



Ethernet Routing Switch 1600

Software Release Notes

ETHERNET ROUTING SWITCH 1600	1
SOFTWARE RELEASE NOTES	1
ETHERNET ROUTING SWITCH 1600	4
SOFTWARE RELEASE 2.1.8.1	4
1. <i>Release Summary</i>	4
2. <i>Important Notes before Upgrading to This Release</i>	4
3. <i>Platforms Supported</i>	4
4. <i>Notes for Upgrade</i>	4
5. <i>Version of Previous Release</i>	5
6. <i>Compatibility</i>	5
7. <i>Changes in This Release</i>	5
8. <i>Known Issues</i>	6
9. <i>Known Limitations</i>	6
10. <i>Documentation Corrections</i>	6
ETHERNET ROUTING SWITCH 1600	7
SOFTWARE RELEASE 2.1.8.0	7
1. <i>Release Summary</i>	7
2. <i>Important Notes before Upgrading to This Release</i>	7
3. <i>Platforms Supported</i>	7
4. <i>Notes for Upgrade</i>	7
5. <i>Version of Previous Release</i>	8
6. <i>Compatibility</i>	8
7. <i>Changes in This Release</i>	8
8. <i>Known Issues</i>	12
9. <i>Known Limitations</i>	13
10. <i>Documentation Corrections</i>	13
ETHERNET ROUTING SWITCH 1600	14
SOFTWARE RELEASE 2.1.7.0	14
1. <i>Release Summary</i>	14
2. <i>Important Notes before Upgrading to This Release</i>	14
3. <i>Platforms Supported</i>	14
4. <i>Notes for Upgrade</i>	14
5. <i>Version of Previous Release</i>	15
6. <i>Compatibility</i>	15
7. <i>Changes in This Release</i>	15
8. <i>Known Issues</i>	16
9. <i>Known Limitations</i>	16
10. <i>Documentation Corrections</i>	16
ETHERNET ROUTING SWITCH 1600	17
SOFTWARE RELEASE 2.1.6.0	17
1. <i>Release Summary</i>	17
2. <i>Important Notes before Upgrading to This Release</i>	17
3. <i>Platforms Supported</i>	17
4. <i>Notes for Upgrade</i>	17
5. <i>Version of Previous Release</i>	18
6. <i>Compatibility</i>	18

7. <i>Changes in This Release</i>	18
8. <i>Known Issues</i>	19
9. <i>Known Limitations</i>	19
10. <i>Documentation Corrections</i>	19
ETHERNET ROUTING SWITCH 1600	21
SOFTWARE RELEASE 2.1.5.0	21
1. <i>Release Summary</i>	21
2. <i>Important Notes before Upgrading to This Release</i>	21
3. <i>Platforms Supported</i>	21
4. <i>Notes for Upgrade</i>	22
5. <i>Version of Previous Release</i>	22
6. <i>Compatibility</i>	22
7. <i>Changes in This Release</i>	22
8. <i>Outstanding Issues- To be resolved in a future release</i>	23
9. <i>Known Limitations- Operation not to be changed</i>	24
10. <i>Documentation Corrections</i>	24
ETHERNET ROUTING SWITCH 1600	25
SOFTWARE RELEASE 2.1.4.0	25
1. <i>Release Summary</i>	25
2. <i>Important Notes before Upgrading to This Release</i>	25
3. <i>Platforms Supported</i>	25
4. <i>Notes for Upgrade</i>	25
5. <i>Version of Previous Release</i>	26
6. <i>Compatibility</i>	26
7. <i>Changes in This Release</i>	26
8. <i>Outstanding Issues – To be resolved in a future release</i>	27
9. <i>Known Limitations - Operation not to be changed</i>	27
10. <i>Documentation Corrections</i>	27
ETHERNET ROUTING SWITCH 1600	28
SOFTWARE RELEASE 2.1.3.0	28
1. <i>Release Summary</i>	28
2. <i>Important Notes before Upgrading to This Release</i>	28
3. <i>Platforms Supported</i>	28
4. <i>Notes for Upgrade</i>	28
5. <i>Version of Previous Release</i>	29
6. <i>Compatibility</i>	29
7. <i>Changes in This Release</i>	29
8. <i>Outstanding Issues – To be resolved in a future release</i>	30
9. <i>Known Limitations - Operation not to be changed</i>	30
10. <i>Documentation Corrections</i>	31
ETHERNET ROUTING SWITCH 1600	32
SOFTWARE RELEASE 2.1.2.0	32
1. <i>Release Summary</i>	32
2. <i>Important Notes before Upgrading to This Release</i>	32
3. <i>Platforms Supported</i>	32
4. <i>Notes for Upgrade</i>	32
5. <i>Version of Previous Release</i>	33
6. <i>Compatibility</i>	33
7. <i>Changes in This Release</i>	33
8. <i>Outstanding Issues – To be resolved in future release</i>	34
9. <i>Known Limitations- Operation not to be changed</i>	34
10. <i>Documentation Corrections</i>	35
ETHERNET ROUTING SWITCH 1600	36
SOFTWARE RELEASE 2.1.1.0	36

1. <i>Release Summary</i>	36
2. <i>Important Notes before Upgrading to This Release</i>	36
3. <i>Platforms Supported</i>	36
4. <i>Notes for Upgrade</i>	36
5. <i>Version of Previous Release</i>	37
6. <i>Compatibility</i>	37
7. <i>Changes in This Release</i>	37
8. <i>Outstanding Issues-To be resolved in future release</i>	39
9. <i>Known Limitations-Operation not to be changed</i>	39
10. <i>Documentation Corrections</i>	39
ETHERNET ROUTING SWITCH 1600	41
SOFTWARE RELEASE 2.1.0.1	41
1. <i>Release Summary</i>	41
2. <i>Important Notes before Upgrading to This Release</i>	41
3. <i>Platforms Supported</i>	41
4. <i>Notes for Upgrade</i>	41
5. <i>Version of Previous Release</i>	42
6. <i>Compatibility</i>	42
7. <i>Changes in This Release</i>	42
8. <i>Outstanding Issues – to be resolved in future release</i>	43
9. <i>Known Limitations – Operation not to be changed</i>	43
10. <i>Documentation Corrections</i>	43



Ethernet Routing Switch 1600

Software Release 2.1.8.1

1. Release Summary

Release Date: July 12, 2010

Purpose: Software maintenance patch release to address externally found customer issue.

2. Important Notes before Upgrading to This Release

Release 2.1.8.1 is the last scheduled software release for the ERS 1600 product. Please refer to CSB 2010009967, Rev 1 for Hardware Life-Cycle information for the 1600 series of products, and to CSB 2009009296, Rev 3 for the latest Software Life-Cycle information.

Due to a supply limitation, the SDRAM for the 1600 product family needed to be changed. This change has already been implemented within the 1612G and 1624G products. For the 1648T, the change also required a minor software driver change. Release 2.1.7.0, contained the software driver change, and is therefore the minimum release to support any 1648T units with the newer SDRAM. All units of Hardware Revision 34 or higher will contain the new SDRAM; this equates to all new shipping units. The hardware revision number can be found on the rear label of the unit (HDW #). At the same time, all new shipping units of the 1648T with the new SDRAM will ship from the factory with a minimum software release of 2.1.7.0. As long as these units are NOT downgraded to a prior release, the units will operate properly. Therefore for any newly received units, all units received with release 2.1.7.0 or higher, should only be operated with release 2.1.7.0 or higher.

3. Platforms Supported

Ethernet Routing Switch 1600; ERS1648, ERS1612, ERS1624

Please refer to the following document for more details on the ERS 1600 Platform

Release Notes for the Ethernet Routing Switch 1600 Series Switch Software Release 2.1 (Part No. 316859-J)
Managing Platform Operations Ethernet Routing Switch 1600 Series Software Release 2.1(Part No. 321817-A)

4. Notes for Upgrade

Please see Release Notes for the Ethernet Routing Switch 1600 Series Switch Software Release 2.1 (Part No. 316859-J) and Upgrading to Ethernet Routing Switch 1600 Software Release 2.1 (Part No. 321327-B) at <http://www.nortel.com/support> (select Passport family) for details on how to upgrade your Ethernet Routing Switch 1600

File Names for This Release

File Name	Module or File Type	File Size (bytes)
p16b2181.img	Boot monitor image	1572064
p16a2181.img	Runtime image	5650900
p16c2181.img	3DES encryption module for SSH	52472
p16c2181.des	DES SNMPv3 encryption module	8638
p16a2181.mib	MIB	2410980
p16a2181.mib.zip	MIB (zip file)	385078
p16a2181.md5	md5 checksum file	474
p16b2181.had	Boot image, pre-boot-monitor Code	162376
p16a1310.img	Intermediate software used during upgrades from 1.x to 2.x software	3083656

Note: A direct upgrade from code releases prior to 1.3.x to 2.1.8.1 is not supported. Users must first perform an intermediate upgrade to 1.3.1, and then an upgrade to 2.1.8.1 code. Please reference the latest 1600 upgrade guide P/N 321-327-B.

