

# The ICPC Presentation Client



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An ICPC Tool

## Introduction

The ICPC Presentation System provides a mechanism for generating "slide show" presentations containing user-provided images, photos, and a variety of live data from a running contest. The Presentation System consists of two components: *Presentation Clients* and the *Presentation Admin*. This document describes the Presentation Client component; refer to the separate documentation on the Presentation Admin for an explanation of how that component operates.

A Presentation Client is a single process which displays (rotates between) one or more *presentations*. The Presentation System contains a wide variety of built-in presentations, each of which is identified by having both a *number* and a *title* (also referred to as its *name*). Each presentation client is started by giving it a list of the presentations (by number or title) that the client should display. It is allowable to start multiple simultaneous presentation clients, each displaying its own (possibly overlapping) set of presentations. Each separate presentation client is typically run on a separate machine, with each machine connected to a projector or large display to allow many people to watch. (At the ICPC World Finals, for example, as many as 10 or more separate screens are displayed, each running its own specified sequence of presentations.)

Some built-in presentations incorporate data from a running contest. For example, one presentation knows how to display the current contest scoreboard, updating it as the contest progresses; another displays a rising (animated) balloon, labeled with the appropriate team and problem letter/color, whenever a team solves a problem; another presentation shows a graph of the languages used to solve problems so far in the contest; another shows the runs currently in the "judge's queue" and the judgment each runs receives as it exits the queue; still another presentation shows the current contest clock (remaining time); and so forth.

The following images show some of the many built-in presentations which can be displayed by the Presentation System; see below for a complete list of available presentations.



## Input Data Sources

When a Presentation Client is started it must be told, in addition to what presentations to display, where to obtain its input data (images, contest events, etc.). This is referred to as specifying a *contest source*. Presentation Clients can obtain their input data from two different types of contest sources: a compliant *Contest API*, or a *Contest Package* folder.

When connecting to a live contest via the Contest API, the Presentation Client works by reading the *event feed*. The ICPC Presentation System will work with any CCS or the CDS that produces an event feed which is compliant with the Contest API specification. Tools known to produce compliant event feeds include [Contest Data Server](#), [DOMjudge](#), [PC-Squared](#), and [Kattis](#); other Contest Control Systems may also produce compatible event feeds and hence work with the Presentation System.

A second way to provide the Presentation Client with input data is by creating a *Contest Package* folder as per the reference above.

## Using the Presentation Client

### Installation

To install the Presentation Client, download and unzip the Presentation Client distribution package to any convenient location. The Presentation Client itself is a collection of Java programs (components). The distribution is a self-contained package which contains all the Java libraries and other components necessary to run the Presentation Client. (Note however that Java version 17 or higher must be installed on the machine.)

### Operation

The Presentation Client is designed to run in one of two modes: *standalone* or *admin\_controlled*. This document focuses on using the Presentation Client in *standalone* mode. Using the Presentation Client in *admin-controlled* mode requires installing the separate *Presentation Admin* ICPC Tool; that usage is discussed

briefly below and is described in greater detail in the separate documentation for the Presentation Admin (a separate ICPC Tool).

**Standalone Mode** The Presentation Client distribution includes a set of scripts which can be used to launch the program, `standalone.bat` for Windows platforms and `standalone.sh` for macOS and Linux. (for Linux or similar systems see *Additional Notes*, below) Also, see the Presentation Admin documentation for information regarding a second script, *client.bat*, which is contained in the Presentation Client distribution.

The *standalone* script assumes it is being run from the main Presentation Client folder (i.e. from the folder where the distribution was unzipped) and is invoked with a set of command line parameters to control its operation.

The first parameter to the script specifies a contest data source, either a URL to a Contest API server, or a local folder that is the root of a *Contest Package* as described above.

If the first parameter is a URL, the Presentation Client expects the next two parameters to specify a user name and password. This user name and password are used to login to the Contest API.

