

LABVIEW™ DATALOGGING AND SUPERVISORY CONTROL MODULE NOTES FOR BRIDGEVIEW™ USERS

Welcome to National Instruments LabVIEW Datalogging and Supervisory Control (DSC) module, the next generation of BridgeVIEW.

National Instruments brings you this powerful tool for handling high channel count applications, as well as for supervisory control of a wide variety of distributed systems as a fully compatible upgrade path for BridgeVIEW, the National Instruments industrial automation version of LabVIEW. The LabVIEW DSC module takes the best of the BridgeVIEW tools and integrates them into LabVIEW as a powerful module, opening a path for future innovations in logging your data and supervising your networked system.

Your BridgeVIEW applications will run under the LabVIEW DSC module with no more conversion than the ordinary mass compilation necessary under any major version change of LabVIEW. See the [Converting VIs](#) section for detailed information on how to convert your VIs to LabVIEW 6.

This is “change documentation”, describing changes and new features in the LabVIEW DSC module to help you get up to speed quickly. It assumes that you are familiar with LabVIEW 6 and with BridgeVIEW 2.1 or greater, and is not necessarily as complete as the formal documentation.

For installation instructions and for last-minute changes, corrections, and new material that was not available for the printed manuals, see the *LabVIEW Datalogging and Supervisory Control Module Release Notes*. For complete discussions of LabVIEW DSC module features and functionality in context with the complete software package, consult your printed documentation and online help.

If you are upgrading from BridgeVIEW and are about to run the LabVIEW DSC module for the first time on a Windows 2000 system, consult the [Compatibility and Industrial Automation Server Strategies](#) section for information about using certain servers under Windows 2000.

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Installing the LabVIEW Datalogging and Supervisory Control Module

Before you install the LabVIEW Datalogging and Supervisory Control module you must have already installed LabVIEW 6.



Note If for any reason you reinstall LabVIEW 6.0 after installing the LabVIEW DSC module, you should also reinstall the LabVIEW DSC module after completing the LabVIEW reinstallation.

Perform the following steps to install LabVIEW and the LabVIEW DSC module:

1. Insert the LabVIEW 6 CD in your CD-ROM drive.
2. Run the installer as follows:
 - a. If your computer system has the AutoPlay feature enabled, the installation will begin automatically.
 - b. If your system does not use AutoPlay, run the following program:
`x:\setup.exe`
 where *x* is the letter of your CD-ROM drive.
3. Follow the onscreen instructions.

4. Reboot your computer. *You must reboot your computer after installing LabVIEW 6 and before installing the LabVIEW DSC module.*
5. Insert the LabVIEW DSC module CD in your CD-ROM drive
6. Run the installer as follows:
 - a. If your computer system has the AutoPlay feature enabled, the installation will begin automatically.
 - b. If your system does not use AutoPlay, run the following program:
`x:\LabVIEW DSC Installer.msi`
where *x* is the letter of your CD-ROM drive.
7. Follow the onscreen instructions.
8. Reboot your computer.

Required System Configuration

You must LabVIEW 6 or greater installed on your computer before you install the LabVIEW Datalogging and Supervisory Control module.



Note If for any reason you reinstall LabVIEW 6.0 after installing the LabVIEW DSC module, you should also reinstall the LabVIEW DSC module after completing the LabVIEW reinstallation.

The LabVIEW DSC module runs on any system that supports Windows 95/98, Windows NT 4.0, or Windows 2000. A minimum of 32 MB of RAM and at least 60 MB of free disk space (for the system to use as swap space) is required for this version to run effectively. We recommend 128 MB of RAM and at least 127 MB of swap space available on your system. Increasing your computer resources will have a significant effect on performance of the LabVIEW DSC module.

Compatibility and Integration

The LabVIEW DSC module is part of National Instruments long-term effort to more closely integrate our software tools to make systems integration easier and more efficient. In particular you will find that the LabVIEW DSC module is more closely integrated with Lookout, National Instruments HMI and industrial process control software, and hardware devices such as National Instruments FieldPoint.

Toward this end, the LabVIEW DSC module makes use of the Logos communications protocol, an internal National Instruments technology for rapid and reliable transmission of data across your network and between applications running on one computer. You will occasionally encounter the

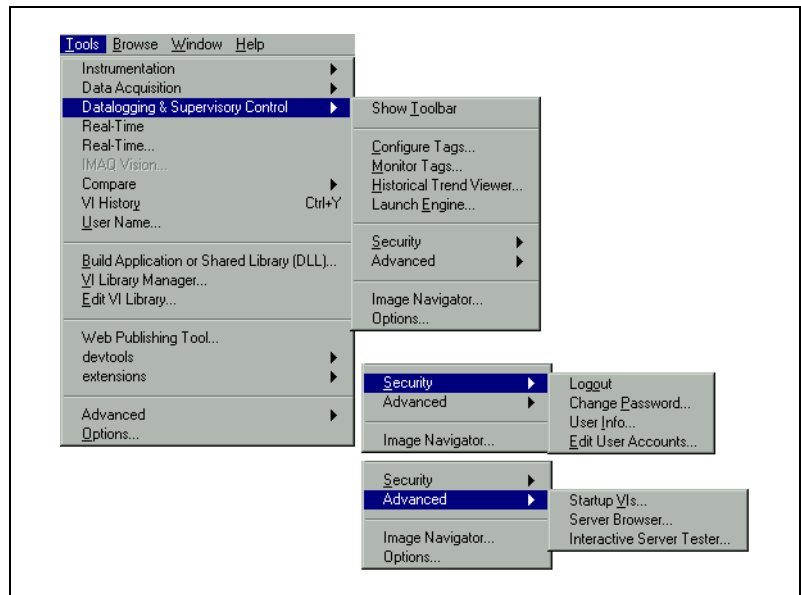
term Logos in data addressing and browsing activities, and may find the term used in URLs for data connections.

Except for the appearance of the term in certain dialog boxes and data locators, you never interact directly with Logos.

Getting Started with the LabVIEW DSC Module

As a former user of BridgeVIEW, you will find some elements of the LabVIEW DSC module familiar. Some of the features are new and others have changed. A quick tour of the changes should make your transition to the LabVIEW DSC module easier.

One of the first changes you will notice is the reorganization of the **Project** menu item into a **Tools** menu. LabVIEW DSC module tools are now concentrated in the **Datalogging & Supervisory Control** menu item, as shown in the following illustration. Notice that the sub-menus, **Security**, and **Advanced** are shown in their expanded form on this illustration as well.



Most of the items have the same or similar names as their BridgeVIEW counterparts. You will find some interface changes, though, as well as improved performance and ease of use.

Major changes have taken place in security, in the HMI wizard and how it works, in compatibility with National Instruments Lookout, in historical trending, and how you use the Citadel historical database.

Other changes have taken place internally, out of view from the user level, as new technologies have been incorporated into LabVIEW and the LabVIEW DSC module tools, but care has been taken to ensure interface and operational compatibility with your BridgeVIEW applications.

Logging Data

The LabVIEW DSC module uses a new version of National Instruments Citadel database. Consult the *LabVIEW Datalogging and Supervisory Control Release Notes* for detailed information on maintaining continuing of data when you upgrade from BridgeVIEW to the LabVIEW DSC module.

Set Your Palette

You can customize your LabVIEW palettes to display the controls and functions you most often use. The active palette should have been set to display the LabVIEW DSC module palettes when you installed the module. If it was not, or if you have done other LabVIEW component installations, you may need to select the active palette yourself.

If your palette is not already set to stay visible on the screen, fix the palette to the screen by clicking on the push-pin, and the palette buttons will appear. Click on the **Options** button, as shown in the illustration to the left and select the **Datalogging & Supervisory Control** option for all your LabVIEW DSC module controls and functions to appear in your palettes.



For more information on customizing your palettes, consult your LabVIEW documentation.

Tag Utility Toolbar Feature

The LabVIEW DSC module now features a floating toolbar to give you quick access to the most frequently used tag utilities without needing to go through the menu tree.



Activate the toolbar by selecting **Tools»Datalogging & Supervisory Control»Show Toolbar**. Click on the appropriate button to activate the tool you want to use.

Working with Tags

Tags are how the LabVIEW DSC module keeps track of your data. As a former BridgeVIEW user, you are familiar with tags and how they are used. You will use tools for working with tags in essentially the same way you used the BridgeVIEW tools.

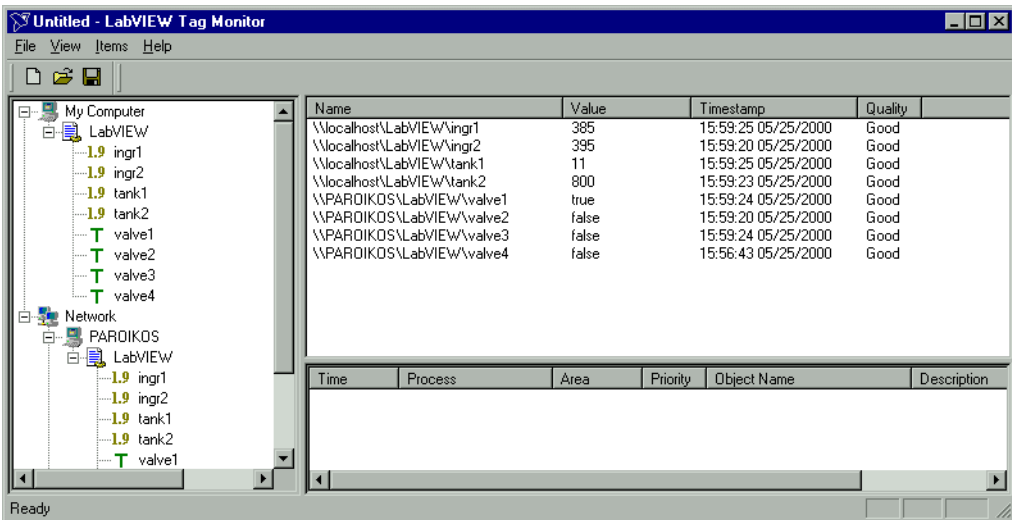
Tag Name Control

The Tag Name control is now located on the I/O subpalette of the LabVIEW Controls palette.

Connecting to Tags Across the Network

Using tags across a network has been made much easier with the LabVIEW DSC module.

When you browse for tags, or to find servers when you create and configure tags, or to select a DataSocket data source, you will see some variation of the view in the left column of the following window.



As you can see, navigating to data is a matter of finding the data source (such as LabVIEW, Lookout, or certain servers) on your own computer or on your network.

To find tags or data on another computer, you must first register the computer. You can register computers through the Tag Configuration Editor, the Tag Monitor, or through the LabVIEW DSC module options.

- In the Tag Configuration Editor, select **Configure»Network»Registered Computer**.

- In the Tag Monitor, right-click on the Network node and select **Register Computer**.
- From LabVIEW, select **Tools»Datalogging & Supervisory Control»Options** and click on the **Advanced** tab, selecting **Registered Computers** from the options.