5. Version of Previous Release

Software Version **2.1.8.0**

6. Compatibility

This software release is managed with Java Device Manager (JDM) release 6.2.1.2

7. Changes in This Release

New Features in This Release

None

Command Line Interface

None

Problems Resolved in This Release

Ethernet port buffer size changes were previously lost when executing a save config command. (Q02143272)

In previous release (2.1.8.0) a command was introduced to increase the buffer size for 1648GTX and 1648GTX-PWR ports (only) to avoid the potential for packet drops. (Q02064720).

```
config ethernet <port no> tx-queue <queue-id> size <value>
```

The port buffer size configured using the above command was not saved during "save config". Due to this, the configured values would be lost after a reboot. This is now resolved, and in the 2.1.8.1 release, the Ethernet port TX Queue Buffer size values will now be saved in the config.

8. Known Issues

None

9. Known Limitations

The ERS 1600 will not pass IP packets that contain a received IP header checksum value of 0xffff. The ERS 8600 E/M modules will potentially create and pass such packets. The RFC regarding this area of operation is not 100% clear as to how a product should behave, and what is valid. Therefore it is now recommended to not connect an ERS 1600 running in L3 operation to the egress port of an E/M module of an ERS 8600, to avoid the potential for this situation to be seen. If seen, the application will fail, as the required packet passing will always be dropped. In these situations, the user must now design their network differently (such as use R/RS modules instead), and not at Avaya's expense. (Q02154661)

10. Documentation Corrections

None

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Ethernet Routing Switch 1600

Software Release 2.1.8.0

1. Release Summary

Release Date: April 30, 2010

Purpose: Software maintenance release to address externally found customer issues, as well as add some new additional features.

2. Important Notes before Upgrading to This Release

Release 2.1.8.0 is the last scheduled software release for the ERS 1600 product. Please refer to CSB 2010009967, Rev 1 for Hardware Life-Cycle information for the 1600 series of products, and to CSB 2009009296, Rev 3 for the latest Software Life-Cycle information.

Due to a supply limitation, the SDRAM for the 1600 product family needed to be changed. This change has already been implemented within the 1612G and 1624G products. For the 1648T, the change also required a minor software driver change. Release 2.1.7.0, contained the software driver change, and is therefore the minimum release to support any 1648T units with the newer SDRAM. All units of Hardware Revision 34 or higher will contain the new SDRAM; this equates to all new shipping units. The hardware revision number can be found on the rear label of the unit (HDW #). At the same time, all new shipping units of the 1648T with the new SDRAM will ship from the factory with a minimum software release of 2.1.7.0. As long as these units are NOT downgraded to a prior release, the units will operate properly. Therefore for any newly received units, all units received with release 2.1.7.0 or higher, should only be operated with release 2.1.7.0 or higher.

3. Platforms Supported

Ethernet Routing Switch 1600; ERS1648, ERS1612, ERS1624

Please refer to the following document for more details on the ERS 1600 Platform

Release Notes for the Ethernet Routing Switch 1600 Series Switch Software Release 2.1 (Part No. 316859-J)

Managing Platform Operations Ethernet Routing Switch 1600 Series Software Release 2.1 (Part No. 321817-A)

4. Notes for Upgrade

Please see Release Notes for the Ethernet Routing Switch 1600 Series Switch Software Release 2.1 (Part No. 316859-J) and Upgrading to Ethernet Routing Switch 1600 Software Release 2.1 (Part No. 321327-B) at <http://www.nortel.com/support> (select Passport family) for details on how to upgrade your Ethernet Routing Switch 1600

File Names for This Release

File Name	Module or File Type	File Size (bytes)
p16b2180.img	Boot monitor image	1572064
p16a2180.img	Runtime image	5651697
p16c2180.img	3DES encryption module for SSH	52472
p16c2180.des	DES SNMPv3 encryption module	8638
p16a2180.mib	MIB	2410980
p16a2180.mib.zip	MIB (zip file)	385078
p16a2180.md5	md5 checksum file	427
p16b2180.had	Boot image, pre-boot-monitor Code	162376
p16a1310.img	Intermediate software used during upgrades from 1.x to 2.x software	3083656

Note: A direct upgrade from code releases prior to 1.3.x to 2.1.8.0 is not supported. Users must first perform an intermediate upgrade to 1.3.1, and then an upgrade to 2.1.8.0 code. Please reference the latest 1600 upgrade guide P/N 321-327-B.

5. Version of Previous Release

Software Version **2.1.7.0**

6. Compatibility

This software release is managed with Java Device Manager (JDM) release 6.2.1.2

7. Changes in This Release

New Features in This Release

VLACP (Virtual Link Aggregation Control Protocol)

The ERS 1600 software 2.1.8.0 now supports VLACP. Below is a short overview of VLACP. For additional detailed information regarding VLACP operation and configuration, refer to ERS 8600 NN46205-518 user document, which contains information regarding VLACP behavior. VLACP implementation on the 1600 matches that of VLACP implementation in the ERS 8600 for current (v5.1.x and v7.0) implementations:

NOTE: The ERS 1600 does not support sub-100 millisecond time-out like the ERS 8600 can.

Virtual LACP (VLACP) is a Nortel modification that provides end-to-end failure detection. Virtual Link Aggregation Control Protocol (VLACP) is an extension to LACP used for end-to-end failure detection. VLACP is not a link aggregation protocol. It is a mechanism to periodically check the end-to-end health of a point-to-point connection. VLACP uses the Hello mechanism of LACP to periodically send Hello packets to ensure an end-to-end communication. When Hello packets are not received, VLACP transitions to a failure state, which indicates a service provider failure and that the port is disabled.

The VLACP only works for port-to-port communications where there is a guarantee for a logical port-to-port match through the service provider. VLACP does not work for port-to-multiport communications where there is no guarantee for a point-to-point match through the service provider. You can configure VLACP on a port. VLACP functions both across a service provider network (on a per port basis) or within any directly connected links within a LAN, again on a per port basis.

LACP can also be used with MLT to complement its capabilities and provide quick failure detection. VLACP is recommended for all SMLT access links when the links are configured as MLT to ensure both end devices are able to communicate. By using VLACP over Single-Port SMLT (SLT), enhanced failure detection is extended beyond the limits of the number of SMLT or LACP instances that can be created on a Nortel switch.

NOTE: Only VLACP is supported on a single port SMLT (SLT); LACP is not supported with SLT. VLACP and LACP should NOT be configured at the same time on any interface/MLT.

VLACP trap messages are sent to the management stations if the VLACP state changes. If the failure is local, the only traps that are generated are port link down or port linkup.

For ERS 1600 VLACP configurations should use values of 500 msec short timer (or higher) and a minimum timeout scale of 5. Lower values can be used, but should any VLACP 'flapping' occur, the user will need to increase one or more of the values. These timers have been proven to work for large scaled environments and also provide the 3 second recovery time required for converged networks.

There is both CLI and JDM support for the new VLACP feature as well as SNMP MIB support. The new MIB attributes for VLACP are found in the Rapid_City.mib.

Command Line Interface

The following CLI commands are introduced as part of this new feature.

From Runtime CLI

config vlacp <enable|disable> - Allows the user to enable/disable VLACP on a global level. The default for this parameter value is disabled.

config vlacp info - Allows the user to see the VLACP configuration at a global level.

config ethernet <port> vlacp <enable|disable> - Allows the user to enable/disable VLACP at the port level. The default for this parameter value is disabled.

config ethernet <port> vlacp fast-periodic-time <integer> - Allows the user to set the value for fast periodic time in milliseconds from a range of 500 to 20000milliseconds. The default value for this parameter value is 500.

config ethernet <port> vlacp info - Allows the user to see the VLACP parameters configured at the port level.

config ethernet <port> vlacp slow-periodic-time <integer> - Allows the user to set the value for slow periodic time in milliseconds from a range of 10000 to 30000milli sec. The default value set is 30000. If the VLACP timeout is set as long, slow-periodic-time will be used while VLACP action is happening on ports.

config ethernet <port> vlacp timeout <long|short> - Allows the user to set long timeout or short timeout. The default value is long. This command allows the user configure the time period to be long or short which affects bring the port down, when VLACP action takes place.

config ethernet <port> vlacp timeout-scale <integer> - Allows the user to set the VLACP timeout-scale on a port from a range of 2 to 10. The VLACP port timeout = periodic-time x timeout-scale.

config ethernet <port> vlacp ethertype <hex value> -: Allows the user to set the VLACP protocol ethertype. The value can be set from 0x1 to 0xffff or from 1 to 65535. Default value is 0x8103.

config ethernet <port> vlacp macaddress <value> - Allows the user to set the multicast MAC address used to exchange VLACPDUs from end to end perspective. For end-to-end configurations, i.e. using VLACP across a provider network, the default MAC address of 01-80-C2-00-11-00 can be used, but for point-to-point directly connected LAN links, a MAC address of 01-80-C2-00-00-0F is recommended to be configured.

show ports info vlacp [<ports>] - Allows the user to see the VLACP configuration and action at the port level.

