

**CRISP Automation Systems Documentation**  
**Manual Number: MAN-WWS-REF-030**  
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Reference Documents:

CRISP Document 500 047-001 August 1992

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[CRISP\\_SETUP.COM / CRISP\\_WWS\\_SETUP.COM](http://CRISP_SETUP.COM / CRISP_WWS_SETUP.COM).....

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## **Usage**

This manual includes the entire CRISPwindows Reference Manual, CRISP document number 500 047-001, August 1992, by reference. Sections from that manual are replaced by the sections in this manual.

The changes in this document are for:

- Clarification on how Window Workstation interfaces with CRISP/32
- Features added by the Central Administration layered product
- Features added by the Enhanced Security mode of WWS 3.0

In the base manual, “CRISPwindows” is used to refer to both the CRISPwindows program itself, and the entire product. This supplement reflects the newer usage of CRISPwindows as referring only to the CRISPwindows program, while using “Window Workstation” in reference to the entire product.

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## Workstation Security

### ***General***

Access to application elements (variables and view files) in your application can be limited with the CRISP security features. In the CRISP security system, each Window Workstation user has a username and password. This set of usernames is completely independent of the OpenVMS login usernames. To run Window Workstation, all users will continue to login into OpenVMS as username CRISP. The CRISP security system with its usernames and passwords is an additional security layer tailored to the requirements of CRISP and Window Workstation users.

When a user logs in to the Window Workstation, the user is recognized to have certain privileges, which are used to limit access to application elements. If a user does not continue using the system after logging in, the user can be automatically logged off and the display will switch to a default view.

User authorization information (username, password, privileges, and auto-logout time) is maintained by a security administrator using a CRISP security authorization utility.

### ***Usernames and Passwords***

To run Window Workstation you will log in to your workstation using the OpenVMS name CRISP. A Window Workstation user also has a CRISP Security username and password unrelated to the OpenVMS username and password.

A username may be a user's real name, a job class name (such a Operator, Engineer, Supervisor, etc.), or any other title suitable to the application. Passwords are assigned by a user with the privilege to administer security, such as a workstation security administrator. A CRISP Security user password may be null (no password), unless the Enhanced Security option is in use.

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### ***Default User, Logins, Logouts, Auto-logout, Default View***

When Window Workstation is started, the initial username is DEFAULT. Users can login to another username by selecting the **Login** item from the **Command** pulldown menu. This menu is on the menu bar of the CRISPwindows control window, which is the window that appears first when Window Workstation is started. A login dialog box will appear in which the user first enters the new username, then the password for that username.

Users can logout by selecting the **Logout** item from the **Command** pulldown menu. When a user logs out, the current username reverts to DEFAULT, and the default view is displayed.

Each user has an associated auto-logout time. The auto-logout time is any positive integer, including zero. An auto-logout time of zero indicates that the user cannot time out. When a new user logs in, Window Workstation starts a timer that measures the time since the last mouse click or keyboard activity. If the time exceeds the auto-logout period, the user is automatically logged out.

On automatic logout, two things happen. The current username reverts to DEFAULT, and the display switches to the default view. You define the default view by setting the CRISPDRAW\_VIEW parameter in the CRISPDRAW\_CONFIG file.

### ***Security Privileges***

There are three Security Privileges: Disuser, Run Security Program, and Grant Security.

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A user whose Disuser privilege is set cannot log in to Window Workstation and cannot run the security authorization utility.

A user whose Run Security Program privilege is set can run the security authorization utility to add and delete users, modify a user's System and User Privileges and modify the User Privilege names. A user whose Grant Security privilege is also set can modify another user's Security Privileges as well.

### ***System Privileges***

There are four System Privileges, Start CRISPDRAW, Exit CRISPwindows, Print Hardcopy, and Edit Displays.

The Start CRISPdraw privilege allows the user to start a CRISPdraw subprocess that is not defined to autostart (refer to CRISPPWIN\_PROCDEF elsewhere in this document).

The Exit CRISP windows privilege allows the user to exit the CRISPwindows process, which closes down the Window Workstation.

The Print Hardcopy privilege allows the user to print a display at run-time using the **Print** menu selection (refer to Menu Reference: Run-mode Interface elsewhere in this document).

The Edit Displays privilege allows the user to entered edit-mode from run-mode.

### ***User Privileges, Comparison Algorithm, and Security Database***

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The user privileges have no inherent significance. You define them in terms of your application. There are 32 bits in the user privilege mask. For any user you may specify any combination of these bits to be set. The workstation security administrator specifies user privilege masks using the security authorization utility.

At run-time, when a user attempts to access a system symbol (usually by executing a run-mode action) the mask value of the symbol is retrieved from the CRISPWIN\_SECURITY file. This symbol mask is compared with the current user's user privilege mask. The comparison performed in this privilege check is one of two comparison algorithms names Algorithm 1 and Algorithm 2. You configure the comparison algorithm and the privileges of the users by running the security authorization utility.

A "bias bit" value can be configured on each Window Workstation system. Before the user's privilege mask is operated upon, it is right-shifted by the bias value. This allows the privilege masks to be sub-divided into separate security domains.

In Algorithm 1, the user privilege mask and symbol mask are bit-wise ANDed. If the result of this operation is non-zero, access is granted. In other words, if any of the bits that are set in the symbol mask are also set in the user's mask, access is granted. For example, a user with a user privilege mask of FFFFFFF5 could access any symbols except those with symbol masks of 0000000A, 00000008, OR 00000002.

