



Ethernet Routing Switch 5500 Series

# Release Notes — Software Release 5.0

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# Revision History

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<b>Date Revised</b>	<b>Version</b>	<b>Reason for revision</b>
July 2006	2.01	Correction to the section titled, "Ensuring Device Manager Online Help displays correctly".
July 2006	2.00	Up-issued for Software Release 5.0
July 2005	1.00	New document for Software Release 4.2.

## 6 Revision History

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Ethernet Routing Switch 5500 Series  
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# Introduction

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These are the Release Notes for the Nortel\* Ethernet Routing Switch 5500 Series, Software Release 5.0.

The Nortel Ethernet Routing Switch 5500 Series includes the following switches:

- Nortel Ethernet Routing Switch 5510-24T
- Nortel Ethernet Routing Switch 5510-48T
- Nortel Ethernet Routing Switch 5520-24T-PWR
- Nortel Ethernet Routing Switch 5520-48T-PWR
- Nortel Ethernet Routing Switch 5530-24TFD

These Release Notes provide the latest information about Software Release 5.0, as well as operational issues not included in the documentation suite.

For a complete list of documentation in the 5500 Series suite, consult ["Related information"](#) (page 31).

The following topics are discussed in this document:

- ["File names for this release"](#) (page 10)
- ["Nortel Ethernet Routing Switch 5520 phone dongle"](#) (page 10)
- ["Ensuring Device Manager Online Help displays correctly"](#) (page 11)
- ["New software features in Release 5.0"](#) (page 11)
- ["Supported software and hardware capabilities"](#) (page 22)
- ["Additional information for the feature software license file"](#) (page 24)
- ["Issues resolved in Release 5.0"](#) (page 25)
- ["Known limitations and considerations in Release 5.0"](#) (page 25)
- ["Related information"](#) (page 31)
- ["How to get help"](#) (page 32)

The information in these Release Notes supersedes applicable information in other documentation.

## File names for this release

Table 1 "Software Release 5.0 Components" (page 10) describes the Ethernet Routing Switch 5500 Series, Software Release 5.0 software files. File sizes are approximate.

**Table 1**  
**Software Release 5.0 Components**

Module or file type	Description	File Name	File Size (bytes)
Standard runtime image software version 5.0	Standard image for the Ethernet Routing Switch 5500 Series	55x0_50010.img	5 363 800
Secure runtime image software version 5.0	Switch agent software	55x0_50011s.img	5 572 580
Boot/diagnostic software version 5.0.0.02	Switch diagnostic software	55x0_50002_diags.bin	811 860
Java Device Manager software version for Windows (6.0.1.0)	Device Manager software image for Windows NT, Windows XP, Windows 2003, Windows 2000	jdm_6010.exe	
Java Device Manager software version for UNIX (6.0.1.0)	Device Manager software image for Solaris	jdm_6010_solaris_sparc.sh	
	Device Manager software image for HP Unix	jdm_6010_hpux_pa-risc.sh	
Java Device Manager software version for Linux (6.0.1.0)	Device Manager software image for Linux	jdm_6010_linux.sh	
Readme file	Device Manager readme file	readme_v6.0.1.0.txt	
Software Release 5.0 Management Information Base (MIB) definition files	MIB definition files	55x0mibs_v5.0.zip	1 995 432

## Nortel Ethernet Routing Switch 5520 phone dongle

The part number for the Nortel Ethernet Routing Switch 5520 (5520-24T/48T-PWR) universal phone dongle is DY4311046.

## Ensuring Device Manager Online Help displays correctly

Nortel supports the following two browsers for Java Device Manager Online Help:

- Netscape
- Internet Explorer

If you use Netscape as your Web browser, to ensure that the topics and table of contents display correctly when making a context call to on-product Help, perform the following procedure once before requesting Help on a topic:

1. Start the Netscape browser.
2. From the **Tools** menu, select **Options**. (An **Options** window opens.)
3. In the **Security and Privacy** panel of the **Options** window, click **Site Controls**. (An **Options - Site Controls** window opens.)
4. Ensure that the **Site List** tab is selected.
5. Select **Local Files** in the **Master Settings** area of the window.
6. Select **Internet Explorer** in the **Rendering Engine** area of the window.
7. Click **OK** to close the **Options - Site Controls** window.

## New software features in Release 5.0

Ethernet Routing Switch 5500 Series, Software Release 5.0 provides the following new features or feature improvements:

- System configuration
  - "Software licensing" (page 13)
  - "Time Domain Reflectometer " (page 13)
  - "802.1ab, Link Layer Discovery Protocol" (page 13)
- VLANs, Spanning Tree, and MultiLink Trunking
  - "Auto Detection/Auto Configuration of Nortel IP phones" (page 14)
  - "MultiLink Trunking scaling and load balancing" (page 14)
  - "Disabling MLT trunk members" (page 14)
  - "Split MultiLink Trunking" (page 14)
  - "Link Aggregation Control Protocol port enhancement" (page 15)
  - "Virtual Link Aggregation Control Protocol" (page 15)
  - "STPG port membership mode" (page 16)
  - "802.1t path cost calculation with STPG" (page 16)
  - "802.1w, Rapid Spanning Tree Protocol" (page 16)

