

**DSLPro User Guide**

Issue 01, 05/2006

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# **User Guide**

Date: 5/19/2006  
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## User Guide

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## 1.0 Credits and Contacts

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## 2.0 Document History

<b><i>Documentation Change History</i></b>				
Revision	Date	Author	Change	Proof read by
draft	5/19/2006	Glenn Boyden	New Document	gb

## 3.0 Introduction to DSLPro

### 3.01 General

DSLPro is a software solution designed to address several issues encountered by Valor's DSL provisioning department, Data Support Services (DSS). It was designed and implemented by employees of to the DSS department. The original DSL provisioning and support process had several drawbacks. Below is a list of the main issues.

- Port and customer information were stored in hundreds of separate Excel spreadsheets.
- All provisions were manually configured in each piece of equipment.
- Process lacked scalability and the department was having a very difficult time keeping up

Excel is a good tool for simple documents use, but cannot efficiently store the large pools of data that represent a DSL network. It forced limitations on scalability by allowing only one provisioner at a time to make changes to a site. It was also easy to double assign an order or assign it to the wrong site accidentally.

Manual provisioning is also fine when limited, but the high volume that is now a daily occurrence could not be accomplished with 8 times the personnel. Frequent typing errors and mistakes were causing large numbers of unnecessary trouble tickets. This all had a detrimental snowball effect on the department.

### 3.02 Objective of DSLPro

The original process proved to be slow, error-prone, complicated, and lacked scalability. DSLPro seeks to be fast, error-free, simple, and scalable. Most of all, it aims to make DSL a productive and profitable enterprise for the company. The high-level specs are listed below:

- DSLPro had to blend into the current workflow by working with the current order system, CCS and ticket tracking system, WFM. This was to limit impact to the provisioners and engineers for the initial deployment.
- It needed to free the provisioner from mental translations and memorized codes.
- Prevent duplication of order assignment.
- Eliminate provisioning related errors.
- Provide transparency by showing the user the commands and actions it is performing on the network equipment.
- Provide data entry validation to maintain data integrity
- Speed up provisioning by eliminating the search and gathering of information.
- Provide a provisioner one simple common interface to control provisions across all platforms from DSLAM to router with feedback.
- Provide a secure system with access limited to the job scope of the user
- Manage concurrent site and port activity by using locks appropriately.
- Leverage concepts from the original process to reduce learning curve. (i.e. mimic the look of the original spreadsheets.)
- Strategically develop and release stand-alone modules in the order of greatest productivity gain. The time saved by each release accelerated the development of the next and provided benefits early on. This was part of the process to transition away from the dependence on Excel spreadsheets for record storage.
- It had to be cost FREE. There was no budget available for this effort.

DSLPro achieves these goals through its modular approach. Instead of being just a simple repository of provisioning data, DSLPro can automate provisioning using a series of specially designed **BOTs**. The BOTs add a layer of abstraction. They act as translators between the main module and the different equipment found throughout the network.

Automation works great but, like calculators are to math, it is imperative that the provisioner be versed in the operation of each vendor's equipment and only use the tools to enhance their speed and efficiency. To encourage this, all BOTs show the commands that are issued to the equipment. The user can take over control when desired.

### **3.03 Results: Gain in Productivity and Quality**

Reviewing records from 2004 and comparing them with the results of 2005 showed incredible improvement. Using DSLPro, each provisioner could provision over 7 times the number of orders in a day in comparison to those using original method. In fact, one DSLPro user can exceed the daily output of a manual provisioner in less than an hour. The DSLPro completed orders were also virtually error free compared to those accomplished by manual means. Although the monthly average of orders increased 5 times in 2005, no additional staffing was required and the number of support calls due to provisioning errors became a rarity.

When support calls come in, they are now corrected in a fraction of the time. DSLPro's ability to find the customer records and trace the entire connection from end-to-end in seconds allows the DSS engineer to focus on solving the issue. Time is not wasted searching records or typing dozens of syntax sensitive commands.

### **3.04 Reporting and Automation**

DSLPro uses a relational database to centrally store information about the DSL network. This allows for new abilities not possible with spreadsheets. Below are a few examples:

- Monitor the port capacity of the entire network and each site in real time.
- Monitor the productivity and history of provisioning in real time
- Report on the growth of DSL by showing new customers added to each site per month
- Custom adhoc reports like finding the fastest provisioned speed for each site.
- Cutovers to new equipment and restorations are made easy since DSLPro tools can automatically provision the entire site per the actual customer records.

### **3.05 Security**

DSLPro has its own group-based security built-in. It blocks access to the modules that can alter the network for all those not registered. Registered users are assigned to groups with different clearance levels that are suitable for their job function. The groups are listed below:

- Non-registered user – Access to read-only tools
- Provisioner- Access to tools that can alter customer data and provision
- Engineer – Same capabilities as a provisioner but can also make site changes
- Admin- Can perform changes for all of levels of DSLPro

### **3.06 Version Control**

DSLPro manages its own version control. When a new version of a module is ready, it is given a new internal version number. This new number is also entered into the DSLPro database. All modules that are running with the old version number will automatically close 5 minutes after the version number change. Anyone attempting to run a module with an expired version number will be shown a message of the change in versions and action to take. Most changes are completed within ten minutes. Since the modules are on a shared drive, the users only need to restart to start using the latest version.

## 4.0 DSLPro Modules

### 4.01 Summary of Modules

DSLPro is a system of modules that are both Windows based and Web based. The Windows modules provide a fast, secure, and feature rich environment to handle the production workload of provisioning. The Web components provide interdepartmental Web interfaces. This document focuses on the Windows side and the Web modules that overlap. Please see the document written by David Duperre for more information on the Web interfaces. Below is a summary of the individual Windows modules.

Icon	Name	Function
	DSLPro Customer Lookup	This module provides fast phone number to site location lookup by accessing the Digi-Serv database directly. It also shows cable information. It ties the phone number directly to the spreadsheet holding the port information and places the user directly on the customer's row in a single click. Since the spreadsheets are no longer used or updated, only the site, customer, and cable information remain useful.
	DSLPro Quick List	This module lists all of the sites and their IP addresses. It sorts the sites by name and groups them by region and equipment function. This provides quick access to all sites and to the corresponding spreadsheets when they were still in use. It is still a handy utility. It is used primarily to access the equipment and update the site notes.
	DSLPro Capacity	This module displays the port usage statistics across the entire Valor DSL network as well as for each individual site. It allows engineering to see, at a glance, which sites are in most need of port expansion. It also produces reports that are used in growth trend analysis.
	DSLPro Site Viewer	This module provides a colored coded display of site port assignments. The view closely emulates the previously used spreadsheets in appearance. It is a read-only view of the network for use by company employees outside of the provisioning department. Security is not needed and therefore not enforced on this module. It also provides a method of exporting the site details into a structured excel spreadsheet for review and mark-up.
	DSLPro Support	This module provides the same colored coded display of site port assignments as site viewer but adds the many features needed to provision and support the network. Only members of provisioning and engineering have access, all others are blocked.
	DSLPro Provision	This module was designed to work with the CCS order system. It provides a fast straightforward method for completing orders. When data is available, it is able to auto populate the order fields when the order number is keyed-in.
	DSLPro Disconnect	This module manages the special handling rules for disconnect orders entered using DSLPro Provision. These orders are placed in special queues that are time monitored. The first date is the actual disconnection date. The second is the date the customer is removed and port freed for reuse. On the date specified in the CCS order, the customer's port is turned off. After the grace period has passed, the port is cleared for reassignment. If the customer was placed back in service after making a payment, the order is properly closed without impact to service. It is ran once each morning.

	DSLPro Manager	This module is the interface for network changes. It allows the addition, modification, and removal of DSLAM's from DSLPro. It works under a simple check-in/check-out methodology. When a change to a site is needed, the user exports the site data to a structured Excel spreadsheet. The site is automatically blocked from provisioning changes while the modifications are being made. The Excel spreadsheet makes changes simple and straightforward. The changes are saved to the file and uploaded back into DSLPro. When the import is finished, the site is automatically available again to the provisioners.
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Table 1

#### 4.02 Install and Setup:

These modules are placed on a shared Windows network server folder and made available to the provisioning and engineering groups. Currently, that location is:

[\\dalsrv201\NetworkPlanning\Data\\_Engineering\Data\\_Eng\\_Provisioning\\_&\\_Documentation\DSLProSupport](\\dalsrv201\NetworkPlanning\Data_Engineering\Data_Eng_Provisioning_&_Documentation\DSLProSupport)

In that folder is a file called DSLPro.dat. This file contains the host address of the MySQL server. Changing this file will point all modules to the new server after they are re-launched. Although DSLPro resides on a network drive, to fully use DSLPro, install the following on each PC before launching any of the modules:

- Oracle 9i client – Allows access to Digi-Serv data
- Tera Term Pro - This freeware terminal program is used during troubleshooting sessions where captures are required. DSLPro is expecting the C:\program files\TTERM\PRO directory to exist.



Figure 1

Placing the Quick Launch icons on the Taskbar will make access easy when multiple applications are open. This is done by unlocking the Taskbar and dragging the short-cut icon over it. The "I" cursor will indicate the location where it will be dropped.