In Algorithm 1, the lowest security is provided by a symbol mask of FFFFFFFF, which allows access to any user except one whose user privilege mask is 0. The highest security is provided by a symbol mask of 0, which allows no access to any user, regardless of user privilege mask.

In Algorithm 2, the used privilege mask and the symbol mask are bit-wise ANDed. The result of this operation is bit-wise XORed with the symbol mask. If the result is zero, access is granted. In other words, if all bits that are set in the symbol mask are also set in

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the user's mask, access is granted. For example, a user with a user privilege mask of 00000005 can access only symbols with symbol masks of 00000001, 00000004, or 00000005.

In Algorithm 2, the lowest security is provided by a symbol mask of 0, which allows access to any user, regardless of user privilege mask. The highest security is provided by a symbol mask of FFFFFFFF, which allows access only to a user whose user privilege mask has all bits set.

### ***Workstation Security Administration***

Workstation user security authorization and privileges are maintained using a security authorization utility. In the X Window environment, the utility is CRISP\$UTL:CIA\_MAINT\_WINDOW. A character-based version of this utility, called CRISP\$UTL:CIA\_MAINT, is also available on your system. Since Window Workstation users always have access to the X Window environment, this section will describe only the CIA\_MAINT\_WINDOW version of this utility.

Should you wish multiple workstations to share security values, the CRISP Central Administration product can be installed. The Window Workstation and CRISP/32 systems will co-operate to share security information across the network, using DECnet.

### **Security Administrator**

You should designate primary and backup workstation security administrators to maintain the security system, create new user accounts, and assign privileges for users of your system. The workstation security administrator need not be the same person as the person who administers the VMS system itself. Although the workstation security

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administrator logs in to the security authorization utility as SYSTEM, it is not wise to have the same password on the CRISP security username SYSTEM as on the VMS username SYSTEM.

The workstation security administrator automatically has all privileges. The only configurable security features of the SYSTEM user are the password and the auto-logout time.

Security authorization information is kept in the CRISP\_UAF file (refer to CRISP\_UAF.IDX in the Configure section of this document).

CRISP\_UAF is not a text file. Passwords are maintained in encrypted form only. Even the System Administrator cannot see passwords. If a user forgets a password, a new password must be assigned

### **SYSTEM, TEMPLATE, and DEFAULT users**

There are always at least three usernames in the CRISP security system. They are SYSTEM, TEMPLATE, and DEFAULT. SYSTEM is the username intended for use by the workstation security administrator.

TEMPLATE is a username not for use by any user. The privileges and auto-logout time assigned to TEMPLATE will be assigned by default whenever a new user is created. Do not set the Disuser flag on the TEMPLATE user, else all newly created users will be automatically disabled upon creation, and will need to be enabled one at a time.

DEFAULT is the base-level user of the CRISP security system. When Window Workstation starts up, the DEFAULT user is automatically logged in. If a logged-in user times out, the logged-in user is logged out and the DEFAULT user is logged in.

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Note that the workstation security administrator should not give TEMPLATE or DEFAULT the Run CIA or Grant security privileges to run the security authorization utility or to grant security privileges to other users. Otherwise, unauthorized users will be able to create new, highly-privileged user accounts, effectively giving themselves full privileges.

### **CIA Maintenance Utility**

When you run CIAMAIN, a window appears that has a menu bar with three choices, **File**, **Login**, and **Edit**. You may use File to exit CIAMAIN at any time. The **Edit** selection is grayed out when CIAMAIN starts up to indicate that you must login as an authorized user to run CIAMAIN.

Pull down the **Login** menu and select **Set**. The first time you run CIAMAIN you will be required to enter a new password for username SYSTEM, and privileges for usernames DEFAULT and TEMPLATE. Otherwise, a dialog box appears in which you must enter the username and password of a user who is privileged to run CIAMAIN. Once you have logged in, the **Edit** selection of the CIAMAIN Commands menu will no longer be grayed out.

The **Edit** pulldown menu has three selections, **Users**, **Priv Names**, and **Algorithm**. Select **Users** to add, delete, or modify a user. Select **Priv Names** to change the names of the user privileges. Select **Algorithm** to change the comparison algorithm for the user-defined security privileges.

When you select **Users**, a dialog box appears in which you must enter the username you wish to add, delete, or modify. If you are adding a user, you will be prompted to enter the new user's password. You will also be given an opportunity to modify the new

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user's privileges, which will have been set to the privileges defined for the TEMPLATE user.

If you enter the name of an existing user, a dialog box will appear with pulldown menus allowing you to **Modify** a user's privileges or password, or to **Delete** the user. Deleting users is disabled in the High Security version of CRISP Security.

If you are modifying a user's privileges, a dialog box appears in which the security, system, and user privileges are listed. Beside each privilege name is a button you can select to grant or deny the privilege. In this dialog box is also an entry box in which you may enter the user's auto-logout time. Zero or blank indicates no auto-logout. There are also two buttons, one to restore the privileges to the values they held before you began to modify them, and one to set the privileges to those of the TEMPLATE username.

The default names of the user privileges when you first run CIAMAIN are U PRIV 01, U PRIV 02, and so on. U PRIV 01 represents the least-significant bit of the user privilege mask, and U PRIV 32 represents the most-significant bit. You can change these names by selecting **Priv Names** in the **Edit** pulldown menu of the CIAMAIN startup window.

