



Juniper Networks Unified Access Control

Installation Guide (IC4500/IC6500)

Juniper Networks, Inc.

1194 North Mathilda Avenue
Sunnyvale, CA 94089

USA

408-745-2000

www.juniper.net

Part Number: 530-025639-01

This product includes the Envoy SNMP Engine, developed by Epilogue Technology, an Integrated Systems Company. Copyright © 1986–1997, Epilogue Technology Corporation. All rights reserved. This program and its documentation were developed at private expense, and no part of them is in the public domain.

This product includes memory allocation software developed by Mark Moraes, copyright © 1988, 1989, 1993, University of Toronto.

This product includes FreeBSD software developed by the University of California, Berkeley, and its contributors. All of the documentation and software included in the 4.4BSD and 4.4BSD-Lite Releases is copyrighted by The Regents of the University of California. Copyright © 1979, 1980, 1983, 1986, 1988, 1989, 1991, 1992, 1993, 1994. The Regents of the University of California. All rights reserved.

GateD software copyright © 1995, The Regents of the University. All rights reserved. Gate Daemon was originated and developed through release 3.0 by Cornell University and its collaborators. Gated is based on Kirton's EGP, UC Berkeley's routing daemon (routed), and DCN's HELLO routing protocol. Development of Gated has been supported in part by the National Science Foundation. Portions of the GateD software copyright © 1988, Regents of the University of California. All rights reserved. Portions of the GateD software copyright © 1991, D. L. S. Associates.

Juniper Networks, the Juniper Networks logo, NetScreen, NetScreen Technologies, the NetScreen logo, NetScreen-Global Pro, ScreenOS, and GigaScreen are registered trademarks of Juniper Networks, Inc. in the United States and other countries.

The following are trademarks of Juniper Networks, Inc.: ERX, E-series, ESP, Instant Virtual Extranet, Internet Processor, J2300, J4300, J6300, J-Protect, J-series, J-Web, JUNOS, JUNOScope, JUNOScript, JUNOSe, M5, M7i, M10, M10i, M20, M40, M40e, M160, M320, M-series, MMD, NetScreen-5GT, NetScreen-5XP, NetScreen-5XT, NetScreen-25, NetScreen-50, NetScreen-204, NetScreen-208, NetScreen-500, NetScreen-5200, NetScreen-5400, NetScreen-IDP 10, NetScreen-IDP 100, NetScreen-IDP 500, NetScreen-Remote Security Client, NetScreen-Remote VPN Client, NetScreen-SA 1000 Series, NetScreen-SA 3000 Series, NetScreen-SA 5000 Series, NetScreen-SA Central Manager, NetScreen Secure Access, NetScreen-SM 3000, NetScreen-Security Manager, NMC-RX, SDX, Stateful Signature, T320, T640, T-series, and TX Matrix. All other trademarks, service marks, registered trademarks, or registered service marks are the property of their respective owners. All specifications are subject to change without notice.

Products made or sold by Juniper Networks or components thereof might be covered by one or more of the following patents that are owned by or licensed to Juniper Networks: U.S. Patent Nos. 5,473,599, 5,905,725, 5,909,440, 6,192,051, 6,333,650, 6,359,479, 6,406,312, 6,429,706, 6,459,579, 6,493,347, 6,538,518, 6,538,899, 6,552,918, 6,567,902, 6,578,186, and 6,590,785.

Copyright © 2008, Juniper Networks, Inc.
All rights reserved. Printed in USA.

Juniper Networks assumes no responsibility for any inaccuracies in this document. Juniper Networks reserves the right to change, modify, transfer, or otherwise revise this publication without notice.

Year 2000 Notice

Juniper Networks hardware and software products are Year 2000 compliant. The JUNOS software has no known time-related limitations through the year 2038. However, the NTP application is known to have some difficulty in the year 2036.

Software License

The terms and conditions for using this software are described in the software license contained in the acknowledgment to your purchase order or, to the extent applicable, to any reseller agreement or end-user purchase agreement executed between you and Juniper Networks. By using this software, you indicate that you understand and agree to be bound by those terms and conditions.