SLPP (Simple Loop Prevention Protocol)

The ERS 1600 software 2.1.8.0 now supports SLPP. Below is a short overview of SLPP. For additional detailed information regarding SLPP operation and configuration, refer to ERS 8600 NN46205-605 user document, which contains information regarding SLPP behavior. SLPP implementation on the 1600 matches that of SLPP implementation in the ERS 8600 for current (v5.1.x and v7.0) implementations:

SLPP is used to prevent loops in an SMLT network. SLPP is focused on SMLT networks but works with other configurations. This functionality provides active protection against network loops. When the user configures and enables SLPP, the switch sends a test packet to the VLAN. A loop is detected if the switch or if a peer aggregation switch on the same VLAN receives the original packet. If a loop is detected, the switch disables the port. To enable the port requires manual intervention. As an alternative, the user can use port auto-enable to re-enable the port after a predefined interval.

NOTE: SLPP and any form of STP are both used as loop prevention or protection protocols. Running both protocols at the same time on the same port is not recommended. It is recommended that users choose a design in which one or the other is enabled..

There is both CLI and JDM support for the new SLPP feature as well as SNMP MIB support. The new MIB attributes for SLPP are found in the Rapid_City.mib.

Command Line Interface

The following CLI commands are introduced for this feature.

From Runtime CLI

config slpp add <vid> - Allows the user to add a VLAN to the SLPP transmission list. This configuration controls the boundary of SLPP-PDU sending. SLPP is configured at the VLAN level, but then works at a port level.

config slpp etherType <pid> - Allows the user to set SLPP PDU Ethertype. The default value is 0x8104.

config slpp info - Allows the user to view the SLPP global parameter configuration.

config slpp operation <enable|disable> - Allows the user to enable or disable SLPP packets transmitting and receiving process. This command is for controlling SLPP operation. The CP is performing the SLPP-PDU sending and processing the received SLPP-PDU only when SLPP operation is in enabled state. The default is disabled.

config slpp remove <vid> - Allows the user to remove a VLAN from the SLPP transmission list.

config slpp tx-interval <integer> - Allows the user to set SLPP packets transmit interval from a range of 500 to 5000 millisecond. The default value is 500 milliseconds. This is a global parameter for the switch.

config ethernet <port> slpp info - Allows the user to see SLPP configurations on a port.

config ethernet <port> slpp packet-rx <enable|disable> - Allows the user to enable/disable SLPP Rx at the port level. The port will take part in SLPP operation only if 'packet-rx' is enabled.

config ethernet <port> slpp packet-rx-threshold <interger> - Allows the user to set SLPP packet Rx threshold at the port level, from a range of 1 to 500. This command controls the number of SLPP-PDU that have to be received on a port before the port shut down action will take place.

Show ports info slpp - Allows the user to see the SLPP configuration and action at the port level.

ECMP (Equal Cost Multipath)

The ERS 1600 software 2.1.8.0 now supports ECMP. Below is a short overview of ECMP (for additional detailed information regarding ECMP operation and configuration, refer to ERS 8600 NN46205-523 user document, which contains information regarding ECMP behavior. ECMP implementation on the 1600 matches that of ECMP implementation in the ERS 8600 for current (v5.1.x and v7.0) implementations):

With Equal Cost Multipath (ECMP), the Ethernet Routing Switch 1600 can determine up to four equal-cost paths to the same destination prefix. The User can use multiple paths for load sharing of traffic. These multiple paths allow faster convergence to other active paths in case of network failure. By maximizing load sharing among equal-cost paths, you can use your links between routers more efficiently when sending IP traffic. Equal Cost Multipath is formed using routes from the same source or protocol.

The ECMP feature supports and complements the following protocols and route types:

- Open Shortest Path First (OSPF)
- Routing Information Protocol (RIP)
- Static routes
- Default routes

There is both CLI and JDM support for the new ECMP feature as well as SNMP MIB support. The new MIB attributes for ECMP are found in the Rapid_City.mib.

Command Line Interface

The following CLI commands are introduced for this feature.

From Runtime CLI

config ip ecmp <enable | disable> -: Allows the user to enable or disable the ECMP feature. The default is disabled.

config ip ecmp-<1|2|3|4>-pathlist <prefix-list-name> - Allows the user to configure up to four equal cost paths to the same destination prefix.

config ip ecmp-max-path <integer> - Allows the user to set the maximum ecmp paths number. Valid integer values are 2 to 4.

config ip ecmp-pathlist-apply - Allows the user to apply the changes to the entire ecmp pathlist configuration.

config ip info -: This command will display the IP (and therefore include ECMP) based configurations made.

Problems Resolved in This Release

Platform

STP state of gigabit ports for the ERS 1612G or ERS1624G now transitions correctly through the STP states, after a re-boot. Previously the ports would go into forwarding or blocking too fast after a re-boot. (Q01895696)

Correct Error Messages are now displayed when we an improper QoS configuration is attempted. (Q02122907)

The configuration (by default config.cfg) will no longer will become corrupted when the user creates access policies and then performs a save config operation. (Q02028601)

ERS 1600 now ensures that a constant number of protocol based Vlans can be created. Now only 12 protocols based Vlans can be created for all types of protocols. In case a subnet VLAN is also created, then the maximum number of protocol VLANs that can be supported is 11. (Q01999368)

Previously, when a SNMP trap was being sent from an ERS 1600, even with a CLIP configured and force-trap-receiver enabled, the trap did not use the CLIP address as the Source IP address. This is now resolved by the addition of a new command:

```
config sys set snmp force-iphdr-send <true|false>; the default value is false.
```

When this new configuration parameter is set true, the CLIP IP address will be used as the Source IP for SNMP traps. (Q02012841)

For the ERS 1600 a command has now been introduced to increase the buffer size for 8348GTX and 8348GTX-PWR ports (only) to avoid the potential for packet drops. (Q02064720).

Command Line Interface Command

```
config ethernet <port no> tx-queue <queue-id> size <value>
```

Here value = number of descriptors in resolution of 16 {16..384}

The CLI command has been introduced to configure the number of buffer descriptors allocated per port/per queue ID. This configurable CLI command allows the user to allocate buffer descriptors based on their respective network setup thereby ensuring minimal loss in cases of high traffic throughput.

IP Multicast

PGM-SPM packets will now be forwarded by ERS 1600. This forwarding will be done by the CP, which will have an impact on performance. (Q02078348)

ERS 1600 was previously unable to learn all the incoming multicast streams immediately. With this change the ERS 1600 now creates the multicast records for multiple streams immediately. (Q02114269)

Ethernet header for the PGM-SPM packets will now be correctly populated with the right SRC MAC and Frame Checksum. (Q02119047)

Multicast RTP streams are now forwarded properly and continuously and will no longer stop intermittently. (Q02100761)

Multicast Route Table entries and IGMP sender entries are now properly maintained, even at low traffic rates. (Q02078313)

ERS 1600 now forwards PGM-SPM packets even when the sender and receiver are connected to the same switch. (Q02119064)

8. Known Issues

If an endstation is connected to a port which is a member of both an IP-Subnet VLAN and a Port based VLAN, the ARP entry for the endstation is not re-learned if the ARP entry is removed. In order to not see this situation, the VLAN ID configuration must be one where the VLAN ID for the IP Subnet based VLAN must be less than the VLAN ID associated with the Port based VLAN. (Q02113776)

IST/SMLT configurations are no longer support if the ERS 1600 has MSTP mode enabled; the two functions are not interoperable. In order to use IST/SMLT designs, MSTP mode must be disabled or the switch set to standard STP mode enabled. (Q02128593)

When configuring static routes from JDM the user must set the preference field or a pop-up error will occur. The system should read the preference from the global table which it does not. The user should therefore either set a specific value for preference or assign the global value. For CLI this function works. (Q02045170-01)

All links in a LAG will undergo STP re-convergence when any LAG port members are updated. (Q02123036)

From JDM it is not possible to change CLI passwords, even if using a SNMPv3 connection. (Q02127220)

9. Known Limitations

None

10. Documentation Corrections

None

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Ethernet Routing Switch 1600

Software Release 2.1.7.0

1. Release Summary

Release Date: 16-Jan-2009

Purpose: Software maintenance release to address customer found software issues.

2. Important Notes before Upgrading to This Release

Please reference bulletin 2007007921 Rev 2, for important information regarding upgrading any 1600 switch from 1.x code to 2.x code, before performing any such upgrade. This same information is also included in the most recent version of the Upgrade Guide (P/N 321327-B).