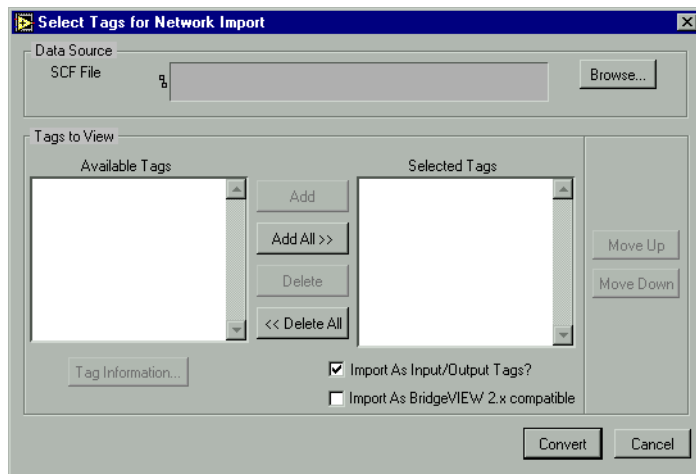


Note In order to register or unregister a computer, you must be logged in as Administrator or with administrator privileges (that is, your user account must be a member of the Administrator group).

See the *Registering Computers* section in the document for more information on registering and unregistering computers

Importing Network Tags

You can import tags into your local LabVIEW DSC module .scf file from from a .scf file located on another computer. Open the Tag Configuration Editor and select **File»Import Network Tags**. The following dialog box appears.



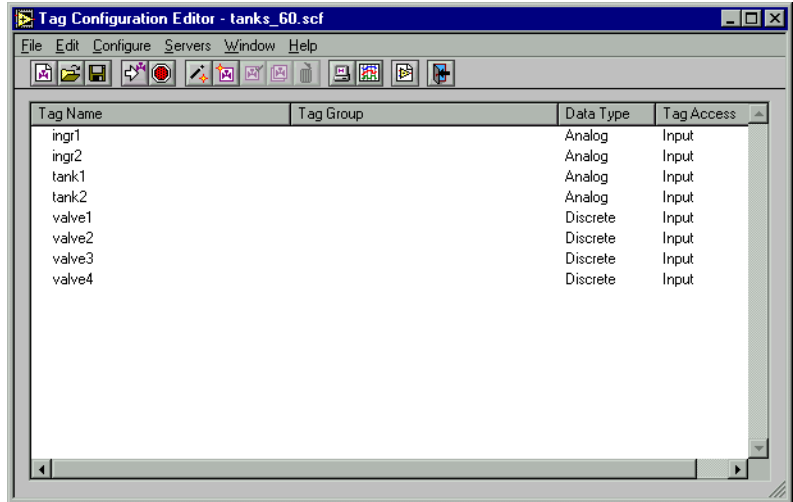
With this you can browse to a .scf file on any computer on your network, and import tags from that file into your local .scf file.

You can also use this dialog box to import tags from a remote computer using BridgeVIEW 2.x networking. This option is provided for compatibility with BridgeVIEW 2.x networking, but we recommend converting to the new National Instruments Logos networking when possible.

You can also access this option in the Tag Configuration Editor with BridgeVIEW compatibility pre-selected by selecting **Configure»Network»BridgeVIEW 2.x Networking Import Network Configuration**.

Configuring Tags

The Tag Configuration Editor has been streamlined and made more flexible and efficient. When you invoke this tool, the following screen appears.



The first three icon buttons create, open, or save a new tag configuration file (.scf). Use the next four buttons to invoke the tag wizard, create a new tag, or edit, copy, or delete existing tags. Use the last three buttons to launch the Tag Engine, invoke the Tag Monitor or create a new VI.

The Tag Configuration Editor menu items are much the same as they were in BridgeVIEW, with a few exceptions, including some relocated items, as listed below:

- **File»New VI** (new)
- **Edit»Column setup** (new)
- **Configure»Security** (new)
- **Configure»Network»Registered Computers** (new)
- **Configure»Network»Time Synchronization**(new)
- **Configure»Network»Convert Network Protocol** (new)
- **Configure»Network»BridgeVIEW2.X Networking»Allow Network Access** (relocated from **Configure»Allow Network Access**)

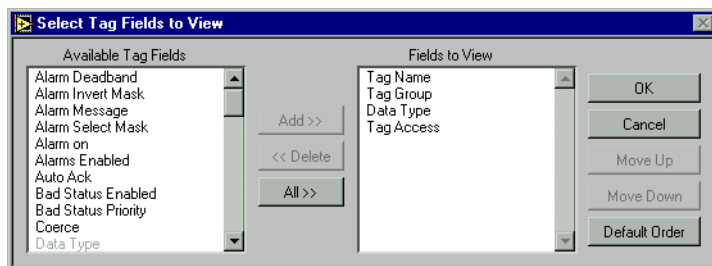
- **Configure»Network»BridgeVIEW2.X Networking»Clients have Write Access** (relocated from **Configure»Clients have Write Access**)
- **Configure»Network»BridgeVIEW2.X Networking»Import Network Configuration** (relocated from the **File** menu)
- **Configure»Network»BridgeVIEW2.X Networking»Configure Network Access** (relocated from **BridgeVIEW Project** Menu)
- **Window** (new)
- **File»Exit LabVIEW** (new. Choose **Close** to exit the Tag Configuration Editor, and **Exit LabVIEW** to quit LabVIEW.)



Tip As an additional convenience, you can now create a new tag through the HMI Wizard as well as in the Tag Configuration Editor.

Column Setup

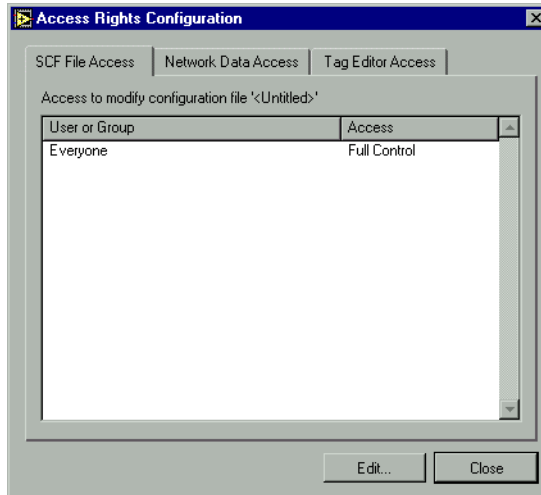
Selecting **Edit»Column Setup** invokes the **Select Tag Fields to View** dialog box. You can now display the same columns of information as in the spreadsheet import/export options in the Tag Configuration Editor. Use the **Select Tag Fields to View** dialog box to set which columns are active by adding or deleting tag attributes to or from the **Fields to View** window. Highlight the tag attribute category you want and click on **Add** or **Delete** to customize your view.



You can change the order of appearance of columns by selecting a given column heading and moving it up and down on the list by clicking the appropriate button, or by selecting a column heading and dragging it to the position you want it to occupy.

Tag Security

The LabVIEW DSC module implements permission-based security for tags. Selecting **Configure»Security** in the Tag Configuration Editor displays the following dialog box.



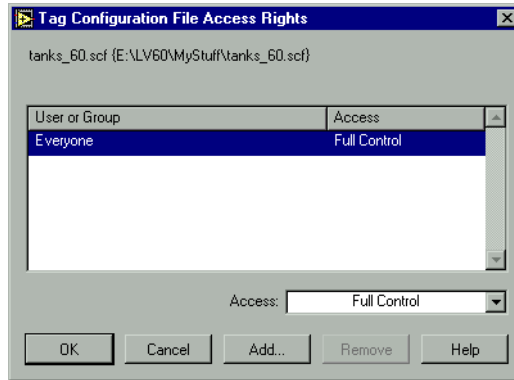
Notice that this box has three tabs: **SCF File Access**, **Network Data Access**, and **Tag Editor Access**. Each of these tabs allows you to configure a different aspect of security.

When you select the **SCF File Access** tab, you are setting security on the `.scf` file itself, specifically setting who can edit a given `.scf` file. This permission is part of each `.scf` file, and can vary from file to file.

When you select the **Network Data Access** tab, you set who will have access to data. Security settings here determine who can and cannot connect to tags configured in a `.scf` file. The settings you make here are specific to a given `.scf` file, and can vary from file to file. All tags in a given `.scf` file inherit the settings you make in this tab, except for any tags you edit security settings for individually. (As noted elsewhere in this document, you must use the same `lookout.sec` file on all your networked computers for network security to work properly.)

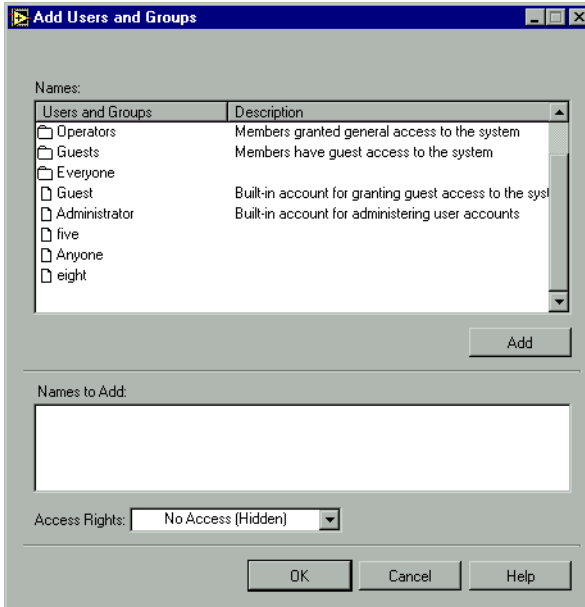
When you select the **Tag Editor Access** tab, you are setting who can and cannot launch the Tag Configuration editor. This setting holds for all users of the LabVIEW DSC module.

When you click on the **Edit** button in the **SCF File Access** dialog box, the following dialog box appears.



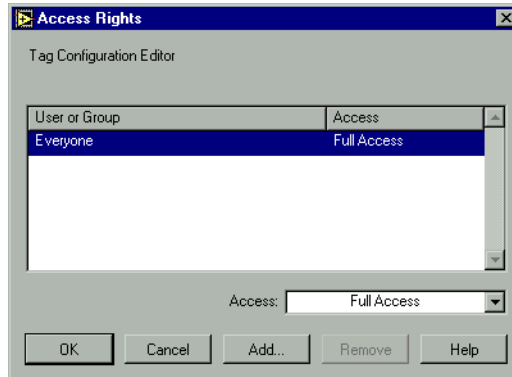
The large field in the center of this dialog box lists the groups and user accounts that have permission to work with the .scf file shown.

To remove a permission, select it and click on Remove. To change the extent of the permission, select it and choose from the options in the Access listbox. To add a new user or group to the permissions, click on the **Add** button. The following dialog box appears.