#### 4.03 Remote use of DSLPro via VPN

Remote provisioning and support are possible through VPN connections. It has been tested over home DSL connections and coffee shop WIFI access. It works well. VPN access can be accomplished two ways.

1. Loading DSLPro applications in a single folder on the remote PC
2. Launch VPN
3. Launch the DSLPro module of choice.

or

1. Setup your work PC for Remote Desktop.
2. Launch VPN
3. Run the applications from the office PC via Remote Desktop.

If DSLPro security rejects the connection, take note of the detected user name. That name may need to be added to your DSLPro security profile. Run DSLPro Site Viewer as a test since it does not enforce security and will show the detected user name in the lower left corner. Report the name back to the DSLPro administrator.

## 5.0 DSLPro Customer Lookup

### 5.01 Description

The DSLPro Customer Lookup module will search the Digi-Serv database and retrieve the customer, site, and cable information if available. Launch the module and the following will appear. The yellow flags correspond to the notes below.

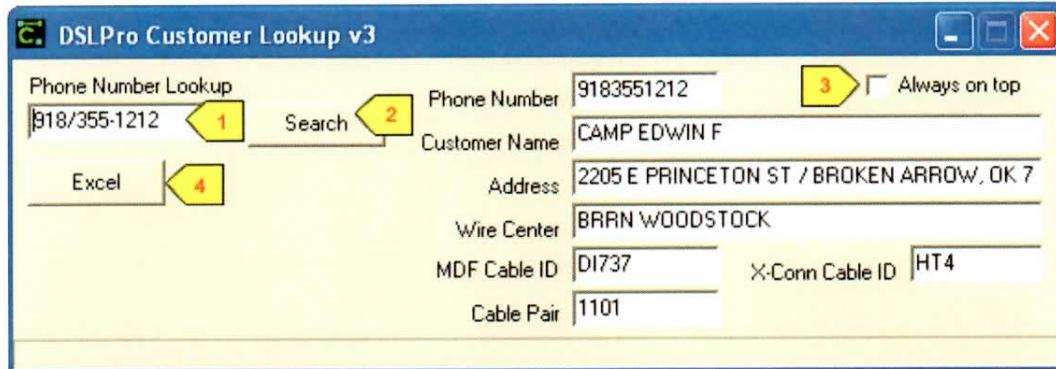


Figure 2

ID	Field	Description
1	Phone number lookup	Enter a valid 10-digit phone number in the Phone Number Lookup field. It is okay to use formatting characters or not.
2	Search button	Click the Search button. The results will appear in the fields to the right.
3	Always on top	Click the "always on top" checkbox to keep the form accessible if using frequently with other programs on the screen.
4	Excel button	Opens associated spreadsheet and jumps to customer. This is no longer used since the Excel spreadsheets have been retired.

Table 2

## 6.0 DSLPro Quick List

### 6.01 Description

The DSLPro Quick List module lists the equipment in the network. It provides the ability to access the equipment via telnet, BOT, or GUI. Launch the module and figure 3 will appear. The yellow flags correspond to the notes in the table.

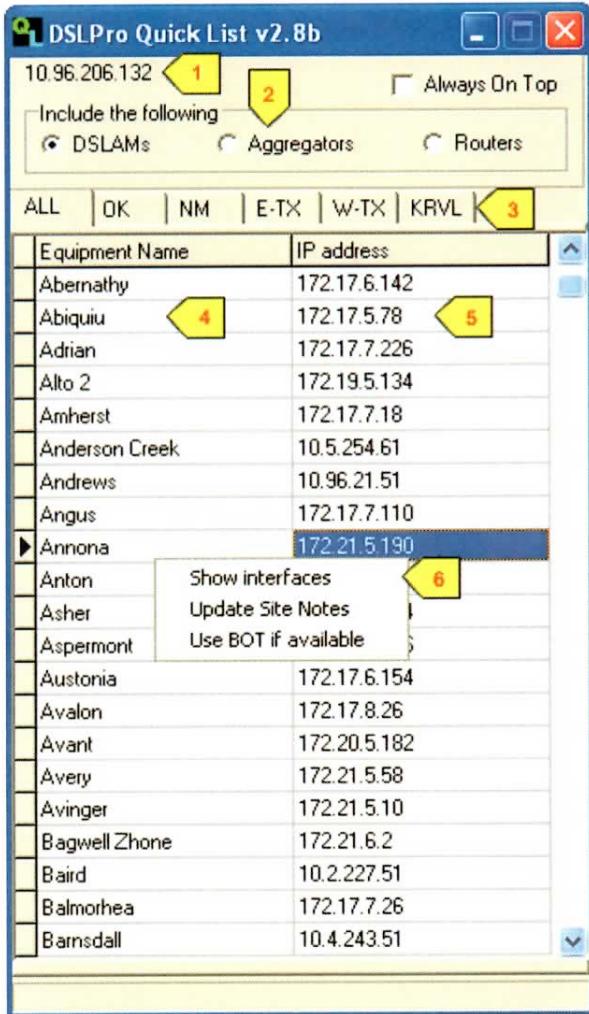


Figure 3

ID	Description
1	Indicates the IP address of the DSLPro server.
2	The radio buttons filter the equipment by function type.
3	The tabs filter the equipment by operational regions.
4	Double-clicking on a site name will open the associated spreadsheet. With the retirement of the spreadsheets, this is no longer used.
5	Double-clicking on the IP address launches a telnet session or GUI depending on the type of equipment.
6	Right-clicking on the IP address will show this menu. <b>Show Interfaces</b> - lists the chain of switches and router associated with this site. <b>Update Site Notes</b> - This opens a memo box to add notes about a site that are viewed inside DSLPro Support. <b>Use BOT if available</b> - This option launches the DSLPro BOT for the site. This is used if telnet is not convenient.

Table 3

## 7.0 DSLPro Capacity

### 7.01 DSLPro Capacity - Global Stats

The DSLPro Capacity module provides port information across the network. Launch the module and the following will appear. The yellow flags correspond to the notes.

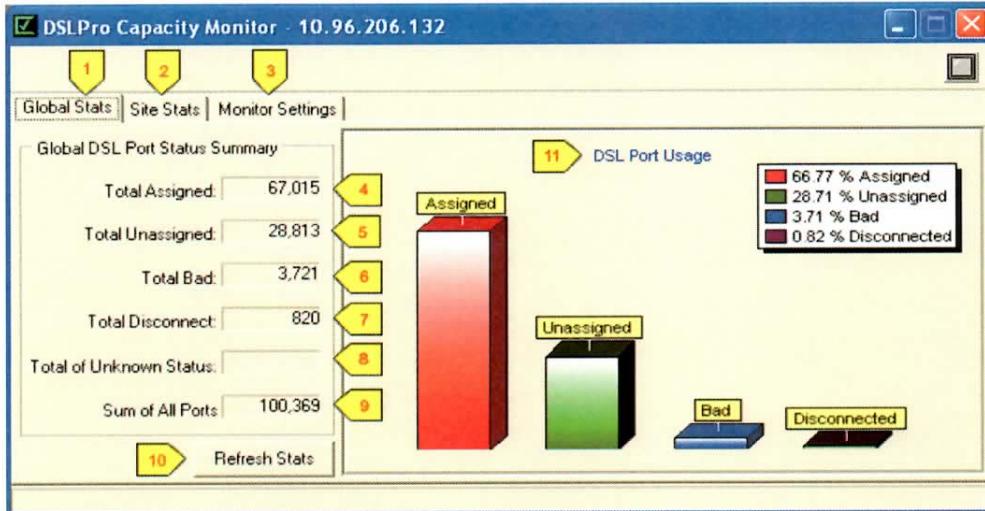


Figure 4

ID	Field	Description
1	Global Stats tab	This tab displays the statistics of the entire network.
2	Site Stats tab	This tab shows the capacity numbers for each site. See the next graphic, Figure 5.
3	Monitor Settings tab	This tab is a feature that was never implemented. It was designed to alert the engineers when any site has reached 0 available ports. Since the network has always had at least 3 sites with 0 port capacities, the alarm would have been continuous.
4	Total Assigned	Total of provisioned DSL customers
5	Total Unassigned	The number of ports available for sale
6	Total Bad	The ports that have proven problematic and blocked from customer assignment.
7	Total Disconnect	The number of ports scheduled to be reclaimed after the 15 day grace period. This includes customers who are moving or missed payment of their account.
8	Total of Unknown Status	Was vital when the port information was imported from spreadsheets. It was a quick indicator to bogus data in the status field. This field should always be blank if the data is good.
9	Sum of All Ports	Sum of 4 through 8 representing all physical ports in the network that are monitored by DSLPro
10	Refresh Stats button	Recalculates the above numbers. On a workday, these numbers are continuously changing as orders and tickets are being worked.
11	Chart	This chart reflects the data on the left.

Table 4

## 7.02 DSLPro Capacity - Site Stats

The DSLPro Capacity Site Stats tab shows a break down by site, with the ability to sort in a number of ways. The default sort is by unassigned port count.