- "802.1s, Multiple Spanning Tree Protocol" (page 16)
- System monitoring
  - "IP Flow Information eXport" (page 17)
- IP routing
  - "Routing Information Protocol" (page 17)
  - "Open Shortest Path First" (page 17)
  - "Virtual Router Redundancy Protocol" (page 18)
  - "Equal Cost Multi Path" (page 18)
  - "Routing policies" (page 18)
  - "Brouter port" (page 18)
  - "Non-Local Static Route" (page 19)
  - "IP blocking" (page 19)
  - "User Datagram Protocol broadcast forwarding" (page 19)
  - "Proxy Address Resolution Protocol" (page 19)
- QoS and IP filtering
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  - "QoS Wizard enhancements" (page 20)
- Security
  - "Extensible Authentication Protocol (802.1x) accounting" (page 20)
  - "Multihost Single-Authentication on EAP ports" (page 20)
  - "Non-EAP hosts on EAP-enabled ports" (page 20)
  - "Dynamic Host Control Protocol snooping" (page 21)
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  - "Dynamic ARP inspection" (page 21)
  - "CLI audit" (page 21)
  - "Nortel Secure Network Access" (page 21)
  - "Password security feature" (page 22)

### **System configuration**

Release 5.0 supports the following new system configuration features.

## Software licensing

With Release 5.0 software, you are required to have an Advanced Routing License to enable certain features. There is only one type of software license available for Release 5.0. This software license supports the following five features:

- IP Flow Information eXport (IPFIX)
- Split MultiLink Trunking (SMLT) (supported on standalone only)
- Open Shortest Path First (OSPF)
- Virtual Router Redundancy Protocol (VRRP)
- Equal Cost Multi Path (ECMP)

The software license file is based on authorized MAC addresses. A software license file can support up to 1,000 MAC addresses.

A software license file is generated from one or more MAC addresses. The MAC address of the base unit in a stack is required. Nortel also recommends that you provide the MAC address of the temporary base unit to be used in license file generation. This ensures that the licensed features continue to operate if the base unit fails.

A 5500 Series switch supports up to ten valid license files. For example, you install License File 1 to cover your network of 5500 Series switches, but the base unit fails and is replaced. You install a new license file (License File 2) to cover the replacement unit. The two separate license files are then used to support the network.

For information on loading the software license file to your switch or stack, refer to *Nortel Ethernet Routing Switch 5500 Series Overview – System Configuration* (NN47200-500).

## Time Domain Reflectometer

The Time Domain Reflectometer (TDR) provides a diagnostic capability to test connected cables for defects (such as short pin, pin open, and so on). You can perform cable diagnostics on any port in the switch or stack, and you can initiate multiple port tests simultaneously. You can initiate TDR tests and obtain test results from the CLI or the JDM.

## 802.1ab, Link Layer Discovery Protocol

Link Layer Discovery Protocol (LLDP) allows stations connected to a LAN to advertise their capabilities to each other, enabling the discovery of physical topology information for network management. LLDP-compatible stations can consist of any interconnection devices including PCs, IP Phones, switches, and routers. Each LLDP station stores LLDP information in a standard Management Information Base (MIB), making it possible for the

information to be accessed by a network management system (NMS) or application. LLDP can be used to discover duplex mismatches between an IP Phone and the switch, help identify Nortel IP Phones, and assign specific QoS parameters.

For more information about system configuration, see *Nortel Ethernet Routing Switch 5500 Series Overview – System Configuration* (NN47200-500).

## **VLANs, Spanning Tree, and MultiLink Trunking**

Software Release 5.0 supports the following new VLANs, Spanning Tree, and MultiLink Trunking features.

### **Auto Detection/Auto Configuration of Nortel IP phones**

The Auto Detection/Auto Configuration (ADAC) feature automatically configures the switch to support and prioritize Nortel IP Phone traffic. When ADAC is enabled and a Nortel IP Phone is connected to the switch, the switch automatically configures the VLAN, port, and QoS settings necessary for the transmission of signal and voice between the Nortel IP Phone and the switch.

ADAC can be configured globally and by port.

An unlimited number of IP Phones can be supported on a port.

### **MultiLink Trunking scaling and load balancing**

In Release 5.0 software, the number of supported MultiLink Trunking (MLT) trunk groups is increased from 6 to 32 and the maximum number of members for each trunk group is increased from 4 to 8. You can now also choose between either MAC-based (basic) or IP-based (advanced) MLT load balancing using the CLI.

### **Disabling MLT trunk members**

With Release 5.0 software, if any trunk member is set to Disabled (not active), the trunk member is no longer removed from the trunk. The trunk member remains a disabled member of the trunk, and so no longer has to be reconfigured to rejoin the trunk. In addition, a trunk member can now be disabled if there are only two trunk members on the trunk. The lowest numbered port in the trunk can now be disabled as well.

### **Split MultiLink Trunking**

Split MultiLink Trunking (SMLT) is proprietary to Nortel and provides load balancing and system level redundancy, eliminating single point of failure in the network.

SMLT allows a standard MultiLink Trunk connection to be effectively split, connecting one access switch to two interconnected peer aggregator switches. As SMLT operates with STP disabled, traffic flows from the access switch to both aggregator switches simultaneously. SMLT provides redundant paths and MAC synchronization across the peer aggregator switches for fast failover and recovery and better traffic load balancing.

Nortel supports only a triangle configuration for SMLT in Software Release 5.0.

#### **ATTENTION**

Devices connected directly to the IST Peer/Aggregation Switches must be on different VLANs than devices connected to the Access Switches.

The Ethernet Routing Switch 5500 Series implementation is based on the Ethernet Routing Switch 8600 Series implementation adapted to the 5500 Series hardware platform. In Software Release 5.0, SMLT is supported on standalone switches only.

#### **ATTENTION**

For SMLT to function properly on the 5500 Series switch, you must manually disable STP on all SMLT and single port SMLT ports in all spanning tree groups or instances to which the ports belong.

