Technical Note

Connecting Jupiter and NV9000 Equipment

Introduction

In this document, we describe:

- An interface to a Jupiter control system for NVISION routers.
- An interface from an NV9000 control system that allows NVISION control panels to switch routers controlled by the Jupiter.

There are several scenarios. We limit this discussion to just two; NVISION routers controlled by the Jupiter and NV9000 panels controlling routers under Jupiter control.

NVISION Routers Controlled by Jupiter

Be aware of the license required on the Jupiter for this function.

1 The NVISION router has the ES bus protocol installed on the router control card. Use the CTRL 1 serial port to connect to the Jupiter's VM or CM serial port. The cable used is pin to pin (or straight through).

2 You must add the NVISION router to the Jupiter configuration.

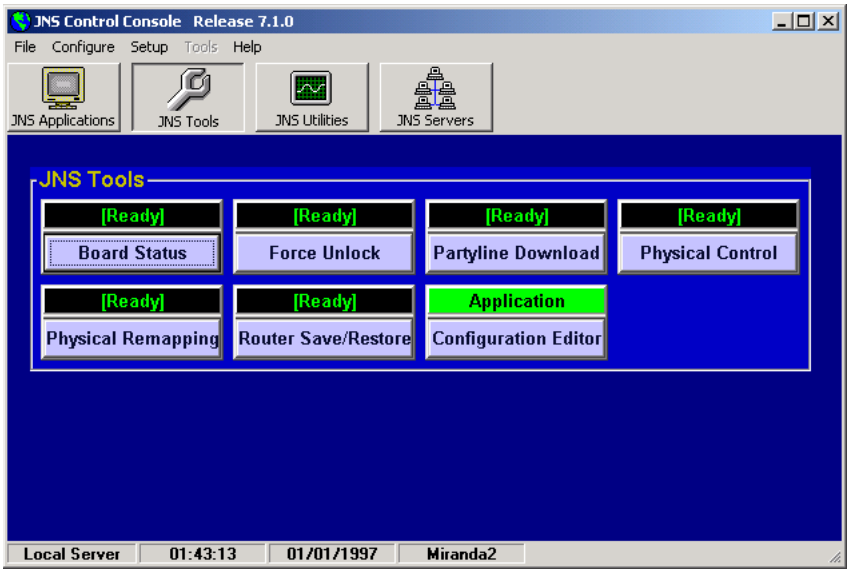


Figure 1. JNS Console

Choose the Configuration Editor from the JNS console.

Then choose ‘Switcher Description’ from the Jupiter menu.