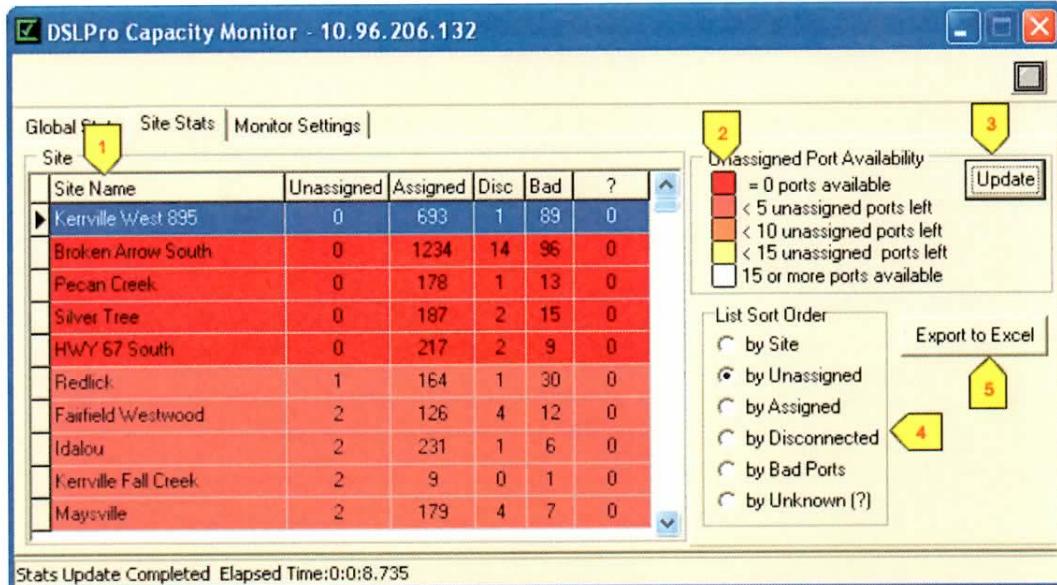


Figure 5

ID	Field	Description
1	Site Grid	The sites are listed by their unassigned value by default. When a site has 0 Unassigned, It is highlighted in red. Engineers must add capacity. No new customers can be added and any customers on a bad port will not be able to be relocated. "?" stands for Unknown Status. This should always be zero.
2	Unassigned Port Availability Legend	This color legend explains the site's highlighted color. Allows quick glance status of site's port availability.
3	Update button	This button starts a rebuild of the aggregate totals for each site. This averages 10 seconds or so to complete.
4	List Sort Order radio buttons	These radio buttons change the sort order of the site grid list.
5	Export to Excel	This button will generate a specially formatted spreadsheet showing the sites sorted regionally. It is compatible with the site growth analysis process used by ANE.

Table 5

## 8.0 DSLPro Site Viewer

### 8.01 Description

This module is a read-only viewer of the DSLPro site information. It can search the entire network for a phone number or customer name. It is also useful for area managers and field engineers to generate Excel spreadsheets for audit activities.

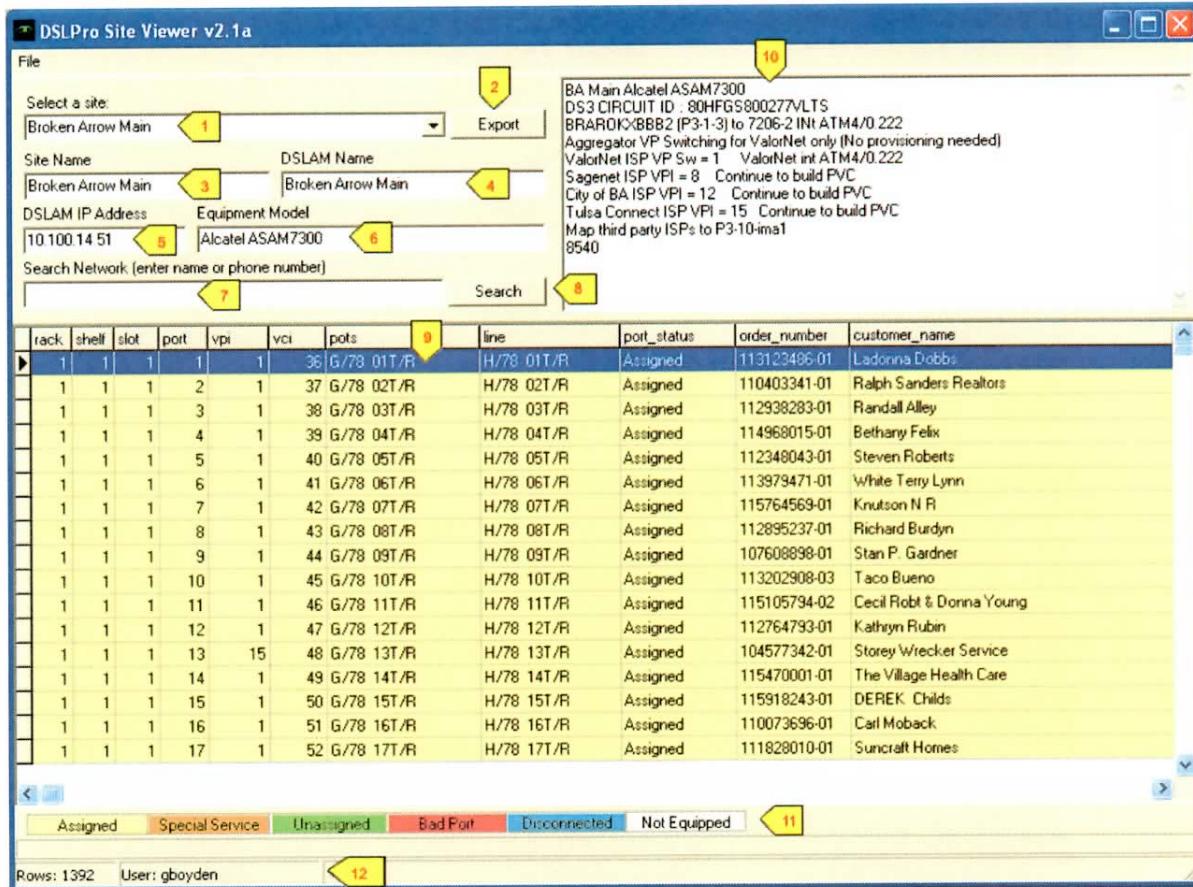


Figure 6

ID	Field	Description
1	Select a site	Type or select from the pull-down list a site name. The selected site port information will populate the grid.
2	Export	Clicking this button will create a formatted Excel sheet from the site displayed in the grid.
3	Site Name	This is the name given to the entire CO site.
4	DSLAM Name	This is the name given to the specific DSLAM box. Scrolling down the grid with the down arrow key will change this value if the site contains more than one DSLAM
5	DSLAM IP address	This is the unique IP address given to the DSLAM.
6	Equipment Model	Shows the manufacturer of the DSLAM. Some sites may have a

		mixture of DSLAM types.
7	Search Network	This is an intelligent search box. If one enters a 10 digit number, it will search the circuit number field. All other searches will be performed on the customer name field. Press enter to execute the search.
8	Search button	Pressing this button will execute the search for the value in the adjacent field.
9	Site Notes	This memo field holds any miscellaneous information that may be useful to provisioning.
10	Color Legend	Describes the row color associated with the port status.
11	Rows	Shows the number of ports in the site.
12	User	Shows the currently detected user.

Table 6

Double-clicking on a populated grid row will display a row summary text box that can be copy-pasted from. This box is shown below.

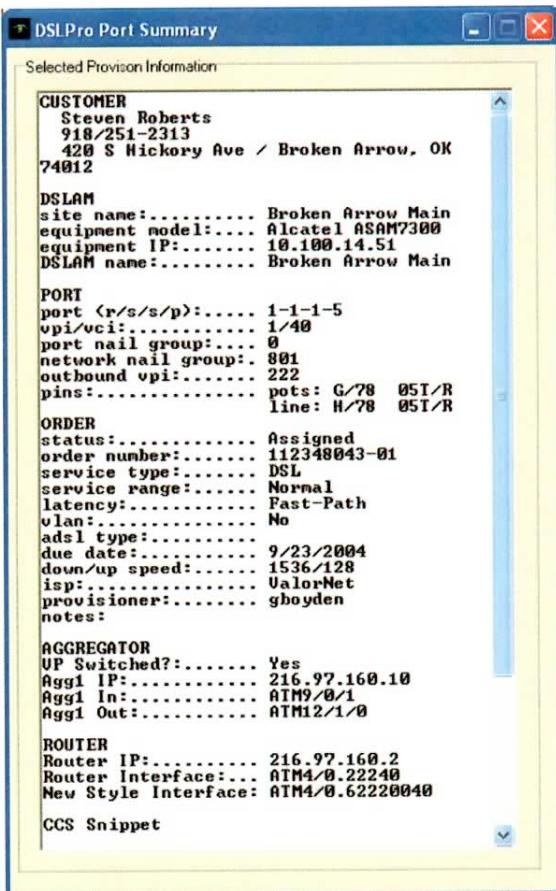


Figure 7

## 9.0 DSLPro Support

### 9.01 Description

DSLPro Support module is the central support module. From this module, provisioners and engineers can perform a number of actions on the customers and ports including customer moves, customer provisions, customer disconnects, marking a port unassigned, and marking a port bad. The figure and table below describe the interface.

