. In today's world, it is imperative to protect and guard the ports in your system. Thus, **Firewall** restricts certain users to certain ports by defining the port range accessible to them.

Port information consists of a list of the ports or port ranges, protocols, and the user profiles. You need to define port information only if you want to restrict the use of a port or range of ports to one or more users.

1. To add, display, remove, or print port restrictions, select **21. Work with TCP/IP Port Restrictions** from the **Work with Advanced Security** screen. The **Work with TCP/IP Port Restrictions** screen appears.
2. Enter the parameters according to the following table. To add, select **F6**.



Work with TCP/IP Port restrictions

Parameters	Description
Port Range	Specifies the port number or range of port numbers identifying the port or ports that are being restricted. Valid values range from 1 through 65 535. **NOTE:** *Ports 1 - 1024 are used by the system-supplied TCP/IP applications. If the user specifies ports 1 through 1024, this can affect the operation of those applications.* **Lower** = lower end of port range **Upper** = ***ONLY** (Used to restrict only a single port) **User** = The user profile that will use this port or range of ports.
Opt.	**4** = **Delete** (deletes the restrictions for a port)
	F6 = **Add**: Use to add a port restriction by typing the port number into the input field at the top of the list. To add more restrictions, use the Add function again.

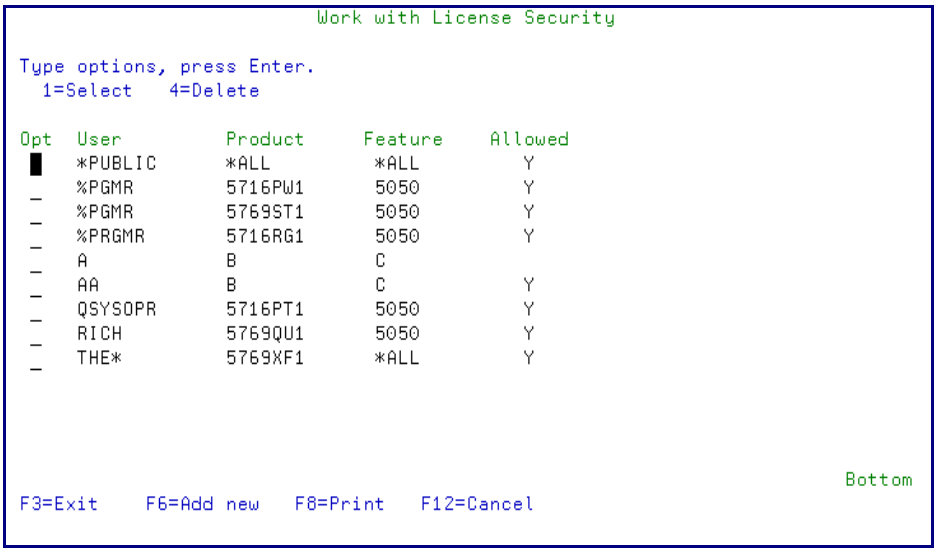
License Management Security

Licensed programs can either be unlimited or limited to a group of users.

License Management

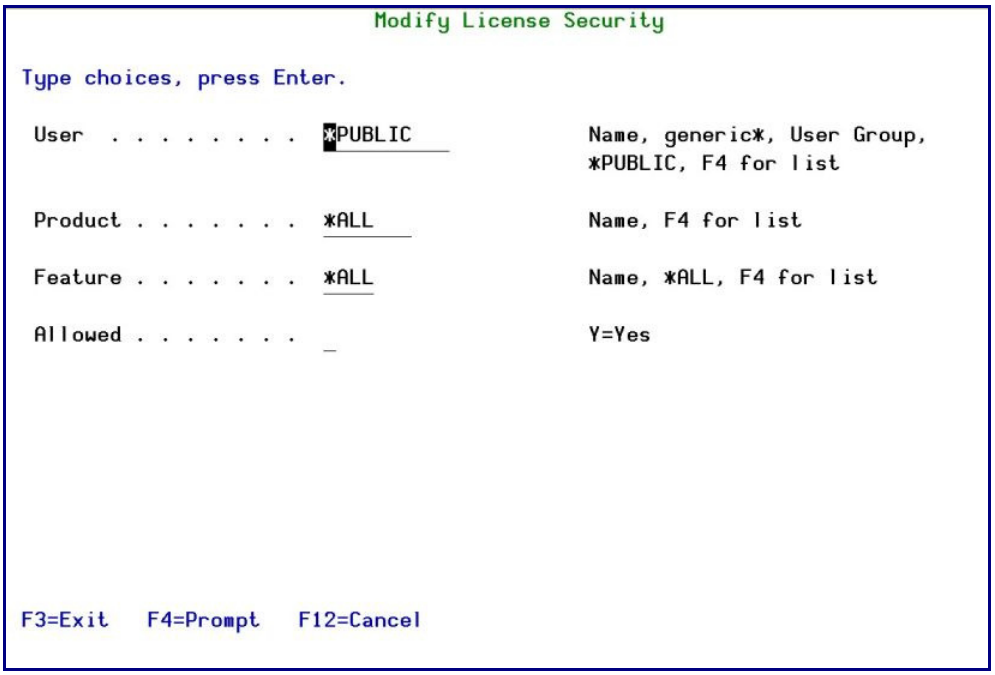
This option enables users to supervise, and therefore allow and restrict, the use of licensed copies of their software.

1. To work with License Security, select **41.License Management** from the **Work with Advanced Security** screen. The **Work with License Security** screen appears.
2. Set parameters according to the following table and press **Enter**. Select **F6** to add a new user or option **1** to modify.



Work with License Security

Parameters	Description
User	User working with particular software
Product	Software in question
Feature	The feature that the user has access to ***ALL** = all features
Allowed	**Y** = User is allowed to access this software



Modify License Security

Display License Management Log

This feature provides information about every transaction generated by the License Management server.

1. To display the log, select **45. Display License Management Log** from the **Work with Advanced Security** screen. The **Display Firewall Log** screen appears.
2. Set parameters according to the table in the DHCP Security section earlier in this chapter, and press **Enter**.

Chapter 10: Configuration and Maintenance

System Configuration

This section reviews the process of setting general configuration for **Firewall.**

To reach this screen, select **81. System Configuration** from the main screen. The **iSecurity (part I) Global Parameters** screen appears.

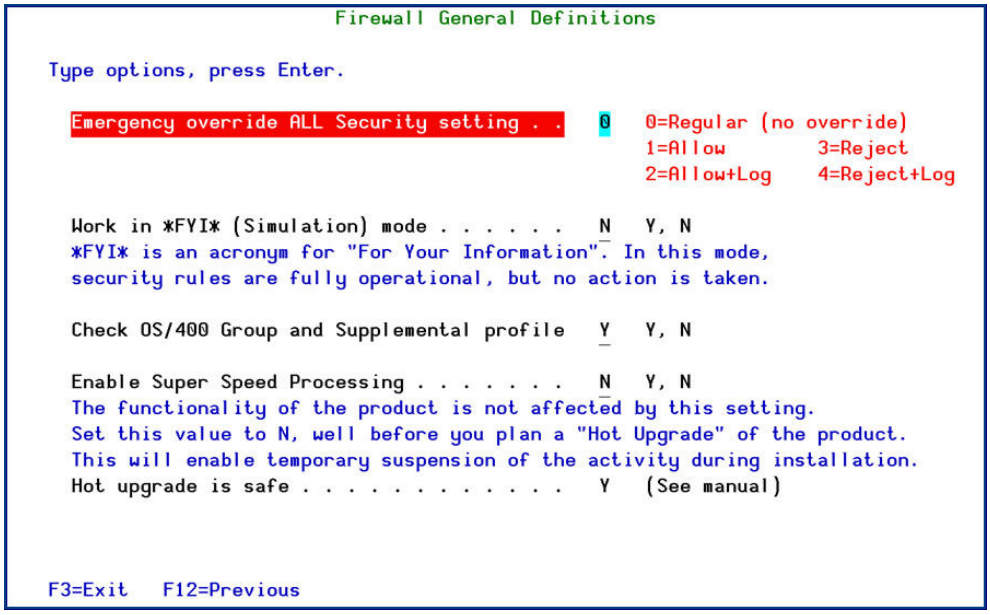
```
*FYI* Mode Active     iSecurity (part I) Global Parameters

Select one of the following:

Firewall                                    Screen
 1. General Definitions                     11. General Definitions
 2. Additional Settings                     12. Customize Messages
 3. User Exit Programs
 4. Transaction Post Processing             Password
 5. Intrusion Detection System              21. Password Dictionaries
 6. Password Exit Programs
 7. Enable ACTION (CL Script + more)        System Configuration
 8. SYSLOG                                  81. iSecurity/Base
 9. Log Retention
                                            General
                                            91. Language Support
Selection ===>                              99. Copyright Notice

Release ID . . . . . .  15.0  09-11-12    4465D5A  720 206A
Authorization code . . . . . .  _____________              0


F3=Exit    F22=Enter authority code
```

iSecurity (part I) Global Parameters

General Definitions

This option presents general definitions relating to emergency overrides, FYI (Simulation) mode, **Firewall** history log, OS/400 Group and Supplemental profiles, and Super Speed processing. Follow this procedure:

1. Select **1. General Definitions** from the **iSecurity (part I) Global Parameters** screen. The **Firewall General Definitions** screen appears.
2. Set parameters and definitions according to the following table and press **Enter**.



