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## HA 对报告混合路径和四路径布线

[https://kb-cn-stage.netapp.com/on-prem/ontap/OHW/OHW-KBs/HA\\_Pair\\_reports\\_Mixed-path\\_with\\_Qu...](https://kb-cn-stage.netapp.com/on-prem/ontap/OHW/OHW-KBs/HA_Pair_reports_Mixed-path_with_Qu...)

Updated: Wed, 22 Apr 2026 07:30:31 GMT

### 适用场景

- FAS
- AFF

### 问题描述

Sysconfig -a 即使存储堆栈具有四个路径（四路径），也会报告为 **Mixed-Path**。

```
NetApp Release 9.7P7: Thu Aug 27 16:59:02 EDT 2020
```

```
System ID: XXXXXXXXXX (hostname02); partner ID: XXXXXXXXXXXX (hostname01)
```

```
System Serial Number: XXXXXXXXXXXXX (hostname02)
```

```
System Rev: A0
```

```
System Storage Configuration: Mixed-Path
```

```
System ACP Connectivity: Inband Active
```

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```
SAS2/SAS3 Mixed Stack Support: all
All-Flash Optimized: false
Capacity Optimized: false
All SAN Array: false
Backplane Part Number: 111-02392
Backplane Rev: A0
Backplane Serial Number: xxxxxxxxxxxx
slot 0: System Board 2.3 GHz (System Board XXI C1)
      Model Name:          FAS9000
```

EMS 日志还会显示以下警告：

```
Sun Feb 21 00:09:09 -0600 [hostname01: pmcsas_asyncd_1: sas.adapter.debug:info]:
params: {'debug_string': 'expander 5:00a098:bc2f570:3f is not self-configuring ...
ignoring attached expanders', 'adapterName': '10'}
Sun Feb 21 00:09:12 -0600 [hostname01: pmcsas_asyncd_0: sas.adapter.debug:info]:
params: {'debug_string': 'expander 5:00a098:d385b00:3f is not self-configuring ...
ignoring attached expanders', 'adapterName': '9'}
```

当您查看时 `sasadmin expander_map`，它会显示磁盘架的四个路径：

```
Expanders on channel 10a:
Level 1: WWN 500a098007dd6621, ID 11, Serial Number ' xxxxxxxxxxxx', Product
'DS46012IOM12A ', Rev '0260', Slot B
Level 1.1: WWN 500a098bc2f3203f, ID 103, Serial Number ' ', Product 'Traf
DCM ', Rev '0647', Slot B
Level 1.2: WWN 500a098bc297803f, ID 104, Serial Number ' ', Product 'Traf
DCM ', Rev '0647', Slot B
Level 1.3: WWN 500a098bc29c603f, ID 105, Serial Number ' ', Product 'Traf
DCM ', Rev '0647', Slot B
Level 1.4: WWN 500a098bc2f2203f, ID 202, Serial Number ' ', Product 'Traf
DCM ', Rev '0647', Slot B
Level 1.5: WWN 500a098bc2f3003f, ID 106, Serial Number ' ', Product 'Traf
DCM ', Rev '0647', Slot B
Level 2: WWN 500a098007f4243d, ID 12, Serial Number ' xxxxxxxxxxxx', Product
'DS46012IOM12A ', Rev '0260', Slot B
```

