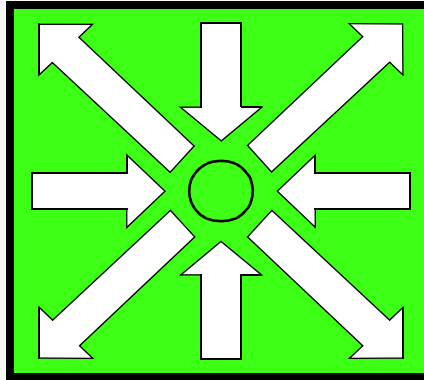


F5 Big-IP LoadBalancer



Supports Management Module SM-F5N1000

Copyright Notice

Document 5004. Copyright © 2002-present Aprisma Management Technologies, Inc. All rights reserved worldwide. Use, duplication, or disclosure by the United States government is subject to the restrictions set forth in DFARS 252.227-7013(c)(1)(ii) and FAR 52.227-19.

Liability Disclaimer

Aprisma Management Technologies, Inc. ("Aprisma") reserves the right to make changes in specifications and other information contained in this document without prior notice. In all cases, the reader should contact Aprisma to inquire if any changes have been made.

The hardware, firmware, or software described in this manual is subject to change without notice.

IN NO EVENT SHALL APRISMA, ITS EMPLOYEES, OFFICERS, DIRECTORS, AGENTS, OR AFFILIATES BE LIABLE FOR ANY INCIDENTAL, INDIRECT, SPECIAL, OR CONSEQUENTIAL DAMAGES WHATSOEVER (INCLUDING BUT NOT LIMITED TO LOST PROFITS) ARISING OUT OF OR RELATED TO THIS MANUAL OR THE INFORMATION CONTAINED IN IT, EVEN IF APRISMA HAS BEEN ADVISED OF, HAS KNOWN, OR SHOULD HAVE KNOWN, THE POSSIBILITY OF SUCH DAMAGES.

Trademark, Service Mark, and Logo Information

SPECTRUM, **IMT**, and the **SPECTRUM IMT/VNM** logo are registered trademarks of Aprisma Management Technologies, Inc., or its affiliates. **APRISMA**, **APRISMA MANAGEMENT TECHNOLOGIES**, the **APRISMA MANAGEMENT TECHNOLOGIES** logo, **MANAGE WHAT MATTERS**, **DCM**, **VNM**, **SpectroGRAPH**, **SpectroSERVER**, **Inductive Modeling Technology**, **Device Communications Manager**, **SPECTRUM Security Manager**, and **Virtual Network Machine** are unregistered trademarks of Aprisma Management Technologies, Inc., or its affiliates. For a complete list of Aprisma trademarks, service marks, and trade names, go to <http://www.aprisma.com/manuals/trademark-list.htm>.

All referenced trademarks, service marks, and trade names identified in this document, whether registered or unregistered, are the intellectual property of their respective owners. No rights are granted by Aprisma Management Technologies, Inc., to use such marks, whether by implication, estoppel, or otherwise. If you have comments or concerns

about trademark or copyright references, please send an e-mail to spectrum-docs@aprisma.com; we will do our best to help.

Restricted Rights Notice

(Applicable to licenses to the United States government only.)

This software and/or user documentation is/are provided with RESTRICTED AND LIMITED RIGHTS. Use, duplication, or disclosure by the government is subject to restrictions as set forth in FAR 52.227-14 (June 1987) Alternate III (g)(3) (June 1987), FAR 52.227-19 (June 1987), or DFARS 52.227-7013 (c)(1)(ii) (June 1988), and/or in similar or successor clauses in the FAR or DFARS, or in the DOD or NASA FAR Supplement, as applicable. Contractor/manufacturer is Aprisma Management Technologies, Inc. In the event the government seeks to obtain the software pursuant to standard commercial practice, this software agreement, instead of the noted regulatory clauses, shall control the terms of the government's license.

Virus Disclaimer

Aprisma makes no representations or warranties to the effect that the licensed software is virus-free.

Aprisma has tested its software with current virus-checking technologies. However, because no anti-virus system is 100 percent effective, we strongly recommend that you write-protect the licensed software and verify (with an anti-virus system in which you have confidence) that the licensed software, prior to installation, is virus-free.

Contact Information

Aprisma Management Technologies, Inc.

273 Corporate Drive
Portsmouth, NH 03801

Phone: 603.334.2100

U.S. toll-free: 877.468.1448

Web site: <http://www.aprisma.com>

Contents

INTRODUCTION	5	F5 Big-IP Interface Tables View	20
Purpose and Scope	5	Interface Table	20
Required Reading	5	Interface IP addresses	21
Supported Devices	6	IF Address Table	21
The SPECTRUM Model	6	F5 Big-IP Pool Configuration View	21
TASKS	8	Pool Table	21
DEVICE VIEWS	9	Pool Member Table	23
Interface Device View	9	F5 Big-IP Secure Socket Layer Proxy Table View	24
Interface Icons	10	F5 Big-IP Virtual Address Configuration View	25
Interface Icon Subviews Menu Options	11	Virtual Address Table	25
Interface Status View	12	Virtual Addresses Table2	26
Secondary Address Panel	12	F5 Big-IP Virtual Server Configuration View	26
DEVICE TOPOLOGY VIEWS	13	Virtual Server Table1	26
Interface Device Topology View	13	Virtual Server Table2	27
Cablewalk and Cablewalk List View	14	Virtual Server Table3	28
APPLICATION VIEWS	15	Snat Translation Address View	28
Supported Applications	16	Snat Translation Address Table1	28
Common Applications	16	Snat Translation Address Table2	29
Device-Specific Applications	17	Snat Original Address View	30
Big-IP Application	18	Snat Original Address Table1	30
F5 Big-IP General BIG/IP Scalars	18	Snat Original Address Table2	30
		F5 Big-IP Member Information View	31
		Member Table1	31
		Member Table2	32
		F5 Big-IP Network Address Translation (NAT) View	33
		NAT Table1	33
		NAT Table2	34

F5 Big-IP Nd Address View 34

 NdAddress Table1 34

 NdAddress Table2..... 35

F5 Big-IP Virtual Address View 36

 Virtual Address Table2 36

 Virtual Addresses Table2 36

F5 Big-IP VPort Information View 37

 VPort Table1 37

 VPort Table2 38

UCD Application..... 38

 UCD Disk Table View 39

 UCD Extensible Commands Table View 40

 UCD Memory Information View 40

 UCD Mib Registry Table View 41

 UCD Process Table 41

 SNMP Errors View..... 42

 UCD Version Information View..... 42

CONFIGURATION VIEWS 44

 Device Configuration View 44

PERFORMANCE VIEW 46

DEVICE WEB MANAGEMENT 47

MODEL INFORMATION VIEWS 48

INDEX 49

Introduction

This section introduces the SPECTRUM Device Management documentation for F5 Big-IP LoadBalancer devices.

This introduction to the F5 LoadBalancer documentation contains the following information:

- [Purpose and Scope](#)
- [Required Reading](#)
- [Supported Devices](#) (Page 6)
- [The SPECTRUM Model](#) (Page 6)

Purpose and Scope

Use this documentation as a guide for managing F5 Big-IP LoadBalancer devices with the SPECTRUM management module SM-F5N1000. This documentation describes the icons, menus, and views that enable you to remotely monitor, configure, and troubleshoot Load Balancer devices through software models in your SPECTRUM database.

Only information specific to the supported management module is included under this topic.

For general information about device management using SPECTRUM and for explanation of basic SPECTRUM functionality, and navigation techniques, refer to the documentation listed under *Required Reading*.

Required Reading

To use this documentation effectively, you must be familiar with the information covered by the other SPECTRUM online documentation topics listed below.