Firewall General Definitions

Parameter or Option	Description
Emergency override ALL Security setting	This option is explained in full detail in Chapter 4, *Using the Emergency Override Feature*. **0** = Disable emergence override – all rules function normally **1** = Allow all activity **2** = Allow and log all activity **3** = Reject all activity **4** = Reject and log all activity
Work in FYI Simulation Mode	This option is explained in full detail in Chapter 4, *FYI Simulation Mode –Global Setting*. **Y** = Enable FYI globally **N** = Do not enable FYI
Check OS/400 Group and Supplemental profile	**Firewall** checks permissions the same way the system does. First, it checks the permissions of the user, and if there are none, it checks the group profile. If there are still no permissions, it checks its supplemental group profile. **iSecurity** follows IBM's method of requiring up to 17 checks to examine user permissions. **NOTE:** The more checks **Firewall** performs, the lengthier the validation process. The unique algorithm upon which this product is based guarantees a highly rapid process. This option configures how you check users for access. **Y** = Check user for access; if not allowed, check group/supplemental profile for access **N** = Check user for access; if not allowed, reject access without checking group/supplemental profile
Enable Super Speed Processing	Super Speed Processing keeps the most useful commands in the Firewall CPU memory, therefore improving product

Parameter or Option	Description
	performance. Disable this feature a week before upgrade, in order to perform a "hot upgrade" – allowing you to upgrade product without shutting down. **Y** = enable super speed processing **N** = disable super speed processing

Additional Settings

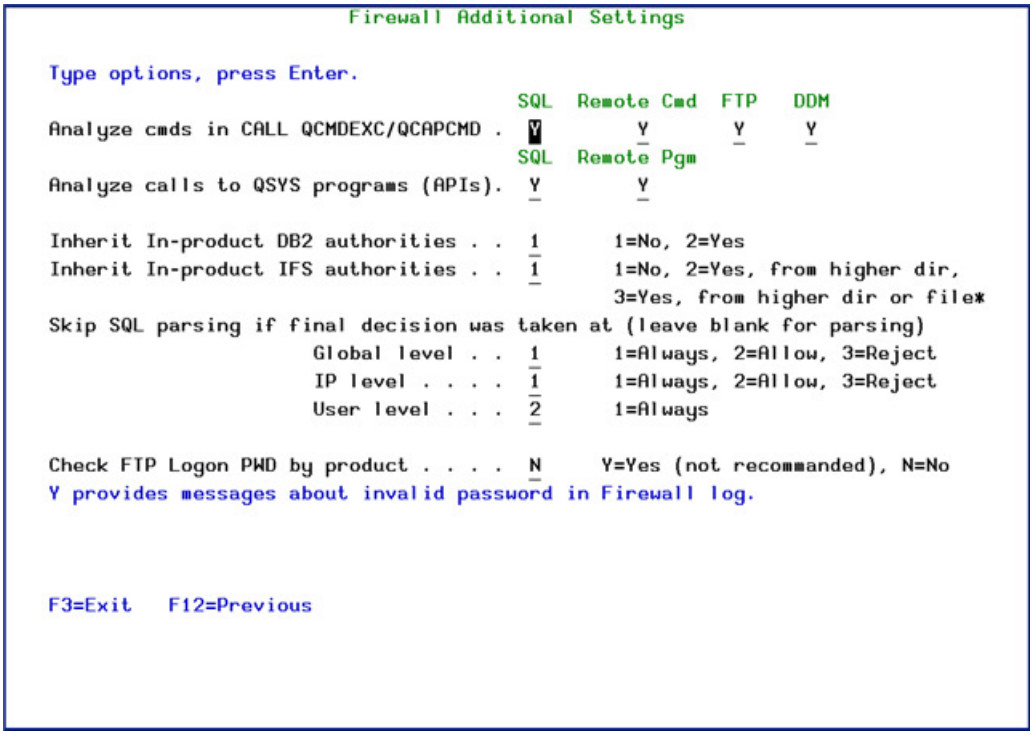
Firewall can ensure that a proper password is entered even before performing any other checks, and before allowing the operating system to validate that password.

If the parameter is set to '**N**' (recommended) at the **Check FTP Logon PWD by product** field, the request might be rejected due to other reasons before ensuring that the password is valid.

The field **Inherit In-product DB2 authorities** refers to optional Native Object Security inheritance

Skip SQL parsing if final decision was taken at… Eliminate SQL parsing when not needed. This option can be activated separately based on the level on which the decision was taken and the type of the decision.

For example: an organization whishes to eliminate parsing of an SQL which was rejected as it has been received from an unauthorized IP (The request can still be logged for farther review).

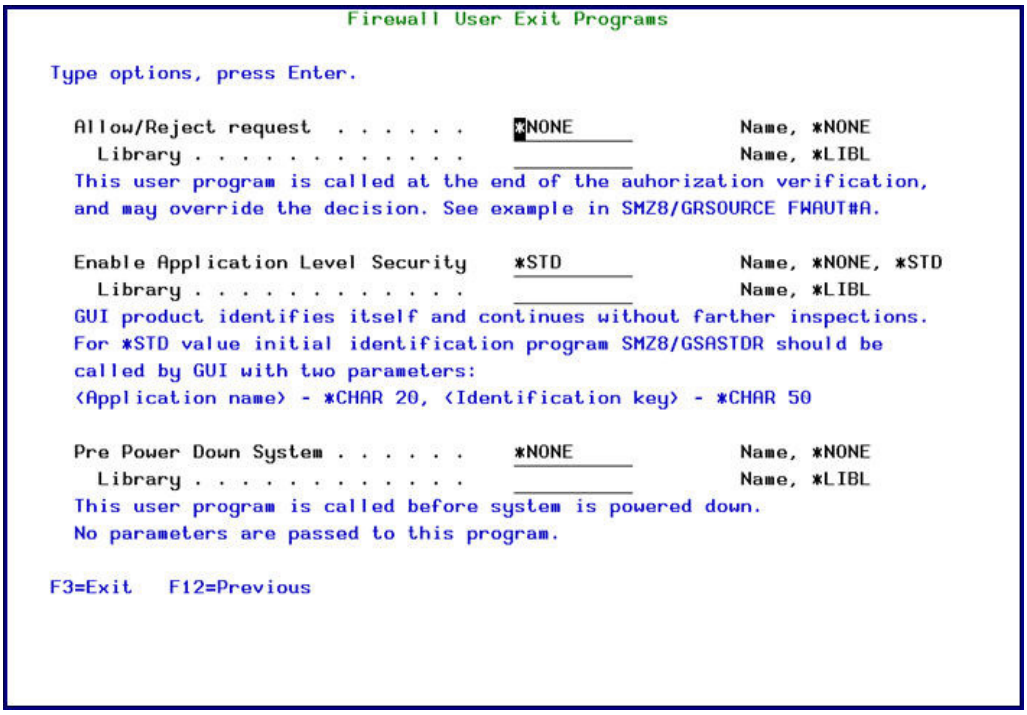


Firewall Additional Settings

User Exit Programs

User Exit Programs are an option for the user to access a program *after* **Firewall** filters have rejected a particular authorization attempt.

1. To work with Firewall User Exit Programs, select **3. User Exit Programs** from the **iSecurity (part I) Global Parameters** screen. The **Firewall User Exit Programs** screen appears.
2. Set parameters and press **Enter**.



Firewall User Exit Programs

Parameter or Option	Description
Allow/Reject Request	After **Firewall** determines an action as legitimate or unauthorized, it can perform an additional check, which can override the first decision. **Name =** name of user exit program ***NONE*=** do not call any program. (Use this option when there is no exit program) ***LIBL =** library where program is located
Enable Application Level Security	***STD =** application security will be checked by the standard iSecurity Firewall program SMZ8/GSASTDR. To activate the Application Security feature, ensure that this field has ***STD** definition **Name =** name of custom-made application security program ***NONE =** no application security check
Pre- Power Down System	If you want to call a program before "power down" (shutting down the AS/400), you must do it here. **Name =** name of user exit program

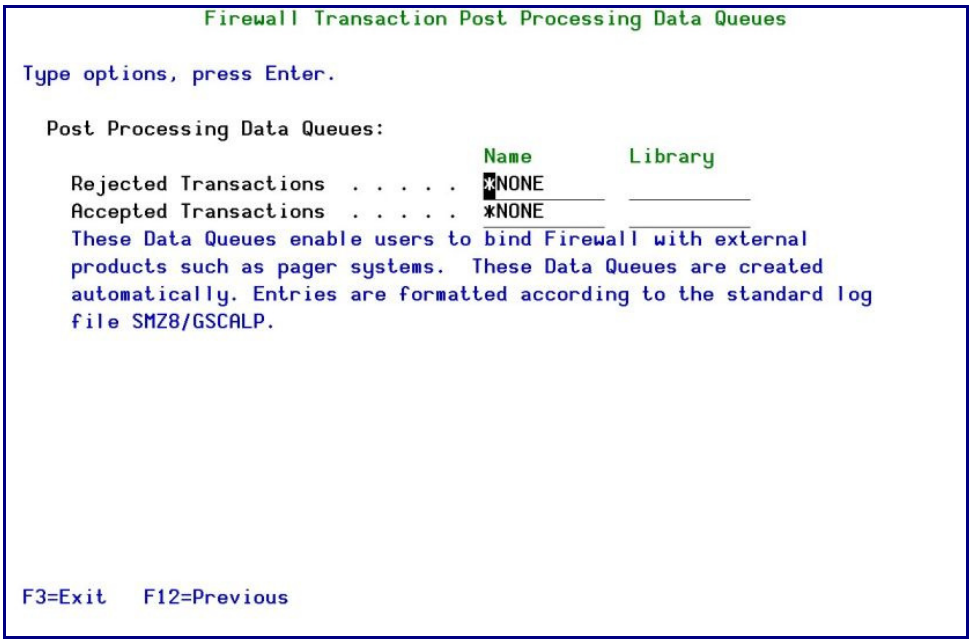
Parameter or Option	Description
	***NONE* =** do not call any program. (Use this option when there is no exit program.)

NOTE: You may also set exit program "behavior" for each server (see *Modifying Server Security*).

Transaction Post-Processing

This option informs particular data queues of accepted/rejected transactions. The user can send all rejected transactions to one data queue, all accepted transactions to another, or send them both to the same message queue.

1. To use Transaction Post Processing, select **4. Transaction Post Processing** from the **iSecurity (part I) Global Parameters** screen. The **Firewall Transaction Post Processing Data Queues** screen appears.
2. Set correct parameters and press **Enter**.

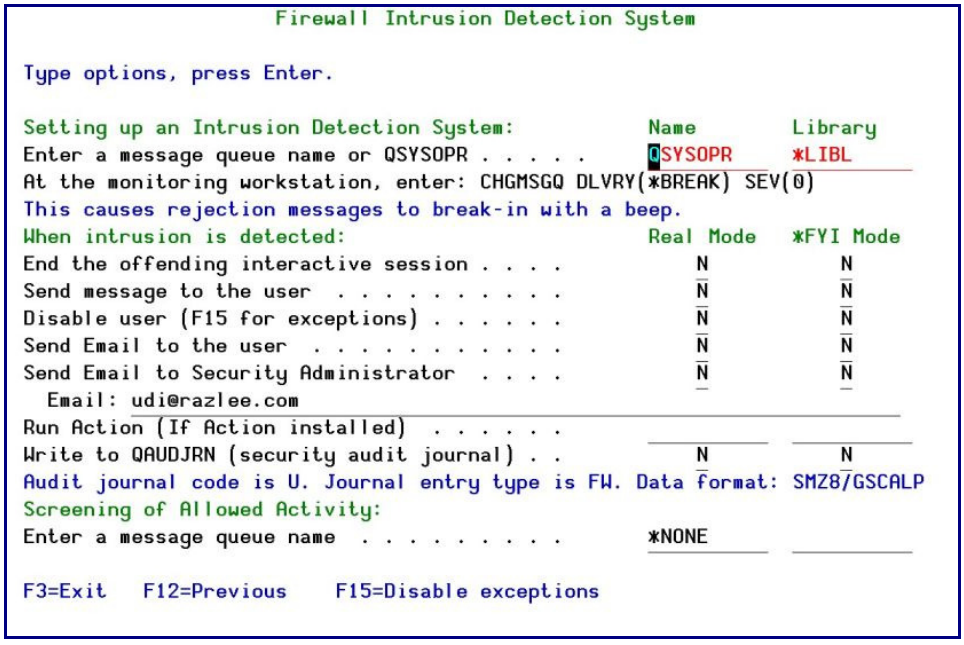


Firewall Transaction Post-Processing Data Queues

Intrusion Detection

This option is related to Transaction Post-Processing, but involves message queues instead of data queues. Intrusion Detection lets particular message queues know of accepted/rejected transactions. Users can send all rejected transactions to one message queue, all accepted transactions to another, or send them both to the same message queue.