Due to a supply limitation, the SDRAM for the 1600 product family needed to be changed. This change has already been implemented within the 1612G and 1624G products. For the 1648T, the change also required a minor software driver change. Release 2.1.7.0, contains the software driver change, and is therefore the minimum release to support any 1648T units with the newer SDRAM. All units of Hardware Revision 34 or higher will contain the new SDRAM; this equates to all new shipping units. The hardware revision number can be found on the rear label of the unit (HDW #). At the same time, all new shipping units of the 1648T with the new SDRAM will ship from the factory with a minimum software release of 2.1.7.0. As long as these units are NOT downgraded to a prior release, the units will operate properly. Therefore for any newly received units, all units received with release 2.1.7.0 or higher, should only be operated with release 2.1.7.0 or higher.

3. Platforms Supported

Ethernet Routing Switch 1600; ERS1648, ERS1612, ERS1624

Please refer to the following document for more details on the ERS 1600 Platform

Release Notes for the Ethernet Routing Switch 1600 Series Switch Software Release 2.1 (Part No. 316859-J)

Managing Platform Operations Ethernet Routing Switch 1600 Series Software Release 2.1 (Part No. 321817-A)

4. Notes for Upgrade

Please see Release Notes for the Ethernet Routing Switch 1600 Series Switch Software Release 2.1 (Part No. 316859-J) and Upgrading to Ethernet Routing Switch 1600 Software Release 2.1 (Part No. 321327-B) at <http://www.nortel.com/support> (select Passport family) for details on how to upgrade your Ethernet Routing Switch 1600

File Names for This Release

File Name	Module or File Type	File Size (bytes)
p16b2170.img	Boot monitor image	1571920
p16a2170.img	Runtime image	5621536
p16c2170.img	3DES encryption module for SSH	52472
p16c2170.des	DES SNMPv3 encryption module	8638
p16a2170.mib	MIB	2403186
p16a2170.mib.zip	MIB (zip file)	383713
p16a2170.md5	md5 checksum file	380
p16b2170.had	Boot image, pre-boot-monitor code	162376
p16a1310.img	Intermediate software used during upgrades from 1.x to 2.x software	3083656

Note: A direct upgrade from code releases prior to 1.3.x to 2.1.7.0 is not supported. Users must first perform an intermediate upgrade to 1.3.1, and then an upgrade to 2.1.7.0 code. Please reference the latest 1600 upgrade guide P/N 321-327-B.

5. Version of Previous Release

Software Version **2.1.6.0**

6. Compatibility

This software release is managed with Java Device Manager (JDM) release 6.0.6.0

7. Changes in This Release

New Features in This Release

None

Problems Resolved in This Release

General

The ERS 1600 no longer returns incorrect interface index for MAC addresses learnt on MLT when queried through a MIB browser. (Q01952125)

When configured in RSTP mode, the ERS1600 no longer stops responding during a MIB walk (Q01953242)

I

8. Known Issues

STP state of gigabit ports for the ERS 1612G or ERS1624G can transition from “disabled” to “forwarding” directly (versus showing learning first) in some scenarios during boot up. (Q01895696)

SMLT ports or MLTs for ERS 1600 might not come up successfully after a reboot. If seen a disable/enable toggle of the SMLT ports affected should be tried or else a power cycle of the switch is recommended. (Q01897155)

9. Known Limitations

None

10. Documentation Corrections

In the user manual Configuring IP Routing and Multicast Operations using the CLI (P/N 321711-B, rev 01) on page 119 the manual inaccurately states support for 4000 VLANs. The 1600 actually has support for 2047 VLANs maximum, but any VLAN number between 1 and 4048 can be used.

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Ethernet Routing Switch 1600

Software Release 2.1.6.0

1. Release Summary

Release Date: 07-Jul-2008

Purpose: Software maintenance release to address customer found software issues.

2. Important Notes before Upgrading to This Release

Please reference bulletin 2007007921 Rev 2, for important information regarding upgrading any 1600 switch from 1.x code to 2.x code, before performing any such upgrade. This same information is also included in the most recent version of the Upgrade Guide (P/N 321327-B).

3. Platforms Supported

Ethernet Routing Switch 1600; ERS1648, ERS1612, ERS1624

Please refer to the following document for more details on the ERS 1600 Platform

Release Notes for the Ethernet Routing Switch 1600 Series Switch Software Release 2.1 (Part No. 316859-J)

Managing Platform Operations Ethernet Routing Switch 1600 Series Software Release 2.1 (Part No. 321817-A)

4. Notes for Upgrade

Please see Release Notes for the Ethernet Routing Switch 1600 Series Switch Software Release 2.1 (Part No. 316859-J) and Upgrading to Ethernet Routing Switch 1600 Software Release 2.1 (Part No. 321327-B) at <http://www.nortel.com/support> (select Passport family) for details on how to upgrade your Ethernet Routing Switch 1600

File Names for This Release

File Name	Module or File Type	File Size (bytes)
p16b2160.img	Boot monitor image	1572304
p16a2160.img	Runtime image	5621526
p16c2160.img	3DES encryption module for SSH	52472
p16c2160.des	DES SNMPv3 encryption module	8638
p16a2160.mib	MIB	2403186
p16a2160.mib.zip	MIB (zip file)	383713

p16a2160.md5	md5 checksum file	474
p16b2160.had	Boot image, pre-boot-monitor code	162376
p16a1310.img	Intermediate software used during upgrades from 1.x to 2.x software	3083656

Note: A direct upgrade from code releases prior to 1.3.x to 2.1.6.0 is not supported. Users must first perform an intermediate upgrade to 1.3.1, and then an upgrade to 2.1.6.0 code. Please reference the latest 1600 upgrade guide P/N 321-327-B.

5. Version of Previous Release

Software Version **2.1.5.0**

6. Compatibility

This software release is managed with Java Device Manager (JDM) release 6.0.6.0

7. Changes in This Release

New Features in This Release

The ERS 1600 software release 2.1.6.0 now supports SNMP-v3 service type in access policies.

Below are the CLI commands provided,

To add a group under access policy SNMP service:

ERS-1612:1/config sys access-policy policy 2# snmp-group-add <snmp-v3 group name> <snmp-model>

To delete a group under access policy SNMP service:

ERS-1612:1/config sys access-policy policy 2# snmp-group-del <snmp-v3 group name> <snmp-model>

The info command output is:

ERS-1612:1/config sys access-policy policy 2# snmp- group-info

snmpv3-groups:

GroupName	Snmp-model
group1	snmpv1
group2	usm

For new policies created, the user has to explicitly add the required groups.

(Q01845007).

NOTE: There is no JDM support for this feature in the current release. The commands for this feature are only available through CLI.

Problems Resolved in This Release

General

The ERS 1600 no longer displays an error message when configuring a MLT through JDM.(Q01853793)

The NtStgEnable field for a MLT no longer displays unknown characters when viewed through JDM.
(Q01853795)

8. Known Issues

The ERS 1600 displays error messages while adding discard ARP entries in some scenarios.
(Q01820617)

9. Known Limitations

Access strict flag will not function properly for just FTP service in an access policy. If access policy is disabled FTP may no longer function. Switch re-boot maybe required to get FTP service back working. TFTP can be used instead. (Q01876569/Q01897960)

SNMP-v3 service (if set enabled) will be disabled if an attempt is made to modify any other service for an access policy through JDM. Under these conditions, user needs to go into CLI and re-enabled the SNMP-v3 service. This situation will not be seen if a SNMP set is done via a non-JDM application; situation is only seen with JDM. (Q01877020)

For the 1648T only, the command config bootconfig net set-mgmt-port along with config bootconfig net mgmt IP will only work during boot-up and will no longer function when the run-time image is loaded and running, To manage a 1648T, any VLAN with an associated IP address can use that IP address to manage the switch. The 1648T has no specific management interface. See below for additional information. (Q01873262)

The ERS 1600 can sometimes display the operating mode of a Gigabit link as half duplex when in fact the link is operating properly at full-duplex, for an auto-negotiation enabled configuration. This has only been seen with a connection to an ERS425 switch and after the link is toggled after a reboot. (Q01865369)

10. Documentation Corrections

Documentation correction for "Configuring Network Management using the CLI and Device Manager", Ethernet Routing Switch 1600 Series, Software Release 2.1 (Part No. 321816-A)

The following changes need to be considered in the section "Assigning a port as the management port (Ethernet Routing Switch 1648T only) using the Run-Time CLI" (start on Page 154)

The ERS 1648T does not have a dedicated out-of-band management port, so any documentation associated with a "management port" maybe inaccurate. To manage a booted and running 1648T the user should create a VLAN, assign an IP address to the VLAN, and then add a port or ports to that VLAN. This can be done using the following commands.

```
config vlan <vlan-id> create byport <stg-id>
config vlan <vlan-id> ip create <mgmt-ip/mask>
config vlan <vlan-id> add ports <mgmt-port>
```

At this time this VLAN IP address, or any VLAN IP address can be used to manage the 1648T. The user may also need to enable routing or create/add static routes for access to function as well.

(Q01873632)

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Ethernet Routing Switch 1600

Software Release 2.1.5.0

1. Release Summary

Release Date: 31-Jan-2008

Purpose: Software maintenance release to address customer found software issues.

