

7705 Service Aggregation Router











Card and Module Support

Release 6.1 Quick Reference Card

Platform Notes

All 7705 SAR chassis run the same system software. The main difference between the products is their hardware platforms.

Table 1: Platform Notes

									
SAR-8	SAR-18	SAR-A	SAR-F	SAR-H	SAR-Hc	SAR-M	SAR-O	SAR-W	SAR-Wx
V1: 12 Gb/s HD V2: 60 Gb/s HD	140 Gb/s HD	8 Gb/s HD	2 Gb/s HD	8 Gb/s HD	5 Gb/s HD	10 Gb/s HD	Passive (no HD)	10 Gb/s HD	10 Gb/s HD
Rack-mountable: 2 RU	Rack-mountable: 10 RU	Rack-mountable: 1 RU	Rack-mountable: 1 RU	Rack-mountable: 1.5 RU Wall-mountable	DIN rail-mountable Wall-mountable Panel-mountable	Rack-mountable: 1 RU	Pole-mountable Wall-mountable	Pole-mountable Wall-mountable Cable strand-mountable	Pole-mountable Wall-mountable Cable strand-mountable
The SAR-8 is an 8-slot chassis that supports 2 CSMs, a Fan module (with alarm functionality), and 6 adapter cards.	The SAR-18 is an 18-slot chassis that supports 2 CSMs, a Fan module, an Alarm module, and 16 adapter cards.	The SAR-A is a fixed chassis with two variants: <ul style="list-style-type: none">passively cooled chassis with 12 Ethernet ports and 8 T1/E1 portspassively cooled chassis with 12 Ethernet ports and no T1/E1 ports	The SAR-F is a fixed chassis that has 16 T1/E1 ports, 2 Gigabit Ethernet ports, and 6 Fast Ethernet ports.	The SAR-H is a fixed chassis that has 2 Ethernet SFP ports, 2 SFP/RJ-45 combination Ethernet ports, 4 PoE-capable Ethernet RJ-45 ports, and 2 module slots. Connecting a PoE Power Supply increases the number of Ethernet ports that can supply PoE to a connected device. There are two variants of the SAR-H chassis: <ul style="list-style-type: none">high-voltage AC/DC for 100/240 VAC and 110-250 VDC installations (includes integrated AC input)low-voltage DC for -48/-60 and +24 VDC installations	The SAR-Hc is a fixed chassis that has 2 Gigabit Ethernet SFP ports, 2 Ethernet RJ-45 ports, 2 PoE-capable Ethernet RJ-45 ports, and 2 RS-232 RJ-45 ports.	The SAR-M is a fixed chassis with four variants: <ul style="list-style-type: none">fan-cooled chassis with 7 Gigabit Ethernet ports, 16 T1/E1 ports, and 1 module slotfan-cooled chassis with 7 Gigabit Ethernet ports, no T1/E1 ports, and 1 module slotpassively cooled chassis with 7 Gigabit Ethernet ports, 16 T1/E1 ports, and no module slotspassively cooled chassis with 7 Gigabit Ethernet ports, no T1/E1 ports, and no module slots	The SAR-O is a passive, unpowered optical unit with eight models that are used to add and drop the following CWDM wavelengths from an optical network: <ul style="list-style-type: none">1471/1491 nm1511/1531 nm1551/1571 nm1591/1611 nm1471/1491/1511/1531 nm1551/1571/1591/1611 nmTx: 1471/1511/1551/1591 nm Rx: 1491/1531/1571/1611 nmTx: 1491/1531/1571/1611 nm Rx: 1471/1511/1551/1591 nm	The SAR-W is a fixed, ruggedized, environmentally hardened chassis that has 5 Gigabit Ethernet data ports (3 SFP ports and 2 RJ-45 Power over Ethernet (PoE) ports).	The SAR-Wx is a fixed, ruggedized, environmentally hardened chassis with six variants (listed variants are available with optional GPS receiver): <ul style="list-style-type: none">3 GigE SFP ports, 2 RJ-45 GigE ports, and an RJ-45 alarm input connector3 GigE SFP ports, 1 RJ-45 GigE port, 1 RJ-45 PoE+ GigE port, and an RJ-45 alarm input connector4 GigE SFP ports, 1 RJ-45 GigE port, 1 RJ-45 4-pair xDSL port, and an RJ-45 alarm input connector

Adapter Card Support

Table 2 lists the types of adapter cards supported on the 7705 SAR-8 and SAR-18. Adapter cards cannot be installed in the other chassis.

