

BusinessLink Software Support

STRATEGI ADMINISTRATOR'S GUIDE



Version V1R9

This manual applies to Strategi version V1R9 and later and was last revised in July 2005.

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A Note to Readers of this Manual

Built on the premise that technological solutions are useless unless they provide real-world business benefits, Strategi has been architect to provide your organization with a foundation to enable creative breakthrough e-business solutions. This manual has been designed to enhance your usability experience with Strategi as well.

The latest versions of this document and other Technical Support Bulletins can be downloaded from ADVANCED BusinessLink Corp.'s Support Website, <http://support.businesslink.com>.

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Sincerely,

BusinessLink Software Support

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CHAPTER 1 – Introduction to Strategi

With Strategi, the third generation of our Java™ powered client technology, ADVANCED BusinessLink Corp. is the first in the world to bring Digital Certificate authentication, 128-bit SSL, applet-provider authentication and built-in Push technology to an AS/400 client.

Strategi is the first and only JAVA-based Browser/Server solution with the cryptographic support needed for e-Business/e-Commerce applications.

Strategi provides full AS/400 client functionality, including 5250 emulation with on-the-fly GUI, printing and file transfer using a built-in Push Technology engine, API's for client/server application development, industrial strength cryptography and comprehensive, AS/400-centric user and security management, all in a tiny applet (typically under 100k depending on browser).

Other emerging Java emulators and GUI conversion applets can run up to 1Mb in size, making them impractical for deployment to browser users over the Internet. Strategi, on the other hand, enables fast, simple deployment to a large, remote user community without the struggles associated with installing, configuring, and managing dedicated client software.

Host-based clients traditionally rely on user and password entry to determine client identity. BusinessLink brings Digital Certificate-based client authentication to the AS/400. Host administrators can require that users obtain client certificates signed by certificate issuing authorities such as Verisign, Inc. No sign on screen will be offered to users unless they match the required certificate level and identification details. Even then, users can be required to sign on with profiles that specifically match their certificate details.

To ensure privacy of data sent and received, Strategi can be configured to use 128-bit SSL key exchange with a licensed RSA/RC4-128 cryptography engine. (Non-US versions may be limited to RC4-40 or RC4-56 to comply with US Department of Commerce restrictions on cryptography).

Reports and files transferred can also be SSL secured. Given that the AS/400 has no support for secure FTP, Strategi provides the only way to securely transfer AS/400 files and reports across the Internet.

Finally, the applet is digitally signed, authenticating it as the trusted, original copy supplied by ADVANCED BusinessLink Corp. Signing guarantees against a counterfeit applet being substituted in its place by a hacker, etc. This commonly overlooked risk is important, since a false applet could be introduced to capture passwords and other critical data before it was discovered.

No TELNET or FTP Needed

You need only read the volumes of industry press relating to the lack of security inherent in Telnet and FTP servers on the AS/400 to appreciate that it is considered a serious risk for AS/400's on the Internet. Telnet passes all 5250 data in the clear across the Internet and gives a sign on screen to almost every generic client. FTP has serious exposure to brute force attack, and can create sizeable security holes.

Strategi does not require the use of either Telnet or FTP. Although it runs native on the AS/400, Strategi obtains and manages its sessions directly with OS/400, and adds a sophisticated management infrastructure to deal with the delivery of AS/400 sessions.

Built-In Webserver, HSM, Growth Strategy

The Strategi system contains a native AS/400 version of ADVANCED BusinessLink Corp.'s high performance web server, "BusinessLink/WEB". As well as serving the applet, Strategi provides an extremely fast HTTP-server, including SSL 3.0 and client digital certificate authentication.

Strategi also includes BusinessLink's High Speed Messaging (HSM) technology. HSM is used to create web applications, allowing an HTML front-end web interface to communicate with backend AS/400 programs written in RPG, CL, or any other AS/400 language. HSM uses a template-based architecture to populate HTML template pages, rather than the traditional overheads associated with generating HTML from scratch, as with CGI-BIN. The result is much faster performance and greater scalability than existing AS/400 web serving alternatives, particularly for interactive applications.

Pre-requisites

The Strategi applet is certified 100% Java by Sun Microsystems. In short, this qualification means that the applet should function properly on any platform that is 100% Java compliant and has a properly configured TCP/IP connection. Although most recent versions of both Netscape Communicator/Navigator and Microsoft Internet Explorer are compliant, some versions are not. This section outlines exactly what the Strategi applet requires for successful operation.

How the Strategi Java Applet Works

When a browser client enters the URL of the page containing the HTML statements that load the applet, the sequence of events is as follows:

1. The applet is transferred to the local PC on the same TCP/IP port that loaded the page.
2. The applet initializes, starts, and attempts to make a connection back to the same URL specified on the request using default TCP/IP port 43856, the port specified in the Strategi Special Values or port 80 for Strategi systems with HTTP Tunneling configured.
3. The user is prompted for a user name and passphrase. If a valid user name and password is specified, the applet obtains a 5250 session and presents the user with an AS/400 sign on screen (note: as a system administrator, you can configure Strategi to bypass an AS/400 sign on screen and take the user directly to their AS/400 application; this is discussed later in this manual).

The Strategi 5250 Java applet needs to have a certain environment to function properly:

- The client browser must have a 100% compliant JVM (Java Virtual Machine). This is currently true with Netscape 3.01+ and MSIE 3.02+ (with the exception of certain versions of MSIE 6).
- The connection that the applet establishes is used for stream communications. In other words, the established connection must not be interrupted or terminated by firewalls, proxies or timeouts/disconnects on Internet connections. Doing so will terminate the TCP/IP connection.
- For Strategi systems, if the AS/400 is behind a firewall, port 43856 (or the port specified in the Strategi Special Values) must be open for inbound and outbound TCP traffic or the applet must be configured to use HTTP Tunneling. Adding the applet parameter statement "**<param name=http_tunnel value='fallback'>**" will allow the applet to first try port 43856 and revert to port 80 if the initial connection attempt on port 43856 fails.

Strategi runs on OS/400 V4M2M0 or above, with TCP/IP. No prerequisite software is required; system administrators need only load the Strategi software onto your AS/400 and configure it; users connect via a Java-compliant browser on an Internet- or intranet-connected PC.

Applet Operational Requirements

Strategi needs the following environment in order to operate properly:

- Workstation platform is Windows 95/98/NT/2000/XP (w/ browser JVM).
- Browser version is Netscape 3.01+ or IE 3.02+.
- Workstation TCP/IP is configured properly.
- Workstation TCP/IP connection is stable.
- Workstation has Winsock client installed if using a proxy server.
- Firewall (if present) has port 43856 (or configured port) open for TCP traffic.
- Firewall (if present) supports stream I/O.
- Firewall (if present) does not terminate connections after a specified period of time.

AS/400 Operating System

Strategi requires AS/400 operating system version V4R2M0 or higher. This can be determined by displaying data area QGPL/QSS1MRI.

AS/400 Command Line Example:

DSPDTAARA QGPL/QSS1MRI

AS/400 Basic TCP/IP Services

Strategi will require the use of one TCP/IP interface on the AS/400. It does not require any support from common TCP/IP applications such as FTP, Telnet, etc.

CHAPTER 2 – Get Started With Strategi

Starting Strategi

1. After Strategi completes the installation, you will be presented with a normal AS/400 screen. Type in **GO STRATEGI /SGI**, and you will be presented with the Strategi Main Menu, as displayed below:

SGI		Strategi by ADVANCED BusinessLink	
Select one of the following:			
1. Users		80. Start Strategi Subsystem	
2. Groups		81. End Strategi Subsystem	
3. Send a File		90. Signoff	
4. Connections			
5. IFS Zones			
6. Web Sites			
7. HSM Servers			
8. Peer Systems			
9. Strategi Values			
10. Event Handlers			
11. Event Routing			
Selection or command			
===> █			
F3=Exit F4=Prompt F9=Retrieve F12=Cancel			
F13=Information Assistant F16=AS/400 main menu			

Figure 1, Strategi Main Menu

2. Use the “Start Strategi” menu option or Strategi command **STRSGI** to start Strategi.
3. Once Strategi has started, verify that it is running by going to your website address in your browser: <http://your.ip.address/>
4. If everything is running as normal, entering your IP address will take you to your Strategi Resources Website: <http://your.ip.address/resources/main.htm>

The Resources Website, pictured below in Figure 2, is your Default Strategi Website. If this web page displays, you have completed a successful installation of Strategi.

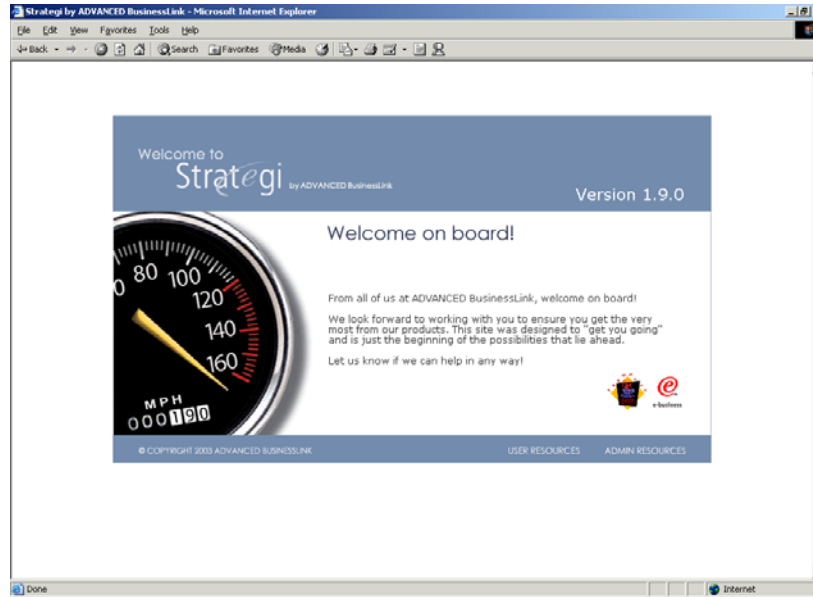


Figure 2 – Strategi Resources Website

Now that your website is up and running, it's time to create your first Strategi user.

Creating A Strategi User

A Strategi user needs to be defined on the AS/400 before they can connect through Strategi. No additional software is loaded into the user's computer, as the Java applet is downloaded to their computer and run directly from it whenever the users access your Strategi website.

1. Return to the Strategi Main Menu, as shown in Figure 1 by typing **GO STRATEGI/SGI** in the command line.
2. Select "Users" from the menu or use the Strategi command **WRKSGIUSR**. You will be presented with the following screen:

```

Work with Strategi Users                                SEATTLE1
                                                    Position To _____
Type options, press Enter.
2=Change 3=Copy 4=Delete 5=Display 8=Attributes 9=Files 10=Connections
11=Enable 12=Disable 13=Certificate Wait 14=Groups 15=Zones

Opt Access Name                                     Number   Class      Status
┌── BUSINESSLINK TECHNICAL SUPPORT                 000000001 *ADMIN    *ENABLED
├── TEST                                           000000003 *EXTERNAL  *ENABLED
├── TEST_USER                                       000000002 *EXTERNAL  *ENABLED
└── TESTUSER2                                       000000004 *EXTERNAL  *ENABLED

                                                    Bottom
F3=Exit  F5=Refresh  F6=Create  F10=Sort Number  F11=Next View  F12=Cancel
F13=Repeat  F16=Option Parm  F17=Top    F18=Bottom   F20=Subset
  
```

Figure 3 – Work with Users

3. Press **F6** to create a Strategi user.
4. You will be presented with a list of available parameters with which to create a user. For the purposes of this chapter, we will only use the Access Name and Passphrase settings. The additional parameters will be discussed in Chapter 3.

Create Strategi User (CRTSGIUSR)	
Type choices, press Enter.	
Access Name	<input type="text"/>
Passphrase	*NAME <input type="text"/>
Passphrase Expired	*NO <input type="text"/> *YES, *NO, *NEVER
Email Address	<input type="text"/>
First Name	<input type="text"/>
Last Name	<input type="text"/>
Title	<input type="text"/>
Organization	<input type="text"/>
Text Description	<input type="text"/>
Class	*EXTERNAL *EXTERNAL, *INTERNAL, *ADMIN More...
F3=Exit F4=Prompt F5=Refresh F10=Additional parameters F12=Cancel F13=How to use this display F24=More keys	

Figure 4 – Create Strategi User

5. Enter an Access name, up to 40 characters. This is the name the user types in to log in to the Strategi applet or via authenticated HTTP. This name may contain spaces and other punctuation and it NOT case-sensitive.
6. Enter a Passphrase, up to 40 characters. The Passphrase is much more secure than a password, because it can be much longer and can include both spaces and punctuation. It is not case-sensitive.
7. Press **Enter** to create your user, which will now be visible when working with Strategi users.
8. Make note of the registration number for the new Strategi user. You will note an OUTQ called Snnnnnnnnnn (where “nnnnnnnnnn” refers to the user registration number) has been created in the Strategi library. For example, if the new registration number is 0000000002, the OUTQ will be named **S000000002**. This OUTQ will become very important in terms of printing. This will be discussed further in the Printing chapter.

Signing On To The Strategi Applet

Now that you’ve created your first user, it’s time to sign on to the Strategi applet.

1. Go to your Resources Web Page at <http://your.ip.address/resources/main.htm> and select “Java 5250” from the User Resources drop-down menu.
Note: You must have Macromedia Flash Player installed to access the Resources website.
2. Click on one of the “Green Screen”, “GUI, or “Green Screen enhanced”, or “GUI enhanced icons, as shown below.



Figure 5 – Java 5250 GUI, Green Screen, Enhanced

3. A Strategizer Identification Window will display on top of a new browser window, which prompts you to enter your “**Access Name**” and “**Passphrase**”. Enter the Access name and Passphrase that you set for your new user and click “OK.”
4. Your AS/400 Sign-On screen will be displayed in the applet window.
(Note: If you receive an error stating “Signon screen not found”, please see Strategizer Values SIGNONSCREEN12345, USRPRF, DEVICENAMEPOSITION and PASSWORD)
5. When you receive your AS/400 Sign-On screen, this means that Strategizer emulation is running properly.

In the following chapters we will discuss the various features of Strategizer and ways you can customize and configure Strategizer to fit your business needs.

CHAPTER 3 – Strategi Main Menu

In this chapter we will discuss portions of the Strategi Main Menu that are not discussed in detail elsewhere in this manual:

- **Users**
- **Groups**
- **Connections**
- **HSM Servers**
- **Peer Systems**
- **Strategi Values**
- **Event Handlers**
- **Event Routing**

Users (WRKSGIUSR)

The Users option allows you to create and maintain users. This includes such things as enabling/disabling users and changing their User Attributes.

Create a Strategi User (CRTSGIUSR)

A Strategi user needs to be defined on the AS/400 before they can connect through Strategi. No additional software is loaded into the user's computer, as the Java applet is downloaded to their computer and run directly from it whenever the users access your Strategi website.

1. Return to the Strategi Main Menu, as shown in Figure 1 by typing **GO STRATEGI/SGI** in the command line.
2. Select "Users" from the menu or use the Strategi command WRKSGIUSR. You will be presented with the following screen:

```
Work with Strategi Users                                SEATTLE1
                                                    Position To _____
Type options, press Enter.
 2=Change 3=Copy 4=Delete 5=Display 8=Attributes 9=Files 10=Connections
11=Enable 12=Disable 13=Certificate Wait 14=Groups 15=Zones

Opt Access Name                                     Number  Class    Status
┌──┴──┬────────────────────────────────────────┬───┬───┬───
1  BUSINESSLINK TECHNICAL SUPPORT                000000001 *ADMIN  *ENABLED
2  TEST                                           000000003 *EXTERNAL *ENABLED
3  TEST_USER                                     000000002 *EXTERNAL *ENABLED
4  TESTUSER2                                    000000004 *EXTERNAL *ENABLED

F3=Exit  F5=Refresh  F6=Create  F10=Sort Number  F11=Next View  F12=Cancel
F13=Repeat  F16=Option Parms  F17=Top  F18=Bottom  F20=Subset
```

Figure 6 – Work with Strategi Users

3. Press **F6** to create a Strategi user.

Create Strategi User (CRTSGIUSR)	
Type choices, press Enter.	
Access Name	<input type="text"/>
Passphrase	*NAME
Passphrase Expired	*NO__ *YES, *NO, *NEVER
Email Address	<input type="text"/>
First Name	<input type="text"/>
Last Name	<input type="text"/>
Title	<input type="text"/>
Organization	<input type="text"/>
Text Description	<input type="text"/>
Class	*EXTERNAL *EXTERNAL, *INTERNAL, *ADMIN More...
F3=Exit F4=Prompt F5=Refresh F10=Additional parameters F12=Cancel F13=How to use this display F24=More Keys	

Figure 7 – Create Strategi User

4. You will be presented with a list of available parameters, as listed below. Fill out the required and optional parameters.

- **Access Name (NAME)**
Up to a maximum of 40 characters. This is the name the user will type in to log into the Strategi applet or into authenticated HTTP. The name may be changed any time after creation, but must remain unique; two users cannot have the same Access Name. This field is forced and must be filled in. Note: The access name is forced to uppercase for storage and comparison and may contain spaces and other punctuation.
- **Passphrase (PASS)**
The “Passphrase” is much more secure than a “password”. The passphrase can be up to 40 characters and can include both spaces and punctuation. In other words, the passphrase can be a complete sentence, like “I try to think of things in a positive light.” The Passphrase is not case-sensitive.
- **Passphrase Expired (PASSEXP)**
Controls if and how a user’s passphrase is to be expired. If the passphrase is to be expired, Strategi values define how this expiration is done. See online help text for more information regarding the possible values.
- **Email Address (EMAIL)**
The user’s email address. This value is for information only.
- **First Name (FNAME)**
The user’s first name. This value is for information only.
- **Last Name (LNAME)**
The user’s last name. This value is for information only.
- **Title (TITLE)**
The user’s title within their organization. This value is for information only.

- **Organization (ORG)**
The company to which the user belongs. This value is for information only.
- **Class (CLASS)**
The class of the user. This is used as informational to allow Strategi to display and work with users based on their overall function within the context of Strategi.

Press F10 for additional parameters. You will be presented with the following screen:

```

Create Strategi User (CRTSGIUSR)
Type choices, press Enter.
Status . . . . . ☒ENABLED_   *PENDING, *ENABLED...

Additional Parameters

Allow Website Login . . . . . *YES           *YES, *NO
Allow GUIStyle . . . . . *YES           *YES, *NO
Allow Pocket Strategi . . . . . *YES           *YES, *NO
Allow Remote . . . . . *YES           *YES, *NO
Allow 5250 Emulation . . . . . *YES           *YES, *NO
Allow Send Spool File To User . *YES           *YES, *NO
Allow Send File To User . . . . *YES           *YES, *NO
Allow Receive File From User . . *YES           *YES, *NO
Allow High Speed Messaging . . . *YES           *YES, *NO

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

```

Figure 8 – Create Strategi User, continued

- **Status (STATUS)**
The status of the user's account. The system may disable or lock a user according to the rules defined in the Strategi System value LOGINMAX, and additionally according to the individual account rules as set by the user's EXPIRY parameter values.
An account disabled by the system will show the status *DISABLED(A). An account locked by the system will show *LOCKED for users who exceed the LOGINMAX value for invalid login attempts. See online help text for details on possible values.
- **Allow Website Login (ALWWEB)**
Whether the user is allowed to login to websites on the Strategi server.
- **Allow GUIStyle (ALWGUI)**
Whether the user is allowed access to GUIStyle terminal emulation. If you have not obtained licensing for this feature, you must set to *NO.
- **Allow Pocket Strategi (ALWPKT)**
Whether the user is allowed access to the Pocket Strategi product. If you have not obtained licensing for this feature, you must set to *NO.
- **Allow Remote (ALWRMT)**
Whether the user is allowed access to Remote. If you have not obtained licensing for this feature, you must set to *NO.

