

Task 5—Setting Up a Web Portal for the Dial NMS

About a Web Portal

A web portal for the dial NMS is a combination of CGI scripts and HTML links used to support a dial Internet access service.

As the number of devices and applications in a network increase, the operations support team may become inundated with a myriad of management products. To support a dial service, a web portal provides easy access to:

- Product manuals, design guides, white papers, and troubleshooting guides.
- Light-weight tools and scripts.
- Network policies, procedures, and reports.
- Periodic and just-in-time reporting.
 - The help desk can access operational information (for example, current connected caller status).
 - The operations staff can report on current service levels.



For more information on building a management intranet, go to http://www.cisco.com/warp/public/cc/serv/mkt/nmps/ent/tech/bmi_wi.htm

Table 22	Utilities Provided by the Web Portal for the Dial NMS
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Utility	Function
Documentation Center	A web server used as an online-documentation hub to share network operations information.
Device Linker	A web page used for bookmarking URLs for quick device telnet and out of band (console) access.
	See the "Building a Device Linker Web Page" section on page 83.

Utility	Function		
Cisco IOS CLI Command Center	A web page that provides HTTP access to frequently used Cisco IOS CLI commands. The operations team and help desk can use this utility to troubleshoot connectivity problems.		
	See the "Using HTTP to Access CLI Commands" section on page 86.		
IP Tracker	A web page that uses two scripts to keep track of IP address block assignments by using DNS reverse lookup zones.		
	See the "Creating an IP Tracker Web Page" section on page 96.		
SNMP Commander	A script that aids the MIB research task by enabling engineers to build web-based object identification (OIDs) bookmarks. You can poll for network statistics by using OID bookmarks and a web browser. No keyboard is required.		
	See the "About SNMP Commander" section on page 48.		
Syslog Viewer	A utility that uses FTP to access a syslog server and a web browser to view syslog messages. Migration to HTTP is straightforward after security issues are addressed. The use of non-wrapping text is useful when viewing debug messages and modem call records.		
	See the "Inspecting Syslog Messages in the Log File" section on page 78.		
Modem Call Record Viewer	Light-weight scripts used to parse and view modem call records.		
	See the "About Syslog" section on page 67.		
CiscoWorks 2000 Resource Manager Essentials	A utility used to remotely monitor and maintain devices through a web-based browser interface.		
	See the "Task 8—Using CiscoWorks 2000 Resource Manager Essentials" section on page 117.		

 Table 22
 Utilities Provided by the Web Portal for the Dial NMS (continued)

Building a Device Linker Web Page

A device linker web page:

- Simplifies access to the many device-management interfaces in the network.
- Provides links to the telnet, console, and HTTP ports of Cisco IOS devices.

Figure 19 Device Linker Used to Access Devices



By using a Cisco terminal server for out-of-band console access, such as a Cisco 2511, the consoles are available at TCP port 20xx on a terminal server. The target line number replaces xx. For example to get to line 1, telnet to port 2001. The equivalent URL is telnet://172.21.101.250:2001

To build a device linker web page, follow these steps:

- **Step 1** Collect the IP addresses for the Cisco IOS devices.
- **Step 2** Collect the device console out-of-band (OOB) paths for the terminal server and the lines connected to Cisco IOS devices.
- **Step 3** Create a basic HTML table and enter the information for each device. The telnet and HTTP information is in bold in the following HTML code fragment. Step 4 shows what the table looks like in a web browser.

```
<html>
<head>
<title>Dial The.Net Device Linker</title>
</head>
<body>
<h2>Dial The.Net Device Linker</h2>
<tt>
Name
IP
IPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIPIP
```

Table 23	Functions and	Parameters f	for Designing	a Device	Linker Web	Page
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Function	Formula	Example
OOB console access	telnet://termserver-ip:20XX	telnet://172.21.101.250:2001
Basic IP access	telnet://ip-address	telnet://172.21.10.1
IOS HTTP access	http://ip-address	http://172.21.10.1

Step 4 Post the device linker web page to a WWW server in the NOC.

Figure 20	A Device	Linker	Management	Page
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殿 Dial The.Net	Device Linker	- Netscape			
<u>F</u> ile <u>E</u> dit ⊻iew	<u>Go</u> <u>C</u> ommunica	ator <u>H</u> elp			
Back Forw	ard Reload H	Ame Search Guide	Print Security	Stop	N
🧃 🦋 Bookmar	rks 🏼 🍌 Locatio	n: http://sj-fs2.cisco.com/	wg1/coe-iae/Publishe	d/proje 💌 🕼	What's Related
🕴 🖳 Directory	🖳 My HTTP	🖳 Cisco Systems 🖳	LBJ 🖳 ISG Lab	🖳 NMS ISG 🛛 🖆	່ງ Tools 📺 Empl
Dial The	.Net Dev	vice Linker			
Name	P	Console	Hardware Type	Comments	
travis-nas-01	172.21.10.1	travis-00b-01:2001	5800	Dial POP #1	
		•		·	3

Step 5 Click on an active device link. After a telnet session opens, log in.