Table 2: Platform and Adapter Card Support

Adapter Card	SAR-8	SAR-18
2-port 10GigE (Ethernet) card ⁽¹⁾	Up to 4 cards	Up to 6 cards
2-port OC3/STM1 Channelized card ⁽²⁾	Up to 6 cards	Up to 12 cards
4-port OC3/STM1 Channelized card ⁽²⁾	Up to 4 cards	Up to 6 cards
4-port OC3/STM1 Clear Channel card	Up to 6 cards	Up to 12 cards
4-port DS3/E3 card ⁽²⁾	Up to 6 cards	Up to 12 cards
6-port E&M card ⁽³⁾	Up to 6 cards	Up to 12 cards
6-port FXS card ⁽³⁾	Up to 6 cards	Up to 12 cards
8-port Ethernet card, ver 1	Up to 6 cards	—
8-port Ethernet card, ver 2	Up to 6 cards	Up to 12 cards
8-port FXO card ⁽³⁾	Up to 6 cards	Up to 12 cards
8-port Gigabit Ethernet card	Up to 6 cards	Up to 12 cards
8-port Voice & Teleprotection card ⁽³⁾	Up to 6 cards	Up to 12 cards
10-port 1 GigE/1-port 10 GigE X-Adapter card	—	Up to 4 cards
12-port Serial Data Interface card ⁽³⁾	Up to 6 cards	Up to 12 cards
16-port T1/E1 ASAP card, ver 1	Up to 6 cards	—
16-port T1/E1 ASAP card, ver 2	Up to 6 cards	Up to 12 cards
32-port T1/E1 ASAP card	Up to 6 cards	Up to 12 cards
Auxiliary Alarm card	Up to 6 cards	Up to 12 cards
CWDM OADM card	Up to 6 cards	Up to 12 cards
Integrated Services card ⁽³⁾	Up to 6 cards	Up to 12 cards
Packet Microwave card	Up to 6 cards	Up to 12 cards
Power Injector card	Up to 4 cards	Up to 8 cards

- Notes:
- (1) Although a single 2-port 10GigE (Ethernet) Adapter card can be installed in a 7705 SAR-8 or 7705 SAR-18 chassis, it is strongly recommended that a minimum of two cards be installed for redundancy (a maximum of two 2-port 10GigE (Ethernet) Adapter cards can be installed in a 7705 SAR-8 chassis with a CSMv1).
 - (2) The number of cards supported depends on channelization and on the CSM variant installed (for the 7705 SAR-8).

On a 7705 SAR-8 chassis with a CSMv1, a maximum of four 2-port OC3/STM1 Channelized Adapter cards and six 4-port DS3/E3 Adapter cards can be installed in MDA slots 1 to 6 if DS3/E3 channelization is being used (E3 channels are supported on the 4-port DS3/E3 Adapter card only). If DS1/E1 channelization is being used, two 2-port OC3/STM1 Channelized Adapter cards or six 4-port DS3/E3 Adapter cards can be installed in MDA slots 1 to 6. If DS0 (64 kb/s) channelization is being used, two 2-port OC3/STM1 Channelized Adapter cards and 4-port DS3/E3 Adapter cards can be installed in MDA slots 1 to 6. The 4-port OC3/STM1 Channelized Adapter card is not supported on a 7705 SAR-8 chassis with a CSMv1.