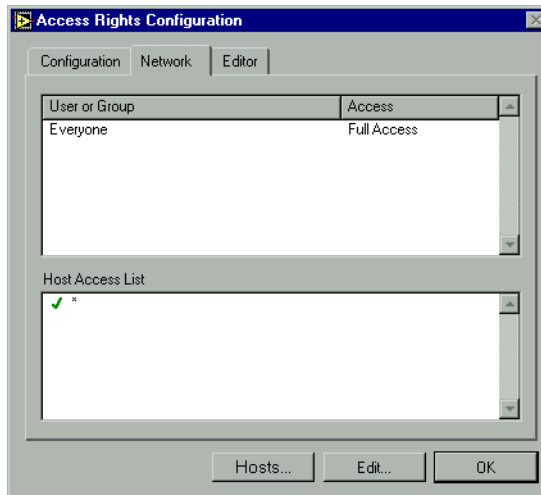
Highlight the user or group you want to add and double-click on it (click the **Add** button). Set the **Access Rights**, and click the **OK** button when you are finished.

When you select the **Tag Editor Access** tab, the following dialog box appears.



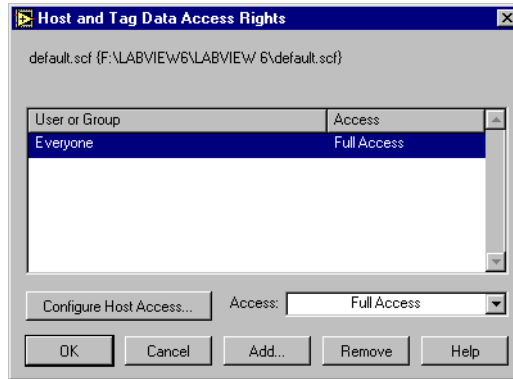
You set permission to use the Tag Configuration Editor in this dialog box, using the same procedures as you do to set permissions for editing a particular .scf file.

The **Network Data Access** option of the **Access Rights Configuration** dialog box is shown in the following illustration.



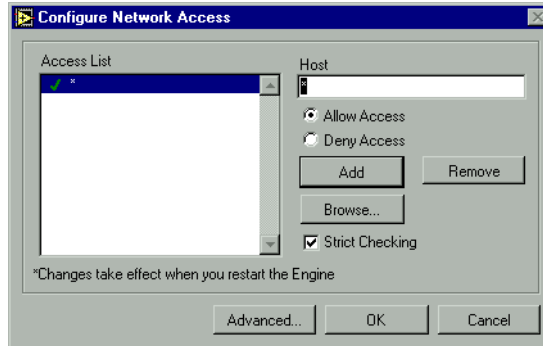
You can configure two levels of network security: host access and user or group access. The **Host Access List** controls whether or not a particular computer can access data on your computer, no matter who is logged on. You can also grant or deny access to specific users and groups.

Clicking on **Edit** invokes the following dialog box.



As with the other options, you click on **Add** to add permissions for accessing the data configured in the selected .scf file.

You can also configure the host access—meaning you can set which computers on your network can access the data configured by the active .scf file. To set computer access, click on the **Configure Host Access** button. You can also open this dialog box directly from the **Network** tab of the **Access Rights Configuration** dialog box by clicking on the **Hosts** button in that dialog box. In either case, the following dialog box appears.

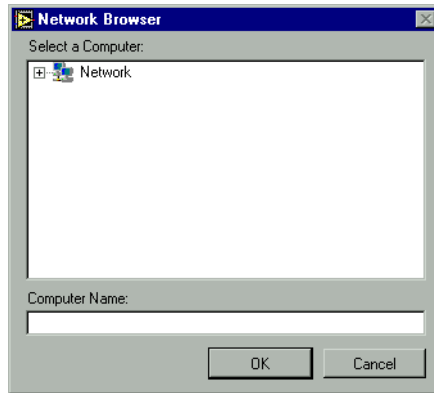


In BridgeVIEW you accessed this dialog box by selecting **Project>Configure Network Access**. This dialog box functions the same way the BridgeVIEW version did, adding the capability to browse the network for computers you want to permit or deny access to individually.

You can use the asterisk wildcard to enable or disable all computers or all computers in a set. For instance, entering *.yourdomain.com would select all the computers with that domain address. This is the same syntax used in the LabVIEW VI Server TCP/IP Access section of the LabVIEW

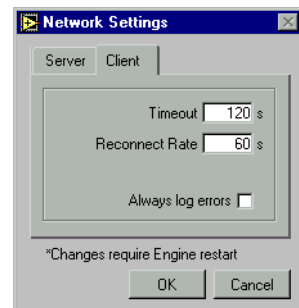
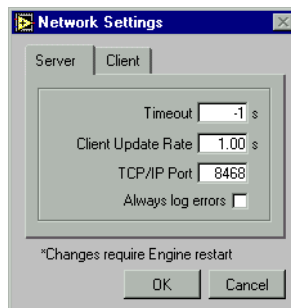
options. Consult your LabVIEW documentation for more information on how LabVIEW uses host names.

If you are uncertain of the computer names you want to allow or deny access to, you can browse the network and select individual computers by clicking on the **Browse** button. The following dialog box appears.



Click on the network node to expand the network view, and select the computer you want to allow or disable access for. Click **OK** to add this computer to your access list.

If you have enabled BridgeVIEW 2.x networking in your Tag Configuration Editor (by selecting **Configure»Network»BridgeVIEW 2.x Networking»Allow Network Access**), it enables the **Advanced** button on the **Configure Network Access** dialog box. Clicking on this button in the dialog box pops up the following two-tab dialog boxes that function in the same way they did in BridgeVIEW 2.x.



Note These settings only apply to BridgeVIEW 2 networking.

Register and Unregister Computers

See the *Registering Computers* section of this document for detailed instructions on how to register and unregister a computer. Access this option in the Tag Configuration Editor by selecting **Configure»Network»Registered Computers**.

Convert Network Protocol

This option converts the `.scf` file currently loaded in your Tag Configuration Editor from using BridgeVIEW 2.x network tags to using LabVIEW DSC module Logos tags.

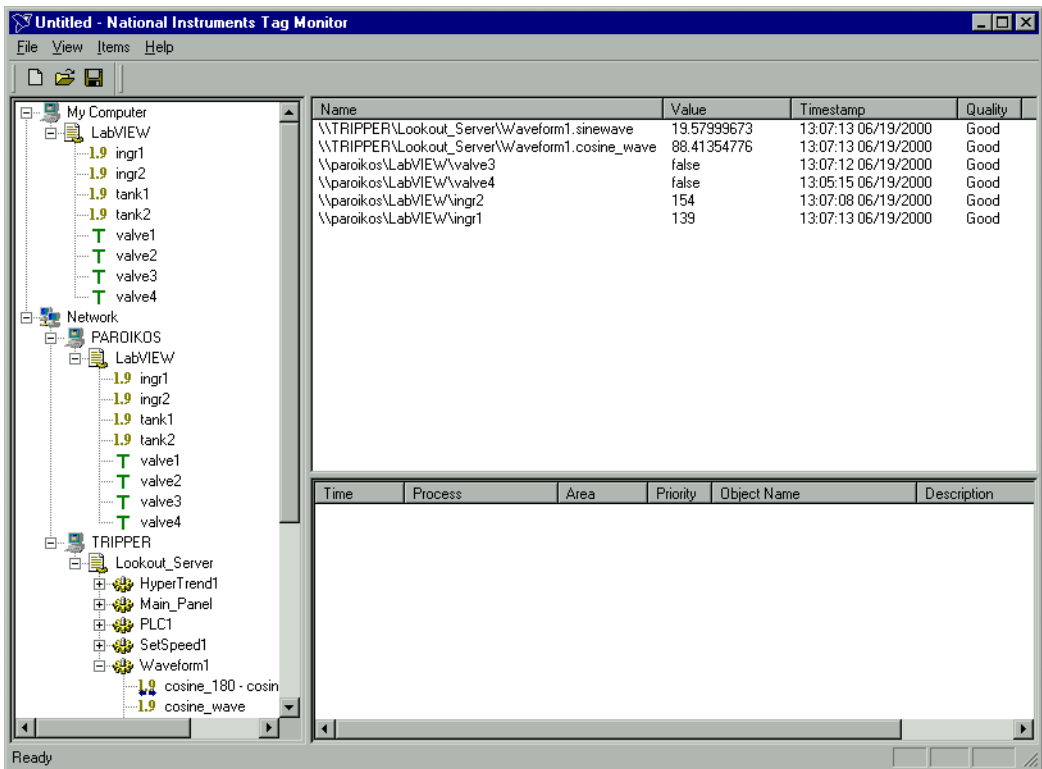
Access this option by selecting **Configure»Network» Convert Network Protocol**.

Windows

All open LabVIEW windows appear under this menu item, allowing you to select the window you want to access next directly.

Tag and Alarm Monitoring

Tag monitoring in the LabVIEW DSC module has changed both in appearance and in operation since BridgeVIEW. In addition to monitoring tags, this tool also monitors alarms and events in a display in the bottom right of the window. You access the Tag Monitor from the LabVIEW DSC module by selecting **Tools»Datalogging & Supervisory Control»Monitor Tags**. You can also launch the Tag Monitor from the Engine Manager, as well as from the main LabVIEW window, the Tag Utilities Toolbar, and other convenient locations.



Monitoring Tags

As you can see, you now navigate to the tags you want to monitor using the tree in the left window of the LabVIEW Tag Monitor. There are several other features in the new Tag Monitor that follow from this innovation.

Not only can you monitor tags with the Tag Monitor, you can also view and acknowledge alarms in the bottom right pane of the Tag Monitor.

You can see tags both directly in your local computer under the **My Computer** node, and across the network, under your computer name (Paroikos in this instance) under the **Network** node. You can also see data from other National Instruments software and devices on other networked computers, such as the Lookout process running on the computer named TRIPPER.

To select tags for monitoring, you can select, then drag and drop of multiple items from the selection tree into the monitoring window. You can also double-click on a tag to move it to the tag display window on the right. You can also select a tag and right-click on it, or select a tag or set of tags and then click on the **Add** button.

You can save different tag monitoring selections for quick access.

The tag values and status update continuously, so the **Trigger Tag** setting used to update values in BridgeVIEW is no longer necessary, and has been removed from the Tag Monitor.

There is no longer a timeout setting in the Tag Monitor.

The Tag Monitor no longer displays the scaling units for a tag.

Status information for the tag is conveyed in the **Quality** column.

In the **View** menu, you can set a given computer or device (such as a National Instruments FieldPoint module) as the root for the tree view in the left window. Select **Go to Host** to enter the computer name or the IP address you want to make the root for the tree view. Select **Default** to restore the full tree.

Selecting **View»Refresh** refreshes the tree view and the alarm view at the bottom of the window. (The tags in the tag window update continuously, and do not need to be refreshed.)

You can add, remove, write to, or edit the properties of a tag by selecting the tag and using the options in the **Items** menu. You can also right-click on a tag to access these options.

Monitoring Alarms and Events in Tag Monitor

The alarm and event pane of the Tag Monitor window is the same Alarm and Event Display control that has been added to the LabVIEW DSC module controls. See the *Alarm and Events Control* section of this document for more information on using this feature.

Browsing Tags

The Tag Browser has been removed from the LabVIEW DSC module. You can use the new Tag Monitor to browse tags if necessary.