Figure 21 Console Port Login

🚚 Telnet - 172	2.23.84.20			_	
<u>C</u> onnect <u>E</u> dit	<u>T</u> erminal <u>H</u> elp				
User Access	Verification				
Username: a Password:	ıdmin				
travis-nas-	01#show caller		Active	elhī	
Line vty Ø travis-nas-	User admin 01#	Service VTY	Time 00:00:16	Time 00:00:00	
Ⅰ	-				۔ // ا

Troubleshooting a Cisco 2511 Console Connection

If you cannot access the console of a device, follow these steps:

```
Step 1 Verify that the configuration on the terminal server is correct. Telnet is the only service that must be supported to access the lines. The following configuration fragment shows you how to configure 16 TTY lines on a Cisco 2511 terminal server.
```

!
line 1 16
no exec
transport input telnet
!

Step 2 If the console port is blocked, you may need to telnet to the terminal server and clear the line. Enter the **show users** EXEC command followed by the **clear line** *type number* command.

Line User Host(s) Idle Loc	cation
0 con 0 admin idle	
4 tty 4 admin incoming 0 dhc	cp-172-71-218-198.guessme.com
* 10 vty 0 admin incoming 0 dhc	cp-172-71-218-198.guessme.com
<pre>[confirm] [OK]</pre>	
c2511-oob# show users	
Line User Host(s) Idle Loc	cation
0 con 0 admin idle	
* 10 vty 0 admin incoming 0 dhc	cp-172-71-218-198.guessme.com

Step 3 (Optional) Sometimes administrators inadvertently leave lines in use. To make idle telnet sessions end after 30 minutes, enter the **exec-timeout 30 0** command on all the lines.

```
!
line 1 16
no exec
exec-timeout 30 0
transport input telnet
!
```

About HTTP Access to the CLI

Using web-based access to the CLI reduces the need for telnet sessions to monitor or verify network operations. Telnet sessions can be reserved for actions such as making configuration changes. Additionally, sending syslog to a syslog server prevents telnet sessions from becoming cluttered with debug output.

HTTP access to the CLI is:

- Very difficult to secure. One way of securing a router is to use access-control lists on all VTY lines. Enable only devices in the NOC to access the VTY lines.
- Not recommended for service providers. If used, you should weigh the perceived ease of use versus the additional security issues involved with HTTP access to a network device.

The Cisco IOS CLI Command Center is a web page utility that provides HTTP access to CLI commands on a router. HTTP access to the CLI simplifies the troubleshooting tasks for a help desk.

Using HTTP to Access CLI Commands

To manage a dial Internet access service by using HTTP access to CLI commands, follow these steps:

Step 1 Enable HTTP services on the Cisco IOS device by entering the following commands:

```
!
ip http server
ip http authentication aaa
!
```

Table 24 Command Descriptions

Command	Purpose
ip http server	Enables the router to function as an HTTP server.
ip http authentication aaa	Uses the AAA facility as an authentication method for HTTP server users.

Step 2 Create a table in an HTML web page and enter your list of frequently used Cisco IOS CLI commands.



To create the link for a CLI command, specify the IP address of the Cisco IOS device followed by the command. Remember to include the forward slashes (/) between each command mode and key word.

Table 25 Formula and Example for Linking a CLI Command

Formula	Example
http://ip-address/exec/ios-key-word//cr	http:/172.23.84.20/exec/sh/caller/cr

The web page can include many types of commands useful for managing a dial Internet access service, including:

- System commands (Table 26)
- Interface commands (Table 27)
- Call state commands (Table 28)
- Debug commands (Table 29)

Table 26 System Commands

show running configuration	show file systems	show ip route
show version	dir	show ip route static
show modem version	show flash	show ip route connected

Table 27 Interface Commands

show controller t1	show ip interface brief	show interface Fast Ethernet0/0/0
show isdn service	show interface	show line
show isdn status		

show modem	show caller	show users
show modem call-stats	show caller ip	show dialer
show modem ?	show caller timeout	show dialer map
	show caller ?	

	Iaple 20	Call State	Commanus
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Table 29Debugging Commands

show logging	debug isdn q931	debug aaa authentication					
clear counters	debug modem	debug aaa authorization					
clear logging	debug ppp negotiation	debug aaa accounting					
show debug	debug ppp authentication	debug aaa per-user					
undebug all	debug dialer	debug vtemplate					
	debug dialerpacket	debug vprofile					

Step 3 Post the HTML page that you created in Step 2 to a web server.