2. Important Notes before Upgrading to This Release

Please note new support for the following Switch Clustering (SMLT) configurations with any ERS 1600 2.1.x based release. Please also reference the Switch Clustering Support Topologies' and Interoperability with ERS, document number NN48500-555.

Topologies	1600
Triangle L2	YES
Triangle VRRP	YES
Triangle RSMLT	NO
Triangle Multicast	YES(IGMP at the edge)

Topologies	1600-1600	1600-5500	1600-8300	1600-8600
Square L2	YES	NO	NO	YES
Square L3-Unicast	YES	NO	NO	NO
Square RSMLT	NO	NO	NO	NO
Square IPMulticast	NO	NO	NO	NO

FULL MESH	NOT SUPPORTED
-----------	---------------

For any SMLT configuration involving MLTs or MLT with LACP LAGs, STP needs to be disabled on the ERS 1600 ports in the MLT or LAG (be it either a triangle or square configurations), in order to get proper SMLT failovers. This potentially includes the edge switches in a triangle configuration as well. (Q1807362)

3. Platforms Supported

Ethernet Routing Switch 1600; ERS1648, ERS1612, ERS1624

Please refer to the following document for more details on the ERS 1600 Platform

Release Notes for the Ethernet Routing Switch 1600 Series Switch Software Release 2.1 (Part No. 316859-J)
Managing Platform Operations Ethernet Routing Switch 1600 Series Software Release 2.1(Part No. 321817-A)

4. Notes for Upgrade

Please see Release Notes for the Ethernet Routing Switch 1600 Series Switch Software Release 2.1 (Part No. 316859-J) and Upgrading to Ethernet Routing Switch 1600 Software Release 2.1 (Part No. 321327-B) at <http://www.nortel.com/support> (select Passport family) for details on how to upgrade your Ethernet Routing Switch 1600

File Names for This Release

File Name	Module or File Type	File Size (bytes)
p16b2150.img	Boot monitor image	1572304
p16a2150.img	Runtime image	5614511
p16c2150.img	3DES encryption module for SSH	52472
p16c2150.des	DES SNMPv3 encryption module	8638
p16a2150.mib	MIB	2401504
p16a2150.mib.zip	MIB (zip file)	383422
p16a2150.md5	md5 checksum file	474
p16b2150.had	Boot image, pre-boot-monitor code	162376

A direct upgrade from code releases prior to 1.3.x to 2.1.5.0 is not supported. User must first perform an intermediate upgrade to 1.3.1, and then an upgrade to 2.1.5.0 code.

5. Version of Previous Release

Software Version **2.1.4.0**

6. Compatibility

This software release is managed with Java Device Manager (JDM) release **6.0.6.0**

7. Changes in This Release

New Features in This Release

IP-Subnet based VLAN support

The ERS 1600 software release 2.1.5.0 now supports IP subnet-based VLANs. For a detailed description of the feature along with configuration examples, please refer to the document “Configuring VLANs, Spanning Tree, and Link Aggregation using CLI” (321717-C, Rev 01).

With the new support for IP-Subnet Based VLANs, the support for 1.x code is no longer required. Therefore Nortel is moving 1.x code to Life-Cycle status of EOL (no support) at the end of March, 2008. Customers currently running 1.x code are recommended to plan for a move to 2.1.5.0 code as availability occurs. There will also be a CSB posted to Nortel support web site under ERS1600 stating these plans.

NOTE: There is no JDM support for this feature in the current release. The commands for this feature are only available through CLI. Therefore only the CLI version of the documentation has changed

Link Aggregation Control Protocol (LACP)

The ERS 1600 software release 2.1.5.0 now supports Link Aggregation Control Protocol (LACP). For a detailed description of the feature along with configuration examples, please refer to the document “Configuring VLANs, Spanning Tree, and Link Aggregation using CLI” (321717-C, Rev 01)

There is no support for LACP/802.3ad standby links.

NOTE: There is no JDM support for this feature in the current release. The commands for this feature are only available through CLI. Therefore only the CLI version of the documentation has changed

Problems Resolved in This Release

SNMP

The ERS 1600 now returns the proper OIDs and the corresponding values for all the MIBs under the Transmission group when a “snmpwalk” command is executed from a MIB browser.(Q01782620)

Platform

General

The total number of QoS Policies configured on the ERS 1600 is now properly displayed when the command “show qos policy” is executed via CLI. (Q01677490)

The ERS 1600 no longer allows users to assign an IP address to a VLAN if the IP address is in the same subnet as that of the management port’s IP address, regardless of the management port being enabled or disabled. (Q01767089)

8. Outstanding Issues- To be resolved in a future release

The CLI command “show mlt info <mlt-id>” does not display the title keywords “LACP ADMIN and LACP OPER” in the output only when the optional mlt-id is used. However, the actual values for these parameters are displayed in the underlying table. (Q01809712)

The ERS 1600 does not display any error message when executing the command “show ports info stg main” in RSTP mode. (Q01809883)

The ERS 1600 incorrectly shows the maximum MTU size on a port as 1950 when the port information is displayed via JDM. (Q01814235).

9. Known Limitations- Operation not to be changed

The ERS 1600 does not support loading of previously saved configuration files when the Spanning Tree mode is changed from regular STP to RSTP-MSTP mode or vice-versa. The switch must be loaded in factory default configuration mode and a fresh configuration must be created whenever the spanning tree mode is changed. (Q01809922 and Q01809718)

Radius authentication will only work using a CLIP address as the Radius Source IP when the ERS 1600 switch is configured to operate in L2 mode (no routing); with L3 enabled it will fail. When the ERS 1600 has routing enabled, the user should use some VLAN IP address for Radius Source IP and not any CLIP. (Q01669867)

A MIB-walks for various tables, such as FDB, port statistics counters, etc., can result in an error such as, 'lexicographic order not increasing oids', because the values in these tables are often not stored in a numerical order. Now many MIB tools/browsers have options to ignore such errors, and these options should be used if such errors are seen. This has no affect on the ERS 1600 CLI displaying the tables properly. (Q01796813)

As noted in another section of this Readme, CP-Limit has a maximum value of 5000, for both broadcast and multicast packet rates – reference CR 1485638. The default value for both is 1700 packets per second. Therefore any “normal” multicast or broadcast data rates that exceed the configured value for CP-Limit (more likely multicast traffic) will cause the port to be shutdown, as all broadcast and multicast packets are sent to the CPU for inspection. Based upon this, the configuration of CP-Limit in a multicast network involving the ERS 1600 needs special consideration. Please note that CP-Limit is enabled by default on all ports as well. (Q01807363)

Unknown multicast is flooded in the VLAN only when the VLAN has neither PIM nor IGMP enabled. In all other cases, it is either dropped or forwarded to select ports depending on configuration. If a 1000BaseT SFP is used, P/N AA1419043 or AA1419043-E5 or E6, then the configuration option of auto-negotiation disable is invalid, per IEEE 802.3ab standard. This standard states that for any copper/TX port running at 1000M bps, that auto-negotiation MUST be enabled. The ERS1600 does not guard against this improper configuration, and therefore it is up to the user to not program such a configuration. Additional if the improper (auto-negotiation disabled) setting is used, both CLI and JDM will always show the port in the up and active state (port green via JDM) even with no connection present. (Q01819108)

The system/CPU MTU size for the ERS1600 allows a setting of 1950 bytes, but the maximum [Ethernet] MTU the ERS1600 can handle is 1518 bytes (or 1522 bytes for 802.1Q tagged frames). Setting the value to 1950 has no operational issue on the switch, but this size MTU can not be handled by the switch, and packets over 1522 bytes long will always be discarded at port level hardware. (Q01814235)

10. Documentation Corrections

NONE.

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Ethernet Routing Switch 1600

Software Release 2.1.4.0

1. Release Summary

Release Date: 07-Sep-2007

Purpose: Software maintenance release to address customer found software issues.

2. Important Notes before Upgrading to This Release

Please reference bulletin 2007007921 Rev 2, for important information regarding upgrading any 1600 switch from 1.x code to 2.x code, before performing any such upgrade. This same information is also included in the most recent version of the Upgrade Guide (P/N 321327-B).

3. Platforms Supported

Ethernet Routing Switch 1600; ERS1648, ERS1612, ERS1624

Please refer to the following document for more details on the ERS 1600 Platform

Release Notes for the Ethernet Routing Switch 1600 Series Switch Software Release 2.1 (Part No. 316859-J)

Managing Platform Operations Ethernet Routing Switch 1600 Series Software Release 2.1 (Part No. 321817-A)

4. Notes for Upgrade

Please see Release Notes for the Ethernet Routing Switch 1600 Series Switch Software Release 2.1 (Part No. 316859-J) and Upgrading to Ethernet Routing Switch 1600 Software Release 2.1 (Part No. 321327-B) at <http://www.nortel.com/support> (select Passport family) for details on how to upgrade your Ethernet Routing Switch 1600

File Names for This Release

File Name	Module or File Type	File Size (bytes)
p16b2140.img	Boot monitor image	
p16a2140.img	Runtime image	
p16c2140.img	3DES encryption module for SSH	
p16c2140.des	DES SNMPv3 encryption module	

p16a2140.mib	MIB	
p16a2140.mib.zip	MIB (zip file)	
p16a2140.md5	md5 checksum file	
p16b2140.had	Boot image, pre-boot-monitor code	
p16a1310.img	Intermediate software used during upgrades from 1.x to 2.x software	

Note: A direct upgrade from code releases prior to 1.3.x to 2.1.4.0 is not supported. Users must first perform an intermediate upgrade to 1.3.1, and then an upgrade to 2.1.4.0 code. Please reference the latest 1600 upgrade guide P/N 321-327-B.

