# **Basic Router Configuration using SDM**

## Document ID: 71305

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This document describes how to use the Cisco Security Device Manager (SDM) in order to set the basic configuration of the router. This includes the configuration of the IP address, default routing, static and dynamic routing, static and dynamic NATing, hostname, banner, secret password, user accounts, and so forth. Cisco SDM allows you to configure your router in all kinds of network environments that includes small office home office (SOHO), branch office (BO), regional office, and central site or Enterprise headquarters using an easy-to-use web-based management interface.

# Prerequisites

## Requirements

This document assumes that the Cisco router is fully operational and configured to allow the Cisco SDM to make configuration changes.

Note: Refer to Allowing HTTPS Access for SDM in order to allow the router to be configured by the SDM.

## **Components Used**

The information in this document is based on these software and hardware versions:

- Cisco 3640 Router with Cisco IOS® Software Release 12.4(8)
- Cisco Security Device Manager (SDM) Version 2.3.1

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure

that you understand the potential impact of any command.

**Note:** If you use a Cisco Integrated Service Router (ISR), refer to Basic Router Configuration Using Cisco Configuration Professional for similar configuration details with more powerful features. For information on which routers are suppoted by Cisco CP, refer to the Supported Routers section of the *Release Notes for Cisco Configuration Professional 2.5*.

## Conventions

Refer to the Cisco Technical Tips Conventions for more information on document conventions.

# Configure

In this section, you are presented with the information to configure the basic settings for router in a network.

## **Network Diagram**

This document uses this network setup:



**Note:** The IP addressing schemes used in this configuration are not legally routable on the Internet. They are RFC 1918 addresses which have been used in a lab environment.

## **Interface Configuration**

Complete these steps in order to configure the interfaces of a Cisco router.

1. Click **Home** in order to go to the SDM Home page.

The SDM Home page provides information such as hardware and software of the router, feature availability, and a configuration summary. The green circles show the features supported in this router and the red circles show the features not supported.

Edit View Tools He	Device Manager (SDM): 172. Ip	16.1.2				
home	onligure 🧭 Monitor	Refresh Save	Q Search	🥐 Help		
About Your Router			Host Na	me:		Rout
	Hardware	Mc	<u>xe</u> Softw	are		More .
	Model Type:	Cisco 3	840 IOS Ve	rsion:		12.4(8)
	Available / Total Memory(M	B): 49/128	MB SDM V	ersion:		2.1
Cisco 3640	Total Flash Capacity:	48	MB			
	Feature Availability:	° 🥝 — Firewall 🔇	VPN 📀	IPS 🔇	NAC 😆	
Configuration Overview					View Runnin	ng Config
Configuration Overview Interfaces and Co Total Supported LAN:	nnections	€° Up (1) 2 То	Oown (5) Ital Supported V	/AN:	View Runnin 4(Serial Sync	ng Config c/Async)
Configuration Overview , Interfaces and Co Total Supported LAN: Configured LAN Interfa	innections ace:	👻 Up (1) 2 To 1 To	Down (5) Datal Supported V Datal WAN Conner Datal WAN Conner	/AN: ctions:	View Runnin 4(Serial Synd 1	ng Config C/Async) (HDLC)
Configuration Overview Configuration Overview Total Supported LAN: Configured LAN Interfa DHCP Server:	ace: Not	Up (1)     2 To     1 To     Configured	Oown (5) otal Supported V otal WAN Conner	/AN: ctions:	View Runnin 4(Serial Synd 1	ng Config C/Async) (HDLC)
Configuration Overview Configuration Overview Total Supported LAN: Configured LAN Interfa DHCP Server: VPN	nnections ace: Not	<ul> <li>Up (1)</li> <li>2 To</li> <li>1 To</li> <li>Configured</li> <li>Up (0)</li> </ul>	Down (5) otal Supported V otal WAN Connec	/AN: ctions:	View Runnin 4(Serial Sync 1	ng Config C/Async) (HDLC)
Configuration Overview Interfaces and Co Total Supported LAN: Configured LAN Interfa DHCP Server: VPN IPSec (Site-to-Site):	nnections ace: Not	<ul> <li>Up (1)</li> <li>2 To</li> <li>1 To</li> <li>Configured</li> <li>Up (0)</li> <li>0 Git</li> </ul>	Down (5) otal Supported V otal WAN Conner RE over IPSec:	/AN: ctions:	View Runnin 4(Serial Synt 1	ng Config C/Async) (HDLC) 0
Configuration Overview  , Interfaces and Co Total Supported LAN: Configured LAN Interfa DHCP Server:  , VPN IPSec (Site-to-Site): Xauth Login Required:	mnections ace: Not	Configured	Down (5) otal Supported V otal WAN Conner RE over IPSec: asy VPN Remote	/AN: ctions:	View Runnin 4(Serial Synt 1	rg Config (JAsync) (HDLC) 0 0
Configuration Overview Configuration Overview Total Supported LAN: Configured LAN Interfa DHCP Server: VPN IPSec (Site-to-Site): Xauth Login Required: No. of DMVPN Clients:	mnections ace: Not	Configured     Up (1)     2 To     1 To     Configured     O     O     O     O     O     O     O     O	Down (5) otal Supported V otal WAN Conner RE over IPSec: asy VPN Remote o. of Active VPN	/AN: ctions: : Ctients:	View Runnin 4(Serial Synd 1	rg Config (Async) (HDLC) ( 0 0
Configuration Overview Configuration Overview Total Supported LAN: Configured LAN Interfa DHCP Server:	mnections ace: Not	Configured     Up (1)     2 Ta     1 Ta     Configured     O     O     O     O     O     O     O     O     O     O	Down (5) otal Supported V otal WAN Conner RE over IPSec: asy VPN Remote o. of Active VPN	/AN: ctions: : Clients:	View Runnin 4(Serial Synd 1	ig Config (Async) (HDLC) ( 0 0 0
Configuration Overview Configuration Overview Total Supported LAN: Configured LAN Interfa DHCP Server:	mnections ace: Not	Configured     Up (1)     2     Ta     1     Ta      Configured     O     G     O     G     O     Na      O	Down (5) otal Supported V otal WAN Conner RE over IPSec: asy VPN Remote o. of Active VPN	/AN: :tions: : Clients:	View Runnin 4(Serial Synd 1	(HDLC)

