SGCWEBSOCKETS · TECHNICAL DOCUMENT

UDP Client

TsgcUDPClient — low-level UDP datagram client for sgcWebSockets P2P stack; foundation for STUN, TURN and ICE.

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Overview

TsgcUDPClient implements the UDP Client based on Indy library.

At a glance

COMPONENT CLASS `TsgcUDPClient`	STANDARDS / SPEC **UDP — RFC 768**
TRANSPORTS **TCP, TLS**	PLATFORMS **Windows, macOS, Linux, iOS, Android**
FRAMEWORKS **VCL, FireMonkey, Lazarus / FPC**	EDITION **Standard / Professional / Enterprise**

Features

- Native Delphi implementation with full ANSI/Unicode support.

Technical specification

Standards & specs	UDP — RFC 768
Component class	`TsgcUDPClient` (unit `sgcUDP_Client`)
Frameworks	VCL, FireMonkey, Lazarus / FPC
Platforms	Windows, macOS, Linux, iOS, Android

Main properties

The principal published / public properties used to configure and drive the component. Consult the online help for the full list.

`DTLSOptions`	Certificate, verification and OpenSSL settings applied when DTLS is enabled.
`Host`	IP address or DNS hostname of the destination UDP peer or server.
`Port`	UDP port number of the destination peer or server.
`DTLS`	Enables Datagram TLS (DTLS) to encrypt the UDP traffic sent and received by this client.
`Proxy`	Optional SOCKS5 proxy through which UDP datagrams are tunneled.
`LogFile`	Writes every datagram sent and received to a plain-text log file for diagnostics.
`NotifyEvents`	Controls how received-datagram and exception events are dispatched to the main thread.
`IPVersion`	Selects the IP stack (IPv4 or IPv6) used by the UDP socket.
`Version`	Read-only string with the sgcWebSockets library version that built this component.

Main methods

The principal public methods exposed by the component.

`WriteData()`	Sends a single UDP datagram (overloaded for text, bytes and explicit address/port).
`ClearDTLS()`	Discards the cached DTLS session state so the next datagram triggers a fresh DTLS handshake.

Public events

The component exposes the following published events; consult the online help for full event-handler signatures.

`OnDTLSVerifyPeer`	Fires during the DTLS handshake so the application can inspect and accept or reject the peer certificate.
`OnUDPException`	Fires when the UDP reader thread catches an unhandled exception.
`OnUDPRead`	Fires when an incoming UDP datagram has been received from the peer.

Quick Start

Drop the component on a form, configure the properties below and activate it. The snippet that follows shows the typical **TsgcUDPClient** configuration sourced from the online help.

> **About this scenario.** TsgcUDPClient implements the UDP Client based on Indy library.

Delphi (VCL / FireMonkey)

```
oClient := TsgcUDPClient.Create(nil);
    oClient.Host := '127.0.0.1';
    oClient.Port := 80;
```

C++ Builder

```
oClient = new TsgcUDPClient();
    oClient->Host = "127.0.0.1";
    oClient->Port = 80;
```

.NET (C#)

```
oClient = new TsgcUDPClient();
    oClient.Host = "127.0.0.1";
    oClient.Port = 80;
```

Common scenarios

The following scenarios are lifted verbatim from the online help. Each shows the configuration and method calls needed to drive the component through a specific real-world flow.

1 · TsgcUDPServer

TsgcUDPServer implements the UDP Server based on Indy library.

Delphi (VCL / FireMonkey)

```
oClient := TsgcUDPServer.Create(nil);
    oClient.Port := 80;
```

C++ Builder

```
oClient = new TsgcUDPServer();
    oClient->Port = 80;
```

.NET (C#)

```
oClient = new TsgcUDPServer();
    oClient.Port = 80;
```

Sources used to build this document

Every external claim links back to a primary source. The online-help references decode the canonical deep-link the company maintains for this component.

Primary standard / spec — UDP — RFC 768	datatracker.ietf.org/doc/html/rfc768
Online help — component page	www.esegece.com/help/sgcWebSockets/Components/P2P/UDP/TsgcUDPClient.htm
Delphi demo project (in the sgcWebSockets package)	`Demos\35.P2P\01.UDP_Server_Client`
Component page	www.esegece.com/products/websockets/p2p/udp-client/
Product page	www.esegece.com/products/websockets/

> **Document scope.** This document covers the publicly-documented surface of the UDP Client component shipped with sgcWebSockets. For full property, method and event reference consult the online help linked above.