- ***Getting Started with SPECTRUM for Operators***
- ***Getting Started with SPECTRUM for Administrators***
- ***How To Manage Your Network with SPECTRUM***
- ***SPECTRUM Views***
- ***SPECTRUM Menus***
- ***SPECTRUM Icons***

- **SPECTRUM Software Release Notice**

Supported Devices

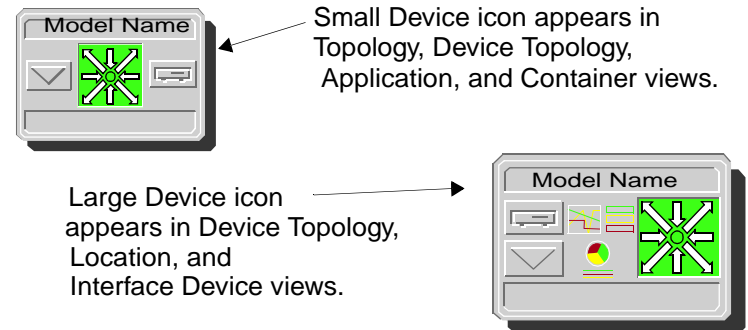
The SPECTRUM management module SM-F5N1000 currently allows you to model different types of F5 Load Balancer devices as described below.

The **F5 Big-IP Load Balancer** is a device which provides the means to load balance servers, caches, firewalls, and VPN gateways. It contains four load balancing modes, and three modes for maintaining connections to servers. This device supports Intelligent traffic control, Secure Network Address Translation (SNAT), performance monitoring, full TCP/IP protocol support, VLAN trunking, and GB Ethernet interface.

The SPECTRUM Model

SPECTRUM uses a single device model type, **BigIPLoadBlncr**, for modeling any of the supported F5 devices. Load balancer models are represented in SpectroGRAPH views by Device icons. As [Figure 1](#) shows, the appearance of the Device icon varies slightly depending on the kind of view it appears in.

Figure 1: Small and Large Device Icons



The device-specific Icon Subviews menu options available from the Device icon are listed below.

Option	Accesses the...
Fault Management	Fault Management view, which is described in the <i>How to Manage Your Network with SPECTRUM</i> documentation.
Device	Device Views (Page 9)
DevTop	Device Topology Views (Page 13)
Application	Application Views (Page 15)
Configuration	Configuration Views (Page 44)
Model Information	Model Information Views (Page 48)
Primary Application	Menu options that let you select Routing, MIB-II, or UCDAp as the primary application.
Device Web Management	Default Web Browser. This option allows you to manage the device through a Web Browser.

The rest of the documentation for this management module is organized according to view type, as follows.

- [Device Views](#) (Page 9)
- [Device Topology Views](#) (Page 13)
- [Application Views](#) (Page 15)
- [Configuration Views](#) (Page 44)
- [Model Information Views](#) (Page 48)

Tasks

This section lists device management tasks alphabetically and provides links to descriptions of the views and/or table used to perform the task.

Application Information (examine)

- [Application Views](#) (Page 15)

Clear Cache (set)

- [UCD Version Information View](#) (Page 42)

Debugging (turn on or off)

- [UCD Version Information View](#) (Page 42)

Device (configure)

- [Device Configuration View](#) (Page 44)

Device Topology (examine)

- [Device Topology Views](#) (Page 13)

Device View (monitor)

- [Device Views](#) (Page 9)

Error Fix (Set)

- [UCD Extensible Commands Table View](#) (Page 40)

- [UCD Process Table](#) (Page 41)

F5 Configuration Utility web application (Access)

- [Device Web Management](#) (Page 47)

Interface Mask and Address (examine)

- [Secondary Address Panel](#) (Page 12)

Model Information (examine)

- [Model Information Views](#) (Page 48)

Performance Views (examine)

- [Performance View](#) (Page 46)

Restart Agent (set)

- [UCD Version Information View](#) (Page 42)

Device Views

This section describes the Device views and subviews available for models F5 Big-IP LoadBalancer devices in SPECTRUM.

Device views use icons and labels to represent the modeled device and its components, such as modules, ports, and applications. There is one type of Device view:

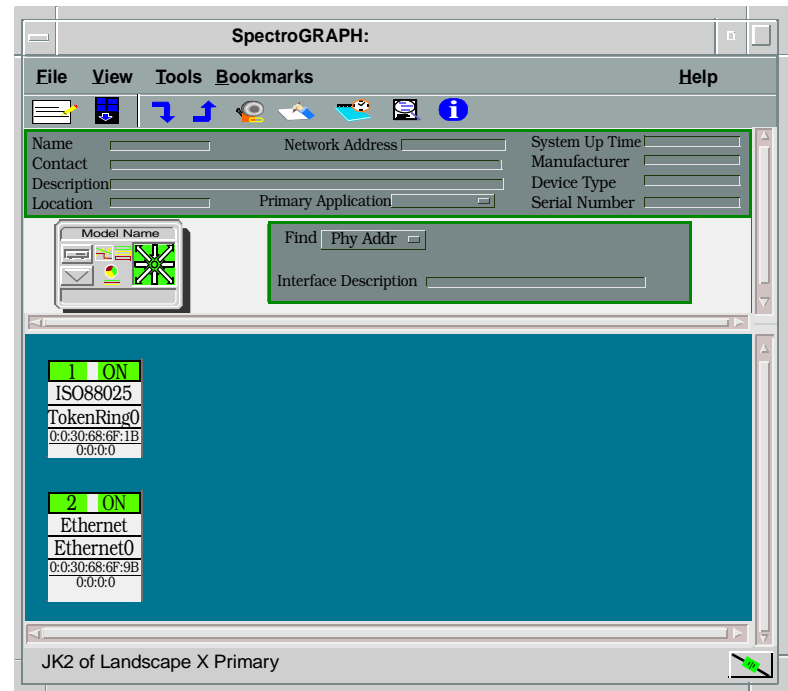
- [Interface Device View](#)

Interface Device View

Access: From the **Icon Subviews** menu for the Device icon, select **Device > Interface**.

This view provides dynamic configuration and performance information for each of the device's serial/network/I/O ports, which are represented by Interface icons in the bottom panel of the view, as shown in the figure. The middle panel of the view also displays a Device icon, which allows you to monitor the device operation and access other device-specific views.

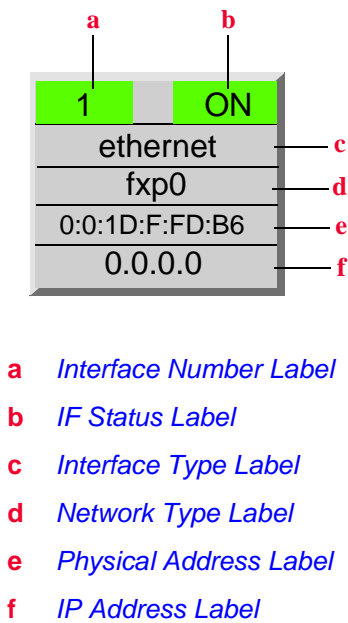
Figure 2: Interface Device View



Interface Icons

Figure 3 shows a close-up of an Interface icon from an Interface Device view. Most of the informational labels on the icon also provide double-click access to other views, as explained in the following label descriptions.

Figure 3: Interface Icon



Interface Number Label

This label displays the interface number.

IF Status Label

This label displays the current Operational Status of the interface (see Table 1). Note that the background color of the label also depends on the interface’s current Administrative Status, which is set by the user (see *Interface Status View* (Page 12)). This view can be accessed by double-clicking the label.

Table 1: Interface Status Label Colors

Color	Operational Status	Administrative Status	Label Text
Green	ON	ON	ON
Blue	OFF	OFF	OFF
Yellow	OFF	ON	OFF
Red	Testing	Test	Test

Interface Type Label

This label identifies the type of interface—e.g., Ethernet, FDDI, Other, etc. Double-click this label to access the Interface Configuration view. See the **SPECTRUM Views** documentation.