5. Version of Previous Release

Software Version **2.1.3.0**

6. Compatibility

This software release is managed with Java Device Manager (JDM) release 6.0.6.0

7. Changes in This Release

Old Features Removed From This Release

The CLI commands “`config license load license-file`” and “`show license`” are now obsolete and removed from the Command Line Interface (CLI). The Ethernet Routing Switch 1600 Series Software no longer supports the functionality provided by these commands. (Q01726115)

Problems Resolved in This Release

General

Packet forwarding through an ERS1648 that is installed with a Samsung-G SDRAM memory module, no longer results in malformed or corrupted packets. (Q01677236 and Q01692951)

Platform

The ERS 1600 now sends SNMP trap and syslog messages when the redundant power supply goes down. (Q01673859)

A warning message is now displayed on the CLI to inform users that VLAN configurations saved under legacy spanning tree mode (STP) will not work in RSTP/MSTP mode or vice-versa. (Q01730947)

When an ERS 1600 is operating in RSTP mode, the SMLT status on a single port SMLT (SLT) now changes to the correct operating state when the physical interface on that port is down. (Q01733502)

8. Outstanding Issues – To be resolved in a future release

Radius authentication will not succeed when the ERS 1600 is configured to use a circuitless-ip-interface (CLIP) as the source IP address in the radius packets. (Q01669867)

The command “show qos policy” does not display the total number of policies configured. (Q01677490)

9. Known Limitations - Operation not to be changed

None

10. Documentation Corrections

None

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Ethernet Routing Switch 1600

Software Release 2.1.3.0

1. Release Summary

Release Date: 25-Jul-2007

Purpose: Software maintenance release to address customer found software issues.

2. Important Notes before Upgrading to This Release

Please reference bulletin 2007007921 Rev 2, for important information regarding upgrading any 1600 switch from 1.x code to 2.x code, before performing any such upgrade. This same information is also included in the most recent version of the Upgrade Guide (P/N 321327-B).

3. Platforms Supported

Ethernet Routing Switch 1600; ERS1648, ERS1612, ERS1624

Please refer to the following document for more details on the ERS 1600 Platform

Release Notes for the Ethernet Routing Switch 1600 Series Switch Software Release 2.1 (Part No. 316859-J)

Managing Platform Operations Ethernet Routing Switch 1600 Series Software Release 2.1 (Part No. 321817-A)

4. Notes for Upgrade

Please see Release Notes for the Ethernet Routing Switch 1600 Series Switch Software Release 2.1 (Part No. 316859-J) and Upgrading to Ethernet Routing Switch 1600 Software Release 2.1 (Part No. 321327-B) at <http://www.nortel.com/support> (select Passport family) for details on how to upgrade your Ethernet Routing Switch 1600

File Names for This Release

File Name	Module or File Type	File Size (bytes)
p16b2130.img	Boot monitor image	
p16a2130.img	Runtime image	
p16c2130.img	3DES encryption module for SSH	
p16c2130.des	DES SNMPv3 encryption module	

p16a2130.mib	MIB	
p16a2130.mib.zip	MIB (zip file)	
p16a2130.md5	md5 checksum file	
p16b2130.had	Boot image, pre-boot-monitor code	
p16a1310.img	Intermediate software used during upgrades from 1.x to 2.x software	

Note: A direct upgrade from code releases prior to 1.3.x to 2.1.3.0 is not supported. Users must first perform an intermediate upgrade to 1.3.1, and then an upgrade to 2.1.3.0 code. Please reference the latest 1600 upgrade guide P/N 321-327-B.

5. Version of Previous Release

Software Version **2.1.2.0**

6. Compatibility

This software release is managed with Java Device Manager (JDM) release 6.0.6.0

7. Changes in This Release

New Features in This Release

Support for Traffic Conditioning, Policing and Egress Traffic Shaping

The ERS 1600 software release 2.1.3.0 now supports Traffic Conditioning, Policing and Shaping. For a detailed description of the feature along with configuration examples, please refer to the document “Configuring QoS and Filters using CLI and Device Manager (321822-B).

Force Trap-Sender configuration (Q01640753)

The ERS 1600 release 2.1.3.0 now supports a configurable option which when enabled, forces all SNMP traps to use a pre-configured IP address as the agent IP address. The agent IP address is a field inside the SNMP Trap packet and is visible only when the traps are sent out in SNMPv1 format. The pre-configured IP address must be a circuit-less IP interface address (also referred to as CLIP). The CLIP address is configured using a separate CLI command “`config ip circuitless-ip-int`”. This CLIP address is then specified as the source-address in the CLI command given below.

The force trap-sender configuration is disabled by default.

Command Line Interface

The following CLI commands are introduced for this feature.

From Runtime CLI:

```
config sys set snmp force-trap-sender <true|false>
config sys set snmp sender-ip <target-addr> <source-addr>
```

From Device Manager:

This command is available under the “Edit-Chassis” tab.

NOTE: When setting the force-trap-sender to TRUE, it should be noted that the SNMP agent IP address inside the Trap packet and the source IP address of the UDP/IP packet might be different. Some SNMP managers do not process packets with this mismatch. Users should take care to configure the sender-ip accordingly and/or change the setting on their SNMP managers to ignore this mismatch.

NOTE: This applies only to traps that are sent out in SNMPv1 format. The SNMPv2c format does not have the agent ip address field inside the trap packet.

Support for BX SFPs (Q01616302)

The ERS 1600 release 2.1.3.0 now properly detects and supports BX SFPs. These SFPs are identified by the Nortel part numbers AA1419069 and AA1419070.

NOTE: In order to ensure proper operation, a BX SFP should be paired with another BX SFP only.

Problems Resolved in This Release

IP Unicast

The ARP entries on the ERS 1600 are now properly aged out when the corresponding MAC address entry in the FDB table ages out, for static routes. This is an extension of CR Q01525511 added in the 2.1.2.0 release.(Q01656886)

IP Multicast

The ERS 1600 now properly decrements the TTL (Time-to-live) value in the IP header of all IP multicast-routed packets. (Q01616122).

NOTE: See the Known limitations section for a detailed description of a limitation related to this issue.

The ERS 1600 no longer becomes unstable when IP multicast sessions become inactive and the corresponding S,G entries on the ERS 1600 are aged out. (Q01613940)

Platform

The ERS 1600 software now displays additional helpful information in the error message whenever there is an error in a file transfer from or to the switch using the TFTP protocol. (Q01617332)

8. Outstanding Issues – To be resolved in a future release

Radius authentication will not succeed when the ERS 1600 is configured to use a circuitless-ip-interface (CLIP) as the source IP address in the radius packets. (Q01669867)

9. Known Limitations - Operation not to be changed

The ERS 1600 decrements the TTL for bridged IP multicast packets also if the configuration is such that the VLAN has PIM enabled on it and if the Sender and Receiver are in the same VLAN. (Q01616122)

When an ERS 1600 is configured for Traffic Policing and if multiple flow-classifier (filter) rules are attached to the same policing account, then the packet/octet count will be displayed equally for all the rules even if the traffic profile matches only some of the rules. In order to see unique statistics for each rule, please use separate policing accounts for each rule or configure the rule for just statistics collection. (Q01681351)

When configuring traffic policing on the ERS 1600, then some values of CIR and PIR may not be accurately metered. In order to avoid this behavior, it is recommended to configure CIR and PIR as equal or else set the PIR value to be at least 10% higher than the CIR value. This does not apply to CBS/PBS values. If CBS and PBS values are not specified when creating the policy, the software automatically calculates them as 1.5 times the value of CIR and PIR expressed in Kilobytes.(Q01677632)

10. Documentation Corrections

There is a new version of the “Managing Platform Operations” manual (321817-B) with corrections to the port mirroring section of Chapter 3.

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Ethernet Routing Switch 1600

Software Release 2.1.2.0

1. Release Summary

Release Date: 19-Apr-2007

Purpose: Software maintenance release to address customer found software issues.

2. Important Notes before Upgrading to This Release

Please reference CSB 022158-01 for important information regarding upgrading any 1600 switch from 1.x code to 2.x code, before performing any such upgrade. This same information will soon be included in an updated version of the Upgrade Guide (P/N 321327-B).