1. To use Intrusion Detection, select **5. Intrusion Detection** from the **iSecurity (part I) Global Parameters** screen. The **Firewall Intrusion Detection** screen appears.
2. Set correct parameters and press **Enter**.



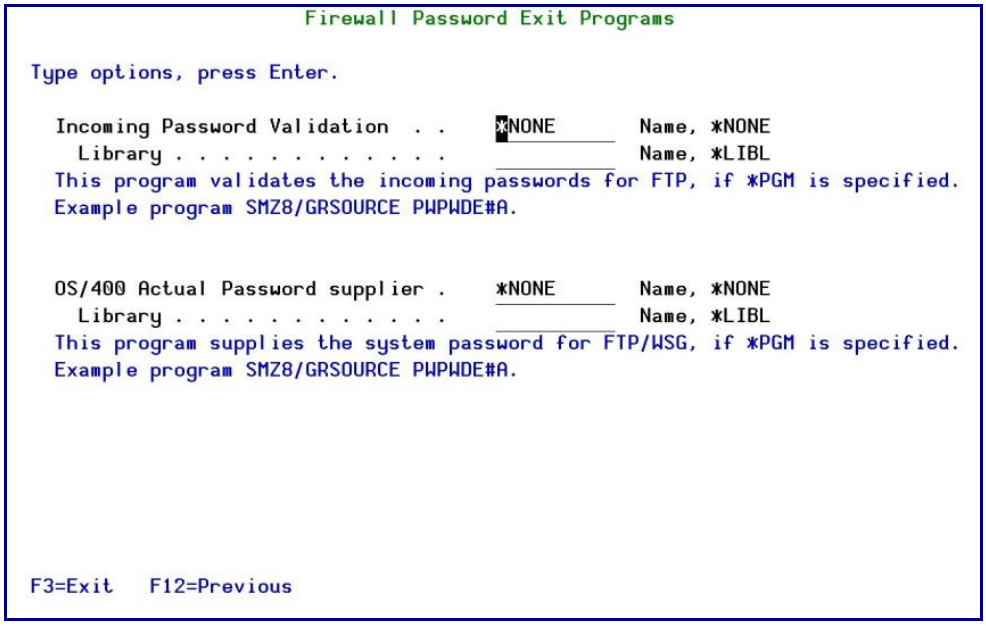
Firewall Intrusion Detection System

Parameter or Option	Description
Monitoring message queues	**Name =** name of user **Library =** location of message queue
Write rejections to security audit journal	Select **Y** (Yes) or **N** (No) to send rejections to the **Audit** journal.

Password Exit Programs

This option provides an additional check for FTP passwords. It is a security risk to code passwords which are kept for later use. Whenever a password has to be validated, and the ***PGM*** is written as the validation parameter, the program mentioned here will be called to verify that the entered password is the correct one.

1. To work with Password Exit Programs, select **6. Password Exit Programs** from the **iSecurity (part I) Global Parameters** screen.
2. Set correct parameters and press **Enter**.



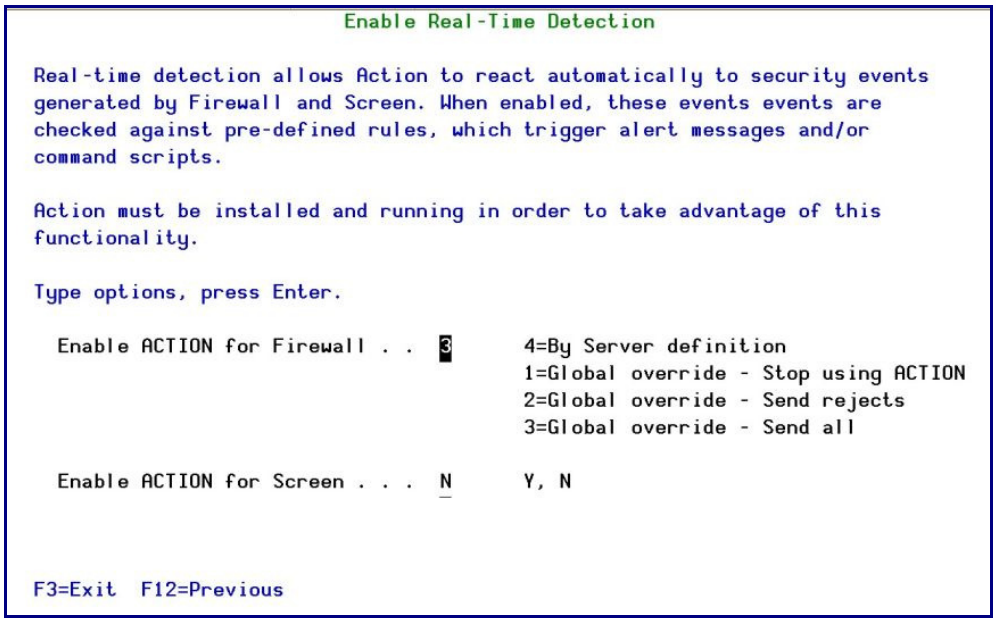
Firewall Password Exit Programs

Enable ACTION (CL Script + More)

This feature enables **Action** to respond automatically to security events generated by **Firewall** and **Screen**. In order for this feature to work, the user must verify that **Action** is installed and functioning correctly.

To enable real-time detection:

1. Select **7. Enable ACTION (CL Script + more)** from the **iSecurity (part I) Global Parameters** screen. The **Enable Real-Time Detection** screen appears.
2. Select the correct options according to the following table.
3. Select **1. Work with Servers** from the **Firewall** main menu.
4. Choose a server and select option **1** from the **Modify Server Security** screen.
5. Choose desired option from the **Allow Action to React** field and press **Enter**.



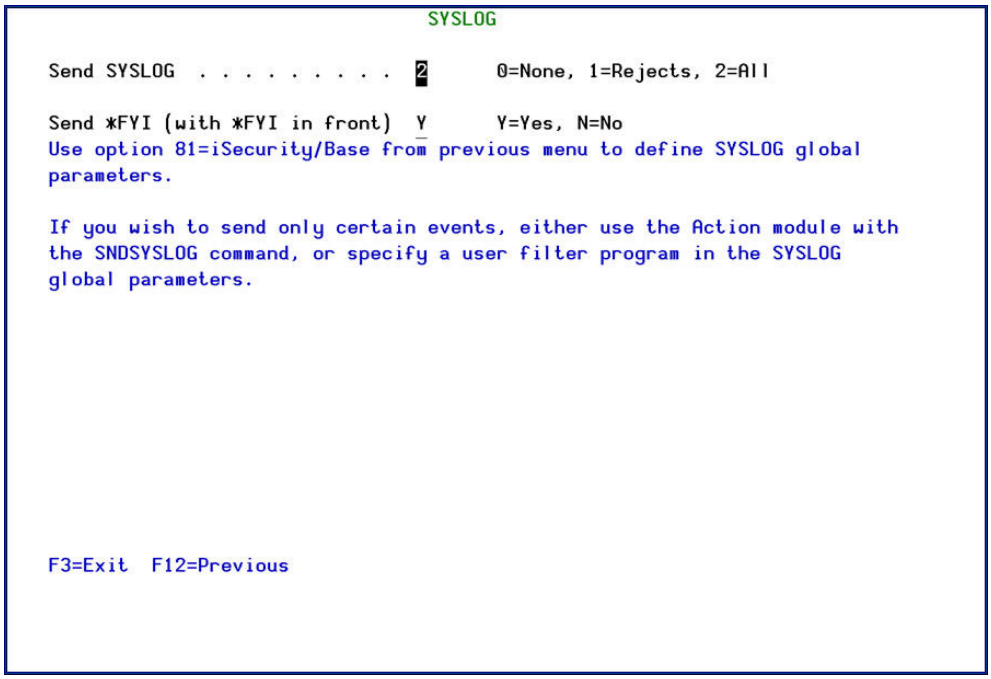
Enable Real-Time Detection

Option	Description
Enable Action for Firewall	**1** = Do not use **Action** **2** = Act only by rejects **3** = Act by all transactions **4** = Act by server. (default)
Enable Action for Screen	**Y** = Enable Screen protection **N** = Do not enable Screen protection (default)

SYSLOG

This feature sends security-related events from various IBM i facilities (such as logs and message systems) to a remote Syslog server according to range of severities like: emergency, alert, critical, error, warning and more.

By using **SYSLOG**, a user can decide whether he wants the SYSLOG to contain all of **Firewall** events (2=All), rejects only (1) or none (0).



SYSLOG

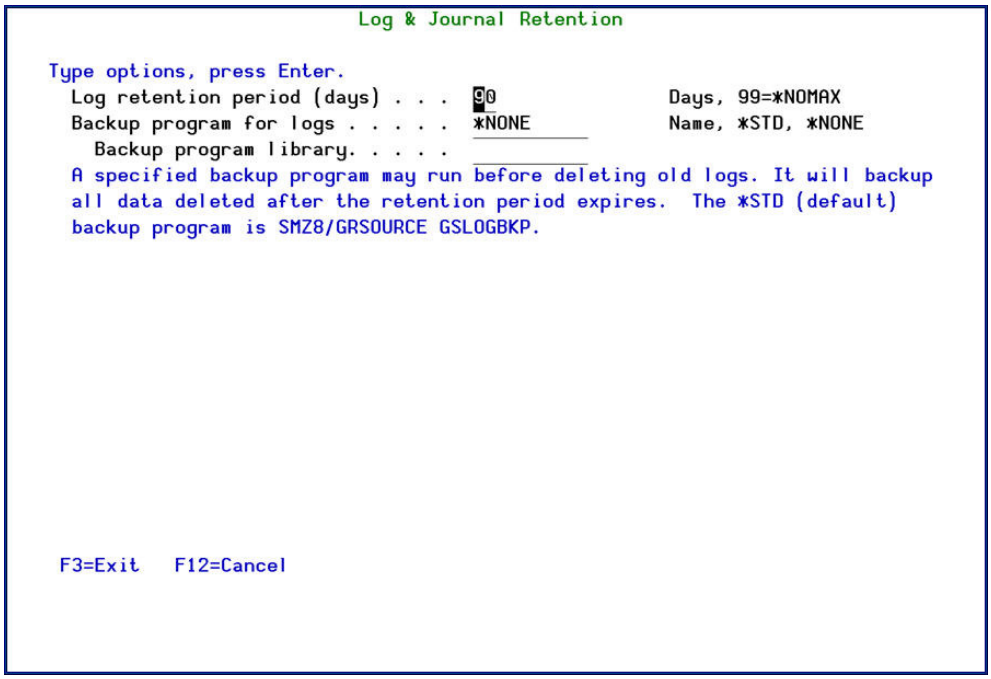
By using **Audit -> 81. System Configuration -> 21. Syslog Definitions**, a user can define when to send Syslog messages, to what IP address, from which facility (list of optional facilities below), in what range of severity (list below) and the format of the message.