On a 7705 SAR-8 chassis with a CSMv2, a maximum of six 2-port OC3/STM1 Channelized Adapter cards and 4-port DS3/E3 Adapter cards can be installed in MDA slots 1 to 6 if DS3/E3 channelization is being used (E3 channels are supported on the 4-port DS3/E3 Adapter card only). If DS1/E1 channelization is being used, four 2-port OC3/STM1 Channelized Adapter cards, four 4-port OC3/STM1 Channelized Adapter cards, or six 4-port DS3/E3 Adapter cards can be installed in MDA slots 1 to 6. If DS0 (64 kb/s) channelization is being used, four 2-port OC3/STM1 Channelized Adapter cards and 4-port DS3/E3 Adapter cards can be installed in MDA slots 1 to 6.

On a SAR-18 chassis, a maximum of twelve 2-port OC3/STM1 Channelized Adapter cards and 4-port DS3/E3 Adapter cards can be installed in MDA slots 1 to 12 if DS3/E3 channelization is being used (E3 channels are supported on the 4-port DS3/E3 Adapter card only). If DS1/E1 channelization is being used, four 2-port OC3/STM1 Channelized Adapter cards, six 4-port OC3/STM1 Channelized Adapter cards, or twelve 4-port DS3/E3 Adapter cards can be installed in MDA slots 1 to 12. If DS0 (64 kb/s) channelization is being used, four 2-port OC3/STM1 Channelized Adapter cards and 4-port DS3/E3 Adapter cards can be installed in MDA slots 1 to 12.

The total number of channel groups that can be configured per card and per node is bound by release-specific system limits. For more information, please contact your Alcatel-Lucent technical support representative.

(3) Because this card supports access mode only, for network applications, at least one of the other installed cards must be a network-capable adapter card.

Module Support

Table 3 lists the types of modules supported on the 7705 SAR platforms that support modules.

Table 3: Platform and Module Support

Module	SAR-8	SAR-18	SAR-M ⁽¹⁾	SAR-H
2-port 10GigE (Ethernet) Module	—	—	1 module	—
4-port T1/E1 and RS-232 Combination module	—	—	—	Up to 2 modules
6-port DSL Combination module	—	—	1 module	—
8-port xDSL module	—	—	1 module	—
Alarm module	—	1 module	—	—
CSMv1	Up to 2 modules	Up to 2 modules	—	—

Table 3: Platform and Module Support (Continued)

Module	SAR-8	SAR-18	SAR-M ⁽¹⁾	SAR-H
CSMv2	Up to 2 modules	—	—	—
CWDM OADM module	—	—	1 module	—
Fan module	1 module	1 module	—	—
GPON module	—	—	1 module	—
GPS Receiver module	—	—	—	1 module

Note:
(1) Modules are only supported on the SAR-M variants with a module slot (fan-cooled).

AC and High Voltage DC Power Supply Support

Alcatel-Lucent offers the following AC/DC and HVDC power supplies that can be used with 7705 SAR platforms.

100W High Voltage Power Supply

A 100W High Voltage Power Supply with integrated AC input is available for 100/240 VAC installations. The input can be modified to function as a high-voltage DC power supply for rated 110-250 VDC installations. The 100W High Voltage Power Supply can be mounted on a DIN rail, wall, or panel.

The following 7705 SAR platforms support AC or DC source-to-router connections through the 100W High Voltage Power Supply:

- SAR-A
- SAR-F
- SAR-Hc
- SAR-M

250W AC Power Supply Unit

An external 250W AC Power Supply with integrated AC input is available for 100/240 VAC installations.

The SAR-8 (v1 and v2, –48 VDC systems only) support AC connections through the 250W AC Power Supply.

2500W AC Power Supply Shelf

A 2500W AC Power Supply Shelf with integrated AC input is available for 240 VAC installations. The 2500W AC Power Supply Shelf can be mounted on a standard 19-inch rack and occupies one rack unit. It supports up to four power supplies for redundancy.

The following 7705 SAR platforms support AC connections through the 2500W AC Power Supply:

- SAR-8 (v1 and v2, –48 VDC systems only)
- SAR-18

CLI Naming Conventions

Table 4 lists the CLI name for each adapter card (MDA type) for the 7705 SAR platforms that support adapter cards.

Table 5 lists the CLI name for each module for the 7705 SAR platforms that support modules.