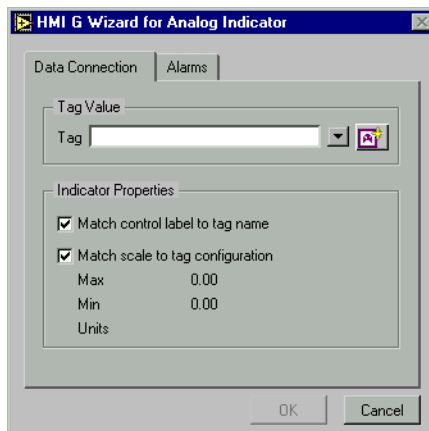
HMI Wizard and DataSocket

One of the great changes in the LabVIEW DSC module is in how the HMI wizard takes advantage of the power of National Instruments DataSocket technology. The result is simpler code and more efficient execution.

The LabVIEW DSC module HMI wizard uses National Instruments DataSocket technology to link your LabVIEW front panel object to data. For more detailed information on using DataSocket, consult your LabVIEW documentation.

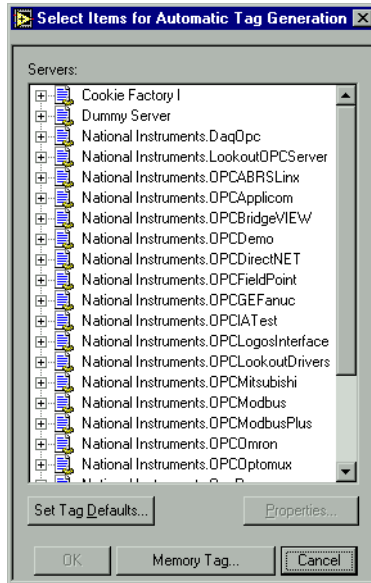
When you use the HMI Wizard in an application, the wizard checks to see if you have an Engine Status VI included in your block diagram. If you do not already have that VI in your block diagram, the HMI wizard will create a loop that will launch the Tag Engine when you run your VI. The loop stops if the Tag Engine stops (unless you override its effects with other program structures).

The actual changes in how you use the HMI Wizard are minimal. When you right-click on a control or indicator in LabVIEW and select the **HMI Wizard**, the following dialog box appears.



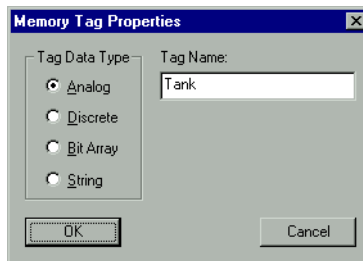
You can select a tag from the currently loaded .scf file, or you can click on the Tag Configuration Wizard button and create a tag to connect to.

If you choose to create a tag by clicking on the wizard, the following dialog box appears.



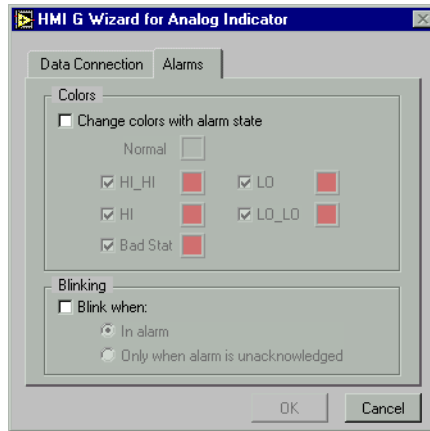
Select the server or data source for the tag to which you want to connect your control or indicator, and then either click **OK** or set the tag defaults as you do using the Tag Configuration Wizard in the Tag Configuration Editor.

You can also make a memory tag. Click on the Memory Tag button and the following dialog box appears.



Select the data type, enter the tag name, and click on **OK** to complete creating your memory tag.

Alarm configuration has been moved to a second tab in the HMI Wizard dialog box. Click on the **Alarms** tab and the dialog box changes to the alarms options as shown in the following illustration.

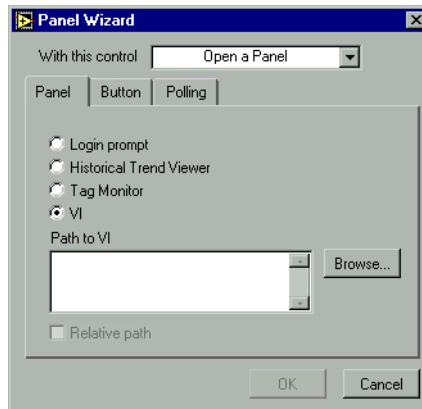


The options in this dialog box have not changed. You set the alarm limits when you configure your tag. Use the options in this dialog box to set how your control or indicator will react when alarms are triggered.

Panel Wizard

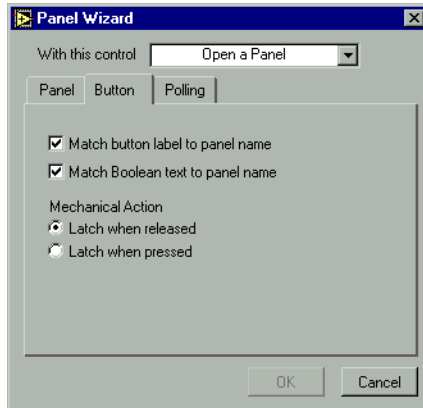
The Panel wizard has been enhanced to give you control over the action of the boolean controls you use to control other front panels.

When you right-click on a boolean control (such as a pushbutton) and select Panel Wizard, the following dialog box appears.



All the functions you are accustomed to in using the panel wizard are located on the appropriate option tab in this dialog box. One change has been made in the **Polling** tab options, and the items in the **Button** tab are new.

When you click on the **Button** tab, the following options appear.



Checking **Match button label to action** changes the button label to match the VI name you are using the button to call. If you are using the wizard to invoke the login dialog or the Historical Trend Viewer, the label will reflect those choices. Checking the **Match Boolean text to action** does the same for the boolean text.

The **Mechanical Action** options work the same way as the mechanical action options available by right-clicking on a Boolean control in LabVIEW.

There has been a change in the wording of one of the **Polling** options, as shown in the following illustration.



The option shown as **Until engine is shut down** used to be presented as **While engine is running**. The new wording is a more accurate description of what actually happens in the software.

If you run the calling VI while the engine is not running, the VI will poll when started and continue to poll until the engine is started and then shut down. If the engine is restarted after having stopped, however, the VI will not resume polling until you restart the calling VI.

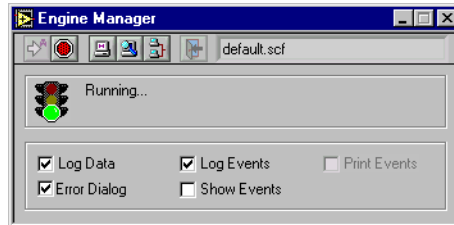
Tag Engine

The Tag Engine (the next generation of the BridgeVIEW engine) is how the LabVIEW DSC module manages your data. The engine starts data servers, logs data, handles alarm and event reporting, and maintains the real-time database with the current values of your tags as well as alarm and event status.



When the Tag Engine is loaded, an icon appears in the Windows Taskbar tray (located next to the clock on your taskbar) as shown at left. You can control the Tag Engine by right-clicking on this icon and selecting **Stop** or **Exit**.

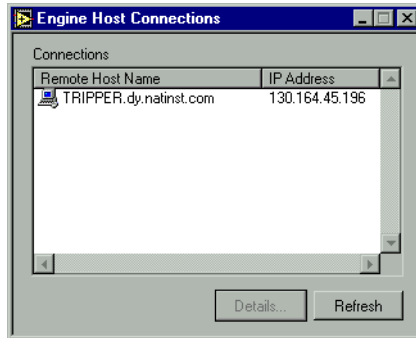
Although the appearance of the Tag Engine Manager has changed, you use it the way you always have, with all options having the same names.



Click on the minimize button to minimize the Engine Manager. If you close the Engine Manager completely, you can access it again by right-clicking on the Engine Manager icon in the Windows Taskbar tray and selecting **Show Details**.

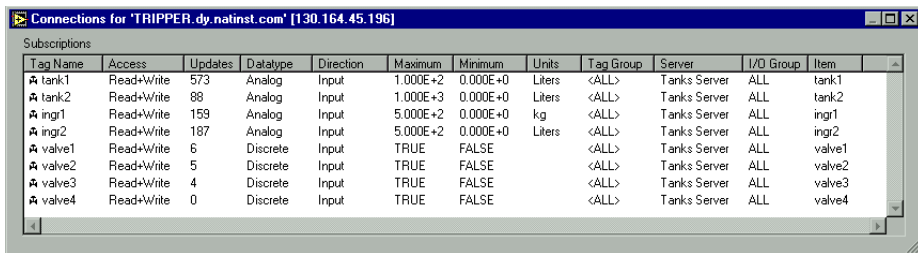
View Client Connections

You can now see what computers are drawing data from your LabVIEW DSC module applications. The Tag Engine must be running. Click on the **View Client Connections** icon in the Tag Engine Monitor, and the following dialog box appears.



This dialog box shows all the computers currently accessing data from your LabVIEW DSC application. This dialog box does not automatically refresh its display if the list of connected computers changes, so you do need to click the **Refresh** button (or press F5 on the keyboard) to see changes in the list of computers accessing data from your local computer.

Select the computer you want to check, and click on the **Details** button. The following dialog box appears.



Tag Name	Access	Updates	Datatype	Direction	Maximum	Minimum	Units	Tag Group	Server	I/O Group	Item
tank1	Read+Write	573	Analog	Input	1.000E+2	0.000E+0	Liters	<ALL>	Tanks Server	ALL	tank1
tank2	Read+Write	88	Analog	Input	1.000E+3	0.000E+0	Liters	<ALL>	Tanks Server	ALL	tank2
ingr1	Read+Write	159	Analog	Input	5.000E+2	0.000E+0	kg	<ALL>	Tanks Server	ALL	ingr1
ingr2	Read+Write	187	Analog	Input	5.000E+2	0.000E+0	Liters	<ALL>	Tanks Server	ALL	ingr2
valve1	Read+Write	6	Discrete	Input	TRUE	FALSE		<ALL>	Tanks Server	ALL	valve1
valve2	Read+Write	5	Discrete	Input	TRUE	FALSE		<ALL>	Tanks Server	ALL	valve2
valve3	Read+Write	4	Discrete	Input	TRUE	FALSE		<ALL>	Tanks Server	ALL	valve3
valve4	Read+Write	0	Discrete	Input	TRUE	FALSE		<ALL>	Tanks Server	ALL	valve4

This dialog box does not display any tag values; it just shows the data being accessed by the remote computer, along with information characterizing the tags being accessed.

To see the current total of data updates (for example), you must close the details dialog box, refresh the **Engine Host Connections** dialog box, and then check the details again.

Historical Trend Viewer

The Historical Trend Viewer has been updated for the LabVIEW DSC module. The new version uses improved networking and can now retrieve data from both local and remote sources. In addition, you are no longer restricted to viewing data currently being logged by the engine, if running.