2. Choose **Configure > Interfaces and Connections > Create Connection** in order to configure the WAN connection for the interface.

As an example, for serial interface 2/0, choose the **Serial** option and click **Create New Connection**.

**Note:** For other types of interfaces like **Ethernet**, choose the respective interface type and proceed by clicking the **Create New Connection** button.



3. Click Next in order to proceed once this interface appears.

Serial Wizard		X
WAN Wizard	Welcome to the Serial WAN Configuration Wizard	
	This wizard will allow you to configure a Serial interface for Internet connectivity	
Ant	Three types of Serial WAN connections are supported:	
A DE	* Frame Relay	
3 11 11/	* HDLC	
	* PPP	
	To continue, click Next.	
	< Back Next> Finish Cancel	Help

4. Select Serial interface 2/0 (desired) from the Available Interfaces option and click Next.



5. Choose the encapsulation type for the serial interface and click Next.



6. Specify the static IP address with the corresponding subnet mask for the interface and click Next.

Serial Wizard - Serial2/0(Syn	c/Async)
WAN Wizard	IP address: Enter the IP address for this connection
	Static IP address     IP address:     192.168.1.1
	subnet mask: 255.255.2
	C IP Unnumbered to: Ethernet0/0
	You can configure this interface to perform dynamic DNS updates by checking the checkbox below.
	Enable Dynamic DNS Dynamic DN8
	< Back Next > Finish Cancel Help

7. Configure the default routing with optional parameters such as the next hop IP address (192.168.1.2 as per network diagram) supplied by the ISP and click **Next**.

Serial Wizard - Serial2/0(Syn	ic/Async)	×
WAN Wizard	Advanced Options	
	There is no static route configured on the router. A default static route ensures that outgoing traffic will always be sent to another router on the network.	
	C Default Static Route	
- Int	C Use this Interface as Forwarding Interface	
	Next Hop IP address     192.168.1.2	
	(If your ISP has given you a next hop IP address enter it here)	
M A	PAT is not configured on any router interface. Configuring PAT allows multiple devices on the LAN to share this WAN connection.	
$\mathbb{M}$	Port Address Translation	
	LAN Interface to be translated: FastEthernet1/0	
W W		
	< Back Next > Finish Cancel Help	

This window appears and shows the configuration summary configured by the user. Click Finish.



This window appears and shows the command delivery status to the router. Otherwise, it displays errors if the command delivery fails due to incompatible commands or unsupported features.

Commands Delivery Status	×
Command Delivery Status:	
Preparing commands for delivery Submitting 6 commands, please wait Configuration delivered to router. 	*
ОК	

8. Choose **Configure > Interfaces and Connections > Edit Interfaces/Connections** in order to add/edit/delete the various interfaces.

📢 Cisco Router an	d Security Device Man	ager (SDM): 172.16.1.2						1
File Edit View	Tools Help							
🚮 Home	Configure	Monitor Retresh	Gave S	🔍 🦻 earch Hel	p			Cisco Sv utiliuuu
Tasks	🗞 Interfaces an	d Connections						
 *	Create Connection	Edit Interface/Connection	Ì					
Interfaces and	Interface List		da Add 👻 📝 E	dit 🛅 Delete	Summary	🕰 Details	🗢 Disable 🔏 Te	est Conne
	Interface	IP	Туре	Blo	t Status	Description		
Filewall and ACL	Ethernet0/0 FastEthernet1/0	no IP address 172.16.1.2	Ethernet 10/100Ethernet	0	O Dow			
	Serial2/0	192.168.1.1	Serial Sync/Asyr	ic 2	🕒 Up			
<u> </u>	Serial2/1	no IP address	Serial Sync/Asyr	ic 2	💡 Dow			
VPN	Serial2/2	no IP address	Serial Sync/Asyr	IC 2	Oow Dow			
EN Security Audit	Serial2/3	no IP address	Serial SynciAsyr	10 2	O Dow			
Routing								
4.	Details about Interf	face:Serial2/0			🔷 Admi	nistratively Up	오 Administra	atively Do
A D	Item Name			Item Valu	ie			
nni	IP address/subnet	mask		192.168.1	1/255.255.25	5.0		
	Encapsulation			HDLC				
	NAT			≺None≻				
Intrusion Prevention	Access Rule - inbo	und		<none></none>				
	Access Rule - outb	ound		<none></none>				

Highlight the interface with which you want to make changes and click **Edit** if you want to edit or change the interface configuration. Here you can change the existing static IP address.

