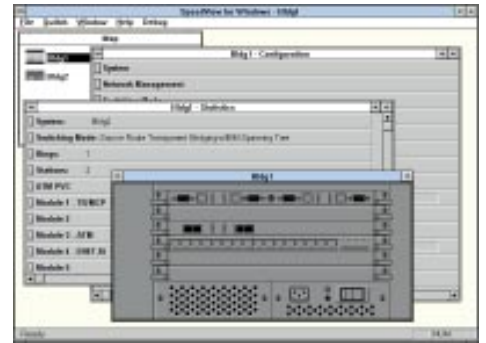**Centillion 100
SpeedView
Adaptable Network
Management**

Powerful Traffic Monitoring

Simplifies Configuration

Provides Robust Traffic and Security Management

SpeedView™ is an easy-to-use graphical management application for the Centillion 100™ multi-LAN/ATM switch. Through SpeedView, network managers can configure their network of Centillion 100 switches and monitor and control network traffic.

Virtual LAN (VLAN) support and a choice of switching options, along with powerful broadcast reduction and filtering capabilities, make the Centillion 100 more than just a multi-LAN/ATM switch; it is a sophisticated traffic management device as well. SpeedView, an advanced and intuitive configuration and management tool, harnesses this power and flexibility, delivering precise control over the switched network environment.

SpeedView enables close examination of traffic patterns in a network of Centillion 100 switches. As the network grows and traffic patterns evolve, SpeedView provides the information needed to streamline network design for optimum performance and efficient bandwidth utilization.

SpeedView's rich statistical displays are complemented by simple intuitive utilities for configuring all switching parameters, enabling system performance to be finely tuned for the precise conditions of the network.

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Benefits

Powerful Traffic Monitoring

SpeedView provides a wealth of port-level statistics for Centillion 100 network traffic, down to the dynamic traffic load on permanent virtual paths (PVP) and permanent virtual circuits (PVC) on ATM links between switches. Through the comprehensive statistical displays of frame counts and broadcast traffic, network managers can gather the information needed to tune the network for maximum effectiveness as requirements change. Additionally, network probes and analyzers can be attached directly to ports on a Centillion 100 switch to obtain a more detailed view of switched network traffic content.

Simplifies Configuration

SpeedView provides a simple point-and-click interface to configure Centillion 100s. Each field is preconfigured with a default value, allowing a Centillion 100 to be configured in a few minutes. Switch configurations can be saved in a file, copied, and downloaded to other Centillion 100s to further ease configuration.

Provides Robust Traffic and Security Management

Many switches are "black boxes" where frames from one LAN segment are switched to another without a trace and cannot be monitored. SpeedView solves this problem by unleashing the unrivaled traffic monitoring capabilities in the Centillion 100. Up to 128 filters can be applied on a per-port basis, and filters can be configured to forward, drop, redirect, or mirror frames to a designated port.

The redirection and mirroring capabilities provide great flexibility for monitoring network traffic, tracing network problems, and auditing network abuse. Network managers can attach a probe and network analyzer to any number of ports and capture select data that is redirected or mirrored to these ports. This preserves existing analyzer investments and allows network managers to diagnose different parts of the network without ever leaving their desk.

Features

Adaptable and User Friendly

Allowing management of a network of Centillion 100 switches with almost no up-front learning curve, SpeedView offers a set of powerful, intuitive, and easy-to-use graphical applications for configuration management, network monitoring, and statistics gathering.

SpeedView software adapts to the installed management environments, providing a consistent user-friendly interface on Microsoft Windows and UNIX platforms.

Choice of Network Management Platforms

SpeedView is available for the most popular UNIX management platforms under HP OpenView for UNIX on HP and Sun workstations, and NetView/6000 on IBM's RISC System/6000, as well as the DOS/Windows environment.

In-Band or Out-of-Band Management

For out-of-band management of a Centillion 100 network, SpeedView for Windows communicates with a Centillion 100 switch via the RS-232 serial port on the Master Control Processor (MCP) switch module. The SpeedView station may be connected to the RS-232 port either directly or via an asynchronous modem. This allows isolated Centillion 100 switches in remote sites to be managed without losing the flexibility of a graphical management application.