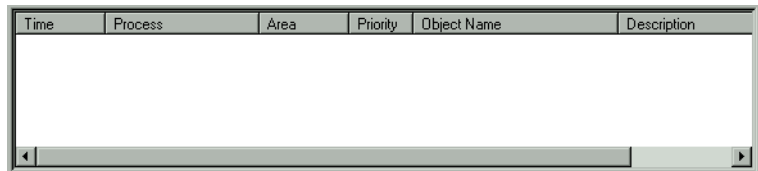
The Tag Engine does not need to be running for you to retrieve data from your historical database. The Citadel service must be running on the computer you are accessing data from, however.

You access the Historical Trend Viewer by selecting **Tools»Datalogging & Supervisory Control»Historical Trend Viewer**. The user interface for the new version of the viewer is essentially the same as the traditional BridgeVIEW interface.

Alarms and Events Control

The LabVIEW DSC module includes a new control for monitoring and acknowledging alarms and events. This new tool improves networking and adds other advanced features.

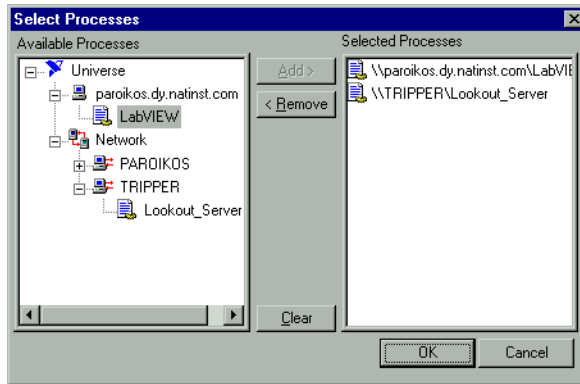
Located on the Alarms and Events control Palette, the Alarm and Event Display looks like the following illustration when you place it on a LabVIEW panel.



Time	Process	Area	Priority	Object Name	Description
------	---------	------	----------	-------------	-------------

This display will show alarms and events from every computer and process you configure it to display.

To monitor alarms from a process, you must first select the sources for those alarms. Right-click in the alarm display and select **Select Processes**. The following dialog box appears.

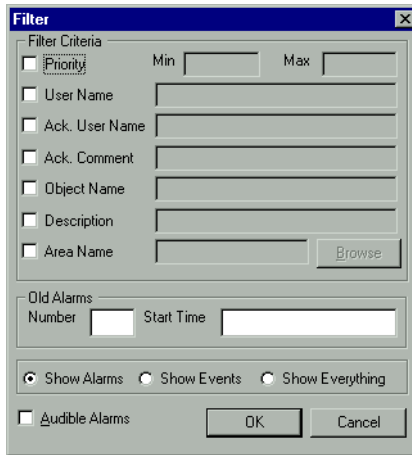


Navigate to the process you want to view alarms for, and select it, then click on the **Add** button. Remove any processes you do not want to see alarms for.

For the Alarm display to work, you must be monitoring at least one tag from some process or VI (whether on your own computer or on a network computer). Until you are monitoring at least one tag, you cannot select which processes on your computer or on a networked computer to monitor for alarms and events. (The process or VI containing the tag you are monitoring is automatically selected as a process for your alarms and events window to monitor; you need not select it manually.)

Right-click on an alarm and select an acknowledgement option to acknowledge that alarm, all selected alarms, or all alarms.

You can filter alarms so you only see the alarms you are interested in. Right-click in the alarm display and select **Filter Options**. The following dialog box appears.



When you set filter options, only alarms that meet all your filter criteria will be displayed in the alarm area of the Tag Monitor.

To monitor alarms with specific priorities, set the **Min** and **Max** values of the **Priority** criterion.

Set **User Name** to restrict your alarm monitoring to alarms generated while that particular user is logged on. You can only select one user name at a time, but you can use wild card characters to widen the scope of the alarms reported.

Set **Ack User Name** to restrict your alarm monitoring to alarms acknowledged by that particular user. You can only enter one user name at a time, but you can use wild card characters to widen the scope of the alarms reported.

The **Ack Comment** filter restricts your alarms displayed to those with the specified acknowledgement comment.

Set **Object Name** to restrict your alarm monitoring to alarms involving the tag name you enter. You can only enter one name at a time, but you can use wild card characters to widen the scope of those objects reported.



Note For **Object Name** filtering to work, your tag name must be a completely qualified tag name, as displayed in the tag monitoring display above the alarm display.

Set **Description** to restrict your monitoring alarms that meet your criteria. You can only choose one description category at a time, but you can use wild card characters to widen the scope of the alarms reported. The categories HiHi, Hi, Lo, or LoLo are added as a prefix to any descriptions and are ignored by description filtering.

Set **Area Name** to restrict your monitoring to the alarm area you choose. You can only enter one alarm area at a time.

Use the **Browse Areas** button to locate and select the alarm area you want to use as a filter.

You can choose to have the alarm display show alarms only, events only, or both alarms and events by checking the appropriate box in the **Show** section of this dialog box.

Use the parameters in the **Old Alarms** section to display alarms after they have been acknowledged.

Select **Audible Alarms** to enable a sound alert when an alarm takes place. The sound depends on your windows system setting for error sounds.

If you are filtering alarms, any alarms that do not meet your filter criteria do not show up in your alarm display.

Security

The LabVIEW DSC module now uses permission based security. While you can still use control level security and the Security VIs as you did in BridgeVIEW for HMI controls, we recommend you begin using permission-based security for your applications.

The mechanics of security in the LabVIEW DSC module have changed in three important ways: logging in, security levels, and how you set up user accounts.

Instead of logging in through the BridgeVIEW security menu, you now log in with LabVIEW's User Name option. See the next section, *Logging In*, for more information on logging in.

You create and maintain user accounts using the National Instruments User Manager. You must be logged in under an account with a sufficient security level to access this tool, with which you create different user accounts and set different security levels for each user.

To access the User Manager, select **Tools»Datalogging and Supervisory Control»Security»Edit User Accounts**.

Because you cannot yet remotely configure security on distributed LabVIEW DSC module applications, you must copy the security file from your development computer to all other computers running LabVIEW (or Lookout) applications that you want to use your user accounts with.



Note The new National Instruments User Manager is a part of the continuing, long term integration of National Instruments software tools. At this time the security file it creates is called `lookout.sec` (located in your `Windows\System` directory on Windows 95/98 computers and in the `WINNT\system32` directory on Windows NT/2000). This is not just so your LabVIEW DSC module applications can share data with National Instruments Lookout, but also utilize the same security settings and user accounts.

The Security VIs that come with the LabVIEW DSC module have changed. See the *Security VI Changes* section of this document for more information on these changes.

Logging In

Instead of logging in through a security submenu as you did in BridgeVIEW, you now log in with the LabVIEW User Name option. Select **Tools»User Name** to invoke the User Login dialog box.

See the *Importing Your BridgeVIEW Security User Accounts* section of this document for instructions on how to import your BridgeVIEW user accounts into the LabVIEW DSC module.

Security Levels

BridgeVIEW offered up to 255 security levels. LabVIEW DSC module offers 11 ranging from 0 to 10, with 10 being the highest level.

The LabVIEW DSC module no longer depends on security levels, however, and discourages their use. Instead, we recommend that you use the access rights to configure access to controls and indicators, as described in the *Tag Security* and *Setting Security Access Permissions* sections of this document.

When the National Instruments User Manager imports user accounts from your copies of BridgeVIEW, it maps the security levels as shown in the following tables.

BridgeVIEW Default Security Level	National Instruments User Manager Security Level
0	0
25	1
50	2
100	4
150	6
200	8
255	10

BridgeVIEW Security Level Range	National Instruments User Manager Security Level
0	0
1—38	1
39—63	2
64—89	3
90—114	4
115—140	5
141—165	6
166—191	7
192—216	8
217—242	9
243—255	10

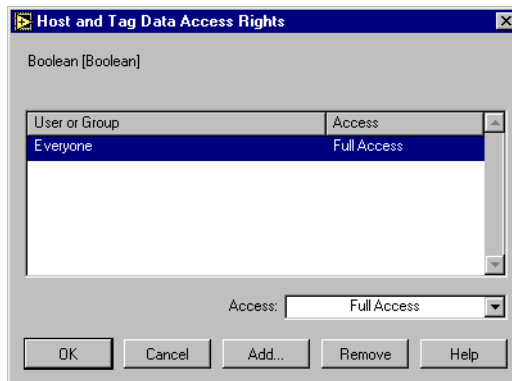
For information on importing your BridgeVIEW security levels into the new LabVIEW DSC module system, see the [Importing Your BridgeVIEW Security User Accounts](#) section of this document.

Setting Security Access Permissions

You set security permissions on individual controls, for LabVIEW DSC module tools, controls, and for tags. All permissions are set using the same set of dialog boxes.

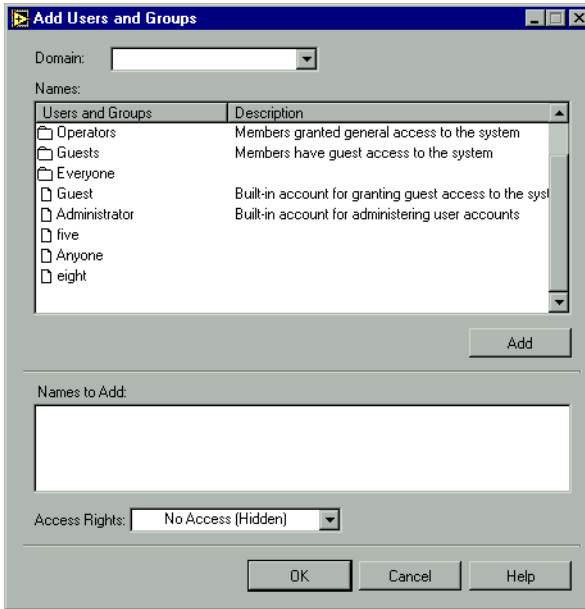
Set permissions for individual controls by right-clicking on the control on the front panel of your LabVIEW application, and selecting **Security**. To configure permissions for the LabVIEW DSC module tools, select **Tools»Datalogging & Supervisory Control»Options**, click on the **Advanced** tab, and select **Security Preferences** or **Tools Access**. You configure tag security and network security through the Tag Configuration Editor.

When you begin to configure permissions, the following dialog box is the first to appear.



This illustration shows the name of the selected control and the currently assigned permissions.

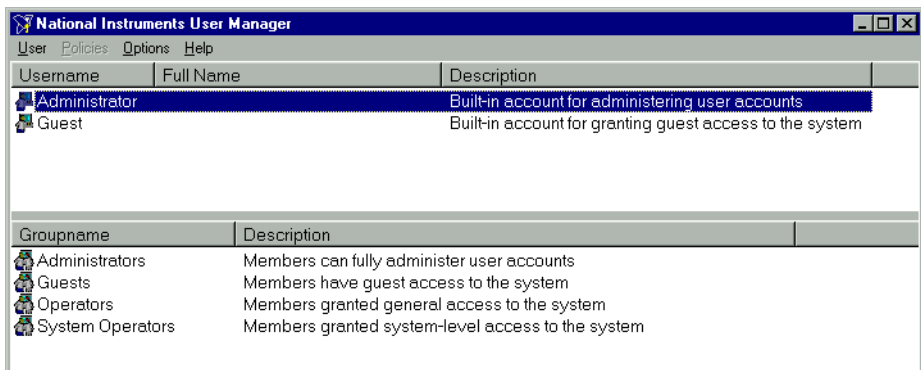
To remove a permission, select it and click on Remove. To change the extent of the permission, select it and choose from the options in the Access listbox. To add a new user or group to the permissions, click on the **Add** button. The following dialog box appears.