Generally speaking, the software license restricts the manner in which you are permitted to use the software and may contain prohibitions against certain uses. The software license may state conditions under which the license is automatically terminated. You should consult the license for further details.

For complete product documentation, please see the Juniper Networks Web site at www.juniper.net/techpubs.

End User License Agreement

READ THIS END USER LICENSE AGREEMENT ("AGREEMENT") BEFORE DOWNLOADING, INSTALLING, OR USING THE SOFTWARE. BY DOWNLOADING, INSTALLING, OR USING THE SOFTWARE OR OTHERWISE EXPRESSING YOUR AGREEMENT TO THE TERMS CONTAINED HEREIN, YOU (AS CUSTOMER OR IF YOU ARE NOT THE CUSTOMER, AS A REPRESENTATIVE/AGENT AUTHORIZED TO BIND THE CUSTOMER) CONSENT TO BE BOUND BY THIS AGREEMENT. IF YOU DO NOT OR CANNOT AGREE TO THE TERMS CONTAINED HEREIN, THEN (A) DO NOT DOWNLOAD, INSTALL, OR USE THE SOFTWARE, AND (B) YOU MAY CONTACT JUNIPER NETWORKS REGARDING LICENSE TERMS.

1. The Parties. The parties to this Agreement are Juniper Networks, Inc. and its subsidiaries (collectively "Juniper"), and the person or organization that originally purchased from Juniper or an authorized Juniper reseller the applicable license(s) for use of the Software ("Customer") (collectively, the "Parties").

2. The Software. In this Agreement, "Software" means the program modules and features of the Juniper or Juniper-supplied software, and updates and releases of such software, for which Customer has paid the applicable license or support fees to Juniper or an authorized Juniper reseller.

3. License Grant. Subject to payment of the applicable fees and the limitations and restrictions set forth herein, Juniper grants to Customer a non-exclusive and non-transferable license, without right to sublicense, to use the Software, in executable form only, subject to the following use restrictions:

- Customer shall use the Software solely as embedded in, and for execution on, Juniper equipment originally purchased by Customer from Juniper or an authorized Juniper reseller, unless the applicable Juniper documentation expressly permits installation on non-Juniper equipment.
- Customer shall use the Software on a single hardware chassis having a single processing unit, or as many chassis or processing units for which Customer has paid the applicable license fees.
- Product purchase documents, paper or electronic user documentation, and/or the particular licenses purchased by Customer may specify limits to Customer's use of the Software. Such limits may restrict use to a maximum number of seats, registered endpoints, concurrent users, sessions, calls, connections, subscribers, clusters, nodes, or transactions, or require the purchase of separate licenses to use particular features, functionalities, services, applications, operations, or capabilities, or provide throughput, performance, configuration, bandwidth, interface, processing, temporal, or geographical limits. Customer's use of the Software shall be subject to all such limitations and purchase of all applicable licenses.

The foregoing license is not transferable or assignable by Customer. No license is granted herein to any user who did not originally purchase the applicable license(s) for the Software from Juniper or an authorized Juniper reseller.

4. Use Prohibitions. Notwithstanding the foregoing, the license provided herein does not permit the Customer to, and Customer agrees not to and shall not: (a) modify, unbundle, reverse engineer, or create derivative works based on the Software; (b) make unauthorized copies of the Software (except as necessary for backup purposes); (c) rent, sell, transfer, or grant any rights in and to any copy of the Software, in any form, to any third party; (d) remove any proprietary notices, labels, or marks on or in any copy of the Software or any product in which the Software is embedded; (e) distribute any copy of the Software to any third party, including as may be embedded in Juniper equipment sold in the secondhand market; (f) use any 'locked' or key-restricted feature, function, service, application, operation, or capability without first purchasing the applicable license(s) and obtaining a valid key from Juniper, even if such feature, function, service, application, operation, or capability is enabled without a key; (g) distribute any key for the Software provided by Juniper to any third party; (h) use the Software in any manner that extends or is broader than the uses purchased by Customer from Juniper or an authorized Juniper reseller; (i) use the Software on non-Juniper equipment where the Juniper documentation does not expressly permit installation on non-Juniper equipment; (j) use the Software (or make it available for use) on Juniper equipment that the Customer did not originally purchase from Juniper or an authorized Juniper reseller; or (k) use the Software in any manner other than as expressly provided herein.

