

SmartBits

Multiport Port/Stream/Performance Analysis System



Application Note #27

Multiple Users Accessing the Same Chassis

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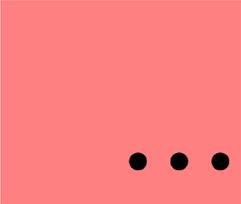
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Multiple Users Accessing the Same Chassis

The purpose of this application note is to explain how multiple users or multiple programs can access and use the same SmartBits chassis simultaneously. This application note contains the following main sections:

- ***Requirements to Use the Multi-user Function.....2***
- ***Preparing the Multi-user Operation.....3***
- ***How Does the Multi-user Feature Work?.....4***

Requirements to Use the Multi-user Function

To use the multi-user function, you must meet the following requirements.

- Use SmartBits applications which support multi-user operation. The following list specifies the minimum version required for each program to use the multi-user feature.

Applications with Multi-user Functionality

SmartWindow 6.51

SmartLib 3.07

SmartApps 2.30

SmartxDSL 1.01

SmartMulticastIP 1.20

SmartFlow 1.00

SmartVoIPQoS 1.00

SmartCableModem Test 1.10

BGP Router Test 1.00

- A stand-alone SmartBits chassis must be **Multi-user Ready**. This includes all SMB-600s, all SMB-6000s, all SMB-6000Bs, current SMB-2000 and current SMB-10s. [This excludes all SMB-200s.]

SMB-600/6000/6000B: All SMB-600, SMB-6000 and SMB-6000B chassis have multi-user capability.

SMB-2000 and SMB-10: All new SmartBits 2000 and SmartBits 10 chassis have an identifying Multi-user Chassis label to support multiple users. To check your chassis (controller) firmware version which must be version 6.60 or later, connect to the chassis and select the application's Help menu **About** command.

If you have an older chassis, you can retrofit your SmartBits chassis by purchasing the hardware upgrade and sending the chassis to Netcom Systems to install the SMB-2000 multi-user compliant backplane and controller firmware.

SMB-200: The SmartBits 200 is a single-user only chassis and cannot be accessed by multiple users or multiple programs simultaneously.

- ALL CONNECTED SmartBits chassis must be **Multi-user Ready**.
You can connect SMB-10s and SMB-2000s in a stack with the DB-37 connectors. *If one chassis is not Multi-user Ready, all other chassis are disabled from the multi-user function.*
In a stack of interconnected SMB-2000 and SMB-10 chassis, all chassis must be fitted with the multi-user compliant backplanes and firmware in order to use the multi-user capability.

Note: To use the SMB-10 with the SMB-2000 in a multi-user environment, you must have the multi-user backplane in **both** the SMB-10 and the SMB-2000.



You can connect SMB-200s, SMB-2000s, SMB-600s, SMB-6000s, and SMB-6000Bs via the synchronizing Expansion RJ-45 ports. *If you include an SMB-200 in the connected series of chassis, all the chassis are disabled from the multi-user function.* The SMB-200 is designed to be single user only.



Important: All connected SmartBits chassis must be multi-user ready in order to perform the multi-user function.



Important: If you are working in a multi-user SmartBits chassis environment, you cannot test or configure a port if you do not have ownership of that port. Refer to page 4 for details on how to view and change ownership of a port.

Preparing the Multi-user Operation

In a multi-user environment, it is helpful to schedule and assign users to desired chassis slots for specific time periods.

The SmartBits programs identify ports available to you and the ports reserved by other users which are not available to you. When you have reserved one or more cards, you have the ability to release them for other users to use.

Since your test requirements may dramatically vary at times and others may need the same ports, we highly recommend that each multi-user location set up a scheduling board, either posted or via a computer program scheduler.

The following examples shows one style of scheduling boards; please design a schedule that best suits your environment.

Table 1. Example of a SmartBits Scheduling Board

Week of June 1	Morning 7:00-12:59	Afternoon 1:00-5:59	Evening 6:00-12:00
Dave	chassis 1#, slots 2, 6, 8	chassis 1#, slots 10-20	
Scot	chassis 1#, slots 10-20	chassis 1#, slots 2, 6, 8	
Joe		chassis 2#, slots 1 - 6	chassis 1#, slots 2, 6, 8
Mark	chassis 2#, slots 1-8		

How Does the Multi-user Feature Work?