Highlight the User or Group you want to add and click the **Add** button. Set the **Access Rights**, and click the **OK** button when you are finished.

National Instruments User Manager

You create individual accounts for operators and developers with the National Instruments User Manager. Anyone whose account is a member of the Administrators group can create, revise, or delete system user accounts by selecting **Tools»Security»Edit User Accounts**. The User Manager appears.



Use the User Manager to create and edit the properties of groups, create or edit the properties of user accounts, assign users to one or more groups, and

otherwise manage security for your Lookout and LabVIEW DSC module applications.



Note For your user accounts to work consistently across your network, you must use the same `lookout.sec` file for all your installed copies of Lookout or the LabVIEW DSC module. After you have created your `lookout.sec` file, make a copy of it from your `WINDOWS\SYSTEM` directory of Windows 95/98 systems, and the `WINDOWS\SYSTEM32` directory for Windows NT/2000 systems. Place a copy of the file in the `WINDOWS\SYSTEM` or `WINDOWS\SYSTEM32` directory of each of the other computers you want to be able to use these user accounts with.

Importing Your BridgeVIEW Security User Accounts

You can import your BridgeVIEW user accounts into the new LabVIEW DSC module User Manager. If it is not already running, open the National Instruments User Manager by selecting **Tools»Datalogging & Supervisory Control»Security»Edit User Accounts**. Then select **User»Import BridgeVIEW Users**. A dialog box appears asking you whether the user accounts you want to import are from BridgeVIEW 1.0, 1.1 or later, a BridgeVIEW 2.0 binary export, or a BridgeVIEW text export file. Select the correct option to complete importing your user information.

Creating User Accounts

To create a user account, select **User»New User**. The following dialog box appears.

The dialog box titled "New National Instruments User" contains the following fields and controls:

- Username: [Text Field]
- Full Name: [Text Field]
- Description: [Text Field]
- Password: [Text Field]
- Confirm Password: [Text Field]
- Security Level: [Dropdown Menu, value: 5]
- Minutes idle until logoff: [Spinner, value: 0]
- Password Never Expires
- Password Expires In [Text Field] Days
- Account Disabled
- Groups: [Button]
- OK: [Button]
- Cancel: [Button]
- Help: [Button]

Enter the new user's domain name in the **Username** field.

Enter the user's **Full Name**.

You can use the **Description** field for job titles or other relevant information.

Enter the user's password in the **Password** field.

Enter the password a second time in the **Confirm Password** field to make sure there was no typing error in the first entry.

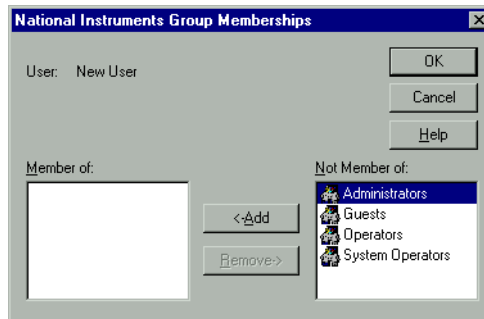
Set the new user's **Security Level**. Security levels range from 0 to 10, with 10 being the highest possible security authorization. Assign level 10 access only to those people responsible for system security.

Minutes idle until logoff sets how long LabVIEW will run with no operator interaction before logging the current user off automatically. Setting this value to 0 (the default) means there is no timeout in effect.

The User Manager default is for passwords never to expire. You can set an expiration time for passwords if you choose. Users cannot reset their own password; a member of the Administrator group must set the password for them.

Select the **Account Disabled** checkbox if you want to disable a user account without removing the user from the system.

Click on the **Groups** button to add this user to various local security groups. The following dialog box appears.



The default groups are Administrators, Guests, Operators, and System Operators. Any groups you have created are also shown.

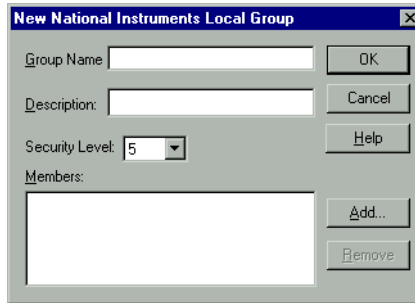
To enter a user in a group, highlight the group in the **Not Member of** field and click on the **Add** button. To remove a user from membership in a group, highlight a group in the **Member of** field and click on the **Remove** button.



Note When you add an individual user who has a security level different than that of the group, that user will have the higher of the security levels.

Creating Groups

To create a group, select **User»New Local Group**. The following dialog box appears.



Group Name assigns a name to your new group.

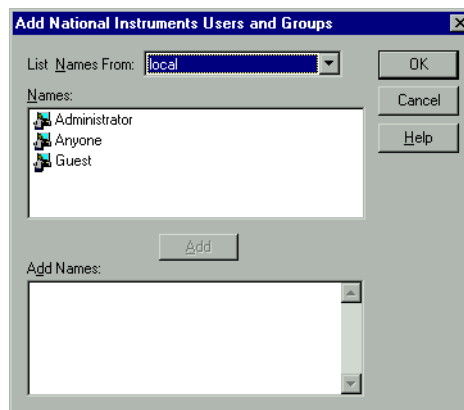
Enter a description of the group in the **Description** field.

Security Level assigns the security level for members of this group.



Note When you add an individual user whose individual account has a security level different than that of the group, that user will have the higher of the two security levels.

To add **Members**, click on the **Add** button. The following dialog box appears.

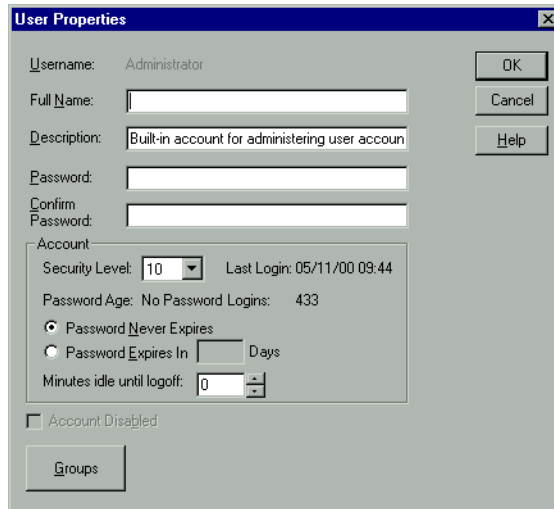


The **List Names From** listbox selects the domain to list user names from. At this time, you are restricted to your local domain.

Highlight the names you want to add in the **Names** field, and click on the **Add** button to add those users to your group.

Modifying Users and Groups

The dialog boxes for editing users and groups are essentially the same as those for creating users and groups. Open the User Manger, double-click on the user or group you want to edit, or highlight and select **User»Properties**. The following dialog box appears.



The **User Properties** dialog box displays information about user activity. You use it as you would the new user dialog box.

Special Users and Groups

The National Instruments User Manager comes with several user accounts and groups built-in. The user accounts include Administrator, Anyone, Guest, and (nobody). The built-in groups include Administrators, Guests, Operators, and System Operators. You cannot delete any of these accounts, though you can edit the properties of some of them.

The Administrator account overrides all other security settings and has access to everything in LabVIEW. This override extends to all accounts added to the Administrators group.

You cannot delete the Administrator account or change its security level. You can set the password and enter the name and a description of the Administrator. You can also add or remove user accounts.

The (nobody) account cannot be edited or deleted, and does not actually appear as an account in the User Manager. This account is what LabVIEW defaults to when no authorized user is logged on. It always has a security level of 0.

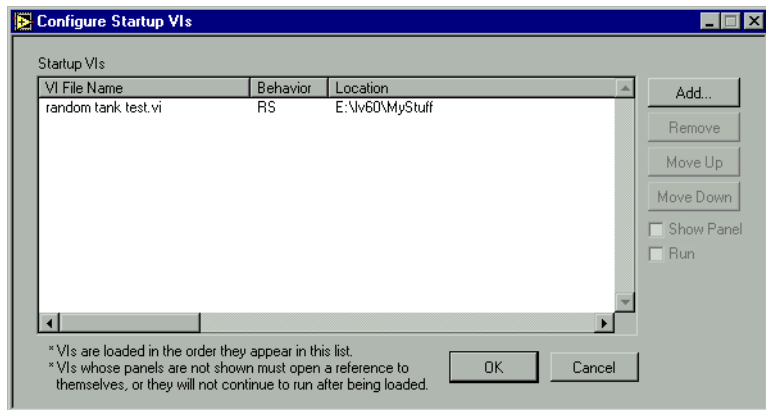
The Anyone account is built in. You cannot delete this group in the User Manager, and you can only edit the full name and description (despite the asterisks in the password fields, you cannot create a password for the Anyone account). When you first create an application, it is configured with this account allowed full read and write permissions.

You can edit all the properties of the Guest user account and of the Guests, Operators, and System Operators groups.

Configuring Startup VIs

In BridgeVIEW you could select a group of VIs to open automatically when you launched BridgeVIEW. This capability has been relocated and enhanced for the LabVIEW DSC module.

To configure startup VIs, select **Tools»Datalogging & Supervisory Control»Advanced»Startup VIs**. The following dialog box appears.



Clicking the **Add** button opens a standard file open dialog box. Select the VI you want to have open and click on the **Show Panel** and **Run** buttons to set your behavior preferences.

Select a VI in the list to change its order of loading and change the behavior options.

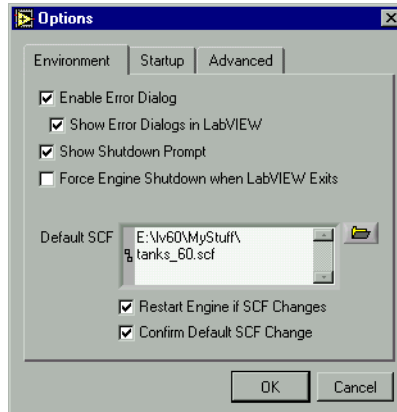
If your startup VI runs without showing a panel, you must have the VI open a reference to itself using for it to continue running. See your LabVIEW documentation on the LabVIEW VI Server for information on how to have a VI open a reference to itself.

Options

You can set a number of different types of options in the LabVIEW DSC module. You can customize the way your LabVIEW environment uses the LabVIEW DSC module tools, set security access to the module tools, register and unregister computers for networking, and time synchronize computers on your network so your data time stamps are consistent from computer to computer.

Select **Tools»Datalogging & Supervisory Control»Options**.

The following dialog box appears.