5. Audit. Customer shall maintain accurate records as necessary to verify compliance with this Agreement. Upon request by Juniper, Customer shall furnish such records to Juniper and certify its compliance with this Agreement.

6. Confidentiality. The Parties agree that aspects of the Software and associated documentation are the confidential property of Juniper. As such, Customer shall exercise all reasonable commercial efforts to maintain the Software and associated documentation in confidence, which at a minimum includes restricting access to the Software to Customer employees and contractors having a need to use the Software for Customer's internal business purposes.

7. Ownership. Juniper and Juniper's licensors, respectively, retain ownership of all right, title, and interest (including copyright) in and to the Software, associated documentation, and all copies of the Software. Nothing in this Agreement constitutes a transfer or conveyance of any right, title, or interest in the Software or associated documentation, or a sale of the Software, associated documentation, or copies of the Software.

8. Warranty, Limitation of Liability, Disclaimer of Warranty. The warranty applicable to the Software shall be as set forth in the warranty statement that accompanies the Software (the "Warranty Statement"). Nothing in this Agreement shall give rise to any obligation to support the Software. Support services may be purchased separately. Any such support shall be governed by a separate, written support services agreement. TO THE MAXIMUM EXTENT PERMITTED BY LAW, JUNIPER SHALL NOT BE LIABLE FOR ANY LOST PROFITS, LOSS OF DATA, OR COSTS OR PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES, OR FOR ANY SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THIS AGREEMENT, THE SOFTWARE, OR ANY JUNIPER OR JUNIPER-SUPPLIED SOFTWARE. IN NO EVENT SHALL JUNIPER BE LIABLE FOR DAMAGES ARISING FROM UNAUTHORIZED OR IMPROPER USE OF ANY JUNIPER OR JUNIPER-SUPPLIED SOFTWARE. EXCEPT AS EXPRESSLY PROVIDED IN THE WARRANTY STATEMENT TO THE EXTENT PERMITTED BY LAW, JUNIPER DISCLAIMS ANY AND ALL WARRANTIES IN AND TO THE SOFTWARE (WHETHER EXPRESS, IMPLIED, STATUTORY, OR OTHERWISE), INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. IN NO EVENT DOES JUNIPER WARRANT THAT THE SOFTWARE, OR ANY EQUIPMENT OR NETWORK RUNNING THE SOFTWARE, WILL OPERATE WITHOUT ERROR OR INTERRUPTION, OR WILL BE FREE OF VULNERABILITY TO INTRUSION OR ATTACK. In no event shall Juniper's or its suppliers' or licensors' liability to Customer, whether in contract, tort (including negligence), breach of warranty, or otherwise, exceed the price paid by Customer for the Software that gave rise to the claim, or if the Software is embedded in another Juniper product, the price paid by Customer for such other product. Customer acknowledges and agrees that Juniper has set its prices and entered into this Agreement in reliance upon the disclaimers of warranty and the limitations of liability set forth herein, that the same reflect an allocation of risk between the Parties (including the risk that a contract remedy may fail of its essential purpose and cause consequential loss), and that the same form an essential basis of the bargain between the Parties.

9. Termination. Any breach of this Agreement or failure by Customer to pay any applicable fees due shall result in automatic termination of the license granted herein. Upon such termination, Customer shall destroy or return to Juniper all copies of the Software and related documentation in Customer's possession or control.

10. Taxes. All license fees for the Software are exclusive of taxes, withholdings, duties, or levies (collectively "Taxes"). Customer shall be responsible for paying Taxes arising from the purchase of the license, or importation or use of the Software.

11. Export. Customer agrees to comply with all applicable export laws and restrictions and regulations of any United States and any applicable foreign agency or authority, and not to export or re-export the Software or any direct product thereof in violation of any such restrictions, laws or regulations, or without all necessary approvals. Customer shall be liable for any such violations. The version of the Software supplied to Customer may contain encryption or other capabilities restricting Customer's ability to export the Software without an export license.