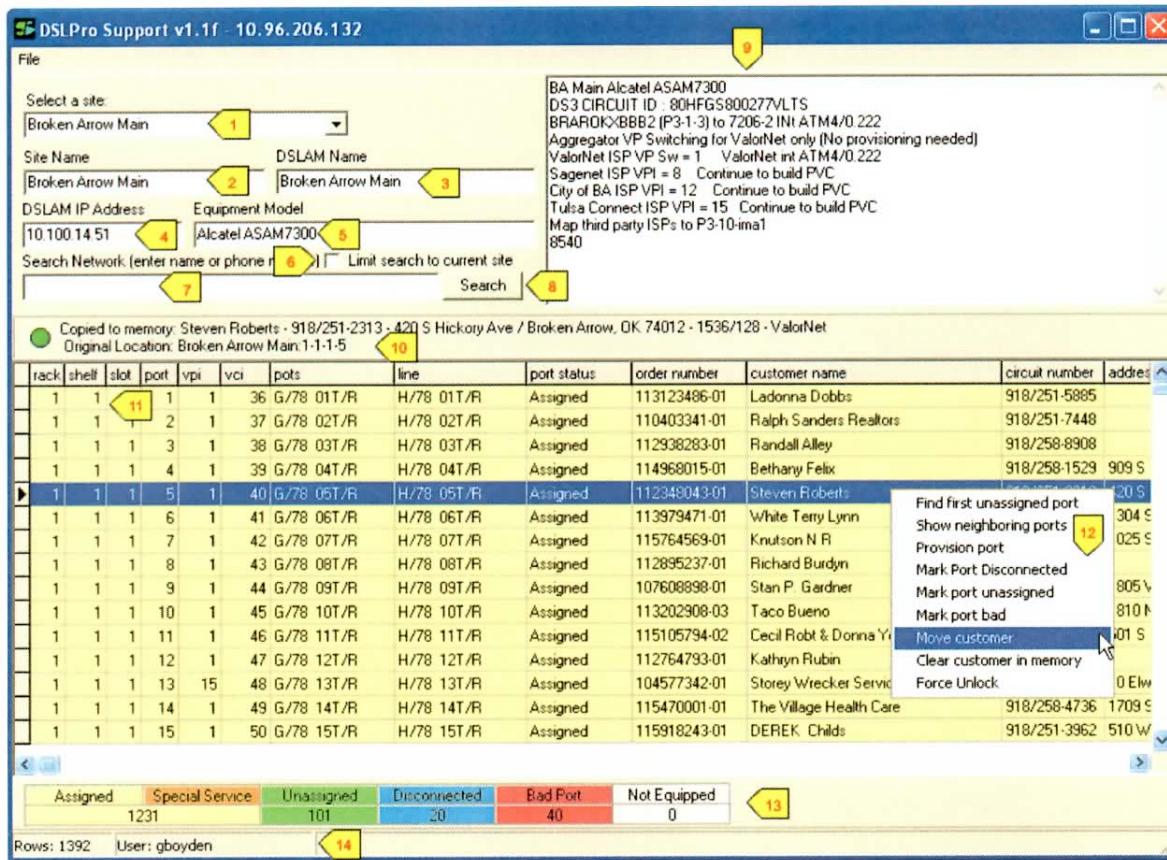


Figure 8

ID	Field	Description
1	Select a site	Type or select from the pull-down list a site name. The selected site port information will populate the grid.
2	Site Name	This is the name given to the entire CO site.
3	DSLAM Name	This is the name given to the specific DSLAM box. Scrolling down the grid will change this value if the site contains more than one DSLAM
4	DSLAM IP address	This is the unique IP address given to the DSLAM.
5	Equipment Model	Shows the manufacturer of the DSLAM. Some sites may have a mixture of DSLAM types.
6	Limit Search checkbox	With this checkbox selected, any search will be limited to the site

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		displayed in the grid. Otherwise, the search results would be network wide. DON'T FORGET to uncheck it when finished.
7	Search Network	This is an intelligent search box. If one enters a 10-digit number, it will search the circuit number field. All other searches will be performed on the customer name field. Press enter to execute the search. Formatted numbers like (801) 555-1212 work just as well as 8015551212.
8	Search button	Pressing this button will execute the search for the value in the adjacent Search Network field.
9	Site Notes	This memo field holds any miscellaneous information that may be useful to provisioning.
10	Customer in Memory Indicator	This box shows a customer that has been copied to memory for a move operation. When a user can chooses 'Move customer' from the menu, the DSL information is copied to memory and displayed here. The original pin information is also displayed. The user can find an open port in that site or another site and select "Paste Customer" to move the customer to the new port. Selecting "Clear customer form memory" will clear this box and the information in memory.
11	Site grid	The grid shows all of the port information for a site. Each row represents one port in the site. This can be made up of multiple DSLAMs. The port status is indicated by the row's highlighted color and its status field value. To affect a port, double-click for provisioning, or right-click for other options.
12	Port action pop-up menu	Activate this menu by right-clicking on a row. The options are: <b>Find first unassigned port</b> – this option will place the row cursor on the first unassigned port (green) in the site. A real time saver. <b>Show neighboring ports</b> – this option is useful after a search that retrieves one or more hits. Selecting this option will re-list the highlighted port and show ports on either side. It is useful know if the adjacent ports are bad if the port is exhibiting issues. <b>Port provision</b> – same as double-clicking on the row. Opens the Port Support form. <b>Mark port disconnected</b> – This will change the port to indicate disconnected (blue). This alone does not turn off the port. To disconnect the port, use the Port Support form. The disconnected port will be monitored by DSLPro for 15 days, and then it will be marked unassigned if not changed to assigned or bad prior. <b>Mark port unassigned</b> – This will change the port to indicate it is available (green). This will allow the port to be provisioned. <b>Mark port bad</b> - This will change the port to indicate it is bad (red). This will prevent the port from being provisioned. This option will prompt the user for the reason it is bad for later review. The user's name is automatically logged into the notes field. <b>Move Customer</b> - This will place the customer in memory so that it can be relocated to another port anywhere in the network. <b>Clear customer in memory</b> - This will remove a customer that is currently in memory. <b>Force Unlock</b> – DSLPro prevents multiple users from working on the same port at the same time by locking the port to others automatically. A user can use this option to override the lock. This is handy when a user has gone home and left the port open on their desktop or reboots their PC before unlock DSLPro can issue an automatic unlock of the port.

13	Port legend and statistics	This colorful bar describes the port status colors used on each row. The values below each show the number of rows associated with each status. If a site has zero unassigned ports, an additional "SITE IS FULL" message will be displayed to alert the user. This prevents the user from wasting their time searching for a port that does not exist.
14	Status bar	The status bar shows the number of rows in the grid and the currently detected user.

Table 7

## 9.02 Port Support form

Double-clicking on a grid row or selecting the menu option "Provision port" will launch the Port Support form shown below. From this form, the user can display and update the client's data, trace the circuit, and provision the equipment. The form can detect if the user is DHCP or has a Static IP assignment. It provides the tools to deal with each. Below are both versions of the form.

## 9.03 Port Support form - DHCP view

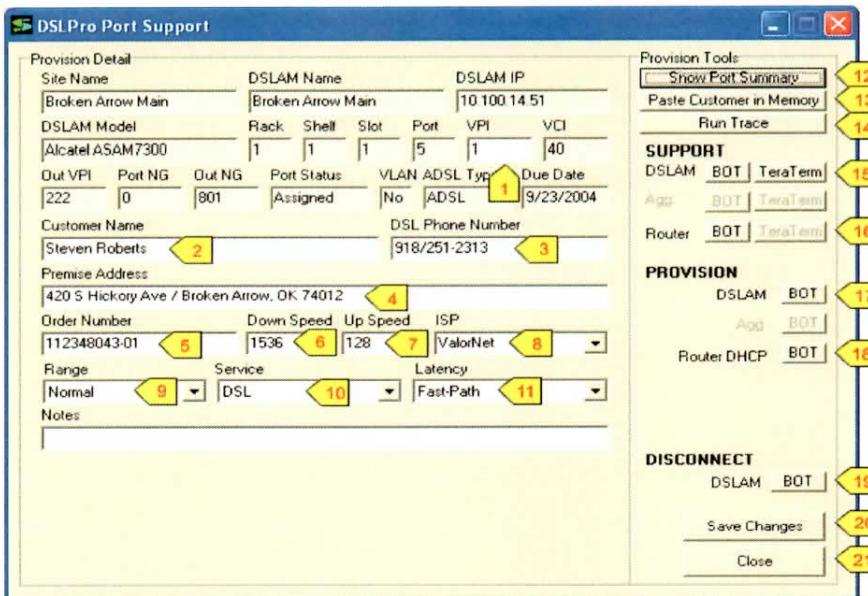


Figure 9

ID	Field	Description
1	VPI	User can override the displayed value here. It is often used to force the user to a 3 <sup>rd</sup> party ISP via VP switching.
2	Customer Name	Editing the customer name and clicking "save changes" will update the customer's name.
3	DSL Phone Number	This field shows the current phone number. This can be changed by the user.
4	Premise Address	This field shows the current premise address. This can be changed by the user. It is optional.
5	Order Number	This field shows the Associated CCS order number. This can be changed by the user.