With SpeedView for Windows, Centillion 100 switches may also be managed in band over Token Ring via a Class 2 LLC interface loaded at the SpeedView station.
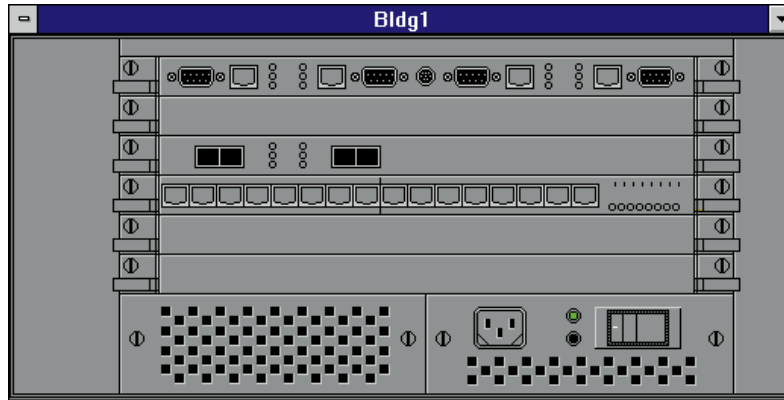
Figure 1 | **SpeedView Screen**

Figure 2 | **Ethernet Statistics Screen**

**Autodiscovery of a
Centillion 100 Network**
When SpeedView is configured for
in-band management, it quickly discovers
all other interconnected switches in the
network. Once SpeedView is loaded, it
immediately searches for Centillion 100
switches and displays an icon for each
switch it finds (see Figure 1). A mouse
click on a switch icon expands into an
intuitive user interface that allows the
switch to be configured and statistics
for network traffic examined
(see Figure 2).

**SNMP-Compatible Agent with
Private MIB Extensions**
To ensure compatibility with existing
network management tools, the Centillion
100 features built-in Simple Network
Management Protocol (SNMP) agent
support. The Centillion private MIB
extensions provide access to detailed
management statistics, including hard-
ware status, virtual ring statistics, MAC

address, RIF and name cache listings,
and ATM link statistics. Any configurable
parameter can be accessed and changed
using SNMP "get" and "set" commands.
This allows the Centillion 100 to be fully
managed by SpeedView or any other
SNMP-capable management applications.

SpeedView can also configure SNMP
traps to be automatically generated for
conditions such as unauthorized access
attempts or even changes in operating
status on individual ports on the switch.

Port-Level Activity Statistics

SpeedView's statistical displays provide access to a wealth of detailed information on traffic being transmitted through each switch port. This includes frame counts for unicast and multicast frame types, MAC level errors, and collision rates. With these statistics, network managers can determine which LAN segments are generating the most bandwidth demand and reconfigure the network accordingly.

Password-Controlled Configuration

Access to the Centillion 100 SNMP agent is password secured. An unauthorized attempt to gain access to switch configuration parameters generates traps that can be sent to a specified management station. More than one network manager may examine switch settings and statistics, but only one connected management station is permitted to make configuration changes.

Centillion 100 Configuration Updates

All Centillion 100 firmware and configuration information is fully upgradable from the SpeedView console. Two configurations may be stored in flash memory on the MCP module in each Centillion 100. Every time the configuration is updated, the previous configuration becomes a backup, which is invoked if the primary configuration fails to load successfully when a Centillion 100 is started.

Multiple SpeedView configurations for the Centillion 100 can be saved and stored on BootP and TPFP servers as well as the SpeedView station. This flexibility provides a selection of sure-fire methods for booting up a Centillion 100, and enables rapid implementation of configuration updates to accommodate moves and changes.

The ease with which SpeedView can create and apply new configurations lends itself well to modeling network behavior and matching requirements under different scenarios. Multiple configuration files can be created, stored, and uploaded for network modeling purposes, ensuring maximum reliability and rapid service recovery.

Broadcast Traffic Control

SpeedView allows a range of broadcast minimization features to be applied selectively to each Centillion 100 switch port. Broadcast control includes:

- Source route explorer proxy
- Parallel ring broadcast reduction
- NetBIOS name proxy
- Datagram broadcast discard
- NetBIOS name filters

Flexible Traffic Filtering

Through SpeedView, customized filters that examine up to 255 bytes in a frame can be defined. Wildcard characters allow the match pattern to be flexibly connected. Up to 128 traffic filters can be applied to each port. This makes it possible to control traffic flow through the switch with a high degree of granularity. Filter conditions can be checked in isolation or in combination, invoking one of four actions:

- *Forward* Simply forward the frame to its intended destination port.
- *Drop* Abort frame forwarding and drop the frame.
- *Redirect* Forward the frame to one or more alternate destination ports.
- *Mirror* Copy the frame to a designated monitor port.