Interface Feature Edit Dialog -Serial2/0	x
Connection Association NAT General Application Service	_
Encapsulation: HDLC	
IP address Static IP address	
IP address: 192.168.1.1	
Subnet mask: 255.255.255.0 or 24	
Dynamic DNS Method:	
OK Cancel Help	

# **NAT Configuration**

### **Dynamic NAT Configuration**

Complete these steps in order to configure the dynamic NAT in a Cisco router.

1. Choose **Configure > NAT > Basic NAT** and click **Launch the selected task** in order to configure basic NATing.



2. Click Next.



3. Choose the interface that connects to the Internet or your ISP and choose the IP address range to which Internet access is to be shared.

Basic NAT Wizard			
NAT Wizard Network Address Translation	Sharing the Internet Connection If this router has a connection to the In on the LAN to share this connection. Choose the interface that connects to Serial2/0 Detail	ternet, specify how you v the Internet or your Intern s	vant PCs and hosts net service provider:
Franki         Tol.           100000         000000           100000         000000           100000         00000           100000         00000           100000         00000           100000         00000           100000         00000           100000         00000           100000         00000           100000         00000	The following ranges of IP addresses to the router. Check the box next to eac that you specified: IP address range	are allocated to network h network that is to shar	s directly connected re the connection Comment
	V 172 16 1 0 to 172 16 1 255	EastEthernet1/0	
	192.168.1.0 to 192.168.1.255	Serial2/0	
	Note: To configure NAT on an interface Edit NAT Configuration, and uncheck t window. For details see help.	e marked as Designated hat interface in the Desig	l, exit this wizard, click gnate NAT Interfaces
		< Back Next > Finis	h Cancel Help

4. This window appears and shows the configuration summary configured by the user. Click Finish.

Jasic NAT Wizard	
NAT Wizard Network Address Translation	Summary of the Configuration
	Click finish to deliver the configuration to the router.
	Interface that is connected to the Internet or to your Internet service provider: Serial2/0
FEMI         TOI           1019620156         24.534 2           1019620156         24.534 2           1019620156         24.534 2           1019620156         24.594 5           101972016         24.594 5           101972016         24.594 5           101972016         24.594 5           101972016         24.594 5           101972016         24.594 5           101972016         24.594 5           101972016         24.594 5           101972016         24.594 5           101972016         24.594 5           101972016         24.594 5           101972016         24.594 5           101972016         24.594 5           101972016         24.594 5           101972016         24.594 5           101972016         24.594 5           101972016         24.594 5           101972016         24.594 5	IP address ranges that share the Internet connection: 172.16.1.0 to 172.16.1.255
	< Back Next > Finish Cancel

5. The Edit NAT Configuration window shows the configured dynamic NAT configuration with the translated IP address overloaded (PATing). If you want to configure the dynamic NATing with address pool, click **Address Pool**.

Create NAT Configuration Edit NAT Configuration		X	
Designate NAT Interfaces		Address Pool	Translation Timeouts
Network Address Translation Rules			
Inside Interface(s): FastEthernet1/0			
Outside Interface(s): Serial2/0			
Original address	Translated address	Rule Type	Add
172.16.1.0-172.16.1.255	192.168.1.1	Dynamic	
			Edit
			Delete
			View Route MAP

#### 6. Click Add.

Ad A	ldres \ddre addre	<b>ss Pools</b> ess Pools are use esses.	d to configure Dynamic Network Address Tr	x
		Pool Name	Address	
				Add
				Edit
				Delete
	E c	ione selected Ent	ry on Add	
		C	K Cancel Hein	

Here informations such as the pool name and IP address range with netmask are provided. There can be times when most of the addresses in the pool have been assigned, and the IP address pool is nearly depleted. When this occurs, PAT can be used with a single IP address in order to satisfy additional requests for IP addresses. Check **Port Address Translation (PAT)** if you want the router to use PAT when the address pool is close to depletion.