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6	Down Speed	This pull down menu lists the available DSL down speeds. Changes to this value will not be communicated to the DSLAM until the DSLAM button (17) is pressed.
7	Up Speed	This pull down menu lists the available DSL up speeds. Changes to this value will not be communicated to the DSLAM until the DSLAM button (17) is pressed.
8	ISP	This pull down menu lists the available ISP names. If an ISP uses a different VPI and there are other provisions in the site that reflect this, the VPI value will automatically change to reflect this value. Changes to the VPI value will not be sent to the DSLAM until the DSLAM button (17) is pressed.
9	Range	Normal and Extended are the values. Extended indicates that the user is at the limits of DSL service and should be provisioned at 384/128-Interleave.
10	Service	Currently the only value is DSL. In the future, this can be expanded to include services like voice and video.
11	Latency	Fast-Path and Interleave are the values. Fast-Path is the default. Interleave is used to improve the reliability of the connection at the cost of increase latency time due to added overhead. Typically used for extended reach customers.
12	Notes	This field is for leaving a note about the port for others to read.
13	Show Port Summary button	This button opens a separate form with text box filled with the port details. This information can be copy-pasted to other applications like CCS, WFM and e-mails.
14	Run Trace button	This button will open the default web browser and launches the DSLPro Trace web application that will test the connection from the DSLAM to the Router. This is a very valuable and convenient feature that quickly shows all the information needed to determine the location of the issue.
15	Support DSLAM button	This button will launch the associated DSLAM BOT and examines the port in question for status. This BOT allows the user perform most needed operations on a DSLAM including port, slot, shelf inspection, resetting, and typical provisioning all with clicks of the mouse.
16	Support Router button	This button will launch the associated Router BOT and examines the ATM interface for an IP address. This BOT allows the user perform most needed operations on a router like inspecting the interface, rebuilding the interface, ATM ping, and checking to see if the customer has pulled an IP address all with clicks of the mouse.
17	Provision DSLAM button	This button will launch the associated DSLAM BOT and immediately provisions the port using the values in the Port Support form. If the provision completes without error, the white text box at the top turns green and the program automatically closes. If there is an error, the text box turns red and displays the error message. The program does not auto-close if there was an error.
18	Provision Router DHCP button	This button will launch the associated Router BOT and immediately provisions the ATM interface using the values in the Port Support form. If the provision completes without error, the white text box at the top turns green and the program automatically closes. If there is an error, the text box turns red and displays the error message. The BOT does not auto-close if there was an error.

19	Disconnect DSLAM button	This button will launch the associated DSLAM BOT and immediately disconnects the DSLAM port. If the disconnection completes without error, the white text box at the top turns green and the program automatically closes. If there is an error, the text box turns red and displays the error message. The program does not auto-close if there was an error.
20	Save Changes button	This writes the values in the form back to the master DSLPro database. Clicking on any of the DSLAM or Router buttons will also save the information. This button is used when the user only needs to change non-provisioning values like names and phone numbers.
21	Close button	Closes the form.

Table 8

#### 9.04 Port Support form - Static view

If a customer has a static IP address assigned by the Static IP database, the Port Support form automatically displays the IP data and an additional Router Static button.

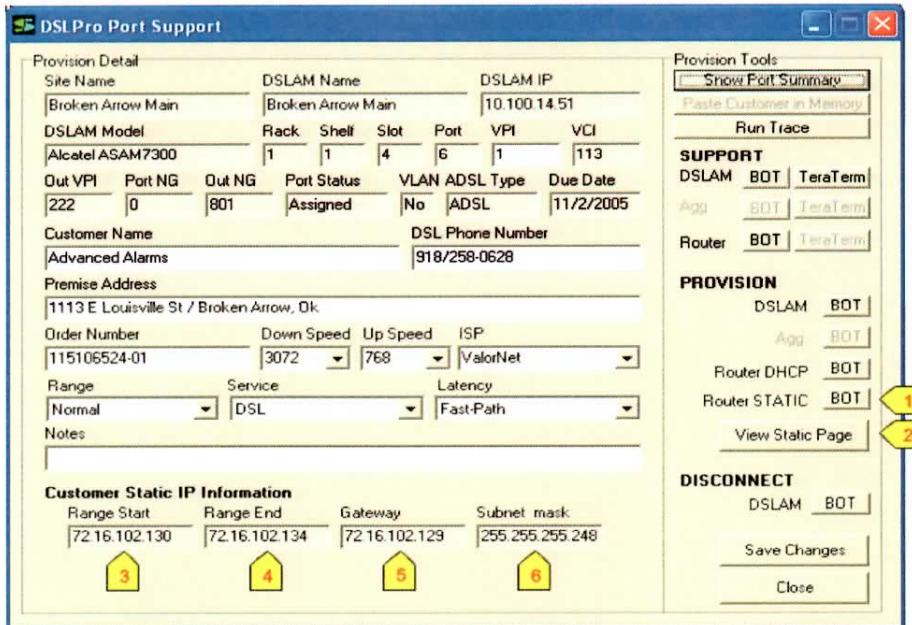


Figure 9

ID	Field	Description
1	Router Static button	Only appears if the customer has a static assignment. Clicking this button will provision the ATM interface on the router with the customer's static IP values. Clicking the Router DHCP will provision the interface back to DHCP mode. It's a good idea to test the connection first as DHCP to make sure physical connection is working. If so, then provision as static, then test again.
2	View Static Page	This button will launch the web browser and display the details about the static assignment.

3	Range Start	This is the beginning of the static IP range for the customer.
4	Range End	This is the end of the static IP range for the customer.
5	Gateway	This is the value the customer uses for their gateway and the number placed in our routers.
6	Subnet mask	This is the subnet mask that is placed in our router and used by the customer.
*	Values in 4 through 6	These values should be read and confirmed with the customer prior to provisioning the router for Static. First test with the customer connection in DHCP mode, and only if that works, continue with the static IP provisioning.

Table 9

## 9.05 Port Support form- Static with Complex Route

Notes

**Customer Static IP Information**

Range Start	Range End	Gateway	Subnet mask
216.97.168.222	216.97.168.222	216.97.168.221	255.255.255.252

\*Custom or complex route - click View Static Page for details 1

**DISCONNECT**  
DSLAM BOT

Save Changes  
Close

Figure 9

ID	Field	Description
1	Complex Route message	This message will appear if the assignment in the Static IP database indicates that is a non-standard static assignment. It may have special parameters. Be sure to inspect the current ATM interface in the router prior to making any changes.
2	View Static Page	This button will launch the web browser and display the details about the static assignment. With the Complex Route message displayed, you must review this page prior to understand all the special handling this provision will need.
*	Seek help	These types of assignments can be complicated. If confronted with this message and remain uncertain about the provision, review it with the supervisor before attempting to make any router changes.

Table 10

## 10.0 DSLPro Provision

### 10.01 Description

The DSLPro Provision module was designed to work with the CCS order system. It provides a fast straightforward method for completing orders. When data is available, it is able to auto-populate the fields when the order number is keyed-in.

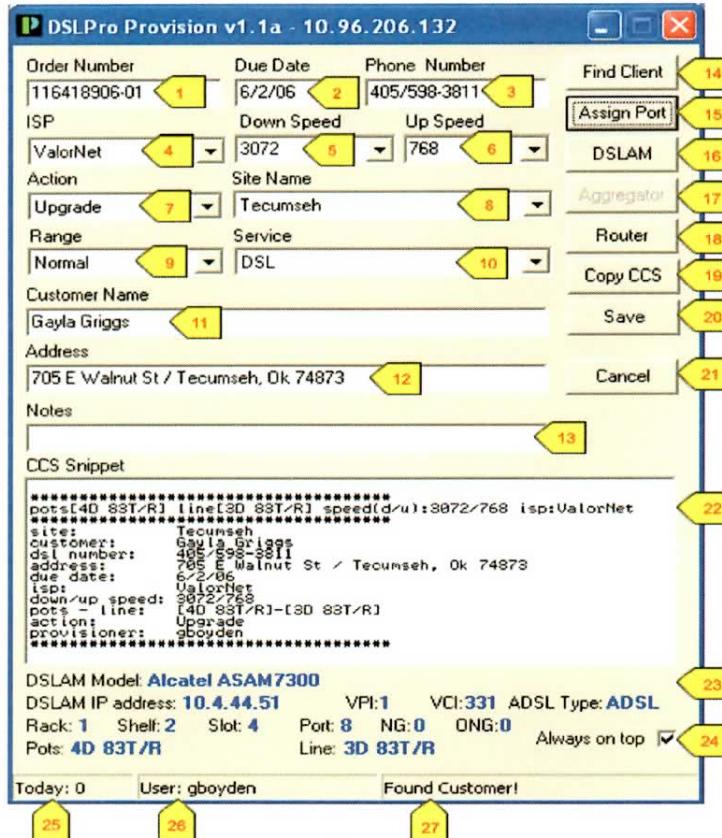


Figure 10

ID	Field	Description
1	Order Number	This is the CCS order number. Please sure to include the dash for consistency. If the order number is found in the queue derived from CCS nightly capture, then the remaining fields will be auto-filled. If not, the remaining fields will be cleared.
2	Due Date	Please enter the Due Date as shown in the CCS order.
3	Phone Number	Enter the phone number associated with the DSL service in CCS. If a customer has multiple phone numbers, place the DSL number related to the DSL ASOC, not just the first number.
4	ISP	Enter the ISP servicing this customer as listed in CCS. This is not always clear, check the CCS remarks tab and the CCS ASOCs.
5	Down Speed	Type or select from the list the down speed for the DSL order