Network Type Label

This label identifies the type of network the interface is connected to. Double-click the label to open the Model Information view for the interface.

Physical Address Label

This label displays the physical (MAC) address of the interface. Double-click the label to open the Address Translation Table (AT),

IP Address Label

This label displays the IP address for the interface. Double-click the label to open the [Secondary Address Panel](#) (Page 12), which allows you to change the address and mask for this interface.

Interface Icon Subviews Menu

[Table 2](#) lists the device specific Icon Subviews menu options and the views to which they provide access.

Table 2: Interface Icon Subviews Menu

Option	Opens the . . .
Detail	Interface Detail view, which displays Packet, Error, and Discard Breakdown pie charts.
IF Status	Interface Status View (Page 12).
IF Configuration	Interface Configuration view (see SPECTRUM Views).
Address Translation Table	Address Translation Table (AT), (see SPECTRUM Views).
Secondary Address Panel	Secondary Address Panel (Page 12).
Thresholds	Interface Threshold view, which allows you to set the on/off alarm thresholds for load, packet rate, error rate, and % discarded.
Model Information	Model Information Views (Page 48).

Interface Status View

Access: From the **Icon Subviews** menu for the Interface icon in the Interface Device view, select **IF Status**.

This view provides information on the operational status of the interface and allows you to enable or disable the port.

Operational Status

The current state of the interface (ON, OFF, or Testing).

Administrative Status

This button allows you to select the desired operational state of the interface (ON, OFF, or Testing).

Secondary Address Panel

Access: From the **Icon Subviews** menu for the Interface icon in the Interface Device view, select **Secondary Address Panel**.

This panel provides a table of IP addresses and masks obtained from the Address Translation table within the device's firmware. You can change the current address displayed in the **IP Address** field by selecting an entry from the table in this panel and clicking the **Update** button.

Device Topology Views

This section provides brief descriptions of the Device Topology views available for models of F5 Big-IP LoadBalancer devices in SPECTRUM.

Device Topology views show the connections between a modeled device and other network entities. There are two kinds of Device Topology views available for F5 Load Balancer models:

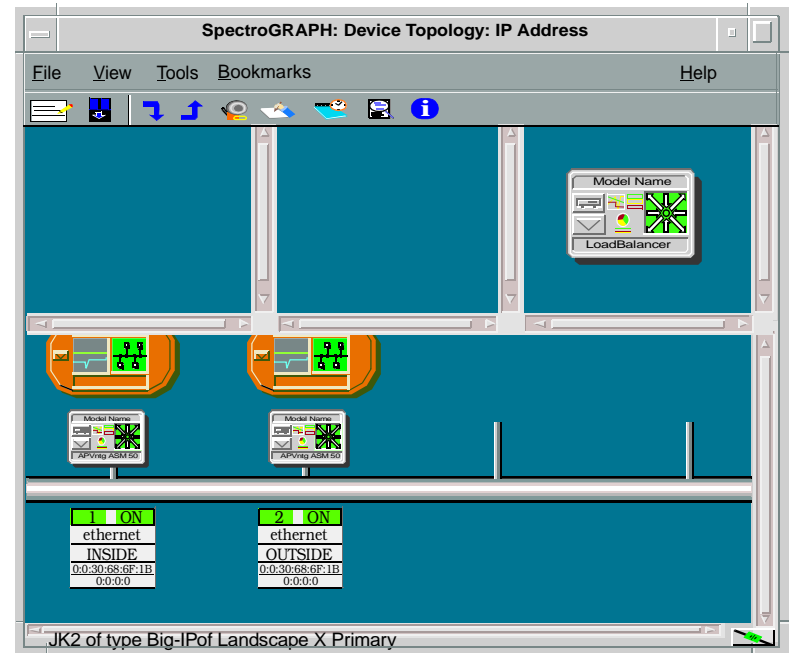
- [Interface Device Topology View](#)

Interface Device Topology View

Access: From the **Icon Subviews** menu for the Device icon, select **DevTop > Interface**.

The lower panel of the Interface Device Topology view (Figure 4) uses interface icons to represent the device's serial/network I/O ports. These icons provide the same information and menu options as those in the [Interface Device View](#) (Page 9). If there is a device connected to a particular interface, a device icon appears on the vertical bar above the interface icon along with an icon representing the network group that contains the device.

Figure 4: Interface Device Topology



Cablewalk and Cablewalk List View

Access: From the **Icon Subviews** of the device icon in the **Device Topology** view.

This view is described in detail in the **SPECTRUM Views** documentation.

Application Views

This section describes the main Application view and the associated application-specific subviews available for models of F5 Big-IP LoadBalancer devices in SPECTRUM.

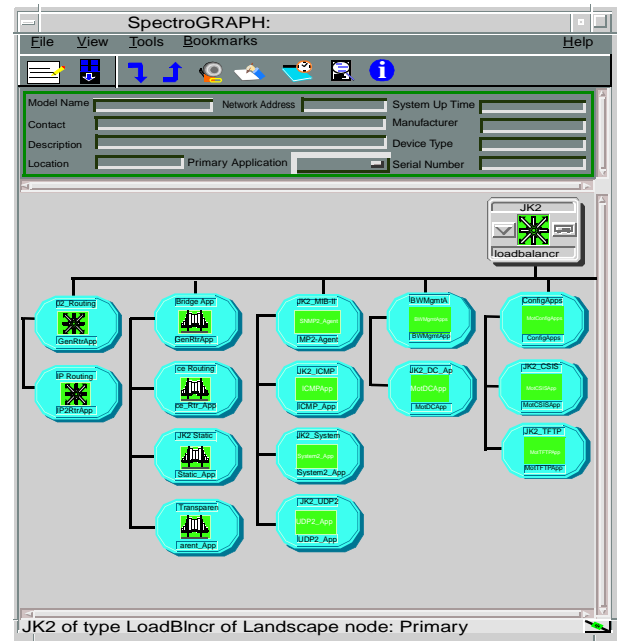
Access: From the **Icon Subviews** menu for the Device icon, select **Application**.

When a device model is created, SPECTRUM automatically creates models for each of the major and minor applications supported by the device. The Application view identifies all of these application models, shows their current condition status, and provides access to application-specific subviews.

Figure 5 shows an Application view in its default mode (Icon) where each of the application models is represented by an Application icon. The Application icons are arranged hierarchically under a Device icon, with major applications in the top row and their respective minor applications stacked directly below.

If you prefer to see applications displayed by name only, in a single vertical list, select **View > Mode > List**.

Figure 5: Main Application View



Supported Applications

SPECTRUM's applications can be grouped within two general categories as follows:

- [Common Applications](#), below
- [Device-Specific Applications](#) (Page 17)

Common Applications

For the most part, these applications represent the non proprietary MIBs supported by your device. Listed below (beneath the title of the SPECTRUM document that describes them) are some of the common applications currently supported by SPECTRUM.



The documents listed are available for viewing at:

Note:

www.aprisma.com/manuals/

- ***Routing Applications***

- Generic Routing
- Repeater
- AppleTalk
- DECnet
- Open Shortest Path First

- ***Bridging Applications***

- Spanning Tree
- Static
- Transparent
- PPP Bridging
- Source Routing
- Translation

- ***MIB II Applications***

- SNMP
- IP
- ICMP
- TCP
- System2
- UDP

- ***Technology Applications***

- APPN
- ATM Client
- DHCP
- PNNI
- rfc1316App
- DLSW

- **Transmission Applications**

- FDDI
- Point-to-Point
- DS1
- DS3
- RS-232
- WAN
- Frame Relay
- Token Ring
- Ethernet
- Fast Ethernet
- rfc1317App
- rfc1285App
- rfc1315App
- 802dot11App
- SONET

- **DOCSIS Applications**

- DOCSISCblDvApp
- DOCSISQOSApp
- DOCSISBPI2App
- DOCSISBPIApp
- DOCSISIFApp

- **Digital Subscriber Line Applications**

- ADSL

Device-Specific Applications

SPECTRUM imports the following device-level proprietary MIBs into its database:

- LOAD-BAL_SYSTEM_MIB
- UCD-SNMP-MIB

These MIBs can be used in conjunction with SPECTRUM's optional customization products (referred to as the Level I Tool Kits) to create application models and views that display the condition of selected MIB objects.