**Note:** If the CRISP Central Administration product is installed, and editing of the privilege names is not done on the central node, the new privilege names must be copied to the central node. Details are covered in the Window Workstation Configuration manual.

## **Closing Security Gaps**

CRISP Security as it exists on a newly installed system is set up to be sufficiently secure for most systems, where all workstation users are trusted users. However, for a high-security environment, some gaps do remain. The files used by CIAMAIN are not

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protected from access by any workstation user and CIAMAINTE can be executed by any workstation user. Thus, by deleting the CRISP\_UAF file or defining a CRISP\_UAF logical to point to a non-existent file, then running CIAMAINTE, a workstation user could gain access to all security privileges.

To maximize the security of the system, operators can be assigned a VMS username and password which cannot create a VMS command prompt. Further security can be attained by making the workstation automatically log in at boot time.

The security administrator can log out the VMS session, and log in as username CRISP to perform security modifications.

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# Configuring Window Workstation

## *Configuration Script*

The Window Workstation has a configuration script which must be executed after the Window Workstation product is installed. Refer to the Window Workstation Configuration manual for more details.

## *Environment Variables*

Environment variables or logical names are alias names which you define in your environment to accomplish any of the following goals in your system.

- Simplify access to directories or files.
- Redirect where the system finds directories or files.
- Allow the system to search multiple directories for a file.
- Override the default setting of a parameter or resource.

All of the required logical names used by Window Workstation are defined for you by setup and login command files that are placed on your system when Window Workstation is installed. You may wish to define additional logical names to tailor your system for your use. For instance, the names of the configuration files used by Window Workstation are specified by defaults that can be overridden by logical names of your choice.

On a VMS system, logical names are defined by typing the following DCL command.

```
DEFINE LOGICAL_NAME "DEFINITION"  
  
or (for a system-wide definition)  
  
DEFINE /system LOGICAL_NAME  
"DEFINITION"
```

Logical names are removed by typing the following.

```
DEASSIGN LOGICAL_NAME  
  
or  
  
DEASSIGN /system LOGICAL_NAME
```

For example, Window Workstation normally uses the default file specification `CRISP$CFG:CRISPPWIN_SECURITY.DAT` to locate its database security file. If you wish to override this default specification to cause Window Workstation to locate the file `ALT.FILE` in the directory `DISK$USER2:[LEO]` on a remote node named `GREY`, you would type the following.

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```
DEFINE /system CRISPWIN_SECURITY
GREY::DISK$USER2:[LEO]ALT.FILE
```

You can also define a logical as a search list, so that if the file is not found using the first file specification, the system will find the file with a second specification. For instance, in the previous example, if you needed to have a backup version of CRISPWIN\_SECURITY on the local node (in case the node GREY was unavailable), you would define the logical name as follows.

```
DEFINE /system CRISPWIN_SECURITY
GREY::DISK$USER2:[LEO]ALT.FILE, -
CRISP$CFG:CRISPWIN_SECURITY.DAT
```

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If your system application requires logical names that must be set up automatically, you should create a command file containing definitions of the appropriate logical names. Name this command file `USER_SETUP_XXX.COM`, where `XXX` is an identifier you supply (such as `USER_SETUP_MYLOGICALS.COM`). Place the command file in the `CRISP$CFG:` subdirectory.

All files matching the file specification `CRISP$CFG:USER_SETUP_*.COM` are invoked by a CRISP setup command file that runs at system startup, so your logical names will be defined automatically at the next bootup.

You may also invoke the command file manually by typing the following to define the logical names immediately.

```
@CRISP$CFG:USER_SETUP_MYLOGICALS.COM
```

**.c.Symbols ;** Symbols are alias names you can specify to allow you to type a shortened form for commands you invoke often. For instance, if you needed to locate the names and the creation dates of all the files in the CRISP tree with an extension of `.DAT`, you would type the following.

```
DIRECTORY CRISP$DEVICE:[CRISP...]*.DAT
```

If you needed to do this often, you would define a much shorter symbol to run the same command. You would type the following.