- **Allow 5250 Emulation (ALWEMU)**
Determines whether a user is allowed to access 5250 terminal emulation. Entering a value of ***NO** will still allow a user to access their Available Files via the applet and file-only access via Strategi/REMOTE.
- **Allow Send Spool File To User (ALWSPOOL)**
Determines whether the user is allowed to receive files spooled using the SNDSGIF command. This covers both AS/400 spoolfiles and database files in the ***DB2PRTCTL** format.
- **Allow Send File To User (ALWFILE)**
Determines whether the user can have files sent to them using the SNDSGIF command. Files are all from types other than ***SPOOL** and ***DB2PRTCTL**.
- **Allow Receive File From User (ALWRCVFILE)**
Whether files can be received from the user. This value applies only to Remote and Pocket Strategi users.
- **Allow High Speed Messaging (ALWHSM)**
Determines whether the user is allowed to run HSM applications.

Page down for additional parameters. You will be presented with the following screen:

```

Create Strategi User (CRTSGIUSR)
Type choices, press Enter.

Emulation:
Host User Name . . . . . *MUSTKEY__ Name, *MUSTKEY
Host Password . . . . . *MUSTKEY__ Name, *MUSTKEY
Required Device Name . . . . . *ANY_____ Name, generic*, *ANY
Idle Timeout . . . . . *NONE_____ HHMM, *NONE
Maximum Sessions per Client . . *NOMAX 01-99, *NOMAX
Time To Retain Sessions . . . . *NONE_____ HHMM, *NONE

Remote:
Registration Number . . . . . *USER 1-50000, *NONE, *NEXT...
SSL Minimum Key Length . . . . . *NONE_____ *NONE, 40, 56, 128
Client Certificate Required . . . *NO_ *YES, *NO

TCP/IP Address Filtering:
Address . . . . . *ANY_____
Subnet . . . . . *NONE_____

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

```

Figure 9 – Create Strategi User, continued

- **Emulation (EMU)**
The six values of the EMU parameter determine the user's emulation requirements.

Host User Name – This is an optional AS/400 user profile. If set, the user is forced to sign on using that profile and cannot use any other. A setting of ***MUSTKEY** means the user must key in any valid profile; no specific profile is forced.

Host Password – This is an optional AS/400 password. If a password is specified with a user profile, then the user is automatically signed on to the AS/400 without ever seeing a signon screen. When they sign off, the emulation applet is automatically closed. This field has no effect if the Host User Name is set to ***MUSTKEY**. A setting of

***MUSTKEY** means the user must key in the password corresponding to the Host User Name selected above.

Required Device Name – Allows the device name, under which the emulation is to be run, to be specified. The device is auto-created if it does not already exist. A setting of ***ANY** means the device is selected automatically.

Idle Timeout – The length of time a user can be idle while using emulation before the emulation session is automatically ended. This is generally used to prevent users from tying up emulation sessions for a prolonged period of time, when they are not actually using them. The timeout is specified as HHMM, where HH=hours and MM=minutes or can be *NONE.

Maximum Sessions – The maximum number of sessions the user is allowed to have open at any one time. **Note:** Currently this applies only to the emulation delivered by the Remote client. A future version of Strategi will enable these for the 5250 applet.

Time To Retain Sessions – The length of time to retain the state of a session when there is no activity. The session state will be maintained for the specified duration even after the session is timed out (see Idle Timeout). **Note:** Currently this applies only to the emulation delivered by the Remote client. A future version of Strategi will enable these for the 5250 applet.

- **Remote (RMT)**
Options for the Remote user.

Registration Number – The unique Remote registration number for the user. Note that different Strategi users cannot share a single Remote registration number.

Reset Authentication – Resets Remote authentication information for the user.

- **SSL Minimum Key Length (SSLRQD)**
Determines the minimum key length a user must have in order to connect to an authenticated website, and therefore, to use any resource available on the site.

Note: International customers are required to have explicit exemption in writing from the US Department of Commerce, in order to receive software written in the US that enables cryptography of greater strength than RSA RC4-40 for communications. Therefore, international users of Strategi will not be able to utilize user settings requiring greater than 40-bit encryption without this special written permission.

- **Client Certificate Required (CTFRQD)**
Determines whether the user must connect to a digitally authenticated website and present a valid personal certificate in order to log in.
- **TCP/IP Address Filtering (IPADD)**
Determines if there are criteria that must be met for the TCP/IP address from which the user connected. The address and subnet work together, with the subnet indicating how much of the address to check.

For example, if you want the user to connect from work, but not from home, you can insert their work IP address here. For this to function, the work IP address must be “static”. Certain Internet Service Providers assign IP addresses “on the fly” from an open pool; for this restriction to work, the user’s work computer must have a specific, dedicated IP address that does not change.

If you select ***ANY**, the user can connect from any TCP/IP address. If the user's work IP address is assigned on the fly, as described above, then you would use this setting.

Address	Subnet	Description
10.0.0.0	255.0.0.0	User can connect only from an internal LAN (all “10.xxx.xxx.xxx” IP addresses are always on internal LANs).
123.456.789.0	255.255.255.0	User can connect only from the network 123.456.789.xxx. Because the first three positions in the subnet mask are selected (“255.255.255”), the user can connect from any computer at an IP address beginning with “123.456.789”.
1.2.3.4	*NONE	User can connect only from the specific TCP/IP address 1.2.3.4

Table 1 – Subnet Mask Examples

Page down again for additional parameters. You will be presented with the following screen:

Change Strategi User (CHGSGIUSR)

Type choices, press Enter.

Account Expiration:

Calculate From Date	<input checked="" type="checkbox"/> NEVER__	*SAME, CCYYMMDD, *NEVER...
Number of Days	_____	000-365, *SAME
Action to Take	_____	*SAME, *DISABLE, *DELETE

Bottom

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

Figure 10 – Create Strategi User, continued

- **Account Expiration (EXPIRY)**

The expiration date and action related to expiring a user account. If the expiration date is passed, the selected action is taken: either to disable the user or delete the account.

The actual expiration date is calculated by adding the number of days to the base date. For example, if the base date is set to *CREATED and the number of days is 10, then the account will expire 10 days from the creation date.

When a user account is automatically disabled by the system, the user’s status is set to ***DISABLED(A)**, though some commands, like CHGSGIUSR may convert this to ***DISABLED** when prompted.

Calculate From Date – Specifies the base date from which to calculate the actual account expiration date. Uses the CCYYMMDD date format. The actual expiration date is <base date> + <number of days>.

Number of Days – The number of days to offset the base date. See online help text for more details.

Action to Take – The action taken by the system when the user is expired.

5. Once you've filled out the appropriate parameters, press **Enter** to generate a new record, which will now be visible when working with Strategi users.

Files

Entering Option 9 next to the user (or using the WRKSGIF command) will show the list of files that are displayed to the user in the Available Files window when they are signed into the applet, as well as files they have sent/received in Pocket Strategi or Remote.

Once you take Option 9, F10 will let you switch views between Files Sent To User and Files Received From User. Subsetting allows you to view the status of all files, including *DELETED.

Attributes – User Attribute Definitions

Attributes are used in various places within Strategi. An attribute belongs to an entity, such as a user, and may be added to that entity as required. If the attribute is not added, no storage for the attribute is used within the entity.

The attribute value is stored separately for each entity when the attribute is added, but the attribute definition is stored separately, once for the entire system.

This separation of value and definition allows the creation of attribute definitions to specifically tailor the implementation of the Strategi database. Each site where Strategi is installed can have their own unique information recorded against each user or website without all sites having to carry many empty fields that they will never use.

There are several User Attribute Definitions available, by default, for a user when they are created. You can view these pre-defined User Attributes by entering the Attributes option number next to the user or with Strategi command **WRKSGIA** and specifying *USER. There may also be *WEB attributes, but currently, there are none predefined.

User Attribute - PRINTFORMAT

The most common use of a User Attribute is the PRINTFORMAT attribute. If different users require a different type of printing, then you will want to utilize the PRINTFORMAT user attribute.

A good example would be Strategi users that reside in different locations and have different printer models. For one location, RTF may be suitable for their printer type, but in the other location, *HPT may need to be used to support an older Dot-matrix printer. Using the PRINTFORMAT User Attribute for these individual users would help resolve this problem.

To change the PRINTFORMAT User Attribute:

1. Go to the Strategi Menu
2. Select Users
3. Next to the user you would like to update, take option 8 for Attributes. You will be presented with the following screen:

```

Work with User Attributes

User Number. . . . 70
User Access Name . STRATEGI USER
First/Last Name. .

Position to . . .  _ _ _ _ _

Type options, press Enter.
2=Change 4=Delete 5=Display

Grp Attribute      Value (abbreviated)
┌─ Grp Attribute
│ ADR ADDRESS1
│ ─ ADR ADDRESS2
│ ─ ADR ADDRESS3
│ ─ ADR STATE
│ ─ ADR COUNTRY
│ ─ ADR ZIP
│ ─ ADR PHONE
│ ─ ADR FAX
│ ─ APS PRINTROUTING
└─

More...

F3=Exit F5=Refresh F12=Cancel

```

Figure 11 – Work with User Attributes

4. Scroll until you find PRINTFORMAT
5. Take option 2 to Change and you will be presented with a screen similar to the Stragegi Value PRINTFORMAT
6. Entering a printing format value in these fields will immediately override the Stragegi Value PRINTFORMAT. See example below: (*HPT and *HP4 is Host Print Transform printing to a printer manufacturer/model of HP4)

```

Change Stragegi User Attribute

User . . . . . : 000000070 - STRATEGI USER
Attribute . . . : PRINTFORMAT
Attribute Text . : Print Format

Format Code      : *HPT
Format Parameter 1 : *HP4
Format Parameter 2 :

```

Figure 12 – Change Stragegi User Attribute

Additional printing information is available in the Printing Chapter.

Creating or Deleting A User Attribute Definition

In addition to the pre-defined definitions, you can create your own attributes using the CRTSGIA command. See online help text for parameter information.

Once an attribute definition has been created, it cannot be changed. You must delete the user attribute definition and re-create it. The attribute also cannot be deleted while defined format parameters exist for any user.

Groups (WRKSGIGRP)

The Groups option allows you to work with Strategi groups. Strategi groups are collections of Strategi users that are used to simplify the administration of authorities and the transfer of files from the AS/400 to the Strategi client (user). Once a group has been created, the group may be specified instead of specific Strategi user numbers in any authority or file transfer scenario which requests Strategi user numbers.

Add Group

To create/add a group, you would do the following:

1. Press **F6** to Add Group
2. Enter the **Group Name** (GROUP) and a **Text Description** (TEXT)
3. Press **F10** for additional parameters to define a Group Output Queue for the members of this group. Please see detailed information below.
4. Press **Enter** to create the group.
5. To add users to the new group, enter option 12 Work With Members next to the group name.
6. Press **F6** to Add Member.
7. From here, you can add several users by specifying **Type** as ***USER** or if you already have groups created, you can specify a **Type** of ***GROUP** and add another group of users to this new group.

Group Output Queues

A Group Output Queue can be specified for a group when it is created. When specified, all prints placed in this Group Output Queue will be sent to all members of the group.

The detailed information about Group Output Queues is as follows:

- A group output queue is specified as QUEUE_NAME/LIBRARY.
- A single group output queue *cannot* be shared between groups
- Output queues in the Strategi library are automatically created or deleted when you create, change or delete the Strategi group. If the output queue is in a non-Strategi library, it must already exist when specified for the group or it must be deleted manually.
- When a Strategi group is associated with an output queue outside of the Strategi library, that output queue's DTAQ is set to <STRATEGI>/PUSHWRITER. When a Strategi group is disassociated with an output queue outside of the Strategi library, that output queue's DTAQ is set to *NONE.
- To send a file to the group output queue using the SNDSGIF command, specify the group name and it will automatically be sent to the associated group output queue.

A custom processing program may also be used to send a file to a group output queue. The customer program should be specified in the Strategi Value PUSHWRITERPROGRAM. It is in this value that you would specify the program and the user profile under which it will run.

PUSHWRITERPROGRAM specification is as follows:

- Program – 10 characters or *NONE
- Library – 10 characters
- User Profile – 10 characters, defaults to SGIEVTHDL

The custom processing program's input parameters are as follows:

- Data Queue trigger data – 128 characters
- Spooled File attribute data – 512 characters

For more detailed information, please see the following pages on IBM's website:

<http://publib.boulder.ibm.com/iserics/v5r2/ic2924/books/c415713509.htm>

<http://publib.boulder.ibm.com/iserics/v5r2/ic2924/index.htm?info/apis/QUSRSPLA.htm>

Connections (WRKSGICNN)

The Connections option allows you to work with a list of all Strategi connection records. It lets you see not only who is currently connected, but also examine the history of those who have previously connected. It will display all Strategi connections, including Webmaster, Emulation, HTTP, Remote, GUIStyle and pStrategi.

Selecting the Connections option from the Strategi Main Menu or using the command WRKSGICNN displays the following screen:

```
Work with Connections                                SEATTLE1
                                                    Position To _____
Type options, press Enter.
  5=Display Details

Opt User Name          Client      Date/Time In  State
┌───┴───────────┐      ───┬───┐      ───┬───┐      ───┬───┐
 1 MICHELLE          *EMULATION 11Sep02 08:01 *ONLINE
 2 MICHELLE          *REMOTE    11Sep02 08:01 *ONLINE
 3 MICHELLE          *WEBMASTER 11Sep02 08:00 *ONLINE

This is a subsetted list
F3=Exit      F5=Refresh  F11=Next View  F12=Cancel  Bottom
F16=Option P F17=Top      F18=Bottom    F20=Subset  F13=Repeat
```

Figure 13 – Work with Connections

Your initial view is a subsetted list showing only ***ONLINE** connections. To view other types of connections, you will need to push F20 to subset by other criteria.

Pressing F20 will present you with the following subset criteria:

- **Last/Current State**

The last or current state the user/s was in. Possible values are:

- *ALL – all user connections
- *ONLINE – users currently online
- *OFFLINE – users currently offline who exited Strategi
- *TIMEOUT – users currently offline who were timed out due to inactivity
- *ERROR – users currently offline who were exited due to an error

- **User Number**

The Strategi user number. It must be entered as "000000025", for example.

- **Date**

The date the connection was made. Possible values are:

*TODAY – connection was established on the present day

CC – a specific century (i.e., 19 or 20)

CCYY – a specific year (e.g., 1999, 2001, etc..)

CCYYMM – a specific year, month combination

CCYYMMDD – a specific year, month, day combination

CCYYMMDDHH – a specific year, month, day, hour combination (e.g., 2002080112 will include connections made on August 1st, 2002 during the 12th hour)

- **Client Type**

The type of client used to establish the connection. Possible values are *REMOTE,

*GUISTYLE, *EMULATION, *PSTRATEGI, *WEBMASTER, *HTTP

Entering option 5 in the field next to a specific user will display the following information:

```

                                Display Strategi Connection Details
Connection Reference . . : 0000000784
Current Status . . . . : *ONLINE
User Number . . . . . : 000000002
User Name . . . . . : MICHELLE

Date/Time In . . . . . : 25 FEB 2002 15:48:38
Date/Time Out . . . . : *NOTSET
Online Activity . . . . : 0000000000 Emulation Screens Processed

Client Type . . . . . : *EMULATION
Access Point . . . . . : DEFAULT
Client Version Text . . : 427
Client IP Address . . . : 206.19.198.113
Link Security Type . . . : *NONSSL
Link Security Detail . . : RSA RC4-40

Press Enter to continue.
F3=Exit  F12=Cancel

```

Figure 14 – Display Strategi Connection Details

- **Connection Reference**

Assigned reference number for this specific connection

- **Current Status**

Current status (i.e., *ONLINE, *OFFLINE, etc.)

- **User Number**

Strategi User number

- **User Name**

Strategi User name

- **Date/Time In**

Time the user started their connection

- **Date/Time Out**

Time the user exited their Strategi connection. If current status is *ONLINE, *NOTSET will be displayed.

- **Online Activity**

Displays number of Web Resources Delivered (*HTTP), Data Packets Received (*REMOTE), Data Objects Sent/Received (*PSTRATEGI), Emulation Screen Processed (*EMULATION) or Website Updates (*WEBMASTER). This value will not be updated until the user exits the system or logs out.

- **Client Type**
Type of client used to access Strategi. (i.e., *EMULATION, *REMOTE, etc...)
- **Access Point**
The point at which Strategi was accessed. For *HTTP or *EMULATION, it will display information about the Website/zone from which the user accessed Strategi.
- **Client Version Text**
For *EMULATION it will display the applet version, for *WEBMASTER it will display Strategi Webmaster and for *HTTP it will display the browser and OS of the user.
- **Client IP Address**
The user's IP address.
- **Link Security Type**
Displays whether the connection was SSL secured. *SSL, *NONSSL, or *NONE
- **Link Security Detail**
Displays the type of security used. This will vary depending on Link Security Type and the Client Version.

HSM Servers

As the foundation for high-speed transaction processing, HSM frees you from the pain of developing and testing CGI-BIN alternatives and provides a solid, integrated business solution.

Packaged as high-speed “middleware”, HSM blends seamlessly with Strategi to connect remote clients to your AS/400 over the Internet.

****Please see the Strategi High Speed Messaging Guide for more details****

<http://manuals.businesslink.com/strategi/V1R9/sgihsmpdf>

Peer Systems

Peer Systems allow AS/400 sites the ability to link AS/400 hosts together in a manner conducive to Internet deployment. This is an add-on to the base Strategi system. Please see your sales representative to purchase this product.

****Please see the Strategi WebCluster Guide for more information****

<http://manuals.businesslink.com/strategi/V1R9/sgiwebcl.pdf>

Strategi Values

Using Strategi command **WRKSGIVAL** or selecting the “Strategi Values” option from the Strategi Main Menu will allow you to work with the various configurable aspects of Strategi, which are controlled through Strategi Values.

These are global values that will affect all users of the system. Many of the values require a restart of the Strategi Subsystem before the changes will take effect.

Keywords

Keywords are listed here alphabetically within their respective groups.

GUI Emulation (GUI)

FKEYBUTTONS

Determines whether F-key buttons will be generated. The values can be set as follows:

0=Do not generate F-key buttons

1=Generate F-key buttons

See FKEYDELIMITERS for additional information.

FKEYDELIMITERS

Emulation will show F-key buttons wherever it finds an "F" onscreen that is...

- (a) preceded by one of the FKEYDELIMITERS characters or a space or an attribute, and
- (b) followed by one or two digits then one of these characters or a space, and
- (c) not in an input field.

If the FKEYBUTTONS value is "0", no buttons will be generated. If FKEYDELIMITERS is blank and FKEYBUTTONS is "1", then buttons will be generated for "space+Fnn+space" sequences.

MENUDETECT

Sets the limits on a DDS screen where Strategi looks for a certain identifier to determine if a screen is a menu screen (can be used in conjunction with NODOTMENUITEMS and USEHIDDEN). This is how Strategi identifies whether to display clickable menu buttons for menu items on a screen.

Entering "2" to change and pressing Enter presents several parameters, Top Rows, Bottom Rows and Text. If the phrasing in "Text" is found within the top XX rows of the screen or the bottom XX rows, then Strategi will consider the DDS to be a menu screen and will display the clickable mouse buttons in front of numbers which have a dot (".") following them. Note: The actual image displayed here is identified in the HTML that loads the Strategi Java applet, and can be turned off within that HTML's parameters if you do not want the button to display at all.

NODOTMENUITEMS

Determines if menu items will be given without the trailing period (".").

USEHIDDEN

The values can be set as follows:

0 = Do not generate menu or Fkey buttons from hidden text

1 = Generate Fkey buttons but not menu buttons from hidden text

2 = Generate both Fkey buttons and menu buttons from hidden text

If the DDS screen has hidden text, setting this keyword to TRUE (1) will cause clickable "buttons" to be assigned to the hidden text, presuming it meets the Java Applet Conventions.