```

Level 2.1: WWN 500a098d3acd503f, ID 175, Serial Number '      ', Product 'Traf
DCM      ', Rev '0647', Slot B
Level 2.2: WWN 500a098d3acd703f, ID 207, Serial Number '      ', Product 'Traf
DCM      ', Rev '0647', Slot B
Level 2.3: WWN 500a098d3acdd03f, ID 153, Serial Number '      ', Product 'Traf
DCM      ', Rev '0647', Slot B
Level 2.4: WWN 500a098d3acdb03f, ID 121, Serial Number '      ', Product 'Traf
DCM      ', Rev '0647', Slot B
Level 2.5: WWN 500a098d3acd903f, ID 239, Serial Number '      ', Product 'Traf
DCM      ', Rev '0647', Slot B
Level   3: WWN 500a098007f43089, ID 13, Serial Number ' xxxxxxxxxxxx', Product
'DS46012IOM12A  ', Rev '0260', Slot B
Level 3.1: WWN 500a098d2b7a803f, ID 161, Serial Number '      ', Product 'Traf
DCM      ', Rev '0647', Slot B
Level 3.2: WWN 500a098d2b7a603f, ID 107, Serial Number '      ', Product 'Traf
DCM      ', Rev '0647', Slot B
Level 3.3: WWN 500a098d2b7a403f, ID 108, Serial Number '      ', Product 'Traf
DCM      ', Rev '0647', Slot B
Level 3.4: WWN 500a098d2cf9203f, ID 125, Serial Number '      ', Product 'Traf
DCM      ', Rev '0647', Slot B
Level 3.5: WWN 500a098d2cf9003f, ID 110, Serial Number '      ', Product 'Traf
DCM      ', Rev '0647', Slot B
Level   4: WWN 500a098007dd6489, ID 14, Serial Number ' xxxxxxxxxxxx', Product
'DS46012IOM12A  ', Rev '0260', Slot B
Level 4.1: WWN 500a098bc2f6603f, ID 134, Serial Number '      ', Product 'Traf
DCM      ', Rev '0647', Slot B
Level 4.2: WWN 500a098bc2f5603f, ID 137, Serial Number '      ', Product 'Traf
DCM      ', Rev '0647', Slot B
Level 4.3: WWN 500a098bc2e6c03f, ID 111, Serial Number '      ', Product 'Traf
DCM      ', Rev '0647', Slot B
Level 4.4: WWN 500a098bc2f5803f, ID 191, Serial Number '      ', Product 'Traf
DCM      ', Rev '0647', Slot B
Level 4.5: WWN 500a098bc2f5a03f, ID 223, Serial Number '      ', Product 'Traf
DCM      ', Rev '0647', Slot B
Level   5: WWN 500a098007f43285, ID 15, Serial Number ' xxxxxxxxxxxx', Product
'DS46012IOM12A  ', Rev '0260', Slot B
Level 5.1: WWN 500a098d3a3dc03f, ID 143, Serial Number '      ', Product 'Traf
DCM      ', Rev '0647', Slot B
Level 5.2: WWN 500a098d3859f03f, ID 225, Serial Number '      ', Product 'Traf
DCM      ', Rev '0647', Slot B

```

Level 5.3: WWN 500a098d3859d03f, ID 193, Serial Number ' ', Product 'Traf  
DCM ', Rev '0647', Slot B  
Level 5.4: WWN 500a098d385ef03f, ID 222, Serial Number ' ', Product 'Traf  
DCM ', Rev '0647', Slot B  
Level 5.5: WWN 500a098d3a06503f, ID 228, Serial Number ' ', Product 'Traf  
DCM ', Rev '0647', Slot B

Expanders on channel 9a:

Level 1: WWN 500a098007dd6621, ID 11, Serial Number 'xxxxxxxxxxx', Product  
'DS46012IOM12A ', Rev '0260', Slot B  
Level 1.1: WWN 500a098bc2f3203f, ID 103, Serial Number ' ', Product 'Traf  
DCM ', Rev '0647', Slot B  
Level 1.2: WWN 500a098bc297803f, ID 104, Serial Number ' ', Product 'Traf  
DCM ', Rev '0647', Slot B  
Level 1.3: WWN 500a098bc29c603f, ID 105, Serial Number ' ', Product 'Traf  
DCM ', Rev '0647', Slot B  
Level 1.4: WWN 500a098bc2f2203f, ID 202, Serial Number ' ', Product 'Traf  