```
DATS == "DIRECTORY  
CRISP$DEVICE:[CRISP...]*.DAT"
```

Typing `DATS` at the next prompt will have the same effect as typing the longer form.

Unlike logical names, symbols cannot be created at system boot time. If you have symbols you wish to have created automatically, you should create a command file containing definitions of the appropriate symbols. Name this command file `USER_LOGIN_XXX.COM`, where `XXX` is an identifier you

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supply (such as `USER_LOGIN_MYSYMBOLS.COM`). Place the command file in the `CRISP$:` directory.

All files matching the file specification `CRISP$:USER_LOGIN_*.COM` are invoked by a CRISP command file that runs when you log in as CRISP, so your symbols will be defined automatically at the next login.

You may also invoke the command file manually by typing the following to define the symbols immediately.

`@CRISP$:USER_LOGIN_MYSYMBOLS.COM`

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### **.c.Configuration files**

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subprocesses can be configured to meet the needs of your application. Most of this configuration is done by editing Data and Command files which are part of the Window Workstation system. For each aspect of CRISPwindows and CRISPdraw that you can configure, the following table shows which file contains the related configuration parameters. Detailed descriptions of the files are in the sections that follow.

<b>Description</b>	<b>File</b>
Session Number	
CRISPWIN_PROCDEF.DAT	
Process Default Directory	
CRISPWIN_PROCDEF.DAT	
Process Definition	
CRISPWIN_PROCDEF.DAT	
Starting CRISPdraw Subprocesses	
CRISPWIN_PROCDEF.DAT	
CRISPdraw Configuration File Specification	
CRISPWIN_PROCDEF.DAT	
CRISPwindows X Resources	
CRISPWIN.DAT	
CRISPwindows Window Geometry	
CRISPWIN.DAT	
Symbol Security	
CRISPWIN_SECURITY.DAT	
Security Database	
CRISPWIN_SECURITY.DAT	
Aliasing Node Names	
CRISPWIN_WORF_ALIAS.DAT	
Connecting to WSHST1::WSDIR	
CRISPWIN_WORF_ALIAS.DAT	
Usernames and Passwords	
CRISP_UAF.IDX	
User Privileges	
CRISP_UAF.IDX	
User Timeout Time	

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<b>Run-Node</b> which will run	The network node name of the processor the process.
<b>Display-Node</b> display device.	The network node name of the process's
<b>Process Type</b> Must be CWIN for CRISPdraw.	The type of process for this entry. CRISPwindows and CDRW for
<b>Default Directory</b> for the process.	Optional. The initial default directory
<b>Configuration File Specification</b> specification of the Specification May be used to	CRISPdraw only. Optional. File  CRISPDRAW_CONFIG.DAT file. override the default specification.

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**CRISPWIN\_PROCDEF.DAT (cont)**

<b>Fields</b>	<b>Description</b>
<b>Autostart Flag</b> specifies that start this NOAUTOSTART specifies that CRISPdraw subprocess in event.	CRISPdraw only. AUTOSTART CRISPwindows should automatically CRISPdraw subprocess. CRISPwindows should start the response to some other CRISPwindows

Format rules for the CRISPWIN\_PROCDEF file are as follows.

- Blank lines and whitespace are ignored.
- Text strings beginning with ! are comments and are ignored.
- A comma separates fields of a record.
- Optional fields may be left blank.

An example of the CRISPWIN\_PROCDEF file follows.

```
! CRISP$CFG:CRISPWIN_PROCDEF.DAT
!
! This CRISPwindows session will start one CRISPdraw subprocess
! automatically (session #2) and cannot start any more
! subprocesses.
!
1,          ! session_number,
vaxa,      ! run_node_name,
vaxa,      ! display_node_name,
CWIN,      ! process_type,
crisp$wvs: ! default_directory
!
2,          ! session_number,
vaxa,      ! run_node_name,
vaxa,      ! display_node_name,
```

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```
CDRW,          ! process_type,
crisp$wws_dsp:,! default_directory,
crisp$wws_etc:crispdraw_config.dat,
!              ! configuration file specification,
autostart      ! autostart flag
!
!
! This CRISPwindows session will start two CRISPdraw subprocesses
! automatically (sessions #12 and #13) and can start one more
! CRISPdraw subprocess manually (session #14).
!
11, vaxb, vaxb, CWIN, crisp$wws:
!
12, vaxb, vaxb, CDRW, crisp$wws_dsp:,
    crisp$wws_etc:crispdraw_config12.dat, autostart
```



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`width x height +x_offset+y_offset`

where `width`, `height`, and the offsets are all specified in pixels, and the offsets are relative to the upper left corner of the screen. Thus, the default startup geometry in `CRISPPWIN.DAT` is as follows.

`crispwin.geometry:`  
`=500x500+30+30`

This specifies a window 500 pixels wide, 500 pixels high, 30 pixels to the right of the left edge of the screen, and 30 pixels down from the top of the screen.

In some customized Window Workstation systems, there may be additional resources defined in this file.

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### **.c.CRISPPWIN\_SECURITY.DAT**

;  
Window Workstation uses the database security file called `CRISP$CFG:CRISPPWIN_SECURITY.DAT` to determine access privileges for symbols in your Window Workstation system. Symbols include CRISP variable tagnames and view filenames. In some customized Window Workstation systems, names of individual CRISPwindows functions are also symbols whose access can be controlled. Defining a logical name `.i.CRISPPWIN_SECURITY ;` overrides the default file specification of this file.

In the `CRISPPWIN_SECURITY` file, blank lines and comments beginning with `!` are ignored. The first non-comment line of the file must contain the default symbol mask. The default symbol mask defines the symbol mask to be used when a symbol is not found in the file.

All other non-comment lines in the `CRISPPWIN_SECURITY` file must be `.i.symbol mask definitions;`. A symbol mask definition consists of a mask value, at least one space or TAB, and the name of the symbol. There must be a symbol mask definition record for each symbol whose protection is to be different from the default symbol mask.

The symbol mask value is specified by a hexadecimal number. The symbol mask is the same size as the user privilege mask, 32 bits (refer to Workstation Security: User Privileges, Comparison Algorithm, and Security Database elsewhere in this document). Leading zeros in the mask may be omitted, if desired.

If the symbol is used in a run-mode action (such as, `goto display_dir:overview.v` or `modify scm3::react1:valve_101 (valve_index5)`) it must be entered in the same way as it is specified in the run-mode action. That is, the pathname of the view file must be entered as specified in the `goto` statement, and the node name, database name, and any subscript name must be part of the symbol name as entered in the `CRISPPWIN_SECURITY` file. The symbol name is not case-sensitive, however.

At run-time, the mask value of a symbol is compared with the user privilege mask of the current logged-in user. If the user has the required privileges, access is granted. The meanings of the individual bits of the mask are customer-defined.

A "bias bit" value can be configured on each Window Workstation system. Before the user's

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privilege mask is operated upon, it is right-shifted by the bias value. This allows the privilege masks to be sub-divided into separate security domains.