Log retention

Determine how many days you want to keep the **Firewall** log.

The job GS#MNT is used to delete logs regarding the number of retention days. This job is placed as a job scheduler and is working at a specific time.

99 = *NOMAX (save and do not erase old history logs)



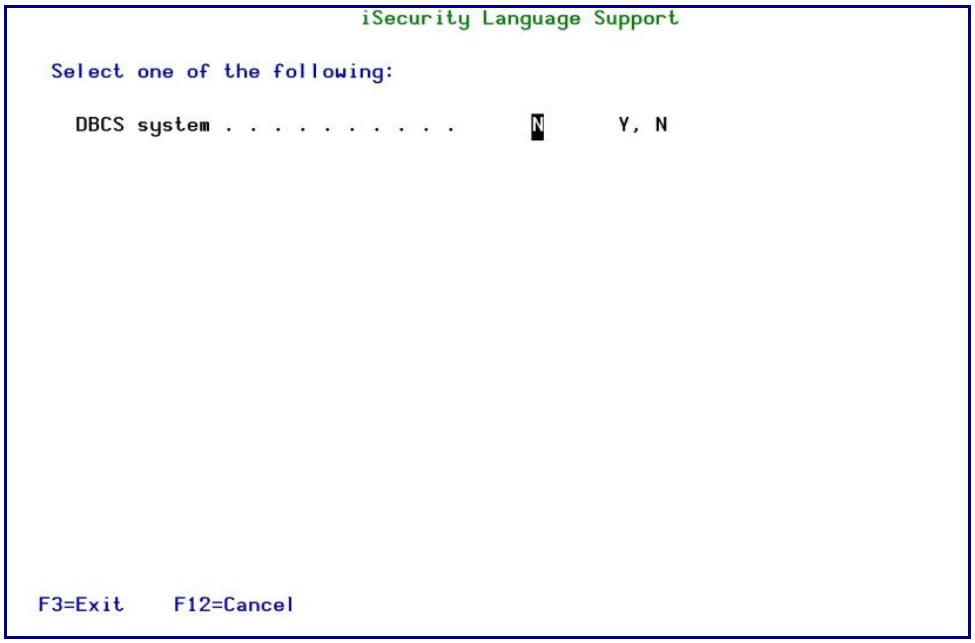
Log & Journal Retention

Language Support

Double-Byte Character Set (DBCS) is a set of characters in which each character is represented by two bytes. These character sets are commonly used by national languages, such as Japanese and Chinese, which have more symbols than can be represented by a single byte.

There are two option: the default setting of '**N**' (do not support DBCS), and '**Y**' (support DBCS). Choose an option based on the relevant national language.

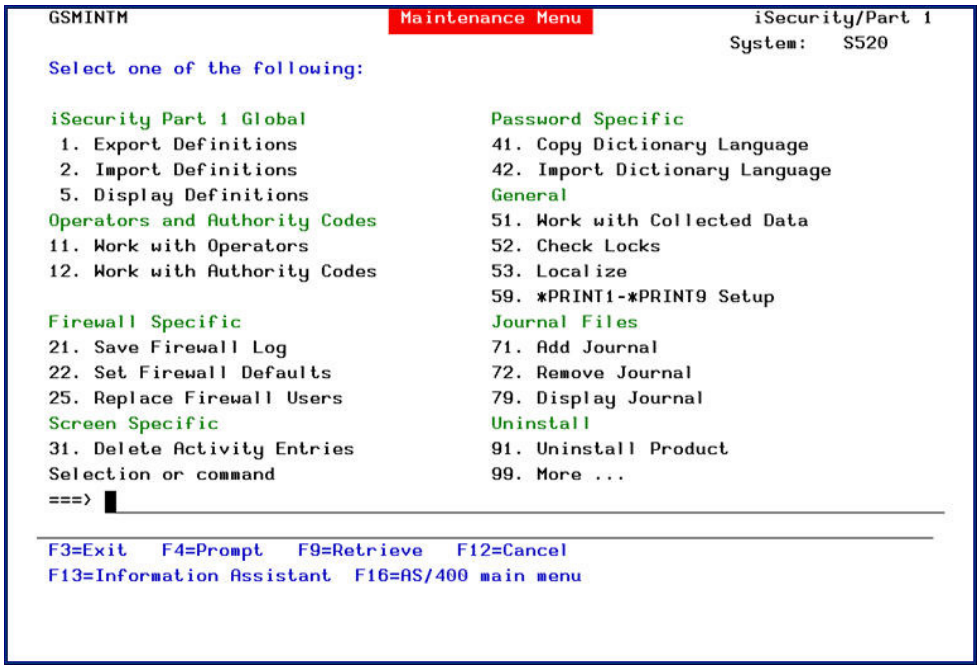
1. To work with iSecurity Language Support, select **91. Language Support** from the **iSecurity (part I) Global Parameters** screen. The **iSecurity Language Support** screen appears.
2. Set your desired parameter and press **Enter**.



iSecurity Language Support

The Maintenance Menu

The Maintenance Menu enables the user to set and display global definitions for Security Part 1. To access the Maintenance Menu, select **82. Maintenance Menu** from the **Firewall** main menu.



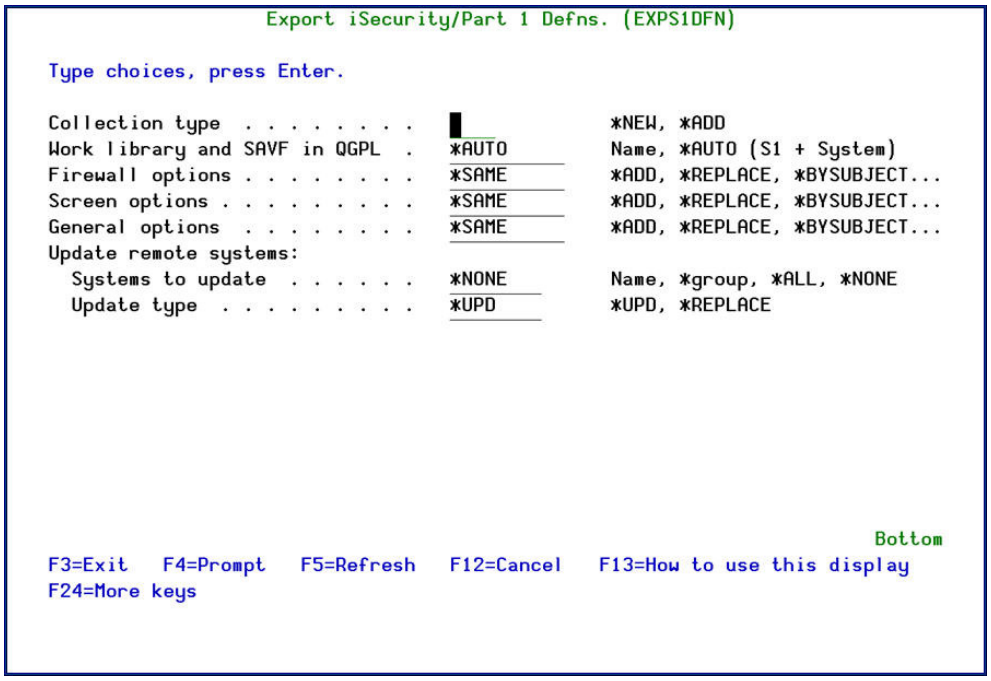
Maintenance Menu

iSecurity Part 1 Global

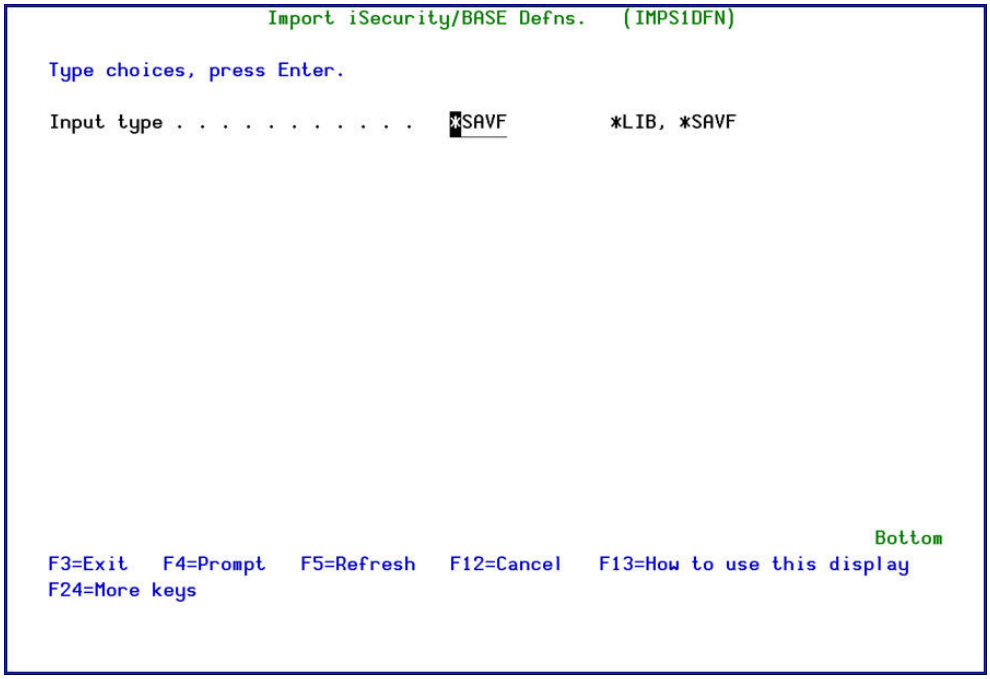
Export / Import Definitions

This option is useful in transferring configuration settings/definitions from one System i to another, when you need to distribute definitions between LPARs or different machines.

Firewall will export/import: IP addresses/ System names (SNA)/ Users/ Groups/ Applicant/ Locate/ Native & IFS/ Logon controls FTP-TELNET-Passthrough/ Prechecks DDM-DRDA/ Time groups and more.



