

Quick-Start Guide for Remote Access Concentrators

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About This Guide

This guide provides instructions for installing Bay Networks® Remote Access Concentrator (RAC) hardware and software. The instructions are summarized in a list of tasks that tell you what information and tools are required to install and boot a RAC using factory defaults. This guide also includes a roadmap to instruct you as to which tools and information along with which document describes a particular function or task in more detail.




If you want	Go to
Summarized instructions for installing the software images, tools, and the RAC.	<u>QuickStart on page -1</u>
A list of tasks and related tools and documentation.	<u>Roadmap on page -12</u>
To list all documents supporting Remote Access Concentrators.	<u>RAC Reference Documentation on page -16</u>

Before You Begin

Before using this guide, you must order line provisioning through your telco.

Conventions

This manual uses the following printing conventions:

Convention:	Represents:
<code>special type</code>	In examples, <code>special type</code> indicates system output.
special type	Bold special type indicates user input.
<code>(Return)</code>	In command examples, this notation indicates that pressing <code>(Return)</code> enters the default value.
bold	Bold indicates commands, pathnames, or filenames that must be entered as displayed.
<i>italics</i>	In the context of commands and command syntax, lowercase italics indicate variables for which the user supplies a value.
[]	In command dialog, square brackets indicate default values. Pressing <code>(Return)</code> selects this value. Square brackets appearing in command syntax indicate optional arguments.
{ }	In command syntax, braces indicate that one, and only one, of the enclosed value must be entered.
	In command syntax, this character separates the different options available for a parameter.
	Notes provide important information.
	Warnings inform you about conditions that can have adverse effects on processing.
	Cautions notify you about dangerous conditions.

Acronyms

ACP	Access Control Protocol
BootP	Bootstrap Protocol
bfs	block file system
CLI	Command Line Interface
erpcd	expedited remote procedure call daemon
IP	Internet Protocol
MIB	Management Information Bases
RAC	Remote Access Concentrator
RARP	Reverse Address Resolution Protocol
ROM	Read Only Memory
SNMP	Simple Network Management Protocol
telco	Telephone Company
TFTP	Trivial File Transfer Protocol
VCLI	Virtual Command Line Interface
WAN	Wide Area Network

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Valbonne, France	33-4-92-96-69-68	33-4-92-96-69-98
Sydney, Australia	61-2-9927-8800	61-2-9927-8811
Tokyo, Japan	81-3-5402-0180	81-3-5402-0173



About This Guide





Quick-Start Guide for Remote Access Concentrators

This Quick-Start guide describes how to install and configure Remote Access Concentrator (RAC) hardware and software using factory defaults. After installing the RAC, you can customize it for your specific requirements.

This guide is written for experienced users who install and maintain RACs and have completed the prescribed Bay Networks courses. You can choose either the quick-start procedure or the roadmap.

The information is presented as follows:

- Quick-Start-- Provides summarized instructions for installing the software images, tools, and the RAC.
- Roadmap -- Provides a list of tasks and related documentation for each task.
- Related Documentation -- Lists all documents supporting Remote Access Concentrators.

QuickStart

The quick-start tasks are designed to provide the information necessary to install and configure the RACs using factory defaults. [Table 1](#) summarizes the quick-start tasks.

Table 1. Quick-Start Tasks

Task	What is Performed	What is Required
1	Order line provisioning from the telco	Switch type and switch parameters that are supported by the RAC
2	Determine IP addresses	RAC IP address Subnet mask Broadcast address Preferred Load Host address Preferred Dump Host address Load/Dump Gateway address
3	Determine boot sequence	self or net
4	Determine software image location	oper.64.enet (on RAC) or TFTP Load Directory and Dump path/filename
5	Install RAC software	PC running Microsoft® Windows NT® Server or UNIX or a UNIX workstation
6	Install the Model 5399 or Model 8000	Model 5399 requires an available slot in a System 5000 MSX chassis. The Model 8000 requires a remote monitor and an Ethernet connection.
7	RAC configuration	Configure the RAC's IP addresses, boot sequence, and operating image (information gathered in Tasks 2-4)
8	Boot the RAC	Boot the RAC from the ROM monitor
9	Configure the switch type	Information from Task 1 and either the na utility, Annex Manager, or Quick2Config Annex
10	Set switch parameters	
11	Set basic security	cli and vcli
12	Reboot RAC	Issue boot command
13	Customizing the RAC	The na utility, Annex Manager, or Quick2Config Annex

Task 1: Order Line Provisioning

The lines are ordered through the telco before the RAC is installed. Typically this is done after the sales order is placed. The supported switch types and switch parameters are described in *Provisioning WAN Lines for Remote Access Concentrators*. You should have the switch type and parameter values before continuing with the install.