The comparison performed in the privilege check is one of two comparison algorithms named Algorithm 1 and Algorithm 2. You configure the comparison algorithm and the privileges of the users by running the security authorization utility described in Workstation Security elsewhere in this manual.

In Algorithm 1, the user privilege mask and the symbol mask are bitwise ANDed. If the result of this operation is non-zero, access is granted. In other words, if any of the bits that are set in the symbol mask are also set in the user's mask, access is granted. For example, a user with a user privilege mask of FFFFFFF5 could access any symbols except those with symbol masks of 0000000A, 00000008, or 00000002.

In Algorithm 1, the lowest security is provided by a symbol mask of FFFFFFFF, which allows access to any user except one whose user privilege mask is 0. The highest security is provided by a symbol mask of 0, which allows no access to any user, regardless of user privilege mask.

An example of the CRISPWIN\_SECURITY file using Algorithm 1 follows.

```
! CRISP$CFG:CRISPWIN_SECURITY.DAT
!
  800 ! default symbol mask
!       Any symbol not defined in this file has a symbol
!       mask of 800.  If the user privilege mask of the
!       currently logged-in user has bit 11 set, the user
!       may access the symbol.
!
  8F  display_server:viewfile1.v
  80  display_server:viewfile2.v
  80  display_server:viewfile3.v
A0000005 labvax::react:proc_variable1
A0000005 labvax::resin1:proc_variable1(index_num(cd:sn))
A00000FF labvax::resin1:proc_variable2(index_num(cd:sn))
AFFFFFFF labvax::resin1:proc_variable3(index_num(cd:sn))
A0000005 labvax::resin2:proc_variable1
A00000FF labvax::resin2:proc_variable2
```

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```

FFFFFFFF labvax::resin2:proc_variable3
A0000005 opvax::react:proc_variable1(labvax::react:index_variable)
    80 secondary_disps:viewfile4.v
    0  secondary_disps:viewfile5.v
!       No user can switch to this CRISPdraw view file.
FFFFFFFF secondary_disps:viewfile6.v
!       If the user privilege mask of the currently logged-in
!       user has any bits set, the user may switch to this
!       CRISPdraw view file.
!
! end of CRISP$CFG:CRISPWIN_SECURITY.DAT
```

In Algorithm 2, the user privilege mask and the symbol mask are bitwise ANDed. The result of this operation is bitwise XORed with the symbol mask. If the result is zero, access is granted. In other words, if all bits that are set in the symbol mask are also set in the user's mask, access is granted. For example, a user with a user privilege mask of 00000005 can access only symbols with symbol masks of 00000001, 00000004, or 00000005.

In Algorithm 2, the lowest security is provided by a symbol mask of 0, which allows access to any user, regardless of user privilege mask. The highest security is provided by a symbol mask of FFFFFFFF, which allows access only to a user whose user privilege mask has all bits set.

An example of the CRISPWIN\_SECURITY file using Algorithm 2 follows.

```

! CRISP$CFG:CRISPWIN_SECURITY.DAT
!
! 800 ! default symbol mask
!     Any symbol not defined in this file has a symbol
!     mask of 800. The user privilege mask of the
!     currently logged-in user must have at least bit 11
!     set in order to access the symbol.
!
! 8F  display_server:viewfile1.v
! 80  display_server:viewfile2.v
! 80  display_server:viewfile3.v
```

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```
A0000005 labvax::react:proc_variable1
A0000005 labvax::resin1:proc_variable1(index_num(cd:sn))
A00000FF labvax::resin1:proc_variable2(index_num(cd:sn))
AFFFFFFF labvax::resin1:proc_variable3(index_num(cd:sn))
A0000005 labvax::resin2:proc_variable1
A00000FF labvax::resin2:proc_variable2
AFFFFFFF labvax::resin2:proc_variable3
A0000005 opvax::react:proc_variable1(labvax::react:index_variable)
    80 secondary_disps:viewfile4.v
    0 secondary_disps:viewfile5.v
! Any user can switch to this CRISPdraw view file.
FFFFFFF secondary_disps:viewfile6.v
! The user privilege mask of the currently logged-in
! user must have all bits set in order to switch to
! this CRISPdraw view file.
!
! end of CRISP$CFG:CRISPPWIN_SECURITY.DAT
```

### **.c.CRISPPWIN\_WORF\_ALIAS.DAT**

;

Window Workstation connects to CRISP databases using a communications layer called WORF. WORF uses the network node names in your data source names to locate the CRISP databases. The CRISP\$CFG:CRISPPWIN\_WORF\_ALIAS.DAT file contains a list of .i.alias network node names; and the actual node names to which WORF translates the aliases. Defining a logical name .i.CRISPPWIN\_WORF\_ALIAS ; overrides the default file specification of this file.

Window Workstation uses an internal name, .i.WSHST1;, to refer to the CRISP node on which Window Workstation should find the system workstation database (WSDIR), which it must use for session-related information. The CRISPPWIN\_WORF\_ALIAS file must contain a line that aliases WSHST1 to a node in your system that runs CRISP.

The format of the CRISPPWIN\_WORF\_ALIAS file is a list of pairs of node names, separated by spaces. The left-hand name of a pair is the alias and the right-hand name is the actual name. A right-hand name of 0 directs accesses to the local node on which Window Workstation is running.