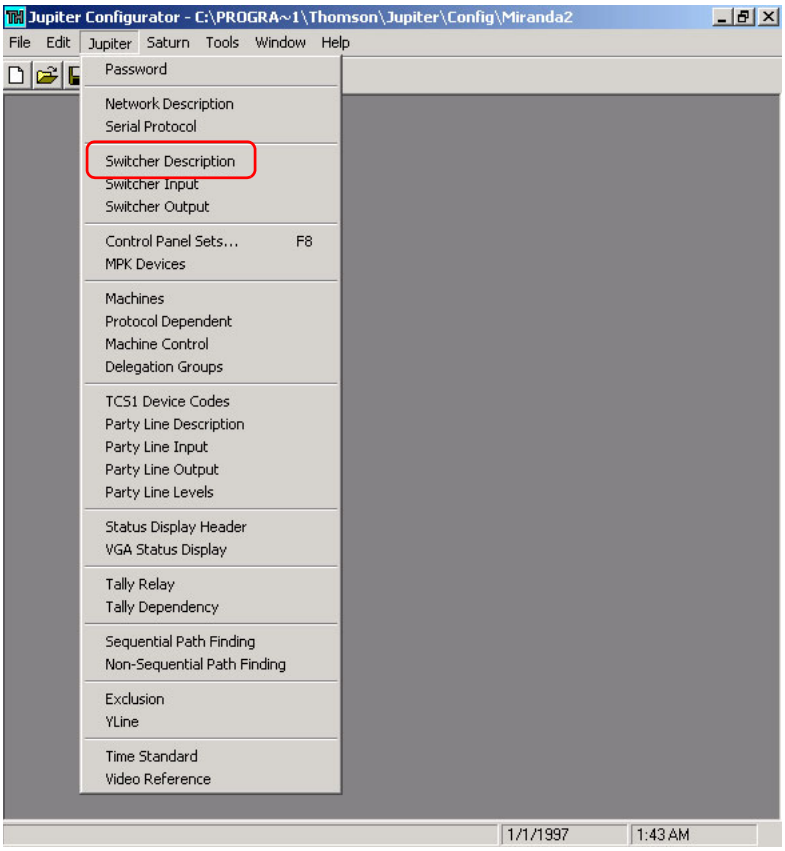


Figure 2. Jupiter Configurator

Add the router to the ‘Switcher Description’ table. shows the NV9000 entry. Its data will be the same as adding a GVG (Phillips) router except for a few items pertaining to the protocol.