Note: All 7705 SAR platforms support the IOM, which uses the CLI naming convention iom-sar. The IOM is virtualized in the system software, and must be activated before any adapter cards or modules can be preprovisioned and configured.

Table 6 lists the CLI name for the group of ports on the 7705 SAR platforms that provide an integrated T1/E1, Ethernet, and/or other interface capability.

Table 4: CLI Naming Conventions for Adapter Cards

Adapter Card	SAR-8	SAR-18
2-port 10GigE (Ethernet) card	a2-10gb-xfp	a2-10gb-xfp
2-port OC3/STM1 Channelized card	a2-choc3	a2-choc3
4-port OC3/STM1 Channelized card	a4-choc3/12	a4-choc3/12
4-port OC3/STM1 Clear Channel card	a4-oc3	a4-oc3
4-port DS3/E3 card	a4-chds3	a4-chds3
6-port E&M card	a6-em	a6-em
6-port FXS card	a6-fxs	a6-fxs
8-port Ethernet card, ver 1	a8-eth	—
8-port Ethernet card, ver 2	a8-ethv2	a8-ethv2
8-port FXO card	a8-fxo	a8-fxo
8-port Gigabit Ethernet card, ver 1	a8-1gb-sfp	a8-1gb-sfp
8-port Gigabit Ethernet card, ver 2	a8-1gb-v2-sfp	a8-1gb-v2-sfp
8-port Gigabit Ethernet card, ver 3	a8-1gb-v3-sfp	a8-1gb-v3-sfp
8-port Voice & Teleprotection card	a8-vt	a8-vt
10-port 1 GigE/1-port 10 GigE X-Adapter card, ver 1	—	x-10GigE
10-port 1 GigE/1-port 10 GigE X-Adapter card, ver 2	—	x-10GigE-v2
12-port Serial Data Interface card	a12-sdi	a12-sdi
16-port T1/E1 ASAP card, ver 1	a16-chds1	—
16-port T1/E1 ASAP card, ver 2	a16-chds1v2	a16-chds1v2
32-port T1/E1 ASAP card	a32-chds1v2	a32-chds1v2

Table 4: CLI Naming Conventions for Adapter Cards (Continued)

Adapter Card	SAR-8	SAR-18
Auxiliary Alarm card	aux-alarm	aux-alarm
CWDM OADM card	oadm-cwdm-1ch oadm-cwdm-2ch oadm-cwdm-4ch oadm-cwdm-8ch	oadm-cwdm-1ch oadm-cwdm-2ch oadm-cwdm-4ch oadm-cwdm-8ch
Integrated Services card	isc	isc
Packet Microwave card	a8-pmc	a8-pmc
Power Injector card	mw-pic-2	mw-pic-2

Table 5: CLI Naming Conventions for Modules

Module	SAR-8	SAR-18	SAR-H	SAR-M ⁽¹⁾
2-port 10GigE (Ethernet) Module	—	—	—	p2-10gb-xfp
4-port T1/E1 and RS-232 Combination module	—	—	a4-combo	—
6-port DSL Combination module	—	—	—	p6-dcm
8-port xDSL module	—	—	—	p8-xdsl
CSMv1 module ⁽²⁾	csm-1g	csm-10g	—	—
CSMv2 module	csmv2-10g	—	—	—
CWDM OADM module	—	—	—	oadm-cwdm-1ch
GPS Receiver module	—	—	p1-gps	—
GPON module	—	—	—	p1-gpon

Notes:

- (1) Modules are only supported on the SAR-M variants with a module slot (fan-cooled).
- (2) The SAR-A, SAR-F, SAR-H, SAR-Hc, SAR-M, SAR-W, and SAR-Wx replace the CSM found in the SAR-8 and SAR-18 with a control and switching functional block that is integrated into the chassis and does not need to be provisioned. It is shown in the CLI as CSM A with a provisioned type of csm-1g for the SAR-F and csm-2.5g for the SAR-A, SAR-H, SAR-Hc, SAR-M, SAR-W, and SAR-Wx.