With the multi-user feature, SmartBits chassis can be accessed and used by a maximum of 10 users simultaneously AFTER the users have accessed the chassis sequentially and reserved their necessary ports.

Up to 10 users or programs may access a multi-user chassis at one time.

Multi-user chassis allow multiple users to connect to the same chassis simultaneously, as long as they each use different cards in that chassis. While connected to a multi-user chassis, users can reserve available ports and:

- Run multiple applications.
- Run multiple instances of a program which supports multi-users.
- Run any other Netcom Systems application.

SmartBits programs which support the multi-user feature identify the available and unavailable ports in the following ways:

- Through ownership LEDs on the main window of the program.
- Through ownership LEDs in reservations windows.
- Through multi-user checkboxes in card setup windows.

The color convention of triangle LEDs (SmartWindow and SCMT) or circle LEDs (other applications) next to port numbers or hub/slot/port numbers provides the following status information:

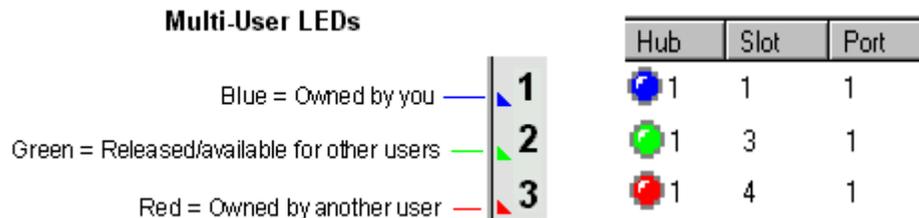


Figure 1-1. Multi-user LEDs

Multi-user operation provides current status of each port and allows the user to change the status by releasing reserved ports.

The following examples of multi-user functions demonstrate how the feature is used. For more details, please refer to the user guide or online help for each supporting application.



Note: All reserved cards are released when you disconnect from the SmartBits chassis.

In SmartWindow, with SMB-600 and SMB-6000/6000B Multi-users

When on-line, the SmartWindow front panel displays virtual images of installed SmartModules. SmartModules to which you have ownership have an off-white background. Cards displayed with a gray background are unreserved or owned by another user.

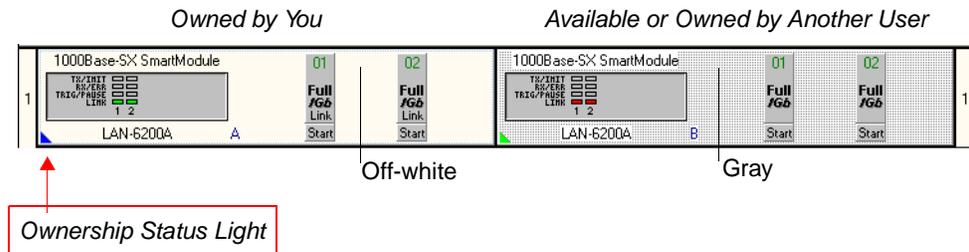


Figure 1-2. SmartWindow front panel view of SMB-6000

The ownership status indicator in the bottom left corner shows the ownership of the card in a multi-user environment:

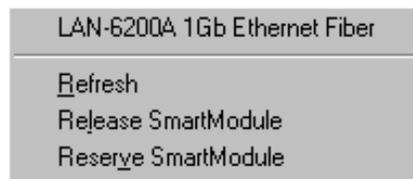
- **Blue** means the card is reserved to you.
- **Green** means the card is available to other users.
- **Red** means the card is reserved to another user.



Important: You cannot use a card unless you have reserved it. Note that the once you have connected to a chassis, the chassis link is independent of any cards reserved; therefore, even if no cards are reserved by you and all cards have been released or reserved by other users, the chassis link will remain until disconnected.