Index (IDX) – Internal Use

CONNECTNUMBER

This represents the total number of connections through Strategi since installation. (For information only)

EVENTREFERENCE

Internal Use

HANDLENBR

Displays the last File Handle number used by the Strategi system. (For information only.)

HSMREFERENCE

Displays the last HSM Internal Reference number used by the Strategi system. (For information only.)

REMOTEREERENCE

Internal Use

REMOTEREGISTRATION

Internal Use

SENDNUMBER

The transmission reference number for the last Strategi file sent. (For information only.)

SENDUNITNUMBER

The reference number assigned for the last Strategi file sent, but will be the same for a single file sent to multiple users when using the SNDSGIF command. (For information only.)

USERNUMBER

The registration # of the last user created in Strategi. (For information only.)

Java (JVA)

JAVADIRDF

The default directory for the Java HSM server. (For information only.)

Lightweight Directory Access Protocol (LDAP)

LDAPAUTHENTICATION

Authentication mechanism as defined by Java JNDI. Default is "simple" and the alternatives are, "DIGEST-MD5", "CRAM-MD5", and others, depending entirely on the common denominators of server and JNDI support.

LDAPCLASSPATH

Classpath additions, if required.

LDAPPROVIDER

Provider URL for the LDAP server, e.g. ldap://ldap.businesslink.com.

LDAPSECURITY

Security protocol to use on the link. Currently only *NONE is supported.

LDAPTHREADS

LDAP server threads to run to support the LDAP service. *NONE disables the server. *CALC calculates a number from 5-100 based on the number of user records. Otherwise any number from 5-100.

LDAPUIDATTRIBUTE

User ID attribute as defined by the LDAP server. Will usually be "uid", but may vary depending on the LDAP schema and configuration.

LDAPUIDBASE

User ID Base qualification. Defined by the LDAP server and used to qualify the user ID precisely. This will normally be *NONE.

Naming (NAM)

IFSROOT

The root folder for all Strategi IFS objects, set at the time of installation. (For information only.)

LIBRARY

The library to which Strategi is installed. (For information only.)

PRODUCTCODE

The product designation as assigned by ADVANCED BusinessLink Corp. (For information only.)

PRODUCTNAME

The product name as assigned by ADVANCED BusinessLink Corp. (For information only.)

RELEASE

In the example provided, "1,9,0", this refers to the version # (1), release # (9), and modification# (0). (For information only.)

SBSNAME

The Strategi subsystem name designated during installation. (For information only.)

Operations (OPR)

ALERTMSGQ

Sets the Queue Name and Library for the Alert Message Queue.

CLEANUPCONNECTIONS

Specifies the age (in days) of connections history records to keep. Any records older than the specified age will be cleaned up by the cleanup job. 0=Don't cleanup, *NONE=Don't cleanup
A change to this value does not require a restart of the Strategi subsystem.

CLEANUPDELETEDDIRS

Specifies the age (in days) of deleted website directories to keep. Any records older than the specified age will be cleaned up by the cleanup job. 0=Don't cleanup, *NONE=Don't cleanup
A change to this value does not require a restart of the Strategi subsystem.

CLEANUPFILES

Specifies the age (in days) of sent/received file history and file data to keep. Any records older than the specified age will be cleaned up by the cleanup job. 0=Don't cleanup, *NONE=Don't cleanup. Days for Data value cannot exceed the Days for History value.
A change to this value does not require a restart of the Strategi subsystem.

CLEANUPTIME

Specifies the 24-hour clock time (HHMM) at which the cleanup job should be run.
A change to this value does not require a restart of the Strategi subsystem, but the new time will be used only *after* the next cleanup job runs.

EVENTTIMEOUT

Sets the number of seconds to wait before an event is timed out.

LOGDIAGNOSTICS

Turns the Strategi subsystem's logging on/off.

LOGLEVEL

Sets the level of logging activity. Options are 0 (None), 1 (Normal), 2 (Extended) and 7 (Diagnostic).

LOGMSGQ

Identifies the queue name and library where log messages are recorded.

POSTPTFCOMMAND

The command string to be QCMDEXC'd at the completion of a PTF.

POSTUPGRADECOMMAND

The command string to be QCMDEXC'd at the completion of upgrade.

RUNHSMONLY

Enables Strategi to run as a DHSM system only.

SENDFILECOPYRATIO

Used with the SNDSGIF command. The number of file links to make on a given send before copying the file.

Client Printing (PRT)

HTMLFIXEDFONTSIZE

Sets a fixed font size to display reports sent to the user in a .htm format. You can change this as desired, but leaving this parameter set to the default “00” means the font size will be determined automatically depending on the “printed page” size of the output report. For example, reports with 160 columns would display at a smaller font size than reports that are only 80 columns wide; they would need to be at the smaller font size in order to print out properly and be easier to read on screen with a minimum of side-to-side scrolling.

HTMLPAGETABLEHEIGHT

Sets the HTML table height command at which to display reports sent to the user in a .htm format. You can change this as desired, but leaving this parameter set to the default “0000” means the browser will break up the table in the output HTML automatically. This will enable it to be printed at a size suitable for an 8 ½ x 11 sheet of paper.

However, if you find that the last few lines of print are dropped off the page, due to your printer’s margins or using an odd-sized paper, you can set this number manually to a figure which will cause your reports to output to properly.

PDFFONTSIZE

Identifies the base font size to use for PDF prints with a portrait layout (whether the print is portrait or landscape is controlled by PDFGOLANDSCAPE). The font size specified here is a “base” size: it will be used for 80 column prints. Wider prints will use a fraction of this value rounded down to a whole number. The system administrator should be aware that setting this to a larger or smaller number will affect the look of the output; if a smaller number is used, the text may appear “bunched up” on the page; if a larger font is used, it may result in the text wrapping around to the following line, resulting in the output having a jumbled appearance.

PDFGOLANDSCAPE

This value has two segments, a width and a font size. If a print’s width (as detected according to the Strategi value PRINTWIDTHDETECTION) exceeds the width segment of PDFGOLANDSCAPE, then the print is landscape rather than portrait.

PDFMARGINS

Determines the margins to use when creating (and, thus, subsequently printing) the .PDF file. It is recommended these settings be left at a minimum of ½ inch, as that is the minimum margin required by most laser printers. Setting the margin to less than ½ inch may result in a slightly larger display area within the .PDF file, but may result in part of the .PDF page being “chopped off” when output to the end-user’s printer.

PDFPAPERSIZE

Determines what size of paper the end user has in their printer. The possible values are **1**, where the printer is stocked with A4-sized paper, and **2**, where the printer is stocked with 8 ½” x 11” paper.

PRINTFORMAT

Determines the format style of the output file. There are several possible special values available. Additional information is available in the Printing and File Transfer section.

Possible values are: ***HPT**, ***HTML**, ***PDF**, ***RTF**, ***PRTCTLA**, ***ASCII TEXT**, ***BINARY**, ***XBASE**, and ***XML**.

PRINTROUTING

The service that push writer uses for “send to”. Possible options for “Route To” are ***WEB**, ***PSTRATEGI**, or ***REMOTE**. If ***PSTRATEGI**, then “Transfer Group” is the name of the transfer

group to use. For *PSTRATEGI and *REMOTE the “Event” is the event code to use. The event can be special value *FORMTYPE, which will cause the push writer to use the form type of the printout. A change to this value does not require a restart of the Strategi subsystem.

PRINTWIDTHDETECTION

This parameter is used to control the way in which Strategi calculates print width (which in turn controls the way fonts are sized, and whether pages are oriented portrait or landscape). The special values are: ***NONE** uses the actual spool file width as defined by the print file; ***OPTIMIZED** searches the first 200 lines for rightmost character; ***FULL** searches entire spool file for rightmost character.

PUSHWRITERPROGRAM

Specifies a custom processing program and the user profile under which it will run.

RTFFONTNAME

Identifies which font, resident on the end-user’s PC, is used when displaying a RTF file received from the AS/400 through Strategi. The default used is Courier New as that is a standard Windows font, and is a fixed width, non-proportional font. The system administrator should be aware that setting this to a proportional font (such as Arial) vs. a fixed width font (such as Courier New) will mean that vertical columns on the page will fail to align properly, resulting in the output having a jumbled appearance.

RTFFONTSIZE

Identifies the base font size to use for RTF prints with a portrait layout (whether the print is portrait or landscape is controlled by RTFGOLANDSCAPE). The font size specified here is a “base” size: it will be used for 80 column prints. Wider prints will use a fraction of this value rounded down to a whole number. For example, if RTFFONTSIZE was 12, and a 105-column print was generated, its font size would be $12 * 80/105$, or 9 once it is rounded down. This is because a smaller font size is needed to fit more columns in the same space. The system administrator should be aware that setting this to a larger or smaller number will affect the look of the output; if a smaller number is used, the text may appear “bunched up” on the page; if a larger font is used, it may result in the text wrapping around to the following line, resulting in the output having a jumbled appearance.

RTFGOLANDSCAPE

This value has two segments, a width and a font size. If a print’s width (as detected according to the Strategi value PRINTWIDTHDETECTION) exceeds the width segment of RTFGOLANDSCAPE, then the print is landscape rather than portrait. The font size segment dictates the base font size for landscape prints similar to how RTFFONTSIZE controls font size for portrait prints. As with RTFFONTSIZE, the font size here is a base that gets scaled according to the ratio between actual width and the base width (the width segment of RTFGOLANDSCAPE). For example, if the RTFGOLANDSCAPE width was 132, and the font size was 8, and a 150 column print was printed, actual font size would be $8 * 132/150$, or 7 once rounded down.

RTFMARGINS

Determines the margins to use when creating (and, thus, subsequently printing) the .RTF file. It is recommended these settings be left at a minimum of ½ inch, as that is the minimum margin required by most laser printers. Setting the margin to less than ½ inch may result in a slightly larger display area within the .RTF file, but may result in part of the .RTF page being “chopped off” when output to the end-user’s printer.

RTFPAPERSIZE

Determines what size of paper the end user has in their printer. The possible values are **1**, where the printer is stocked with A4-sized paper, and **2**, where the printer is stocked with 8 ½” x 11” paper.

TITLEEXTRACTION

Allows you to configure the settings that extract the title text from a printed file for use as the file description

Scan Width Percentage - This value controls how centered a text segment must be in order to be considered for the title text. For example, if the document width is 100 characters and the scan

width percentage is 60%, a text segment must have its center within the center 60 characters of the line.

Padding Count. - The number of spaces required on the left and right of the title text.

Lines to Process - The number of lines in the document to search for the title text..

TOPMARGINLINENUMBER

Specifies the number of blank lines at the top of a print to trim before generating the print. This is necessary because AS/400 prints do not have a standard concept of “margin”, but rather contain a few blank lines at the top of the page to simulate a margin. If these blank lines PLUS the RTFMARGINS were included together, more blank space at the top of the page than is generally desired would result. So up to TOPMARGINLINENUMBER blank lines will be stripped from the print before conversion. If a non-blank line is encountered before TOPMARGINLINENUMBER, stripping stops.

Remote & Distributed Services (RMT)

DHSMADDRESS

Specifies the address or addresses that DHSM listens on for incoming DHSM connections. It can be set to an IP address or to *WEBSITES, in which case the addresses of all configured websites will be used. DHSM is a licensed feature.

DHSMCERTIFICATE

Specifies which website's SSL certificate to use for DHSM with SSL. This is only relevant if SSL is configured on your system.

DHSMTHREADS

Controls how many DHSM threads are running on a Strategi system. The first segment dictates how many DHSM Threads will start by default when Strategi starts. The third segment states how many new threads to start if no threads are available for a new connection. The second segment states the maximum number of threads that may run at any time. The number of DHSM Threads that can run on your system total is restricted by license.

PSGIADDRESS

The listen address for Pocket Strategi. Possible values are *ALL or a valid IP address. A change to this value requires a restart of the Strategi subsystem before the change will take effect.

PSGI THREADS

The number of processing threads for Pocket Strategi internal services. This is not related to the number of incoming connections, which are not physically limited. A change to this value requires a restart of the Strategi subsystem before the change will take effect.

REMOTEADDRESS

The listen address for Strategi/REMOTE. Possible values are *ALL or a valid IP address. A change to this value requires a restart of the Strategi subsystem before the change will take effect.

REMOTECERTIFICATE

The name of the website for the remote digital certificate. The Site Code name would be used. A change to this value requires a restart of the Strategi subsystem before the change will take effect.

REMOTECOMPANYNAME

The name of the company licensing Strategi/REMOTE. This is stamped onto generated clients and cannot be changed on the client once the client is generated. Changes will be reflected in subsequently generated clients. This consists of a long and short company name, used in several places in the remote software.

REMOTEFILECHECK

Sets the frequency that Remote will check for available files. Valid values are 1-999. Setting this value to 001 will cause files to be sent almost immediately.

REMOTEHOSTID

List of acceptable unique system ID's. This is a comma-delimited list with no spaces between values. The first one in the list is stamped onto generated clients and cannot be changed without regenerating the client.

For users of the previous BusinessLink/REMOTE client, the remaining ID's are alternates to allow several coprocessors to be combined into one Strategi system. Please contact BusinessLink Support for information on how to obtain your ID to connect previous clients.

For new users of Strategi/REMOTE, you can create this unique identifier using your serial number with numbers/letters appended to the end or any other unique number you like.

REMOTETHREADS

The number of threads that will be started to service Strategi/REMOTE connections. Listed in a typical 3 value format; initial, maximum and increment.

A change to this value requires a restart of the Strategi subsystem before the change will take effect.

Security (SEC)

FORCELOGIN

This setting controls whether Strategi will accept a browser-saved password with website *BASIC authentication. If set to 0, Strategi will allow a user to log in if the browser has saved their password and submitted it. If set to 1, the user will be forced to log in even if the browser has been set to remember it.

FORCELOGINSSL

Determines whether logging into an authenticated zone through HTTP will always be SSL enabled. This prevents your Strategi user name and password from being transferred in the clear over the Internet. In order for this to work, your organization must have purchased the Strategi SSL add-in module; if the module has not been purchased, this setting is ignored.

IDLEUSERTIMEOUT

Determines how many minutes of inactivity must lapse before a website user is logged out. This does not determine the timeout settings for emulation users. Emulation timeout must be configured in the user's account.

LOGINMAX

The number of invalid login attempts allowed until a user is set to *LOCKED.

PASSWORDEXPIRY

The number of days until a user's password will be expired.

Virtual Terminal Emulation (VRT)

COMSSERVERADDRESS

Controls the TCP/IP address and port to use for Strategi's emulation applet. If the default port value is changed, the applet parameter "connection_port" must be added to the applet loading html page in order for the applet to communicate on the correct port.

DEVICENAMEPOSITION

Row and Column where the first character of the Sign On Screen Device Name will be found.

This value is required and must match your AS/400 sign-on screen exactly.

EMULATIONADDRESS

The IP address and ports to use for emulation in Strategi/REMOTE. Currently does not support a value of *ALL or *WEBSITES. Possible values could be 127.0.0.1 (Loopback) or any valid IP address.

A change to this value requires a restart of the Strategi subsystem before the change will take effect.

PASSWORD

Row and Column on the AS/400 sign on screen where the first character of the AS/400 Password will be found. *This value is required and must match your AS/400 sign-on screen exactly.*

SECONDARYSIGNON

Determines whether a user configured with automatic signon, via Host User Name and Host Password, is able to access a secondary signon screen using the System Request option. 1=Yes 0=No

SESSIONS

This indicates the maximum number of Strategi sessions that may be hosted concurrently; users attempting to connect after the maximum concurrencies are reached will receive a “No server response (TCP/IP ok)” message. As current connections are freed (as users exit from their Strategi session), new users will be able to connect, up to the licensed number of concurrent Strategi users.

SIGNONSCREEN1, 2, 3, 4, 5

These settings indicate the Row and Column where the first character of the indicated signon screen text will be found. They are used by Strategi to determine if the screen being presented to the user is an AS/400 sign on screen. All criteria entered into these fields must be met in order for the screen to be considered a valid AS/400 Sign-On screen. When installed, Strategi will complete the first 3 SIGNONSCREEN values with the default AS/400 Sign-On screen settings.

For example, in the default setup, SignonScreen1 is “01,036Sign On”, SignonScreen2 is “06,017User . . .” and SignonScreen3 is “Password . . .”.

This means that, to be considered as an AS/400 sign on screen, the characters “Sign On” must begin in row 1, column 36, “User . . .” must begin in row 6, column 17, and “Password . . .” must begin in row 7, column 17.

Note: Capitalization, spacing and punctuation are important here, and must match your AS/400 sign on screen exactly. If you modify the Sign-On screen and do not change these settings to match, users will be able to login to Strategi, but will then receive a message of “Sign-on screen not found” when Strategi fails to find a matching AS/400 Sign-On screen.

STRATEGIUSER

Row and column on the AS/400 Sign-On screen where the Strategi User Info Field will be found.

TERMINALNAME

Identifies the Virtual Terminal Name Prefix. Defaults to QPADEV.

TERMINALTYPE

Identifies the Virtual Terminal type. Defaults to 31792 (80-column color). For 132-column color use value 3477FC. Works in conjunction with the applet parameter

<PARAM NAME=“allow_132_column” VALUE=“no”>.

TERMINALVARY

Controls the varying on of user-specific devices (i.e. devices specified in the Strategi user profile in the EMU Required Device Name parameter).

“Skip if not VRYONP” affects error handling for generic device names, such as ABC*. When set to “0” (No), the user will get device name ABC1, unless Strategi already has a session using that device. If it does, it will continue to check until it finds the next available device. When set to “1” (Yes), the device will be checked to be in a vary on pending state. If it is not, the device will be skipped and the next one will be checked until it finds one in a vary on pending state.

“Auto Vary On” affects session start for all user-specific device names. When set to “1”, it causes Strategi to check the devices before starting a session and if they exist, but do not have a vary on pending status, Strategi will first vary on the device.

USRPRF

Determines the row and column location of the Profile Field on the AS/400 Sign On Screen.

This value is required and must match your AS/400 sign-on screen exactly.

Website Attribute (WEB)

DEFAULTURL

Identifies the web page name to use as the default URL. For example, if someone typed in www.businesslink.com to get to our website, and we had the DEFAULTURL set to [homepage](http://www.businesslink.com/homepage.htm), they would be taken to www.businesslink.com/homepage.htm. Alternately, if we had the DEFAULTURL set to [main](http://www.businesslink.com/main.htm) they would have been taken to www.businesslink.com/main.htm instead. If the value is specified without an extension, then the file can have any extension.

DYNAMICTHREADS

The maximum number of additional HTTPTHREAD jobs to start as needed. Each HTTP Thread can serve one HTTP request at a time. The maximum number of threads will be limited by your Strategi license.

HTTPKEEPALIVE

Controls the HTTP protocol keep-alive constraints to help prevent all threads from being tied up by a few users for a long time and to prevent clients from tying up threads while sitting idle. HTTP keep-alive allows HTTP 1.1 to request and get many resources over a single IP connection, which results in faster web-serving. The parameters are defined as follows:

Maximum Resources – The maximum number of resources that will be served on this connection

Active Seconds – The maximum number of seconds allowed while actively receiving and responding to requests

Idle Seconds – The maximum number of seconds allowed while waiting for another request.

HTTPMESSAGEPATH

The subdirectory where Strategi's error message HTML pages are located. These pages have been designed to keep a consistent look-and-feel to your Strategi website. Default value is MESSAGES.

HTTPTRANSMISSIONMAX

Specifies the maximum packet size the Strategi webserver will deliver. All zero's means that no maximum is specified.

LOGINURL

Specifies the name of the file to use for login when using *CUSTOM authentication on a website zone. This file will always be delivered *without* authentication, no matter what the authentication setting of the zone. If the value is specified without an extension, then the file can have any extension.

SERVERID

The ID assigned to the Strategi server.

SSLSESSIONTIMEOUT

Used to control how long SSL session data is retained so that SSL connections can be quickly resumed if the user reconnects to the same server, providing the same session key. It is an internal setting for SSL, which if shortened will increase the load on the server to negotiate SSL connections, and if lengthened, increases the time frame for an unauthorized user to assume the identity of a previous user. The recommended balance between security and performance is 3600 seconds, or 1 hour.

