

# ISA Hardware

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## In This Section

This section provides an overview of Alcatel-Lucent's implementation of the ISA hardware.

Topics include:

- [MS-ISA Overview on page 22](#)
- [MS-ISM Overview on page 23](#)
- [Application Assurance Hardware Features on page 24](#)

## MS-ISA Overview

The MS-ISA (or ISA-MS in CLI) is an Integrated Services Adaptor for Multi-Service processing, as a resource module within the 7x50 system providing packet buffering and packet processing.

ISA-MS fits in an MDA/ISA slot on an IOM and has no external ports, so all communication passes through the IOM, making use of the network processor complex on the host IOM for queuing and filtering functions like other MDAs and ISAs.

The actual ingress and egress throughput will vary depending on the buffering and processing demands of a given application, but the ISA-MS hardware can support slightly more than 10 Gbps of throughput ingress and egress.

With the introduction of the MS-ISM and ISA2 processing, ISA-MS may also be referred to as ISA1, as the first generation ISA hardware.

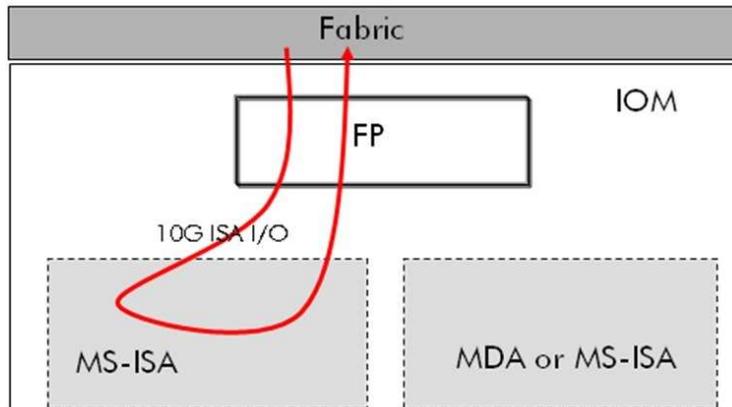
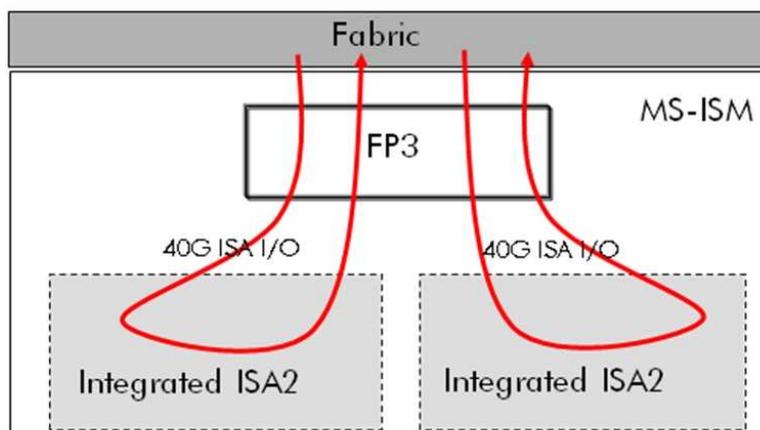


Figure 1: MS-ISA on Host IOM

## MS-ISM Overview

The Multi-Service Integrated Services Module (MS-ISM) card contains two ISA2 processing modules providing increased packet processing throughput and scale compared to the MS-ISA platform. Each ISA2 processing module supports a 40G datapath for packet processing; as with ISA1 the actual throughput varies by function.

The IOM base card is an imm-2pac-fp3 with two embedded positions for ISA2s. Hot swap or field replacement of the ISA2s within an MS-ISM assembly is not supported. IMM cards offering 10x10GE media plus one ISA2, or 1x100GE media plus one ISA2.