↓ To reserve a single SmartModule:

Right-click on the LED Panel to open the multi-user menu. Choose *Refresh*, *Release* or *Reserve SmartModule* as needed (see figure below).



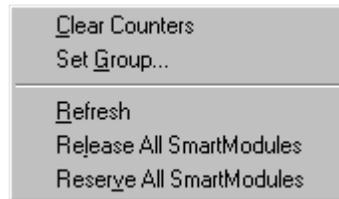
The ownership status light only reflects the status of the SmartModules as of the most recent refresh. It is possible in a multi-user environment for a card to be reserved by another user in the time between the last refresh and your attempt to reserve the card.

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How Does the Multi-user Feature Work?

↓ To control groups of SmartModules:

Right-click anywhere within the Top Panel to open the multi-user menu that controls all SmartModules. Select the *Refresh*, *Release* or *Reserve* command as needed (see figure below).



When connected to the SMB-600 chassis, the SmartWindow interface adjusts to display the more compact hardware platform. Each slot represents a MiniModule.

In SmartWindow, with SMB-2000

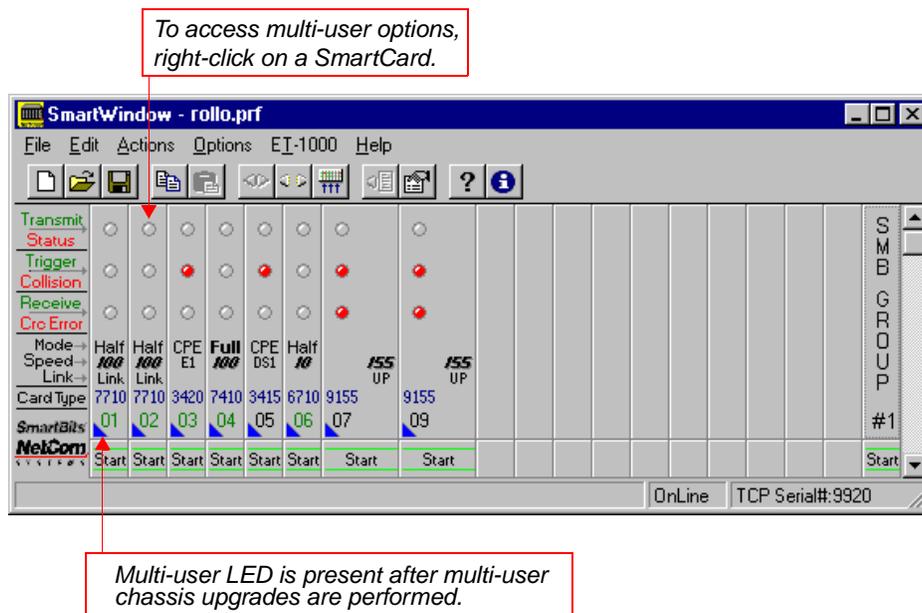


Figure 1-3. Multi-user compliant SMB-2000 main menu

- 1 To refresh, release or reserve a single card, right-click on it. The following dialog appears (see figure below).



- 2 To reserve all cards, right-click the *SMB Group* panel (see the following figure).

Multiple Users Accessing the Same Chassis How Does the Multi-user Feature Work?

Transmit Setup...	
Trigger Setup...	
Display Counters	}
Clear Counters	
Copy SmartBits Data...	
Paste SmartBits Data...	
Set Group...	
Refresh Hub Display	
Release All SmartCards in Hub	}
Reserve All SmartCards in Hub	
Refresh All	}
Release All SmartCards	
Reserve All SmartCards	

For reserving cards on a single chassis when you are connected to only one.

For reserving cards on up to four chassis when you are connected to more than one.



Note: You cannot group cards or configure them until you have reserved them. (Right-clicking on an unreserved card displays no configuration options; the card must first be reserved.) Cards reserved by other users are released on disconnect.

In SmartFlow

When you connect SmartFlow to chassis, it displays only those cards that are available and not reserved (in use) by another user. Available ports appear on the **Card Setup** tab that you use to configure and reserve the ports. When you first connect to a chassis with multi-user capabilities enabled (SMB-2000 or SMB-6000/600), only the ports that are not reserved by anyone else and are available to you appear in the list.