THREADS

The initial number of HTTPTHREAD jobs to start when the Strategi subsystem starts. Each HTTP Thread can serve one HTTP request at a time. Additional threads will be started, as needed, as many additional threads as specified by the DYNAMICTHREADS Strategi value. The total number of threads running will be limited by your Strategi license.

WEBMASTERADDRESS

Identifies the TCP/IP address and port from which Strategi's Webmaster program (used for "checking in" and "checking out" the Strategi website) can connect. The default TCP/IP address is *WEBSITES, which means Webmaster may connect back to the Strategi webserver from any TCP/IP address. The default port is 43808. The System Administrator may set these as desired.

Extended Applet Attributes (XAA)

XAADISPLAYMODE

Determines whether the Strategi 5250 emulation window displays initially in GUI mode or Green Screen ("Text") mode. Possible values are "GUI" or "TEXT". This value also exists as a User Attribute.

Note: This value is overridden by an applet parameter within the HTML page that loads the applet.

XAADISPLAYWINDOW

Retains information as to the user's Strategi 5250 emulation window's dimensions and position on the screen from the last time the user viewed it. This value also exists as a User Attribute.

Note: The User Attribute of the same name will override this value.

XAAENTERKEYACTION

Determines whether the keyboard Enter key will behave as an AS/400 Enter key or as a FieldExit key. This value also exists as a User Attribute.

Note: This value is overridden by an applet parameter within the HTML page that loads the applet. To use this value, you must remove or comment out the corresponding applet parameter.

XAARETRIEVE

Specifies behavior concerning file retrieval when in the Java emulation applet. This value also exists as a User Attribute.

The first value, "Auto Retrieve?", specifies whether files will be automatically downloaded by the applet when they become available. The second, "Delete Without RTV?", specifies whether a user can delete a file if they have not retrieved it. The third, "Autodelete Keeping", specifies the maximum number of available files a user can have, which, if exceeded, will cause the older files to be deleted until this number is satisfied.

Note: These values are overridden by the applet parameters within the HTML that loads the applet. To use these values, you must remove or comment out the corresponding applet parameters.

Character Translation (XLT)

CLIENTCCSID

CCSID's are the standard OS/400 Coded Character Set Identifiers, which for most single-byte character sets are the same as the related Code Page.

ClientCCSID defaults to 819 (standard ISO 8859-1 as used in US and Western European versions of Microsoft Windows). This can be changed to support other codepages.

HOSTCCSID

HostCCSID defaults to 37 (standard US EBCDIC), and can be changed to support other codepages, (e.g., For Italy use = 280).

Event Handlers and Event Routing

These two menu options relate to Managed Event Handlers. Events allow processing of data received into the system by various Strategi services. Conceptually, there are three entities that relate to events: the client, the handler and the routing entry.

****For more information, please see the Strategi Event Services Guide****

<http://manuals.businesslink.com/strategi/V1R9/sgievt.pdf>

CHAPTER 4 – Strategi Java Applet

Display Modes

After entering their username and passphrase in the Strategi Identification window, the user will be presented with the AS/400 emulation window in either GUI or TEXT Mode. The applet code itself is the same, but you can choose whether or not to initially display it in a specific mode. This is specified using an applet parameter. Applet parameters are discussed later in this chapter. By default, the Strategi Resources website contains both a GUI and TEXT mode applet-loading page for your convenience.

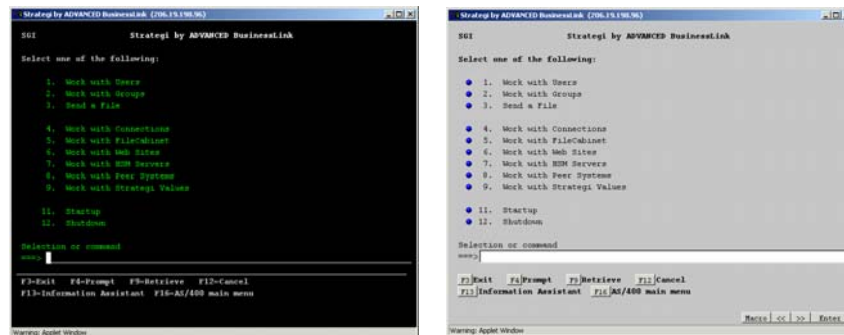


Figure 15 – Emulation Text Mode vs. GUI Mode

Alt + Shift + G toggles between the two modes on the user's next input. Pressing **Enter** also counts as input, so you can toggle modes while remaining on the same screen.

Enhanced Strategi 5250 Client Applet

The Enhanced applet is a signed applet that allows some additional features that are not available within the Standard GUI or Text applets. From your Resources website, you can get to the Signed applet by clicking on "Quickstart GUI Enhanced" icon.

The Enhanced applet requires the user to allow signed applets to be executed by the browser on their local workstation. The browser may display an alert window explaining this fact and ask whether or not to proceed. If you wish to utilize the features available in this version of the Strategi client applet you must allow applets of this type to be downloaded and executed.

Some of the additional features included are:

- *HPT printing (discussed further in the Printing Chapter)
- Copy/Paste functionality (discussed below)

Applet Features

Macros

Macros enable you to enter an entire sequence of keystrokes with the press of a button, to avoid typing it over and over again.

The macros feature is available in all applets, signed and unsigned. When using the default version of the GUI applet, the macros button will automatically be displayed. When using the TEXT applet, you will need to enable buttons using the applet parameter tag, **<PARAM NAME=textmode_buttons VALUE="yes">**, in order for the macro button to be visible.

The macro button appears in the lower right corner of the applet window:



Figure 16 – Macro Button

To record a sequence of keystrokes, press the “Macro” button and then choose “Record”:



Figure 17 – Recording a Macro

Type your sequence of keystrokes and when complete, press the “Stop Recording” button. The dialog box “Macros” will pop up prompting you to save the key sequence you just entered. Type a name in the “Macro Name” box and press the “Save” button.

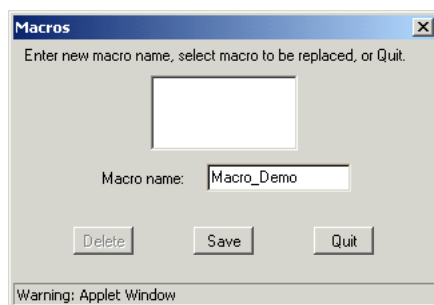


Figure 18 – Saving a Macro

To use the macro, simply press the “Macros” button again and choose the name of the macro you need. This macro will be available whenever you sign into Strategi as the same user.

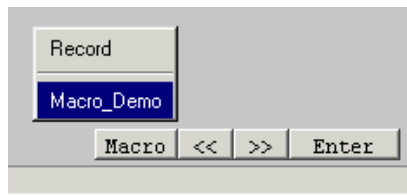


Figure 19 – Using a Macro

Currently, each macro can store up to 128 characters. Recording of certain functions, such as a **Tab**, **Page Down**, **Enter**, or an **F-key** will each use up 7 of the available 128 characters.

Strategi Functions Pop-up

Clicking the right mouse button will bring up the Strategi Functions Popup, shown below:

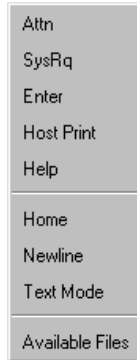


Figure 20 – Strategi Functions Popup

This window will remain on the screen until the user selects one of the options or clicks anywhere outside of the window.

An explanation of each of the buttons follows:

Name	Description
Attn	Attention
SysRq	System Request
Enter	The same as pressing the keyboard "Enter" key.
Host Print	Takes a text-only "snap-shot" of the screen and sends it to the users outqueue. If the outqueue is currently their Strategi outqueue, the file will be sent to them in the print format that is currently set.
Help	Displays the help file for that screen
Home	Displays the OS/400 Main Menu defined for the user
Newline	Moves the cursor to the first input field on the following line or will wrap to the first field on the screen if no input fields follow.
Text Mode/GUI Mode	Toggles between GUI and Text Modes (same as ALT+Shift+G)
Available Files	Displays the Available Files window

Table 2 – Strategi Functions Popup Definitions

Copy/Paste Capabilities

Strategi allows you to copy and paste from the Enhanced applet, in both GUI and TEXT modes.

To copy text, click and hold the left mouse button and drag your pointer over the text you want to copy from the emulation screen. Once you've selected what you want to copy, release the left mouse button. You'll receive a pop-up menu to either "**Copy**" or "**Cancel**".

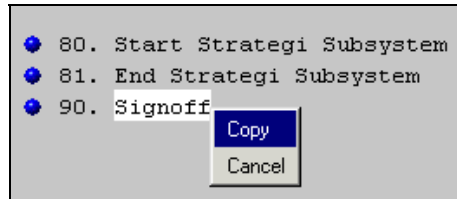


Figure 21 – Copy/Paste Function

Once the text is copied you can paste into another emulation field or Windows application using “Ctrl+V”.

132-Column Mode

Strategi is capable of 132-column mode, but only displays it when working in a “Display Objects” screen. Otherwise the emulation screens appear in regular 80-column mode. 132-column mode can be displayed in both GUI and TEXT modes.

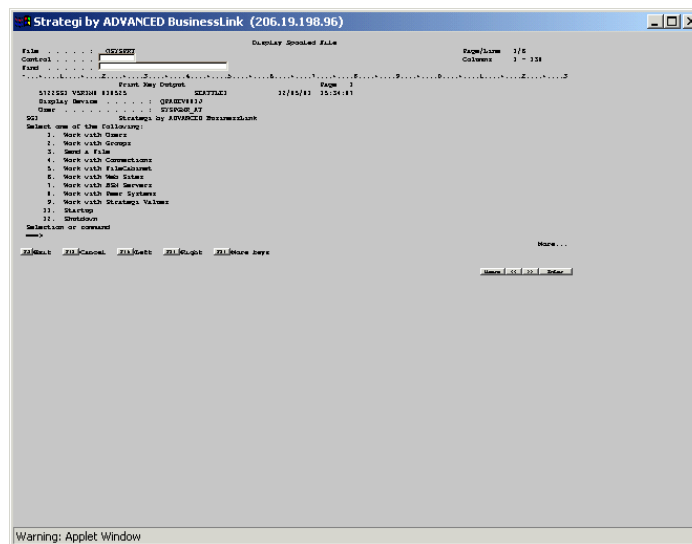


Figure 22 – 132-column Mode

The print in this example appears small because, in order to keep the columns aligned, a fixed-width font is used. Using a larger font size would have made the emulation window too wide to fit onto a computer screen.

The print in this example appears small because, in order to fit 132 columns on the screen, a smaller font must be used. Using a larger font size would have made the emulation window too wide to fit onto a computer screen.

Enabling/Disabling 132-column mode

132-column mode can be enabled and disabled using both the Strategi Special Value **TERMINALTYPE** and the applet parameter tag **<PARAM NAME=allow_132_column VALUE="no">**.

The Strategi Special Value **TERMINALTYPE**, by default, is set to 80-column mode with the value of **31792** (80-column color). This means that globally, all emulation sessions will be 80-column.

If you were to change the applet parameter tag of “allow_132_column” to “yes”, then all emulation sessions launched from that applet-loading page will be forced to 132-column.

The opposite is true if you were to change the **TERMINALTYPE** value to **3477FC** (132-column color) and change the applet parameter tag of “allow_132_column” to “no”. All emulation sessions launched from that applet-loading page will be forced to 80-column.

If you comment out the applet parameter tag or remove it all-together, then the Strategi Special Value of **TERMINALTYPE** will always be used.

The applet parameter tag can be useful if certain users need to have an 80-column session and others need 132-column. You can have those users launch the applet from different applet-loading pages with the parameter tag modified as needed.

Dynamic Window Resizing

As with any Windows application, you may resize the emulation window by using the mouse to drag a corner or side of the window in any direction. Strategi will resize the window text as well, dynamically selecting the “best-fit” font. Strategi maintains the relationship between the height and width of the screen for readability purposes.

The window size settings are stored in a user attribute (XAADISPLAYMODE) so the next time the user signs into the applet the window will be displayed in the same size as when the user signed out.

Mouse Selection

The java applet supports mouse selection of typical AS/400 lists, where there may be selections:

1=Select 4=Delete 8=Work with job

at the top and a number of rows each with a single input field for entry of the option number. Clicking one of the options causes it to be highlighted, and an information message appears at the bottom of the emulation window, saying something like:

“Click on line for 8=Work, DoubleClick to Enter”

Clicking anywhere on one of the lines in the list will then cause that option number to be placed in the input box for that line. **“Double-clicking”** will not only enter the option number but will also press **“Enter”**. Clicking anywhere else on the screen or using the **Page Up** or **Page Down** button will deselect the option.

Mouse Selection Rules

1. Options consist of one or two characters, then an “-“, then some text. Two-character options starting with “F” are ignored (they are F-key buttons). The option number, or first word of the option text must be clicked. **“Option 1=Select”** is automatically selected on a new screen, unless there is a status message at the foot of the screen.
2. The line item option entry fields must be 1 or 2 characters long. Clicking on the screen background, other than an option or option line, results in normal cursor positioning and deselects any option.
3. Strategi’s ability to enter **“5=Display”**, etc., by clicking on the relevant list line also applies to lines that have multiple input fields, as long as only one field looks like an option (one or two characters long and a normal text field). This allows selection in, for example, the standard SEU list display.




4. Highlighting the options will not occur if there are no lines on which mouse selection would be valid.

Page Action Buttons

There are three page action buttons at the bottom right of the Strategi emulation screen, not including the macro button.



Figure 23 – Page Action Buttons

Clicking on the  button will perform an Enter. Clicking on the  and  buttons will perform Page Up and Page Down respectively.

If you find that the buttons hide any meaningful text at the right-hand end of the status line, the buttons can be dismissed by doing a “right-click” with the mouse anywhere on the line where the buttons are. They can be made to reappear on the current screen with another “right-click” or they will automatically appear on the next screen.

Disabling AS/400 Function Keys

Strategi permits suppression of the AS/400’s “Attention”, “System Request”, and/or “Host Print” keys. The buttons in the Strategi Functions Popup (brought up via right mouse-click) are grayed out (disabled), and the corresponding Alt + keys have no effect. To disable any or all of these keys, you will need to insert the following applet parameter tag into the web page loading the Strategi applet:

<PARAM NAME=Disable_Keys VALUE="xxxxyyzzz">

The “xxxxyyzzz” can be any or all of the following:

Value	Description
ATN	Attention
SRQ	System Request
PRT	Host Print

Table 3 – Applet Function Keys

Examples:

Disable all three function keys

<PARAM NAME=Disable_Keys VALUE="ATNSRQPRT">

Disable System Request and Print function keys

<PARAM NAME=Disable_Keys VALUE="SRQPRT">

The ATN, SRQ, and PRT codes can be in any order and any case.

This can be useful in restricting casual user access without going through the complex AS/400 steps that are otherwise needed. If you want to disable these keys for all users, you will need to insert this code into all of your applet-loading pages.

Error Line Messages

If you were to use **Alt+P** to print a screen and then immediately do **Alt+Shift+G** to toggle GUI/Text mode, the AS/400 error line message confirming the Print key has been processed is normally overwritten by the local feedback saying the GUI/Text mode will change on the next screen. You can switch between the two messages by performing a left mouse click on the message itself.

Keyboard Mapping

Use the following keystroke combinations in the Java applet to produce the specified actions:

Keystrokes	Action
Alt + A	Attention
Alt + I	Insert – works in Text mode only, as GUI input boxes will normally have insert on.
Alt + S	System Request
Alt + P	Host Print key
Alt + F	Refresh and display Available Files list
Alt + H	Command entry Help
Alt + D	Duplicate Key
Alt + Shift + G	Swaps the GUI/Text Input modes
Alt + Shift + Enter	Swaps Enter and Ctrl + Enter functions
Tab	Tabs between fields
Enter or Ctrl + Enter	Destructive Field Exit (Text mode)
Numeric Keypad “plus”	True “Field +” and destructive “Field Exit”
Numeric Keypad “Minus”	True “Field –”. Works in signed numeric fields only, otherwise just inserts a dash (“-”)
Shift + 6	Inserts a caret (“ ^ ”) character, which is then converted to/from the “not” character on the AS/400
Shift + \	Solid bar in Java, used in C source code
Alt + \	Broken bar, which displays as a solid bar until you leave the field; used in AS/400 CLP sources (see notes below on Pipe Characters)

Table 4 – Keyboard Mapping

Please note the following:

- The “cent” character can be displayed, but cannot be keyed in.
- The initial behavior of “Enter or “Field Exit” is set in the java applet using the following parameter:

<PARAM NAME=“enter_key_action” VALUE=“xxx”>

Values: enter or field_exit

“Field Exit” acts as a “Tab” in GUI mode, but as a true, destructive “FieldExit” in Text mode.

- Conversion of carets, bars, cents, etc...depends on the correct EBCDIC/ASCII tables being configured.

Pipe Characters

The primary pipe character, as used in C program sources on the AS/400, is entered normally, using Shift +|, displaying a solid bar.

The secondary pipe character, needed for CL programs, is not accepted by Java text boxes (not even as an Alt+Onnn entry). We display it as a broken bar on output, and use **Alt** + \ for keying. For Netscape, the secondary pipe character displays as a solid bar when keyed, then all solid bars are changed to broken bars on "Field Exit" or "Enter". For Explorer 4, **Alt** + \ must be keyed at least once when in the field to flag usage, then **Shift** + \ must be used enter the characters, changing on "Field Exit". Both bars cannot be keyed into the same field, only one or the other. Conversion from solid to broken bars on the Field Exit applies to all bars, if any of them have been keyed in with **Alt** + \.

Applet Parameters

Many of the Strategi 5250 Emulation Java Applet features are controlled and configured via the use of HTML parameter tags. These tags reside in the HTML for the page that loads the applet (i.e., basegui.htm, basegui_caa.htm and basetext.htm).

The lists below detail all of the applet tags that can be used. Many of them are, by default, already in the applet loading pages and can be modified according to your needs. Some of them will need to be added.

Should you decide to add any of these parameters or modify existing ones, you will need to create a customized version of the applet loading page.

For more information, please see Technical Support Bulletin on Creating Customized Versions of Resources Website Pages, which can be found on our Support website.

Basic Applet Statement Requirements

The following applet tags and parameters are required for the applet to function properly. These should not be modified.

<applet code="abljem.class" codebase="/applets" archive="abljem.zip">

- Description:
applet code: The html start tag and the main java class file required.
codebase: The webserver location for abljem.class and any other .class files (used by MSIE).
archive: The compressed class archive (used by Netscape).
- Default: Same as example.

<PARAM NAME="applet_link" VALUE="<HSM NAME=applet_link>">

Optional

- Description: When Digital Client Certificates or SSL with Website Authentication are used, this value will be replaced with a key that will auto-login the user to the applet. This prevents the requirement for two signons.
- Values: The key will be available only if the user is logged into the zone with a Digital Certificate or with SSL and authentication.
- Default: None

<PARAM NAME="cabbase" VALUE="/applets/abljem.cab">

- Description: Specifies cab location for MSIE.
- Values:
 abljem.cab: Loads the applet normally.
 abljem.caa: Loads the signed (enhanced) version of the applet.
- Default: abljem.cab

<HSM NAME=user_agent VALUE="usragt"></hsm>

- Description: Used to identify client browser for proper field alignment.
- Values: usragt

<PARAM NAME="user_agent" VALUE="usragt"> <!-- must use quotes -->

- Description: Used to identify client browser for proper field alignment. HSM start tag; replaces "usragt" with browser's identification tag.
- Values: User_agent will be replaced with the user agent string that represents what browser the user is using.
- Default: usragt

</APPLET>

- Description: Applet end tag.

Display

Control how items are displayed to the user.