Add Address Pool
Pool Name: pool1
✓ Port Address Translation(PAT)
IP address: 192.168.1.3 192.168.1.10
Network Mask: 255.255.255.0 or 24
CancerHeip

7. Click Add.



8. Click Edit.

Create NAT Configuration Edit NAT Configuration			
Designate NAT Interfaces		Address Pool	Translation Timeouts
Network Address Translation Rules			
Inside Interface(s): FastEthernet1/0			
Outside Interface(s): Serial2/0			
Original address	Translated address	Rule Type	Add
172.16.1.0-172.16.1.255	192.168.1.1	Dynamic	
			Edit
			Delete

9. Choose Address Pool in the Type field, provide the name to the Address Pool as pool1 and click OK.

Edit Address Translation Rule	
🔿 Static 🛛 💽 Dynami	C
Direction: From inside to	outside 🔽
Translate from interfac	e
Inside Interface(s):	FastEthernet1/0
ACL Rule:	1
Translate to interface –	
Outside Interface (a):	Parial2/0
Outside interiace(s).	Senaizio
Type:	Address Pool
	Interface
Interface:	Address Pool
Addrose Rool:	la cald
Address P001.	poori V

10. This window shows the configuration for dynamic NATing with the address pool. Click **Designate NAT Interfaces**.

2/2 NAT			
Create NAT Configuration Edit NAT Configuration			
Designate NAT Interfaces		Address Pool	Translation Timeouts
Network Address Translation Rules			
Inside Interface(s): FastEthernet1/0			
Outside Interface(s): Serial2/0			
Original address	Translated address	Rule Type	Add
172.16.1.0-172.16.1.255	192.168.1.3-192.168.1.10	Dynamic	<u></u>
			Edit
			Delete

Use this window in order to designate the inside and outside interfaces that you want to use in NAT translations. NAT uses the inside and outside designations when it interprets translation rules, because translations are performed from inside to outside, or from outside to inside.

Once designated, these interfaces are used in all NAT translation rules. The designated interfaces appear above the Translation Rules list in the main NAT window.

NAT Interf	ace Setting			
Select the inside / o	e list of inter utside.	faces that you w	ant to design	nate as
inter	face	inside(truste	d) out	side(untruste
FastEthe	rnet1/0	<b>v</b>		
Serial2/0	I			<b>V</b>
<b>▲</b>				•
	ОК	Cancel	Help	

### Static NAT Configuration

Complete these steps in order to configure static NAT in a Cisco router.

1. Choose **Configure > NAT > Edit NAT Configuration** and click **Add** in order to configure static NATing.

Create NAT Configuration Edit NAT Configuration			
Designate NAT Interfaces		Address Pool	Translation Timeouts
Network Address Translation Rules			
Inside Interface(s): FastEthernet1/0			
Outside Interface(s): Serial2/0			
Original address	Translated address	Rule Type	Add
			Edit
			Destate

- 2. Choose the **Direction** either from inside to outside or from outside to inside, specify the inside IP address to be translated under **Translate from Interface**. For the **Translate to Interface** area select the Type.
  - Choose **IP Address** if you want the Translate from Address to be translated to an IP address defined in the IP Address field.
  - Choose **Interface** if you want the **Translate from Address** to use the address of an interface on the router. The **Translate from Address** is translated to the IP address assigned to the interface that you specify in the Interface field.

Check **Redirect Port** if you want to include port information for the inside device in the translation. This enables you to use the same public IP address for multiple devices, as long as the port specified for each device is different. You must create an entry for each port mapping for this Translated to address. Click **TCP** if this is a TCP port number and click **UDP** if it is a UDP port number. In the Original Port field, enter the port number on the inside device. In the Translated Port field, enter the port number that the router is to use for this translation. Refer to the Allowing the Internet to Access Internal Devices section of Configuring Network Address Translation: Getting Started.

Static C Dynamic	
Direction: From inside to	outside 💌
Translate from interface	
Inside Interface(s):	
IP address:	172.16.1.1
Network Mask(optional):	or a
Translate to interface	
Outside Interface(s):	
Туре:	IP address
Interface:	FastEthernet1/0
IP address:	192.168.1.3
Redirect Port	
C TCP C UDP	
Original Port:	8080 Translated Port. 80

This window shows the static NATing configuration with port redirection enabled.

🕼 N.4	λ <b>Τ</b>			
Creat	le NAT Configuration Edit NAT Configu	Iration		
D	esignate NAT Interfaces		Address Pool	Translation Timeouts
	Network Address Translation Rules			
	Inside Interface(s):			
	Outside Interface/a/s			
	Outside Intenace(s):			
	Original address	Translated address	Rule Type	Add
	112.10.1.1 (0000)	132.100.1.3 (00)	Otano	Edit
				Delete
				View Route MAP

## **Routing Configuration**

### **Static Routing Configuration**

Complete these steps in order to configure static routing in a Cisco router.

1. Choose **Configure > Routing > Static Routing** and click **Add** in order to configure static routing.

•	Routing							
	Static Routing			1d	Edit	Delete	De	lete All
	Destination Network		Forwarding		Optional			
	Prefix	Prefix Mask	Interface or IP address		Distance	Permanent Rou	ıte	Track
	0.0.0	0.0.0.0	192.168.1.2		1	No		None

2. Enter the Destination Network address with mask and select either outgoing interface or next hop IP address.

Add IP Static Roul	te				
Destination	Network	(			
Prefix:			10.1.1	.0	
Prefix Mask:			255.2	55.255.0	
🗖 Make this a	is the de	fault route			
Forwarding	( Next Ho	op)			
C Interface:			Etherr	net0/0	~
IP Address	:	ļ	192.1	68.1.2	
Distance met	ric for thi t route	s route:	1		
0	K	Cancel		Help	

This window shows the static route configured for the 10.1.1.0 network with 192.168.1.2 as the next hop IP address.