6	Up Speed	Type or select from the list the up speed for the DSL order
7	Action	This list contains the values <b>Connect</b> , <b>Upgrade</b> , <b>Disconnect</b> . Selecting the <b>Upgrade</b> value will provision the DSLAM but not the router.
8	Site Name	Type or select the name of the site to assign the customer to.
9	Range	This list contains the values <b>Normal</b> or <b>Extended</b> . Selecting the <b>Extended</b> value will provision the DSLAM at 384/128 and sets the latency to Interleave. This is for the Extended Reach customers that are at the limits of service distance from the CO.
10	Service	Currently there is only one service, DSL. In the future, there may be voice or video offerings
11	Customer Name	Enter the name of the customer in this field
12	Address	Enter the address using the format shown in this field
13	Notes	Use this field for special cases, otherwise leave blank
14	Find Client button	This button will search Digi-Serv for customer location and information. If found, it will auto-populate the customer related fields.
15	Assign	The Assign button performs several actions. First, it will search the network to see if they are already provisioned somewhere in the network. If so, a "Found Customer" message will appear on the status bar (27), then the site name will change to match that site and the action will change to upgrade. If the customer is new, a "New Customer" message will appear on the status bar, and it will assign them to the first unassigned port in the site selected. If the action is "Disconnect" and the customer is not found, a message will appear alerting the provisioner.
16	DSLAM	This button will launch the associated BOT for that DSLAM type. The BOT will build the PVC and set the port speeds.
17	Aggregator	This BOT was retired when the network was changed to VP-switching.
18	Router	This button will launch a BOT and build a DHCP interface on the associated router.
19	Copy CCS	This button copies the specially formatted CCS snippet information into the clipboard memory buffer. This saves the provisioner from needing to use the drag/highlight/right-click/copy action with the mouse. The provisioner can now paste this information into the remarks field in CCS.
20	Save	This button saves the order and credits the provisioner automatically. It will then clear all data and place the cursor back at the first field.
21	Cancel	This button will clear all data and place the cursor back at the first field without saving it.
22	CCS snippet	After assigning the customer, this memo field auto-populates with the provisioning details in a format needed for CCS. This information gets placed in the CCS Remarks field just before the order is removed from the DSLAM skill and saved in CCS.
23	Assignment detail	When an order is assigned, the details of the assignment are reflected here for the provisioner to see.

24	Always On Top	This check box will keep the form visible when using with CCS. CCS maximizes itself to fill the screen, obscuring the view of other programs. Without this feature, the provisioning process becomes slow and cumbersome when using a PC with only one monitor.
25	Today:	The status bar Today: field shows the provisioner the amount of orders they have completed that day. This is helpful for the user to track their progress and provide motivation.
26	User:	This shows the currently detected user name. This is the person getting credit for the completed orders.
27	Customer status	This field shows if the customer is new to the network or an existing customer each time Assign is clicked.

Table 11

## 11.0 DSLPro Disconnect

### 11.01 Description

The DSLPro Disconnect module manages the special handling rules for disconnect orders. The customers that are displayed in the grid represent the orders that have disconnection dates equal or greater to the current date.

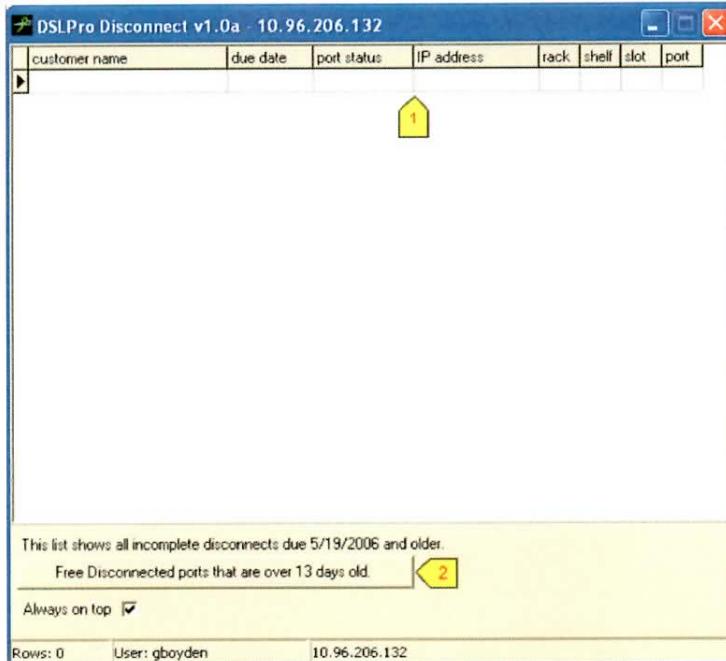


Figure 11

ID	Field	Description
1	Disconnect List	Double-clicking on each row will process the order. It will first check to see if the disconnection was canceled (i.e. the customer made payment). If the customer's port status is still "disconnect", the associated DSLAM BOT will launch and disconnect their port. They will then be cleared from the list. If the customer port status is no longer disconnect, the customer is cleared from the list, but no BOT is launched. Each day, one person double-clicks on each order until all have been cleared from the queue.
2	Free Disconnected ports button	Customers have 13 days after a disconnect order to make payment or they will lose their pin assignments to a new customer. DSLPro automatically changes ports marked disconnected to unassigned after this period has passed. This button is just a manual way to accomplish the same thing. If a customer makes payment after this time frame, they will be processed like a new order and assigned a different set of pins.

Table 12

## 12.0 DSLPro Site Manager

### 12.01 Description

The DSLPro Site Manager module was designed to manage DSLPro's DSLAM information. This module provides a simple method to add, update, and remove DSLAMs from the database using formatted spreadsheets. This was done to mimic the process already used by engineering.

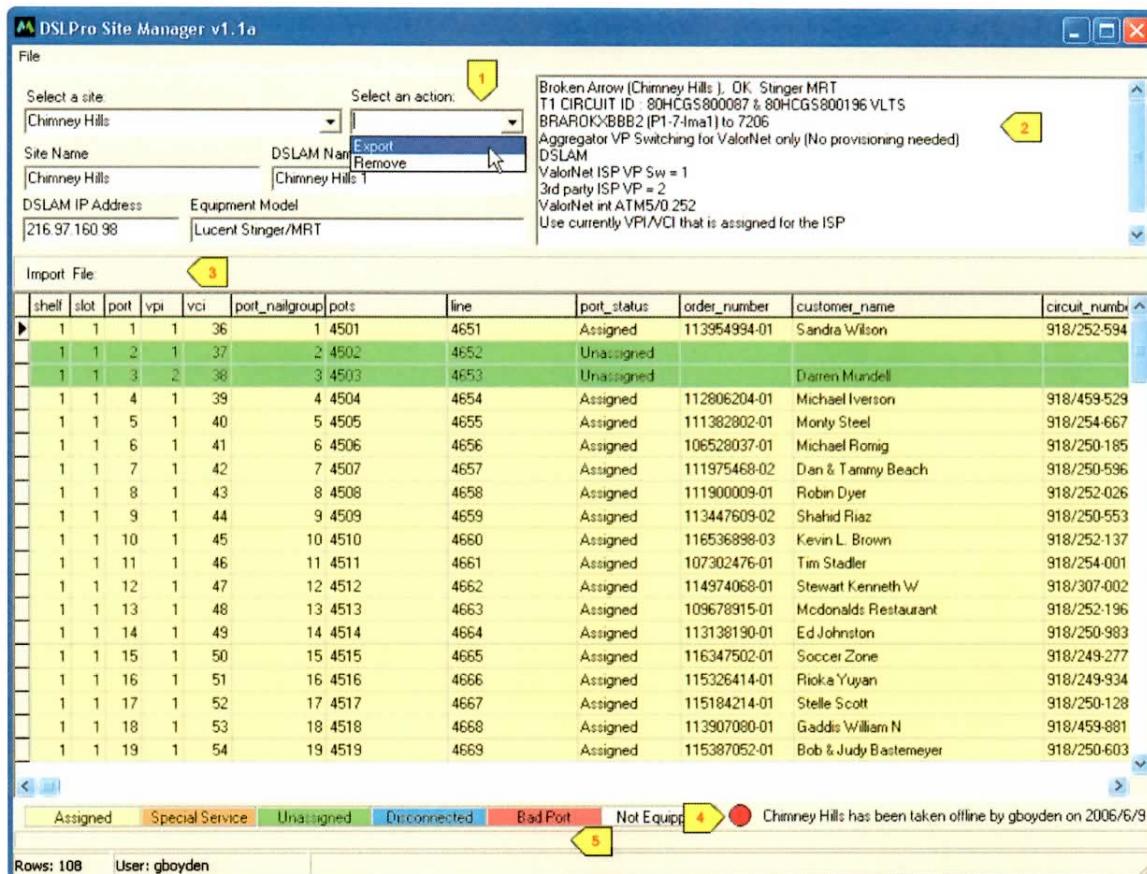


Figure 12

ID	Field	Description
1	Select an action	The options are <b>Export</b> or <b>Remove</b> . Selecting <b>Export</b> will start the generation of a formatted spreadsheet containing the information present in the grid. This spreadsheet can be modified and imported again later. During the export process, you will be asked if the intention is to re-import the spreadsheet. If so, the site will be locked to other provisioners until it is re-imported. The red circle shown by flag 4 will appear to everyone to indicate this. Selecting <b>Remove</b> will erase the currently selected site from the database.
2	Site Notes	During the import of a site, you will have the opportunity to add whatever information that may be helpful to the provisioners. This information will appear here.