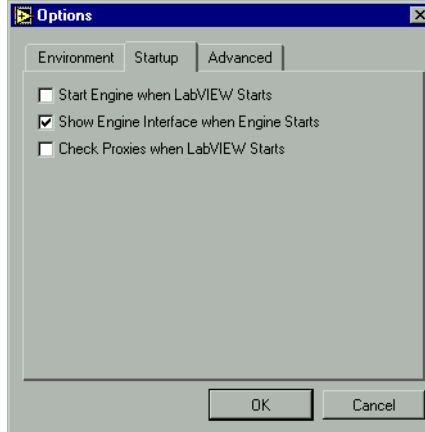
Environment

The Environment options control how LabVIEW works for you as a development tool. These options include:

- Enabling error dialogs and displaying DSC module error messages
- Requiring LabVIEW to display a prompt screen when you exit if the Tag Engine is running
- Forcing the Tag Engine to shut down when you exit LabVIEW
- Checking the default `.scf` file, and changing it if you choose by clicking on the open file icon to the left of the display field
- stopping and restarting the Tag Engine automatically if the `.scf` file is changed
- Confirming any change made in the default `.scf` file.

Startup

There are four of Startup options you can set as shown in the following illustration.



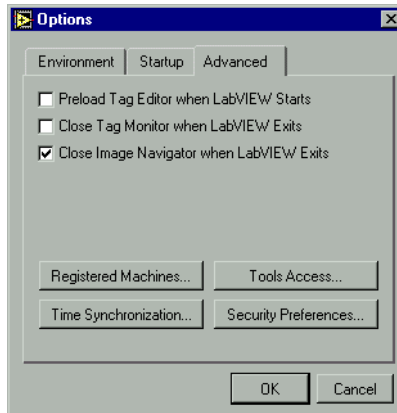
These options include:

- Automatically starting the Tag Engine when LabVIEW runs
- Showing the Engine Manager when the engine runs
- Checking proxies when LabVIEW starts

Click on the **Startup** tab of the **Options** dialog box to access these options.

Advanced

There are three categories of Advanced options you can set as shown in the following illustration.



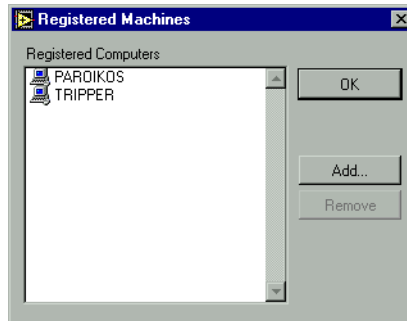
These options include:

- Having the Tag Configuration Editor preloaded and ready to run when you launch LabVIEW
- Closing the Tag Monitor (if it is open) when you exit LabVIEW
- Closing the Image Navigator (if it is open) when you exit LabVIEW
- Registering computers for networking (must be logged in as Administrator to enable this option)
- Setting time synchronization for your networked computers (must be logged in as Administrator to enable this option)
- Security access to the LabVIEW DSC module tools (must be logged in as Administrator to enable this option)
- Setting Security Preferences (must be logged in as Administrator to enable this option)

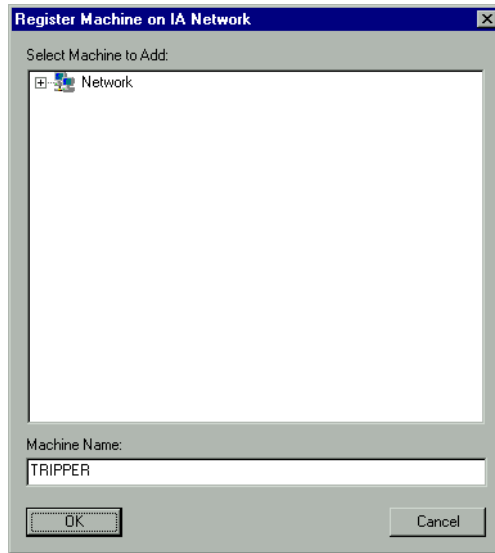
Click on the **Advanced** tab of the **Options** dialog box to access these options.

Registering Computers

You must register computers for easy transmission of data across your network using LabVIEW, Lookout, and National Instruments FieldPoint and other hardware. Click on the **Registered Computers** button in the **Options** dialog box. The following dialog box appears.



To remove a computer from your list of registered computers, select the computer and click on the **Remove** button. To add a computer to your list of registered computers, click on the **Add** button. The following dialog box appears.



Enter the computer you want to access in the **Computer Name** field, or browse for the computer in the network tree.

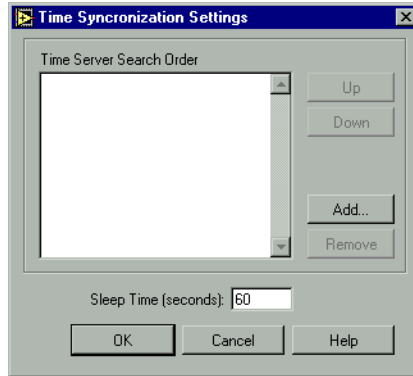
Click on **OK** when you are finished.

To unregister a computer in the Tag Monitor, right-click on it and select **Unregister**.

Time Synchronization

To keep your data properly time stamped, you must make sure the times on your computers are properly synchronized. The National Instruments time synchronization service is installed as a service in Windows NT that runs every time you run your computer. Time synchronization runs as a background process in Windows 98/95.

Click on the **Time Synchronization** button of the **Advanced** options tab in the **Options** dialog box. The following dialog box appears.



Any computer that is running the time synchronization service can serve as a time server or a time client. The primary time server is the first computer listed in the **Time Server Search Order** field.



Note You must make sure that the order of search for time servers is the same for all the computers on your network you want to synchronize, including the primary time synchronization server.

You do not need to include a computer running the LabVIEW DSC module in its own list of time synchronization services.

Suppose you have four computers you need to have synchronized. If one fails, the others look for the next in line to synchronize to as time servers. For computers A, B, C and D, you would use the following time server search order in each computer.

Table 1-1. Time Synchronization Order

Computer A	Computer B	Computer C	Computer D
None listed	A	A	A
—	—	B	B
—	—	—	C

As the primary time server, Computer A would have no other servers listed. As long as Computer A is running, it should synchronize to itself. Computer B should synchronize to Computer A as long as A is running. If A is not running, B should synchronize to itself. Computer C should synchronize to Computer A if it is running, Computer B if A is not running,

and to itself if neither A not B is running. This pattern should be used for all the computers you want in one synchronized set.

To change the order in which your computers search for a time synchronization server, select the computer name and click on the **Up** or **Down** buttons.

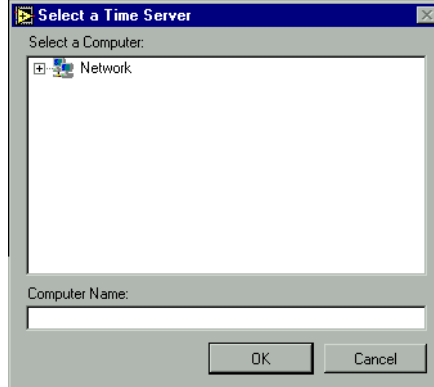
Use **Sleep Time (seconds)** to set how long each computer waits between each synchronization. You should set the primary time synchronization server sleep time to 60 seconds.

If your primary server is off-line for some reason, a computer scheduled to synchronize automatically seeks out the second computer on the synchronization server list. At the time of the next synchronization, the computer first looks for the primary server before seeking a secondary synchronization server.



Note If you have some computers running Windows 98/95 and other computers running Windows NT in your network, you should list your Windows NT computers first in the server search list. Time synchronization works better between Windows 98/95 and Windows NT systems when the Windows NT computer is the server.

To add a computer to the **Time Server Search Order** field, click on the **Add** button. The following dialog box appears.



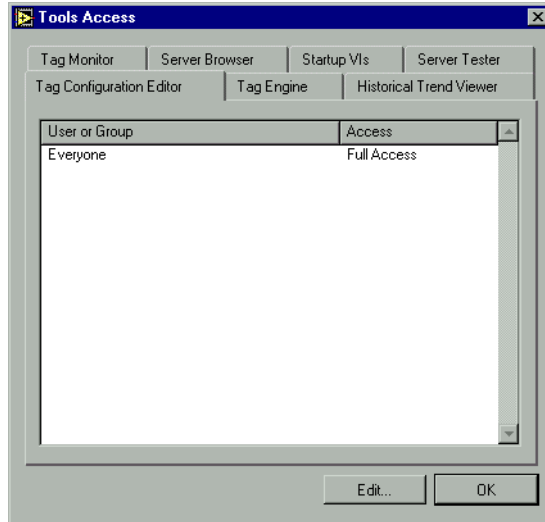
If you know the name of the computer you want to add, you can type it into the **Computer name** field. If you do not know the exact name of the computer, you can browse for it in the network tree contained in the **Select a Computer** field.

To remove a computer from the **Time Server Search Order** field, highlight the computer name and click on the **Remove** button.

If no computer is set as a primary time server, your computer synchronizes to itself.

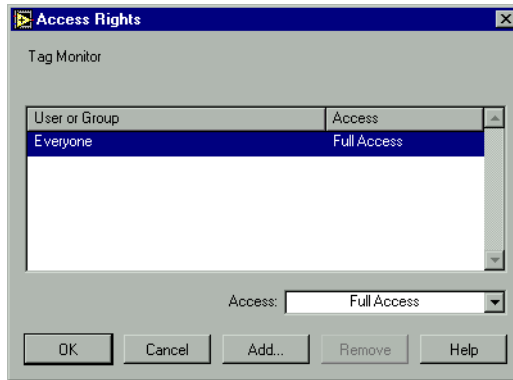
Tool Access

You can limit access to most of the LabVIEW DSC module tools using the Tool Access options. Click on the **Tool Access** button on the Advanced options tab. The following dialog box appears.



As you can see, this dialog box allows you to set security permissions for every major LabVIEW DSC module tool.

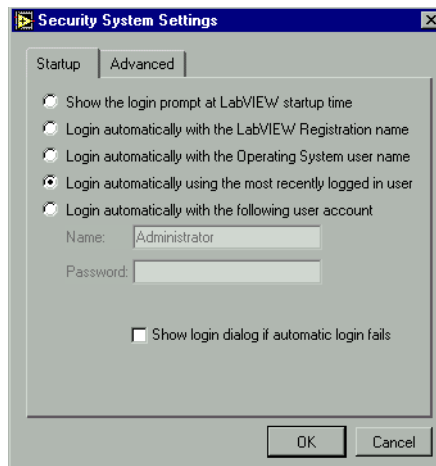
Click on the tab for the tool you want to configure permissions for, and then click on the Edit button. The standard LabVIEW DSC module Access Rights dialog box appears with the name of the tool you are configuring permissions for displayed above the list of users and groups.



For detailed information on adding and removing users and groups in this dialog box, see the [Setting Security Access Permissions](#) section of this document.