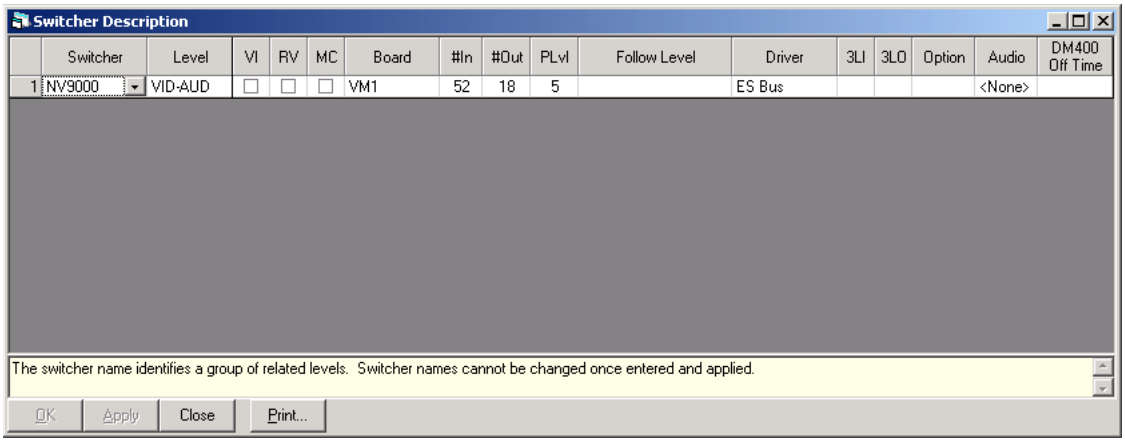


Figure 3. Switcher Description

3 Add what the NV9000 system calls “virtual levels” to the ‘Switcher Input’ and ‘Switcher Output’ tables.

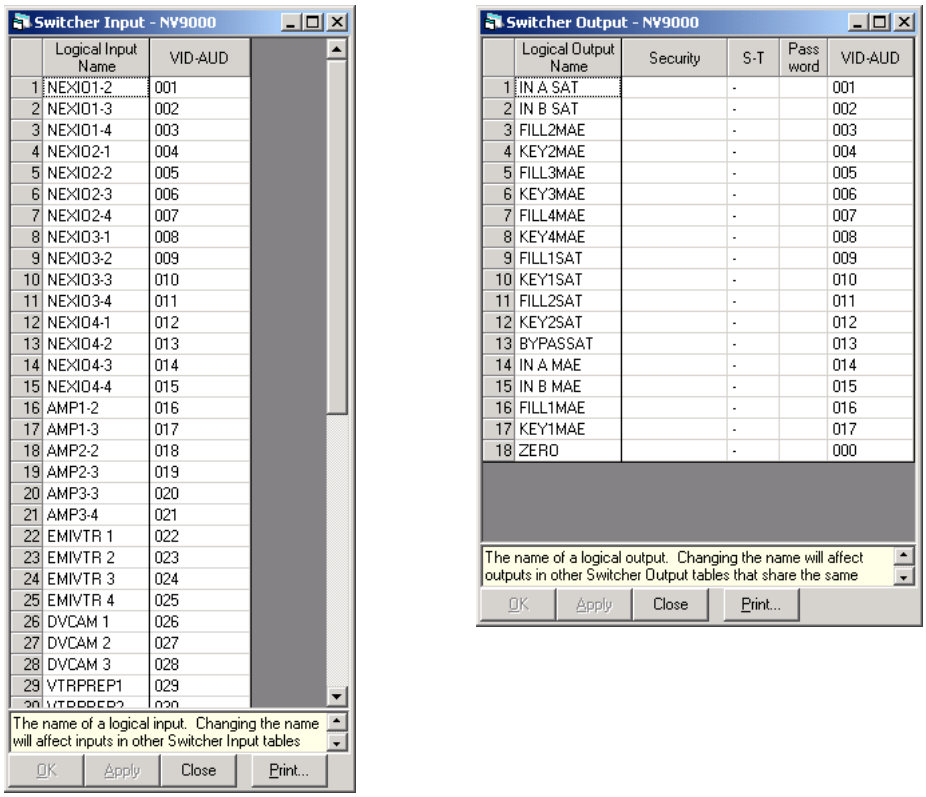


Figure 4. Switcher Input and Output

In the Switcher tables, add what the NV9000 system calls “devices” (i.e., “logical names” in Jupiter terminology) with their physical connections. The logical names are added to the CP input and CP output sets (which are similar to NV9000 “categories).

4 When you add the NVISION router to the ‘Switcher Description’ table, you must select a protocol. A native router will use binary protocol which does not require a key. For the NVISION router, you must pick ‘ES Bus’ protocol. (Note that in different versions of Jupiter software, the name of the protocol can be different.)

In the `SW_DESCR` file (in the configuration’s folder) the entry for the protocol will be E. (This file can be opened in Notepad.) When you try to save the router entry that has ES-Bus protocol selected, the row will turn RED if the license is not installed:

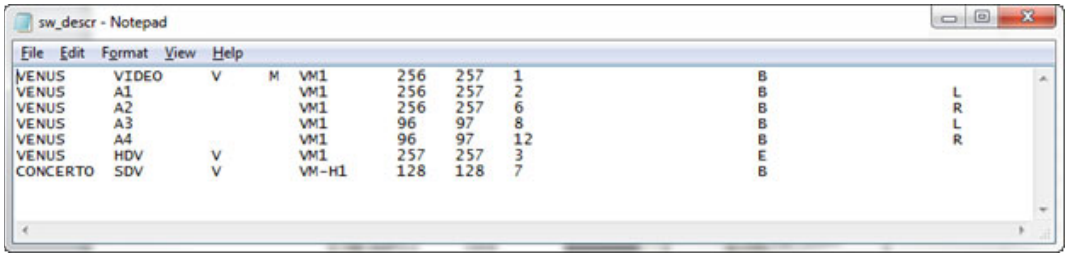


Figure 5. Configuration Folder

5 . Assign a serial port in the ‘Serial Protocol’ table:

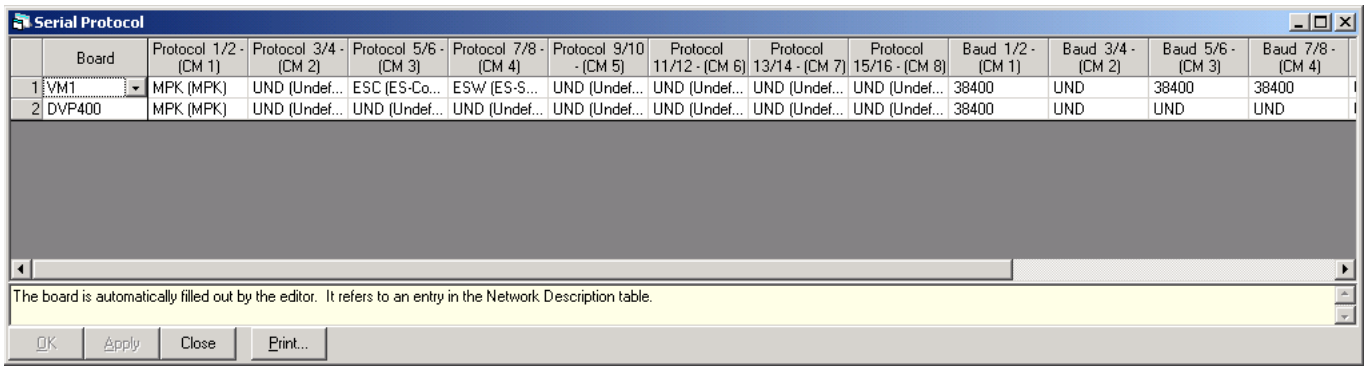


Figure 6. Serial Protocol

In this table, the most common name for the ES-Bus protocol you use is *ES Control*. If you pick ES Bus instead of ES Control, it might not compile and might not work. Assign a Baud rate of 38,400.

Miranda has had NVISION routers running under Jupiter since 1992. There are hundreds in service today. In Jupiter version 5.1 and earlier, there was no license required. For Jupiter version 7 and later, the license is required and if the router is larger than 256×256, a different license is required. If the Jupiter is not licensed for ES Control protocol, there is nothing you can do.

