ONVIF® | Standardizing IP Connectivity for Physical Security

Understand ONVIF in 10 Minutes



Copyright © 2011-2026 ONVIF, Inc. Unless otherwise indicated, all rights are reserved by ONVIF, Inc.

ONVIF in a Nutshell

- What is ONVIF?
- Why use ONVIF?
- ONVIF Structure – Specifications and Profiles
- ONVIF Conformant Products
- Where can I get more information?

Copyright © 2011-2026 ONVIF, Inc. Unless otherwise indicated, all rights are reserved by ONVIF, Inc.

What is ONVIF?

- ONVIF is an organization, comprised of member companies from within the IP security industry
- The mission of ONVIF is to provide and promote standardized interfaces for effective interoperability of IP-based physical security products and services
- The three cornerstones of ONVIF are:
  - Standardization of communication between IP-based physical security products and services
  - Interoperability regardless of brand and deployment (on-premise, cloud, hybrid solutions)
  - Openess to all companies and organizations

Copyright © 2011-2026 ONVIF, Inc. Unless otherwise indicated, all rights are reserved by ONVIF, Inc.

Why use ONVIF?



- In a multi-vendor environment, ONVIF ensures that products will work seamlessly together
- Choose between more than 37,000+ products to match your exact needs and preferences, regardless of vendor
- As an installer, ONVIF saves you installation time, trouble, cost, and future-proofs your installation

Copyright © 2011-2026 ONVIF, Inc. Unless otherwise indicated, all rights are reserved by ONVIF, Inc.

ONVIF® | Standardizing IP Connectivity for Physical Security

ONVIF PROFILES



Copyright © 2011-2026 ONVIF, Inc. Unless otherwise indicated, all rights are reserved by ONVIF, Inc.

ONVIF Structure

- ONVIF consists of a wealth of specifications
- These specifications are grouped into Profiles
- A Profile has a fixed set of features
- Profiles makes it easier to identify compatible products



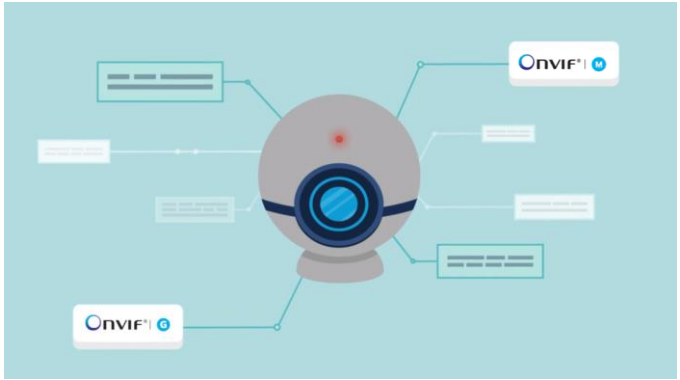


Copyright © 2011-2026 ONVIF, Inc. Unless otherwise indicated, all rights are reserved by ONVIF, Inc.

ONVIF Profiles

- The Profile specifies a set of features that must be supported by both client and device
- Conformant products must support at least one Profile...
- ...but can support more than one...



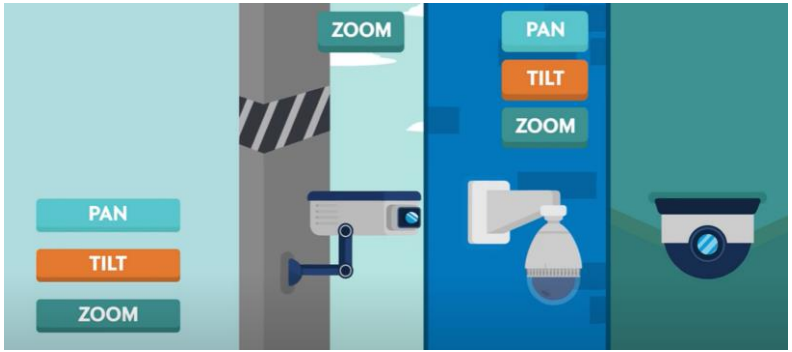


Copyright © 2011-2026 ONVIF, Inc. Unless otherwise indicated, all rights are reserved by ONVIF, Inc.

ONVIF Profiles

- Features in Profiles are either Mandatory or Conditional
- Mandatory features must be supported
- Conditional features only supported if relevant
- i.e., PTZ functions can only be supported in PTZ cameras





Copyright © 2011-2026 ONVIF, Inc. Unless otherwise indicated, all rights are reserved by ONVIF, Inc.