<PARAM NAME="allow_132_column" VALUE="yes">

- Description: Specifies if the screens will be viewed in 132-column mode. Only valid for "display objects" screens (commented out by default).
- Values: Yes or No
- Default: No

<PARAM NAME="allow_prtbin_dialog_cancel" VALUE="yes">

- Description: causes the Cancel button to not appear, and window close to be ignored, on the Binary Print dialog. The default is yes, consistent with earlier versions. Setting a value of No makes it harder for users to lose prints, but forces entry of a plausible path in that dialog, which might lead to reports of the applet being locked up if invalid paths are entered, or to session failure if the dialog is left up for too long.
- Values: yes or no
- Default: yes

<PARAM NAME="column_separators" VALUE="N">

- Description: Specifies how to treat fields with the column separator attribute. Fields with the column separator attribute are by default underlined.
- Limitations: Version V1R5M3 and later
- Values: N, U, D
 N (none): Provides consistency with earlier versions of Strategi
 U (underlined): Underlines column-separated fields.
 D (dot): Uses small central dots.
- Default: N

<PARAM NAME="display_mode" VALUE="GUI">

- Description: Determines initial display mode. Overrides user's settings and saved values. Users may toggle with **Alt + Shift + G**.
- Default: Whatever is set for the user.
- Values: GUI or Text
GUI: User will enter applet in GUI mode.
Text: User will enter applet in Text mode.

<PARAM NAME="dup_character " VALUE="x">

- Description: Specifies what the Dup Character will be displayed as on the 5250 applet.
- Values: any character
- Default: "#"

<PARAM NAME="filelist_image" VALUE="jlogo2.jpg">

- Description: Specifies image to be displayed on the left side of the Available Files window.
- Default: Strati image is displayed

<PARAM NAME="login_image" VALUE="jlogo.jpg">

- Description: Specifies image to be displayed on the left side of the name/passphrase applet window.
- Default: no picture

<PARAM NAME="login_passphrase_prompt" VALUE="Pass:">

- Description: Identification login window passphrase prompt.
- Default: Passphrase

<PARAM NAME="login_user_prompt" VALUE="User:">

- Description: Identification login window user name prompt.
- Default: Name

<PARAM NAME="option_button_image" VALUE="button.gif">

- Description: Used to specify the "clickable" button image to be placed next to item numbers in GUI mode.
- Default: No buttons on menu items.

<PARAM NAME="product_title" VALUE="product title">

- Description: Title to be displayed at the top of the login applet window.
- Values: Any title you would like to specify to be shown.
- Default: Strati - Identification
-

<PARAM NAME="show_sizing_rectangles" VALUE="false">

- Description: Can be set to true to display the size of 80 and 132 column screens within the emulation window, delaying snapping back to those sizes until the cursor is moved into the window.
- Values: true or false
- Default: false

<PARAM NAME="textmode_buttons" VALUE="no">

- Description: Determines if text mode buttons are active.
- Values: Yes or No
- Default: No

<PARAM NAME="window_title" VALUE="title">

- Description: Used to specify title to appear at the top of the browser window.
- Values: Any desired title.
- Default: "Strategi by ADVANCED BusinessLink"

File Retrieval

Control settings dealing with files sent to the users.

<PARAM NAME="autodelete_binary_prints" VALUE="no">

- Description: Specifies whether prtbin files should be automatically deleted as soon as they are delivered to the printer.
- Values: yes or no
- Default: No

<PARAM NAME="autodelete_URLs_keeping" VALUE="0">

- Description: Controls the automatic deletion of old URLs.
- Values: Any numeric value
- Default: 0 – does not autodelete any files.

<PARAM NAME="autoretrieve_URLs" VALUE="yes">

- Description: Controls the automatic retrieval of files.
- Values: yes or no
 - Yes**: If an item is sent to an out queue, it will automatically open the print.
 - No**: If an item is sent to an out queue, it will stay in the available files window and no action will take place.
- Default: Yes

<PARAM NAME="delete_without_retrieve" VALUE="yes">

- Description: Determines if users or the system may delete files before they are opened.
- Values: yes or no
 - Yes**: Users/system may delete a file before it's opened.
 - No**: Users must open a file at least once before they or the system can delete it.
- Default: No

<PARAM NAME="initial_binary_prints" VALUE="yes">

- Description: Specifies whether to automatically print prtbin files that are available when the applet loads.
- Values: yes or no
- Default: No

Security

Control settings that deal with applet security.

<PARAM NAME="connection_port" VALUE="ppppp">

- Description: Specifies the port for the emulation applet to connect to, where ppppp is the port number. This must be used in conjunction with the Strategi Special Value of COMSSERVERADDRESS. Both values must contain the same port number.

<PARAM NAME="connection_security" VALUE="pass">

- Description: Specifies if a java identification prompt requesting a passphrase will be displayed. This is a required parameter, intended for possible future implementations. If this PARAM is omitted, no emulation screen will be presented.
- Default: Pass - requests passphrase.

<PARAM NAME="http_tunnel" VALUE="fallback">

- Description: Specifies whether to use HTTP tunneling which forces requests for port 43856 to port 80.
- Values: always, fallback, never
Always: tunneling will always occur
Fallback: tunneling will occur if normal 43856 connection fails
Never: tunneling will never occur
- Default: Never

<PARAM NAME="tunnel_URL_vary" VALUE="false">

- Description: Specifies specific behavior of HTTP tunneling with respect to caching screens.
- Values: true or false
True: Makes each tunneled HTTP request different (by having a varying random number on each), which causes IE to locally cache every screen. Could be valuable if an intermediate proxy, etc. was wrongly caching requests for the fixed tunneling URL.
False: Causes IE to cache only the latest screen.
- Default: False

<PARAM NAME="URL_protocol" VALUE="HTTPS">

- Description: Forces the applet to be loaded using HTTPS
- Value: HTTPS

Keyboard

Control the function of certain keys. This includes disabling keys and controlling their actions.

<PARAM NAME="disable_keys" VALUE="xxxxyyyzzz">

- Description: Used to specify keys to be disabled.
- Values: ATN, SRQ, PRT
ATN: Disables attention key.
SRQ: Disables System Request key.
PRT: Disables Host Print key.
- Default: All keys are enabled.

<PARAM NAME="enter_key_action" VALUE="field_exit">

- Description: Specifies default enter key behavior (commented out by default).
- Values: field_exit or enter
field_exit: Enter key acts as field exit (PC enter).
enter: Enter key acts as AS/400 enter.
- Default: field_exit

<PARAM NAME="plus_field_exit" VALUE="no">

- Description: Specifies whether or not the Numeric Keypad Plus key will be action key-exit or not.
- Values: Yes or No
- Default: No

Colors

Control the display of certain screen colors.

<PARAM NAME="attribute_XX_colors" VALUE="###,###,### ; ###,###,###">

- Description: Enables color mapping for the 5250 applet, mapping RGB color values to AS/400 screen color attributes. These PARAMS specify which colors to use. The XX will be replaced with one of the attribute numbers 20 through 3E (e.g. "attribute_3E_colors").
- Limitations: In order for these mappings to take effect, the "input_colors" parameter must be commented out.
- Values: RGB triplet format
###,###,### ; ###,###,### = foreground ; background
- Default: Normal screen colors

<PARAM NAME="bold_highintensity" VALUE="false">

- Description: Changes color mappings to a bold/high intensity setting.
- Values: True or False
- Default: False

<PARAM NAME="cursor_colors" VALUE="###,###,### ; ###,###,###">

- Description: Enables color mapping of the emulation screen cursor.
- Limitations: Text Mode Only
- Values: RGB triplet format
###,###,### ; ###,###,### = foreground ; background
- Default: White Text on Blue

<PARAM NAME="error_line_colors" VALUE="###,###,### ; ###,###,###">

- Description: Used to specify error line colors.
- Values: RGB triplet format
###,###,### ; ###,###,### = foreground ; background
- Default: Normal screen colors.

<PARAM NAME="feedback_line_colors" VALUE="###,###,### ; ###,###,###">

- Description: Used to specify feedback line colors.
- Values: RGB triplet format
###,###,### ; ###,###,### = foreground ; background
- Default: Normal screen colors.

<PARAM NAME="input_background_color" VALUE="###,###,###">

- Description: Specifies what color to use for the input background.
- Values: Any color in RGB format.
- Default: White

<PARAM NAME="input_colors" VALUE="###,###,### ; ###,###,###">

- Alternative to: Input_Background_Color & Input_Text_Color PARAMS
- Description: Specifies input box background and foreground colors.
- Limitations: GUI Mode Only
- Values: RGB triplet format
###,###,### ; ###,###,### = foreground ; background
- Default: Black Text on White

<PARAM NAME="input_text_color" VALUE="###,###,###">

- Description: Determines what color to use for the input text.
- Values: Any color in RGB format.
- Default: Black

<PARAM NAME="screen_background_color" VALUE="###,###,###">

- Description: Specifies what color to use for the screen background.
- Values: Any color in RGB format.
- Default: White

<PARAM NAME="screen_colors" VALUE="###,###,### ; ###,###,###">

- Alternative To: Screen_Background_Color & Screen_Text_Color PARAMS
- Description: Specifies colors to be used for foreground and background.
- Limitations: Applies to GUI mode only.
- Values: RGB triplet format
###,###,### ; ###,###,### = foreground ; background
- Default: Dark Grey Text On White

<PARAM NAME="screen_text_color" VALUE="###,###,###">

- Description: Specifies what color to be used for screen text.
- Values: Any color in RGB format.
- Default: Dark Gray

<PARAM NAME="textmode_error_line_colors" VALUE="###,###,###">

- Description: Specifies what colors to use for error lines in text mode.
- Values: Any color in RGB format.
- Default: Normal screen colors.

<PARAM NAME="textmode_feedback_line_colors" VALUE="###,###,###">

- Description: Specifies what colors to use for the feedback line when in text mode.
- Values: Any color in RGB format.
- Default: Normal screen colors.

CHAPTER 5 – Printing

Strategi User Outqueue

In order for prints to be sent to a Strategi user, either in the applet or to their Pushfeed, the file must be sent to the Strategi user's outqueue.

The Strategi user's outqueue is defined in the following manner:

Strategi Library/S + Strategi User Number or in other words: **STRATEGI /S000000001**

In order for the user to receive the file, it must be sent to the outqueue in a released status. If the file is in a status of HLD, the file will remain in the outqueue until it is released.

Identifying Strategi Users With Emulation

Instead of manually changing a user's default print outqueue, you can make this change programmatically when the user logs in to the AS/400. User identification information can be passed to the AS/400 startup job using a specifically modified signon screen, which includes fields to accept Strategi-related input and a few Strategi configuration entries.

Example source to assist you in identifying your Strategi users is located in: STRATEGI/SGIEXAMPLE(QDSIGNON) and our Technical Support Bulletin http://support.businesslink.com/docs/bulletins/strategi/tsb_sgi004.htm

Print Format

Strategi Value: PRINTFORMAT

The Strategi Value PRINTFORMAT controls the global printing format for all users. Prints will automatically be sent to the user in this format, unless otherwise specified in a User Attribute or using the SNDSGIF command.

The expected parameter values for the PRINTFORMAT keyword are:

Format Code	Format Parameter 1	Format Parameter 2
*RTF	*NONE	*NONE
*HTML	*NONE	*NONE
*PDF	*NONE	*NONE
*HPT	MFRTYPMDL	*NONE
*HPT	*WSCST	somelib/somevalue
*PRTCTLA	*NONE	*NONE
*ASCII TEXT	*NONE	*NONE
*BINARY	*NONE	*NONE
*XBASE	*NONE	*NONE
*XML	*NONE	*NONE

Table 5 – PRINTFORMAT Format Parameters

****See the User Attributes section for information on the PRINTFORMAT user attribute.****

File Transfer

Strategi allows users to receive various kinds of AS/400 files through the Java applet. When files are sent to a user, what happens at the PC end will depend on what the user's browser and operating system are configured to do with that sort of file. They could be sent a Microsoft Word document, for example, which most PC's would open in Microsoft Word.

To send files to Strategi users, you can use the SNDSGIF command.

Send Strategi File: SNDSGIF Command

To send files to Strategi users, you can use the SNDSGIF command. This command allows you to send various kinds of files to a user in different formats. The command has complete help text, which you can view to find out more about the individual parameters. Each from and to format is also defined below.

Host Print

A host print is the simplest form of a print. The host print will send a print of the user's current screen to their Strategi outqueue, thereby sending the print to them while online. If the user's outqueue hasn't been defined as their Strategi outqueue, the print will go to their default output queue. The print will be sent using the format defined in either the Strategi Value of PRINTFORMAT or the PRINTFORMAT User Attribute.

Available Files Window

Files sent to a Strategi user will be displayed in their Available Files Window. If the user is currently online when the file is sent the Available Files Window will pop up and the file will be displayed in the browser, associated application or sent directly to their printer, depending on the print format used.



Figure 24 – Available Files Window

There are applet parameters that control the behavior of files when they are sent to a user during an emulation session.

Examples would be:

- Automatic retrieval of files when during emulation,
- How many files to keep in the Available Files Window
- Whether to delete files without first retrieving them, according to the number of files kept
- Whether to automatically send binary prints to the printer

See File Retrieval in the Applet Parameters section of this manual for information about the specific applet parameters.

Print Formats Defined: To Formats

Files sent through Strategi can be converted to several different formats. Each one of these formats will be opened on the user's PC, by whichever program has been associated with the file extension.

***RTF**

*RTF is the default printing format for the Strategi Value PRINTFORMAT. Using the RTF format ensures that page formatting, line breaks, font sizes, etc. are properly displayed in Word. This, in turn, will ensure the report will display and print in the format you intended.

There are several Strategi Values that will help define how the RTF print is formatted. They are RTFFONTNAME, RTFFONTSIZE, RTFGOLANDSCAPE, RTFMARGINS and RTFPAPERSIZE.

For details on each of these values, please see the Strategi Values.

- **Default file extension** – .RTF
- **Usually opens with** – Microsoft Word/browser
- **How to print** – Use Word's or browser's print option

Opening RTF Prints in Word Instead of Browser

If RTF prints are opening in the browser, rather than Word, you must change program with which this file type is associated on the user's PC. The following applies to Win95, Win98, WinNT and Win2K.

1. In Windows, open "My Computer" or Windows Explorer
2. (Win95/98/NT) On the menu bar, click "View" and select "Options"
(Win2K) Click "Tools" and select "Folder Options"
3. Click the tab labeled "File Types"
4. There will be a list of document types for the user's PC. Have the user scroll down the list until they find the entry "Rich Text Document" or "Rich Text Format"
5. (Win95/98/NT) Click "Rich Text Document" and then click the "Edit" button
(Win2K) Click the "Advanced" button
6. A screen opens that specifies different settings for this file type. Uncheck the box that says, "Browse in same window". This will enable the .rtf documents to open in Word, rather than the browser.

***HTML**

The HTML format causes the data in the file to be "tabled". This means it is put into table format to, as much as possible, preserve the page break arrangements. If a particular table is too "short", however, the browser may attempt to fit more than one table onto a printed page, ignoring the forced "page

breaks” the tables are attempting to enforce. You can change the table height using the Strategi Value HTMLPAGETABLEHEIGHT.

- **Default file extension** – .HTM
- **Usually opens with** – Browser
- **How to print** – Use browser’s print option

80-column prints will default to font size 3 when the Strategi Value HTMLFIXEDFONTSIZE is set to ‘00’ and anything larger than 80-column will default to font size 2.

You can control the font size of the HTML document by changing this value to the desired size.

HTML documents are formatted according to the following rules:

1. Leading blank lines are dropped from each page.
2. From the first non-blank line until the next blank line, the lines are “bolded” by inserting HTML controls. The rest of the page is printed according to the actual report.
3. If the report is 80 columns or less (per the spool file record length), the standard browser font is used. If the report is greater than 80 columns, the reduced browser font is used.
4. As mentioned, a table encapsulates each page. The treatment of the tables is somewhat browser-dependent; Netscape will print as many entire tables as it can on one page and will not print continuously if a table exceeds the page size. Internet Explorer will also fit as many entire tables as it can on one page, but it will split up a table and continue it on the next page if necessary.

***PDF**

Using *PDF will format a file as a PDF document, commonly opened using Adobe’s Acrobat Reader®.

There are several Strategi Values that will help define how the PDF print is formatted. They are PDFFONTSIZE, PDFGOLANDSCAPE, PDFMARGINS and PDFPAPERSIZE. These are similar to the RTF values listed above.

- **Default file extension** – .PDF
- **Usually opens with** – Adobe Acrobat Reader®.
- **How to print** – Use Acrobat’s print option

Conversion of files to *PDF format involves the use of a system server called *CONVERT. This server must be running in order for the conversion to succeed.

***HPT (Host Print Transform)**

Strategi Host Print Transform allows conversion of AS/400 prints to binary automatically, bypassing the need to use another program for the conversion. *HPT prints use the standard OS/400 Host Print Transform API’s to convert a standard AS/400 spoolfile into a file your PC’s printer can understand.

When specifying to use *HPT as a print format, a printer type must be either implied or specified. This is because Strategi will be responsible for sending the OS/400 API the correct parameters for converting the document into a viable binary stream to send to your printer. You must know the manufacturer/model type of your printer so Strategi can convert the binary printer stream correctly. The AS/400 already has a way of denominating printer types, which you can get by listing the options for the MFRTYPMDL parameter of the LPR command.

- **Default file extension** – .PRTBIN
- **Usually opens with** – Goes directly to printer

- **How to print** – Prints automatically

***HPT print setup:**

1. If all Strategi users will need to print in *HPT format and all have the same printer, you can make your changes to the Strategi Value PRINTFORMAT. If users need to print in different formats or they have different printer manufacturer/models, you will need to set the PRINTFORMAT user attribute for each user.
2. Change the PRINTFORMAT values to reflect *HPT and your appropriate MFRTYPMDL. See the example shown below:

Change Strategi User Attribute	
User	: 000000021 - STRATEGI TEST USER
Attribute	: PRINTFORMAT
Attribute Text	: Print Format
*HTML, *RTF, *HPT	: *HPT
Format Parameter	: *HP4
Format Parameter	: *NONE

Figure 25 - *HPT PRINTFORMAT User Attribute

The first Format Parameter indicates the type of print, the 2nd indicates the printer MFRTYPMDL or *WSCST (workstation customizing object) and the 3rd would indicate a workstation customizing object's name and library. No restart of the Strategi subsystem is necessary.

3. Now that printing is set up on the AS/400, the user should attempt to send themselves a print. This can be most easily accomplished by doing a simple screen print or Host Print. The user must be signed into the **Enhanced Applet** for *HPT printing to work. (Be sure the user's out queue is set to their Strategi user).
4. The print has now been sent to the user. For the first *HPT print only, the user will be prompted to enter their printer path, as shown below.

The dialog box is titled "Binary Print" and contains the following text: "Send qsysprt-000001.prtbin to printer". Below this is a text input field containing the path "\\servername\printer-name". Below the input field are two lines of example text: "eg LPT1 or \\WORKGROUP\SERVER\LASER" and "or program, eg COMMAND /C COPY %1 LPT1". At the bottom are "OK" and "Cancel" buttons. A warning bar at the very bottom reads "Warning: Applet Window".

Figure 26 – Binary Print Dialog Box

The printer can be a network printer or a local printer. The above example is a network printer path. If it's a local printer attached to an LPT port, the path would simply be something like "LPT1", "LPT2", etc..

(Note: USB port printers are not compatible, due to restrictions in the Windows printing environment)

5. Once the user enters the path and clicks o.k., the print will be sent directly to the printer. The user will not be prompted for a printer path again, unless, in the Available Files Window, they select a .prtbin file and click “Retrieve”.
6. The printer path is stored directly on the user’s PC. Should the printer path need to be modified, it can be found in the following location: *(Use Notepad or WordPad to open/edit this file)*

C:\WINNT\java\strategi\prtbin.pth (WinNT/2K)

C:\Windows\java\strategi\prtbin.pth (Win95/98)

***BINARY**

By definition, a “binary” print is one where the AS/400 has generated the final data to be sent to the client printer, e.g., HP PCL5 data in ASCII. The data must be taken from the AS/400 without converting it from EBCDIC to ASCII, and it cannot be loaded into an application on the client PC.