NV9000 Controlling Routers under Jupiter Control

1 In this scenario, all routers are controlled by Jupiter.

2 First look in the ‘MPK Devices’ table to see if there are any entries of the serial type.

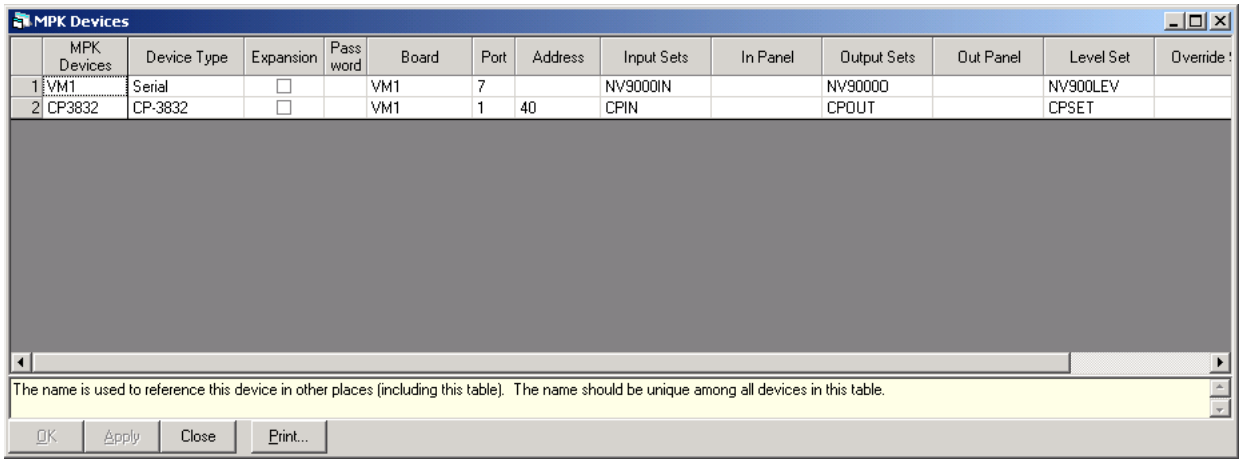
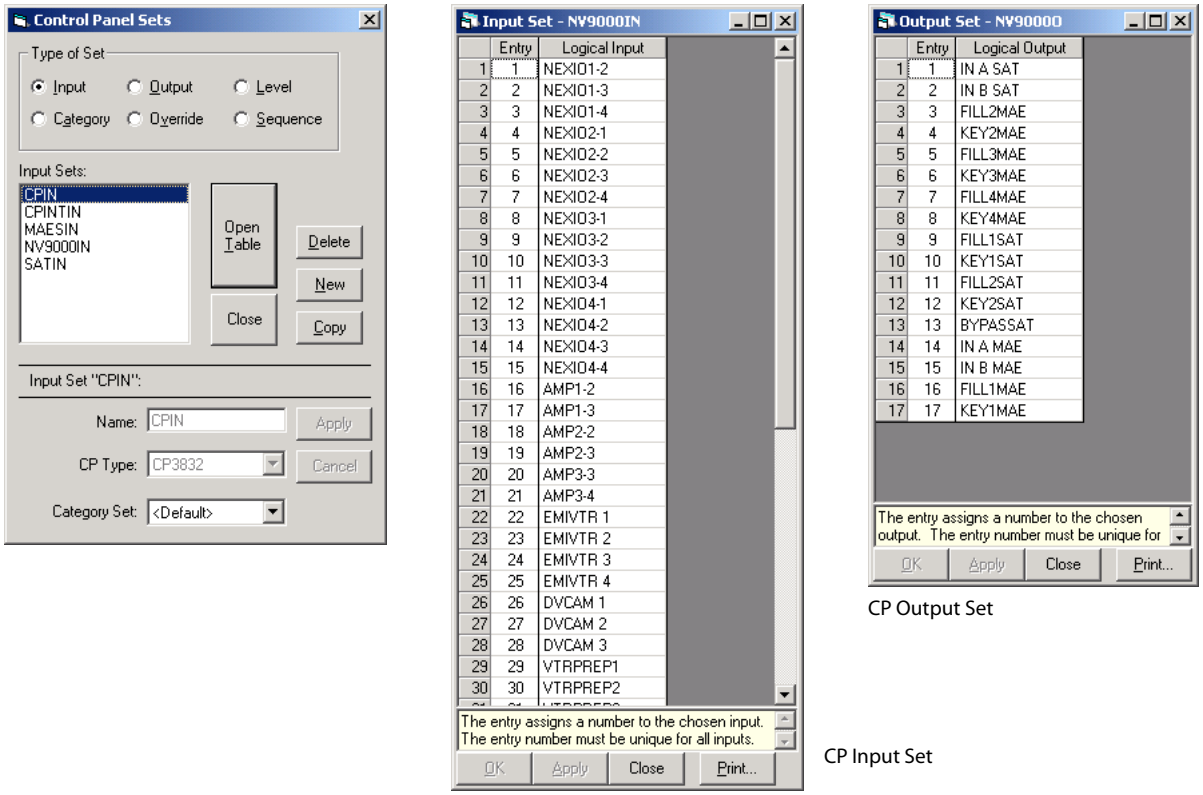


Figure 7. MPK Devices

Usually the entries are for control panels, but there is a special entry you select from a pull-down menu called ‘Serial’. If one already exists, you can make another one using the same CP input set, CP output set and CP Level set. It is possibe that you can simply use the port already defined. If there is no serial

entry in the MPK table, you must build the 3 tables (CP input set, CP output set, and CP level set) and configure a serial port for ‘ES Switch’ protocol.



CP Output Set

CP Input Set

Figure 8. Control Panel Sets

3 To build the CP sets, open the ‘Control Panels’ table. You will make 3 new sets. Be sure to specify the serial type rather than a control panel type. The category selection is default. For the ‘Level’ set, there is no serial type, so use CP3000. The input set is a list of logical source names that match alphanumerically with mnemonics defined in a ‘Switcher Input’ table. We recommend that you think of the *logical name* as you would an NV9000 *device*. Each logical name in this CP set has a number. The numbers should start at 1 and end at *N* where *N* is the number of source names in the set. These are the sources that can be switched by the NV9000.

The CP output set has the destination logical names that match those defined in the ‘Switcher Output’ table and are numbered 1 to *N* as well. Think of this number as the device ID. The destinations in this serial CP output set are the only destinations that can be switched from the NV9000. The level set has the levels that exist in the ‘Switcher Input’ and ‘Switcher Output’ tables where the logical names in your lists are defined. Number the levels in this list from 1 to *N*.