12. Commercial Computer Software. The Software is "commercial computer software" and is provided with restricted rights. Use, duplication, or disclosure by the United States government is subject to restrictions set forth in this Agreement and as provided in DFARS 227.7201 through 227.7202-4, FAR 12.212, FAR 27.405(b)(2), FAR 52.227-19, or FAR 52.227-14(ALT III) as applicable.

13. Interface Information. To the extent required by applicable law, and at Customer's written request, Juniper shall provide Customer with the interface information needed to achieve interoperability between the Software and another independently created program, on payment of applicable fee, if any. Customer shall observe strict obligations of confidentiality with respect to such information and shall use such information in compliance with any applicable terms and conditions upon which Juniper makes such information available.

14. Third Party Software. Any licensor of Juniper whose software is embedded in the Software and any supplier of Juniper whose products or technology are embedded in (or services are accessed by) the Software shall be a third party beneficiary with respect to this Agreement, and such licensor or vendor shall have the right to enforce this Agreement in its own name as if it were Juniper. In addition, certain third party software may be provided with the Software and is subject to the accompanying license(s), if any, of its respective owner(s). To the extent portions of the Software are distributed under and subject to open source licenses obligating Juniper to make the source code for such portions publicly available (such as the GNU General Public License ("GPL") or the GNU Library General Public License ("LGPL")), Juniper will make such source code portions (including Juniper modifications, as appropriate) available upon request for a period of up to three years from the date of distribution. Such request can be made in writing to Juniper Networks, Inc., 1194 N. Mathilda Ave., Sunnyvale, CA 94089, ATTN: General Counsel. You may obtain a copy of the GPL at <http://www.gnu.org/licenses/gpl.html>, and a copy of the LGPL at <http://www.gnu.org/licenses/lgpl.html>.

15. Miscellaneous. This Agreement shall be governed by the laws of the State of California without reference to its conflicts of laws principles. The provisions of the U.N. Convention for the International Sale of Goods shall not apply to this Agreement. For any disputes arising under this Agreement, the Parties hereby consent to the personal and exclusive jurisdiction of, and venue in, the state and federal courts within Santa Clara County, California. This Agreement constitutes the entire and sole agreement between Juniper and the Customer with respect to the Software, and supersedes all prior and contemporaneous agreements relating to the Software, whether oral or written (including any inconsistent terms contained in a purchase order), except that the terms of a separate written agreement executed by an authorized Juniper representative and Customer shall govern to the extent such terms are inconsistent or conflict with terms contained herein. No modification to this Agreement nor any waiver of any rights hereunder shall be effective unless expressly assented to in writing by the party to be charged. If any portion of this Agreement is held invalid, the Parties agree that such invalidity shall not affect the validity of the remainder of this Agreement. This Agreement and associated documentation has been written in the English language, and the Parties agree that the English version will govern. (For Canada: Les parties aux présentés confirment leur volonté que cette convention de même que tous les documents y compris tout avis qui s'y rattache, soient rédigés en langue anglaise. (Translation: The parties confirm that this Agreement and all related documentation is and will be in the English language)).

Hardware Installation Guide

Thank you for choosing the Juniper Networks Unified Access Control Infranet Controller appliance.

Before beginning, please refer to the *Juniper Networks Security Products Safety Guide* for important safety information.

You can install the IVE and start configuring your system using the following easy steps:

- Step 1: Rack Mounting the Infranet Controller on page 2
- Step 2: Installing the Hardware on page 3
- Step 3: Performing Basic Setup on page 4
- Step 4: Licensing and Configuring Your Infranet Controller on page 7
- Step 5: Install the Infranet Enforcer hardware on page 8



NOTE: After installing and setting up your Infranet Controller, you should install the most current Infranet Controller service package, license your Infranet Controller appliance, and create a test user to verify user accessibility. To test initial set-up and continue configuring your Infranet Controller, refer to the *Juniper Networks Unified Access Control Administration Guide*.

We recommend that you install the Infranet Controller on your LAN to ensure that it can communicate with the appropriate resources, like authentication servers, DNS servers, internal Web servers via HTTP/HTTPS, external Web sites via HTTP/HTTPS (optional), Windows file servers (optional), NFS file servers (optional), and client/server applications (optional).