Table 6: CLI Naming Conventions for Ports

Chassis	Ports		
	T1/E1 ports	Ethernet ports	Other ports
SAR-A	i8-chds1 ⁽¹⁾	i12-eth-xor ⁽²⁾	—

Table 6: CLI Naming Conventions for Ports (Continued)

Chassis	Ports		
	T1/E1 ports	Ethernet ports	Other ports
SAR-F	i16-chds1	i8-eth	—
SAR-H	—	i8-1gb	—
SAR-Hc	—	i6-1gb	i2-sdi ⁽³⁾
SAR-M	i16-chds ⁽¹⁾	i7-1gb ⁽²⁾	—
SAR-W	—	i5-1gb	—
SAR-Wx	—	i4-1gb-b ⁽⁴⁾ i5-1gb-b ⁽⁵⁾	i4-xdsl ⁽⁶⁾ i1-gps ⁽⁷⁾

Notes:

- (1) On the variant equipped with T1/E1 ports.
- (2) On the variant equipped with Ethernet ports.
- (3) RS-232 ports.
- (4) On the variants equipped with four Ethernet ports.
- (5) On the variants equipped with five Ethernet ports.
- (6) On the variants equipped with xDSL.
- (7) GPS port, on the variants equipped with a GPS receiver.

CLI Card and Port Identifiers

In the CLI context for the SAR-8 and SAR-18, adapter cards are referred to as MDAs. The cards are identified using the format *slot/mda*, where *slot* identifies the IOM slot ID (always 1) and *mda* identifies the physical slot in the chassis for the adapter card.

For the SAR-A, SAR-F, SAR-H, SAR-Hc, SAR-M, SAR-W, and SAR-Wx, the *mda* is a preset virtual slot number; configuration is not done at this level for these chassis.

The SAR-O is a passive unit that requires no CLI configuration.

Ports are identified using the format *slot/mda/port*, where *port* identifies the physical port on the adapter card or SAR-A, SAR-F, SAR-H, SAR-Hc, SAR-M, SAR-W, or SAR-Wx; for example, 1/5/1.

Channelized ports are identified using the format *slot/mda/port.channel-group-id*, where *channel-group-id* identifies the channel group ID; for example, 1/5/1.1.

Bundled channels are identified using the format *bundle-type-slot/mda.bundle-num*, where *bundle* is a keyword, *type* is either ppp (for MLPPP bundles) or ima (for IMA groups), and *bundle-num* is the bundle number, for example, bundle-ima-1/5.1.

Table 7 lists the available MDA slots per platform.

Table 7: MDA Slots

Chassis	Available MDA slots
SAR-8	Slots MDA 1 to 6
SAR-18	Slots MDA 1 to 12 and XMDA 1 to 4

Table 7: MDA Slots (Continued)

Chassis	Available MDA slots
SAR-A	Slots 1 and 2 preconfigured as: <ul style="list-style-type: none">Slot 1 for Ethernet ports (both variants)Slot 2 for T1/E1 ports (only on the variant equipped with T1/E1 ports)
SAR-F	Slots 1 and 2 preconfigured as: <ul style="list-style-type: none">Slot 1 for T1/E1 portsSlot 2 for Ethernet ports
SAR-H	Slots 1 to 3 preconfigured as: <ul style="list-style-type: none">Slot 1 for Ethernet portsSlot 2 for module slot position 1Slot 3 for module slot position 2
SAR-Hc	Slots 1 and 2 preconfigured as: <ul style="list-style-type: none">Slot 1 for Ethernet portsSlot 2 for RS-232 ports
SAR-M	Slots 1 to 3 preconfigured as: <ul style="list-style-type: none">Slot 1 for Ethernet portsSlot 2 for T1/E1 portsSlot 3 for modules (only on variants that support modules)
SAR-W	Slot 1 preconfigured for Ethernet ports
SAR-Wx	Slots 1 to 3 preconfigured as: <ul style="list-style-type: none">Slot 1 for Ethernet portsSlot 2 for xDSL ports (only on variants that support xDSL)Slot 3 for GPS RF ports (only on variants that support GPS)