The final parameter must be a "--p" option followed by a set of presentation names or numbers, separated by spaces; for example, "2 4 clock" (which requests a presentation sequence consisting of presentation number 2, then number 4, then the presentation named "clock").

To terminate a running presentation, press Ctrl-Q. To see debug information including the the current presentation and frame rate, use Ctrl-D.

**Admin-Control Mode** As described above, the Presentation Client provides support for displaying (rotating between) one or more individual presentations. Each instance of the Presentation Client is limited to this functionality; multiple instances can be started but they have no knowledge of each other, there is no way to coordinate their content other than manually when they are started, and there is no way to change the content of a given Presentation Client except by shutting it down and restarting it.

The ICPC Tool set also includes a separate tool called the *Presentation Admin* (see the [ICPCTools website](#)). The Presentation Admin tool provides functionality for managing multiple Presentation Clients; it allows dynamically changing the content of each of many clients along with additional related functions.

If a Presentation Client is going to be used in conjunction with a Presentation Admin, the Presentation Client must be started in a slightly different way. This is supported by a second script (batch file) named *client.bat*.

Like the *standalone* script, the *client* script assumes it is being run from the main Presentation Client folder (i.e. from the folder where the Presentation *Client* distribution was unzipped) and is invoked with a set of command line parameters to control its operation. In this case, however, the parameters are used to register with a Contest Data Server (CDS) and await further instructions from an Admin.

Similar to the *standalone* script, the first three parameters to the *client* script must be a URL to a CDS, a user name, and a password. You do not use "--p" since the list of presentations to display will be configured using an Admin.

If you are running multiple presentation clients it is useful to be able to differentiate them. The "--name" option can be used followed by a string (e.g. "--name left-screen") to uniquely identify this particular client in the Admin.

## Usage

The general form for executing the Presentation Client in standalone mode is

```
standalone.bat/sh contestURL user password [options], or  
standalone.bat/sh contestPath [options]
```

where

contestURL is an HTTPS URL to connect to a CDS, followed by user and password

contestPath is a local folder to load from a contest package

The general form for executing the Presentation Client in admin-controlled mode is

```
client.bat/sh CDSurl user password [options]
```

where

CDSurl is an HTTPS CDS URL, followed by user and password

## Command Line Options

**--p <presentations>**

Standalone client only. Any number of parameters specifying the presentation(s) to display. Each parameter must be a number or partial presentation name. For example, "2 4 clock" which requests a presentation sequence consisting of presentation number 2, then number 4, then the presentation named "clock". Run without any options to see the list of available presentations.

**--name <name>**

Admin-controlled client only. Specifies a name to refer to this client in the admin, e.g. "Stage right" or "Hallway".

**--display <num>**

Specifies which desktop display to use in full-screen exclusive mode. The primary display is number 1, secondary is number 2, etc. If this option is not specified the default is the primary display.

**--multiDisplay <p@wxh>**

Specifies that this client is part of a presentation stretched across multiple client displays. The format of the parameter is "position @ width x height", where width and height are the number of displays horizontally and vertically, and position starts at 1 in the top left and is incremented horizontally. For example, use "2@3x2" to indicate this client is position 2 (top middle) in a 3x2 grid.

**--light**

Light mode - use a white background and shift colors to match.

**--display\_name <template>**

Allows you to change the way team names are displayed using a template with the following parameters:

| Parameter           | Value  |
|---------------------|--|
| {team.display_name} | The team's display name, e.g. "drop tables". If there is no display name the team name will be used.                       |
| {team.name}         | The team's name, e.g. "drop tables".   |
| {org.name}          | The organization's name, often a short form, e.g. "UBC".   |
| {org.formal_name}   | The full organization name, e.g. "University of Toronto". If there is no formal name the organization's name will be used. |

Examples:

- `--display_name "{team.name} ({org.name})"`
- `--display_name "{org.formal_name}"`
- `--display_name "{org.formal_name} ({team.name})"`

**--account <type>**

Filter contest data based on what should be visible to an account of the given type. This is useful when

the Contest Control System only has a single event feed or account that includes internal information (e.g. judgements during the freeze) and you want to show presentations in an area where it will be visible to teams (`--account team`) or spectators (`--account spectator`).