3	Import File:	After you drag-drop a spreadsheet onto the form, the file name and path will appear here.
4	Site Checkout Indicator	When a site is exported with the intention of being modified, other DSLPro modules will lock the site from changes until it is re-imported. This red circle will appear in the other DSLPro modules indicating that the site has been "Checked Out", when it was exported and by whom. When it is imported again, the lock and this indicator will be removed automatically.
5	Progress bar	When a spreadsheet is being imported or exported, small squares will appear left to right at this location indicating the progress of the action.

Table 13

To add a site using this module, simply drag-drop a formatted Excel spreadsheet icon onto the DSLPro Site Manager form. A dialog box will appear to step you through the process. To modify an existing site, select it from the list. It will appear in the grid. Then select the action "**Export**" and follow the dialog that appears. The module will generate a formatted spreadsheet. This spreadsheet can be modified and re-imported using the drag-drop method previously mentioned. To remove a site, select it from the list. It will appear in the grid. Select the "**Remove**" action. A dialog will appear asking if you wish to proceed. If you select "yes" the entire site will be removed from the DSLPro database.

- You should remove a site first if the spreadsheet you are about to re-import has changed the name of the site or the IP address changed. This will prevent duplication of port information.
- After importing a site, review the information displayed in the grid. Be sure no ports have been duplicated.

## 13.0 DSLPro Raptor BOT

### 13.01 Description

The DSLPro Raptor BOT module communicates with the Zhone Raptor DSLAMs in the network. It provides a way to process most provisioning actions with a click of the mouse.

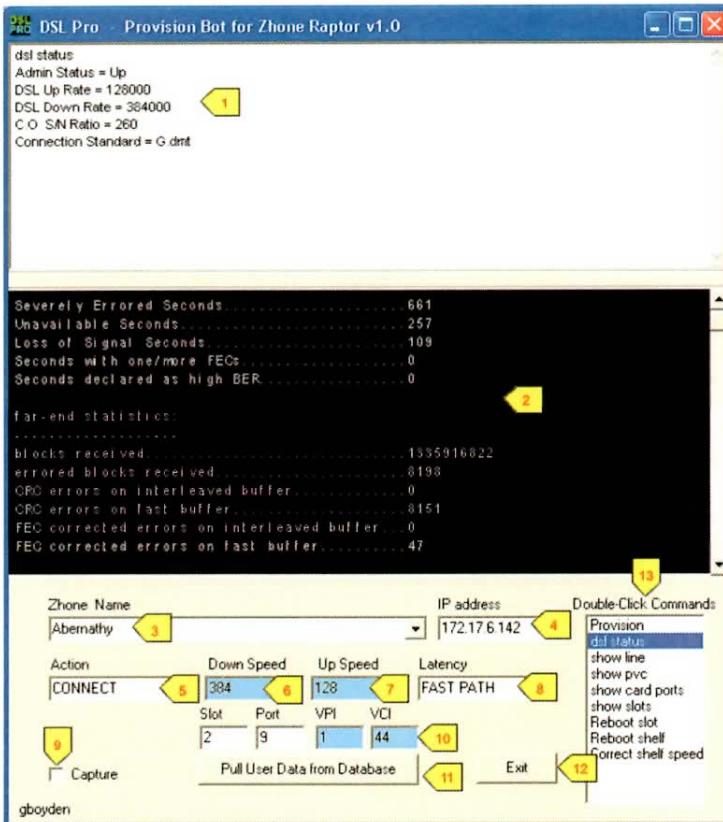


Figure 13

ID	Field	Description
1	Status log	This memo field will display a summary of the port status if "dsl status" is double-clicked in the rightmost list. It will also display a log of the commands issued to the Zhone if the Capture box is checked. This field will turn Green or Red after the "Provision" action to indicate success or failure.
2	Telnet session	This is an automatic and interactive telnet session. Automated commands will display in this window. When the cursor is at rest, the user is free to enter their own commands here as well.
3	Zhone Name	Select the Zhone box to control from this list.
4	IP Address	After selecting the Zhone name, its IP address will appear here.
5	Action	Select <b>CONNECT</b> or <b>DISCONNECT</b> from list to indicate the action to perform when the "Provision" option is double-clicked in the command list.

6	Down Speed	Select the customers DSL down speed from this list to indicate the port speed of the port when the "Provision" option is double-clicked in the command list.
7	Up Speed	Select the customers DSL up speed from this list to indicate the port speed of the port when the "Provision" option is double-clicked in the command list.
8	Latency	Select <b>Fast Path</b> or <b>Interleave</b> from this list to indicate the port latency of the port when the "Provision" option is double-clicked in the command list.
9	Capture	Checking this box will capture the telnet session and display the commands and responses in the top memo box.
10	Slot / Port / VPI / VCI	These fields contain the current port information that will used when the double-click commands on the right are issued.
11	Pull User Data from Database	This button will update the fields in blue. It will find the port speed and VPI/VCI information for the currently selected slot-port of the chosen Zhone. This customer information (if provisioned) will display in the top memo box.
12	Exit	This button will close the BOT
13	Double-Click Commands	This list contains commonly used commands. Double-clicking the items in the list will generate and issue a properly formatted command to the DSLAM. The commands are: <b>Provision</b> – Sets port speed and creates PVC <b>dsl status</b> – Shows if in-sync, speed, SNR, and connection protocol(i.e. G.dmt or ADSL2Plus). <b>show line</b> – Shows line parameters <b>show pvc</b> – Shows the status and endpoints of PVC <b>show card ports</b> – Shows the status of the ports in that card <b>show slots</b> – Shows the status of cards in that shelf <b>Reboot slot</b> – Reboots the current card. <b>Reboot shelf</b> – Reboots the entire shelf. <b>Correct shelf speed</b> – provisions all ports on the shelf to match the information in the DSLPro database.

Table 14

## 14.0 DSLPro Stinger BOT

### 14.01 Description

The DSLPro Stinger BOT module communicates with the Lucent Stinger/MRT DSLAMs in the network. It provides a way to process most provisioning actions with a click of the mouse.

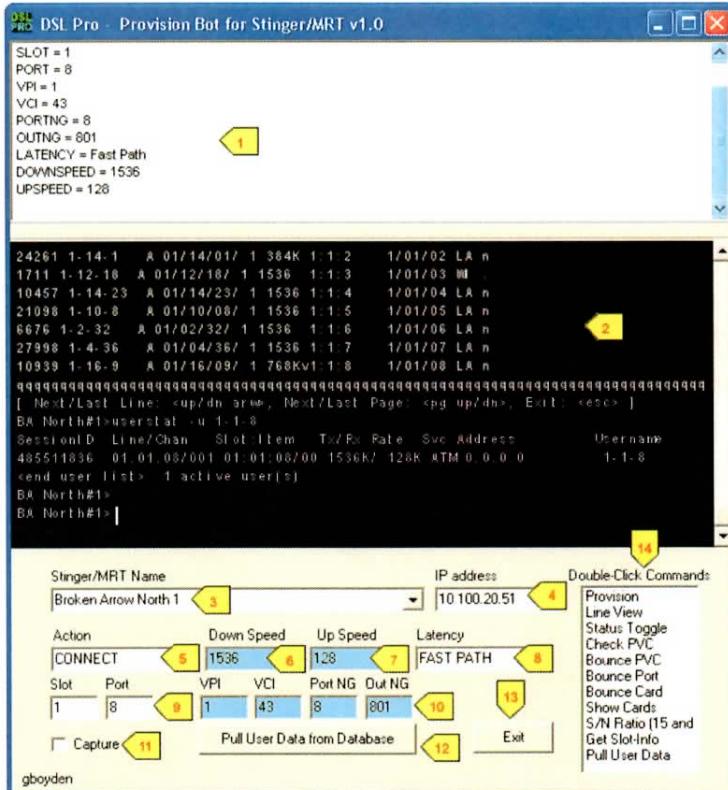


Figure 14

ID	Field	Description
1	Status log	This memo field will display a log of the commands issued to the Stinger if the Capture box is checked. This field will turn Green or Red after the "Provision" action to indicate success or failure.
2	Telnet session	This is an automatic and interactive telnet session. Automated commands will display in this window. When the cursor is at rest, the user is free to enter their own commands here as well.
3	Stinger Name	Select the Stinger or MRT DSLAM to control from this list.
4	IP Address	After selecting the Stinger name, its IP address will appear here.
5	Action	Select <b>CONNECT</b> or <b>DISCONNECT</b> from list to indicate the action to perform when the "Provision" option is double-clicked in the command list.
6	Down Speed	Select the customers DSL down speed from this list to indicate the port speed of the port when the "Provision" option is double-

