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Virtual Services Platform 9000 Software Release 4.0.1.1

1. Release Summary

Release Date: July 2015
Purpose: Software release to address customer found software issues.

2. Important Notes before Upgrading to This Release

None.

3. Platforms Supported

Virtual Services Platform 9000 (all models)

4. Special Instructions for Upgrade from previous releases

None.

5. Notes for Upgrade

Please see "*Virtual Services Platform 9000, Release Notes*" for software release 4.0.1 (NN46250-401, 02.02) available at http://www.avaya.com/support for details on how to upgrade your Switch.

File Names For This Release

File Name	Module or File Type	File Size (bytes)
VSP9K.4.0.1.1.tgz	Release 4.0.1.1 archived software distribution	176202319
VSP9K.4.0.1.1_modules.tgz	Release 4.0.1.1 Encryption Modules	41902
VSP9K.4.0.1.1_mib.zip	Archive of all MIB files	813662
VSP9K.4.0.1.1_mib.txt	MIB file	5413096
VSP9K.4.0.1.1_mib_sup.txt	MIB file	875237
VSP9000v401_HELP_EDM_gzip.zip	EDM Help file	4065789
VSP9000v4.0.1.1.zip	EDM plug-in for v4.0.1.1/vsp9000	5824709
VSP9K.4.0.1.1.md5	MD5 Checksums	586

Note about image download:

Ensure images are downloaded using the binary file transfer. Perform MD5 checksum check on downloaded files to ensure file integrity.

Check that the file type suffix is ".tgz" and the image names after download to device match those shown in the above table. Some download utilities have been observed to append ".tar" to the file name or change the filename extension from ".tgz" to ".tar". If file type suffix is ".tar" or file name does not exactly match the names shown in above table, rename the downloaded file to the name shown in the table above so that the activation procedures will operate properly.

Load activation procedure:

software add VSP9K.4.0.1.1.tgz
software add-modules 4.0.1.1.GA VSP9K.4.0.1.1_modules.tgz
software activate 4.0.1.1.GA

6. Version of Previous Release

Software Version 4.0.0.0, 4.0.1.0

7. Compatibility

8. Changes in 4.0.1.1

New Features in This Release

Slice Local Mirroring

An alternative "slice" method of doing port mirroring is added to supplement diag port mirroring to provide higher performance mirroring with restriction that ports must be local to the same slice.
The new "scope" field is added to the existing diag port mirroring command. If "scope" is not specified, it will be defaulted to "chassis" scope for the existing diag port mirroring functionality.
"scope" must be explicitly specified as "slice" to select the alternative way of port mirroring. The slice port mirroring is currently supported only on legacy card (9024XL) and is not supported on 9048GB and 9048GT or on Avaya next generation cards such as 9048XS-2 and 9012QQ-2.

The CLI command has following format,
(config)mirror-by-port 1 in-port {slot/port} out-port {slot/port} mode {rx/tx/both} ***scope {chassis|slice}***

```
VSP-9010:1(config)#Mirror-by-port 1 in-port 3/9 outport 3/16 mode rx ?
        enable                      Enable port mirroring
        remote-mirror-vlan-id       Set remote mirror vlan id
        scope                       Set port mirroring scope, chassis is the regular port
                                    Mirroring and slice is port mirroring with restriction
        <cr>
```

For a port mirroring instance defined as slice, the following configuration restrictions apply:

1). Both mirroring port and mirrored port are required to be on the same slot/slice. Port mapping from individual ports to slices is listed below.

For a 24-port 10G card (9024XL), there are three slices per card with 8 ports per slice:
Slice 0: port 1 - 8
Slice 1: port 9 - 16
Slice 2: port 17 – 24

For Example:

VSP-9010:1(config)#mirror-by-port 1 in-port 3/9 out-port 3/21 mode rx scope slice

Error: In-port and out-port should be on the same slot and slice for slice port mirroring

2). When configuring in-port (mirrored port) and out-port (mirroring port), a single port instead of port list must be supplied. Many to one port mirroring can be achieved by configuring multiple instances with the same destination port.

For example, if we want to monitor 4 ports via a single port on a 9024XL module, e.g., to use port 3/16 to monitor received traffic on ports 3/9 - 3/12, we can use multiple slice mirror instances as follows.