**Note:**

Aprisma Management Technologies can provide training, technical assistance, and custom engineering support services for creating application models and their associated views.

This device contains the following device-specific applications:

- [Big-IP Application](#) (Page 18)
- [UCD Application](#) (Page 38)

Big-IP Application

This application contains the following application-specific subviews:

- [F5 Big-IP General BIG/IP Scalars](#) (Page 18)
- [F5 Big-IP Interface Tables View](#) (Page 20)
- [F5 Big-IP Pool Configuration View](#) (Page 21)
- [F5 Big-IP Secure Socket Layer Proxy Table View](#) (Page 24)
- [F5 Big-IP Virtual Server Configuration View](#) (Page 26)
- [F5 Big-IP Member Information View](#) (Page 31)
- [F5 Big-IP Virtual Address View](#) (Page 36)
- [F5 Big-IP VPort Information View](#) (Page 37)

F5 Big-IP General BIG/IP Scalars

Access: From the **Icon Subviews** menu for the BigIPApp Application icon, select **Configuration**.

Uptime

The uptime of this device; not the uptime of the SNMP agent.

Total Connections

The total number of connections this balancer has serviced.

Current Connections

The number of current connections.

Maximum Connections

The maximum number of connections that this balancer has serviced at one time.

Packets In

The total count of all packets read off of the network.

Packets In Hi32

Contains the high order 32-bits of the **Packets In** counter. To calculate the total for the **Packets In** quantity, multiply **Packets In Hi32** by 4,294,967,296 (2^{32}) and add **Packets In**.

Packets Out

The total count of all packets written to the network.

Packets Out Hi32

The high order 32-bits of the **Packets Out** counter. To calculate the total for the **Packets Out** quantity, multiply **Packets Out Hi32** by 4,294,967,296 (2^{32}) and add **Packets Out**.

Bits In

The total number of bits read off the network.

Bits In Hi32

The high order 32-bits of the **Bits In** counter. To calculate the total for the **Bits In** quantity, multiply **Bits In Hi32** by 4,294,967,296 (2^{32}) and add **Bits In**.

Bits Out

The total count of all bits written to the network.

Bits Out Hi32

The high order 32-bits of the **Bits Out** counter. To calculate the total for the **Bits Out Hi32** quantity, multiply **Bits Out Hi32** by 4,294,967,296 (2^{32}) and add **Bits Out**.

Port Deny

The number of port denies that have occurred.

Inbound Pckt drops

The number of inbound packets that have been dropped.

Outbound Pckt drops

The number of outbound packets that have been dropped.

Active

Indicates whether the balancer is active or in standby mode.

Mirror Enabled

Displays whether mirroring is enabled on this load balancer.

Reset Counters

Displays whether counters are set to reset or unreset on this load balancer.

Node Ping Interval

The node ping interval in seconds.

NodeTimeout

The node timeout interval in seconds.

Loadbalancer Mode

The global load balance mode.

Watch Dog Card State

The watch dog card state.

Snat Connx Limit

The number of simultaneous connections allowed through a SNAT.

SnatTCPIdleTimeout

Default connection timeout for SNAT TCP connections.

SnatUDP IdleTimeout

Default timeout for SNAT UDP connections.

Gateway Failsafe

Indicates whether gateway failsafe pinging is enabled.

Unit Id(s)

Unit id(s) for this load balancer.

Memory Used

Memory used by the load balancer kernel.

MemoryTotal

Total memory available to the load balancer kernel.

CPU Temp

The CPU temperature (degrees celsius).

Fan Speed (RPM)

Fan speed (revolutions per minute).

F5 Big-IP Interface Tables View

Access: From the **Icon Subviews** menu for the *BigIPApp* Application icon, select **Interface Config**.

This view contains the following information:

Interface Number

The number of interfaces on this Big-IP.

Interface Table

This table contains the following entries:

Interface

The name of the interface.

IP Addresses

The list of IP address on this interface.

IF Dstn

This is a destination interface.

IF Src

This is a source interface.

Timeout (sec)

The seconds before a failout is triggered in failsafe mode.

IFArmed

The interface will be armed if the interface failsafe mode is activated.

VLANSEnbl

The VLANs enabled for this device.

MasqueradeAddress

The MAC masquerade address for this interface.

Last TimeChgd

The last time the interface attributes were modified.

I/F Speed

The speed of this interface.

FullDuplex

Is this interface operating in full duplex mode.

Interface IP addresses

Address number

The number of interface IP addresses on this Big-IP.

IF Address Table

This table contains information about the Big/IP interface IP addresses. It contains the following values:

IP Address

The IP address for this interface IP address.

I/F Name

The name of the interface for this IP address.

Netmask

The netmask for this interface IP address.

Broadcast

The broadcast address for this interface IP address.

Type

The type for this interface IP address.

Unit Id

The unit identifier for this interface IP address.

VLAN Tag

The VLAN tag for this interface IP address.

F5 Big-IP Pool Configuration View

Access: From the **Icon Subviews** menu for the *BigIPApp* icon, select **Pool Configuration**.

Pool Table

This table contains information about the Big-IP pools, and displays the following:

Pool number

The number of pools on this Big-IP.

Pool Name

The name of this pool.

Pool LB Mode

The Load Balance mode of this pool. Possible modes are roundrobin, ratio, fastest, leastConn, predictive, observed, priority, ratioNodeAddress, priorityNodeAddress, leastConnNodeAddress, and globalDefault.

Dependent

Whether or not the pool is dependent.

Member Qty

The number of members in this pool.

PoolBitsIn

The number of bits in this pool.

BitsInHi32

The high order 32-bits of the number of bits in this pool.

PoolBitsOut

The number of bits out for this pool.

BitsOutHi32

The high order 32-bits of the number of bits out for this pool.

PcktsIn

The total of packets in this pool.

PktsInHi32

Contains the high order 32-bits of the **Packets In** counter.

Pkts Out

The total of packets out of this pool.

PktsOutH32

The high order 32-bits of the **Packets Out** counter.

PoolMaxCon

The maximum number of connections the members of this pool have had open at any one time.

CurrentCon

The current number of connections the members of this pool have open.

TotalCon

The total number of connections the members of this pool have served since the pool started.

PrsistMode

The persistence mode for this pool. Possible modes are none, simple, sticky, cookie, and ssl.

SSL Timeout

The timeout time in seconds for SSL persistence for this pool.

SmplTimeout

The timeout time in seconds for simple persistence for this pool.

SimpleMask

The simple persistence mask for this pool.

StickyMask

The addresses matching this mask will have Destination Address Affinity if Server Sticky is true.

CookieMode

The cookie mode used with cookie persistence mode. Possible modes are unspecified, insert, rewrite, passive, and hash.

CookieExpr

The persistent cookie expiration time in seconds for this pool.

CookieHashName

The cookie hash name for this pool.

CkHshOffset

The cookie hash offset for this pool.

CkHashLeng

The cookie hash length for this pool.

Pool Member Table

This table displays the following information.

Pool Member Number

The number of pool members on this Big-IP.

Member Pool name

The name of the pool.