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Figure 22	Cisco IOS	CLI Commander
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Reload Home Search Location: http://onionii MyHTTP Cisco Syste CiscolOS CLI C CiscolOS CLI C CiscolOS CLI CiscolOS CLI	Guide ng.cisco.co ms 및 L entral Comma S-nas s-nas	Print Security Store print Security Store	html 45 ISG VIS–	What's Relate Tools f Employee Cisco Systems								
Location: http://onionii MyHTTP Cisco Syste CiscolOS CLI C CiscolOS CLI C CiscolOS CLI CiscolOS CLI	ng.cisco.co ms 🖳 L omma Comma s-nas	ander mander: trav	html 45 ISG VIS–	What's Relate Tools f Employee Cisco Systems								
MyHTTP Cisco Syste The.Net NMS Ce CiscolOS CLI C CiscolOS CLI CiscolOS CLI	ntral Com s-nas	BJ 🖾 ISG Lab 🖾 NH Ander umander: tra -01	45 15G V is -	Cisco Systems								
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CiscoIOS CLI Celnet to travi System Command	Com s-nas	mander: tra - <u>01</u>	vis-	nas-01.the.net								
Selnet to travi	s-nas	<u>-01</u>										
ystein Command	s											
System Command	s											
how		System Commands										
unning-configuration	show fi	le systems	she	ow ip route								
how version	dir		show ip route static									
how modem version	show f	ash	show ip route connected									
nterfaces	chorr	in interface hrief	s	show interface Fast								
	5110 44	ip internace orier	Ethernet0/0/0									
how isdn service	show	interface	show line									
show isdn status												
Call State												
how modem		show caller	show users									
how modem call-stats		show caller ip		show dialer								
how modem ?		show caller timeout		show dialer map								
	CX-	show caller ?										
Debugging												
how logging	debug i	debug aaa authentication										
lear counters	debug 1	nodem	debug aaa authorization									
lear logging	debug t	opp negotiation	debug aaa accounting									
how debug	debug t	opp authentication	<u>d</u>	ebug aaa per-user								
indebug all	debug	dialer	d	ebug vtemplate								
	debug	dialer packet	<u>d</u>	debug vprofile								
	now version now version now modem version now modem version nuterfaces now controller t1 now isdn service now isdn status Call State now modem how modem call-stats how modem ? Debugging how logging lear counters lear logging how debug ndebug all Mitch	10W show fill 10W inning-configuration 10W dir 10W show fill 10W show fill 10W show fill 10W show fill 10W show 10W show 10W show 10W show now show nod	now show file systems now version dir now modem version show flash now modem version show flash nterfaces show ip interface brief now isdn service show interface how isdn status show caller how modem show caller how modem show caller ip how modem ? show caller ip how modem ? show caller? Debugging debug isdn q931 lear counters debug modem lear logging debug ppp negotiation how debug debug dialer ndebug all debug dialer	how unning-configuration show file systems sh how version dir sh how modem version show flash sh now controller t1 show ip interface brief sh how isdn service show interface sh how isdn service show interface sh how modem show caller sh how modem show caller ip show caller ip how modem ? show caller timeout show caller ? Debugging debug isdn q931 d lear counters debug modem d how debug debug ppp negotiation d how debug debug ppp authentication d								

Table 30 shows the source code that created the Cisco IOS CLI Commander in Figure 22. Telnet to travis-nas-01.

System Commands
show running config
show version
show modem version
show file systems
show flash
show ip route
show ip static
show ip route connected
dir
Interfaces
show controller t1
show isdn service
show isdn status
show ip interface brief
show ip interface
show interface Fast Ethernet0/0/0
show line
Call State
show modem
show modem call-stats
show modem ?
show caller
show caller ip
show caller timeout
show caller ?
show users
show dialer
show dialer map
Debugging
show logging
clear counters
clear logging
show debug
undebug all
debug isdn q931
debug modem

Table 30 Cisco IOS CLI Commander:travis-nas-01.the.net

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debug ppp negotiation	
debug ppp authentication	
debug dialer	
debug dialer packet	
debug aaa authentication	
debug aaa authorization	
debug aaa per-user	
debug aaa vtemplate	
debug aaa vprofile	

 Table 30
 Cisco IOS CLI Commander:travis-nas-01.the.net (continued)

Step 4 Click on a CLI command and view the command output in a web page.

Figure 23 Output for the Show Caller Command

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B	ack Forw	ard Reload	Home Search	ch Guid	ē ie Pi	≸ rint) Securi	y Sta) p							Ν
	🌾 🖁 Bookma	rks 🍌 Gi	o to: http://172.	23.84.20/	'exec/sh	n/cal	ler/cr					-	0	* Wha	at's Rela	ated
	Directory	🖳 My HTTP	🖳 🖳 Cisco Sy	stems 🗄	J LBJ		ISG Lab	B 1	VMS ISG	T 🗂	ools	_ ۲	- Employ	ee		
m	aui-	nas-0	1													-
L:	ine	User		5	ervic	e		Acti [.] Time	ve	Idle Time						
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vt	ty O	gmemi	lla	v	ΤY			-		00:56	5:38					
As	s 34	rlewi	s rad	F	PP			00:2	4:03	00:00	:03					
Se	e0:0	rbrow	n-isdn-ra	d P	PP			01:3	7:30	00:00	:02					
Se	e0:7	kthon	pso-isdn	F	PP			01:3	9:03	00:00	:03					
Se	e0:8	kthom	pso-isdn	F	PP			01:33	9:01	00:00	:03					
Se	e0:9	dleyl	and-isdn	F	PP			03:5	0:25	00:00	:02					
S6	e0:10	rbrow	n-isdn-ra	d F	PP			01:3	7:32	00:00	0:02					
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