(config)mirror-by- port 1 in-port 3/9 out-port 3/16 scope slice
(config)mirror-by-port 2 in-port 3/10 out-port 3/16 scope slice
(config)mirror-by-port 3 in-port 3/11 out-port 3/16 scope slice
(config)mirror-by-port 4 in-port 3/12 out-port 3/16 scope slice

```
================================================================================
                            Diag Mirror-By-Port
================================================================================
ID   MIRRORED_PORT   MIRRORING_DEST  ENABLE   MODE  REMOTE-MIRROR   DSCP TTL SCOPE
                                                      VLAN-ID
--------------------------------------------------------------------------------
1    3/9             3/16            true     rx         0          0    64 slice
2    3/10            3/16            true     rx         0          0    64 slice
3    3/11            3/16            true     rx         0          0    64 slice
4    3/12            3/16            true     rx         0          0    64 slice

All 4 out of 4 Total Num of MirIds displayed
```

3). Up to 4 mirroring instances per slice are supported. To monitor a different slice port once 4 are defined, an existing one needs to be removed first.

```
VSP-9010:1(config)#mirror-by-port 5 in-port 3/13 out-port 3/15 mode both scope slice

Error: Only 4 slice port mirroring instances are allowed per slice.

VSP-9010:1(config)#no mirror-by-port 4
VSP-9010:1(config)#mirror-by-port 5 in-port 3/13 out-port 3/15 mode both scope slice
VSP-9010:1(config)#show mirror-by-port

================================================================================
                              Diag Mirror-By-Port
================================================================================
ID   MIRRORED_PORT   MIRRORING_DEST  ENABLE   MODE  REMOTE-MIRROR   DSCP TTL SCOPE
                                                      VLAN-ID
--------------------------------------------------------------------------------
1    3/9             3/16            true     rx         0          0    64 slice
2    3/10            3/16            true     rx         0          0    64 slice
3    3/11            3/16            true     rx         0          0    64 slice
5    3/13            3/15            true     both       0          0    64 slice

All 4 out of 4 Total Num of MirIds displayed
```

4). For an existing slice port mirroring instance, only two types of modifications are allowed. One is to enable/disable that instance and the other is to change the monitor mode, i.e., to choose among rx, tx, and both. To change the values of other parameters such as mirroring port and mirrored port, the instance must be deleted first then recreated with the desired parameters.

```
VSP-9010:1(config)#no mirror-by-port 1 enable
VSP-9010:1(config)#mirror-by-port 1 mode tx
VSP-9010:1(config)#mirror-by-port 1 enable
VSP-9010:1(config)#show mirror-by-port

================================================================================
                              Diag Mirror-By-Port
================================================================================
ID   MIRRORED_PORT   MIRRORING_DEST  ENABLE   MODE  REMOTE-MIRROR   DSCP TTL SCOPE
                                                      VLAN-ID
--------------------------------------------------------------------------------
1    3/9             3/16            true     tx         0          0    64 slice
2    3/10            3/16            true     rx         0          0    64 slice
3    3/11            3/16            true     rx         0          0    64 slice
5    3/13            3/15            true     both       0          0    64 slice
```

```
      All 4 out of 4 Total Num of MirIds displayed
```

5). Of the 4 possible instances of scope slice port mirroring per slice, a maximum of two mirrors can be configured with Both and/or Tx mode, each of which may have different mirror-to ports.

```
VSP-9010:1#sho mirror-by-port

================================================================================
                              Diag Mirror-By-Port
================================================================================
ID   MIRRORED_PORT   MIRRORING_DEST  ENABLE   MODE  REMOTE-MIRROR   DSCP TTL SCOPE
                                                      VLAN-ID
--------------------------------------------------------------------------------
1    5/1             5/5             true     tx         0          0    64 slice
3    5/2             5/6             true     rx         0          0    64 slice
4    5/4             5/8             true     tx         0          0    64 slice
5    5/9             5/10            true     both       0          0    64 slice
6    5/11            5/12            true     both       0          0    64 slice
7    5/13            5/14            true     rx         0          0    64 slice
8    5/15            5/16            true     rx         0          0    64 slice
9    5/17            5/24            true     both       0          0    64 slice
10   5/18            5/24            true     both       0          0    64 slice
11   5/19            5/24            true     both       0          0    64 slice
12   5/20            5/24            true     both       0          0    64 slice
111  4/1             3/8             true     both       0          0    64 chassis

All 12 out of 12 Total Num of MirIds displayed

VSP-9010:1(config)#mirror-by-port 2 in-port 5/3 out-port 5/7 mode both scope slice

Error: Maximum two mirrors of scope Slice supported if multiple Both/Tx mode mirrors
configured, each for different mirror-to ports.

VSP-9010:1(config)#mirror-by-port 2 in-port 5/3 out-port 5/7 mode rx scope slice
VSP-9010:1(config)#show mirror-by-port

================================================================================
                              Diag Mirror-By-Port
================================================================================
ID   MIRRORED_PORT   MIRRORING_DEST  ENABLE   MODE  REMOTE-MIRROR   DSCP TTL SCOPE
                                                      VLAN-ID
--------------------------------------------------------------------------------
1    5/1             5/5             false    tx         0          0    64 slice
```

```
2     5/3              5/7              true      rx         0           0     64 slice
3     5/2              5/6              true      rx         0           0     64 slice
4     5/4              5/8              true      tx         0           0     64 slice
5     5/9              5/10             true      both       0           0     64 slice
6     5/11             5/12             true      both       0           0     64 slice
7     5/13             5/14             true      rx         0           0     64 slice
8     5/15             5/16             true      rx         0           0     64 slice
9     5/17             5/24             true      both       0           0     64 slice
10    5/18             5/24             true      both       0           0     64 slice
11    5/19             5/24             true      both       0           0     64 slice
12    5/20             5/24             true      both       0           0     64 slice
111   4/1              3/8              true      both       0           0     64 chassis

All 13 out of 13 Total Num of MirIds displayed
```