NOTE: If you decide to install your Infranet Controller in your DMZ, ensure that the Infranet Controller can connect to these internal resources.

Step 1: Rack Mounting the Infranet Controller



NOTE: If you are installing multiple devices in one rack, install the lowest one first and then proceed upward in the rack.



CAUTION: The chassis weights between 15 lbs. (6.8 kgs) and 30 lbs (13.6 kgs). Installing it into the rack requires at least one person to lift the device and a second person to secure the mounting screws.

To install a 2U chassis device into a rack, perform the following steps:

1. Attach the two rails to the chassis. The ears on the rails should be at the back of the chassis.
2. Attach the left and right mounting brackets to the front of each side of the chassis.
3. Have one person grasp the sides of the device, lift the device, and position it in the rack.
4. Align the bottom hole in each mounting bracket with a hole in each rack rail, making sure the chassis is level.
5. Have a second person install a mounting screw into each of the two aligned holes. Use a number-2 phillips screwdriver to tighten the screws.
6. Installing the remaining screws in each mounting bracket.
7. Verify that the mounting screws on one side of the rack are aligned with the mounting screws on the opposite side and that the device is level.

Step 2: Installing the Hardware

The Unified Access Control 4500 and 6500 ship with mounting ears and mid-mounts. The Secure Access 6500 includes rear mounting rails for use in a four-post mounting rack. We recommend you use the rear mounting rails when installing the Secure Access 6500 in a rack.

If you require an additional mounting kit, contact Juniper Networks.

Connect the included cables and power on the Infranet Controller following these steps:

1. On the front panel:
 - a. Connect an Ethernet cable from one of the Ethernet ports on the device to a Gigabit switch port set to 1000BaseTX. DO NOT use autoselect on either port.

Once you apply power to the Infranet Controller, the port uses two LEDs to indicate the connection status, which is described in “Ethernet Port LED Behavior” on page 4.
 - b. Plug the serial cable into the console port.
2. On the rear panel, plug the power cord into the AC receptacle. There is no on/off switch on the Infranet Controller. Once you plug the power cord into the AC receptacle, the Infranet Controller powers up.

Hardware installation is complete after you rack-mount the appliance and connect the power, network, and serial cables. The next step is to connect to the appliance’s serial console as described in “Step 3: Performing Basic Setup” on page 4.

Device Status LED Behavior

Startup takes approximately one minute to complete. If you want to turn the device off and on again, we recommend you wait a few seconds between shutting it down and powering it back up.

There are three device status LEDs located on the left-side of the front panel:

- Power
- Hard disk access
- Fault

Table 1 on page 3 lists the name, color, status, and description of each device status LED.

Table 1: Device Status LEDs

Name	Color	State	Description
POWER	Green	Off	Device is not receiving power
		On Steady	Device is receiving power

Table 1: Device Status LEDs(Continued)

Name	Color	State	Description
HARD DISK ACCESS	Yellow	Off	Hard disk is idle
		Blinking	Hard disk is being accessed
FAULT	Red	Off	Device is operating normally
		Slow blinking	Power supply fault
		Fast blinking	Fan failure
		Solid	Thermal failure

Ethernet Port LED Behavior

The Ethernet port LEDs show the status of each Ethernet port.

Table 2: 4-Port Copper Gigabit Ethernet LEDs (available on IC4500 and IC6500)

LED	Color and State	Description
Link/Activity	Green	Link
	Blinking green	Activity
Link Speed	Off	10 Mbps
	Green	100 Mbps
	Yellow	1 Gbps

Step 3: Performing Basic Setup

When you boot an unconfigured Infranet Controller appliance, you need to enter basic network and machine information through the serial console to make the appliance accessible to the network. After entering these settings, you can continue configuring the appliance through the administrator Web console. This section describes the required serial console setup and the tasks you need to perform when connecting to your Secure Access appliance for the first time.

To perform basic setup:

1. Configure a console terminal or terminal emulation utility running on a computer, such as HyperTerminal, to use these serial connection parameters:
 - 9600 bits per second
 - 8-bit No Parity (8N1)
 - 1 Stop Bit
 - No flow control
2. Connect the terminal or laptop to the serial cable plugged in to the appliance's console port and press **Enter** until you are prompted by the initialization script.