P	<ul> <li>Routing</li> </ul>						
	Static Routing		1	Add	Edit	Delete	Delete All
	Destination Network		Forwarding		Optional		
l	Prefix	Prefix Mask	Interface or IP address		Distance	Permanent Route	Track
l	10.1.1.0	255.255.255.0	192.168.1.2		1	No	None

## **Dynamic Routing Configuration**

Complete these steps in order to configure the dynamic routing in a Cisco router.

- Choose Configure > Routing > Dynamic Routing.
   Select the RIP and click Edit.

Tasks	🔹 Routing						
÷	Static Routing			Add	Edit	Dalete D	elste Al
Interfaces and	Destination Network		Forwarding		Optional		
Connections	Prefix	Prefix Mask	Interface or IP address		Distance	Permanent Route	Trac
<b>3</b>			•				
Firewall and ACL							
En							
Security Rudit	•						
٥Š٥	Dynamic Routing					<u> </u>	Edit
Routing	Item Name	Item Value					
20	RP	Disabled					
NRT	OSPF	Disabled					
Ó	EIGRP	Disabled					

3. Check Enable RIP, select the RIP version, and click Add.

RIF	Version C Version 1	Version2	O Defau
	– IP Network List 72.1.0.0		Add
	Available Interface List	Make the Inter	face Passive
Eth	Available Interface List ernet0/0	Make the Inter	face Passive
Eth Fas	Available Interface List ernet0/0 stEthernet1/0	Make the Inter	face Passive
Eth Fas Sei	Available Interface List ernet0/0 stEthernet1/0 rial2/0	Make the Inter	face Passive   
Eth Fas Sei Sei	Available Interface List ernet0/0 stEthernet1/0 rial2/0 rial2/1	Make the Inter	face Passive
Eth Fas Sei Sei	Available Interface List ernet0/0 stEthernet1/0 rial2/0 rial2/1 rial2/2	Make the Inter	face Passiv(     

4. Specify the Network address to be advertised.

Add	l a Netwo	ork		×
N	etwork:	172.1.	1.0	
	ок		Cancel	

5. Click OK.

Enable RIP	_		
RIP Version (	O Version 1	Version2	C Defaul
IP Network L	.ist		
172.1.0.0			Add.
			Dele
Available Inte	erface List	Make the Inter	face Passive
Ethernet0/0			]
FastEthernet1/0			]
Serial2/0			
Serial2/1			]
Serial2/2			]
Serial2/3			]

6. Click **Deliver** in order to transfer the commands to the router.

Deliver Configuration to Router						
Deliver delta commands to the router's running config.						
Preview commands that will be delivered to the router's running configuration.						
router rip version 2 no auto-summary network 172.1.0.0 exit						
The differences between the running configuration and the startup configuration are lost when router is turned off.						
□ Save running config. to router's startup config. This operation can take several minutes.						
Deliver Cancel Save to file Help						

This window shows the dynamic RIP routing configuration.

Tasks	🔹 Routing						
÷.	Static Routing			Add	Edit	Dejele	elete All
Interfaces and	Destination Network		Forwarding		Optional		
Connections	Prefix	Prefix Mask	Interface or IP address		Distance	Permanent Route	Track
Firewall and RCL							
<u>60</u>							
Security Audit	•						1
4 <b>Š</b> 4	Dynamic Routing						Edit
Routing	Item Name	Item Value					
20	RIP	Enabled					
NIT	RIP Version Network	VersionZ 172.1.0.0					
	Passive Interface	None					

## **Miscellaneous Configuration**

Complete these steps in order to configure the other basic settings in a Cisco router.

1. Choose **Configure > Additional Tasks > Router Properties** and click **Edit** if you want to change the Hostname, Domain Name, Banner and Enable Secret Password properties for a router.

🕼 Additional Tasks			
Router Properties	Device Properties		Edit
	Item Name	Item Value	
	Hostname	Router	
Netflow	Domain Name		
E- Bouter Access	Banner	None	
	Enable Secret Password	None	
VTY			
🍪 Management Access			
i∰ SSH			
🚽 🕾 🎯 Secure Device Provisioning			
B- DHCP			
- 1 DNS			
Dynamic DNS Methods			
H- ACL Editor			
Port to Application Mappings			
E- AAA			
Local Pools			
🖻 🦲 Configuration Management			

2. Choose **Configure > Additional Tasks > Router Access > User Accounts/View** in order to add/edit/delete the User Accounts to the router.

🗑 Additional Tasks							
E- 1 Router Properties	Liser Accounts/View			Add Edit Delete			
- 🛃 NTP/SNTP	Username	Password	Privilege Level	View Name			
	sdmsdm	*******	15	<none></none>			
- SIMP	Add an A	ccount		X			
E - B Router Access							
User Accounts/View	Enter t	he username and passwor	8				
	Usern	ame:					
	Pa	ssword		_			
🌈 DNS 	Pas	sword	<none></none>				
ACL Editor	Nev	v Password:					
Port to Application Mappings ⊡- <sup>™</sup> URL Filtering	Cor	firm New Password:					
E AAA							
	I⊄ En	crypt password using MD5 F	hash algorithm				
🗄 🚊 Configuration Management							
	Privile	ge Level:	1 💌				
	r	Associate a View with the u	Iser				
			1000)				
	Viev	v Name : SDM_Administrat	lor(root) 💌 View Details				
		OK Can	cel Help				

3. Choose **File > Save Running Config to PC...** in order to save the configuration to the NVRAM of the router as well as the PC and to reset the current configuration to default (factory) settings.