Export iSec Part 1 Definitions (EXPS1DFN)



Import iSec Part 1 Definitions (IMPS1DFN)

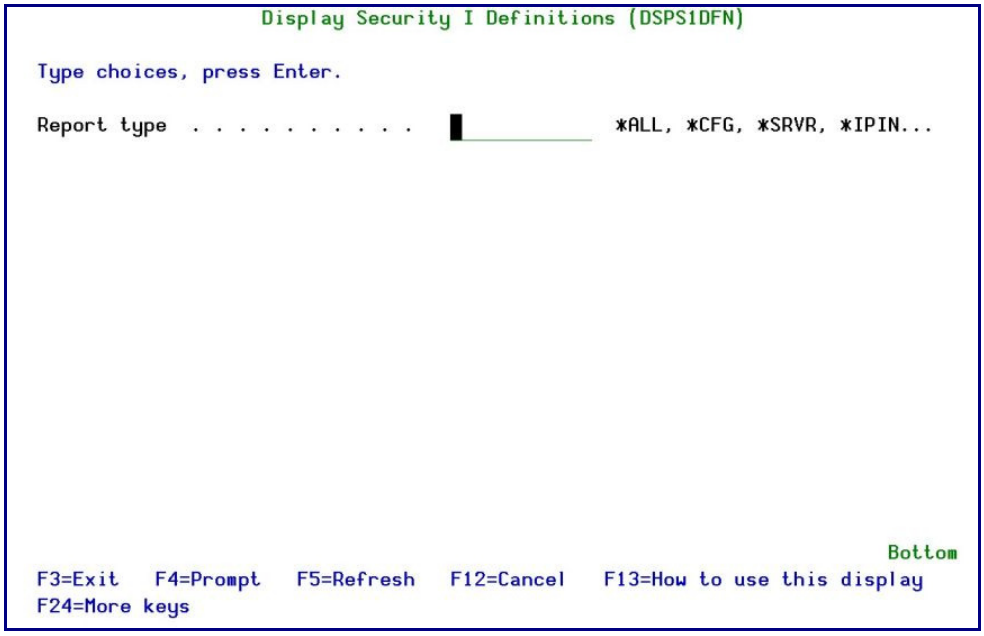
Parameter or Option	Description
Work library and SAVF in QGPL	Destination of export library. **S1** (Security One) is default setting **Name=** name of target library.
Firewall /Screen Options	Definitions pertaining to these two applications ***ADD =** add to a previously imported/exported rule ***REPLACE =** replace a previously imported/exported rule ***BYSUBJECT=** import/export rules by subject (IP address, etc.)
Update remote systems	**Systems to update=** When exporting **Firewall** definitions, the user can choose to export and import at once by preparing the definitions in a SAVF and send it to a remote system or several remote systems, and automatically import them into it. **Update type** ***UPD =** add new records and replace existing ***REPLACE =** clear the definition file and copy the new
Keep backup in library	**Name=** library where backup definitions are found

Display Definitions

This feature enables the user to display and print iSecurity Part One definitions:

1. To display, select the desired report type from the **Display Security I Definitions** screen. After selecting report type, additional parameters appear.

2. Select choices and press **Enter**.



Display Security 1 Definitions

Parameter or Option	Description
Report type	***ALL =** all general definitions ***CFG =** per configuration ***SRVR =** per server ***IPIN =** per IP address
Format	***LIST =** Short form ***DETAILS =** full form
Output	Select correct print option. See **PRINT1-*PRINT9 Setup* at the end of this chapter for details.

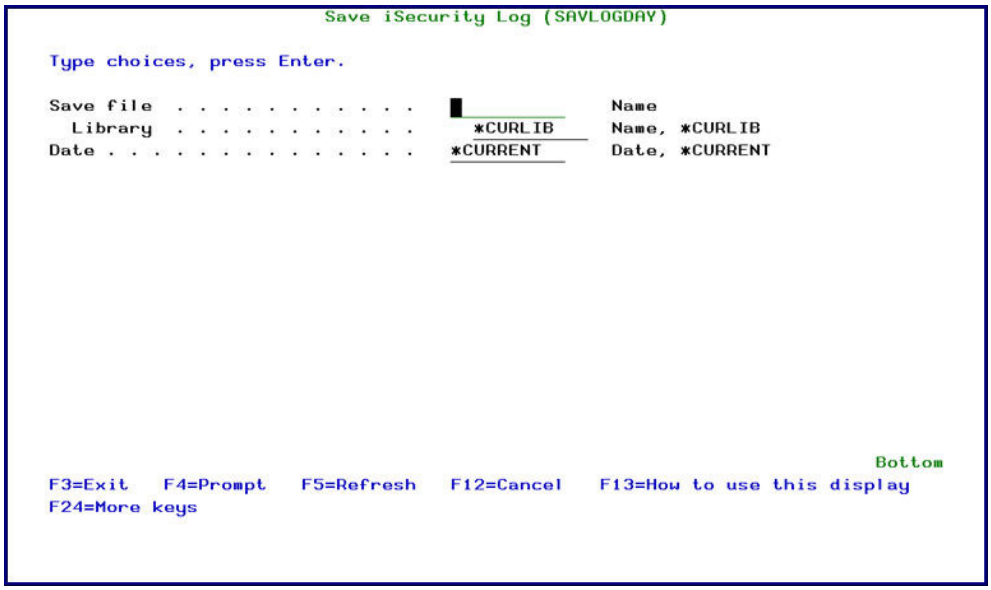
Work with Operators

See *Modifying Operators'* **Chapter 2: First Steps** for a description of this feature.

Firewall Specifics

Save Firewall Log

Allows users to save the daily **Firewall** log in a SAVF format.

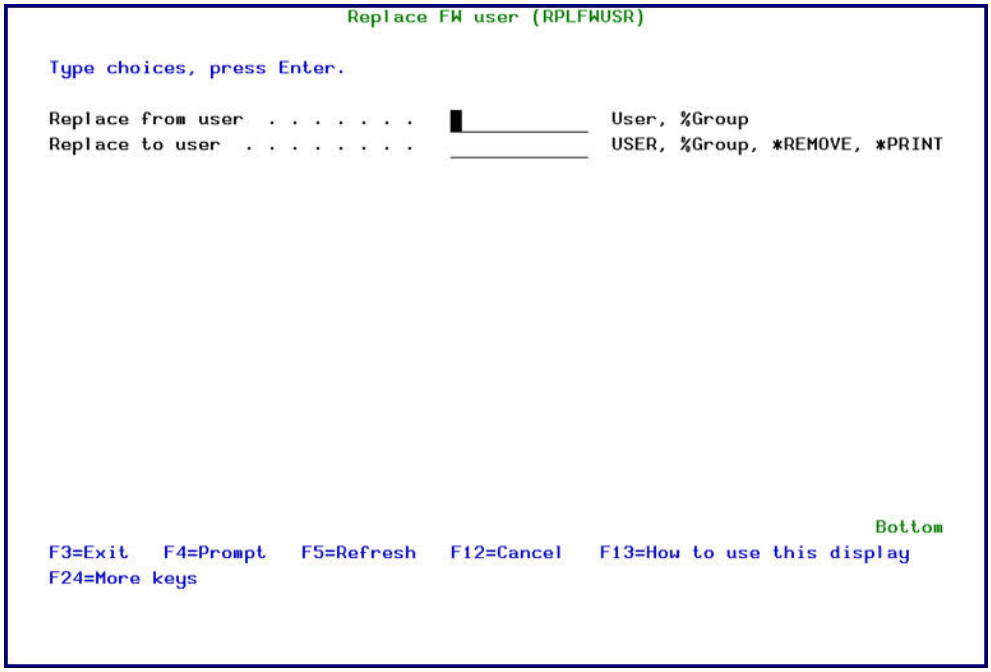


Save Firewall Log

Replace Firewall Users

This option has 2 purposes:

1. Copy and delete the users' Firewall definitions and rules as defined in options 11, 12, 13, 21, 22, 31, 32, to another user profile.
2. Remove the user definitions and rules from the Firewall, using *REMOVE at the Replace to user field.



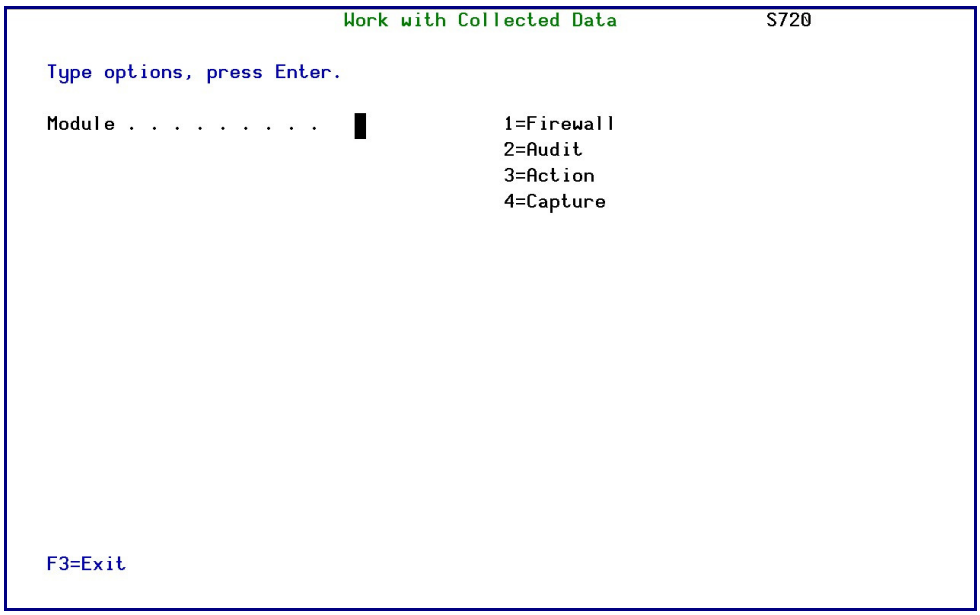
Replace FW user (RPLFWUSR)

General

Work with Collected Data

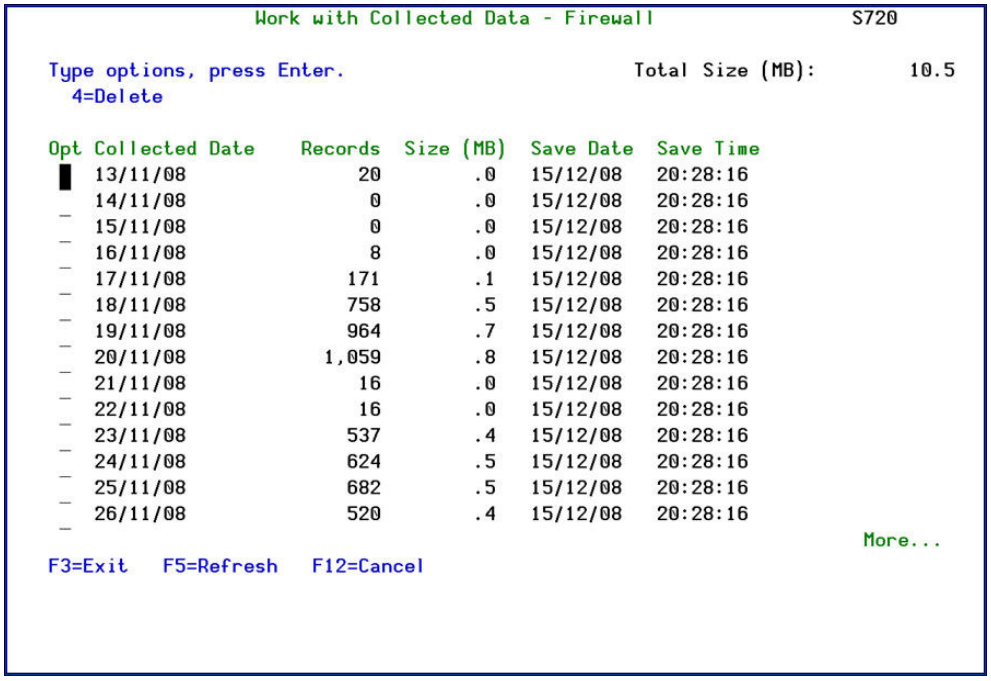
Administrators can view summaries of **Audit, Firewall,** and **Action** journal contents by day, showing the number of entries for each day together with the amount of disk space occupied. Administrators can optionally delete individual days in order to conserve disk space.