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**.c.CRISPWIN\_PRIV.NAMES;**        The Window Workstation security system allows the user to define a set of application-specific privileges called user privileges. The names of these privileges are also user-defined and are maintained in the file `CRISP$CFG:CRISPWIN_PRIV.NAMES`. Defining a logical name `.i.CRISPWIN_PRIV` ;overrides the default file specification of this file.

The `CRISPWIN_PRIV` file does not exist on a newly installed system. It is created when the user privilege names are changed. Changing these names is done using the security authorization utility (refer to Workstation Security elsewhere in this manual).

If the CRISP Central Administration product is installed on a central node, and properly configured on each satellite node, the `CRISPWIN_PRIV.NAMES` file will reside on the central node, with a backup copy on each Window Workstation system.

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pixels wide, 800 pixels high, 220 pixels to the right of the left edge of the screen, and 60 pixels down from the top of the screen.

If your application requires CRISPwindows to start up more than one CRISPdraw subprocess, define the CRISPdraw subprocesses to have different default directories. Put copies of DECW\$XDEFAULTS.DAT in each of these directories. Then you can tailor these parameters for each CRISPdraw subprocess. For instance, you would probably give them different startup geometries, so that the CRISPdraw windows do not hide each other.

**.i. Window Size;** The

CRISPdraw\*minWidth and CRISPdraw\*minHeight resources in the DECW\$XDEFAULTS.DAT file set the minimum size that the window can be resized to. The default values for these resources are set to allow resizing the window down to 500 pixels high and 500 pixels wide. If your application requires that the display screen remains a certain size, you may wish to change these settings to be equal to the startup geometry of your window.

**.i. Window Aspect Ratio;**

**Window Aspect** The aspect ratio is the ratio of a display window of the

**Ratio** width to height. In some systems, the view files depict images that must be kept at a particular aspect ratio for maximum readability (refer to Defining the Display Area elsewhere in this document).

You can limit the range of aspect ratios the user can obtain when resizing the

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window by setting the CRISPdraw\*minAspectX, CRISPdraw\*minAspectY, CRISPdraw\*maxAspectX, and CRISPdraw\*maxAspectY resources in your DECW\$XDEFAULTS.DAT file.

The normal way to use these resources is to force the aspect ratio of the window to be the same as the aspect ratio of the startup geometry (refer to Default Geometry elsewhere in this document). For instance, if your startup geometry specifies a window of 1000x750, you can maintain this aspect ratio by adding the following lines to your DECW\$XDEFAULTS.DAT file.

```
CRISPdraw*minAspectX:
1000
CRISPdraw*minAspectY:
750
CRISPdraw*maxAspectX:
1000
CRISPdraw*maxAspectY:
750
```

**i.Fonts;** For 'hardware text' (all non-vector text) CRISPdraw chooses font style dynamically from a group of four fonts set in the DECW\$XDEFAULTS.DAT file. The font is chosen on the basis of the largest size that will fit in the area allotted for the string (such as the area inside a Text graph).

You can specify the fonts used for hardware text in the CRISPdraw window by specifying the following resources.

```
CRISPdraw*bigScreenWidth
```

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CRISPdraw\*bigScreenHeight  
  
CRISPdraw\*smallScreenFont1  
  
CRISPdraw\*smallScreenFont2  
  
CRISPdraw\*smallScreenFont3  
  
CRISPdraw\*smallScreenFont4  
  
CRISPdraw\*bigScreenFont1  
CRISPdraw\*bigScreenFont2  
CRISPdraw\*bigScreenFont3  
CRISPdraw\*bigScreenFont4

**Fonts (cont)**

When the CRISPdraw window size is wider than the bigScreenWidth or taller than the bigScreenHeight, CRISPdraw uses the four bigScreenFont parameters for all hardware text. If the window size is smaller than the bigScreen size in both directions, CRISPdraw uses the four smallScreenFont parameters for all hardware text.

To eliminate possible confusion, the defaults for these parameters have been chosen so that, by default, CRISPdraw always uses the smallScreenFont parameters. The defaults for the bigScreen parameters are larger than the maximum screen size, so the CRISPdraw window can't be larger than the bigScreen size. If you wish, you can change these parameters to allow CRISPdraw to choose from the bigScreenFont parameters.