### **Link Aggregation Control Protocol port enhancement**

With Release 5.0, you can specify the action that occurs when Link Aggregation Control Protocol (LACP) links on the switch fail to converge:

- **Default mode:** In the Default mode, if an LACP-enabled port is connected to a non-LACP partner port, and the link fails to converge with the link partner, the port state moves to the forwarding state. This is the standard behavior from previous software releases. The Default mode is compatible with standard LACP.
- **Advance mode:** In the Advance mode, if an LACP-enabled port is connected to a non-LACP partner port, and the link fails to converge with the link partner, the port state remains in the blocking state. This behavior is applied only to LACP-enabled ports that have STP disabled, and prevents potential loops from forming in the network. The Advance mode is not compatible with IEEE 802.3ad standard LACP.

### **Virtual Link Aggregation Control Protocol**

Virtual LACP (VLACP) is a Nortel extension to LACP designed to detect end-to-end link failure in less than one second. With VLACP, far-end failures can be detected, which allows a trunk to fail over properly when end-to-end connectivity is not guaranteed for certain links in an aggregation group. When a remote link failure is detected, the change is propagated to the partner port.

VLACP uses one BPDU address previously reserved for STP.

### **STPG port membership mode**

In Release 5.0 software, IEEE 802.1d STGs support two STP port membership modes:

- Normal: In the normal mode, when a port is assigned to VLAN X, which is in STP group Y, the port does not automatically become a member of STP group Y.
- Auto: In the auto mode, when a port is assigned to VLAN X in STP group Y, the port automatically becomes a member of STP group Y.

### **802.1t path cost calculation with STPG**

Nortel STPG now supports the IEEE 802.1t standard (a maintenance extension to the 802.1d standard) for path cost calculation. You can now specify whether STPG calculates port path cost using either the IEEE 802.1d standard or the IEEE 802.1t standard.

### **802.1w, Rapid Spanning Tree Protocol**

Rapid Spanning Tree Protocol (RSTP) is an enhancement to 802.1d STP that converges faster than 802.1d and is backward compatible. RSTP assigns roles to all ports on the switch, and allows a port connected to an end station to be configured as an Edge port. The Edge port transitions directly to the Forwarding state for fast convergence.

A point-to-point link is also capable of fast transition to the Forwarding state. By default, the full duplex port is configured as a point-to-point link. You can configure ports as point-to-point or non-point-to-point.

RSTP is supported on standalone and stack configurations.

### **802.1s, Multiple Spanning Tree Protocol**

Multiple Spanning Tree Protocol (MSTP) allows multiple RSTP instances to run on the same switch. MSTP supports one CIST and seven MSTI instances for each bridge. Each instance contains one or more VLANs. Each MSTP instance functions as a virtual bridge, and each is independent of the other. Traffic load balancing is supported by configuring multiple MSTI instances on the switch.

By default, all ports belong to the CIST instance. VLAN 1 also belongs to, and cannot be removed from, the CIST. The CIST cannot be deleted.

MSTP is supported on standalone and stack configurations.

For more information about VLANs, Spanning Tree, and MultiLink Trunking features, see *Nortel Ethernet Routing Switch 5500 Series Configuration — VLANs, Spanning Tree, and MultiLink Trunking* (NN47200-502).



## System monitoring

Software Release 5.0 supports the following new system monitoring features.

### IP Flow Information eXport

IPFIX IP flows are defined by an IP Source Address (SA), an IP Destination Address (DA), the IP Protocol Type, the Type of Service (ToS), and the ingress port. For TCP or UDP protocols, an IP flow is defined by two additional parameters: source port and destination port.

For each IP flow sampled, the following statistics are maintained:

- packet count
- byte count
- first packet time
- last packet time

If an IP flow is not sampled within the specified IPFIX aging time, it is aged out.

IPFIX statistics can be sorted in increasing or decreasing order, and cleared by unit.

IPFIX information can be exported to a third party collector for detailed analysis.

For more information about system monitoring features, see *Nortel Ethernet Routing Switch 5500 Series Configuration — System Monitoring* (NN47200-505).

## IP routing

Software Release 5.0 supports the following new IP routing features.

### Routing Information Protocol

Routing Information Protocol (RIP) is a distance vector routing protocol used to discover routes in a network based on information from directly-connected routers. RIP implementation is useful in large networks where static route administration is impractical. RIP adds routes to networks in the routing table, but has no image of the overall network because it relies on neighbor information.

### Open Shortest Path First

OSPFv2 is a dynamic routing protocol that discovers network topology and calculates the shortest path to each destination based on cumulative cost.

OSPF can reduce central processing unit (CPU) and memory resource requirements in a large network by partitioning the network into contiguous areas.

OSPF guards against attack by supporting authentication.

### **Virtual Router Redundancy Protocol**

VRRP dynamically assigns responsibility for a virtual router to one of the VRRP routers on a local area network (LAN).

VRRP provides higher availability default paths without configuring dynamic routing protocols on end hosts. It can also be used in load balancing configurations without additional costs.

### **Equal Cost Multi Path**

ECMP allows routers to determine multiple equal cost paths to the same destination. Multiple paths can be used for traffic load sharing and, in case of network failure, allow faster convergence to other active paths.

### **Routing policies**

Release 5.0 supports the following routing policies:

- In/Accept policies can be applied to incoming route updates before they are added to the routing table. For RIP, In/Accept policies can be applied to all incoming packets with one policy for each RIP interface. For OSPF, In/Accept policies can be applied to external routes based on the advertising router ID, and there is only one policy for the entire switch. In/Accept policies are applied before addition to the routing table from the OSPF Link State Database (LSDB).
- Out/Announce policies are applied to outgoing route updates before the route packets are sent. For RIP, Out/Announce policies can be applied to all outgoing packets and have one policy for each RIP interface. There is no Out/Announce policy supported for OSPF.
- Redistribute policies provide notification when a route is added to, or deleted from, the route table. RIP does not support Redistribute policies. For OSPF, redistributed routes are sent as external routes and there is one policy for the entire switch.