ONVIF Profiles

- **Profile A** for broader access control configuration
- **Profile C** for door control and event management
- **Profile D** for access control peripherals
- **Profile G** for edge storage and retrieval
- **Profile M** for metadata and events for analytics applications
- **Profile T** for advanced video streaming

Copyright © 2011-2026 ONVIF, Inc. Unless otherwise indicated, all rights are reserved by ONVIF, Inc.

ONVIF Profiles

- Online overview of features in each profile
- Check list to see exactly which features a profile covers
- Or check to see in which profile(s) your required feature is included

Features		Profiles															
		G		Q		S		T		C		A		D		M	
		Device	Client	Device	Client	Device	Client	Device	Client	Device	Client	Device	Client	Device	Client	Device	Client
General																	
System Settings		M	C	M	C	M	C	M	C	M	C	M	C	M	C	C	C
User Authentication	WS-Username Token					M	M										
	Digest Authentication	M	M	M	M	O	M	M	M	M	M	M	M	M	M	M	M
User Handling		M	C	M	M	M	C	M	C	M	C	M	M	M	M		
Query Services and Capabilities		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Device Discovery		M	C	M	M	M	C	M	M	M	C	M	M	M	M	O	M
Default Access Policy				M													
Network Configuration		M	C	M	C	M	C	M	M	M	M	M	C	M	M		
Zero configuration				C	C	C	C										
Firmware Upgrade				C	C												
Backup and Restore				C	C												
TLS Configuration				C	C												
IP Address Filtering						C	C					C	C				
NTP						C	C	C	C			M	C				
Automatic IP Assignment				C	C												
Media Profile Configuration						M	C	M	C							M	C
Media Transport	RTP/UDP	M	M			M	M[1]	M	M[1]							M	M[1]
	RTP/RTSP/HTTP/TCP	M	M			M		M								M	
	RTP/RTSP/HTTPS/TCP	C	C					C	C							C	C
	RTP/RTSP/TCP/WebSocket							C	O								
	RTP/UDP Multicast					C	C	M	C								

Copyright © 2011-2026 ONVIF, Inc. Unless otherwise indicated, all rights are reserved by ONVIF, Inc.

ONVIF® | Standardizing IP Connectivity for Physical Security

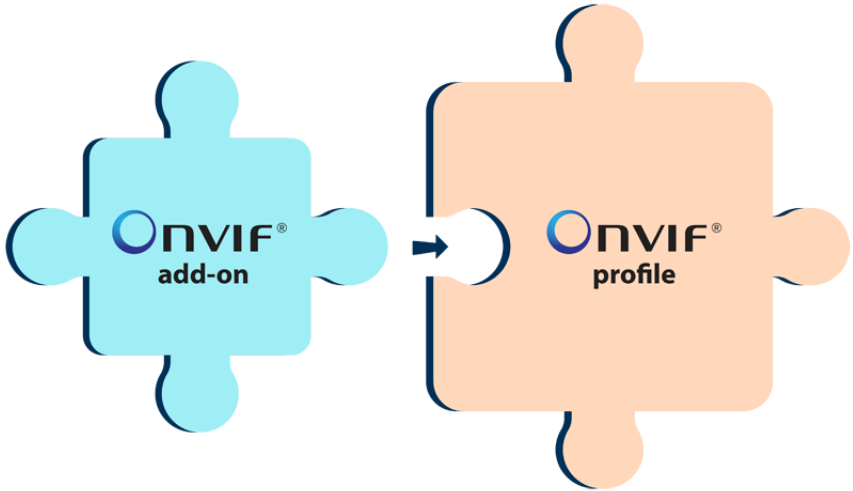
ONVIF ADD-ON



Copyright © 2011-2026 ONVIF, Inc. Unless otherwise indicated, all rights are reserved by ONVIF, Inc.