Binary printing is similar to *HPT printing, in that reports sent in this format will begin printing automatically as soon as the file is received, without any user intervention. The difference is that *BINARY can be used if the spool file data delivered to your AS/400 output queue is already in a format your PC’s printer can understand.

- **Default file extension** – .PRTBIN
- **Usually opens with** – Goes directly to printer
- **How to print** – Prints automatically

If created as a spoolfile, the Create Printer File command (run before the spoolfile is actually created) must contain the parameter **DEVTYPE(*USERASCII)**, causing Strategi to automatically treat it as a binary print file.

If created as a database file after the spoolfile has been created, the SND SGIF command must have the parameter **FROMFMT(*DB2400)**.

Setting The File Extension

For spoolfiles sent automatically by Strategi’s PUSHWRITER or by SND SGIF with no TOFILE specified, Strategi will automatically set the “.prtbin” extension. Otherwise, the TOFILE value will be used.

For database files, a TOFILE with extension “.prtbin” must always be specified on SND SGIF.

Client Action

As with *HPT printing, the user will be prompted to enter their printer path for the first print, provided they are signed into the Enhanced Applet.

If using the standard applet, the user will be prompted to “Save the File to Disk” or “Run An Application”.

Local Hard Disk

Retaining the print path for binary prints requires storing some information on the end-user’s PC. The first time a binary print file is sent to the end-user, certain files and directories are set up automatically (the default setup can be modified, if needed, once it has been created).

In the Java home directory, typically “C:\WINDOWS\java” or “C:\WINNT\java”, a file named “Strategi.pth” contains the path to the Strategi directory, typically “C:\WINDOWS\java\strategi” or “C:\WINNT\java\strategi”. Note: Both directory names are logged to the Java Console (as “Java home directory” and “Application root directory” respectively) to assist troubleshooting.

In the “C:\WINDOWS\Java\strategi” or “C:\WINNT\Java\Strategi” directory may be a file called “prtbin.pth” which contains the path to the printer.

The strategi.pth and prtbin.pth files can be edited with any text editor if needed.

In the unlikely event that the Java home directory cannot be written to by Strategi (e.g., because of network file access restrictions), the system administrator must manually create the strategi.pth file there, pointing to a usable part of the file system.

***PRTCTLA**

The layout as defined by OS/400 CPYSPLF CTLCHAR(*PRTCTL), but with the file content being converted from EBCDIC to ASCII.

***ASCIITEXT**

The file is converted to ASCII text.

- **Default file extension** – .TXT
- **Usually opens with** – Browser
- **How to print** – Use browser’s print option

***XBASE**

Strategi has the ability to send an AS/400 database file from the AS/400 to your PC in a .dbf file format. The file will be loaded and displayed in Microsoft Excel or another spreadsheet program, such as Lotus 1-2-3, as spreadsheet programs can properly display the data in columnar format.

- **Default file extension** – .DBF
- **Usually opens with** – Microsoft Excel
- **How to print** – Use Microsoft Excel’s print option

Opening Database Files in Microsoft Excel

If you find the user is having difficulty in getting the database to display in Excel, please ensure their computer is properly set up to receive the data as per the following instructions:

1. In Windows, open “My Computer” or Windows Explorer
2. **(Win95/98/NT)** On the menu bar, click “View” and select “Options”
(Win2K) Click “Tools” and select “Folder Options”
3. Click the tab labeled “File Types”
4. There will be a list of document types for the user’s PC. Have the user scroll down the list until they find the entry “DBF File” the name of the file extension. If it is not already listed, it will need to be created. Please see Windows instructions on how to create file type associations
5. Change the file type association to be Microsoft Excel or other database application

***XML**

The file will be converted into a structured XML document with field information and data separated.

- **Default file extension** – .XML
- **Usually opens with** – Browser
- **How to print** – Use browser's print option

Print Formats Defined: From Formats

The SNDSGIF StrategI command allows you to send files to users from certain formats. These file formats are defined as follows:

***DB2400**

An AS/400 DB2 database file member with field processing that is dependent on the TOFMT.

***DB2400BIN**

An AS/400 DB2 database file member treated as a continuous stream of binary data. This was kept only for backward compatibility. *DB2400 should be used instead.

***DB2PRTCTL**

An AS/400 DB2 database file member output from CPYSPLF CLTCHAR(*PRTCTL) , treated like *SPOOL.

***IFS**

A file in the AS/400 Integrated File System treated as a continuous stream of binary data. The TOFMT is ignored and standard CCSID conversion is done.

***SPOOL**

An AS/400 spoolfile that will be converted from EBCDIC to ASCII before sending. If the device type is *USERASCII then TOFMT is ignored, and *BINARY is used. If the device type is *AFPDS then TOFMT is ignored and *TRANSFORM is used, defaulting MFRTYPMDL to *HP4.

CHAPTER 6 – Strategi Websites

Websites

Selecting “Websites” from the Strategi Main Menu or using the WRKSGIWEB Strategi command, brings up a screen similar to the one displayed below:

Work with Strategi Web Sites					SEATTLE1	
Position To _____						
Type options, press Enter.						
2=Change 4=Delete 5=Display 12=Work with Zones 22=Work with Alias's						
Opt	Site Code	Normal Address	Secure Address	Cert Address	Status	
<input checked="" type="checkbox"/>	DEFAULT	*ALL	*NONE	*NONE	*ACTIVE	
<input type="checkbox"/>	RESOURCES	*NONE	*NONE	*NONE	*SUSPENDED	
F3=Exit F5=Refresh F6=Create F11=Next View					Bottom	
F17=Top F18=Bottom F20=Subset					F12=Cancel	

Figure 27 – Work with Strategi Web Sites

The Strategi system will normally come installed with two websites in place, DEFAULT and RESOURCES. The DEFAULT website is set to a status of *ACTIVE and the other, RESOURCES, is set to *SUSPENDED. Depending on the system size you purchased, you may only be allowed to have one active website at any given time. For example an “Entry” system can have one website, whereas a “Strategic” system will allow you to have up to 8 active websites.

The DEFAULT website is the one, that in a standard installation, will listen on your defined IP address. The RESOURCES website contains all the default applet-loading pages, images, error messages, etc. This website should NOT be modified and should always remain in a *SUSPENDED state, except under special circumstances. See “Customizing Your Resources Website Pages” below.

Changing Website Parameters

Taking option 2 next to the DEFAULT website and pressing F10 will display the following:

```

Change Web Site (CHGSGIWEB)

Type choices, press Enter.

Site Name . . . . . > DEFAULT      Name
Text Description . . . . . 'Default_Install_Website'

Status . . . . . *ACTIVE__  *SAME, *SUSPENDED, *ACTIVE
TCP/IP Address:
  HTTP . . . . . '10.1.1.51'__
  Secure HTTP . . . . . *NONE__
  Certificate HTTP . . . . . *NONE__

Additional Parameters

TCP/IP Port:
  HTTP . . . . . 80__      nnnnn, *SAME
  Secure HTTP . . . . . 443__ nnnnn, *SAME
  Certificate HTTP . . . . . 444__ nnnnn, *SAME

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

```

Figure 28 – Change Web Site (CHGSGIWEB)

- Site Name (SITE)**
 The name of the website. This name corresponds to the directory tree in the IFS that contains the website documents, SSL certificate information, etc.
- Text Description (TEXT)**
 The description of the website. For websites that have zones requiring a *BASIC login, this is used when prompting for the username and password. It is displayed by the browser in the authentication dialog and should accurately describe the website to the Internet user. The only possible special values are ***SITENAME** where the site name is used for the description or ***SAME** where the description remains the same.
- Status (STATUS)**
 The status of the website. This allows you to temporarily suspend the website without having to remove its definitions or IFS file structure. Possible values are ***ACTIVE**, ***SUSPENDED** and ***SAME**.
- TCP/IP Address (IPADD)**
 The TCP/IP address of the network interface to be used by this website. A separate address may be specified for each of the 3 kinds of HTTP service (HTTP, Secure HTTP and Certificate HTTP). If the same address is used for 2 or more HTTP services, then you must specify a unique port for those services (see below). This address is in standard TCP/IP format (xxx.xxx.xxx.xxx).

Note: Using ***ALL** for the IP address will cause a conflict if any other software is attempting to listen for connections on the standard HTTP ports 80 and 443. In general, ***ALL** should only be used if you have one website configured (not including RESOURCES). If you do configure more than one website, but only have one IP address, you will need to specify a different port for that website to listen on. (e.g., 8080)

HTTP – The IP address to be used for this website.

Secure HTTP – The IP address to be used when connecting to the website via SSL-secured encryption. (i.e., HTTPS)

Certificate HTTP – The IP address to be used when connecting to the website via SSL-secured encryption with a digital certificate. Specifying an IP address here requires a digital certificate be installed in the user's web browser. If this is set, the webserver will capture the digital certificate information upon the user's first login.

- **TCP/IP Port (IPPORT)**

Determines the TCP/IP ports to be used for the 3 types of HTTP services. The industry standard for normal HTTP is 80, for Secure HTTP 443 and Digital Certificate is 444.

Note: When specifying anything other than the defaults, you must specify the port as part of the website IP address (<http://your.company.com:8080>).

DEFAULT Website

To help you become operational as quickly as possible, we have included a sample website with your Strategi installation. You are welcome to use these included web pages as a place to start constructing your company's own customized website.

Located in the #ROOT zone of your DEFAULT website is a "homepage.htm". Because our RESOURCES website (explained below) requires a Flash plug-in, homepage.htm is currently set up as a simple HTML page that detects whether the required Flash plug-in is installed. If it is not installed, this page will direct you to a page called "getflash.htm" and ask that you download/install the plug-in.

Having the "homepage.htm" reside within the DEFAULT website allows you to make customized changes to this page and allows you to turn this page into your company's website homepage. You can then have a link from there, or any other pages that reside in the RESOURCES website and are available from the "/resources/main.htm" page.

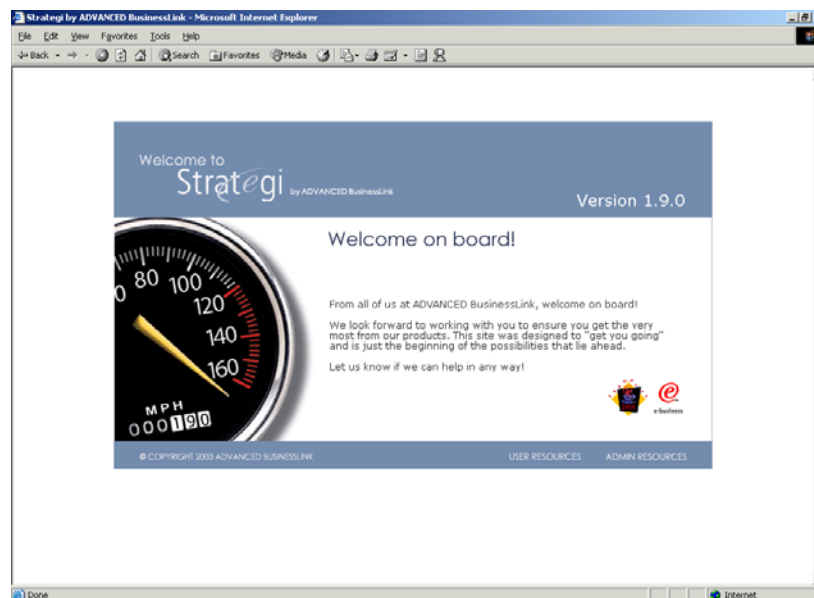


Figure 29 – Strategi Resources Website

Should you want to modify these additional pages, you will need to make copies of these pages into your own DEFAULT website.

RESOURCES Website

The RESOURCES website contains all your default applet-loading pages, error messages, images, etc. This website should *never* be modified in any way. Any modifications to this website will be overwritten in subsequent upgrades to the Strategi software.

It is important then, if you want to make changes to any of these pages, to copy these pages to an alternate website (e.g. DEFAULT) and customize the copied files.

Customizing Your Resources Website Pages

You can find information about making a customized version of the RESOURCES website pages in the following Technical Support Bulletin:

http://support.businesslink.com/docs/bulletins/strategi/tsb_sgi011.htm

Zones

A zone is a logical labeling of an area of the AS/400 file system. They are used in Strategi to control access requirements to various services that Strategi provides (such as authenticated web sites), and to allow areas of disk to be accessed via labels, rather than specific path names.

A zone is merely a label on a potential file system path. The actual path need not exist.

The zone may also refer to an aliased path, which may possibly define access to the resolved alias when it is accessed via the specified zone (depending on the alias definition). Therefore, the same resource could have different security requirements depending on how it was accessed. For example, an internal website may require no encryption, whereas access to the same data via the Internet could require 128 bit SSL.

Zone Creation

Go to the Strategi menu, select Option 6 for Web Sites, and then take option 12 to Work with Zones on the appropriate website (usually DEFAULT).

You will have at least one zone already created, called #ROOT. This is the root zone of your website. All items placed into this zone will be referred to in a URL as www.yourcompany.com/rootdocument.htm.

For example, if you create a zone called "CUSTOM", all documents in this zone would be referred to in a URL as www.yourcompany.com/custom/document.htm.

When in Work with Web Site Zones, press F6 to create a new zone. You will see the following screen:

```

Create Zone (CRTSGIZON)

Type choices, press Enter.

Zone Type . . . . . > *WEBSITE      *IFS, *WEBSITE
Zone Domain . . . . . > DEFAULT      Name, *NONE
Zone Code . . . . . _____
Subdirectory (within domain) . . /_____

Text Description . . . . . *ZONE_____

Encoding For Text Resources . . *ISO8859      *ISO8859, *UTF8
User Authentication . . . . . *NONE_         *NONE, *BASIC, *CUSTOM
Zone To Use For Authentication *THIS_         *THIS, *PARENT, *WEBSITE
Default User Authority . . . . *READ_         *EXCLUDE, *READ, *WRITE...
SSL Minimum Key Length (Bits) . *NONE         *NONE, 40, 56, 128

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

```

Figure 30 – Create Website Zone

- **Zone Type (TYPE)**
This specifies the type of the zone. The zone type determines the way in which the zone domain is interpreted. In this case, you would be creating a *WEBSITE zone.
- **Zone Domain (DOMAIN)**
The entity that defines the primary directory path for the zone. For a *WEBSITE zone this is the website name to which the zone belongs. For an *IFS zone this will always be *NONE, which denotes the top level of the IFS tree.
- **Zone Code (ZONE)**
This is the name of the zone to be created. The zone code is subordinate to the type and domain, and need only be unique within its domain.
- **Subdirectory (SUBDIR)**
This is the subdirectory within the specified domain that the zone will be resolved to. The full directory is resolved by taking the path associated with Zone Domain and appending the subdirectory specified here. This will be the subdirectory path the user will see in the browser. If you wanted the path to be /custom, simply enter the word “custom” after the “/”. The zone code and subdirectory need not match.
- **Text Description (TEXT)**
This is used for authenticated zones (*BASIC) when prompting for the username and password. It is displayed as the realm by the browser in the authentication dialog and should accurately describe the zone to the user.
- **Encoding For Text Resources (TXTENC)**
The encoding determines how the bytes in a text resource (HTML, HSM, etc) are interpreted and affects how HSM transactions are submitted to a server. Currently two encodings are supported, ISO-8859-1 and UTF-8. See online command help text for more information.
- **User Authentication (AUTHEN)**
This determines what kind of authentication will be used to identify a user before the user is permitted access to the zone. *See Basic and Custom Authentication information below.*
- **Zone To Use For Authentication (ATHZONE)**
Determines in which zone Strati will record the login, if this zone requires user authentication. This capability allows a single login to provide access to multiple zones within a hierarchical organization of resources. See online command help text for more information.

- **Default User Authority (DFTAUT)**
This determines what level of authority the user will have to resources within the zone if the user does not have an explicit Zone Authority definition. It is the zone equivalent of AS/400 *PUBLIC object authority.
- **SSL Minimum Key Length (SSLKEY)**
This determines whether the zone must use SSL encryption and the minimum key length that must be negotiated to permit access to the zone.

Authentication

Zone Authority

A zone authority list defines which users have access to what resources within the zone itself. Zone authorities say who can do what within the particular zone. Zone authorities can be set at a sub-site level, so you can restrict which users have access to certain parts of your Strategi website.

For example, you would want all users to have access to your complete website at www.yourcompany.com, but you would probably want to restrict access to www.yourcompany.com/sales to just your sales staff.

Custom Authentication

Strategi website zones can be configured to allow *CUSTOM authentication. This allows you to create customized login web pages, rather than using the browser's default login dialog, as with *BASIC.

With *CUSTOM authentication, one page within the *CUSTOM authenticated zone will be delivered without any authentication (although SSL requirements will apply where configured). The name of this page is specified with the Strategi Value LOGINURL (with "login" being the default). This "login" page will be used to log the user into the zone. See the "login.htm" example page below:

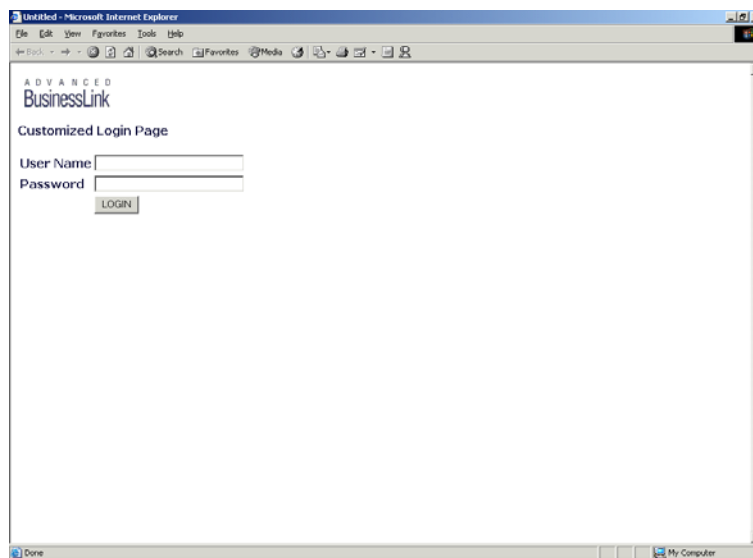


Figure 31 – Customized Login Page

The login page must contain a form which makes a post, the action of which is another web page within the zone, specifying “*LOGIN” after the name of this file. Also within the form must be two input fields, “*LOGINUSR” and “*LOGINPWD”. See example HTML below:

HTML (login.htm)

```
...
<FORM ACTION="homepage.htm?*LOGIN" Method="POST">
User Name <INPUT TYPE="text" NAME="*LOGINUSR"><br>
Password <INPUT TYPE="password" NAME="*LOGINPWD" VALUE=""><br>
<INPUT TYPE="Submit" Value="LOGIN">
</FORM>
...
```

You might then want to include a way for the users to log out, which you could include on subsequent pages. The logout link has a very specific structure. First notice that no actual html page (just a “.” instead) is being referenced. Instead two variable pairs are being sent. *SESSION=LOGOUT tells the server to log the user out of the zone and *LOGOUTREDIRECT sends them to a different web page. The fact that the redirect is to “/login.htm” means that the user will be passed back to the “login” page that resides within this zone.

HTML (homepage.htm)

```
...
<A HREF=".*?*SESSION=LOGOUT&*LOGOUTREDIRECT=/login.htm">LOGOUT</A>
...
```

Because in a *CUSTOM authentication the server never does a BASIC authentication challenge, the browser is not aware of a login state. This means that the browser does not cache the user password entered by the user.

Basic Authentication

HTTP Basic Authentication uses a simple textual encoding to pass the username and password to the server for each resource requested. The server then validates the username and password before serving the resource. This method of authentication is subject to password discovery by employing a “line tap” on the Internet data stream from the client.