### **Brouter port**

A brouter port is a single port VLAN that can act as a combination bridge and router to connect two or more network segments. It is not subject to the spanning tree state of the port. When incoming data packets are of a routable protocol, then the brouter acts as a router. When packets are of a non-routable protocol, then the brouter acts as a bridge. A brouter can

operate in blocking state for non-routable traffic, while routing IP traffic to prevent interruptions caused by Spanning Tree Protocol (STP) recalculation in routed traffic. A brouter maintains both a bridging and a routing table.

### **Non-Local Static Route**

Non-Local Static Route (NLSR) is similar to static routes except that the NLSR next hop of the static route is not directly connected to the network entity. NLSR provides connectivity to remote networks by using static routes with a remote gateway. Where there are two or more ways to reach a network, NLSR can reduce the number of static routes by adding only one static route with a remote gateway.

NLSR manages static routes where the next hop is not local and is reachable through another route. When a non-local route is added to the best route, the non-local next hop is retrieved from the routing table and the information is used to add the new static route.

### **IP blocking**

Release 5.0 supports two blocking modes:

- None
- Full

In configurations with a stack of less than two units, None is the recommended IP blocking mode. Full is the recommended IP blocking mode for configurations supporting more than two units.

### **User Datagram Protocol broadcast forwarding**

UDP broadcast forwarding allows a network entity to forward Layer 2 broadcast frames between VLANs if the packet is a UDP packet.

UDP broadcast forwarding is beneficial where a server listening on a UDP port is located on one network and the clients are on different networks.

### **Proxy Address Resolution Protocol**

A router with proxy ARP acts as a proxy for ARP packets. Proxy ARP allows a network station to respond to an ARP request for a remote destination from a locally-attached host or endstation. If proxy ARP is used, machines on a subnet can reach remote subnets without a default gateway. Proxy ARP can be added to a single router on a network without disturbing the routing tables of other routers in the network.

For more information about IP Routing features, see *Nortel Ethernet Routing Switch 5500 Series Configuration — IP Routing Protocols* (NN47200-503).

## **QoS and IP filtering**

Software Release 5.0 supports the following new QoS features.

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### **User Based Policies**

UBPs associate Quality of Service (QoS) policy criteria with specific users and can apply pre-configured QoS policies to specific users.

User attributes are configured on a RADIUS server and EAP support is enabled.

UBP support levels include Disabled (default), High Security, and Low Security.

The User Role attribute is used to identify the filter set. The filter set is similar to the Nortel SNA filter set support.

### **QoS Wizard enhancements**

Release 5.0 incorporates two new QoS Wizards. The new Wizards support the configuration of QoS considerations for Nortel-specific VoIP and access lists to support "permit" or "deny" access to a network.

For more information about QoS features, see *Nortel Ethernet Routing Switch 5500 Series Configuration — Quality of Service (NN47200-504)*.

## **Security**

Software Release 5.0 supports the following new security features.

### **Extensible Authentication Protocol (802.1x) accounting**

EAP accounting provides RADIUS accounting for EAP-authenticated clients in the network. This feature collects session time, termination reason, and packet counter information.

EAP accounting starts as soon as user authentication is successful and stops when the user logs off or is no longer authenticated.

### **Multihost Single-Authentication on EAP ports**

MHSA permits non-EAP MACs without authentication on EAP-enabled ports to accommodate printers and other such devices sharing a hub with a PC.

MHSA support is allowed on an EAP multihost-enabled port.

### **Non-EAP hosts on EAP-enabled ports**

Non-EAP host support permits non-EAP MAC support on EAP-enabled ports to accommodate printers and other similar devices sharing a hub with a PC.

Non-EAP host support is allowed on an EAP multihost-enabled port. However, guest VLAN and non-EAP MAC support cannot reside on the same port.

**Dynamic Host Control Protocol snooping**

DHCP snooping provides network security to a device by eliminating an attacker's ability to respond to DHCP requests with false IP information (DHCP spoofing). It is based on trusted versus untrusted ports. DHCP snooping drops untrusted DHCP replies and verifies the source of the DHCP packets.

**TACACS+**

TACACS+ is a protocol that provides access control for routers, switches, network access servers, and other networked computing devices over one or more centralized servers.

TACACS+ provides separate authentication, authorization, and accounting services.

All traffic between the client and server is encrypted.

Authentication identifies users before they are allowed access to the network and network services. Authorization can limit the CLI commands available to a user.

Accounting can track and monitor each user and this information can be analyzed for network management and auditing.

**Dynamic ARP inspection**

Dynamic ARP inspection provides network security to a device by eliminating an attacker's ability to poison ARP caches for systems connected to the subnet.

Dynamic ARP inspection also prevents attackers from intercepting traffic intended for other hosts on the subnet (man-in-the middle attack).

**CLI audit**

CLI audit tracks CLI commands stored in a reserved Flash area.

Commands can be forwarded to a remote syslog server if the remote logging feature is enabled.

CLI audit cannot be disabled.

**Nortel Secure Network Access**

ASCII Configuration Generator (ACG) support has been added to the previous Nortel SNA implementation.