Figure 1: Welcome Screen for the Infranet Controller Serial Console

```

E1000 driver loaded
.....
No data to import
Creating initial default data

About to boot as a stand-alone IUE.
Hit TAB for clustering options, wait or hit Enter to continue....
Starting Core Services

Welcome to the initial configuration of your server!
NOTE: Press 'y' if this is a stand-alone server or the first
machine in a clustered configuration.
If this is going to be a member of an already running cluster
press n to reboot. When you see the 'Hit TAB for clustering options'
message press TAB and follow the directions.
Would you like to proceed (y/n)?:
CTRL-A Z for help | 9600 8N1 | NOR | Minicom 2.00.0 | UT102 | Offline

```

3. Enter **y** to proceed and then **y** to accept the license terms (or **r** to read the license first).
4. Follow the directions in the serial console and enter the machine information for which you are prompted, including the:
 - IP address of the internal port (you configure the external port through the administrator Web console after initial configuration)
 - Network mask
 - Default gateway address
 - Primary DNS server address
 - Secondary DNS server address (optional)
 - Default DNS domain name (for example, acmegizmo.com)
 - WINS server name or address (optional)
 - Administrator username
 - Administrator password
 - Common machine name (for example, connect.acmegizmo.com)

- Organization name (for example, Acme Gizmo, Inc.)



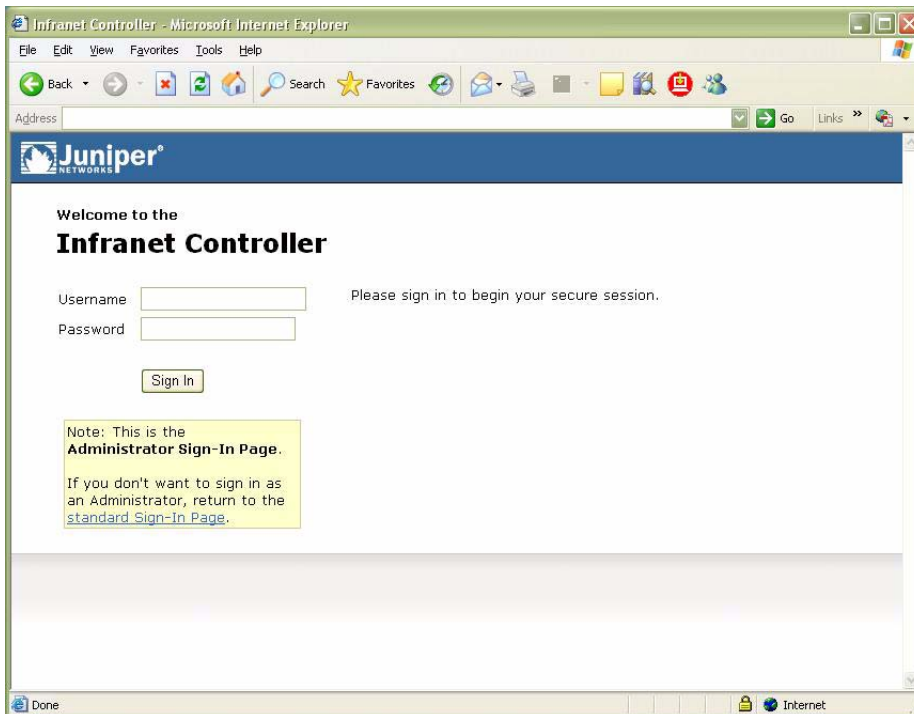
NOTE: The Infranet Controller uses the common machine and organization names to create a self-signed digital certificate for use during product evaluation and initial setup.

We strongly recommend that you import a signed digital certificate from a trusted certificate authority (CA) before deploying the Infranet Controller for production use.

For more information, refer to the “Initial Configuration of the Unified Access Control Solution” chapter in the *Juniper Networks Unified Access Control Administration Guide*.