The default font specifications are set to fonts that are available on most

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```
!      file?
CRISPDRAW_DELAYICONS      = no   ! Delay loading icons until
!      needed?
CRISPDRAW_LOADICONS      = no   ! Load icons at all?
CRISPDRAW_MODAL          = no   ! Always use modal approach to
! ! create objects?
CRISPDRAW_PRESERVERGB    = no   ! Preserve RGB values?
! CRISPDRAW_3DINTERFACE    = no
!
! alternate color lookup table: file of rgb values
! CRISPDRAW_COLORTABLE = dv$etc:pastel.clut
!
! default view name for security purposes
! (also used as startup view unless overridden by a command-line
! setting)
! CRISPDRAW_VIEW = yourview.v
!
!
! Initial heap sizes
!
!
CRISPDRAW_ARINITIALHEAPSIZE = 64      ! ar initial heap size
CRISPDRAW_CIINITIALHEAPSIZE = 200     ! ci initial heap size
CRISPDRAW_COINITIALHEAPSIZE = 2000    ! co initial heap size
CRISPDRAW_DQINITIALHEAPSIZE = 40      ! dq initial heap size
CRISPDRAW_DGINITIALHEAPSIZE = 40      ! dg initial heap size
CRISPDRAW_DRINITIALHEAPSIZE = 256     ! dr initial heap size
CRISPDRAW_ININITIALHEAPSIZE = 40      ! in initial heap size
CRISPDRAW_ITINITIALHEAPSIZE = 40      ! it initial heap size
CRISPDRAW_LNINITIALHEAPSIZE = 200     ! ln initial heap size
CRISPDRAW_LOINITIALHEAPSIZE = 10      ! lo initial heap size
CRISPDRAW_PTINITIALHEAPSIZE = 8000    ! pt initial heap size
CRISPDRAW_PYINITIALHEAPSIZE = 1000    ! py initial heap size
CRISPDRAW_REINITIALHEAPSIZE = 500     ! re initial heap size
CRISPDRAW_SCINITIALHEAPSIZE = 40      ! sc initial heap size
CRISPDRAW_SDINITIALHEAPSIZE = 500     ! sd initial heap size
```

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```
CRISPDRAW_TXINITIALHEAPSIZE = 40          ! tx initial heap size
CRISPDRAW_TTINITIALHEAPSIZE = 200        ! tt initial heap size
CRISPDRAW_VDINITIALHEAPSIZE = 500        ! vd initial heap size
CRISPDRAW_VTINITIALHEAPSIZE = 400        ! vt initial heap size
CRISPDRAW_XFINITIALHEAPSIZE = 40         ! xf initial heap size
!
! display update interval in millisec (default is 1000)
! CRISPDRAW_UPDT_INTERVAL = 2000
!
! maximum number of displays in temporary cache (default is 8)
! CRISPDRAW_DISPLAY_CACHE_SIZE = 4
!
! list of displays to be permanently cached
! CRISPDRAW_PERM_DISPLAYS = "perm1.v,perm2.v,perm3.v"
!
! session number setting (normally overridden by a
!   CRISPDRAW_SESSION_NUMBER setting)
! CRISPDRAW_SESSION_NUMBER = 3           ! (default is 0)
!
!
! end of CRISP$WWS_ETC:CRISPDRAW_CONFIG.DAT
```

To most CRISPdraw users the important parameters in this file are as follows.

```
.i.CRISPDRAW_ASCIIISAVE;
.i.CRISPDRAW_DELAYICONS;
.i.CRISPDRAW_LOADICONS;
.i.CRISPDRAW_VIEW;
.i.CRISPDRAW_UPDT_INTERVAL;
.i.CRISPDRAW_DISPLAY_CACHE_SIZE;
.i.CRISPDRAW_PERM_DISPLAYS;
```

```
.c.CRISPDRAW_ASCIIISAVE;      CRISPdraw has
```

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the capability to save view files in either binary or ASCII format. A menu switch, accessible in edit-mode allows you to select whether files are saved in binary or ASCII format (refer to Menu Reference: Commands Menu elsewhere in this manual). The CRISPDRAW\_ASCII SAVE parameter controls the default startup setting of this switch. The normal setting of this parameter is no, which gives this switch a default setting of BINARY. If CRISPDRAW\_ASCII SAVE is set to yes, the default setting will be ASCII.

The purpose of saving files in ASCII format is to allow them to be transported via serial-line communications utilities like kermit. View files are not intended to be edited using a text editor. If you save your files in ascii mode, they will require longer load times at run-time, so the normal setting of the switch should be BINARY, and the normal setting of CRISPDRAW\_ASCII SAVE should be no.

If you have view files you wish to convert from ASCII format to binary format, enter edit-mode and confirm that the switch is set to BINARY. Then load and save each file you wish to convert.

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`.c.CRISPDRAW_LOAD_ICONS` and `CRISPDRAW_DELAY_ICONS`;  
**CRISPDRAW\_LOAD\_ICONS** and **CRISPDRAW\_DELAY\_ICONS**      If you set the `CRISPDRAW_LOAD_ICONS` parameter to yes, the `CRISPDRAW_DELAY_ICONS` parameter controls when the graph icons are loaded. Setting `CRISPDRAW_DELAY_ICONS` to no causes the icons to be loaded at startup, while setting it to yes causes the icons to be loaded the first time you edit a graph. If you set the `CRISPDRAW_LOAD_ICONS` parameter to no, the `CRISPDRAW_DELAY_ICONS` parameter is ignored and the icons will not be loaded.

Graph icons are a memory aid to remind you how the different graph types represent data. If you choose to load icons, the icons are visible when you are editing a graph or choosing a new graph type. If you choose not to load icons, in edit mode the graphs will be represented as rectangles with the type names inside.

The icons are loaded from drawing files in the `CRISP$DEVICE:[CRISP.WWS.LIB.ICONS]` subdirectory. Loading these files accounts for a significant portion of the time it takes the CRISPdraw subprocess to startup. After you have designed several displays, you may find you do not need the icons anymore. When you no longer need the icons, set the `CRISPDRAW_LOAD_ICONS` parameter to no to reduce the CRISPdraw startup time.

`.c.CRISPDRAW_VIEW`;      Use the `CRISPDRAW_VIEW` parameter to set the default display

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for your CRISPdraw subprocess. The default display is the display which CRISPdraw will automatically switch to if the current logged-in user times out (refer to Workstation Security: Logins, Timeouts, Default View elsewhere in this manual).

**CRISPDRAW\_VIEW**

is also the startup view for autostarted CRISPdraw subprocesses.

**.c.CRISPDRAW\_UPDT\_INTERVAL;**

CRISPDRAW\_UPDT\_INTERVAL is the time in milliseconds between screen updates in run-mode. You can set this parameter to suit your needs, or accept the default of 1000 (1 second).