### Password security feature

This feature enhances the password security present on the switch. The following limitations apply to all switch passwords:

- 10 to 15 characters in length
- 3 retries only
- appear as 15 asterisks, regardless of length
- expire in a configured time limit
- history of 3 passwords kept to ensure passwords are not recycled frequently

For more information about security features, see *Nortel Ethernet Routing Switch 5500 Series Security — Configuration* (NN47200-501).

### Supported software and hardware capabilities

The following table lists the known limits for the Ethernet Routing Switch 5500 Series, Software Release 5.0 and Device Manager 6.0.1.0. These capabilities will be enhanced in subsequent software releases.

Refer to *Release Notes for Nortel Ethernet Routing Switch 5500 Series, Software Release 4.2* (217468-A) for detailed information on hardware and software capabilities for the Ethernet Routing Switch 5500 Series.

**Table 2**  
Supported capabilities in the 5500 Series switches (Release 5.0)

Feature	Maximum number supported
VLANs	256
Protocol-based VLANs	Depending on the protocol specified, the number of protocol VLANs supported at one time varies from 3–7. Refer to <i>Nortel Ethernet Routing Switch 5500 Series Configuration — VLANs, Spanning Tree, and MultiLink Trunking</i> (NN47200-502) for more information.
Nortel SNA VLANs	1 Red VLAN per switch. Nortel recommends a maximum of 5 Yellow VLANs, 5 Green VLANs, and 5 VoIP VLANs per switch for release 5.0.
Nortel SNA ports	All ports. <b>Note:</b> The 5530 has two 10 Gigabit (Gb) ports. You can configure these as uplink ports only. You cannot configure these as dynamic ports.
ARP records	1500
IP interfaces	256

Feature	Maximum number supported
Static routes	up to 512
Spanning Tree Groups	8
Aggregation groups (link aggregation)	32
Ports per aggregation group	8
IGMP maximum number of unique groups	240
EAPoL 802.1x supplicants	All ports
MAC addresses in fdb	16 Kb
RIP routes	512 <sup>1</sup>
OSPF areas	4
OSPF adjacencies	64
OSPF routes	512 <sup>1</sup>
VRRP interfaces	64
ECMP	4 paths <sup>2</sup>
<sup>1</sup> Total number of routes (dynamic and static) supported.	
<sup>2</sup> Supported on the 5520 and 5530 switches only.	

### Layer 3 scaling limitations

The following are Layer 3 scaling limitations for the Ethernet Routing Switch 5500 Series, Software Release 5.0:

- Creation of 256 Layer 3 VLANs supported.
- Only 64 VLANs may have dynamic routing protocols enabled (RIP/OSPF).
- 64 VRRP instances supported.
- Up to 512 routes (local + static + dynamically learned).  
The 5510 can support up to 512 routes, although in some instances the 5510 may only be able to scale to 64 routes depending on address distribution/sequence. However, any 5510 configuration supports a minimum of 64 routes, and in most cases will support many more routes (that is, up to 512). Nortel always supports the default route. The 5520 and 5530 also support 512 routes, and testing indicates that more than 512 routes are possible in some configurations, although 512 is the officially supported limit.
- ECMP is not supported on the 5510, although the 5510 may be present in a mixed stack supporting ECMP. Note, however, that ECMP paths must be configured/physically connected only to 5520s or 5530s. Routes on each ECMP path are additive to local and learned routes on the switch. (See above: the maximum number of routes supported is 512.)

- The 5510 switch cannot route between spanning tree groups.

### **Additional information for the feature software license file**

When you create the Software License file at the site identified in the license kit, you must specify a file name (refer to *Nortel Ethernet Routing Switch 5500 Series Overview – System Configuration* (NN47200-500) for instructions to obtain the Advanced Routing License Features Activation Kit (part number 322515-A)). The file naming restrictions are the following:

- A maximum of 63 alphanumeric characters
- Lowercase only
- No spaces or special characters allowed
- Underscore (\_) is allowed
- The dot (.) and three-character file extension are required

For example, abcdefghijk\_1234567890.lic.

The format of the file that you upload to the license generation tool (and that contains the list of MAC addresses) must be as follows:

- ASCII file format
- One MAC address per line
- No other characters, spaces, or special characters allowed
- MAC must be in hexadecimal, capitalized format, with each pair of characters separated by colons (XX:XX:XX:XX:XX:XX)
- The file must contain the correct MAC addresses. Any incorrect MAC addresses will result in the licensed features not working on designated units.
- The number of MAC addresses must not exceed the number of MAC addresses allowed for the License Authorization Code entered for a particular file:
  - AL1016001 = 2 MAC addresses (1 stack/standalone unit)
  - AL1016002 = 20 MAC addresses (10 stacks/standalone units)
  - AL1016003 = 100 MAC addresses (50 stacks/standalone units)
  - AL1016004 = 200 MAC addresses (100 stacks/standalone units)



## Issues resolved in Release 5.0

The following table describes the issues in previous software releases for the Ethernet Routing Switch 5500 Series that have been resolved in Software Release 5.0.

**Table 3**  
**Issues resolved in 5500 Series Software Release 5.0**

Change Request Number	Documented issue
Q01231314	After downloading the wrong SSH DSA Auth key five times, the TCP/UDP ports close, and you cannot open a Telnet/SSH session. Workaround: Ensure you carefully look at the authentication keys downloaded to the switch. If the ports close, you must reset the switch.
Q01104935	Under certain conditions, a switch may not age out all entries in the MAC Address Table.
Q01173749	If a stack does not use a redundant cable configuration (ring configuration), the stack should be cabled so that all non-base units are downstream of the base unit.