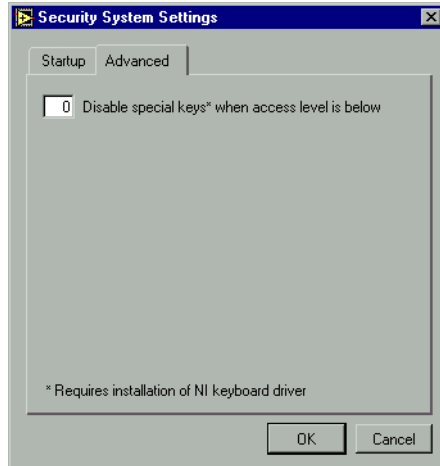
Security Preferences

You can configure a number of security features using Security Preferences options. Click on the **Security Preferences** button on the **Advanced** options tab. The following dialog box appears.



Use these settings to configure how you want to logon when LabVIEW first starts.

Click on the **Advanced** tag of the security system settings to invoke the following dialog box.



Use this option to disable the ability of an operator to use <Alt-Tab> to switch between programs running on your applications computer. The special keyboard driver is installed by default when you install the LabVIEW DSC module.

VI Changes

Most of the VIs in the LabVIEW DSC module have not changed from their BridgeVIEW versions. What changes there have been are in the form of additional inputs or outputs.

Historical Retrieval VI Changes

The Historical Retrieval VIs have changed and expanded for the LabVIEW DSC module, adding functionality and flexibility for new logging capabilities.

The LabVIEW DSC module now permits logging and retrieval of string tags. These VIs function the same as their Analog data counterparts. Consult the LabVIEW context sensitive help for guidance in using these VIs.

One general change has been made in the Historical Retrieval VIs: You can now use URLs as well as tag names as the Tag Name input to the VIs.

To use this feature you must set the tag control to use undefined tag names. Right-click on your tag control to set this option.

In the past you would input a tag to the `Tag Name` input of a Historical Retrieval VI in order to specify what data point the VI was to access. If you choose, you can now input a URL instead. A URL is the way National Instruments DataSocket and National Instruments Logos networking locate data.

The general form for URL DataSocket or Logos URLs is

```
\\computername\LabVIEW\tagname
```

or

```
\\computername\ProcessName\tagname
```

where *computername* is the name of the computer running the process containing the *tagname* on your network and *tagname* is the name of the data point you want to connect to.

When you are connecting to a data source in Lookout or in some other National Instruments data source utilizing Logos networking, you use the URL address element *ProcessName*, where *ProcessName* is the name of the process containing the data point you want to connect to.

In BridgeVIEW, while the BridgeVIEW Engine was running you were restricted to accessing data in the `.scf` file that was loaded. Once the BridgeVIEW engine was closed you could see all your tags. In the LabVIEW DSC module, you can see tags in all your `.scf` files, whether the Tag Engine is running or not.

If you use a URL input for `Tag Name` in addition to a data path for `Citadel Path In`, the LabVIEW DSC module will check in the directory specified by `Citadel Path In` for your URL. If the LabVIEW DSC module does not find that tag, it will report that it cannot access the tag.

If you use a URL input for `Tag Name` while the `Citadel Path In` input is blank, the LabVIEW DSC module uses the URL to locate your tagged data.

The `Citadel Path Out` output contains the URL for the data being reported if the data is from a local computer. If the data is from a remote computer, this output will be empty.

The Tag Engine does not have to be running on your local computer for the Historical Retrieval VIs to access information on your local computer. If you are accessing data on a remote computer, however, the Tag Engine or a Lookout process must be running for you to access the data.

The `Data Type` output returns the proper data type for analog and string data.

Security VI Changes

While your old BridgeVIEW security VIs will continue to work, the LabVIEW DSC module now features a new array of security VIs. These VIs work in much the same way as the BridgeVIEW security VIs, with a few changes in terminology and scope. Help for using these VIs can be found in the context help window of LabVIEW.

Compatibility Issues

Other than the need to recompile VIs when upgrading to a new version of LabVIEW, there are no incompatibilities between BridgeVIEW 2.1 and greater and the LabVIEW DSC module.

If you are running processes on a computer running Windows 2000, you should install the IAS/IAK server patch before attempting to run your applications. See the [Compatibility and Industrial Automation Server Strategies](#) section for more information on running IAS/IAK servers under Windows 2000.

Converting VIs

Upgrading your BridgeVIEW VIs is an automated process. When you open a VI created in a previous version, LabVIEW automatically converts and compiles the VI.

Conversion is a memory-intensive operation. When LabVIEW opens a VI saved in an earlier version (or in BridgeVIEW), it loads all components of the converted VI (front panel, block diagram, and data) into memory, then compiles the VI in memory. LabVIEW also loads into memory the components of all subVIs that need to be converted.

To estimate the amount of memory required to convert VIs, total the amount of disk space that your VIs and all of their subVIs occupy. If these VIs are in VI libraries, add approximately 30 percent of the VI library size to the total, because the VIs are compressed within the library. The conversion process might require at least that total and an additional 3 MB of memory.

If your computer does not have enough memory to convert your VIs all at once, convert the VIs in stages, by components. Examine your hierarchy of VIs and begin by opening and saving subVIs in the lower levels of the hierarchy. Continue to the higher levels of the hierarchy. To convert a directory of VIs, select **File»Mass Compile**. However, this option converts the VIs in a directory or VI library in alphabetical order. If a high-level VI is encountered first, **Mass Compile** requires approximately the same amount of memory as described in the previous paragraph.

To monitor your memory usage, select **Help»About LabVIEW**. This option summarizes the amount of memory that you are using.

Compatibility and Industrial Automation Server Strategies

Before Windows 2000, National Instruments encouraged the use of Industrial Automation Servers, sometimes referred to as IAK or IAS servers. National Instruments furnished OPC servers as an alternative.

For reasons of compatibility with future versions of Windows, National Instruments now recommends that you use OPC servers, specifically the OPC servers from NI-DAQ (includes SCXI), National Instruments FieldPoint, and National Instruments Foundation Fieldbus OPC servers that come with those products, and the Lookout Protocol Drivers OPC Server that use the reliable, time-tested and field-proven Lookout drivers.

The Lookout Protocol Drivers OPC server is available from National Instruments separately; contact National instruments for information on purchasing this server and the accompanying drivers. This CD also includes a patch allowing IAK (IAS) Industrial Automation Servers to run under Windows 2000. This patch is furnished to ensure backwards compatibility only, without guarantee that those servers can be patched to continue to work under future releases of Windows.

For more information about IAS servers and Windows 2000 compatibility issues, see the *Using IAS Servers Under Windows 2000* section.

Using IAS Servers Under Windows 2000

If any of your applications use National Instruments Industrial Automation Servers (also referred to as IAK or IAS servers), you must install a patch for those servers to function correctly under Windows 2000.

To install this patch, run the setup.exe program located in

```
X:\redist\IA Servers Patch\disk1
```

where *X*: is the CD-ROM drive that contains the IAS patch. (While this patch is not available on the LabVIEW DSC module CD, you can get it from your BridgeVIEW 2.1.1 CD, or the most recent National Instruments Industrial Automation Servers CD.)

Specifically, the servers requiring the patch for Windows 2000 are:

- Allen-Bradley (RSLinx)
- Applicom
- DirectNET
- GE Fanuc Ethernet

- Mitsubishi
- Modbus
- Modbus Plus
- Omron Host Link
- Optomux
- Ppccom
- Siemens

The NI-DAQ OPC or National Instruments FieldPoint OPC servers do not need updates to function in Windows 2000, but we strongly recommend that you use the most recent versions available.

We also recommend that you use the stand-alone NI-DAQ OPC or National Instruments FieldPoint OPC servers with the LabVIEW DSC module rather than the old IAK (IAS) servers.

If you are using the Lookout Protocol Drivers OPC Server, you should update to the new version by installing it from the Lookout Protocol Drivers OPC Server CD, available from National Instruments.

Advice for Future Development

While the patched IAK (IAS) servers are currently usable under Windows 2000, National Instruments cannot guarantee that future versions of Windows will allow IAK (IAS) servers to run correctly.

National Instruments recommends that all your future development using the LabVIEW DSC module use the National Instruments Lookout Protocol Drivers OPC Server or the OPC servers for NI-DAQ, National Instruments FieldPoint, and National Instruments Foundation Fieldbus.

See the *Converting Applications from IAK to OPC Based Servers* section for more information on this topic.

Converting Applications from IAK to OPC Based Servers

You can convert your applications from using IAK (IAS) servers into applications using National Instruments Lookout Protocol Drivers OPC Server instead. Included with the LabVIEW DSC module is a conversion utility to aid you in this task.

Conversion is not a seamless process at this time. Because of LabVIEW's strict type checking along with choices you may have made in tag configuration, and differences in implementation of different server drivers, some manual adjustments will probably have to be made in

your conversions. The amount and extent of manual corrections depend on your particular applications. You should make sure to preserve backup working copies of all applications you intend to convert so that your operations can continue while you make all necessary manual corrections in your converted processes.

To run the conversion utility, launch the Tag Configuration Editor and open the tag configuration file (.scf) you want to convert. The Tag Engine (which takes the place of the BridgeVIEW Engine in the LabVIEW DSC module) does not have to be running.

From the **File** menu of the Tag Configuration Editor, choose **Upgrade PLC Drivers**. Follow the instructions in the dialog box that appears.

The conversion utility may generate a list of error messages. At the end of the conversion process, you can choose to save a record of those conversion messages. These messages can be of great help in making manual adjustments, so we recommend you save this record in a file so that you can refer to them later.

Click on **OK** to complete the conversion process and save your .scf file. You can then begin using the Tag Configuration Editor to make any manual corrections necessary to your converted tags.



Note The drivers for the National Instruments Lookout Protocol Drivers OPC Server are derived from National Instruments Lookout HMI/SCADA software. The documentation for these drivers lists their connection points to PLC and RTU hardware as *data members*. This term corresponds to the term *items* as used in the Tag Configuration Editor.

Making Manual Corrections to Converted Tags

In BridgeVIEW you were accustomed to configuring tags to use items from the IAK (IAS) servers.

The conversion utility maps the items of your BridgeVIEW tags to National Instruments Lookout Protocol Drivers OPC Server data members.

In some cases you may find that the Lookout Protocol Drivers OPC Server data members are Boolean values where you had previously configured them as integers. You may also find that there are some item names in your previous tag configuration that cannot be mapped directly to data member names in the new server drivers. Examining the Lookout protocol driver data members listed in the Lookout Protocol Drivers OPC Server help file should help you resolve such incompatibilities.

You will notice that instead of explaining how to build an item name according to the published protocol of the PLC or RTU hardware, the data member documentation features tables listing the ranges themselves and characterizing the data members in those ranges as to data type, whether they are read only, write only, or read/write. These tables also include a general description of what that data member does.

Notice too that certain data members listed can be used to change the parameters of the driver object itself (if you choose).

Using this data member documentation you can edit your tags as necessary to manually fix any conversion difficulties.

More IAS Server Conversion Information

For information on National Instruments product updates and changes in the future, point your browser to

<http://www.ni.com/>

To download the newest patches and drivers, see the National Instruments Software Library at:

<http://digital.ni.com/softlib.nsf/web/all+software>