When a user requests a page that resides in a zone secured by *BASIC authentication, they will be presented with the browser’s pop-up login window, shown below:

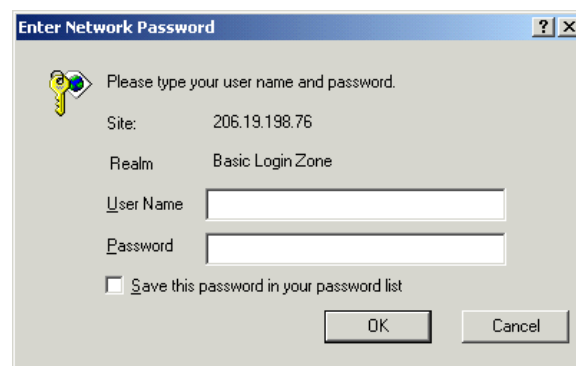


Figure 32 - *BASIC Authentication Login

Once authenticated, the user will be presented with the page they requested.

Because the browser participates in the authentication, the browser has the ability to cache the user's password during the current session, regardless of whether or not they log out. If you wish to have the cached password be unusable as a result of logging out, you can change the Strategi value for FORCELOGIN from the default of '0' to '1'.

Presenting Users With A Page Prior To *BASIC Authentication

If you would like to present users with an HTML page prior to being authenticated into a *BASIC zone, you can include a "login" page in the zone. When a "login" page is present within the zone, that page will be served to the user prior to being authenticated. This is similar to the behavior of a *CUSTOM zone, but the user will still be presented with the basic authentication pop-up before gaining access to any other resources that reside within the zone.

For example, you may want to present the users with a list of resources available within the zone, without requiring the users to know the full path of the resource they require.

Once the user clicks on the link of their choice, they will be presented with the browser login dialog box, as shown below:

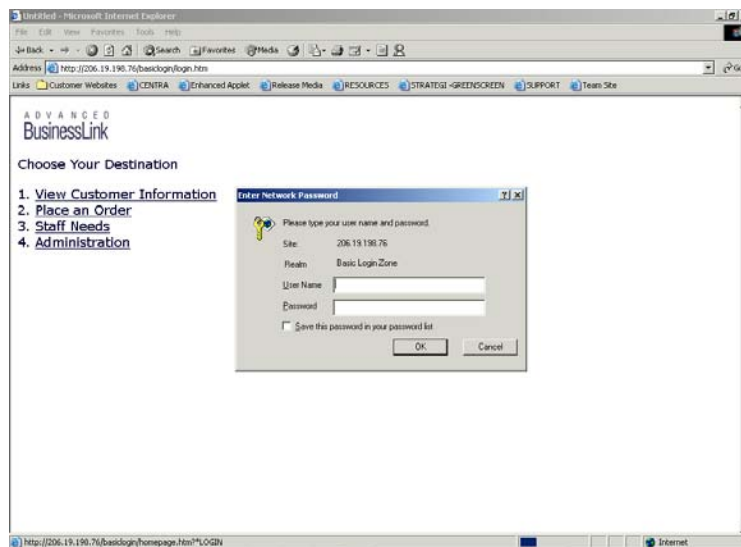


Figure 33 - *BASIC Authentication Login Page

In order to make this work properly, you must include "*LOGIN" as the first part of the URL data. An excerpt from example HTML code would be:

```
...  
<p> <a href="homepage.htm?*LOGIN"> [Click Here To Login] </a>  
</p>  
...
```

Note the URL displayed in the lower left corner of the browser:

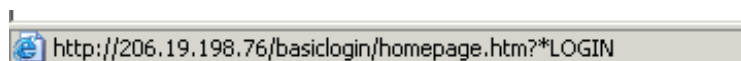


Figure 34 – Browser URL Example

Authority Zone

The Authority Zone parameter (ATHZONE) determines to which zone Strategi will record the login, if the zone requires authentication. This capability allows a single login to provide access to multiple zones within a hierarchical organization of resources.

The possible values are described as follows:

***THIS** – The current zone is used to record the login. Logging into this zone will only allow access to this zone.

***PARENT** – The parent of this zone is used to record logins for authenticated users. The parent zone may also specify *PARENT, and so on, up to the root of the website.

Note that using *PARENT to login to the root zone is the same as using *WEBSITE.

***WEBSITE** – Logins to this zone are recorded against the website root and shared with logins to all other zones which are also *WEBSITE or which evaluate to the root zone.

To make this a bit more clear, an example scenario is shown below:

Please note that we have used *BASIC authentication for this example, but the same behavior will be exhibited with *CUSTOM zones.

The Connection Information Access Point listed for each scenario can be useful in determining where a user logged in and can be viewed by going to Strategi Menu, selecting Connections, and displaying the information for a specific connection.

#	ZONE CODE	DIRECTORY	AUTHORITY ZONE	AUTHENTICATION
1.	AUTH	/auth	*PARENT	*BASIC
2.	AUTHSUB	/auth/sub	*PARENT	*BASIC
3.	AUTHSUB1	/auth/sub/1	*WEBSITE	*BASIC
4.	AUTHSUB12	/auth/sub/1/2	*THIS	*BASIC
5.	AUTHSUB123	/auth/sub/1/2/3	*PARENT	*BASIC

Table 6 – Website Authentication Example

In the above scenario, the following would happen for a login into each zone:

1. The AUTH zone is resolved to *PARENT. You are essentially logging into the root of the website, the same as if *WEBSITE was used. This will effectively give you access to all zones listed, except AUTHSUB12 and AUTHSUB123.

Connection Information Access Point: DEFAULT/DEFAULT + #ROOT

2. The AUTHSUB zone is resolved to *PARENT. Its parent zone is resolved to the root of the website. Logging into this zone will also give you access to all zones listed, except AUTHSUB12 and AUTHSUB123.

Connection Information Access Point: DEFAULT/DEFAULT + #ROOT

3. The AUTHSUB1 zone is resolved to *WEBSITE. This is the same as logging into the root of the website. Logging into this zone will give you access to all zones listed, except AUTHSUB12 and AUTHSUB123.

Connection Information Access Point: DEFAULT/DEFAULT + #ROOT

4. The AUTHSUB12 zone is resolved to *THIS. Logging into this zone will also give you access to the AUTHSUB123 zone.

Connection Information Access Point: DEFAULT/DEFAULT + AUTHSUB12

5. The AUTHSUB123 zone is resolved to *PARENT. Its parent zone is the AUTHSUB12 zone. Logging into this zone will also log you into the AUTHSUB12 zone.

Connection Information Access Point: DEFAULT/DEFAULT + AUTHSUB12

Note: This behavior is the same for *CUSTOM logins.

Login With SSL – Serving Resources Without SSL

In some instances you may wish to utilize SSL during login, but then wish to serve subsequent resources without requiring the use of SSL.

Making this work is best shown by use of an example.

Set up the following zone structure:

DIRECTORY	AUTHENTICATION	AUTHORITY ZONE	SSL KEY
/order	*BASIC	*THIS	*NONE
/order/secure	*BASIC	*PARENT	128
/order/...	*BASIC	*PARENT	*NONE

Table 7 – Login With SSL, Serve Resources Without SSL Example

A transparent secure login using SSL for login and returning to the homepage without SSL can be achieved using the above zones with the following files:

/order/homepage.htm

“Homepage.htm” contains valid HTML for your homepage

/order/login.htm

“Login.htm” is an empty HTML page

/order/login.hsm

“Login.hsm” contains the following HSM data:

```
[DO]
Return_HTTP_Response=302,"Moved
Temporarily","secure/homepage.hsm?*LOGIN"

***END OF DATA***
```

/order/secure/homepage.hsm

“Homepage.hsm” contains the following HSM data:

```
[DO]
```

```
Return_HTTP_Response=302,"Moved  
Temporarily","../homepage.htm?*SSL=0"  
  
****END OF DATA****
```

The sequence of events that occurs here is:

1. /order/homepage is requested
2. The server redirects internally to /order/login.htm because it exists within the zone
3. /order/login.hsm redirects to /order/secure/homepage.hsm?*LOGIN
4. The server logs the user in before processing /order/secure/homepage.hsm
5. /order/secure/homepage.hsm redirects to /order/homepage.htm, switching off SSL
6. Because you are now authenticated homepage.htm is delivered

Important Notes:

- For this to work the Strategi Value FORCELOGINSSL must be set to "0", otherwise all authenticated zones will be secured by SSL.
- The directory to use for login cannot be the same as the LOGINURL value (e.g. "login" by default), as that will cause redirection to the directory instead of the file. Suggestions would be to use "/secure" or "/secureLogin".
- The *SSL directive must occur at the beginning of the URL data.

Aliases

An alias is a dynamic re-mapping from a virtual path within a website to a real and unrelated physical path on the AS/400 IFS file system. The mechanism provides a means of including any part of the IFS as part of one, several or all web sites.

It is then possible to have resources located in a single place, but accessible to all web sites. Equally, an existing website in one location could be immediately logically "relocated" under your Strategi website, without physically moving a thing.

The security of a resource referred to by an alias may be defined by the zone of the virtual source (the requested path), or of the physical target (the substitute path) of the alias.

For example, let's say you discovered a problem in your online order web page <http://www.yourcompany.com/products/domestic.htm>. Because of this, you want to take this website directory offline to fix it and have all of your Internet visitors sent to a different page instead, where they can order from your Customer Service department (i.e., <http://www.yourcompany.com/products/customerservice.htm>).

Normally you would have to do some maintenance to change the page users are sent to from your homepage. Instead, with website aliasing, you can change the website path, so even when Internet users go to [/domestic.htm](#), they are automatically redirected to [/customerservice.htm](#).

Aliasing – Authority Zone

Use of aliases respects the alias definition for the authority zone. Having determined which zone to use for authorities resolving *PARENT is done with respect to the website in which the zone exists.

CHAPTER 7 – Strategi/REMOTE

Configuring Strategi For Remote

You must have certain Strategi Values configured properly before users will be able to download, install and/or use Strategi/REMOTE.

1. AS/400 Java version 1.1.8 or higher must be installed.
2. **REMOTECOMPANYNAME** must be configured. It requires a Long Company Name and a Short Company name value. For example:
Long Company Name = Advanced BusinessLink
Short Company Name = ABL
3. **REMOTEADDRESS** must be configured. You can either use *WEBSITES, which will utilize the IP address already configured for Strategi or you can indicate a different IP address.
4. **REMOTEHOSTID** must be configured. For connecting existing BusinessLink/REMOTE clients, this will be your coprocessor Host Key value. Please contact BusinessLink Support to obtain this number. If you are not connecting any previous clients, you can create a unique identifier using your serial number with some letter/number combination appended to it or any other unique identifier you wish to use. This identifier will be stamped on all generated clients.
5. **EMULATIONADDRESS** must be configured. See Strategi Values for more information.

Convert BusinessLink Users to Strategi - CVTABLSGI

If you will be moving your BusinessLink/REMOTE users over to Strategi/REMOTE users, you will want to utilize the CVTABLSGI command. This command allows you to convert your existing BusinessLink/REMOTE users over to valid Strategi users.

The following user details will be copied over:

BusinessLink/REMOTE User Details	Strategi/REMOTE User Details
Registration Number	Registration Number
Full Name	Access Name
Current Status	Status
Access To Remote Services (4 values)	Allow 5250 Emulation, Receive File From User, Send Spool File To User, Send File To User
Forced Signon	Host User Name and Password
Maximum Idle Time	Idle Timeout
Maximum Number of Sessions	Maximum Sessions
Time to Retain Lost Session	Time to Retain Sessions

Table 8 – Remote User Conversion, BusinessLink to Strategi

1. With Strategi on your library list, prompt the command CVTABLSGI
2. Enter the name of your ABL library (usually ABL)
3. Under Convert Remote Users, accept the default of *YES. If you wish to convert Java users and HSM servers, leave the defaults as *YES, otherwise change the values to *NO.

4. If you have any User Exit programs or HSM server exit programs, press F10 for additional parameters and change the values accordingly
5. When finished, press Enter and the users will be converted to Strategi. This may take a few minutes, depending on how many users are being converted.

Configuring Existing Remote Clients for Strategi

Using an existing copy of the Remote client requires that it be 03AD or better. If your users do not meet this minimum requirement, they will need to delete their existing client and download/install the client from Strategi. See section on Downloading and Installing Remote – New Users.

There are some settings that may need to be changed on the user's Remote client. The possible changes are as follows:

TCP/IP Configuration settings

1. In the Remote client go to Configure and select "TCP/IP (Internet)... ". You will see the window below:

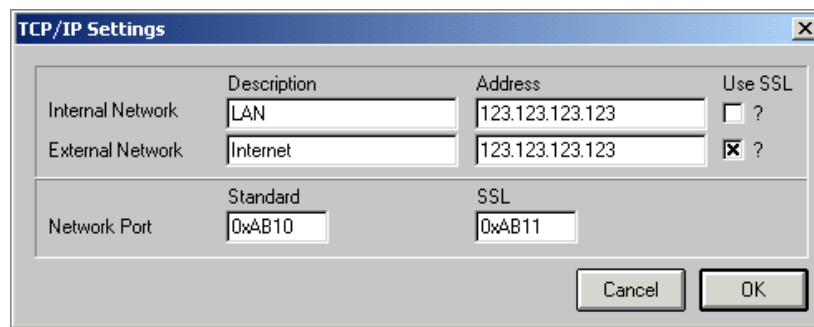


Figure 35 – Remote TCP/IP Settings, Existing Client

2. Change your Address for both Internal and External Network, if necessary.
3. In BusinessLink/REMOTE the Standard Network Port in the client may have previously been **0xAB01** (43777). If this is the case, it may need to be changed to reflect the port configured in Strategi Value REMOTEADDRESS. By default, the Strategi Value is set to 43792 (Hex 0xAB10). The default port value for SSL is 43793 (Hex 0xAB11). The REMOTEADDRESS value for "Allow SSL" must be set to '1' in order to utilize SSL. (Requires that SSL be installed and enabled in Strategi.)

Downloading and Installing Remote – New Users

Registration Number

For a Strategi User to be able to download/install the Remote client, they must have a Remote Registration number. If you already have existing Remote users from previously using the CVTABLSGI command, be sure to use *NEXT in the Registration Number value. This will give the user the next available registration number. If all your Remote users will be new users, you can use *USER to create their registration number as the last 5 digits of their Strategi user number or you can also use *NEXT.

Authorization To Download the Remote Client

Users must be given special authority to download the Remote client. To give them this authority, you must perform the following:

1. Go to the Strategi menu on your AS/400 and select option 6, Web Sites
2. Take option 12 to Work with Zones on the RESOURCES website
3. Take option 12 for Zone Authorities on the REMOTE zone
4. Use F6 to add a new user. The user will only require *READ authority

Note: It is not necessary for the status of the RESOURCES website to be set to *ACTIVE

Downloading the Remote Client

Once the users have been given the proper authority, they can download the Remote client:
(Note: These instructions are for Windows operating systems only.)

1. Go to your Strategi Resources website (<http://your.ip.address/resources/main.htm>) and select "Downloads" from the User Resources drop-down menu.
2. Click on "Remote" icon
3. You will be prompted to enter your Strategi user name and password
4. On the "Generate a Remote Client" page, click on the "Generate" button.
Note: If a Zip utility is not currently installed on the target system, some links to download such utilities are provided for you.
5. A StrategiRemote-Win.zip file will be displayed. Clicking on this link will prompt you to "Open" or "Save" the file. Click "Save" to save the file to your PC
6. Double-click the StrategiRemote-Win.zip file. It should open in your Zip utility.
7. Double-click on the Setup.exe icon (if using WinZip) and click OK in the Install window. If using other zip utilities, you may need to extract it first.
8. Remote will then prompt you for the Installation Parameters, shown below:

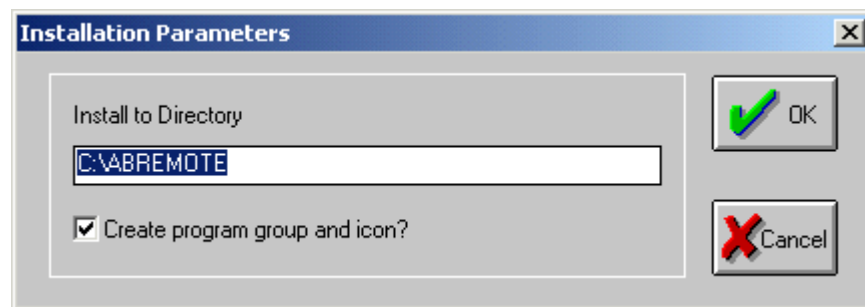


Figure 36 – Remote Installation Parameters

9. You may take the default Installation directory or create your own. The directory name cannot be more than 8 characters. Click OK
10. The installation will complete with an "Installation complete" message. Click OK
11. A Windows box will also pop up showing you your Remote shortcut icon. You can take this shortcut and copy it to your desktop for easier access.



Figure 37 – Remote Client Shortcut

Connecting With Your New Remote Client

TCP/IP Configuration settings

1. In the Remote client go to Configure and select “TCP/IP (Internet)... “. You will see the window below:

	Description	Address	Use SSL
Internal Network	LAN	123.123.123.123	<input type="checkbox"/> ?
External Network	Internet	123.123.123.123	<input checked="" type="checkbox"/> ?

	Standard	SSL
Network Port	0xAB10	0xAB11

Cancel OK

Figure 38 – Remote TCP/IP Settings, New Client

2. Enter the IP address for both Internal and External Network.

Printing in Remote

Sending Files To A User – Sent Files

There are a couple ways to send a file to a Remote user. One is the use of the User Attributes PRINTFORMAT and PRINTROUTING. Both of these values must be used together to successfully send a file to a user. The other is the use of the SNDMSGIF command.

PRINTFORMAT User Attribute

The PRINTFORMAT user attribute is must be set to ***PRTCTLA** in order for prints to be received correctly by the user. See the screen shot below:

Change Strategi User Attribute	
User	: 000000013 - MICHELLE
Attribute	: PRINTFORMAT
Attribute Text	: Print Format
Format Code	: *PRTCTLA
Format Parameter 1	: <input type="text"/>
Format Parameter 2	: <input type="text"/>

Figure 39 – Change PRINTFORMAT User Attribute

PRINTROUTING User Attribute

There are 3 parts to the PRINTROUTING attribute, “Route To”, “Transfer Group”, and “Event”.

Change Strategi User Attribute	
User	: 000000013 - MICHELLE
Attribute	: PRINTROUTING
Attribute Text	: Pushwriter Print Routing
Route To	: *REMOTE
Transfer Group	: *NONE
Event	: *FORMTYPE

Figure 40 – Change PRINTROUTING User Attribute

- **Route To** – This value must be set to ***REMOTE**
- **Transfer Group** – This value must be set to ***NONE**
- **Event** – This value can be set to ***FORMTYPE** to use the Form Type the file was generated as, or you can specify any other event you have configured to be used in Remote file transfer, like *VIEW or *INVOICE, for example.

SNDSGIF To Remote User

The SNDSGIF command is used just as you would use it to send a file to an applet user, but with Remote you will also need to utilize the File Transfer Control parameter.

Valid Transfer Control parameters would be the following:

- **Transfer Group** – This value must be set to ***REMOTE**
- **Processing Event Code** – This value can be set to whichever event code you would like to process the file when it is received by the Remote client. (e.g., ***VIEW**, ***STD**, ***INVOICE**)

The following is an example of using the SNDSGIF command to send a spooled file to a user:

```
SNDSGIF USER(13) FROMFMT(*SPOOL) SPLFILE(QSYSVRT)
SPLJOB(015300)/USERNAME/DEVICENAME) SPLNBR(1) TOFMT(*PRTCTLA)
PTY(*HIGH) TFRCTL(*REMOTE *STD)
```

Using the above command parameters would result in a file notification being sent to the user and then, once the user retrieves the file, it will be processed using the *STD Event configured on the user's Remote client.