## Known limitations and considerations in Release 5.0

The following tables describe issues known to exist in the 5500 Series Software Release 5.0. [Table 4 "Ethernet Routing Switch 5500 Series known limitations" \(page 25\)](#) describes limitations known to exist in Software Release 5.0. [Table 5 "Ethernet Routing Switch 5500 Series considerations" \(page 30\)](#) describes considerations for Ethernet Routing Switch 5500 Series.

Also refer to *Release Notes for Nortel Ethernet Routing Switch 5500 Series, Software Release 4.2 (217468-A)* and *Release Notes for Nortel Ethernet Routing Switch 5500 Series, Software Release 4.3.1 (217468-C)* for more information on known hardware and software limitations for the Ethernet Routing Switch 5500 Series.

**Table 4**  
**Ethernet Routing Switch 5500 Series known limitations**

Change Request Number	Description
Q01193666	In Release 5.0, pinging the virtual IP address from the master VRRP routing switch is not supported.
Q01200004	You might experience ping delays. This can happen, for example, if you configure a default gateway for the switch, and then set an unreachable IP address for the DNS server.
Q01246853	You may receive an error message when performing TDR tests using cable lengths greater than 60 m.

Change Request Number	Description
Q01269487	With Release 5.0, the IPFIX sampling data rate cannot be changed because of a related hardware limitation.
Q01280422	The switch may display "0" for the root port (spanning tree), rather than "None".
Q01295448	With Release 5.0, when configuring IPFIX, the Exporter IP is not configurable. Therefore the exporter address is one of the routable interfaces.
Q01300926 Q01328936 Q01331097 Q01345613	Note that the greater the number of VRRP instances you have, the greater the risk of VRRP bounces (Release 5.0 supports 64 VRRP instances). To help alleviate VRRP bounces, when you configure FAI on VR instances, set the FAI to 600 ms or higher. In general, for a large number of VRRP instances, Nortel recommends that you use a higher advertisement interval.
Q01305224	Each port on the 5520 is restricted to 11 interface IDs. Depending on your configuration, you may be unable to select the complete list of interface applications on an Ethernet Routing Switch 5520 because of the permitted number of interface IDs.
Q01309758	If LACP is enabled on a port that you configure as a Nortel SNA uplink port, the switch does not allow you to disable LACP on that port.
Q01319650	When you have VRRP and traps enabled, OSPF convergence may slow down.
Q01324425	A PC can disappear from the Nortel SNA client list after you perform a Time Domain Reflectometry (TDR) test on a Nortel SNA dynamic port. Workaround: Nortel recommends that you avoid running a TDR test on a Nortel SNA port.
Q01327042 Q01326930	No useful error message appears when you try to enable ECMP or OSPF on the JDM without the software license. You cannot, however, enable ECMP or OSPF without the license. Workaround: Upload the license using the CLI prior to globally enabling ECMP or OSPF on the JDM.
Q01333595	If you add a network device to the switch, and that device does not require PoE, disable PoE on that port.
Q01334161	When a port is NSSA enabled, the CLI allows you to disable CIST learning even though that port belongs to CIST and MSTI. Whenever a port is added to a new VLAN in RSTP or MSTP mode, it automatically becomes STP enabled for that group. This is different from the Nortel STPG mode, where the port is not automatically enabled on the STP group.
Q01334543	The switch does not return a meaningful message when you attempt to add five or more IP prefix lists into a policy.
Q01338594	ACG configuration files do not save LLDP information successfully.
Q01339715	The IPFIX flush menu item is present and functioning in the CLI, although the <code>ip ipfix flush</code> command and its parameters do not display in the menu when you enter an <code>ip ipfix ?</code> command query (Global configuration mode).

Change Request Number	Description
Q01340389	The switch allows you to change rate limiting on active DMLT ports while one or more units having DMLT members are down. However, Nortel recommends you avoid configuration changes of any kind while some units (with DMLT members) are down, as you may experience unexpected results.
Q01346792	<p>If you are unable to get the switch to transmit LLDP network policy type, length, and value (TLV), ensure that the following two conditions are true:</p> <ul style="list-style-type: none"> <li>• ADAC is enabled on the port</li> <li>• “Filter Unregistered Frames” option is set to “Disabled” on the ADAC-enabled port</li> </ul> <p>Refer to <i>Nortel Ethernet Routing Switch 5500 Series Overview – System Configuration (NN47200-500)</i> for more information.</p>
Q01353603	When attempting to download the license file using the JDM after a previous attempt, the switch may return a “commitFailed” error. You may also receive this error if you enter an invalid license file name.
Q01357858	Proprietary TLV is not available for MLT, however 802.3 link aggregation is supported.
Q01362571	There is no message or information provided after you download the software license file using the Web interface. You will not receive notification that the license has loaded successfully or not. Note that you must reset the switch for the license to be activated.
Q01362573	When you open the license download page using the Web-based interface, there is no help file information in the configuration section for loading the license file.
Q01366773	Avoid enabling Nortel SNA on a brouter port—the port is not added to the Red VLAN in this case. Release 5.0 does not support Nortel SNA on a brouter port.
Q01366965	The CLI behavior related to PoE TLVs (MED "Extended Power-Via-MDI" and DOT3 "Extended Power-Via-MDI") is inconsistent when enabling them for transmission on non-PoE switches (no error message is generated in either instance).
Q01368144	<p>Note that the default value for VLACP fast timers differs between the Ethernet Routing Switch 8600 Release 4.1 and Ethernet Routing Switch 5500 Series Release 5.0. The default value is 200 ms on the 8600, and 500 ms on the 5500 Series switch.</p> <p>Note also that the supported VLACP ranges on the 5500 Series and 8600 switches are 10–20000 ms and 400–20000 ms, respectively.</p>
Q01370360	When using the CLI, you may see an inconsistency in output for the <code>show spanning-tree &lt;mstp rstp&gt; port &lt;config status&gt; &lt;port&gt;</code> commands in MSTP or RSTP mode. This only occurs when there is no link on the port for which you are viewing statistics.