		clicked in the command list.
7	Up Speed	Select the customers DSL up speed from this list to indicate the port speed of the port when the "Provision" option is double-clicked in the command list.
8	Latency	Select Fast Path or Interleave from this list to indicate the port latency of the port when the "Provision" option is double-clicked in the command list.
9	Slot / Port	These fields contain the current port information that will used when the double-click commands on the right are issued.
10	vpi / vci / nailgroup	These fields contain the current vpi / vci / nailgroup port information that will used when the double-click commands on the right are issued.
11	Capture	Checking this box will capture the telnet session and display the commands and responses in the top memo box.
12	Pull User Data from Database	This button will update the fields in blue. It will find the port speed, VPI/VCI, and Nailed Group information for the currently selected slot-port of the chosen DSLAM. This customer information (if provisioned) will display in the top memo box.
13	Exit	This button will close the BOT.
14	Double-Click Commands	<p>This list contains commonly used commands. Double-clicking the items in the list will generate and issue a properly formatted command to the DSLAM based upon the data contained in fields to the left. The commands are:</p> <p><b>Provision</b> – Sets port speed and creates PVC  <b>Line View</b> – Starts the stinger line view mode to check sync  <b>Status Toggle</b> – Switches back to CLI mode  <b>Check PVC</b> – Shows if PVC is up. Port must first be in sync  <b>Bounce PVC</b> – Resets and rebuilds PVC. Stingers have a habit of stuck of failed PVC's. This option often fixes the issue.  <b>Bounce Port</b> – Turns the port off then on again. This is needed if the port is stuck.  <b>Bounce Card</b> – This option will reboot the card. Use if customers on a single card are having issues,  <b>Show Cards</b> – This command shows the currently slotted cards and their operational state  <b>S/N Ratio</b> – This will show the signal to noise ratio of the connection. 15 or better is considered good.  <b>Get Slot Info</b> – This command will show information about the current slot.  <b>Pull User Data</b> – This command will update the fields in blue. It will find the port speed, VPI/VCI, and Nailed Group information for the currently selected slot-port of the chosen DSLAM. This customer information (if provisioned) will display in the top memo box.</p>

Table 15

## 15.0 DSLPro ASAM BOT

### 15.01 Description

The DSLPro ASAM BOT module communicates with the Alcatel DSLAMs in the network via the only TL1 license. It provides a way to process most provisioning actions with a click of the mouse. It issues its commands and closes the connection usually within 7 seconds. This helps to enable the single TL1 license to serve multiple users.

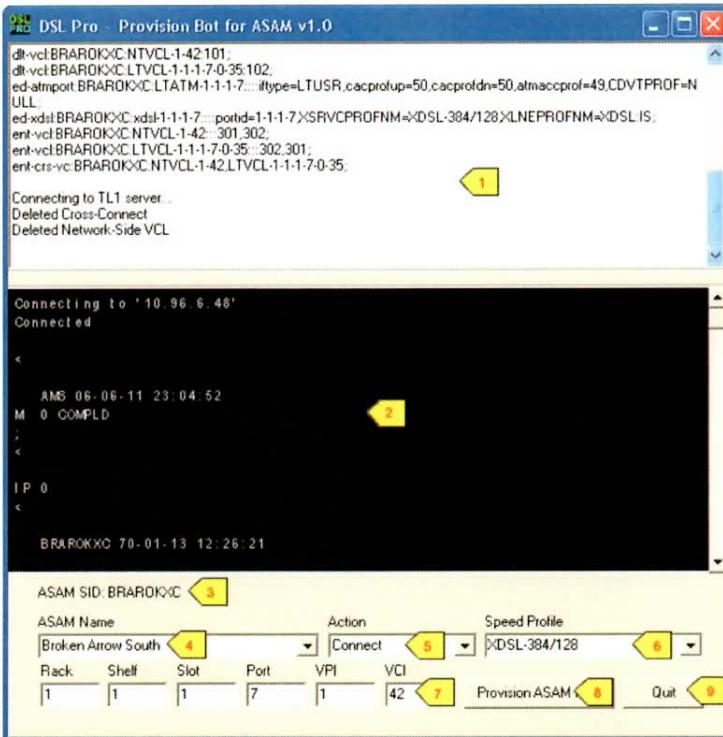


Figure 15

ID	Field	Description
1	Status log	This memo field will display a log of the commands issued to the DSLAM if the Capture box is checked. This field will turn Green or Red after the "Provision" action to indicate success or failure.
2	TL1 session	This is an automatic TL1 session. Automated commands will display in this window.
3	ASAM SID	The ASAM SID is displayed here for the chosen DSLAM. Each Alcatel ASAM is identified in TL1 by its SID name.
4	ASAM Name	This lists contains the names of the available ASAM DSLAMs
5	Action	Select <b>CONNECT</b> or <b>DISCONNECT</b> from list to indicate the action to perform when the "Provision ASAM Now" button is clicked.
6	Speed Profile	The Alcatel SAM uses predefined profiles to set speed and latency. There are also separated profiles for ADSL and

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		XDSL cards. XDSL represents cards capable of ADSL 2.0 Plus.
7	Rack/Shelf/Slot/Port/VPI/VCI	The Alcatel ASAM identifies each port through a full naming convention that contains the rack and shelf designators. These fields must be complete and accurate to provision a port.
8	Provision ASAM Now	This button will generate and issue the TL1 formatted commands needed to provision the port using the information provided in the adjacent fields.
9	Quit	The Quit button will close exit the BOT.

Table 16

## 16.0 DSLPro Cisco7200 BOT

### 16.01 Description

The DSLPro Cisco 7200 BOT module communicates with the Cisco routers in the network to manage customer's DHCP or Static IP ATM interfaces. It provides a way to process most provisioning actions with a click of the mouse.

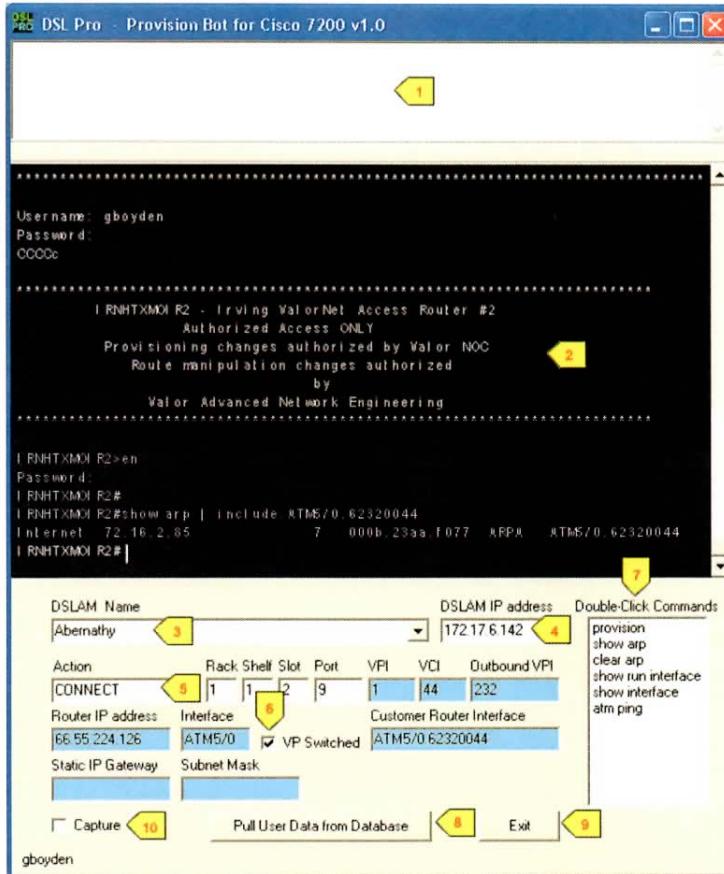


Figure 15

ID	Field	Description
1	Status log	This memo field will display a log of the commands issued to the router if the Capture box is checked. This field will turn Green or Red after the "Provision" action to indicate success or failure.
2	Telnet session	This is an automatic and interactive telnet session. Automated commands will display in this window. When the cursor is at rest, the user is free to enter their own commands here as well.
3	DSLAM Name	Select the DSLAM name from this list.

4	DSLAM IP Address	After selecting the DSLAM name, the IP address is shown here. This BOT will automatically find the associated router for this site.
5	Action	The options are CONNECT and DISCONNECT. The connect action will build the interface in the router, the Disconnect action will remove it.
6	VP Switched	This check box will format the router interface name based on the switching method. If the site is VP switched, select this box.
7	Double-Click commands	Double-Click these commands to perform these commonly used functions. Below are the commands: <b>provision</b> – This option will build the ATM interface <b>show arp</b> – This will show the current connection and its IP address if available <b>clear arp</b> – This will clear the ARP table, forcing the client to pull the IP again. <b>show run interface</b> – This command shows the current configuration for ATM interface. <b>show interface</b> – This option shows the statistics for the current ATM interface. <b>atm ping</b> – This command will send a layer 2 ping down to the clients modem. Success proves the layer 2 connectivity is working.
8	Pull User Data from Database	If the white fields are complete, selecting this button will pull the remaining data from the database and fill-in the blue fields.
9	Exit	This button with close and exit this BOT
10	Capture	With this box checked, the top memo field will capture the commands and responses in the telnet session.

Table 17