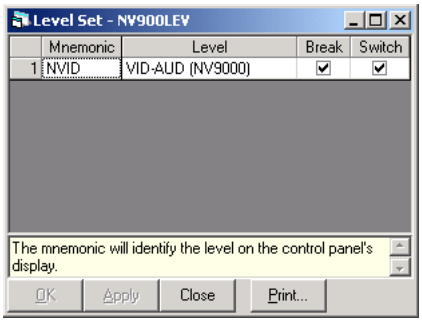


Figure 9. CP Level Set A

Note: there can be multiple ‘Switcher Input’ and ‘Switcher Output’ tables and there can be pathfinding. You must understand what you are doing to ensure the sources in your ‘CP input’ set can be routed to the destinations in your ‘CP output’ set.

4 In the serial protocol table, assign ES Switch protocol to one of the serial ports and select a baud rate. This is the port through which the Jupiter communicates with the NV9000.

To match this setting in the NV9000, use odd parity, like this: S,5,38400,O81. The cable from the NV9000 to the VM or CM is ***not*** pin-to-pin)or straight-through). The Jupiter port is SMPTE 207M, controlling (Tx+ pin 3, Tx– pin 8 and Rx+ pin 7, Rx– pin 2). The NV9000 port usually has the same pinout so the cable is wired 3-to-7 and 8-to-2.

5 In the MPK table, add an entry of the serial type that specifies the CP Input set, CP Output set, CP Level set, and serial port defined in the ‘Serial Protocol’ table. This function does not require a license on the Jupiter. The NV9000 does require the Jupiter router license (order code EC9520).

6 Compile and load these changes to the Jupiter configuration into the VM or CM. It should be ready to communicate with the NV9000 using ES Switch protocol.

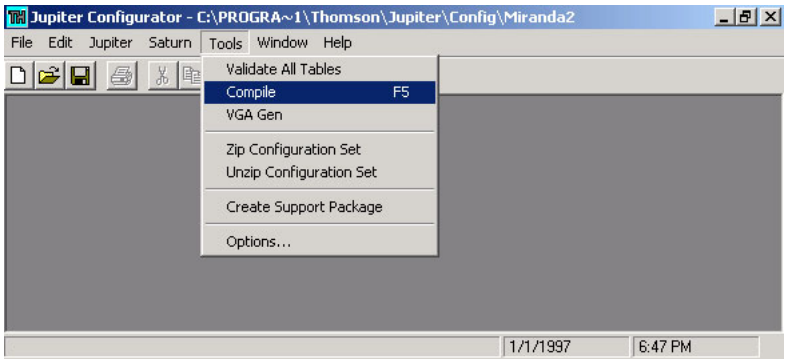
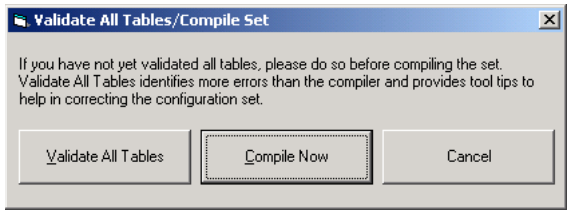
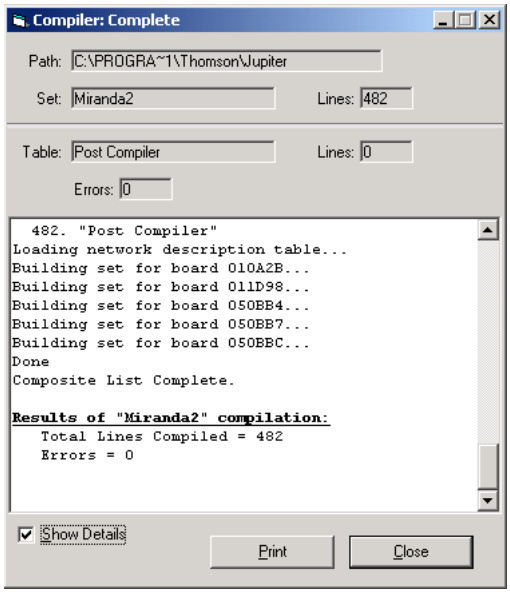