3. Platforms Supported

Ethernet Routing Switch 1600; ERS1648, ERS1612, ERS1624

Please refer to the following document for more details on the ERS 1600 Platform

Release Notes for the Ethernet Routing Switch 1600 Series Switch Software Release 2.1 (Part No. 316859-J)

Managing Platform Operations Ethernet Routing Switch 1600 Series Software Release 2.1 (Part No. 321817-A)

4. Notes for Upgrade

Please see Release Notes for the Ethernet Routing Switch 1600 Series Switch Software Release 2.1 (Part No. 316859-J) and Upgrading to Ethernet Routing Switch 1600 Software Release 2.1 (Part No. 321327-B) at

<http://www.nortel.com/support> (select Passport family) for details on how to upgrade your Ethernet Routing Switch 1600

File Names for This Release

File Name	Module or File Type	File Size (bytes)
p16b2120.img	Boot monitor image	1572160
p16a2120.img	Runtime image	5561432
p16c2120.img	3DES encryption module for SSH	52472
p16c2120.des	DES SNMPv3 encryption module	8638
p16a2120.mib	MIB	2342992

p16a2120.mib.zip	MIB (zip file)	374317
p16a2120.md5	md5 checksum file	388
p16b2120.had	Boot image, pre-boot-monitor code	162376

Note: A direct upgrade from code releases prior to 1.3.x to 2.1.2.0 is not supported. Users must first perform an intermediate upgrade to 1.3.1, and then an upgrade to 2.1.2.0 code. Direct upgrades from any 2.x release to 2.1.x release are fully supported.

5. Version of Previous Release

Software Version **2.1.1.0**

6. Compatibility

This software release is managed with Java Device Manager (JDM) release 6.0.0.0 or higher.

7. Changes in This Release

New Features in This Release

Change in SFP Vendor Recognition Procedure (Q01531763)

Starting with this release, the vendor information for all supported SFPs listed in the release notes for Release 2.1.1.0 (Part No. 316859-J) is now displayed correctly. The vendor names for the SFPs will be displayed either as "NORTEL" or the name of the actual vendor.

The CLI command to display the SFP related information is:

```
show port info config [<port number>]
```

Support for Multi-homed interfaces and ARP aging for multi-homed scenarios (Q01525511)

Starting with this release the ERS 1600 now supports external I/O devices that have multi-homed interfaces; one MAC address-multiple IP addresses. In such scenarios, multiple ARP entries having different IP addresses but mapping to the same MAC address are added to the system ARP table and per VLAN FDB table on the ERS 1600. The ERS 1600 has also the ability to route traffic to these multi-homed destinations. Software support has also been added to implement proper ARP/FDB aging for these entries.

Command Line Interface

There is no new CLI command for this feature.

Auto-boot stop character (Q01570117)

Starting with ERS 1600 release 2.1.2.0, customers who are using modems connected to the serial console port of a 1648T and also are using the autoboot functionality provided by the ERS 1600 boot monitor image, need to configure a new CLI command called "**autoboot-stop**". This command allows users to choose the auto-boot terminating character from one of two possible values. The possible values are "**escape-char**" or "**default**". The "default" setting will stop the auto-boot process only if a carriage return (<enter> key) is pressed. The escape-char option expects the user to press the "Esc" key on the keyboard to stop the autoboot process. This extra setting

should only be applicable to those configurations where an external modem is connected to the serial console port of a 1648T. Without this setting, a re-boot of a 1648T with such a configuration may cause the 1648T to go into monitor mode instead of completing auto-boot, in which case manual intervention is needed.

The default value of the autoboot-stop is “**default**”. That is, the <enter> key is expected to stop the autoboot process.

Command Line Interface

The following CLI commands have been introduced for this feature.

From runtime CLI:

```
config bootconfig flags autoboot-stop <escape-char | default>
```

From bootmonitor CLI:

```
flags autoboot-stop <escape-char | default>
```

Problems Resolved in This Release

Platform

General

The LED on the management port of the ERS 1612 and ERS 1624 switches now reflects the correct operating speed of the management port when set for auto-negotiation enabled. That is, the LED will now be in on state for auto-negotiation to 100Mbps and be in off state for auto-negotiation to 10 Mbps (Q01492222)

The ERS 1600 switch will no longer become unstable when the “show tech” CLI command is executed multiple times in quick succession after turning off the CLI “more” flag.(Q01532756)

Network Management

SNMP

The ERS 1600 software no longer pads RFC 3418 SNMP traps with a numerical 0 at the end of the OID field. (Q01574460)

The ERS 1600 now sends the proper response to SNMP Get request for the OID 1.3.6.1.2.1.17.4.3.1.1(per VLAN FDB table) (Q01575959)

8. Outstanding Issues – To be resolved in future release

The TTL for IP multicast traffic is not properly decremented on the ERS 1600. (Q01616122)

The OSPF adjacency process between two ERS 1600s is stuck in the ExStart state if a VRRP virtual address is configured on an ERS 1600 and it matches with the interface address configured on that box. (Q01619014)

9. Known Limitations- Operation not to be changed

The CPU utilization on the ERS1612 or ERS 1624 can reach very high levels if a physical link is established between the gigabit ports of the ERS 1600 and certain SFP types on the externally connected device and when the port is admin disabled on the ERS 1600. This problem is seen even with some

Nortel approved SFPs. It is recommended to also remove the fiber whenever the port is administratively disabled, or to potentially change the SFP type.(Q01578659)
An error message is displayed on the console when the management port state is toggled and a ping command is issued immediately after toggling the state. However, there is no loss of connectivity and the error message is also not seen again till the port state is toggled. (Q01495200)

Please also see Known Limitations and considerations in this release section of Release Notes for the Ethernet Routing Switch 1600 Series Switch Software Release 2.1 (Part No. 316859-J) for other limitations.

10. Documentation Corrections

NONE.

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Ethernet Routing Switch 1600

Software Release 2.1.1.0

1. Release Summary

Release Date: 19-Dec-2006

Purpose: Software maintenance release to address customer found software issues.

2. Important Notes before Upgrading to This Release

None.

3. Platforms Supported

Ethernet Routing Switch 1600; ERS1648, ERS1612, ERS1624

Please refer to the following document for more details on the ERS 1600 Platform

Release Notes for the Ethernet Routing Switch 1600 Series Switch Software Release 2.1 (Part No. 316859-J)

Managing Platform Operations Ethernet Routing Switch 1600 Series Software Release 2.1 (Part No. 321817-A)

4. Notes for Upgrade

Please see Release Notes for the Ethernet Routing Switch 1600 Series Switch Software Release 2.1 (Part No. 316859-J) and Upgrading to Ethernet Routing Switch 1600 Software Release 2.1 (Part No. 321327-B) at <http://www.nortel.com/support> (select Passport family) for details on how to upgrade your Ethernet Routing Switch 1600

File Names for This Release

File Name	Module or File Type	File Size (bytes)
p16b2110.img	Boot monitor image	1571808
p16a2110.img	Runtime image	5559935
p16c2110.img	3DES encryption module for SSH	52472
p16c2110.des	DES SNMPv3 encryption module	8638
p16a2110.mib	MIB	2342992
p16a2110.mib.zip	MIB (zip file)	374317

p16a2110.md5	md5 checksum file	435
p16b2110.had	Boot image, pre-boot-monitor code	162376

A direct upgrade from code releases prior to 1.3.x to 2.1.1 is not supported. User must first perform an intermediate upgrade to 1.3.1, and then an upgrade to 2.1.1 code.

5. Version of Previous Release

Software Version **2.1.0.1**

6. Compatibility

This software release is managed with Java Device Manager (JDM) release **6.0.0.0**

7. Changes in This Release

New Features in This Release

Directed Broadcast suppression (Q01329829)

The ERS 1600 does not support routing of subnet broadcast traffic (also referred to as directed broadcasts). However, in previous code releases, packets sent to the broadcast address of the subnet are copied to the CPU by the hardware, as well as flooded within the VLAN.

The purpose of this new feature is to protect the CPU from such broadcast packets. When this feature is enabled, all packets destined to the subnet broadcast address of a locally configured VLAN are dropped by the hardware, within the affected VLAN. If the feature is disabled, subnet broadcasts will be sent to the CPU and the switch will also flood the packets to all the ports of the local VLAN. The feature is enabled by default on all VLANs where an IP address is assigned to the VLAN. This will be the case for all VLANs after an upgrade to release 2.1.1.0 as this involves support for a new CLI command.

NOTE: It is recommended to leave this feature enabled in order to protect the CPU from subnet broadcast packets.

New Command Line Interface for Directed-Broadcast Suppression

```
config vlan <vlan-id> ip directed-broadcast <enable/disable>
```

NOTE: There is no JDM support for this feature in the current release. This command is only available through CLI.