**Figure 2: MS-ISM with ISA2s**

The MS-ISM remains as a common base hardware assembly to be used as a generic CPU processing platform for multiple applications. The functions supported in this release on MS-ISM including the following software based capabilities:

- Application Assurance (AA)
- Tunnel (IPsec, GRE)
- Broadband (NAT, LNS)

## Application Assurance Hardware Features

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### AA System Support

The Application Assurance Integrated Services Adapter (AA ISA) is a resource adapter, which means that there are no external interface ports on the AA ISA itself. Instead, any other Input Output Modules on a system in which the AA ISA is installed are used to switch traffic internally MS ISA to the AA ISA. [Table 2](#) describes Application Assurance ISA support on 7750 SR and 7450 ESS products.

**Table 2: Application Assurance System Support**

System	AA on MS-ISA	AA on MS-ISM
7750 SR-12	Yes	Yes
7750 SR-12e	Yes	Yes
7750 SR-7	Yes	Yes
7750 SR-c12	Yes	No
7750 SR-c4	Yes	No
7710 SR	No	No
7450 ESS-12	Yes	Yes
7450 ESS-7	Yes	Yes
7450 ESS-6	Yes	No

A key strength of Application Assurance features is the complete integration into the 7750 SR and 7450 ESS family of products. Common interfaces and operational familiarity reduce the effort to integrate the Application Assurance into existing networks.

## Host IOM Support for AA on MS-ISA

The AA MS-ISA is supported on IOM-20G-B, IOM2-20g , IOM3-XP, CFM-XP (c12), and IOMc4-xp.

Each IOM can support a maximum of two AA ISA modules. To maximize AA ISA redundancy, deployment of AA ISAs on separate host IOMs is recommended as it provides IOM resilience. Traffic from any supported IOM (for example, the IOM-20G-B, and IOM3-XP, fixed port IOMs (IMMs)) can be diverted to AA ISA host IOM.

The MS-ISA is field replaceable and supports hot insertion and removal. See [Figure 1](#). A system can support up to seven active AA MS-ISA cards providing up to 70 G of processing capacity (a system with seven active ISA2s on MS-ISM provides up to 280G processing).

AA ISA software upgrades are part of the ISSU functionality. Upgrades to AA ISA software, for example to activate new protocol signatures, do not impact the second MDA slot for the IOM carrying the AA ISA, nor do upgrades impact the router itself (for example, a new AA ISA software image can be downloaded without a need to upgrade other software images).

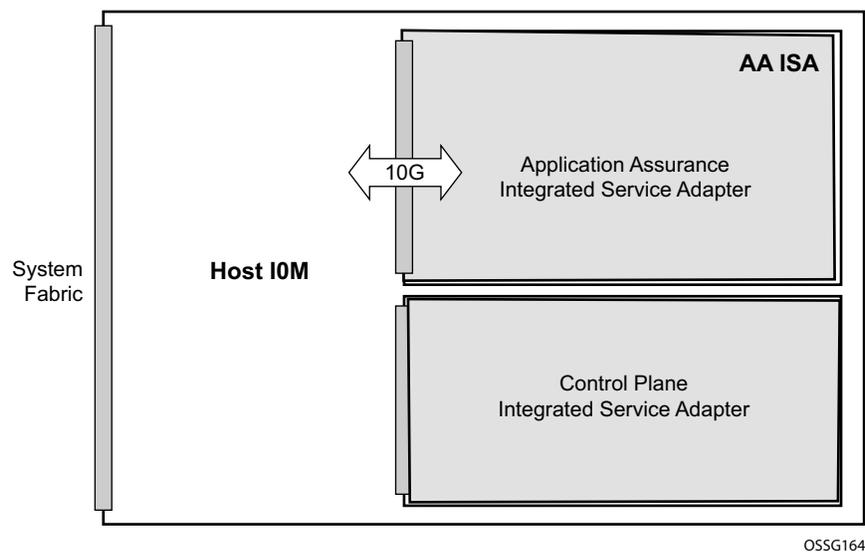


Figure 3: AA ISA on Host IOM 2-20G Example