Task 2: IP Addresses

You must be prepared to enter the following addresses during the configuration procedure:

- Internet address
- Subnet mask
- Broadcast address
- Preferred load host
- Preferred dump host
- Load/Dump gateway address

Task 3: Boot Sequence

You must decide which boot sequence you want to use. You can choose a network boot (**net**), self boot (**self**), or both. Typically, you would select both (**net** and **self**).

Task 4: Software Image

Determine the software image location (RAC or load host). The software image is shipped with the RAC and is stored in flash memory. Typically you would select to load from flash memory, but you can also load from a TFTP load directory from a load host.

Task 5: Install RAC Software

Follow the software install procedures for the operating system you are using. For detailed installation procedures, refer to *Installing Remote Access Concentrator Software for Windows and Windows NT* and *Installing Remote Access Concentrator Software for UNIX*.

Task 6: Install the RAC

Install the Model 5399 or Model 8000 RAC. The Model 5399 is installed in a System 5000 MSX chassis and receives signal and power from the backplane connectors. The model 8000 RAC is a standalone chassis that requires the following cables:

- Ethernet
- Console
- Synchronous (if used)
- Power



Configure the RAC before connecting the WAN cables.

The Model 8000 console terminal is configured as follows:

- 9600 baud
- 8 data bits
- No parity
- 1 stop bit
- XON/XOFF flow control

Detailed installation instructions are in the *Model 5399 Remote Access Concentrator Hardware Installation Guide* and *Installing the Model 8000 Remote Access Concentrator*.

Task 7: RAC Configuration

To configure the RAC, it must be in ROM monitor mode. The Model 5399 is accessible through the slot selection menu on the System 5000 MSX console. Press the **Reset** button on the Model 8000. When all the lights flash, press the **Reset** button again.



A few minutes may pass before the ROM monitor (**monitor::**) prompt appears.

Once the RAC is in ROM monitor mode, perform the following tasks:

- Set the network address
- Set the operating image
- Configure the interface sequence
- Enable the **allow_snmp_sets** parameter

Set the Network Address

This section uses the IP addresses established in Task 2. To set the network addresses:

1. **At the ROM monitor prompt, enter `addr` and respond to the prompts as shown in the example. To accept the default shown in brackets, press the Return key.**



For illustration purposes, this example shows a RAC on an Ethernet network with the IP address 192.9.200.62. The host system address is 192.9.200.55. The router gateway address would be 192.9.200.1 for this subnet to access other subnets.

```
monitor:: addr
Enter Internet address:: 192.9.200.62
Enter Subnet mask [255.255.255.0]::
Enter Broadcast address 192.9.200.55
Enter preferred Load Host address:: 192.9.200.55
Enter Preferred Dump Host [0.0.0.0]::192.9.200.55
Enter Load/Dump Gateway address:: 192.9.200.45
Select type of IP packet encapsulation (ieee802/
ethernet) [<ethernet>]::
Load Broadcast y/n [y]::
```

2. **After you enter the address path names, enter `ad -d` to verify the IP address.**
3. **After you verify the IP address, set the operating image.**

Set the Operating Image

The default operating image is shipped with the RAC and is stored in flash memory. Verify or set the operating image as follows:

1. **At the ROM monitor prompt, enter image and respond to the prompts as shown in the example. To accept the default shown in brackets, press the Return key.**

```
monitor:: image
Enter Image name [(ip) "oper.64.enet", (mop)
"OPER_64_ENET.SYS"]::
Enter TFTP Load Directory[""]::
Enter TFTP Dump path/filename:: 192.9.200.62
```

2. **After you enter the image name, enter im -d to verify the operating image.**
3. **After you verify the operating image, set the interface sequence.**

Configure the Interface Sequence

The interface sequence determines the order or method in which the RAC boots. You can configure the RAC for network, self-boot, or both. To set the sequence:

1. **At the ROM monitor prompt, enter seq. The system responds:**

```
Enter a list of 1 to 4 interfaces to attempt to use
for downloading code or upline dumping. Enter them in
the order they should be tried, separated by commas
or spaces. Possible interfaces are:
```

```
Ethernet: net
```

```
SELF: self
```

```
Enter interface sequence [net]::
```



If the RAC is configured for self-boot, copy the configuration (**config.annex**) file from the server to the RAC using FTP. Do this after you boot the RAC.

2. **After you enter the sequence, enter seq -d to verify the interface sequence.**

3. Save the changes you made to the RAC:

- a) For the 5399 RAC, exit the ROM monitor by entering **Ctrl T**. This brings you back to the System 5000 Slot Selection Menu.
- b) Enter **s** to select the supervisory Module main menu.
- c) Enter **m** to select Module Information Menu.
- d) At the **Enter slot # (1-14):** prompt enter the *slot number* and press **Return**. Then type **d** to set all the changes you made as the default.