1. To view summaries of audit journals, select **51. Work with Collected Data**. The **Work with Collected Data** screen appears.



Work with Collected data

2. Enter **1** (Firewall) and press **Enter**. The **Work with Collected Data – Firewall** screen appears.



```
                  Work with Collected Data - Firewall                S720

Type options, press Enter.                          Total Size (MB):      10.5
  4=Delete

Opt Collected Date    Records  Size (MB)  Save Date  Save Time
    13/11/08               20         .0  15/12/08   20:28:16
    14/11/08                0         .0  15/12/08   20:28:16
    15/11/08                0         .0  15/12/08   20:28:16
    16/11/08                8         .0  15/12/08   20:28:16
    17/11/08              171         .1  15/12/08   20:28:16
    18/11/08              758         .5  15/12/08   20:28:16
    19/11/08              964         .7  15/12/08   20:28:16
    20/11/08            1,059         .8  15/12/08   20:28:16
    21/11/08               16         .0  15/12/08   20:28:16
    22/11/08               16         .0  15/12/08   20:28:16
    23/11/08              537         .4  15/12/08   20:28:16
    24/11/08              624         .5  15/12/08   20:28:16
    25/11/08              682         .5  15/12/08   20:28:16
    26/11/08              520         .4  15/12/08   20:28:16
                                                              More...
F3=Exit    F5=Refresh    F12=Cancel
```

Work with Collected Data - Firewall

3. Enter the correct options and press **Enter**.

Purging all data of FIREWALL

RMVM SMZTMPA/GSCALP *ALL
CLRPFM SMZTMPA/GSSTTSP

*PRINT1-*PRINT9 Setup

Firewall allows the user to define up to nine specific printers for printing output. These may be local or remote printers. ***PRINT1-*PRINT9** are special values which can be entered in the **OUTPUT** parameter of any commands or options that support printed output.

Output to any of the nine remote printers is directed to a special output queue specified on the ***PRINT1-*PRINT9 User Parameters** screen, which, in turn, directs the output to a print queue on the remote system. You use the ***CHGOUTQ*** command to specify the IP address of the designated remote location and the name of the remote output queue.

By default, two remote printers are pre-defined. ***PRINT1** is set to print at a remote location (such as the home office). ***PRINT2** is set to print at a remote location in addition to the local printer. In addition:

- ***PRINT3** creates an excel file.
- ***PRINT3-9** are user modifiable

To define remote printers, perform the following steps:

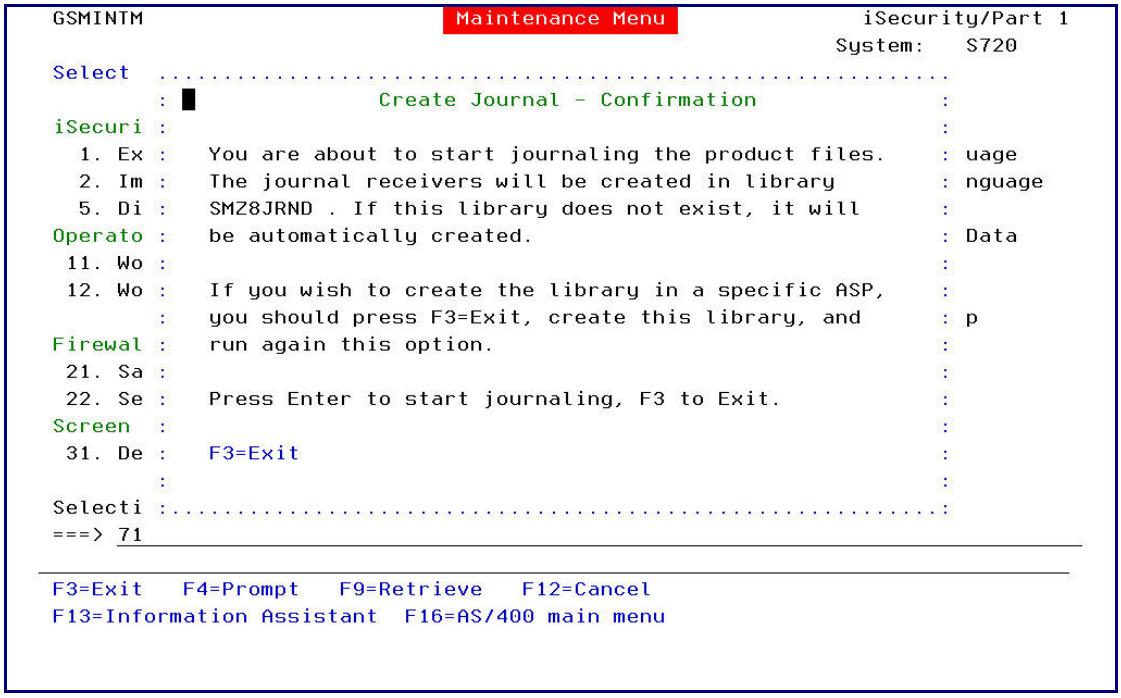
1. Select **82** from the main menu.

2. Select **59** from the **Maintenance** menu. The ***PRINT1-*PRINT9 User Parameters** screen appears.

Journal Product Definitions

Add Journal

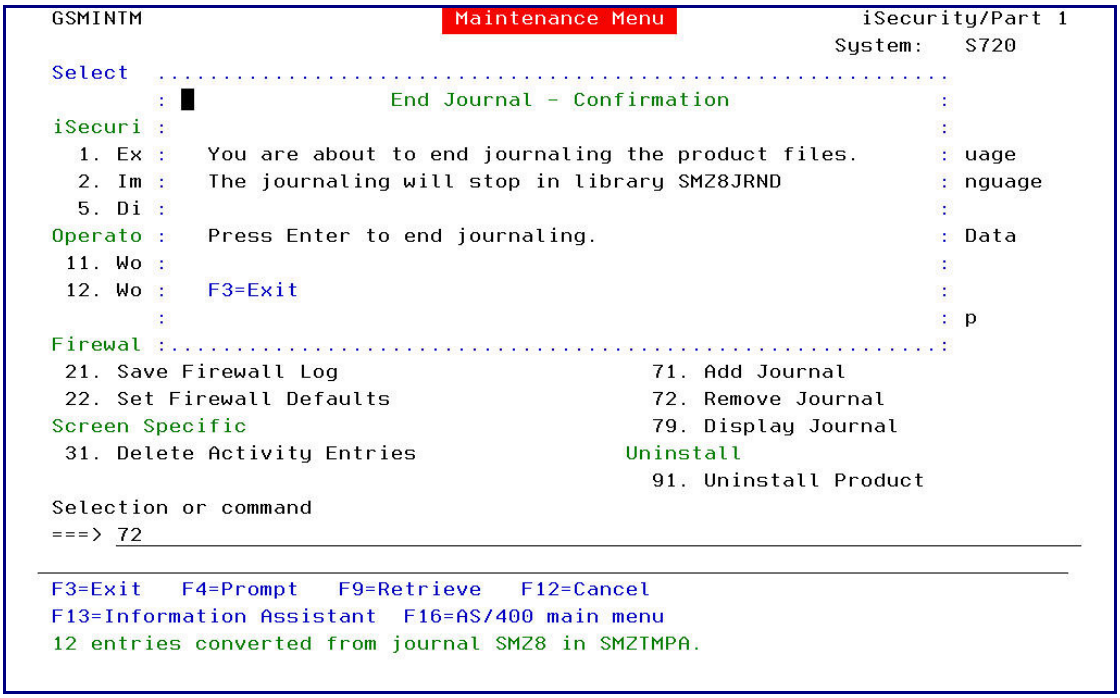
Select option **71. Add Journal** to record the system physical files changes in the data library. The screen **Create Journal – Confirmation** appears. Press **Enter** to confirm.



Create Journal – Confirmation

Remove Journal

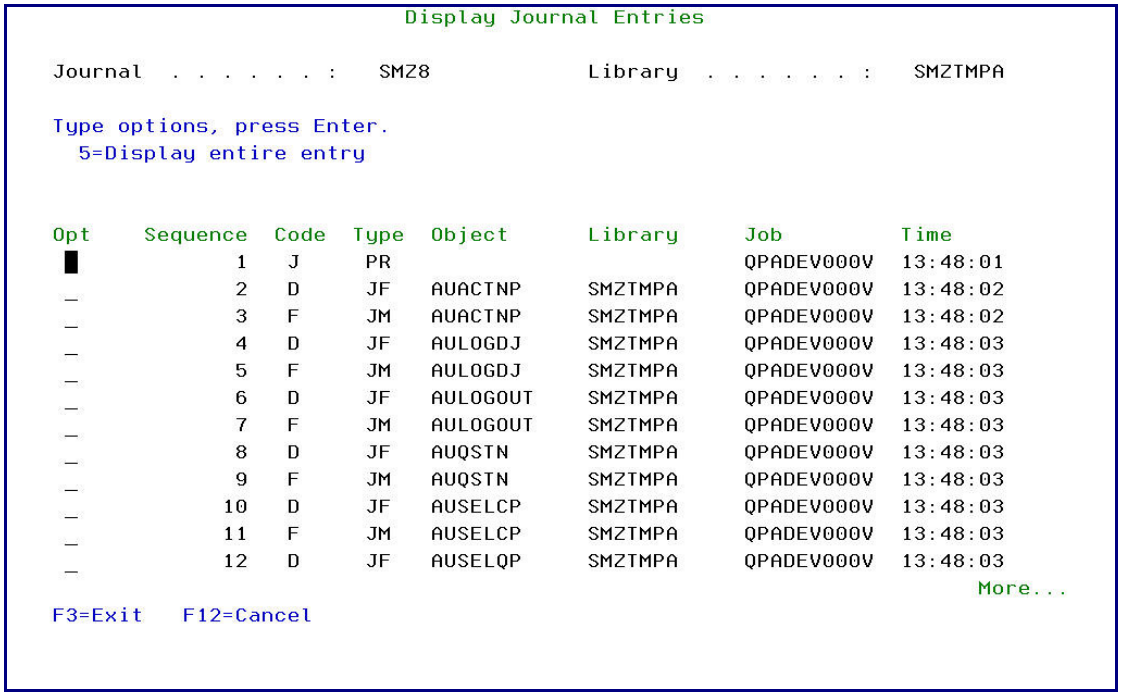
Select option **72. Remove Journal** to end the journaling of changes in the system physical files. The **End Journal - Confirmation** screen appears. Press **Enter** to confirm.