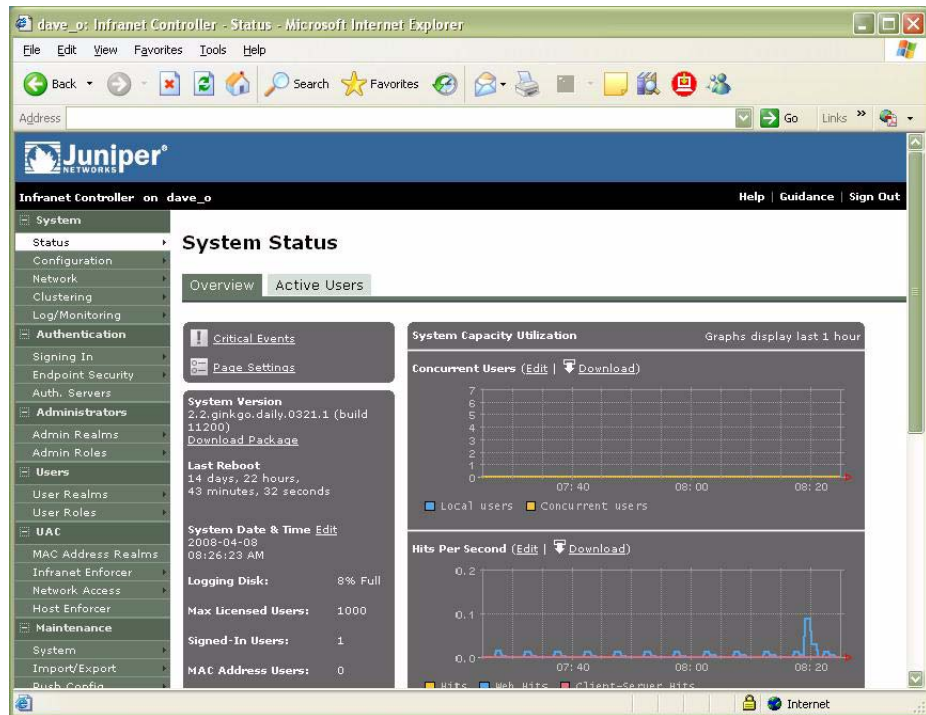
5. In a browser, enter the machine’s URL followed by “/admin” to access the administrator sign-in page. The URL is in the format: **https://a.b.c.d/admin**, where **a.b.c.d** is the machine IP address you entered in step 4. When prompted with the security alert to proceed without a signed certificate, click **Yes**. When the administrator sign-in page appears, you have successfully connected your Infranet Controller appliance to the network.

Figure 2: Administrator Sign-In Page



6. On the sign-in page, enter the administrator user name and password you created in step 4 and then click **Sign In**. The administrator Web console opens to the **System > Status > Overview** page.

Figure 3: System > Status > Overview Page



Step 4: Licensing and Configuring Your Infranet Controller

After you install the Infranet Controller and perform basic setup, you are ready to install the most current Infranet Controller OS service package, license the Infranet Controller, verify accessibility, and complete the configuration process:

- To install the most current Infranet Controller OS service package, license your Infranet Controller and create a test user to verify accessibility, refer to the “General System Management” chapter of the *Juniper Networks Unified Access Control Administration Guide* for your Infranet Controller.
- To test initial set-up and continue configuring your Infranet Controller, refer to the “Initial Configuration of the Unified Access Control” chapter of the *Juniper Networks Unified Access Control Administration Guide* for your Infranet Controller.

Step 5: Install the Infranet Enforcer hardware

If you have not already done so, install the Infranet Enforcer hardware. For cabling, rack mounting, and basic configuration instructions for platforms such as the ISG 1000 or ISG 2000, refer to the *User's Guide* that shipped with the system or visit the Juniper Networks web site at www.juniper.net/techpubs/ to download the *User's Guide* appropriate for the platform you are using.



NOTE:

- Be sure to set the date and time of the Infranet Enforcer to match the date set for the Infranet Controller. If possible, use a Network Time Protocol (NTP) server to set the date and time of both appliances.

 - For Infranet Controller safety information, refer to the *Juniper Networks Security Products Safety Guide* available on the Juniper Networks Support site.
-