Figure 41 – Remote File Notification

File Priority (PTY)

- ***MAX** – File will be sent immediately to a user while online
- ***HIGH** – User will receive file notification on Remote client (see above image)
- ***NORMAL** – User will receive file when they sign off their emulation session
- ***LOW** – User will receive file when they sign off their emulation session
- ***MIN** – User will receive file when they sign off their emulation session

To Host File Transfer – Receive Files

Files can also be sent to the AS/400 using the Remote client. For this to work, you must have a “Send Event” configured on the client and an Event Handler and Event Routing Entry configured in Strategi on the AS/400.

For example, you may want to enable users to upload a file to a specific directory in the IFS. You would first create the Event Handler program. You would then need to define this Event Handler in Strategi by going to Event Handlers from the Strategi Menu. In order to utilize this Event Handler, you must create an Event Routing Entry that uses this Event Handler. This Event Routing Entry must have an Event Source defined as *REMOTE in order for the file to be processed from a Remote user.

For more information on Event Handlers and Event Routing Entries, please see the Strategi Event Services Guide.

Files sent to the AS/400 are called Receive Files. This file information can be viewed per user by going to Strategi Users from the Strategi menu, taking option 9 for Files and pressing F10 to view Received Files. Files that are processed successfully using the specified Event will have a status of “Processed”.

Custom Remote Client Configuration

In some cases you may wish to pre-configure the Remote client before it is distributed amongst your users. You can configure such items as Events, print handling, IP addresses, etc....

Configure these items by doing the following:

1. Download and install the Remote client or use an existing one
2. Set all the values as you would like them to be for all subsequent Remote clients
3. Once you have the Remote client configured, the changes are set in specific files located on your PC. These files will need to be copied over to a specific directory in the IFS.

Copying the configuration files over to the IFS:

1. On your PC go to the C:\ABREMOTE folder (if installed using the default value) or to the custom folder
2. Depending on which configuration values you want, you will be sending the following up to the AS/400:

File Name	Configuration Items
ABCONFIG.DAT	TCP/IP settings
ABSNDRTG.DAT	Send Events
ABRCVRTG.DAT	Receive Events
AEPRINT.INI	Print Handling

Table 9 – Remote Configuration Files

3. The files will need to be copied to the following directory within the IFS:
‘/STRATEGI/REMOTE/CUSTOMER’
We recommend uploading the files to a website zone using Webmaster and then copy them over to the directory using the copy option.
4. Each subsequent Remote client will be generated using these new configuration settings

CHAPTER 8 – Secure Sockets Layer

Secure Sockets Layer - Overview

If your organization has determined it has a need for high-level security and protection for its data, Advanced BusinessLink Corp. is capable of arranging for Secure Sockets Layer encryption. The normal data-encryption level permitted by the U.S. government, for export purposes, is 40-bit encryption. There is a greater degree of protection available, however, for companies on United States soil through Secure Sockets Layer encryption (SSL) and, potentially, for international companies.

Strategi is fully capable of supporting 40-bit, 56-bit or 128-bit SSL data encryption through an additional SSL module. The level of data encryption your company can legally use, however, depends on where your company is located. If all entities of your company are entirely within the United States of America, you are permitted full use of either 40-bit, 56-bit or 128-bit data encryption.

If any entities of your company are outside of the United States, the U.S. Department of Commerce will determine the level of encryption you can use. 56-bit data encryption is authorized for export without any special permission; however 128-bit encryption technology requires authorization by the U.S. Department of Commerce. Per U.S. Department of Commerce, Bureau of Export Administration Form BXA-6002 (Rev. 7/96):

Advanced BusinessLink Corp. products have proven themselves over the years to provide industrial-grade data encryption. For our company, providing the level of encryption you may desire for your data is important. From an integrity standpoint, we can only provide you with the level of encryption security your company has been fully authorized to use. While there may be vendors who claim they can provide 56-bit or 128-bit data encryption without going through the proper channels, we feel it would be unfair, not only to our clients but also to ourselves, if we were to compromise ADVANCED BusinessLink Corp.'s reputation for honesty in that manner.

SSL Securing the Strategi Applet

For the Strategi Java-applet-loading page to be SSL-secured, it needs to be loaded from a page under the SSL-secured domain name "umbrella", and customers need to access it by entering through the domain name vs. the external IP address.

The Strategi applet does not itself run SSL, but rather uses the browser's SSL connection to exchange industrial-strength RC4 session keys. By using the browser's SSL to setup each Strategi session, the Strategi applet ensures it uses different keys for each session. As a result, the data stream cannot be "hacked" by someone using a TCP/IP traffic-monitoring device.

BusinessLink products provide the highest level of security available, not only through data encryption but also by implementing a multiple-level password and "passphrase" system (for additional encryption security, the passphrase can contain up to 50 characters, such as a complete sentence). All of this is designed to ensure that only the users you want to interact with your AS/400 will actually be able to send to and receive data from it.

All Java traffic is scrambled, so anyone watching the TCP/IP packets will see only random garbage, even between otherwise identical emulation sessions. Once the Java user and passphrase have been accepted, the passphrase is used to further encrypt the data; even someone who has analyzed the applet code will be unable to retrieve the actual data. The strength of the security is directly related to the

length of passphrase used, with at least thirty to forty characters recommended; the longer the passphrase, the stronger the security.

This, then, provides a much higher level of security than the 8 - 10 character passwords commonly used by others. The longer the encryption key, the harder it is to crack the passphrase and, thus, the greater the security. Please note that we're talking here not about an encryption level of 40 to 50 bits, but 40 to 50 bytes.

From Sun Microsystems <http://java.sun.com/javastore/jserv/ssl.html>:

Secure Sockets Layer (SSL) Protocol Explained

"The Secure Sockets Layer (SSL) Protocol provides several layers of security available for all users of a web server equipped with SSL. All data coming from and going to an SSL equipped server is encrypted. This ensures that anyone who may be able to spy on the data transmission will not be able to understand the data. An SSL equipped server can also identify itself to anyone who visits it. This ensures that your clients can trust that they have indeed connected to the server they intended to reach."

While someone might, once the connection is established, be able to brute-force redirect the Strategi session to another server, this other server will not know the session key. There is no danger of data being exchanged between the wrong server and the Java emulation session; because they can't communicate, the two will simply sit and stare at each other.

Also from the Sun website:

"When a client makes an SSL request, the server replies with a message and a certificate signed by a certification authority that establishes the server's identity. If the client trusts the certification authority, which may be the server itself or a trusted third party, a secure connection is established."

If someone were to attempt to spy on the data, even if they knew what the program was doing and knew the encryption algorithm, it still wouldn't do any good, because they wouldn't have access to the passphrase-generated encryption key.

Purchasing SSL

Strategi SSL is a separate module that must be purchased separately, however, SSL is included with Enterprise or Global Strategi systems at no additional charge. Please see your sales representative for more information.

Implementing SSL

Once the Strategi SSL module has been purchased from Advanced BusinessLink, you can begin setting up your website to be SSL secured.

You should receive a license key that will enable SSL to be configured on your system. You must be sure to apply this key prior to implementation.

Corporate Identity

Domestic

As part of processing the Digital ID request, Verisign must verify your corporate identity. The quickest way for Verisign to do this is using your Dun & Bradstreet (D-U-N-S) number.

If your company does business within the United States, and you do not know your company's D-U-N-S number (or do not have a D-U-N-S number), please go to

https://digitalid.verisign.com/dnb_query.htm (the "blank space" in this URL is actually the underline "_" character) to search for it, or apply for a new one for free. If you do not wish to use a D-U-N-S number, or your company is not in the United States, you can fax or mail Verisign any of the following additional information (Proof of Right) when you complete the enrollment form:

- Articles of Incorporation
- Partnership Papers
- Business License
- Fictitious Business License
- Federal Tax ID Confirmation

International

International D-U-N-S numbers must be listed in the Dun and Bradstreet database for at least two months before Verisign can verify your company's information. If you have received your D-U-N-S number less than two months ago, you must provide "Proof of Right to Use" documentation <https://digitalid.verisign.com/non-engl.html#proofOfRight>. For additional information, go to "Enrollment Help for Our International Customers" at <https://digitalid.verisign.com/non-engl.html>. Your server should be listed as "Advanced BusinessLink".

Installing SSL

Installing SSL on a Strategi webserver is a straightforward process. If your organization has the SSL add-on module, please go to the BusinessLink Technical Support website at http://support.businesslink.com/docs/bulletins/security/tsb_sec010.htm and select the document titled "Installing and Renewing SSL on Strategi Webserver – V1R9 or Later".

Your organization will be dealing directly with Verisign or another SSL certificate provider to obtain the SSL authorization. Strategi has been designed to make the pre- and post-Verisign work easy to accomplish; the above-mentioned document has all the step-by-step information you will need.

Additional SSL Information

We have included here several links from which you can gain additional information on the subject of data encryption. With the fluid nature of the web, of course, there is no guarantee these links will still be in place by the time you read this document, but they are provided for your convenience. The inclusion of these links in this document in no way, shape or form represents any type of endorsement, either official or unofficial, by ADVANCED BusinessLink Corp., of any materials or references contained therein:

"HOW SSL WORKS: AN INTRODUCTION TO KEY CRYPTOGRAPHY" can be found at <http://wp.netscape.com/security/techbriefs/ssl.html>.

The latest Frequently Asked Questions ("FAQ") on Cryptography can be found at this address: <http://www.rsasecurity.com/rsalabs/faq/>.

Another source of information on current encryption development is the Electronic Privacy Information Center (EPIC) at http://www.epic.org/alert/alert_vol_4.html (Note: the blank spaces in the URL are actually the underline “_” character).

CHAPTER 9 - Licensing Information

Strategi License Use

Strategi implements either concurrent or registered user licensing based upon customer requirement. Each is unique in operational requirements and this chapter addresses the differences between the two.

Concurrent User Licensing

A concurrent user is any user that has performed any of the following functions:

- Established a session with the Strategi 5250 applet, GUIStyle applet, Webmaster, Pocket Strategi or Remote
- Logged in to an authenticated portion of a Strategi website

With that in mind, regardless of the number of services being performed by a user, only one concurrency will be noted. For example, if a user were to establish a 5250 session, established a connection with webmaster, and logged in to a authenticated portion of a Strategi website only one concurrency would be noted by Strategi. By concurrency it is meant "use of a license". License use and listed connections should be differentiated. There may be multiple connections by a user, but only one license is used per user regardless of how many connections.

For example, if a Strategi system has a 4-user concurrent license, any number of Strategi users may be created but only 4 may be online at any given time. It is important to note that this doesn't imply that anonymous connections are counted towards license usage. Only when a user satisfies one of the above three conditions will a license be used and checked against maximum number of concurrent Strategi users allowed.

Registered User Licensing

Unlike concurrent user licensing, the number of concurrent users is not the determining factor. A Strategi system using a registered licensing scheme will allow all registered users to be connected at any given time. The difference in this scenario is that the number of Strategi users that can be created is restricted by the license. For example, a 50 user registered system will allow 50 users to be logged in to a Strategi service but only 50 Strategi users may be created. In comparison, a 50 user concurrent license would allow an unlimited number of Strategi users to be created but only 50 could be connected to a Strategi service simultaneously.

Additional Information

- Only one type of licensing may be installed on a given Strategi system.
- Licensing cannot be decreased once installed regardless of type. For example, installing a license for 50 users cannot be removed and replaced with a license for 25 users. This is due to iSeries 400 licensed product requirements and not a restriction imposed by Strategi.
- Registered user licensing does not support all security options such as SSL and Personal Digital Certificates. Contact ADVANCED BusinessLink Sales staff for more information.

CHAPTER 10 – Strategi Commands

Following is a complete list of commands available in Strategi, along with a brief description of each.

AS/400 online help (using the F1 key) is available for most commands, so the information will not be detailed in this manual. Should you have any questions regarding the use of these commands, please contact BusinessLink Technical Support for assistance.

ACNSGIUSRL	Action User List
ADDEVTAUT	Add Event Authority
ADDEVTRTGE	Add Event Routing Entry
ADDHSMAUT	Add HSM Authority
ADDSGICLSP	Add Strategi Class Path to CLASSPATH env. variable
ADDSGIGRPM	Add Group Member
ADDSGIPEER	Add Peer System Definition
ADDSGIUSRA	Add User Attribute
ADDSGIWSM	Add Workstation Mapping
ADDSGIZNA	Add Zone Authority
CHGAUTSGI	Change IFS Object Authorities
CHGEVTAUT	Change Event Authority
CHGEVTHDL	Change Event Handler
CHGEVTRTGE	Change Event Routing Entry
CHGHSMAUT	Change HSM Authority
CHGHSMINS	Change HSM Server Instances
CHGHSMSVR	Change HSM Server
CHGSGIALS	Change Alias
CHGSGIFD	Change File Information
CHGSGIGRP	Change Group
CHGSGIPEER	Change Peer System Definition
CHGSGIPWD	Change Password
CHGSGIUSR	Change User
CHGSGIUSRA	Change User Attribute
CHGSGIVAL	Change Strategi Value
CHGSGIWEB	Change Web Site
CHGSGIWSM	Change Workstation Mapping
CHGSGIZNA	Change Zone Authority
CHGSGIZON	Change Zone
CHKAUTSGI	Check IFS Object Authorities
CHKEVTHDL	Check Event Handler
CHKHMSVR	Check HSM Server Response
CHKSGIGRPM	Check Group Member
CHKSGIUSR	Check User Access
CLREVTPIFR	Clear Event Performance Data
CLRHSMPIFR	Clear HSM Performance Data
CPYDIRSGI	Copy IFS Directory Tree
CPYIFSTREE	Copy IFS Directory Tree (Deprecated)

CPYSGIGRP	Copy Group
CPYSGIUSR	Copy User
CPYSGIWEB	Copy Web Site
CPYSGIZON	Copy Zone
CPYSVFSGI	Copy Save-File Utility For Strategi
CRTCLSSGI	Create HSM Server Class from Source Member
CRTDIRSGI	Create IFS Directory Tree
CRTEVTHDL	Create Event Handler
CRTHDSDFN	Create HSM Data Server Definition File
CRTHSMCLS	DEPRECATED, use CRTCLSSGI
CRTHMSVR	Create HSM Server
CRTIFSTREE	Create IFS Directory Tree (Deprecated)
CRTSGIA	Create Attribute Definition
CRTSGIALS	Create Alias
CRTSGIGRP	Create Group
CRTSGIUSR	Create User
CRTSGIWEB	Create Web Site
CRTSGIZON	Create Zone
CVTABLSGI	Convert Businesslink Data to Strategi
CVTDBFSGI	Convert Database File
DLTDIRSGI	Delete IFS Directory Tree
DLTEVTHDL	Delete Event Handler
DLTHMSVR	Delete HSM Server
DLTSGIA	Delete Attribute Definition
DLTSGIALS	Delete Alias
DLTSGIF	Delete File
DLTSGIGRP	Delete Group
DLTSGIUSR	Delete User
DLTSGIWEB	Delete Web Site
DLTSGIZON	Delete Zone
DSPEVTAUT	Display Event Authority
DSPEVTHDL	Display Event Handler
DSPEVTPFR	Display Event Performance Data
DSPEVTRTGE	Display Event Routing Entry
DSPHMAUT	Display HSM Authority
DSPHMPFR	Display HSM Performance Data
DSPHMSVR	Display HSM Server
DSPSGIA	Display Attribute Definition
DSPSGIALS	Display Alias
DSPSGICNN	Display Connection
DSPSGIFD	Display File Information
DSPSGIGRP	Display Group
DSPSGIGRPM	Display Group Member
DSPSGIPEER	Display Peer System Definition
DSPSGIUSR	Display User
DSPSGIUSRA	Display User Attribute

DSPSGIVAL	Display Strategi Value
DSPSGIWEB	Display Web Site
DSPSGIZNA	Display Zone Authority
DSPSGIZON	Display Zone
ENDEVTHDL	End Event Handler
ENDHMSVR	End HSM Server
ENDSGI	End Strategi Subsystem
ENDSGIVTS	End VT Server
EXPSGIGRP	Explode Group
GENSGISSL	Generate SSL Data
INSHMSVR	Install Packaged HSM Server
INSSGIAPP	Install Strategi Application
PKGHSMSVR	Package HSM Server for Distribution
PKGSGIAPP	Package Strategi Application for Distribution
PRGMSGSGI	System Progress Message
RMVEVTAUT	Remove Event Authority
RMVEVTPFR	Remove Event Performance Data
RMVEVTRTGE	Remove Event Routing Entry
RMVHMAUT	Remove HSM Authority
RMVHMPFR	Remove HSM Performance Data
RMVIFSTREE	Remove IFS Directory Tree (Deprecated)
RMVSGICNN	Remove Connection Information
RMVSGIFD	Remove File Information
RMVSGIGRPM	Remove Group Member
RMVSGIPEER	Remove Peer System Definition
RMVSGIUSRA	Remove User Attribute
RMVSGIWSM	Remove Workstation Mapping
RMVSGIZNA	Remove Zone Authority
RNMSGIGRP	Rename Group
RNMSGIWEB	Copy Web Site
RNMSGIZON	Rename Zone
RQSHTPSGI	HTTP Request Utility For Strategi
RTVENVSGI	Retrieve Environment Variable Using Strategi
RTVEVTAUT	Retrieve Event Authority
RTVEVTHDL	Retrieve Event Handler
RTVEVTPFR	Retrieve Event Performance Data
RTVEVTRTGE	Retrieve Event Routing Entry
RTVHMAUT	Retrieve HSM Authority
RTVHMPFR	Retrieve HSM Performance Data
RTVHMSVR	Retrieve HSM Server
RTVPRDSGI	Retrieve Product Using Strategi
RTVPTFSGI	Retrieve Program Temporary Fix Using Strategi
RTVSGIA	Retrieve Attribute Definition
RTVSGIALS	Retrieve Alias
RTVSGICNN	Retrieve Connection Information
RTVSGIFD	Retrieve File Information

RTVSGIGRP	Retrieve Group
RTVSGIINF	Retrieve Information
RTVSGIPEER	Retrieve Peer System Definition Values
RTVSGISSNI	Retrieve Session Information
RTVSGIPTH	Retrieve Strategi Path
RTVSGIUSR	Retrieve User
RTVSGIUSRA	Retrieve User Attribute
RTVSGIUSRN	Retrieve User Number
RTVSGIVAL	Retrieve Strategi Value
RTVSGIWEB	Retrieve Web Site
RTVSGIWSM	Retrieve Workstation Mapping
RTVSGIZNA	Retrieve Zone Authority
RTVSGIZON	Retrieve Zone
SETSGIAUT	Set Strategi IFS Object Authorities
SETSGILIC	Set License Information
SETSGIUSRA	Set User Attribute
SLTSGIGRP	Select Group
SLTSGIPEER	Select Peer System
SLTSGIUSR	Select Strategi User
SNDRCVHSM	Request HSM Service
SNDSGIF	Send File
SNDSGISMTTP	Send Internet Mail
SNDSMTSGI	Send Internet Mail
STREVTDL	Start Event Handler
STRHMSVR	Start HSM Server
STRSGI	Start Strategi Subsystem
STRSGIVTS	Start VT Server
WRKEVTAUT	Work With Event Authorities
WRKEVTHDL	Work With Event Handlers
WRKEVTPFR	Work With Event Performance
WRKEVTRTGE	Work With Event Routing Entries
WRKHMAUT	Work With HSM Authorities
WRKHSMPPFR	Work With HSM Performance
WRKHMSVR	Work With HSM Servers
WRKSGIA	Work With Attribute Definitions
WRKSGIALS	Work With Alias Definitions
WRKSGICNN	Work With Connections
WRKSGIF	Work With Files
WRKSGIGRP	Work With User Groups
WRKSGIGRPM	Work With Group Members
WRKSGIPEER	Work With Peer System Definitions
WRKSGIUSR	Work With Strategi Users
WRKSGIUSRA	Work With User Attributes
WRKSGIVAL	Work With Values
WRKSGIWEB	Work With Web Sites
WRKSGIWSM	Work With Workstation Mapping

WRKSGIZNA	Work With Zone Authorities
WRKSGIZON	Work With Zones

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