

BROCADE



Interdomain Routing Security Workshop 21
BGP, 4 Bytes AS

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BGP Malformed AS_PATH

◆ そもそもうちは、「as0」を出せるのか？

```
NetIron MLX-4 Router(config-bgp)#router bgp
NetIron MLX-4 Router(config-bgp)#local
  <1-4294967295> AS number
NetIron MLX-4 Router(config-bgp)#local 0
Invalid input -> 0
Type ? for a list
NetIron MLX-4 Router(config-bgp)#route-map ken per 10
NetIron MLX-4 Router(config-routemap ken)#set as-path prepend
  <1-4294967295> AS numbers
NetIron MLX-4 Router(config-routemap ken)#set as-path prepend 0
Invalid input -> 0
Type ? for a list
NetIron MLX-4 Router(config-routemap ken)#
```

ごめんなさい。やっぱり出来ませんでした。。。

→ IXIAさん、ありがとうございました。



BGP Malformed AS_PATH

◆ 8/17の件

- Brocade(旧Foundry)製品はas0が含まれていても、特別な扱いを行いません。
- そのまま受けて、そのまま流す、という動作になります。
- また、過去の製品(e.g. BigIron4000など)も同じです。

```
NetIron MLX-4 Router#sh ip b route
```

```
Total number of BGP Routes: 4
```

```
Status A:AGGREGATE B:BEST b:NOT-INSTALLED-BEST C:CONFED_EBGP D:DAMPED  
E:EBGP H:HISTORY I:IBGP L:LOCAL M:MULTIPATH m:NOT-INSTALLED-MULTIPATH  
S:SUPPRESSED F:FILTERED s:STALE
```

	Prefix	Next Hop	Metric	LocPrf	Weight	Status
1	100.1.1.0/30	20.1.1.2		100	0	BE
	AS_PATH: 1000 500 {0}					
2	100.1.1.4/30	20.1.1.2		100	0	BE
	AS_PATH: 1000 500 0					
3	100.1.1.8/30	20.1.1.2		100	0	BE
	AS_PATH: 1000 500 {1 2 0 3 4 5}					
4	100.1.1.16/30	20.1.1.2		100	0	BE
	AS_PATH: 1000 500 5 4 3 0 2 1					



BGP Malformed AS_PATH

NetIron MLX-4 Router#sh ip b route 100.1.1.8

Number of BGP Routes matching display condition : 1

Status A:AGGREGATE B:BEST b:NOT-INSTALLED-BEST C:CONFED_EBGP D:DAMPED
E:EBGP H:HISTORY I:IBGP L:LOCAL M:MULTIPATH m:NOT-INSTALLED-MULTIPATH
S:SUPPRESSED F:FILTERED s:STALE

	Prefix	Next Hop	Metric	LocPrf	Weight	Status
1	100.1.1.8/30	20.1.1.2		100	0	BE

AS_PATH: 1000 500 {1 2 0 3 4 5}

Last update to IP routing table: 0h2m58s, 1 path(s) installed:

Route is to be sent to 1 peers:

10.1.1.1(500)

NetIron MLX-4 Router#sh ip b route 100.1.1.16

Number of BGP Routes matching display condition : 1

Status A:AGGREGATE B:BEST b:NOT-INSTALLED-BEST C:CONFED_EBGP D:DAMPED
E:EBGP H:HISTORY I:IBGP L:LOCAL M:MULTIPATH m:NOT-INSTALLED-MULTIPATH
S:SUPPRESSED F:FILTERED s:STALE

	Prefix	Next Hop	Metric	LocPrf	Weight	Status
1	100.1.1.16/30	20.1.1.2		100	0	BE

AS_PATH: 1000 500 5 4 3 0 2 1

Last update to IP routing table: 0h3m0s, 1 path(s) installed:

Route is to be sent to 1 peers:

10.1.1.1(500)

NetIron MLX-4 Router#



BGP Malformed AS_PATH (4byte AS)

```
NetIron MLX-4 Router(config-routemap ken)#sh ip b route
```

```
Total number of BGP Routes: 4
```

```
Status A:AGGREGATE B:BEST b:NOT-INSTALLED-BEST C:CONFED_EBGP D:DAMPED  
E:EBGP H:HISTORY I:IBGP L:LOCAL M:MULTIPATH m:NOT-INSTALLED-MULTIPATH  
S:SUPPRESSED F:FILTERED s:STALE
```