Figure 10. Tools (Compile)



Compilation Dialog



Compilation Complete

Figure 11. Compilation

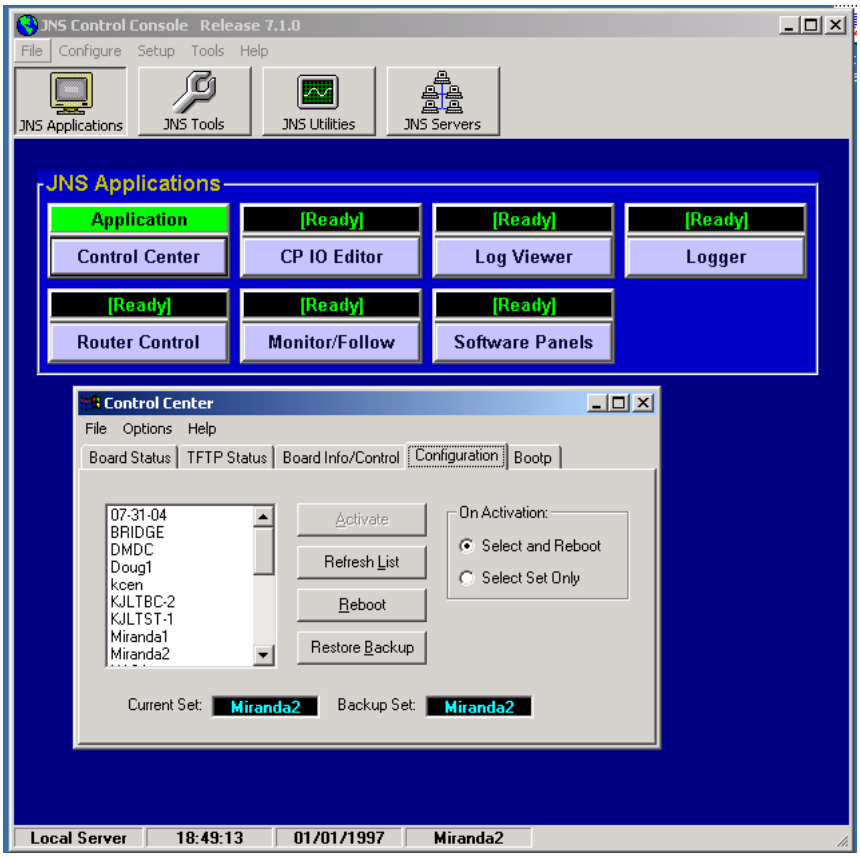


Figure 12. JNS Applications, Control Center, Configuration Load

7 In NV9000-SE Utilities, add a router (named, for expample, Jupiter) using ES-Bus protocol and the serial control point described above.

8 To this router, add the *physical* levels from the CP level set. The level numbers of these levels are "off by 1" from the level number in the CP Level set, so if you have 3 levels, they will be level numbers 0, 1, and 2 in the NV9000 configuration. The size of the levels is the same on all levels. The number of inputs is the number of logical source names in the CP input set. The number of outputs is the number of names in the CP output set.

9 In the level set, assign a virtual level for every physical level. The virtual levels always match the physical levels because the physical level is actually logical in this case.

10 Enter the sources from the CP input set (you can probably open the file from the Jupiter configuration in Microsoft Excel, cut and paste, and import into NV9000-SE Utilities.) There is a number for each logical name in the CP set. Enter this number on every level that has an entry in the 'Switcher Input' or 'Switcher Output' table. For example, if VTR 1 is defined on all levels and is index number 5 then you will enter 5 on every level. If CAM 1 is index 23, you will enter 23 on the video level (only because it doesn't have audio).

11 After you have the source and destination devices entered, you can proceed with category definition and control panel layouts as usual.