6). Diag port mirroring (scope equals chassis) and slice port mirroring (scope equals slice) can co-exist on the same IO module. For slice mirroring the scaling is as described in the previous sections. For chassis mirroring the total number of mirroring instances is the same as current supported range from 1 to 479. Please see ID 111 in example output shown above.

MIB change:

New MIB instance added to the existing rcDiagMirrorByPortTable

```
rcDiagMirrorByPortScope OBJECT-TYPE
    SYNTAX      INTEGER {
                chassis(1),
                slice(2)
            }
    MAX-ACCESS          read-create
    STATUS      current
    DESCRIPTION    "Used to configure the port mirroring scope.
                chassis is the default option which allows
                mirroring among ports from different slots.
                slice option requires both mirroring and
                mirrored ports to be within the same slice.
                Scope configuration only allowed in creation
                but cannot be changed unless recreate."
    DEFVAL      { chassis }
    ::= { rcDiagMirrorByPortEntry 20 }
```

Migration Considerations

Slice local port mirroring configuration must be removed when migrating to a Release that does not support this functionality.

Old Features Removed From This Release

Problems Resolved in This Release

ID	Description
wi01198702	Removed EFS (Egress Fabric Shaper) error messages (see below) as these are transient non-service impacting events and added an error counter to the output of "show khi forwarding zagros" ACLI command. IO7 [11/13/14 10:37:46.880] 0x00170601 00000000 GlobalRouter COP-SW ERROR K2-0 Zag-1 EFS Error Addr = 0xf94, Data = 0x0 "show khi forwarding zagros" adds per lane counters: ========== Health Indicator Ports 5-8 Ports 13-16 Ports 21-24 ========== ... ... EFS Internal Err index1 10 0 0 ... ... ==========
wi01201308	Added support to detect and fix IO Module L2X table parity error.
wi01205757 wi01216309	When the log file instance is greater than 999, a wraparound error occurs. Logger starts appending to existing files and continues writing to the end of the next present file until it is full. There are circumstances where the log file instance will also go beyond 1000 and continue to create new files until the flash is full. Fix makes sure the file instance wraps at 999 and also checks when moving to new file to see if the file already exists and deletes it before continuing to log.
wi01207531	Traffic ingressing or egressing through the out-of-band management port at a high rate may trigger random Protocol out of profile log messages. Fix is to report the correct “protocol out of profile message” depending up on whether it is ingress-OAM or egress-OAM traffic and report the corresponding drops in “show khi cpp protocol-drops” command. VSP9K:1(config)#show khi cpp protocol-drops