MemberIPAddress

The IP address of this pool member.

Port

The port of this pool member.

Maintnnc

Whether or not this pool is in maintenance mode.

MembrRatio

The Load Balancing ratio of the member within the pool.

MPriority

The priority level of the member within the pool.
Used by the priority member load balancing mode.

MmbrWeight

The weight of the member within the pool.

MRipeness

The current load balancing state in the member load balancing mode.

MemBitsIn

The total bits in for this pool member.

MBtsInHi32

The high order 32-bits of the total bits in for this pool member.

MemBitsOut

The total bits out for this pool member.

MBtsOthi32

The high order 32-bits of the total bits out for this pool member.

Pkts In

The total packets in for this pool member.

PktsInHi32

The high order 32-bits of the total packets in for this pool member.

Pkts Out

The total packets out for this pool member.

PktsOutHi32

The high order 32-bits of the total packets out for this pool member.

MmbrConLmt

The member connection limit.

MmbrMaxCon

The maximum number of connections this pool member can have open at any one time.

MmbrCurCon

The current number of connections this pool member has open.

MmbrTotCon

The total number of connections that this pool number has served since starting a pool.

F5 Big-IP Secure Socket Layer Proxy Table View

Access: From the **Icon Subviews** menu for the **BigIPApp** icon, select **SSL Proxy Table**.

Number

The number of Secure Socket Layer (SSL) proxies on this Big-IP.

OrigIPAddress

The original IP address of this SSL proxy.

OrigPort

The original port of this SSL proxy.

DestIPAddress

The destination IP address of this SSL proxy.

DestPort

The destination port of this SSL proxy.

Netmask

The netmask of this SSL proxy.

Broadcast

The broadcast address of this SSL proxy.

UnitID

The unit ID of this SSL proxy.

Enabled

Displays whether this SSL proxy is enabled or disabled.

Interface Name

The interface associated with this SSL proxy.

Last Hop Pool

The name of the last hop pool for this SSL proxy.

F5 Big-IP Virtual Address Configuration View

Access: From the **Icon Subviews** menu for the *BigIPApp* Application icon, select **Virtual Address Config**.

Virtual Address Table

This table contains the following information:

VirtAddrNum

The number of virtual addresses on this device.

IP Address

The IP address for this virtual server.

Addr Status

The status of the server, whether it is in maintenance mode.

ConLmt

The total number of connections this virtual address can support at one time.

Net Mask

The net mask for this virtual address.

Vddr Broadcast

The broadcast address for this virtual address.

Interface

The name of the network interface that this address is attached to.

FailOver Flags

The failover flags for this virtual address.

Octets In

The number of octets received from the network from this virtual server.

OctsInHi32

The high order 32-bits of the number of octets received from the network from this virtual server.

Octets Out

The number of octets sent to the network from this virtual server.

OctsOutHi32

The high order 32-bits of the number of octets sent to the network from this virtual server.

Virtual Addresses Table2

IPAddress

The IP address for this virtual server.

PacketsIn

The number of packets received from the network from this virtual server.

PktsInHi32

The high order 32-bits of the number of packets sent to the network from this virtual server.

PacketsOut

The number of packets sent to the network from this virtual server.

PktsOutH32

The high order 32-bits of the number of packets sent to the network from this virtual server.

CurCon

The number of connections currently open on this virtual server.

MaxCon

The maximum number of connections this virtual server has had open at any one time.

TotCon

The total number of connections this virtual server has had since it started.

Unit ID

The unique identifier of this virtual server.

F5 Big-IP Virtual Server Configuration View

Access: From the **Icon Subviews** menu for the *BigIPApp* Application icon, select **Virtual Server Config**.

Virtual Server Table1

This table contains the following information:

VirtServerNum

The number of virtual servers on this device.

VservIPAddress

The IP address of this virtual server.

Port

The port for this virtual server.

VServ Status

The status of the virtual server.

ConLm

The total number of connections this virtual server can support at one time.

ApProtocol

The application tunnelling protocol this virtual server uses.

ApPrtclTmO

The persistence timeout for this application protocol session.

Reaper

The amount of idle time before we reap an application protocol session.

PersistTmO

The timeout for persistence on this connection.

PersistMsk

The IP addresses matching this mask will have persistent connection. Those not covered by this mask will not.

SrvrStcky

Indicates whether the Destination Address Affinity turned on for this connection.

VSrvrStickyMask

The addresses matching this mask will have Destination Address Affinity if the virtual server sticky is true.

Failover Flags

The failover flag for this virtual server.

Virtual Server Table2**VServ IPAddress**

The IP address of this virtual server.

Port

The port for this virtual server.

OctetsIn

The number of octets received from the network from this virtual server.

OctsInHi32

The high order 32-bits of the number of octets received from the network from this virtual server.

OctetsOut

The number of octets sent to the network from this virtual server.

OctsOutH32

The high order 32-bits of the number of octets sent to the network from this virtual server.

Packets In

The number of packets received by the network from this virtual server.

PcktsInH32

The high order 32-bits of the number of packets received by the network from this virtual server.

Packets Out

The number of packets sent to the network from this virtual server.

PcktsOthH32

The high order 32-bits of the number of packets sent to the network from this virtual server.

CurCon

The number of connections currently open on this virtual server.

Virtual Server Table3**Vserv IPAddress**

The IP address of this virtual server.

Port

The port for this virtual server.

MaxCon

The maximum number of connections this virtual server has had open at any one time.

TotCon

The total number of connections this virtual server has served since the server started.

SSL New

The number of new SSL sessions on this virtual server.

SSL Hits

The number of lookup successes in the SSL session id cache for valid sessions ids.

SSL Timeouts

The number of lookup successes in the SSL session id that have already been reaped.

SSL Misses

The number of lookup failures in the SSL session id cache.

Cookie Mth

The cookie persistence method for this virtual server.

Server Rule

The load balancing rule used by this virtual server.

Server Pool

The load balancing pool used by this virtual server.

Snat Translation Address View

Access: From the **Icon Subviews** for the **BigIPApp** icon, select **Snat View > Snat Configuration**.

Snat Translation Address Table1

A table which contains all of the Secure Network Address Translation (SNAT) entries. It contains the following information:

SnatTransAddress

The Snat Translation Address.

Enabled

Indicates whether this Translation Address is enabled or disabled.

Interface

The name of the interface that this translation address exists on.

Address

The IP address to the outside world for this SNAT.

Netmask

The network mask for the SNAT Translation address.

Broadcast

The broadcast address for the SNAT Translation Address.

SecsCollect

The number of seconds we have been collecting statistics for this port.

SnatBitsIn

The total bits in for this SNAT.

BitsInHi32

The total bits in for this SNAT.

SntBitsOut

The total bits out for this SNAT.

BitsOutH32

The upper 32-bits of the total number of bits out for this SNAT.

Snat Translation Address Table2**SnatPktsIn**

The total packets in for this SNAT.

SPktsInH32

The upper 32-bits of the total number of packets in for this SNAT.

SnatPktOut

The total packets out for this SNAT.

SntPktOH32

The upper 32-bits of the total number of packets out for this SNAT.

CurrntCons

The number of connections currently open for this SNAT.

MaxConns

The maximum number of connections this SNAT has had open at any one time.

TotConns

The total number of connections this SNAT has had since the SNAT started.

LastTransport

Last translated port accessed using the SNAT.

Unit ID

The unit number of the load balancer to which the SNAT translation address is assigned.

Snat Original Address View

Access: From the **Icon Subviews** menu for the **BigIPApp** icon, select **Snat Views > Snat Original Conf**.

Snat Original Address Table1

A table of all secure SNAT entries that contains the following information:

SnatOrigAddr

The IP address to the outside world for this SNAT.

Enabled

Displays whether this is enabled for SNAT.