DCM ', Rev '0647', Slot B  
Level 1.5: WWN 500a098bc2f3003f, ID 106, Serial Number ' ', Product 'Traf  
DCM ', Rev '0647', Slot B  
Level 2: WWN 500a098007f4243d, ID 12, Serial Number 'xxxxxxxxxxx', Product  
'DS46012IOM12A ', Rev '0260', Slot B  
Level 2.1: WWN 500a098d3acd503f, ID 175, Serial Number ' ', Product 'Traf  
DCM ', Rev '0647', Slot B  
Level 2.2: WWN 500a098d3acd703f, ID 207, Serial Number ' ', Product 'Traf  
DCM ', Rev '0647', Slot B  
Level 2.3: WWN 500a098d3acdd03f, ID 153, Serial Number ' ', Product 'Traf  
DCM ', Rev '0647', Slot B  
Level 2.4: WWN 500a098d3acdb03f, ID 121, Serial Number ' ', Product 'Traf  
DCM ', Rev '0647', Slot B  
Level 2.5: WWN 500a098d3acd903f, ID 239, Serial Number ' ', Product 'Traf  
DCM ', Rev '0647', Slot B  
Level 3: WWN 500a098007f43089, ID 13, Serial Number 'xxxxxxxxxxx', Product  
'DS46012IOM12A ', Rev '0260', Slot B  
Level 3.1: WWN 500a098d2b7a803f, ID 161, Serial Number ' ', Product 'Traf  
DCM ', Rev '0647', Slot B  
Level 3.2: WWN 500a098d2b7a603f, ID 107, Serial Number ' ', Product 'Traf  
DCM ', Rev '0647', Slot B  
Level 3.3: WWN 500a098d2b7a403f, ID 108, Serial Number ' ', Product 'Traf

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DCM          ', Rev '0647', Slot B
Level  3.4: WWN 500a098d2cf9203f, ID 125, Serial Number '          ', Product 'Traf
DCM          ', Rev '0647', Slot B
Level  3.5: WWN 500a098d2cf9003f, ID 110, Serial Number '          ', Product 'Traf
DCM          ', Rev '0647', Slot B
Level    4: WWN 500a098007dd6489, ID 14, Serial Number ' xxxxxxxxxxxx', Product
'DS46012IOM12A  ', Rev '0260', Slot B
Level  4.1: WWN 500a098bc2f6603f, ID 134, Serial Number '          ', Product 'Traf
DCM          ', Rev '0647', Slot B
Level  4.2: WWN 500a098bc2f5603f, ID 137, Serial Number '          ', Product 'Traf
DCM          ', Rev '0647', Slot B
Level  4.3: WWN 500a098bc2e6c03f, ID 111, Serial Number '          ', Product 'Traf
DCM          ', Rev '0647', Slot B
Level  4.4: WWN 500a098bc2f5803f, ID 191, Serial Number '          ', Product 'Traf
DCM          ', Rev '0647', Slot B
Level  4.5: WWN 500a098bc2f5a03f, ID 223, Serial Number '          ', Product 'Traf
DCM          ', Rev '0647', Slot B
Level    5: WWN 500a098007f43285, ID 15, Serial Number ' xxxxxxxxxxxx', Product
'DS46012IOM12A  ', Rev '0260', Slot B
Level  5.1: WWN 500a098d3a3dc03f, ID 143, Serial Number '          ', Product 'Traf
DCM          ', Rev '0647', Slot B
Level  5.2: WWN 500a098d3859f03f, ID 225, Serial Number '          ', Product 'Traf
DCM          ', Rev '0647', Slot B
Level  5.3: WWN 500a098d3859d03f, ID 193, Serial Number '          ', Product 'Traf
DCM          ', Rev '0647', Slot B
Level  5.4: WWN 500a098d385ef03f, ID 222, Serial Number '          ', Product 'Traf
DCM          ', Rev '0647', Slot B
Level  5.5: WWN 500a098d3a06503f, ID 228, Serial Number '          ', Product 'Traf
DCM          ', Rev '0647', Slot B

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Expanders on channel 9d:

```

Level    1: WWN 500a098007f4331d, ID 15, Serial Number ' xxxxxxxxxxxx', Product
'DS46012IOM12A  ', Rev '0260', Slot A
Level  1.1: WWN 500a098d3a3db03f, ID 191, Serial Number '          ', Product 'Traf
DCM          ', Rev '0647', Slot A
Level  1.2: WWN 500a098d3859e03f, ID 209, Serial Number '          ', Product 'Traf
DCM          ', Rev '0647', Slot A
Level  1.3: WWN 500a098d3859c03f, ID 177, Serial Number '          ', Product 'Traf
DCM          ', Rev '0647', Slot A

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Level 1.4: WWN 500a098d385ee03f, ID 206, Serial Number '          ', Product 'Traf
DCM      ', Rev '0647', Slot A
Level 1.5: WWN 500a098d3a06403f, ID 244, Serial Number '          ', Product 'Traf
DCM      ', Rev '0647', Slot A
Level 2: WWN 500a098007dd65dd, ID 14, Serial Number 'xxxxxxxxxxx', Product
'DS46012IOM12A ', Rev '0260', Slot A
Level 2.1: WWN 500a098bc2f6503f, ID 104, Serial Number '          ', Product 'Traf
DCM      ', Rev '0647', Slot A
Level 2.2: WWN 500a098bc2f5503f, ID 239, Serial Number '          ', Product 'Traf
DCM      ', Rev '0647', Slot A
Level 2.3: WWN 500a098bc2e6b03f, ID 220, Serial Number '          ', Product 'Traf
DCM      ', Rev '0647', Slot A
Level 2.4: WWN 500a098bc2f5703f, ID 121, Serial Number '          ', Product 'Traf
DCM      ', Rev '0647', Slot A
Level 2.5: WWN 500a098bc2f5903f, ID 175, Serial Number '          ', Product 'Traf
DCM      ', Rev '0647', Slot A
Level 3: WWN 500a098007f41d29, ID 13, Serial Number 'xxxxxxxxxxx', Product
'DS46012IOM12A ', Rev '0260', Slot A
Level 3.1: WWN 500a098d2b7a703f, ID 155, Serial Number '          ', Product 'Traf
DCM      ', Rev '0647', Slot A
Level 3.2: WWN 500a098d2b7a503f, ID 187, Serial Number '          ', Product 'Traf
DCM      ', Rev '0647', Slot A
Level 3.3: WWN 500a098d2b7a303f, ID 241, Serial Number '          ', Product 'Traf
DCM      ', Rev '0647', Slot A
Level 3.4: WWN 500a098d2cf9103f, ID 105, Serial Number '          ', Product 'Traf
DCM      ', Rev '0647', Slot A
Level 3.5: WWN 500a098d2cf8f03f, ID 150, Serial Number '          ', Product 'Traf
DCM      ', Rev '0647', Slot A
Level 4: WWN 500a098007f4246d, ID 12, Serial Number 'xxxxxxxxxxx', Product
'DS46012IOM12A ', Rev '0260', Slot A
Level 4.1: WWN 500a098d3acd403f, ID 106, Serial Number '          ', Product 'Traf
DCM      ', Rev '0647', Slot A
Level 4.2: WWN 500a098d3acd603f, ID 223, Serial Number '          ', Product 'Traf
DCM      ', Rev '0647', Slot A
Level 4.3: WWN 500a098d3acdc03f, ID 169, Serial Number '          ', Product 'Traf
DCM      ', Rev '0647', Slot A
Level 4.4: WWN 500a098d3acda03f, ID 137, Serial Number '          ', Product 'Traf
DCM      ', Rev '0647', Slot A
Level 4.5: WWN 500a098d3acd803f, ID 107, Serial Number '          ', Product 'Traf
DCM      ', Rev '0647', Slot A

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Level 5: WWN 500a098007dd6549, ID 11, Serial Number 'xxxxxxxxxxxx', Product 'DS46012IOM12A ', Rev '0260', Slot A  
Level 5.1: WWN 500a098bc2f3103f, ID 108, Serial Number ' ', Product 'Traf DCM ', Rev '0647', Slot A  
Level 5.2: WWN 500a098bc297703f, ID 151, Serial Number ' ', Product 'Traf DCM ', Rev '0647', Slot A  
Level 5.3: WWN 500a098bc29c503f, ID 109, Serial Number ' ', Product 'Traf DCM ', Rev '0647', Slot A  
Level 5.4: WWN 500a098bc2f2103f, ID 110, Serial Number ' ', Product 'Traf DCM ', Rev '0647', Slot A

Expanders on channel 10b:

Level 1: WWN 500a098007f4331d, ID 15, Serial Number 'xxxxxxxxxxxx', Product 'DS46012IOM12A ', Rev '0260', Slot A  
Level 1.1: WWN 500a098d3a3db03f, ID 191, Serial Number ' ', Product 'Traf DCM ', Rev '0647', Slot A  
Level 1.2: WWN 500a098d3859e03f, ID 209, Serial Number ' ', Product 'Traf DCM ', Rev '0647', Slot A  
Level 1.3: WWN 500a098d3859c03f, ID 177, Serial Number ' ', Product 'Traf DCM ', Rev '0647', Slot A  
Level 1.4: WWN 500a098d385ee03f, ID 206, Serial Number ' ', Product 'Traf DCM ', Rev '0647', Slot A  
Level 1.5: WWN 500a098d3a06403f, ID 244, Serial Number ' ', Product 'Traf DCM ', Rev '0647', Slot A  
Level 2: WWN 500a098007dd65dd, ID 14, Serial Number 'xxxxxxxxxxxx', Product 'DS46012IOM12A ', Rev '0260', Slot A  
Level 2.1: WWN 500a098bc2f6503f, ID 104, Serial Number ' ', Product 'Traf DCM ', Rev '0647', Slot A  
Level 2.2: WWN 500a098bc2f5503f, ID 239, Serial Number ' ', Product 'Traf DCM ', Rev '0647', Slot A  
Level 2.3: WWN 500a098bc2e6b03f, ID 220, Serial Number ' ', Product 'Traf DCM ', Rev '0647', Slot A  
Level 2.4: WWN 500a098bc2f5703f, ID 121, Serial Number ' ', Product 'Traf DCM ', Rev '0647', Slot A  
Level 2.5: WWN 500a098bc2f5903f, ID 175, Serial Number ' ', Product 'Traf DCM ', Rev '0647', Slot A  
Level 3: WWN 500a098007f41d29, ID 13, Serial Number 'xxxxxxxxxxxx', Product 'DS46012IOM12A ', Rev '0260', Slot A  
Level 3.1: WWN 500a098d2b7a703f, ID 155, Serial Number ' ', Product 'Traf DCM ', Rev '0647', Slot A

Level 3.2: WWN 500a098d2b7a503f, ID 187, Serial Number ' ', Product 'Traf  
DCM ', Rev '0647', Slot A

Level 3.3: WWN 500a098d2b7a303f, ID 241, Serial Number ' ', Product 'Traf  
DCM ', Rev '0647', Slot A

Level 3.4: WWN 500a098d2cf9103f, ID 105, Serial Number ' ', Product 'Traf  
DCM ', Rev '0647', Slot A

Level 3.5: WWN 500a098d2cf8f03f, ID 150, Serial Number ' ', Product 'Traf  
DCM ', Rev '0647', Slot A

Level 4: WWN 500a098007f4246d, ID 12, Serial Number ' xxxxxxxxxxxx', Product  
'DS46012IOM12A ', Rev '0260', Slot A

Level 4.1: WWN 500a098d3acd403f, ID 106, Serial Number ' ', Product 'Traf  
DCM ', Rev '0647', Slot A

Level 4.2: WWN 500a098d3acd603f, ID 223, Serial Number ' ', Product 'Traf  
DCM ', Rev '0647', Slot A

Level 4.3: WWN 500a098d3acdc03f, ID 169, Serial Number ' ', Product 'Traf  
DCM ', Rev '0647', Slot A

Level 4.4: WWN 500a098d3acda03f, ID 137, Serial Number ' ', Product 'Traf  
DCM ', Rev '0647', Slot A

Level 4.5: WWN 500a098d3acd803f, ID 107, Serial Number ' ', Product 'Traf  
DCM ', Rev '0647', Slot A

Level 5: WWN 500a098007dd6549, ID 11, Serial Number ' xxxxxxxxxxxx', Product  
'DS46012IOM12A ', Rev '0260', Slot A

Level 5.1: WWN 500a098bc2f3103f, ID 108, Serial Number ' ', Product 'Traf  
DCM ', Rev '0647', Slot A

Level 5.2: WWN 500a098bc297703f, ID 151, Serial Number ' ', Product 'Traf  
DCM ', Rev '0647', Slot A

Level 5.3: WWN 500a098bc29c503f, ID 109, Serial Number ' ', Product 'Traf  
DCM ', Rev '0647', Slot A

Level 5.4: WWN 500a098bc2f2103f, ID 110, Serial Number ' ', Product 'Traf  
DCM ', Rev '0647', Slot A

Level 5.5: WWN 500a098bc2f2f03f, ID 144, Serial Number ' ', Product 'Traf  
DCM ', Rev '0647', Slot A