ø	Cisco Router and	Security Device Manage	9 (SDM): 172.16.1.2				_ D X
F	Save Running Con	tols Help flg to PC					CISCO SYSTEMS
	Write to Startup Co	mig	Monitor Reliesh	Sava Sea	ich Help		
	Reset to factory def	fault and 0	onnections				
	Hile Management.	·	alik Bakanifan a Aranan akina	2			
	Exit	uon t	an interface/connection	•			
	Interfaces and Connections	Interface List		o≩ Add ▼ @ Edit	📋 Delete 🖸	El Summary 🛛 🖾 Detaits	Disable 🔏 Test Connection
	<b>1</b>	Interface	IP	Туре	Slot	Status Description	
	Frewal and ACL	Ethernet0/0 FastEthernet1/0	no IP address 172.16.1.2	Ethernet 10/100Ethernet	0	💙 Dow 🔷 Up	
	~	Serial2/0	192.168 1.1	Berial Sync/Async	2	OUp	
	<u></u>	Sertal2/1	no IP address	Sertal Sync/Async	2	O Dow	
	UPN	Senal2/2 Revtel2/2	no IP address	Serial Sync/Async Redal Renationna	2	O Dow	
	<u>60</u>	benali2/5	nu ir aduress	Senal Synchesync	2	000	
	Security Rudit						
	• <b>č</b> •						
	Routing						
	1 de	Details about Interface	::Serial2/0			😋 Administratively L	/p O Administratively Down
	NHI	Item Name			Item Value		
	<b>[</b> ]	IP address/subnet ma	isk		192.160.1.1/	265.265.256.0	
	during Projection	Encapsulation			HDLC		
Ľ	Kigstoff Piews Mon	NAT			<none></none>		
	:@=	Access Rule - inbound	1		<none></none>		
	Ounity of Section	IPSec Palicy	riu		<none></none>		
	adality of Service	in decinancy			-Nur IB-		

- 4. Go to the task bar and choose **Edit > Preferences** in order to enable these User Preferences options:
  - Preview commands before delivering to router.
  - Save signature file to Flash.
  - Confirm before exiting from SDM.
  - Continue monitoring interface status when switching mode/task.

User Preferences						X
Select your prefere cookie in your brov To restore the defa	ences and click i vser. If cookies ault settings, clic	the OK button to are disabled in kthe Default bu	activate them. T your browser, it tton and then cli	hese preferenc only applies to t ick OK.	es are saved as a the current session.	
Preview com	mands before o	delivering to rout	er.)			
🔽 Save signatu	ure file to Flash.					
🔽 Confirm befo	ore exiting from \$	SDM.				
🔽 Continue mo	nitoring interfac	e status when s	witching mode/	task		
Maximum num	ber of interfaces	to monitor:	1			
	ок	Cancel	Default	Help		

- 5. Choose **View** from the task bar if you want to:
  - View the Home, Configure, or Monitor pages.
  - View the running configuration of the router.
  - View various **show** commands.
  - View SDM default rules.
  - Choose **Refresh** in order to synchronize the router configuration if there are any configured through the CLI with SDM.

🚅 Cisco Router ar	nd Security Device Ma	nager (SDM): 172.16.1.2				_ [ ]
File Edit View	Tools Help					
Horr	ne figure itor	Manitor Refresh	Gare Search	n Help		Cisco System attilitionatili
Task	ning Capita	id Connections				
Short Short Interface	w Commands V Default Rules	Edit Interface/Connection	ll Add • ⊡ Edit	🗊 Delete 🔳	) Summary 🛛 🔯 Details	Disable 🚿 Test Connection
Connec Refr	resh		-			
<b>S</b>	intenace	- IP	Туре	Slot	Status Description	
<b>1</b>	Ethemet0/0	no IP address	Ethernet	0	O Dow	
Firewall and RCL	FastEthernet1/0	172.16.1.2	10/100Ethernet	1	Op	
	Senal2/0	192.168.1.1	Senal Sync/Async	2	C Up	
	Senal21	no IP address	Senal Syncusync	ž	Dow	
VPN	Senal2/2	no IP address	Senal Syncwsync	ž	Dow	
Security Rusk				_		
Nat	Details about Inte	erface:Serial2/0			C Administratively Up	Administratively Down
	Item Name			Item Value		
<b>1</b>	IP address/subne	etmask		192.168.1.1/2	55.255.255.0	
<b>S</b>	Encapsulation			HDLC		
Indusion Prevention	NAT			<none></none>		
1.000	Access Rule - Inb	ound		≺None≻		
. 🐨 =	Access Rule - out	toound		<none></none>		
Quality of Service	IPSec Policy			«None»		
	Construction Description			- N I		