OrigConLmt

The maximum number of connections through this SNAT.

OrigTransAddress

The translation address corresponding to this original address.

TcpIdleTmO

The idle timeout for TCP connections through this SNAT.

UdpIdleTmO

The idle timeout for UDP connections through this SNAT.

StatZeroTime

The time statistics started being collected.

SecsCllctSt

The number of seconds we have been collecting statistics for this port.

SnOrBitsIn

The total bits in for this SNAT.

BitsInHi32

The upper 32-bits of the total number of bits in for this SNAT.

Snat Original Address Table2

SnatOrigAddress

The IP address to the outside world for this SNAT.

OrgBitsOut

The total bits out for this SNAT.

BitsOutH32

The upper 32-bits of the total number of bits out for this SNAT.

PktsIn

The total packets in for this SNAT.

PktsInHi32

The upper 32-bits of the total number of packets in for this SNAT.

PktsOut

The total packets out for this SNAT.

PktsOutH32

The upper 32-bits of the total number of packets out for this SNAT.

CurrntCons

The current number of connections for this SNAT.

Max Conns

The maximum number of connections for this SNAT.

TotalConns

The total number of connections this SNAT has had since the SNAT started.

LstTrnsPrt

The last translated port accessed using the SNAT.

F5 Big-IP Member Information View

Access: From the **Icon Subviews** menu for the Big-IPApp icon, select **Old Groups > Member**.

Member Table1

This table contains balancer member information.

VirtualIPAddress

The virtual IP address.

Port

The virtual IP address port.

Ordnl

The virtual IP address member ordinal number.

Member Address

The node IP address for this member.

Node Port

The node port for this member.

Status

The status of this member.

Packets In

The number of packets read off the network for this member.

PktsInHi32

The upper 32-bits of the number of packets read off the network for this member.

Packets Out

The number of packets written to the network for this member.

PktsOutH32

The upper 32-bits of the number of packets written to the network for this member.

Bits In

The number of bits read off the network for this member.

BitsInHi32

The upper 32-bits of the number of bits read off the network for this member.

Bits Out

The number of bits written to the network for this member.

BitsOutH32

The upper 32-bits of the number of bits written to the network for this member.

Cur Cnxns

The number of connections currently open for this member.

Con Max

The maximum number of connections this member has had open at any one time.

Con Limit

The total number of connections this member can support at one time.

Con Total

The total number of connections this member has served since the server started.

Member Table2**VirtualIPAddress**

The virtual IP address.

Port

The virtual IP address port.

Ordnl

The virtual IP address ordinal number.

Bits In

The number of bits read off the network for this member.

BitsInHi32

The upper 32-bits of the number of bits read off the network for this member.

Bits Out

The number of bits written to the network for this member.

BitsOutH32

The upper 32-bits of the number of bits written to the network for this member.

Cur Cnxns

The number of connections currently open for this member.

Con Max

The maximum number of connections this member has had open at any one time.

Con Limit

The total number of connections this member can support at one time.

Con Total

The total number of connections this member has served since the server started.

F5 Big-IP Network Address Translation (NAT) View

Access: From the **Icon Subviews** menu for the **BigIPApp** icon, select **Old Groups > NAT**.

This view contains the following information:

NAT Table1

NatNumber

The number of NATS present on this system.

Index

A unique value for each NAT defined.

Description

A textual string describing the NAT.

AddrFrom

The IP address.

AddressTo

The NAT's TO IP Address.

PacketsIn

The total packets in for this NAT.

PcktsInH32

The upper 32-bits of the total packets in for this NAT.

Pktsout

The total packets out for this NAT.

PcktOutH32

The upper 32-bits of the total packets out for this NAT.

Unit ID

The unit id associated with this NAT.

NAT Table2**NatNumber**

The number of NATS present on this system.

Description

A textual string describing the NAT.

Bitsin

The total bits for this NAT.

BitsInHi32

The upper 32-bits of the total bits for this NAT.

Bits Out

The total bits out for this NAT.

BitOutHi32

The upper 32-bits of the total bits out for this NAT.

Outside Netmask

The outside Netmask for this NAT.

Outside B'dcast

The outside broadcast address for this NAT.

Interface Name

The interface name for this NAT.

F5 Big-IP Nd Address View

Access: From the *Icon Subviews* menu for the *BigIPApp* icon, select **Old Groups > NdAddress**.

NdAddress Table1**NdAddressNum**

The number of network addresses present on this system.

Index

A unique value for each network address defined.

Description

A textual string describing the node address.

Node Address

The node IP address.

PacketsIn

The total packets in for this node address.

PacketsOut

The total packets out for this node address.

PktsInHi32

The upper 32-bits of the total packets in for this node address.

PktsOutH32

The upper 32-bits of the total packets out for this node address.

Bits In

The total bits in for this node address.

BitsInHi32

The upper 32-bits of the total bits in for this node address.

NdAddress Table2**NdAddressNum**

The number of network addresses present on this system.

Index

A unique value for each node address defined.

Description

A textual string describing the node address.

Node Address

The node IP address.

Bits Out

The total bits out for this node address.

BitsOutH32

The upper 32-bits of the total bits out for this node address.

CrntCnxns

The number of current connections for this node address.

Conmax

The maximum number of connections this node address has had opened at one time.

ConLimit

The maximum number of connections this node address is allowed to have open at one time.

ConTotal

The total connections that this node address has had.

Status

The status of this node address.

Maintnnc

Indicates whether the node is in maintenance mode.

F5 Big-IP Virtual Address View

Access: From the **Icon Subviews** menu for the BigIPApp icon, select **Old Groups > Virtual Address**.

This view contains the following information.

Virtual Address Table2

VAddressNum

The number of virtual addresses present on this system.

Index

A unique value for each virtual address defined.

Description

A description of the virtual address.

IP Address

The IP address for the virtual address.

Pkts In

The total packets in for this virtual address.

PktsInHi32

The high order 32-bits of the total packets in for this virtual address.

Pkts Out

The total packets out of this virtual address.

PktsOutH32

The high order 32-bits of the total packets out of this virtual address.

Bits In

The total bits in for this virtual address.

BitsInHi32

The high order 32-bits of the total bits in for this virtual address.

Virtual Addresses Table2

Index

A unique value for each virtual address defined.

Description

A description of the virtual address.

IP Address

The IP address for the virtual address.

Bits Out

The total bits out of this virtual address.

BitsOutH32

The high order 32-bits of the total bits out of this virtual address.

CurntCnxns

The current number of connections on this virtual address.

ConMax

The maximum number of connections this virtual server has had open at any one time.

ConLimit

The total number of connections this virtual address can support at one time.

ConTotal

The total number of connections this virtual server has served since the server started.

Status

The status of this virtual address.

F5 Big-IP VPort Information View

Access: From the **Icon Subviews** menu for the *BigIPApp* icon, select **VPort**.

VPortNumber

The number of virtual ports present on this system.

VPort Table1

A list of virtual port entries. The number of entries is given by the value of the virtual port number.

Index

A unique value for each virtual port defined.

PortNumber

The virtual port's port number.

Description

A description of the virtual port.

Packets In

The total packets in for this virtual port.

PktsInH32

The high order 32-bits of the total packets in for this virtual port.

Packets Out

The total packets out for this virtual port.

PktsOutH32

The upper 32-bits of the total packets out for this virtual port.

Bits In

The total bits in for this virtual port.

BitsInHi32

The upper 32-bits of the total bits in for this virtual port.

Bits Out

The total bits out for this virtual port.

BitsOutH32

The upper 32-bits of the total bits out for this virtual port.

VPort Table2**VPortNumber**

The number of virtual ports present on this system.

Index

A unique value for each virtual port defined.

PortNumber

The virtual port's port number.

Description

A description of the virtual port.