Change Request Number	Description
Q01371237	The 5500 Series switch supports 32 MLT groups. These can be configured using the CLI, JDM, and the Web interface. Note that the CI allows you to configure only six of the 32 MLT groups.
Q01372515	OSPF virtual link is not supported in Software Release 5.0. Any display for this feature is strictly informational.
Q01374774	When you simultaneously reset two or more non-adjacent stack members causing other members to be isolated from the stack, the stack may fail the DB exchange when the reset units attempt to re-join the stack. Workaround: Reset the base unit, or change the ports status for a stack (down/up).
Q01376770	Note that you should not disable global IP routing on the 5500 Series switch when the switch has an IST enabled. The CLI returns a reminder message if you attempt to disable IP routing with an IST enabled. The JDM also returns an error message, although the message is more generic than that returned from the CLI.
Q01379149	You must ensure you set the same speed on link partners. That is, if the speed for a port is set to 10 Mbps, any device connected to that port (for example, an IP phone), must also be running at 10 Mbps.
Q01380260	You may experience an inconsistency between the base unit (BU) and non-base unit (NBU) ports when using the EAPoL authentication process with UBPs. Specifically, on the NBU, if a policy cannot be installed, the switch will send a success and then immediately send a failure.
Q01378866	When VLAN configuration control (VCC) is set to automatic, avoid changing tagging on ADAC ports.
Q01381116	For Release 5.0, ensure you set LACP timeout to “Long” if you have more than eight LACPs and eight links per LACP.
Q01382613	A root is not elected on an MLT if the VID for an MLT port belongs to a VLAN for an inactive MSTI. Ensure the PVID belongs to a VLAN for an active MSTI. This is related to a hardware limitation.
Q01384613	There is a scaling limitation for TLV in the 802.1ab feature. If you have an 8-unit stack that is fully connected and has 256 VLANs configured, you might experience that the DOT1 VLAN name TLV is not sent properly.
Q01384306	Note that the JDM displays information for RIP Poison enable/disable inconsistently. Workaround: Use the CLI.
Q01386369	If using OSPF MD5 authentication, note that in the case of authentication failure, only the enterprise-specific traps are logged to the syslog.
Q01386170	An ACG file will display error messages for RIP settings when you attempt to download the file if the file contains more than 64 IP VLANs. If using the CI, the download stops at the first error message.
Q01385870	You can configure port mirroring using the CLI and CI only.

Change Request Number	Description
Q01391522	When using the CI to create STP groups, you may receive "The Group has no VLAN members" error message, which then interferes with subsequent configuration. Toggle the STP group field to continue configuration.
Q01394363	There is a discrepancy between the CI and the JDM when viewing port statistics displayed for received packets.
Q01395852	If OSPF is enabled, you may receive an OSPF syslog message on the NBU while the system is coming up. This occurs because OSPF checks for the license, but the license information is not available until the stack is formed.
Q01305076	For Software Release 5.0, you cannot load the software license file from a USB device.
Q01319058	<p>In a Nortel SNA setup, you may experience temporary loss of Nortel SNA functionality when UDP forwarding has approached maximum capacity. Workaround: Configure a filter on the port that connects to the SNAS (or depending on your configuration, on the port connected to the switch that, in turn, connects to the SNAS) to isolate Nortel SNA SCCP traffic received by the CPU.</p> <p>The CLI commands to configure a filter are the following:</p> <ul style="list-style-type: none"> <li>• qos ip-element &lt;element id&gt; src-ip &lt;ipaddr/mask&gt;</li> <li>• qos classifier &lt;value&gt; set-id &lt;value&gt; element-type ip element-id &lt;value&gt;</li> <li>• qos action &lt;value&gt; update-1p &lt;value&gt;</li> <li>• qos policy &lt;value&gt; port &lt;portlist&gt; clfr-type class clfr-id &lt;value&gt; in-profile-action &lt;action id&gt; prec &lt;value&gt;</li> </ul>
Q01402433-01	<p>The CLI commands used to set the CLI password on a stack are not displayed when using ? to request CLI help for the command (that is, <code>cli password ?</code>). The omitted commands are:</p> <ul style="list-style-type: none"> <li>• <code>cli password stack serial &lt;password&gt;</code></li> <li>• <code>cli password stack telnet &lt;password&gt;</code></li> <li>• <code>cli password stack read-only &lt;password&gt;</code></li> <li>• <code>cli password stack read-write &lt;password&gt;</code></li> </ul>
Q01402425-01	<p>MAC address security in a stack is limited to the highest port number of the base unit if that unit is a 5510-24T or 5530-24TFD model. Port numbers higher than 24 are not allowed when a 5510-24T is the base unit and ports higher than 26 are not allowed when a 5530-24TFD is the base unit.</p> <p>For example, if the stack consists of a 5530-24TFD as the base unit and unit 2 is a 5510-48T, ports 2/25 through 2/48 cannot be used for MAC-based security in learning mode.</p> <p><b>Note:</b> Also see CR Q01387506-01 directly below.</p>

Change Request Number	Description
Q01387506-01	In hybrid (mixed) stack configurations, Nortel recommends that the higher model number unit be made the base unit. In instances where a 5530-24TFD is to be part of the stack, Nortel recommends that this unit be made the base unit to utilize the full range of features present on this unit.  <b>Note:</b> If running MAC security, ensure you have a 48-port unit as the BU (see CR Q01402425-01 directly above).
Q01404072	After entering any other command, wait at least twenty (20) seconds before using the <code>copy config nvram</code> command. Additionally, Nortel recommends that you avoid using the <code>copy config nvram</code> command in ASCII configuration files.