↓ To display available ports:

When you connect to a multi-user chassis, only cards that are available (not in use by another user) will be displayed in the **Card Setup** tab, the **Group Wizard**, and the **SmartFlows > Traffic** tab. The following illustrates the possible states of a port in a multi-user chassis, as shown in the **Card Setup** tab:

<i>Ports in chassis that are not multi-user enabled.</i>	}	Multuser
<i>Available for you or someone else to reserve.</i>		<input checked="" type="checkbox"/> Non Multuser
<i>Someone else reserved this port since you connected.</i>		<input checked="" type="checkbox"/> Non Multuser
<i>You reserved this port. It is not available to anyone else until you release it.</i>		<input type="checkbox"/> Reserve
		<input type="checkbox"/> Reserve
		<input type="checkbox"/> In Use
		<input checked="" type="checkbox"/> Reserve

The Multi-user status only reflects the status of the SmartCards since the initial connection to SmartBits or since the last Refresh. It is possible for a port to be reserved by

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How Does the Multi-user Feature Work?

another user in the time between the last refresh and your attempt to configure or use the port.

↓ **To refresh the available ports display:**

Click the heading of the **Multi-user** column to highlight the entire column. Right-click anywhere on the column while it is highlighted. A popup menu appears. Select **Refresh**. If anyone else reserved or released a card since you connected to the chassis, its status will change.

↓ **To reserve ports in a multi-user chassis:**

To ensure that the port you have selected does not get reserved by another user prior to running your test, reserve the port by checking the box in the **Multi-user** column on the **Card Setup** tab. While it is reserved, it will not appear as available to anyone else either using another program.

You can run a test without manually reserving the ports. SmartFlow will automatically reserve the test ports while the test is running, and automatically release them when the test finishes. However, by not reserving the port prior to the test, the test may fail if someone else reserved the port before you tried to start it.

↓ **To check a port's availability since connecting to the chassis:**

Display the **Card Setup** tab reflects the port's current availability or click the **Refresh** command. The **SmartFlows > Traffic** tab and **Group Wizard** reflect ports that are available at the time you connected to the chassis but do not show changes since that time.

↓ **What to do if a port is unavailable:**

You can either select another port, omit that port from the test, or wait until the port is again available.

↓ **To release a port for another user to reserve:**

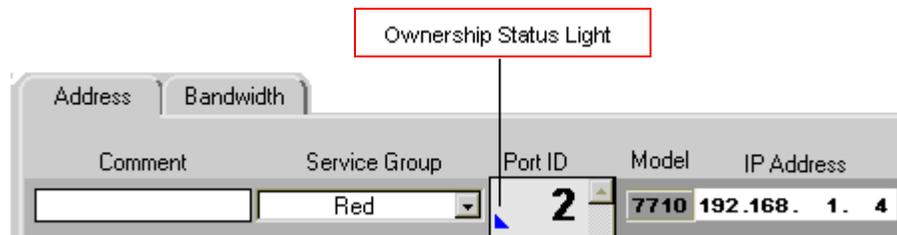
Select the **Card Setup** tab. Click the box in the **Multiuser** field for the port to clear the check mark.



In SmartCableModem Test

Checking the Ownership Status of All Ports

Once connected to a SmartBits chassis, the SmartCard ports which are appropriate to SCMT testing display their Port ID, Model number, and the multi-user ownership status of each port. If you are the first user to access the SmartBits, all ports (BLUE status light) are automatically reserved by you.



In the above SmartCableModem Test example, the ownership status light indicates the multi-user status of each port:

- Blue = The port is reserved to you.
- Green = The port is available to other users (has been released by you). With a single-user chassis, the port is a member of the Released Service Group which acts like any other group.
- Red = The port is reserved by another user. This color does not appear automatically; it appears when you try to use the port or when you apply the Actions menu **Refresh** button.

The ownership status light only reflects the status of the SmartCards since the initial connection to SmartBits or since the last Refresh. It is possible for a port to be reserved by another user in the time between the last refresh and your attempt to configure or use the port.