CurConxns

The number of current connections for this virtual port.

MaxCons

The maximum number of connections this virtual port has had open at any one time.

Con Limit

The connection limit for this virtual port.

Con Total

The total number of connections this virtual port has had open since the server started.

VPort Reap

The total connections reaped on this virtual port.

Allowed

Indicates whether this port is allowed, or disallowed.

TCP persistence

The number of seconds before the Transmission Control Protocol (TCP) persistence expires for this virtual port.

UDP persistence

The number of seconds before User Datagram Protocol (UDP) persistence expires for this virtual port.

UCD Application

This application contains the following subviews:

- [UCD Disk Table View](#) (Page 39)
- [UCD Extensible Commands Table View](#) (Page 40)
- [UCD Memory Information View](#) (Page 40)
- [UCD Mib Registry Table View](#) (Page 41)
- [UCD Process Table](#) (Page 41)
- [SNMP Errors View](#) (Page 42)
- [UCD Version Information View](#) (Page 42)

UCD Disk Table View

Access: From the **Icon Subviews** menu for the UCDAp icon, select **System Information > Disk Table**.

diskTable

This table contains disk watching information. Partitions to be watched are configured by the snmpd.conf file of the agent.

Entry

An entry containing a disk and its statistics.

Index

The integer reference number (row number) for the disk mib.

Path

The path where the disk is mounted.

Device

The path of the device for the partition.

Minimum

The minimum space required on the disk (kbytes) before the errors are triggered. Either this or diskMinPercent is configured via the agent's snmpd.conf file.

MinPercent

The percentage of minimum space required on the disk before the errors are triggered. Either

this or diskMinimum is configured via the agent's snmpd.conf file.

Total

The total size of the disk (kbytes).

Avail

The available space on the disk.

Used

The used space on the disk.

Percent

The percentage of space used on the disk.

ErrorFlag

Error flag signaling that the disk or partition is under the minimum required space configured for it.

ErrorMsg

A description providing a warning and the amount of space left on the disk.

UCD Extensible Commands Table View

Access: From the **Icon Subviews** menu for the UCDAApp icon, select **System Information > Extensible Commands**.

Index

A reference index for extensible scripts.

Names

A one name description of the extensible command.

Command

The command line to be executed.

Result

The result code from the executed command.

Output

The first line of output of the executed command.

ErrFix

Setting this to 1 will try to fix the problem if the agent has been configured with a script to call to attempt to fix problems automatically using remote snmp operations.

UCD Memory Information View

Access: From the **Icon Subviews** menu for the UCDAApp icon, select **System Information > Memory Information**.

Index

Bogus index. This should always return 0.

Error Name

Bogus Name. This should always return the string “swap.”

Total Swap

Total swap size configured for the host.

Available Swap

The available Swap Space on the host.

Total Real

The total real/physical memory space on the host.

Available Real

Available Real/Physical Memory Space on the host.

Total Swap Txt

The total virtual memory used by text.

Available Swap Txt

Active virtual memory used by text.

TotalRealTxt

The total real/physical memory size used by text.

Avail RealTxt

The active real/physical memory space used by text.

Total Free

The total available memory on the host.

Total Shared

The total Shared Memory.

Total Buffered

The total buffered memory.

Total Cached

The total cached memory.

Swap Error

The error flag. A value of 1 indicates very little swap space left.

Swap Error Msg

The error message describing the Error Flag condition.

UCD Mib Registry Table View

Access: From **Icon Subviews** menu for the UCDAApp icon, select **System Information > Mib Registry**.

Registry Slot of Mib Module

The registry slot of a mib module.

Module Name that Rgstrd this OID

The module name that registered this object identifier.

UCD Process Table

Access: From **Icon Subviews** menu for the UCDAApp icon, select **System Information > Process Table**.

This table contains information on running programs/daemons configured for monitoring in the snmpd.conf file of the agent. Processes which violate the number of running processes required by the agent's configuration file are flagged with errors. Double-click on a row within the table to write to the **ErrFix** item.

Entry

An entry containing a process and its statistics.

Index

A reference index for each observed process.

Names

The process name being counted/checked on.

Minimum

The minimum number of processes that should be running. An error flag is generated if the number of running processes is less than the minimum.

Maximum

The maximum number of processes that should be running. An error flag is generated if the number of running processes is more than the maximum.

Count

The number of current processes running with the name in question.

ErrorFlag

An error flag to indicate trouble with a process. If there is an error, it goes to 1. A value of 0 indicates no errors.

ErrorMessage

An error message describing the problem (if one exists).

ErrFix

Setting this to 1 will try to fix the problem if the agent has been configured with a script to attempt to fix problems automatically using remote snmp operations.

SNMP Errors View

Access: From the **Icon Subviews** menu for the UCDAppl icon, select **System Information > SNMP Errors**.

Index

A bogus index for SNMP errors (always 0)

SNMP Error Flag

An error flag to indicate trouble with the agent. It is set to 1 if there is an error, and 0 if there is not.

SNMP Error Names

The SNMP error names.

SNMP Error Message

An error message describing the problem (if one exists).

UCD Version Information View

Access: From the **Icon Subviews** menu for the UCDAppl icon, select **System Information > Version Info**.

Index

The index number.

Tag

CVS tag keyword.

Date

Date string from the Revision Control System (RCS) keyword.

Ctime Date

Date string from ctime.

Version Ident

Version identifier.

Clear Cache

Set to 1 to clear the exec cache, if enabled.

Update Config

Set to 1 to read the config file(s).

Restart Agent

Set to 1 to restart the agent.

Do Debugging

Set to 1 to turn debugging statements on in the agent or to turn it off.

Configuration Views

This section describes configuration views available for F5 Big-IP LoadBalancer devices in SPECTRUM.

Configuration views allow you to see and modify current settings for the modeled device and its interfaces, ports, and applications. The following Configuration view is available for models of F5 Big-IP LoadBalancer devices.

- *Device Configuration View*

Device Configuration View

Access: From the **Icon Subviews** menu for the Device icon, select **Configuration**.

A typical Device Configuration view is shown in [Figure 6](#). Generally, this view includes a few fields that display device information as well as an Interface Configuration Table that lists interface parameters, some of which can be changed (see **SPECTRUM Views**). Some Device Configuration views include one or more buttons that provide access to device-specific configuration information. These are described below.

Figure 6: Configuration View

Index	Description	Type	Bandwidth	Physical Address	Operation Status
-------	-------------	------	-----------	------------------	------------------

Redundancy and Model Reconfiguration Options

Refer to the **SPECTRUM Views** documentation.

IP IF Address Translation

Refer to the ***SPECTRUM Views*** documentation.

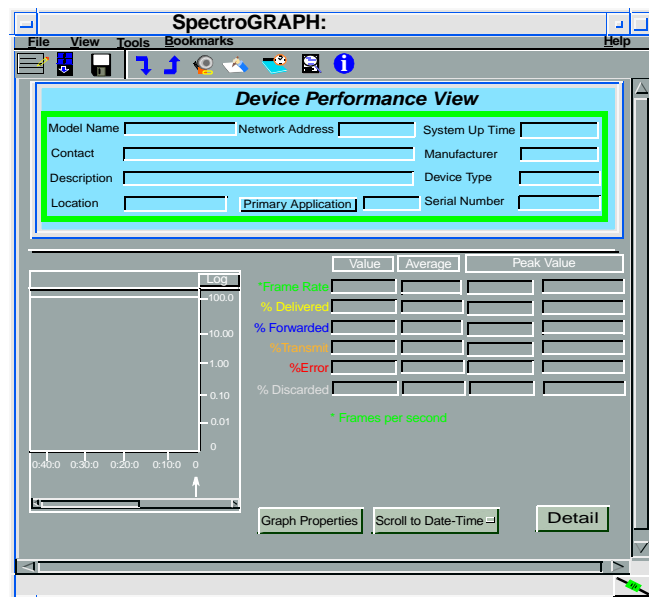
Performance View

This section introduces the Performance view. For details concerning this view, refer to the **SPECTRUM Views** documentation.