# **CLI Configuration**

Г

Router Configuration
Router# <b>show run</b>
Building configuration
current configuration : 2525 bytes
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
! hestname Deuton
boot-start-marker
boot-end-marker
!
no logging buffered
enable password cisco
: no aaa new-model
!
resource policy
!
in cof
· !
!
RSA certificate generated after you enable the
crypto pki trustpoint TP-self-signed-392370502
enrollment selfsigned

```
subject-name cn=IOS-Self-Signed-Certificate-392370502
revocation-check none
rsakeypair TP-self-signed-392370502
1
crypto pki certificate chain TP-self-signed-392370502
certificate self-signed 01
 3082023C 308201A5 A0030201 02020101 300D0609 2A864886 F70D0101 04050
 30312E30 2C060355 04031325 494F532D 53656C66 2D536967 6E65642D 43657
 69666963 6174652D 33393233 37303530 32301E17 0D303530 39323330 34333
  375A170D 32303031 30313030 30303030 5A303031 2E302C06 03550403 13254
  532D5365 6C662D53 69676E65 642D4365 72746966 69636174 652D3339 32333
  35303230 819F300D 06092A86 4886F70D 01010105 0003818D 00308189 02818
 C86C0F42 84656325 70922027 EF314C2F 17C8BBE1 B478AFA3 FE2BC2F2 3C272
 A3B5E13A 1392A158 73D8FE0D 20BFD952 6B22890C 38776830 241BE259 EE2AA
 CF4124EA 37E41B46 A2076586 2F0F9A74 FDB72B3B 6159EEF7 0DEC7D44 BE489
 9E351BF7 F5C808D9 2706C8B7 F5CE4B73 39ED8A61 508F455A 68245A6B D072F
 02030100 01A36630 64300F06 03551D13 0101FF04 05300301 01FF3011 06035
 11040A30 08820652 6F757465 72301F06 03551D23 04183016 80148943 F2369
 ACD8CCA6 CA04EC47 C68B8179 E205301D 0603551D 0E041604 148943F2 36910
 D8CCA6CA 04EC47C6 8B8179E2 05300D06 092A8648 86F70D01 01040500 03818
 3B93B9DC 7DA78DF5 6D1D0D68 6CE075F3 FFDAD0FB 9C58E269 FE360329 2CEE3
 D8661EB4 041DEFEF E14AA79D F33661FC 2E667519 E185D586 13FBD678 F52E1
 E3C92ACD 52741FA4 4429D0B7 EB3DF979 0EB9D563 51C950E0 11504B41 4AE79
 0DD0BE16 856B688C B727B3DB 30A9A91E 10236FA7 63BAEACB 5F7E8602 0C33D
 quit
1
1
!--- Create a user account named sdmsdm with all privileges.
username sdmsdm privilege 15 password 0 sdmsdm
1
1
1
1
interface Ethernet0/0
no ip address
shutdown
half-duplex
1
!--- The LAN interface configured with a private IP address.
interface FastEthernet1/0
ip address 172.16.1.2 255.255.255.0
!--- Designate that traffic that originates from behind
!--- the interface is subject to Network Address Translation (NAT).
ip nat inside
ip virtual-reassembly
duplex auto
speed auto
1
```

```
!--- This is the WAN interface configured with a routable (public) IP address.
interface Serial2/0
ip address 192.168.1.1 255.255.255.0
!--- Designate that this interface is the
!--- destination for traffic that has undergone NAT.
ip nat outside
ip virtual-reassembly
interface Serial2/1
no ip address
shutdown
1
interface Serial2/2
no ip address
shutdown
1
interface Serial2/3
no ip address
shutdown
1
!--- RIP version 2 routing is enabled.
router rip
version 2
network 172.1.0.0
no auto-summary
!--- This is where the commands to enable HTTP and HTTPS are configured.
ip http server
ip http secure-server
1
!--- This configuration is for dynamic NAT.
1
!--- Define a pool of outside IP addresses for NAT.
ip nat pool pool1 192.168.1.3 192.168.1.10 netmask 255.255.255.0
!--- In order to enable NAT of the inside source address,
!--- specify that traffic from hosts that match access list 1
!--- are NATed to the address pool named pool1.
ip nat inside source list 1 pool pool1
!--- Access list 1 permits only 172.16.1.0 network to be NATed.
access-list 1 remark SDM_ACL Category=2
access-list 1 permit 172.16.1.0 0.0.255
1
!--- This configuration is for static NAT
```

```
!--- In order to translate the packets between the real IP address 172.16.1.1 with TCP
```

```
!--- port 80 and the mapped IP address 192.168.1.1 with TCP port 500.
ip nat inside source static tcp 172.16.1.1 80 192.168.1.3 500 extendable
1
!
1
!
!--- The default route is configured and points to 192.168.1.2.
ip route 0.0.0.0 0.0.0.0 192.168.1.2
!
1
!--- The static route is configured and points to 192.168.1.2.
ip route 10.1.1.0 255.255.255.0 192.168.1.2
!
!
control-plane
!
!
!
1
!
1
1
1
1
1
line con 0
line aux 0
!--- Telnet enabled with password as sdmsdm.
line vty 0 4
password sdmsdm
login
!
!
end
```