ONVIF Add-on

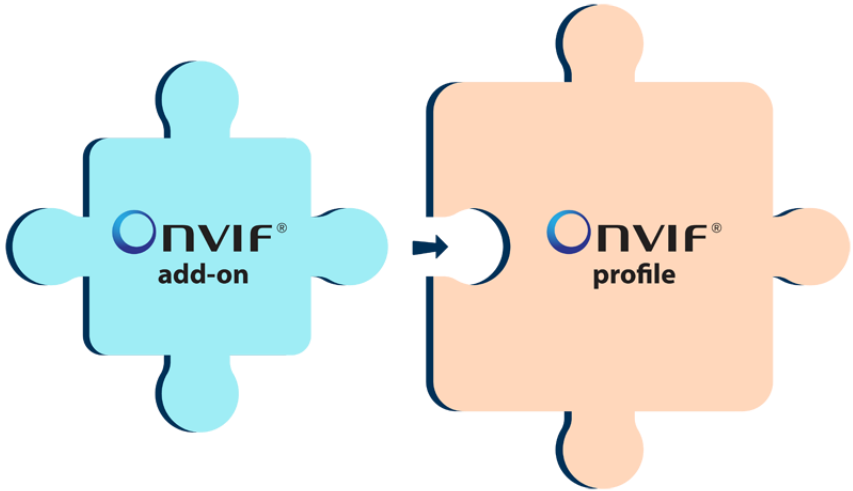
- One or more features that solve one use case
  - Not enough to qualify as a profile by itself
- Allows for version handling
  - Features can be added/removed if there is market justification
- Devices/clients claiming add-on conformance must:
  - Pass add-on conformance tests
  - Conform to an ONVIF profile



Copyright © 2011-2026 ONVIF, Inc. Unless otherwise indicated, all rights are reserved by ONVIF, Inc.

Benefits of an Add-on

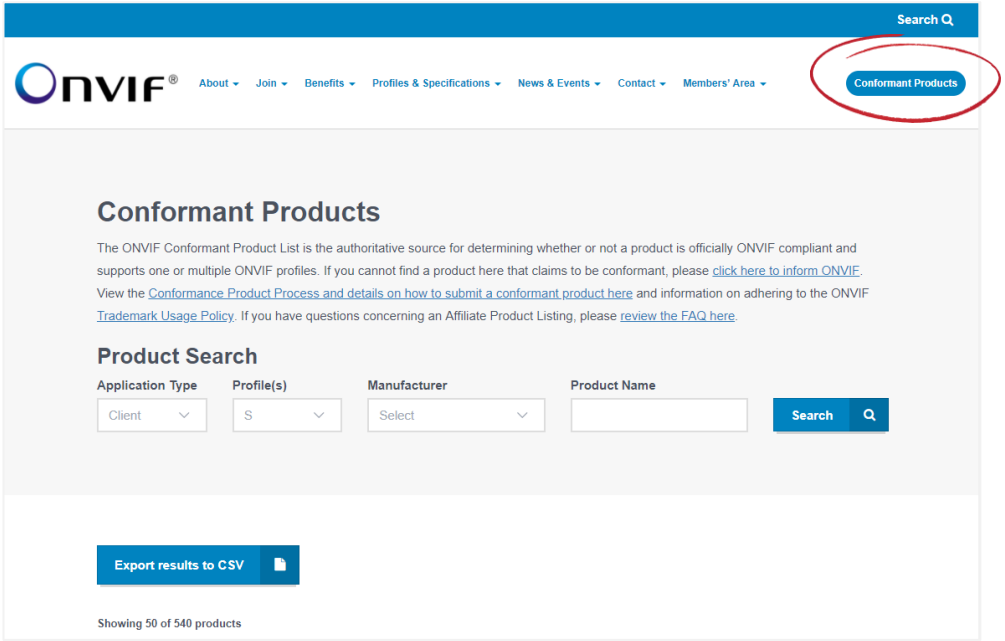
- Allows ONVIF profile conformant device/client to claim conformance to additional capabilities outside of profiles
- Easier and quicker to develop and release due to its limited features as compared with a profile



Copyright © 2011-2026 ONVIF, Inc. Unless otherwise indicated, all rights are reserved by ONVIF, Inc.

ONVIF Conformant Products

- All conformant products are listed on the ONVIF website
- Only products listed here are guaranteed conformant



https://www.onvif.org/conformant-products/

Copyright © 2011-2026 ONVIF, Inc. Unless otherwise indicated, all rights are reserved by ONVIF, Inc.

Where to Get More Information



www.onvif.org

Profiles	www.onvif.org/profiles/
List of Conformant Products	www.onvif.org/conformant-products/
Intro videos	www.onvif.org/video-category/about-onvif/

Copyright © 2011-2026 ONVIF, Inc. Unless otherwise indicated, all rights are reserved by ONVIF, Inc.

Standardizing IP Connectivity for Physical Security

Thank you

© All rights reserved. ONVIF is a trademark of ONVIF, Inc.

Copyright © 2011-2026 ONVIF, Inc. Unless otherwise indicated, all rights are reserved by ONVIF, Inc.