**Table 5**  
**Ethernet Routing Switch 5500 Series considerations**

Item	Description
1	Some terminal programs can cause the Console Interface to crash if you enter a RADIUS secret containing the character "k". The issue has been reproduced using Tera Term Pro (version 2.3), as well as Minicom (version 2.1) on a Linux system.
2	Nortel recommends that you avoid using MAC security on a trunk.
3	Failed attempts to log in (using TACACS+ authentication and accounting) are not stored in the accounting file.
4	When switches are in MSTP mode and connected using a trunk (MLT), and at least one MSTI is configured, the switch can return an incorrect STPG root if you change the mode to STPG and reset the switches.
5	When you use the JDM/Web to configure and add VLAN ports to an STG other than the default STG, STG membership of the port may change. In that case, the new STG participation of that port will be disabled. Workaround: Enable participation of the ports in the new STG after you enable the STG.
6	On the 5530-24TFD, the following (NT-OCP) SFPs cannot be inserted side by side (that is, in neighboring slots) because of the SFP size. The SFPs are listed as manufacturer part number/Nortel part number: <ul style="list-style-type: none"> <li>• TRP-G1H5BC470N4 / AA1419025</li> <li>• TRP-G1H5BC490N4 / AA1419026</li> <li>• TRP-G1H5BC510N4 / AA1419027</li> <li>• TRP-G1H5BC530N4 / AA1419028</li> <li>• TRP-G1H5BC550N4 / AA1419029</li> <li>• TRP-G1H5BC570N4 / AA1419030</li> <li>• TRP-G1H5BC590N4 / AA1419031</li> </ul>

Item	Description
	<ul style="list-style-type: none"> <li>• TRP-G1H5BC610N4 / AA1419032</li> <li>• TRP-G1H7BC470N4 / AA1419033</li> <li>• TRP-G1H7BC490N4 / AA1419034</li> <li>• TRP-G1H7BC510N4 / AA1419035</li> <li>• TRP-G1H7BC530N4 / AA1419036</li> <li>• TRP-G1H7BC550N4 / AA1419037</li> <li>• TRP-G1H7BC570N4 / AA1419038</li> <li>• TRP-G1H7BC590N4 / AA1419039</li> <li>• TRP-G1H7BC610N4 / AA1419040</li> </ul>
7	<p>While downloading the image file, you may receive the following error message: "Error reading image file."</p> <p>Workaround: Typically, this issue can be resolved by simply restarting the image download. If this does not resolve the issue, Nortel recommends that you try an alternate method of downloading the image to the switch (that is, the Web Interface).</p>
8	<p>When a remote server log is configured and the remote logging is enabled, the CLI audit task sends messages to the syslog server regardless of the logging level.</p>

## Related information

This section lists the information sources that relate to the Ethernet Routing Switch 5500 Series, Software Release 5.0.

### Publications

Refer to the following publications for information about the Ethernet Routing Switch 5500 Series, Software Release 5.0:

- *Nortel Ethernet Routing Switch 5500 Series Installation*(NN47200-300)
- *Nortel Ethernet Routing Switch 5500 Series Overview – System Configuratio* (NN47200-500)
- *Nortel Ethernet Routing Switch 5500 Series Security — Configuration* (NN47200-501)
- *Nortel Ethernet Routing Switch 5500 Series Configuration — VLANs, Spanning Tree, and MultiLink Trunking* (NN47200-502)
- *Nortel Ethernet Routing Switch 5500 Series Configuration — IP Routing Protocols* (NN47200-503)
- *Nortel Ethernet Routing Switch 5500 Series Configuration — Quality of Service*(NN47200-504)



- *Nortel Ethernet Routing Switch 5500 Series Configuration — System Monitoring* (NN47200-505)
- *Installing SFP and XFP Transceivers and GBICs* (318034-C)

## How to get help

This section explains how to get help for Nortel products and services.

### Getting help from the Nortel web site

The best way to get technical support for Nortel products is from the Nortel Technical Support web site:

[www.nortel.com/support](http://www.nortel.com/support)

This site provides quick access to software, documentation, bulletins, and tools to address issues with Nortel products. From this site, you can:

- download software, documentation, and product bulletins
- search the Technical Support Web site and the Nortel Knowledge Base for answers to technical issues
- sign up for automatic notification of new software and documentation for Nortel equipment
- open and manage technical support cases

### Getting help over the phone from a Nortel Solutions Center

If you do not find the information you require on the Nortel Technical Support web site, and you have a Nortel support contract, you can also get help over the phone from a Nortel Solutions Center.

In North America, call 1-800-4NORTEL (1-800-466-7835).

Outside North America, go to the following web site to obtain the phone number for your region:

[www.nortel.com/callus](http://www.nortel.com/callus)

### Getting help from a specialist using an Express Routing Code

To access some Nortel Technical Solutions Centers, you can use an Express Routing Code (ERC) to quickly route your call to a specialist in your Nortel product or service. To locate the ERC for your product or service, go to:

[www.nortel.com/erc](http://www.nortel.com/erc)

### Getting help through a Nortel distributor or reseller

If you purchased a service contract for your Nortel product from a distributor or authorized reseller, contact the technical support staff for that distributor or reseller.





Ethernet Routing Switch 5500 Series

## Release Notes — Software Release 5.0

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