# Verify

Choose **Configure > Interface & Connections > Edit Interface Connections > Test Connection** in order to test the end-to-end connectivity. You can specify the remote end IP address if you click the **User-specified** radio button.

nectivity testing and tro	ubleshooting : Serial2/0	>
—IP address / hostname		_
Select a ping option, er	nter the required value and click Start	
C Automatically de	termined by SDM (* User-specified 192.168.1.2	
		Ĩ
		•
	🔲 Summary 🛛 🖾 Details	
Activity Informa	tion X us	
Checking inten Checking inten Checking exit i Pinging to dest	Test Connection successful! The connection is up on the selected interface.	
Failure Reason(s)	Recommended Action(s)	
Start	Save Report Close Help	-

# Troubleshoot

The Output Interpreter Tool (registered customers only) (OIT) supports certain **show** commands. Use the OIT to view an analysis of **show** command output.

Note: Refer to Important Information on Debug Commands before you issue debug commands.

You can use these options in order to troubleshoot:

• Choose **Tools > Update SDM** from the task bar in order to ping, Telnet, and upgrade the SDM to the latest version. You can do this from Cisco.com, from the local PC, or from the CD.

File Edit View	d Security Device Manager (S Tools Help	DM): 172.16.1.2				X
💰 Home	Search Ping Toined	nitoi 🔹 📀	🔲 🔍 Save Searc	🦻 h Helip		CISCO SYSTEMS
Tasks	Cocudo Audit	ections				
-	Configuration Management	of a coll composition	2			
Interfaces and Connections	Update SDM	From Cisco.com From Local PC	⊧Add + 🖪 Edit	î Delete (	🖻 Summary 🛛 🖧 Details	O Disable 🕺 Test Connection
<b>a</b>	Interface	From CD	ype	Slot	Status Description	
Energi acci acci	Ethemet0/0 FactEthernal1/0	no IP address	Ethernet 10/100Ethernet	0	O Dow	
Security Rudi	Serial2/1 Serial2/2 Serial2/2 Serial2/2	172,150,12 192,150,11 no IP address no IP address no IP address	Serial Sync/Async Serial Sync/Async Serial Sync/Async Serial Sync/Async	2 2 2 2	O Daw O Daw O Daw O Daw	
<u>le</u>	Details about Interface:Se	rial2/0			🖕 Administratively U	p 🔾 Administratively Down
PeHI	Item Name			Item Value		
Distrusion Prevention	IP address/subnet mask Encapsulation NAT			192.188.1.1 HDLC <none></none>	255 255 255 0	
1.00-	Access Rule - Inbound			<none></none>		
Country of Country	Access Rule - outbound			<none></none>		
Guality of Service	Easy VPN Remote			chinnep		

• Choose **Help > About this Router** in order to view information on the hardware configuration of the router.

Hardware/So	oftware Details	×
Hardware	Details Software Details	
	Hardware Configuration	
	Close	

This window shows information about the IOS image stored in the router.

Hardware/So	oftware Details		×
Hardware I	Details Software Det	ails	
(1)	IOS Image Name: IOS Version: Boot From: Feature Sets:	c3640-ik9s-mz.124-8.bin 12.4(8) flash IP (Internet Protocol) VPN (DES, AES, 3DES, SEAL)	
	SDM Version:	2.1	
	(	Close	

• The **Help** option provides information about the various available options in the SDM for the configuration of routers.



## Comatibility of SDM with 64-bit OS

SDM is not supported on machines with 64-bit OS. You should install SDM on the router and access it through the web browser.

Refer to Task 4: Install the SDM Files for more information on the installation of SDM files on the router.

## Unable to Launch the SDM through Web Browser

### Problem

When you use SDM through the web browser, an SDM start up error message appears.

### Solution 1

The issue could be with the version of the Java. The Java update may not be compatible with the SDM version. If the version of Java is Java 6 update 12, then **uninstall that version and install Java 6 update 3**. This fixes the problem. Refer to the Web Browser Versions and Java Runtime Environment Versions section of SDM 2.5 Release Note for more information about the compatibility. SDM version 2.5 runs under updates 2 and 3 of Java version 6.

### Solution 2

Enable Allow active content to run in files on My Computer in Internet Explorer options in order to resolve the issue.

- 1. Open Internet Explorer and choose**Tools > Internet Options > Advanced**.
- 2. Under the security section, make sure that the checkboxes next to the options Allow active content to run in files on my computer and Allow active content to install software even if the signature is invalid are checked.
- 3. Now click **OK** and restart the browser in order for the changes to take effect.

## Error: java.bling stack overflow

### Problem

I am unable to connect to the SDM, and I receive this error message:

java.bling stack over flow

#### Solution

This problem usually occurs when Java code version 1.5.0\_06 is used. For information on how to resolve this issue, refer to The user is unable to connect to Security Device Manager (SDM) and receives the java.bling stack over flow error message.

# **Related Information**

- Cisco Security Device Manager Installation Guide
- Cisco Product Support Page Routers
- Cisco Configuration Professional Support Page
- NAT Support Page
- Technical Support & Documentation Cisco Systems

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