Enable the `allow_snmp_sets` Parameter

If you plan to use Annex Manager or Quick2Config to configure and manage the RAC, you must enable the `allow_snmp_sets` parameter. To enable this parameter:

1. **At the console monitor prompt, enter** `allow_snmp_sets`.
2. **Enter Y when you are asked if you want to enable this parameter.**

Task 8: Boot the RAC

Issue the **boot** command to boot the RAC. After the RAC boots, choose which tools you want to use to complete the remaining configuration tasks. The remaining tasks in this book use **admin** commands from the console monitor, but you can also use **na**, Annex Manager, or Quick2Config.

Task 9: Configure the Switch Type

You must configure the switch type using the information collected in Task 1 before connecting the network cables to the WAN ports. To configure the switch type:

1. **After the RAC boots, enter `cli` at the console monitor prompt. (If you are configuring a 5399, connect to the slot the 5399 is installed in using the Slot Selection menu before entering the `cli` command.)**

2. **Enter admin as follows:**

```
annex: su
```

```
Password:
```



The default root password is the RAC's IP address.

```
Annex# admin
```

3. **Using the `set wan` command, enter the switch type. The example below shows how you set the switch for AT9. Enter the switch type from the telco information. (For more information about switch types, refer to *Provisioning WAN Lines for Remote Access Concentrators*.)**

```
admin: set wan=1 switch_type AT9
```

You may need to reset the appropriate port, Annex subsystem or reboot the Annex for changes to take effect.

This sets the switch type for interface 1 to AT9. To specify WAN 2, enter `wan=2`; for both WANs, enter `wan=all`

Task 10: Set Switch Parameters

Using the switch parameters gathered from Task1, configure the switch.

View the existing WAN parameters by entering **sho wan=all all**. Set the WAN parameters to be compatible with those provided by the telco. For information on setting WAN parameters, refer to *Managing Remote Access Concentrators Using Command Line Interfaces*.



Make sure the WAN parameters are compatible with those provided by the telco. The telco may temporarily disable lines connected to improperly configured devices. For more information on WAN parameters, refer to *Remote Access Concentrator Software Reference*.

Task 11: Configure Basic Security

You should configure basic security on the RAC. That is, you should enable CLI and VCLI security to prevent unauthorized access to the RAC through the console monitor or through a Telnet session. To enable security:

1. **Set the enable_security parameter to yes and set up the security host:**

```
set annex enable_security y
set annex pref_secure1_host <ip address>
```

2. **Set CLI port security:**
set port cli_security y



If you set CLI security, make sure that you have a valid login name and password. Once the RAC is rebooted you will be prompted for a user name and password when you enter **cli** at the console monitor prompt.

3. **Set VCLI port security:**

```
set port vcli_security y
```

Task 12: Reboot the RAC

After making configuration changes, you must reboot the RAC for the changes to take effect. After you reboot the RAC:

1. **Connect the cables to the WAN interface ports on the front (Model 5399) or back (Model 8000) of the RAC.**
2. **Test the RAC by dialing in to it.**

Task 13: Customizing the RAC

After installing and booting the RAC, you can customize RAC parameters (for example security or port parameters) using one of the following tools:

- CLI interface (see *Managing Remote Access Concentrators Using Command Line Interfaces*)
- Annex Manager (see *Managing Remote Access Concentrators Using Annex Manager*)
- Quick2Config Annex (see the online Help system)

Roadmap

The roadmap provides a series of tasks which you must perform in sequential order to install, configure, and boot a RAC. Refer to the specified documentation for detailed instructions. The roadmap can be divided into two distinct areas: installation and configuration and customization.

Installing and Configuring the RAC

This portion of the roadmap lists the tasks you must perform to install and configure the RAC and the documentation needed to perform these tasks.

Task	Documentation
Prepare to install the Model 5399 or Model 8000 RAC <ul style="list-style-type: none"> - Confirm that all WAN provisioning requirements are met: <ul style="list-style-type: none"> - IP address - Boot type (net or self) - Image location (TFTP or local) - Confirm required platforms: <ul style="list-style-type: none"> - PC running Windows or UNIX - DEC Alpha (Windows NT 4.0) - Workstation running UNIX 	See the provisioning information provided by your telco. For Windows, see Installing Remote Access Concentrator Software for Windows and Windows NT . For UNIX, see Installing Remote Access Concentrator Software for UNIX .
Install RAC software on the server: <ul style="list-style-type: none"> -UNIX <ul style="list-style-type: none"> - Install RAC Software - Install Annex Manager (optional) -Windows <ul style="list-style-type: none"> - Install na - Install server tools - Install Quick2Config Annex 	