To see the latest, most current ownership status of all ports, select the Actions menu **Refresh** command.

Changing Multi-user Status

You must give ports a "Released" group (GREEN status light) assignment in the Group column to make those ports available to other users. The second user automatically accesses and reserves all port numbers (now BLUE status for the second user) which have been released by the first user. Therefore, the second user must give ports a "Released" group (GREEN status light) assignment in the Group column to make those ports available to the third user.

If any user fails to give the Released group assignment to ports presented to him, all *subsequent* users will access the SmartBits chassis and see no ports as available.

Cards reserved by you are released in either of the following situations:

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How Does the Multi-user Feature Work?

- When you disconnect from the chassis with the Actions menu **Disconnect** command.
- When you assign the Group column **Released** parameter to a port.

In SmartxDSL

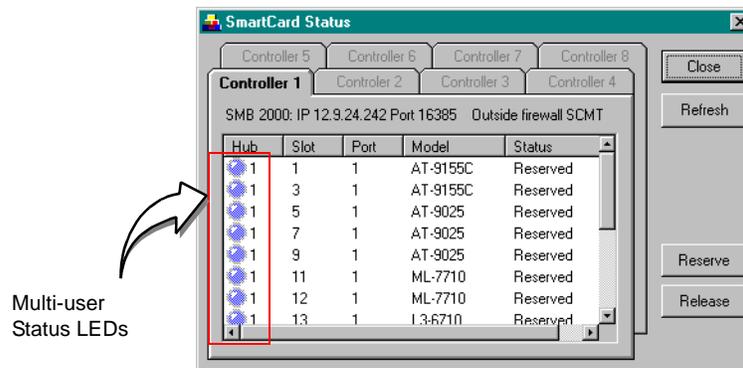
When you connect to a SmartBits chassis, all ports are automatically reserved for your use unless otherwise specified in the Setup menu Preferences window or already reserved by another user. While the chassis is reserved, it is not available to another user or to any other Netcom Systems application.

When you connect to a multi-user chassis, only cards that are available (not in use by another user) AND appropriate to the specific set of tests will be displayed in Available Trunk and Access ports columns.

By default, the program reserves all cards and releases cards that are not selected after 10 minutes. However, if a test is begun during the 10-minute reserved time, the cards that are not selected will not be released until the test finishes and a new 10-minute reserved time period expires.

In the **Setup > Preferences** window, you can specify that the program automatically reserves all cards upon connection and does not release them after a time period.

To see all ports available in each chassis, select **Setup > SmartBits Reservations**. Up to 8 chassis controllers may be accessed at one time; each chassis controller may control up to 4 chassis or 80 ports.



The ownership status light (left-hand LED) indicates the multi-user status of each port:

- Blue = The port is reserved to you.
- Green = The port is available to other users (has not been reserved by you).
- Red = The port is reserved by another user.

The ownership status light only reflects the status of the SmartCards since the initial connection to SmartBits or since the last Refresh. It is possible for a port to be reserved by another user in the time between the last refresh and your attempt to configure or use the port.

To keep maximum resources available for testing, the SmartBits chassis does not update SmartxDSL on the port status unless you click the **Refresh** button.

Changing Multi-user Status

Basic operations in viewing and changing user status include the following steps:

- To check the latest status of all ports, click the **Refresh** button.
- To release cards and make them available to other users, highlight the port row, and click the **Release** button.

You must click the Release button to make ports available to other users. The second user automatically accesses and reserves all available port numbers (now BLUE status for the second user) which have been released by the first user. Therefore, the second user must click on ports with a Release button to make those ports available to the third user.

- To reserve cards which have been released by another user or by yourself, highlight the port row, and click the **Reserve** button.

To ensure that the port you have selected does not get reserved by another user prior to running your test, reserve the port by highlighting the port and clicking the Reserve button. While it is reserved, it is not available to anyone else either using another copy of SmartxDSL or any other Netcom Systems application.

If any user fails to release ports presented to him, any *subsequent* users will access the SmartBits chassis and see no ports as available.