Powerful Traffic Monitoring

When networks change from a shared to a switched environment, it is imperative to maintain the ability to connect a LAN analyzer to the backbone to trace network traffic. The Centillion 100 offers a copy stream capability that allows filtered traffic from any port to be duplicated and copied to a designated Token Ring or Ethernet port.
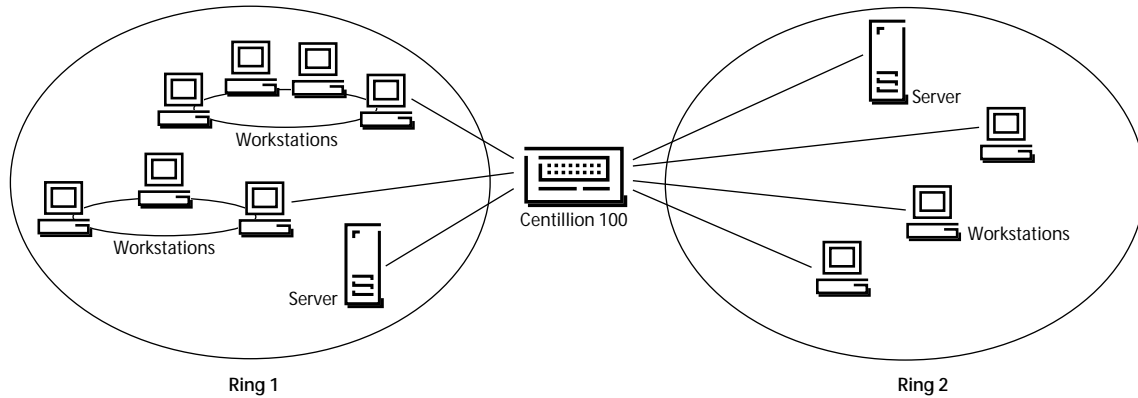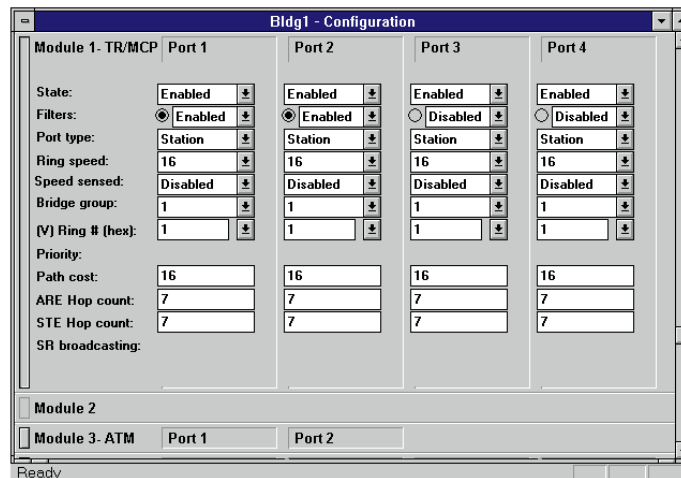
Figure 3 | VLAN Partitioning

Figure 4 | SpeedView VLAN Assignment Screen

Point-and-Click VLAN Assignment
As busy network segments are broken up into smaller segments, it makes sense to group multiple segments into a single logical LAN. This management approach, known as VLAN partitioning, eliminates the increase in broadcast traffic normally resulting from micro-segmentation and removes the need for tedious network address reassignments

(see Figure 3). SpeedView's simple point-and-click interface makes it easy to assign port-level VLAN membership without altering the rest of the network configuration. Up to 32 VLANs can be configured per switch, and Ethernet VLANs may also be configured to span across the entire Centillion 100 network (see Figure 4).

GIGArray Configuration and Management
Centillion 100 ATM links are also configured from SpeedView. Redundant and load-balanced links may be defined to form a GIGArray™ of fully meshed circuits between Centillion 100 switches. Only PVPs between a community of switches need to be configured, and the switch will automatically establish the PVCs necessary. GIGArray greatly enhances resilience and cost-effective bandwidth utilization across the campus network.

Technical Specifications

Technical specifications for the SpeedView management application appear in Table 1.

Table 1 | **SpeedView Adaptable Network Management Technical Specifications**

Agent Support	Simple Network Management Protocol (SNMP) V1
MIB Support	MIB II, IEEE 802.5 Token Ring MIB, IEEE 802.3 Ethernet MIB, FDDI MIB, Source Route Bridge MIB, Centillion Private MIB
Platforms	HP OpenView, IBM NetView/6000, Windows 3.x
Platform Compatible GUI	Performance graphs, integration with platform map and discovery

Ordering Information

Ordering information for the SpeedView management application appears in Table 2.

Table 2 | **SpeedView Adaptable Network Management Ordering Information**

Order Number	Description
AS0013001	SpeedView for Windows 3.1
AS0014001	SpeedView for UNIX (HP OpenView and NV/6000)

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