	Prefix	Next Hop	Metric	LocPrf	Weight	Status
1	200.1.1.0/24	10.1.1.1		100	0	BE
	AS_PATH: 655560 {0}					
2	200.1.2.0/24	10.1.1.1		100	0	BE
	AS_PATH: 655560 0					
3	200.1.3.0/24	10.1.1.1		100	0	BE
	AS_PATH: 655560 0					

```
4 200.1.4.0/24 NetIron MLX-4 Router#sh ip b nei 20.1.1.2 advertised-routes
```

```
There are 4 routes advertised to neighbor 20.1.1.2
```

```
Status A:AGGREGATE B:BEST b:NOT-INSTALLED-BEST E:EBGP I:IBGP L:LOCAL
```

	Prefix	Next Hop	Metric	LocPrf	Weight	Status
1	200.1.1.0/24	20.1.1.1			0	BE
	AS_PATH: 655460 655560 {0}					
2	200.1.2.0/24	20.1.1.1			0	BE
	AS_PATH: 655460 655560 0					
3	200.1.3.0/24	20.1.1.1			0	BE
	AS_PATH: 655460 655560 {5 4 0 3 2 1}					
4	200.1.4.0/24	20.1.1.1			0	BE
	AS_PATH: 655460 655560 5 4 0 3 2 1					

```
NetIron MLX-4 Router#
```



BGP Malformed AS_PATH (4 byte AS)

```
NetIron MLX-4 Router(config-routemap ken)# sh ip b route 200.1.3.0
```

```
Number of BGP Routes matching display condition : 1
```

```
Status A:AGGREGATE B:BEST b:NOT-INSTALLED-BEST C:CONFED_EBGP D:DAMPED  
E:EBGP H:HISTORY I:IBGP L:LOCAL M:MULTIPATH m:NOT-INSTALLED-MULTIPATH  
S:SUPPRESSED F:FILTERED s:STALE
```

	Prefix	Next Hop	Metric	LocPrf	Weight	Status
1	200.1.3.0/24	10.1.1.1		100	0	BE

```
AS_PATH: 655560 {5 4 0 3 2 1}
```

```
Last update to IP routing table: 0h2m41s, 1 path(s) installed:
```

```
Route is advertised to 1 peers:
```

```
20.1.1.2(1000)
```

```
NetIron MLX-4 Router(config-routemap ken)# sh ip b route 200.1.4.0
```

```
Number of BGP Routes matching display condition : 1
```

```
Status A:AGGREGATE B:BEST b:NOT-INSTALLED-BEST C:CONFED_EBGP D:DAMPED  
E:EBGP H:HISTORY I:IBGP L:LOCAL M:MULTIPATH m:NOT-INSTALLED-MULTIPATH  
S:SUPPRESSED F:FILTERED s:STALE
```

	Prefix	Next Hop	Metric	LocPrf	Weight	Status
1	200.1.4.0/24	10.1.1.1		100	0	BE

```
AS_PATH: 655560 5 4 0 3 2 1
```

```
Last update to IP routing table: 0h2m46s, 1 path(s) installed:
```








```
Route is advertised to 1 peers:
```

```
20.1.1.2(1000)
```

```
NetIron MLX-4 Router(config-routemap ken)#
```



4 Byte AS サポート状況

	NetIron XMR	NetIron MLX	NetIron CES	BigIron RX	FastIron SuperX/SX	FastIron Edge X	FastIron CX
							
Type	Internet Router	Internet Router	Carrier Ethernet Switch	Layer2-3 Switch	Layer2-3 Switch	Layer2-3 Switch	Layer2-3 Stackable Switch
Hardware Type	4/8/16/32 Slots Chassis	4/8/16/32 Slots Chassis	1RU BOX	4/8/16/32 Slots Chassis	8/16 Slots Chassis	1.5RU BOX	1RU BOX
4 Bytes ASサポートソフトウェア	IronWare Version 04.0.00	IronWare Version 04.0.00	IronWare Version 04.1.00	IronWare Version 02.9.00	-	-	-
4 Byte ASサポート時期	2008年12月	2008年12月	2009年末	2010年後半	調査中	調査中	調査中



Thank you...

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