The

CRISPDRAW\_UPDT\_INTERVAL parameter represents the minimum update interval. If your system is heavily loaded with other applications, if your views are complex, or if you set this update interval to a very short time, CRISPdraw may update at longer intervals than you have set in this parameter.

**.c.CRISPDRAW\_DISPLAY\_CACHE\_SIZE and  
CRISPDRAW\_PERM\_DISPLAYS**

CRISPdraw

maintains two display caches, one temporary and one permanent. At startup, the .i.temporary cache is set to hold the number of displays you set with the CRISPDRAW\_DISPLAY\_CACHE\_SIZE parameter. Once the temporary cache is full, loading a new display causes the least-recently-used display to be bumped from the cache. The default setting of CRISPDRAW\_DISPLAY\_CACHE\_SIZE is eight.

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To set up a  
.i.permanent cache;, set the  
CRISPDRAW\_PERM\_DISPLAYS to be a comma-  
separated list of the display names you wish to cache.  
These displays are not subject to being bumped as new  
displays are loaded.

### **.c.LOGIN.COM**

; Installation of any  
CRISP product on a system having no previous CRISP tree causes creation of a command file  
called CRISP\$:LOGIN.COM. This command file is not updated during subsequent installation  
of CRISP product updates.

.i.LOGIN.COM  
;invokes a CRISP setup file each time you log in as CRISP. The setup file is called  
CRISP\$:CRISP\_LOGIN.COM if you install both CRISP and CRISPwindows on your machine,  
and is called CRISP\$:USER\_LOGIN\_WWS.COM if you install only CRISPwindows on your  
machine.

LOGIN.COM  
directly or indirectly invokes any command file whose name is in the form  
CRISP\$:USER\_LOGIN\_\*.COM, so if you need to execute DCL commands each time you log  
in, create a command file with a name that follows this form (refer to Symbols elsewhere in  
this document).

You may modify  
the LOGIN.COM file, if you wish. Be sure not to remove the line that invokes the CRISP  
setup file (CRISP\_LOGIN.COM or USER\_LOGIN\_WWS.COM).

### **.c.SCRPRINT.COM**

; .i.Hardcopy printout of displays ;in run-mode is done in  
two parts. The CRISPdraw subprocess does the first part, capturing an X Window image at  
the time you select the **Print** button on the screen. A separate program called .i.SCRPRINT

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;does the second part, running as a background task and processing the image into a format (such as sixel) which can be sent to your printing device.

Rather than running this background task directly as a subprocess, CRISPdraw invokes the command file `CRISP$WWS_BIN:SCRPRINT.COM`. `SCRPRINT.COM`, in turn, runs the `SCRPRINT` program, then sends the processed file to your printer.

This command file contains the name of the print queue to which the printable files will be sent. If the default print queue name in `SCRPRINT.COM`, `LJ250_PRINT`, does not match the appropriate print queue on your system, you will need to edit this command file to correct the queue name.

The line in the `SCRPRINT.COM` file that actually starts the `SCRPRINT` program looks like the following.

```
$ SCRPRINT -OUT 'PRTFILE' 'XIMFILE'
```

The string fragment `-OUT 'PRTFILE'` is a command line parameter that specifies the name of the intermediate printable file which is sent to the print queue. The string fragment `'XIMFILE'` is a command line parameter that specifies the name of the intermediate bitmap file captured by CRISPdraw. You can tailor the hardcopy image by adding other command line parameters to this line. Command line parameters which you can add include the following.

	<code>BW</code>	to generate a greyscale image
	<code>REVERSE</code>	to reverse the black and white colors
in your hardcopy		
	<code>WIDTH W</code>	to set the width of the hardcopy image
to w pixels		
	<code>HEIGHT H</code>	to set the height of the hardcopy
image to h pixels		

The `-WIDTH` and `-HEIGHT` parameters are not absolute and may be overridden by the `SCRPRINT` process.

There are other command line parameters you may use.

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You can review the available parameters by running the SCRPRINT process manually as follows.

SCRPRINT -HELP

This command causes SCRPRINT to list the available command line parameters.

.c.CRISP\_SETUP.COM / CRISP\_WWS\_SETUP.COM;

**CRISP\_SETUP.COM / CRISP\_WWS\_SETUP.COM**

On your workstation, there is a command file that sets up logical names and other environmental parameters for Window Workstation. This command file must be invoked at system boot time. If CRISP and WWS are both installed on your workstation, the setup file is called CRISP\$.i.:CRISP\_SETUP.COM;. If only WWS is installed on your system, the setup file is called CRISP\$.i.CRISP\_WWS\_SETUP.COM;.

A command file called SYS\$MANAGER:.i.SYSTARTUP\_VMS.COM (SYSTARTUP\_V5.COM for VMS V5.5) ;runs at system boot time and must invoke CRISP\_WWS\_SETUP.COM for a WWS-only workstation or CRISP\_SETUP.COM if the workstation also has CRISP. In the initial installation of CRISP or WWS on your workstation, you have to decide whether to accept a new version of the file SYSTARTUP\_V5.COM. If you did not accept the new SYSTARTUP\_V5.COM file, you will need to edit your existing file to make sure the appropriate command file is invoked. For an example of how this is done, examine the file CRISP\$UTL\_SYS:SYSTARTUP\_V5.COM. If your workstation has only WWS installed, you will not have this example file. You can find the example on the machine CRISP is installed on.

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