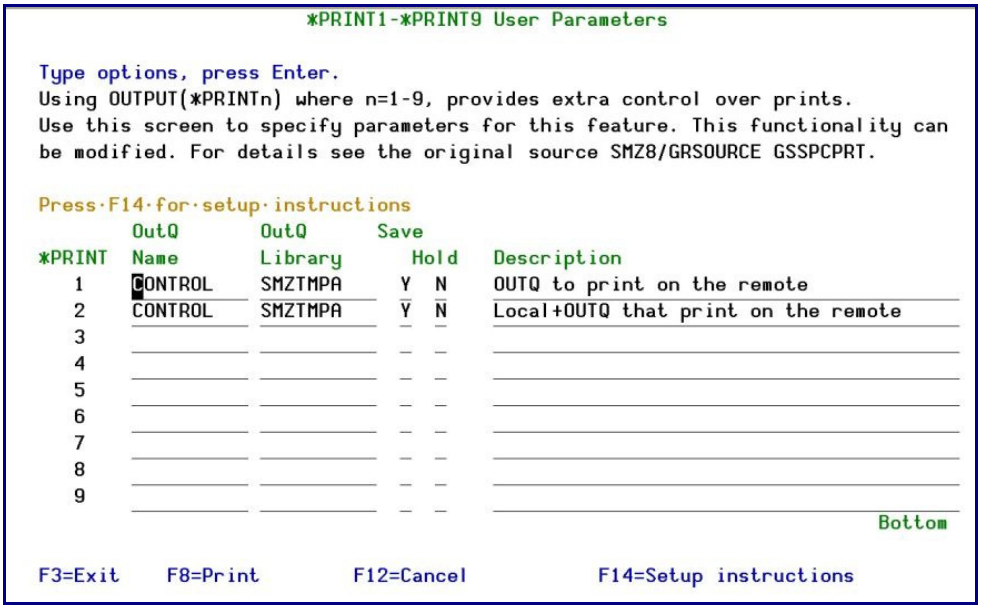
End Journal - Confirmation

Display Journal

To view journalled files, select option **79. Display Journal**.



Display Journal Entries



***PRINT1-*PRINT9 User Parameters**

3. Enter the name of the local output queue and library as shown in the above example. The user may optionally enter a description.

Parameter	Description
*** Print**	Printer number
OutQ Name	Name of the local output queue
OutQ Library	Name of the local output queue's library
Save	**Y**= yes **N** = no
Hold	**Y**= yes **N** = no
Description	Optional text description

4. Enter the following command on any command line to direct output to the remote printer. This assumes that the designated output queue has already been defined.

CHGOUTQ OUTQ('local outq/library') RMTSYS(*INTNETADR)
+ ***RMTPRTQ('outq on remote') AUTOSTRWTR(1) CNNTYPE(*IP) TRANSFORM(*NO)***
+ ***INTNETADR('IP of remote')***

Parameter	Description
QUTQ()	Name of the local output queue
RMTPRTQ()	Name of the remote print queue
INTNETADR()	IP address of the remote system

NOTE: *Press* **F14** *for Setup instructions*

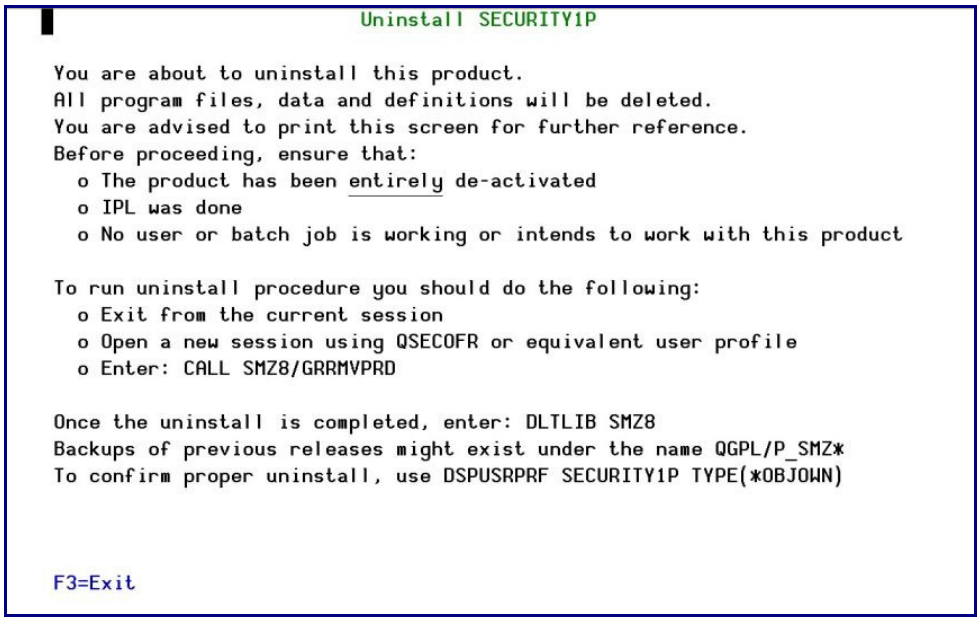
If the desired output queue has not yet been defined use the ***CRTOUTQ*** command to create it. The command parameters remain the same.

For example, ***PRINT1*** in the above screen, the following command would send output to the output queue '***MYOUTQ***' on a remote system with the IP address '1.1.1.100' as follows:

CHGOUTQ OUTQ(CONTROL/SMZTMPA) RMTSYS(*INTNETADR)
+ RMTPRTQ(MYOUTQ) AUTOSTRWTR(1) CNNTYPE(*IP) TRANSFORM(*NO)
+ INTNETADR(1.1.1.100)

Uninstall

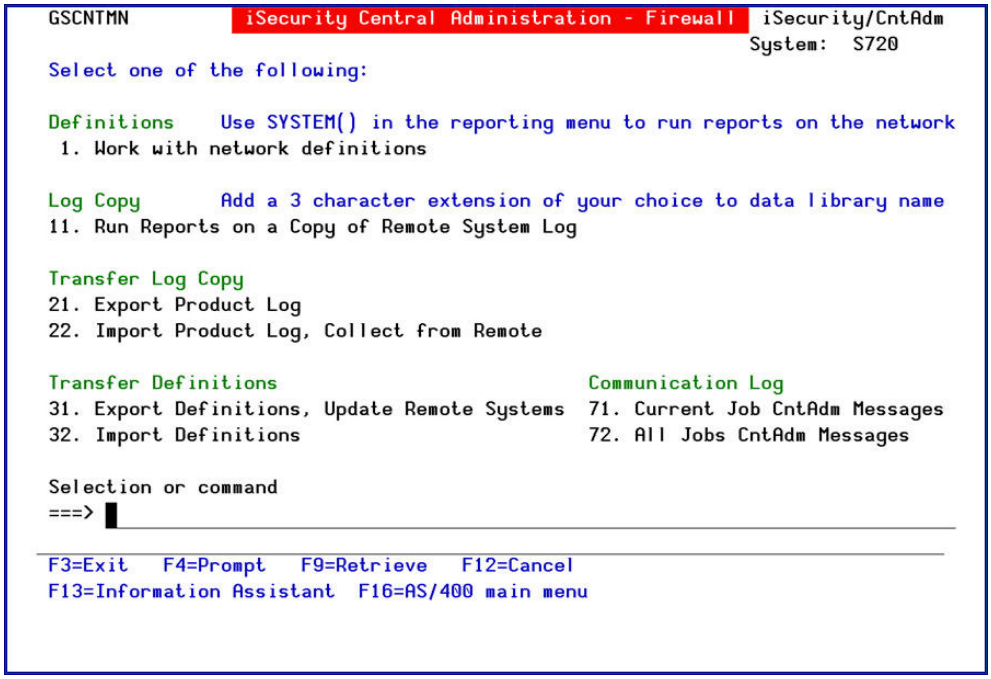
Choose **91. Uninstall Product** from the **Maintenance** Menu, and follow the directions on the screen.



Uninstall SECURITY1P

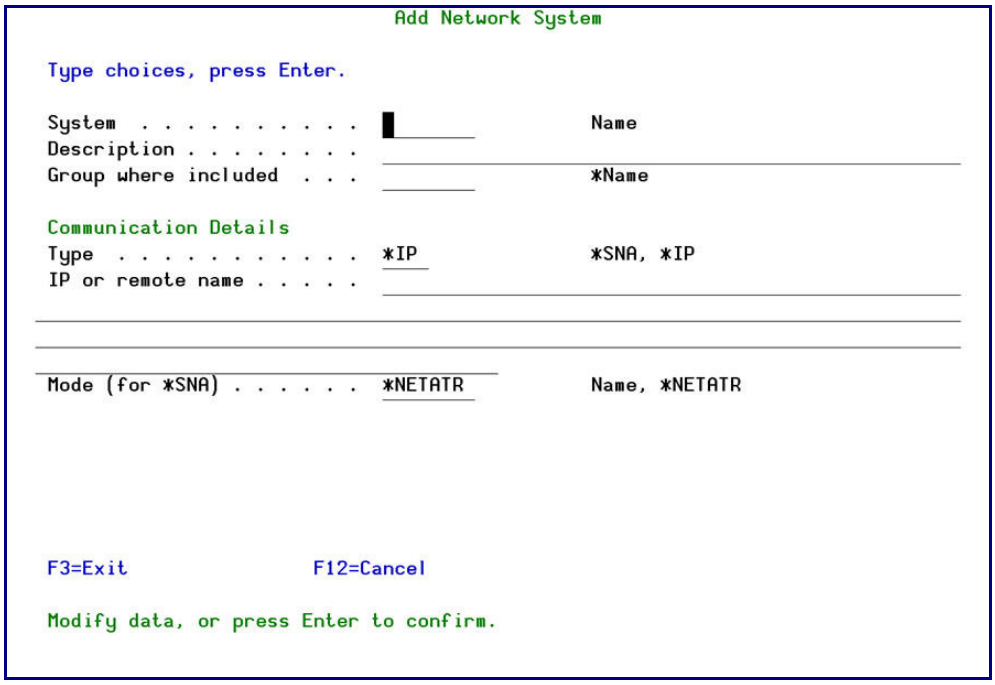
iSecurity Central Administration

Option **83. Central Administration** allows running reports in 2 different ways:



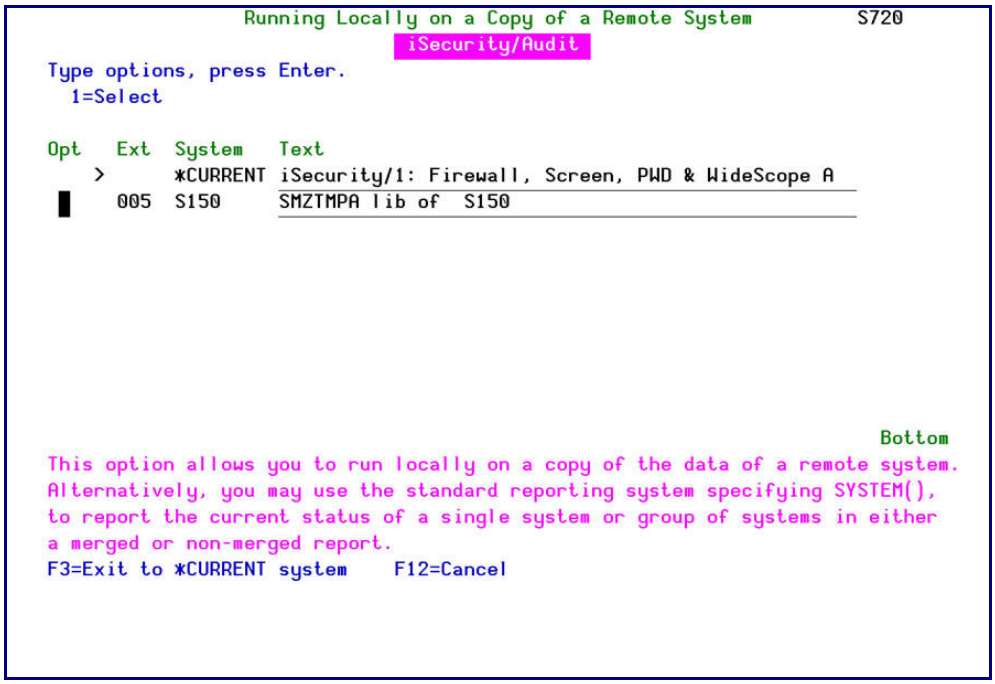
iSecurity Central Administration – Firewall

1. To get current information from existing report or query. Adjusting the system parameters only, to collect information from all the groups in the system to output file that can be sent via email, select option **1. Define Communication Attributes.** The **Work with Network Systems** screen appears.
2. Press **F6** to define a new network system to work with and press Enter to **confirm**.



Add Network System

3. To run the reports on a copy of data library of a remote system, select option **11. Select a Copy, run Reports.** The **Running Locally on a Copy of a Remote System** screen appears displays the system's information and shows libraries which start with SMZ4DTA* or SMZTMPA*



Running Locally on a Copy of a Remote System

Note:

NOTE: *Running on multiple systems with either of the following:*

- *Merge data to a single output . MRGDTA(*NO),*
- *Place output on . . . . . OUTON(*SYSTEM)*

*valid for *, *PRINT-*PRINT9 only.*

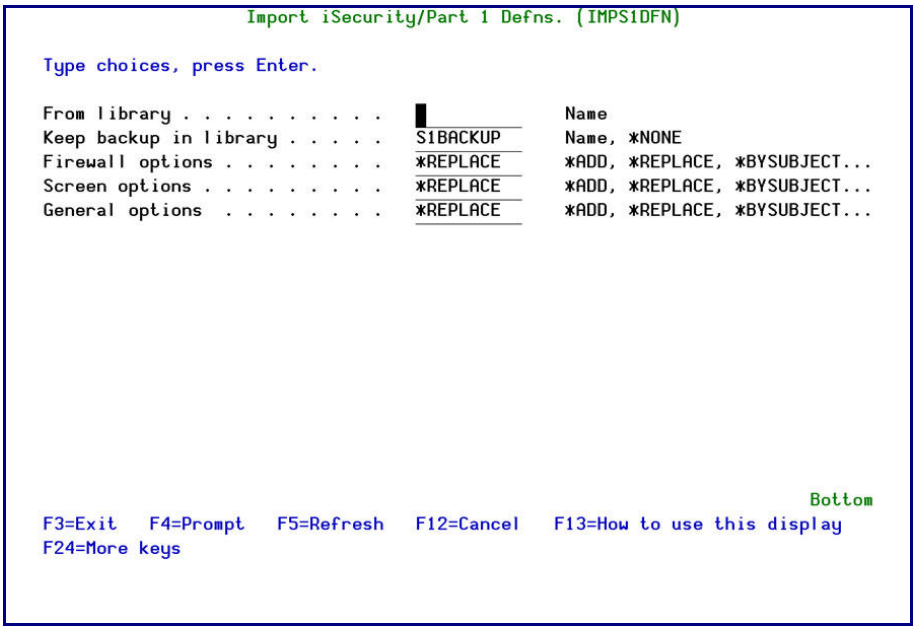
*Selecting other output types such as *HTML, *PDF… may result in unexpected results.*

4. To create a distribution package of the definitions created (export) select options **21. Create a Distribution Package**. The **Export iSecurity/Part 1 Defns. (EXPS1DFN)** screen appears

```
                  Export iSecurity/Part 1 Defns. (EXPS1DFN)

Type choices, press Enter.

Target library:
  Prefix . . . . . .   S1             Name
  Name . . . . . .     *SYSNAM        Character value
Firewall options . . . . . .  *REPLACE     *ADD, *REPLACE, *BYSUBJECT...
Screen options . . . . . .    *REPLACE     *ADD, *REPLACE, *BYSUBJECT...
General options  . . . . . .  *REPLACE     *ADD, *REPLACE, *BYSUBJECT...

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

Export iSecurity/Part 1 Defns. (EXPS1DFN)

5. To restore a distribution package of the definitions created (import) select options **22. Restore a Distribution Package**. The **Import iSecurity/Part 1 Defns. (IMPS1DFN)** screen appears



Import iSecurityPart 1 Defns. (IMPS1DFN)

Appendix: List of Firewall Exit Points

- **iSecurity for System i** protects all the security-related exit points.
- In order to display all the exit points, use command WRKREGINF.
- Sign On: **iSecurity** is the **only** iSeries security solution that checks all green screen signons, both by IP address and by screen name.

Following is a list of the 53 security-related exit points covered by iSecurity.

Note that some exit points are interconnected.

1. QIBM_QTF_TRANSFER	Original File Transfer Function- TRAN0100
2. QIBM_QTMF_SVR_LOGON	FTP Server Logon- TCPL0100
3. QIBM_QTMF_SVR_LOGON	FTP Server Logon- TCPL0200
4. QIBM_QTMF_SVR_LOGON	FTP Server Logon- TCPL0300
5. QIBM_QTMF_SERVER_REQ	FTP Server Incoming Request Validation-VLRQ0100
6. QIBM_QTMF_CLIENT_REQ	FTP Client Outgoing Request Validation-VLRQ0100
7. QIBM_QTOD_SERVER_REQ	TFTP Server Request Validation-VLRQ0100
8. QIBM_QTMX_SVR_LOGON	REXEC Server Logon- TCPL0100
9. QIBM_QTMX_SVR_LOGON	REXEC Server Logon- TCPL0300
10. QIBM_QTMX_SERVER_REQ	REXEC Server Request Validation-VLRQ0100
11. QIBM_QRQ_SQL	Original Remote SQL Server- RSQL0100
12. QIBM_QZDA_SQL1	Database Server- SQL Access & Showcase- ZDAQ0100
13. QIBM_QZDA_SQL2	Database Server- SQL Access- ZDAQ0200
14. SC_QUERY_ROW_SEC	Database Showcase- SCRS0100
15. QIBM_QZDA_NDB1	Database Server- data base access- ZDAD0100
16. QIBM_QZDA_NDB1	Database Server- data base access- ZDAD0200
17. QIBM_QZRC_RMT	Remote Command/Program Call- CZRC0100
18. QIBM_QPWFS_FILE_SERV	File Server- PWFS0100
19. QIBM_QTG_DEVINIT	Telnet Device Initialization- INIT0100
20. QIBM_QTG_DEVTERM	Telnet Device Termination- TERM0100
21. QIBM_QWT_JOBNOTIFY	Sign-on Completed- NTFY0100
22. QIBM_QTMT_WSG	WSG Server Sign-On Validation- QAPP0100
23. QIBM_QHQ_DTAQ	Original Data Queue Server- DTAQ0100
24. QIBM_QZHQ_DATA_QUEUE	Data Queue Server- ZHQ00100
25. QIBM_QVP_PRINTERS	Original Virtual Printer Server- PRNT0100

26. QIBM_QLZP_LICENSE	Original License Mgmt. Server- LICM0100
27. QIBM_QZSC_LM	Central Server- License Mgmt.- ZSCL0100
28. DDM	Network Attribute- DDM Requested Access-DDMACC
29. DRDA	Network Attribute- Display Requested Database Access- DDMACC
30. QIBM_QZSC_NLS	Central Server- Conversion Map- ZSCN0100
31. QIBM_QZSC_SM	Central Server- Client Mgmt.- ZSCS0100
32. QIBM_QNPS_ENTRY	Network Printer Server- entry- ENTR0100
33. QIBM_QNPS_SPLF	Network Printer Server- spool file- SPLF0100
34. QIBM_QMF_MESSAGE	Original Message Server- MESS0100
35. QIBM_QZDA_INIT	Database Server- entry- ZDAI0100
36. QIBM_QZDA_ROI1	Database Server- object information- ZDAR0100
37. QIBM_QZDA_ROI1	Database Server- object information- ZDAR0200
38. QIBM_QSY_CHG_PROFILE	Change User Profile- CHGP0100
39. QIBM_QSY_CRT_PROFILE	Create User Profile- CRTP0100
40. QIBM_QSY_DLT_PROFILE	Delete User Profile- after Delete- DLTP0100
41. QIBM_QSY_DLT_PROFILE	Delete User Profile- before Delete- DLTP0200
42. QIBM_QSY_RST_PROFILE	Restore User Profile- RSTP0100
43. QIBM_QZSO_SIGNONSRV	TCP Signon Server- ZSOY0100
44. QIBM_QWC_PWRDWNSYS	Prepower Down System- PWRD0100
45. QIBM_QTOD_DHCP_ABND	DHCP Address Binding Notify- DHCA0100
46. QIBM_QTOD_DHCP_ARLS	DHCP Address Release Notify- DHCR0100
47. QIBM_QTOD_DHCP_REQ	DHCP Request Packet Validation- DHCV0100
48. QRMTSIGN	System Value- Remote Signon Control
49. QPWDVLDPGM	System Value- Password Validation
50. QIBM_QP0L_SCAN_OPEN	IFS Scan on Open- SCOP0100
51. QIBM_QP0L_SCAN_CLOSE	IFS Scan on Close- SCCL0100
52. QINACTITV	System Value- Inactive Job Timeout
53. QINACTMSGQ	System Value- Inactive Job MessageQ

Thank you for using iSecurity Firewall.

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