Task	Documentation
<p>Install the Model 5399 or Model 8000:</p> <ul style="list-style-type: none"> - Model 5399 <ul style="list-style-type: none"> - Configure jumpers - Install module in hub - Verify installation - Model 8000 <ul style="list-style-type: none"> - Install chassis - Connect Ethernet cables - Connect console terminal - Verify installation 	<p><i>Model 5399 Remote Access Concentrator Module Hardware Installation Guide</i></p> <p><i>Installing the Model 8000 Remote Access Concentrator</i></p>
<p>Initialize the Model 5399 and Model 8000 RAC:</p> <ul style="list-style-type: none"> - Manual initialization <ul style="list-style-type: none"> - Set IP address (addr) - Set boot image (image) - Set boot sequence (seq) -Auto initialization <ul style="list-style-type: none"> -BOOTP -RARP 	
<p>Configure the RAC boot type:</p> <ul style="list-style-type: none"> - Boot using BFS - Boot using TFTP - Self-boot - Boot from a Windows NT host - Boot from another RAC 	

Task	Tools and Documentation
Configure WANs: - Set switch type - Set WAN parameters - Connect WAN interface	UNIX Tools - Annex Manager - na utility <i>Managing Remote Access Concentrators Using Command Line Interfaces</i> <i>Managing Remote Access Concentrators Using Annex Manager</i> Annex Manager online Help Windows Tools - Quick2Config Annex - na utility Quick2Config Annex online Help

Customizing the RAC

This portion of the roadmap describes how to customize the RAC for your specific needs and services. You set parameters and services using the tools available on the Windows or UNIX platform.

Task	Tools and Documentation
Configure basic security: <ul style="list-style-type: none"> - ACP - RADIUS - Filters 	UNIX Tools <ul style="list-style-type: none"> - Annex Manager - na utility Managing Remote Access Concentrators Using Command Line Interfaces
Change RAC configuration settings: <ul style="list-style-type: none"> - Automated Firmware Download (AFD) - Setting/changing parameters 	Remote Access Concentrator Software Reference
Configure hosts and servers: <ul style="list-style-type: none"> - Specify load and dump hosts - Configure the RAC - Event logging - File servers - Name servers - Customize the RAC - Using erpcd 	Managing Remote Access Concentrators Using Annex Manager Annex Manager online Help Windows Tools <ul style="list-style-type: none"> - Quick2Config Annex - na utility
Configure calls and global ports: <ul style="list-style-type: none"> - Defining call types - Setting call default values 	Using Remote Access Concentrator Server Tools for Windows NT Quick2Config Annex online Windows Help
Configure digital modems: <ul style="list-style-type: none"> - Busing out modems and channels - Modem definitions 	

RAC Reference Documentation

In addition to this guide, the following documentation supports the Model 5399 and Model 8000 RAC:

Model 5399 Remote Access Concentrator Hardware Installation Guide (166-024-162) -- Describes how to install the Model 5399 RAC, set the IP address, and make the RAC operational using factory defaults.

Installing the Model 8000 Remote Access Concentrator (118353-A Rev. A) -- Describes how to install the Model 8000 RAC, set the IP address, and make the RAC operational using factory defaults.

Provisioning WAN Lines for Remote Access Concentrators (118354-A Rev. A) -- Describes the information you need to provision WAN lines for Remote Access Concentrators. The guide provides several switch types and switch parameters which must be negotiated through the telco before installing the RAC.

Installing Remote Access Concentrator Software for UNIX (118355-A Rev. A) -- Describes how to install Remote Access Concentrator software on a UNIX server. This book provides examples of the installation script as well as information about installing a particular security regime.

Installing Remote Access Concentrator Software for Windows and Windows NT (118356-A Rev. A) -- Describes the procedures for installing Server Tools, the Network Administrator (**na**) utility, and Quick2Config Annex on a host server running Windows software.

Managing Remote Access Concentrators Using Command Line Interfaces (118357-A Rev. A) -- Describes how to configure and maintain the RAC using UNIX command-line interfaces for both UNIX and Windows environments.

Using Remote Access Concentrator Server Tools for Windows NT

(118358-A Rev. A) -- Describes how to select and configure a security regime, and how to use **erpcd** to configure RAC security.

Managing Remote Access Concentrators Using Annex Manager

(118359-A Rev. A) -- Describes how to use Annex Manager to configure and manage the Remote Access Concentrator.

Remote Access Concentrator Software Reference

(118360-A Rev. A) -- Provides reference descriptions of all CLI commands and all **na** and **admin** parameters.

Remote Access Concentrator SNMP MIB Reference

(118361-A Rev. A) -- Describes RAC MIB trees, standard MIB compliance information, and RAC extensions to standard MIBs. This guide references MIB listings on the Bay Networks web site and provides procedures for common tasks using a MIB browser.