Performance views display performance statistics in terms of a set of transmission attributes, e.g., cell rates, frame rates, % error, etc. A typical view is shown in Figure 7. The instantaneous condition of each transmission attribute is recorded in a graph. The statistical information for each attribute is presented in the adjacent table.

Generally, you determine performance at the device level through Performance views accessed from the Device and Application icons. You determine performance at the port/interface level through Performance views accessed from Interface icons.

Figure 7: Performance View



Device Web Management

This section describes the Device Web Management option available for F5 Big-IP LoadBalancer models in SPECTRUM.

Access: From the **Icon Subviews** menu for the Device icon, select **Device Web Management**.

Clicking on the Device Web Management option opens your default Web Browser and directs it to the URL address `https://<IP Address of model>`.

Enter the correct username and password to pass through a Secure Socket Layer to access a F5 Networks web page, which provides a link to the F5 Configuration Utility web application. This feature allows you to monitor the LoadBalancer device online.

There are also links to F5 online documentation, technical support information, and the F5 Networks homepage. The MIBs supported by the device are also available.

Model Information Views

This section provides a brief description of the Model Information views available for models of F5 Big-IP LoadBalancer devices in SPECTRUM.

Access: From the **Icon Subviews** menu for the F5 Load Balancer Device icon, select **Model Information**.

Model Information views provide descriptive and configuration information about SPECTRUM models of individual devices, interfaces, and applications. [Figure 8](#) shows an example of the Model Information view for a F5 Load Balancer. Model information views are also available for each of the Interface icons in the Interface Device and Interface Device Topology views, and for each of the Application icons in the Application view. Although these views may vary slightly depending on the particular entity being modeled, their basic layout and content are similar for most SPECTRUM management modules. Therefore these views are described in more detail in the **SPECTRUM Views** documentation.

Figure 8: Model Information View

The screenshot displays the 'Model Information View' window within the SpectroGRAPH application. The window title is 'SpectroGRAPH:132.127.118.24'. The main content area is divided into several sections:

- Model Information View (Top Section):** A light blue box containing input fields for Model Name, Network Address, System Up Time, Contact, Manufacturer, Description, Device Type, Location, Primary Application, and Serial Number. This section is highlighted with a green border.
- General Information:** A list of attributes including MM Name, MM Park Number, MM Version Number, Model Type, Model Creation Time, Model Created By, Model State, Security String, Condition, Condition Value, Contact Status, Lost Child Count, Value When Yellow, Value When Orange, Value When Red, Data Relay Class, and Configuration Interval.
- Communication Information:** Includes DCM Timeout, DCM Retry, Community Name, Mgmt Protocol, Poll Interval, Polling Status, Last Successful Poll, and Log Ratio.
- Router Redundancy Information:** A button labeled 'Router Redundancy Information'.
- Poll/Log Information:** A section containing a 'Configure Model' button and two buttons labeled 'LOGGED' and 'POLLED'.
- Pulled Board List Information:** Includes Maximum # of Boards and Current # of Boards.

The status bar at the bottom of the window reads: 'Primary Landscape 0x00080000 - VNM lipton - MIS2 of type Fanout'.

Index

A

- Address Translation table [12](#)
- Administrative Status [12](#)
- Application
 - Icons [15](#)
- Applications
 - Common [16](#)
 - Device-Specific [17](#)
- Available Memory [41](#)

B

- Big-IP Application [17, 18](#)
 - F5 Big-IP General BIG/IP Scalars [18](#)
 - F5 Big-IP Interface Tables View [20](#)
 - F5 Big-IP Member Information [31](#)
 - F5 Big-IP Nd Address [34](#)
 - F5 Big-IP Network Address Translation [33](#)
 - F5 Big-IP Pool Configuration [21](#)
 - F5 Big-IP Secure Socket Layer Proxy Table [24](#)
 - F5 Big-IP Virtual Address [36](#)
 - F5 Big-IP Virtual Address Configuration [25](#)

Device Management

- F5 Big-IP Virtual Server Configuration [26](#)
- F5 Big-IP VPort Information [37](#)
- Snat Original Address [30](#)
- Snat Translation Address [28](#)
- Buffered Memory [41](#)

C

- Cablewalk and Cablewalk List [14](#)
- Cached Memory [41](#)
- Colors
 - Interface Status Label [10](#)
- Configuration [44](#)
 - Device [44](#)
 - F5 Big-IP [21](#)
 - F5 Big-IP Virtual Address [25](#)
 - F5 Big-IP Virtual Server [26](#)
 - Interface [45](#)
- CookieMode [22](#)
- CPU Temp [20](#)

D

- Debugging [43](#)
- Device Configuration [44](#)

- Device icon [6, 15](#)
- Device Web Management [47](#)
- Devices supported by this module [6](#)

E

- Error
 - Flag [42](#)
 - Message [42](#)
- Error Fix [40, 42](#)

F

- F5 Big-IP Member Information View [31](#)
- F5 Configuration Utility web application [47](#)
- Fan Speed (RPM) [20](#)

H

- Host Real/Physical Memory [40](#)

I

- Icon mode [15](#)
- Icon Subviews Menus
 - for Interface icon [11](#)
- Icons
 - Device [6](#), [15](#)
 - Interface [10](#), [13](#)
- Index [40](#), [41](#)
- Interface [29](#)
- Interface Device Topology View [13](#)
- Interface icon [10](#)
- Interface Icon Subviews Menu
 - Options [11](#)
- Interface Status View [12](#)
 - Administrative Status [12](#)
 - Operational Status [12](#)

L

- Labels
 - Interface
 - IF Status Label [10](#)
 - Interface Number Label [10](#)
 - Interface Type Label [10](#)
 - Physical Address Label [11](#)
- List mode [15](#)
- Load Balance Mode [21](#)
- Load Balancing Ratio [23](#)

M

- Memory
 - Available [41](#)
 - Buffered [41](#)
 - Cached [41](#)
 - Shared [41](#)
- Mode (Icon or List) [15](#)
- Model type [6](#)
- MotMPRouter [6](#)

N

- Netmask [21](#)
- Network I/O ports [13](#)

O

- Operational Status [12](#)

P

- Persistence Mode [22](#)
- Pool Load Balance Mode [21](#)
- Port Number [38](#)
- Process Name [41](#)
- Processes
 - Count [42](#)
 - Maximum [42](#)

- Minimum [42](#)
- Names [41](#)

R

- Restart Agent [43](#)

S

- Secondary Address Panel [12](#)
- Serial ports [13](#)
- Server Pool [28](#)
- Shared Memory [41](#)
- SimpleMask [22](#)
- SNMP Errors [42](#)
 - Flag [42](#)
 - Message [42](#)
 - Names [42](#)
- snmpd. conf file [41](#)
- SPECTRUM Model [6](#)
- SSL Broadcast Address [24](#)
- SSL Destination Port [24](#)
- SSL Timeout [22](#)
- StickyMask [22](#)
- Supported devices [6](#)
- Swap Error [41](#)
- Swap Error Message [41](#)

T

Tasks [8](#)

Transmission Control Protocol [38](#)

U

UCD Application [38](#)

 Extensible Commands [40](#)

 SNMP Errors [42](#)

 UCD Disk Table [39](#)

 UCD Memory [40](#)

 UCD Mib Registry [41](#)

 UCD Process [41](#)

 UCD Version [42](#)

User Datagram Protocol [38](#)

V

Views

 Application [15](#)

 Configuration [44](#)

 Interface Status [12](#)