	========== ========== KHI CPP Details - Protocol Drop Counters ========== ========== Protocol ID Discard Count --- INGRESS_OAM 89 EGRESS_OAM 40 Sample log messages: CP1 [01/21/15 21:02:11.003] 0x00024715 00000000 GlobalRouter CPU WARNING Protocol meter EGRESS_OAM has gone out-of-profile. CP1 [01/21/15 21:00:44.200] 0x00024715 00000000 GlobalRouter CPU WARNING Protocol meter INGRESS_OAM has gone out-of-profile.
wi01212265	VSP9000 may reset after sourcing an invalid configuration with LACP SMLT ActorOper Key=0. SSH sessions take more than two hours to be deleted even though the management link has been disabled and client sessions have been logged out.
wi01212274	ARP Entries learned over NNI tunnels are not aging out when a VSP7000 cluster peer is isolated. The ARP table will show an invalid port and no tunnel name associated.
wi01212448	9048XS-2 Datapath lockup possible when large number of MAC entries are moving and IST is configured between two 9048XS-2 ports.
wi01213284 wi01215569	Slice local port mirroring for 9024 modules only. See notes on new feature above. .
wi01217238	In VSP 9000 IST cluster deployments with mixed GEN1 and GEN2 IO modules and where the IST ports are configured on GEN2 IO modules, ARP entries may incorrectly point traffic toward the IST MLT when they should be pointing toward the SMLT on which it was learned, resulting in dropped packets. VSP 9000s with only one type module deployed (GEN1 or GEN2) will not experience this issue.
wi01218350	When the backup CP management port comes up, any telnet connection to the Virtual IP is reset.
wi01219674	Virtual BMAC not taken over by IST node when other node is down
wi01219993	SPBM Unicast-fib does not reflect the correct entries for the port BMACs

wi01221756	Multiple simultaneous TCP session connection requests and resets may cause chassis reset.
wi01223789	Unicast traffic ingressing a SMLT UNI port on a gen2 card destined across the SPB cloud may be dropped by intermediate SPB nodes due to Reverse Path Check verification failing. The failure is due to the gen2 card, which injects the traffic into the SPB cloud, using the configured Virtual BMAC address instead of the node's unique BMAC address as the source mac address of the packet. This problem does not exist if the UNI port is a non-smlt port, or if the ingress slot is a gen1 card. As the packet traverses the SPB cloud, each node performs Reverse Path Checking. If the node has calculated a different path to the source BMAC than the port on which the packet ingressed, the check fails. This scenario is possible when the Virtual BMAC is used as the source mac address of the SPB packet. The check will not fail if the nodal BMAC is used when the traffic is injected into the SPB cloud.
wi01224336 wi01226682	L3 packets ingressing on a gen2 IO module which would be routed matching a default route over an NNI interface are being dropped.

10. Outstanding Issues

Please see "Virtual Services Platform 9000, Release Notes" for software release 4.0.1 (NN46250-401, 02.02) available at http://www.avaya.com/support for details regarding Known Issues.

In addition, the following issues have been identified:

ID	Problem Description	Workaround

wi01226843	As part of upgrading the VSP9K software release, rebooting the chassis may cause a Gen-2 IO module to have inconsistent master CP state in each of its forwarding slices. This would result in packets going to the standby CP instead of the Master CP and control protocols and management applications terminating on that slice will not function properly.
	
	This condition will not occur on normal reset or power induced reboot of a chassis when software is not being updated.
	
	Show khi cpp port-statistics will show ports transmitting packets but not receiving packets. Example shows non-working slice 0 port 1-16 and working slice 2 port 33-48:
	
	`VSP9K#show khi cpp port-statistics 12/1,12/45`
	
	`KHI CPP Details - Port Statistics`
	
	`Ports Packet Type Rx Packets Tx Packets`
	`12/1 LLC_BPDU(128) 0 582`
	`12/1 LLC_TDP(134) 0 192`
	`12/45 LLC_BPDU(128) 1164 583`
	`12/45 LLC_TDP(134) 192 192`
	`12/45 LLC_ISIS(137) 0 153`
		Perform CPU switchover which will correct the inconsistency.

wi01230133	Customers may experience connectivity issues for devices across the SPB cloud in a L2VSN. Broadcast traffic ingressing a BEB's UNI port is not sent out NNI ports into the SPB cloud. This is only an issue in the case of broadcast traffic on a L2VSN ingressing a Gen-2 card that DOES NOT have a port configured as an NNI or as a part of an NNI MLT. An NNI MLT is any MLT with ISIS enabled including the IST MLT.	As a temporary work around ensure that at least one port on every Gen-2 module is configured as an NNI interface or as a part of an NNI MLT.

11. Known Limitations

Please see "Virtual Services Platform 9000, Release Notes" for software release 4.0.1 (NN46250-401, 02.02) available at http://www.avaya.com/support for details regarding Known Limitations.

12. Documentation Corrections

For other known issues, please refer to the product release notes and technical documentation available from the Avaya Technical Support web site at: http://www.avaya.com/support .