



APPENDIX **A**

CPU and Memory Utilization on the ML-MR-10 Card

This appendix provides the CPU and memory utilization percentage values when the CPU intensive features are configured on the ML-MR-10 card.

You can configure the CPU intensive features on the ML-MR-10 card. When you configure the CPU intensive features, ensure that the total CPU utilization does not go beyond 80 percent. The following sections provide information about configuring CPU intensive features on the ML-MR-10 card.

- [CPU Utilization for EVC and QoS on the ML-MR-10 Card, page A-1](#)
- [CPU Utilization for HW-LCAS Circuits on POS Ports and RPR, page A-1](#)
- [The ML-MR-10 card raises an alarm when you configure the memory intensive features. The ML-MR-10 card does not display the expected behavior when the memory utilization is more than 85 percent., page A-2](#)
- [Memory Utilization for EVC and QoS, page A-3](#)
- [Memory Utilization for HW-LCAS Circuits on POS Ports and RPR, page A-4](#)

CPU Utilization for EVC and QoS on the ML-MR-10 Card

[Table A-1](#) provides the CPU utilization percentage values for EVC and QoS on the ML-MR-10 card.

Table A-1 CPU Utilization Percentage Values for EVC and QoS

Number of EVCs	Number of Policy Maps	CPU Utilization Percent
0	0	15
500	500	16
1000	1000	18
2000	2000	19
4000	4000	20

CPU Utilization for HW-LCAS Circuits on POS Ports and RPR

[Table A-2](#) provides the CPU utilization values on POS ports and RPR configured with the ML-MR-10 card with HW-LCAS circuits.

Table A-2 CPU Utilization for HW-LCAS Circuits

Circuit Size	Interface	CPU Utilization
STS1-50V	POS	24
STS1-100V	POS	44
STS1-150V	POS	64
STS1-1910V	POS	68
STS3C-25V	POS	20
STS3c-50V	POS	24
STS3C-63V	POS	40
VT1.5-25V	POS	20
VT1.5-50V	POS	20
VT1.5-63V	POS	24
STS1-50V	RPR	40
STS1-75V	RPR	48
STS1-95V	RPR	66
STS3C-15V	RPR	40
STS3c-31V	RPR	40

Example of CPU Utilization with CPU Intensive Features Configured

Base + VCAT/LCAS (50 members)
 20% is base
 50 members of VCAT/LCAS take 40%
 Rest of 20% can be used to configure CFM features (depending on the CPU percentage required to configure that particular CFM feature. For example, F1 requires 40%, F2 requires 30%, F3 requires 20%).

Memory Utilization

The ML-MR-10 card raises an alarm when you configure the memory intensive features. The ML-MR-10 card does not display the expected behavior when the memory utilization is more than 85 percent.

Memory Utilization for CFM Features

Monitor the memory utilization percentage when the CFM features are configured with various MEP and MIP using the graphs illustrated in [Figure A-1](#) and [Figure A-2](#).

Figure A-1 Number of MEPs and Available Memory

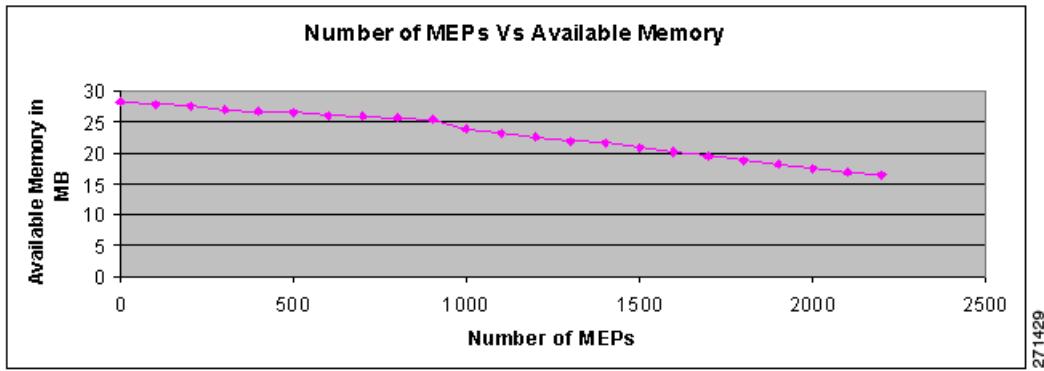
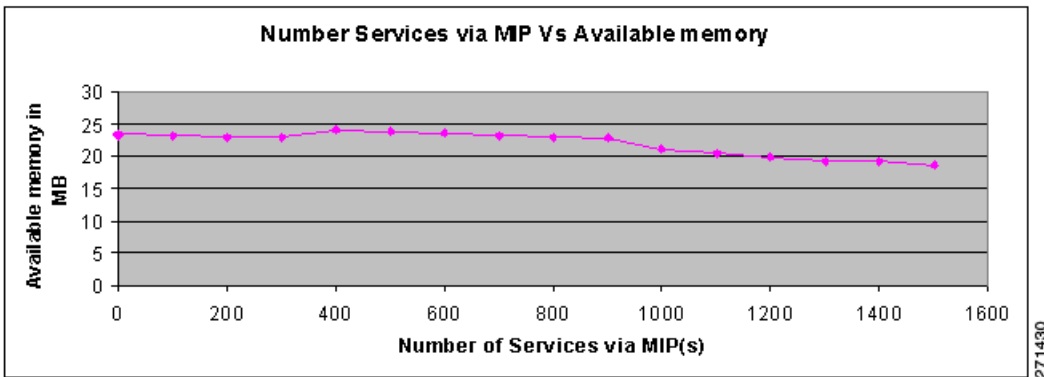


Figure A-2 Number of MIPs and Available Memory



Memory Utilization for EVC and QoS

Table A-3 provides the memory utilization percentage values for EVC and QoS on the ML-MR-10 card.

Table A-3 Memory Utilization for EVC and QoS with the ML-MR-10 Card

Number of EVCs	Number of Policy Maps	Memory Utilization (bytes)
0	0	29818872
500	500	32458148
1000	1000	35041308
2000	2000	40331964
4000	4000	50824400

Memory Utilization for HW-LCAS Circuits on POS Ports and RPR

Table A-4 provides the memory utilization percentage values with POS ports and RPR configured on the ML-MR-10 card with HW-LCAS circuits.

Table A-4 Memory Utilization for HW-LCAS Circuits

Circuit Size	Interface	Memory
STS1-50V	POS	1860
STS1-100V	POS	4212
STS1-150V	POS	6564
STS1-1910V	POS	8524
STS3C-25V	POS	11660
STS3c-50V	POS	12836
STS3C-63V	POS	13620
VT1.5-25V	POS	14036
VT1.5-50V	POS	14820
VT1.5-63V	POS	15212
STS1-50V	RPR	15604
STS1-75V	RPR	16388
STS1-95V	RPR	17172
STS3C-15V	RPR	17564
STS3c-31V	RPR	18348