PIM-SM Static RP support (Q01329813)

The ERS 1600 now supports the PIM-SM static RP configuration. The Rendezvous Point (RP) can now be statically configured via CLI. The CLI commands for configuring static-RP are listed below:

Command Line Interface

```
config ip pim static-rp add grp <value> mask <value> rp <value>
config ip pim static-rp enable
```

```
config ip pim static-rp disable
```

```
config ip pim static-rp delete grp <value> mask <value> rp <value>
config ip pim static-rp info
```

NOTE: There is no JDM support for this feature in the current release. This command is only available through CLI

Old Features Removed From This Release

The commands “config bootconfig net mgmt bootp <enable|disable>” and “show boot bootp” are now obsolete and removed from the Command Line Interface (CLI). The Ethernet Routing Switch 1600 Series Software no longer supports the functionality provided by these commands. (Q01412155).

NOTE: While upgrading from Software Release 2.1.0.0, the bootp option setting (still viable with CLI) should not be saved in the existing boot configuration file. If done, the switch may not boot-up successfully. In order to achieve this, please leave the bootp setting in its default state (enable) and then save the boot configuration. The command to do this is “*config bootconfig net mgmt bootp enable*” from the runtime CLI.

NOTE: Enabling or disabling this option through JDM 6.0.0.0 will not have any effect. The operation will be indicated as successful but the configuration will be ignored by the runtime software. Any appropriate action must be done via the CLI.

The CLI commands “config ip mroute static-source-group” and “show ip mroute static-source-group” are now obsolete and removed from the Command Line Interface (CLI). The Ethernet Routing Switch 1600 Series Software no longer supports the functionality provided by these commands. (Q01505266)

NOTE: Configuring the static-source-group option through JDM 6.0.0.0, as the options are still incorrectly shown within JDM, will not have any effect. The operation will be indicated as successful but the configuration will be ignored by the runtime software.

Problems Resolved in This Release

Layer-2 Switching

General

A loss of connectivity no longer occurs when an MLT is associated with a VLAN whose vlan-Id is potentially between 1 and 20. (Q01427568)

MSTP/RSTP

The ERS 1600 now follows the IEEE 802.1s standard. When multiple VLANs and multiple MSTP instances are configured, the port membership in individual MST instances is now determined according to the VLAN port membership within those MST instances. (Q01172319)

Platform

General

The maximum configurable value for CP-limit has now been changed to 5000. This change applies to both broadcast and multicast traffic. However, the default setting is kept at 1700. (Q01485638)

NOTE: It is recommended to leave the CP-limit setting at the default value of 1700. Changing the CP-limit setting to a value greater than 3000 might lead to system instability in certain cases depending on the traffic patterns and the existing CPU utilization.

IP Unicast

General

The DHCP agent on the ERS1600 now always forwards the DHCP ACK back to the DHCP client. (Q01494928)

8. Outstanding Issues-To be resolved in future release

An error message is displayed on the console when the management port state is toggled and a ping command is issued immediately after toggling the state. However, there is no loss of connectivity and the error message is also not seen again till the port state is toggled. (Q01495200)

The LED status indicating the operating speed on the management port of an ERS1612 or ERS1624 remains active even when the port is operating in 10Mbps mode. (Q01492222)

9. Known Limitations-Operation not to be changed

IP destination filters configured via the CLI command "*config flow-classifier dst_ip <ipaddr> action enable*" apply only to host IP addresses (/32 prefixes) and not to network or subnet IP addresses. (Q01216945)

In an SMLT environment, station movement from one IST core to another IST core is not detected if the station continues to send traffic immediately after the move and before the FDB expiration happens on the previous core IST box. In such cases, the FDB entries on the core IST boxes are never aged out and continue to point incorrectly. The only workaround at this point of time is to stop the station from sending traffic for duration equal to the FDB expiry timer configured on the VLAN. . If such moves are made at the L2 edge switch, i.e. from one switch to another, the time to move is generally greater than the default FDB age-out time (300 seconds) which can be made smaller, plus during such movements, the station is generally no longer connected to the network, and therefore can not continue to send traffic. Wireless traffic could be an exception, especially if APs live off different L2 switches configured as part of the SMLT network. There are no plans to change this operation, so care should be taken in how 1600 SMLT networks are designed. (Q01447502/Q01379448)

The BPDUs of the default STG (STG id 1) are never tagged even when they egress from a tagged port. So, on the ERS1600, the "discard-untagged-frames" option should not be enabled on ports which are likely to receive BPDUs of the default STG. Otherwise, the BPDUs of the default STG will be dropped and this can lead to a Spanning tree loop.(Q01486549)

In an SMLT environment, multicast traffic looping can happen when multiple senders with IP addresses in the same subnet start sending traffic to the same group and if the senders are attached to the IST core boxes. Do not create such multicast configurations.(Q01497223)

The ERS 1600 does not support the option to read the operating temperature of the chassis. (Q01416152)

The Flow Classification feature on the ERS 1600 does not support modification or re-marking of IP fragmented packets. (Q01456199).

Please also see Known Limitations and considerations in this release section of Release Notes for the Ethernet Routing Switch 1600 Series Switch Software Release 2.1 (Part No. 316859-J) for other limitations.

10. Documentation Corrections

In the document, "Configuring IP Routing and Multicast Operations using the CLI Ethernet Routing Switch 1600 Series", Software Release 2.1 321711-B Rev 01, Page 160, the configuration required to cause an ERS1600 running the RIP protocol to send a default route has not been documented correctly. The correct configuration should be:

```
config vlan<vlanId> ip rip enable
```

```
config vlan <vlanId> ip rip default-supply enable
config vlan <vlanId> ip rip supply enable
```

on all VLAN interfaces required to supply a default route. In addition, a route policy configuration is also required where the default route exists in the route table, but is generated from protocols other than RIP or is statically configured by the administrator. The route policy configuration required for this purpose is:

```
config ip route-policy <policy-name> seq 1 create
config ip route-policy <policy-name> seq 1 enable
config ip route-policy <policy-name> seq 1 action permit
config ip route-policy <policy-name> seq 1 match-route-type <route-type>
config ip route-policy <policy-name> seq 1 match-protocol <protocol-name>
```

and

```
config ip rip interface <interface-address> out-policy <policy-name>
```

on all interfaces that need to announce the default route. (Q01492646)

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Ethernet Routing Switch 1600

Software Release 2.1.0.1

1. Release Summary

Release Date: 29-Aug-2006

Purpose: Software patch release to address critical software issues.

2. Important Notes before Upgrading to This Release

None.

3. Platforms Supported

Ethernet Routing Switch 1600

Please refer to the following document for more details on the ERS 1600 Platform

Release Notes for the Ethernet Routing Switch 1600 Series Switch Software Release 2.1 (Part No. 316859-J)

Managing Platform Operations Ethernet Routing Switch 1600 Series Software Release 2.1 (Part No. 321817-A)

4. Notes for Upgrade

Please see Release Notes for the Ethernet Routing Switch 1600 Series Switch Software Release 2.1 (Part No. 316859-J) and Upgrading to Ethernet Routing Switch 1600 Software Release 2.1 (Part No. 321327-B) at <http://www.nortel.com/support> (select Passport family) for details on how to upgrade your Ethernet Routing Switch 1600

File Names for This Release

File Name	Module or File Type	File Size (bytes)
p16b2101.img	Boot monitor image	
p16a2101.img	Runtime image	
p16c2101.img	3DES encryption module for SSH	
p16c2101.des	DES SNMPv3 encryption module	
p16a2101.mib	MIB	
p16a2101.mib.zip	MIB (zip file)	

p16a2101.md5	md5 checksum file	
p16b2101.had	Boot image, pre-boot-monitor code	

5. Version of Previous Release

Software Version **2.1.0.0**

6. Compatibility

This software release is managed with Java Device Manager (JDM) release **6.0.0.0**

7. Changes in This Release

New Features in This Release

None.

Old Features Removed From This Release

None.

Problems Resolved in This Release

Switch Management

General

The commands “config bootconfig net mgmt bootp <enable|disable>” and “show boot bootp” are now obsolete and removed from the Command Line Interface (CLI). The Ethernet Routing Switch 1600 Series Software no longer supports the functionality provided by these commands. (Q01412279).

NOTE: Enabling or disabling this option through JDM 6.0.0.0 will not have any effect. The operation will be indicated as successful but the configuration will be ignored by the runtime software.

NOTE: While upgrading from Software Release 2.1.0.0, the bootp setting should not be saved in the existing boot configuration file. In order to achieve this, please leave the bootp setting in its default state (enable) and then save the boot configuration. The command to do this is “config bootconfig net mgmt bootp enable” from the runtime CLI.

The optional parameter “slot-id” to the command “config bootconfig net mgmt ip” has been removed because the slot-id does not apply to the ERS 1600 chassis which has only a single slot. (Q01412289).

8. Outstanding Issues – to be resolved in future release

None.

9. Known Limitations – Operation not to be changed

Please see Known Limitations and considerations in this release section of Release Notes for the Ethernet Routing Switch 1600 Series Switch Software Release 2.1 (Part No. 316859-J)

10. Documentation Corrections

None.

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