## Examples

```
standalone.bat https://cds user pwd --p logo pictures
```

The above command starts the Presentation Client, causes it to connect to a CDS at the specified URL using the specified user name ("user") and password ("pwd"), and begins alternating between two presentation displays: the first consisting of the ICPC Contest Logo, the second consisting of a set of pictures obtained from the appropriate CDS URL.

```
standalone.bat c:\myContest --p 1 3 16
```

The above command starts the Presentation Client, causes it to load contest information from the Contest Package whose root is the folder "c:\myContest", and begins alternating between presentations 1, 3, and 16.

```
client.sh https://cds user pwd --name "Site 2"
```

The above command starts a Presentation Client in admin-controlled mode, causing it to connect to the CDS specified by the URL `https://cds` logging in with the name "user" and the password "pwd" and registering itself with the Presentation Admin as "Site 2". The Presentation Client then remains quiescent with a blank screen until it receives a command from a Presentation Admin (forwarded via the CDS) telling it what to display.

## Available Presentations

The Presentation System contains a variety of built-in presentations which can be displayed by Presentation Clients. (It is also possible for users to create their own presentations, both static and dynamic, and to include them into the ICPC Presentation System; a future version of this document will provide information on how that works.) Some of the available presentations are listed in the table below, which shows their identifying number and name, the internal specification by which they are known, and notes on their operation. (Note that the numbers will be different, and some presentations are only useful when used in conjunction with the Presentation Admin.)

Available presentations:

| #            | Name             | Id                | Thumbnails   | Description                         |
|--------------|------------------|-------------------|--|-------------------------------------|
| <b>Beta</b>  |                  |                   |  |                                     |
|              |                  |                   |  |                                     |
| 1            | Better Fireworks | .better.fireworks |  |                                     |
| 2            | Contest Floor    | .floor            |  | Shows the contest floor             |
| 3            | Floor Activity   | .old.floor        |  | Displays the contest floor activity |
| <b>Chart</b> |                  |                   |  |                                     |

| #  | Name                  | Id                        | Thumbnails   | Description        |
|----|-----------------------|---------------------------|--|--------------------|
| 4  | Historical comparison | .chart.historical         |    |                    |
| 5  | Judge Queue Depth     | .chart.queue.depth        |    |                    |
| 6  | Judgement time        | .chart.judgement.time     |   |                    |
| 7  | Languages             | .chart.language           |  |                    |
| 8  | Problem comparison    | .chart.problem.comparison |  |                    |
| 9  | Problem detail        | .chart.problem.detail     |  |                    |
| 10 | Problem summary       | .chart.problem.summary    |  | Shows attempts, so |

| #  | Name                        | Id                    | Thumbnails  | Description         |
|----|-----------------------------|-----------------------|---|---------------------|
| 11 | Scoreboard                  | .chart.score          |   | Shows position of c |
| 12 | Total Problems<br>Clock     | .chart.total.problems |   |                     |
| 13 | Contest clock               | .clock                |    | The contest time r  |
| 14 | Countdown                   | .countdown            |   | A countdown clock   |
| 15 | Countdown with sites status | .multisitecountdown   |   | A countdown clock   |
| 16 | Polar countdown<br>Fun      | .polar                |   | A polar countdown   |

| #  | Name                  | Id             | Thumbnails   | Description         |
|----|-----------------------|----------------|--|---------------------|
| 17 | Bill Poucher          | .bill          |    | The venerable ICP   |
| 18 | Do not touch anything | .doNotTouch    |    | A pre-contest mess  |
| 19 | Fireworks             | .fireworks     |    |                     |
| 20 | Mohamed Fouad<br>ICPC | .mohamed       |   |                     |
| 21 | Balloon Path          | .balloon.path  |  | Contest floor showi |
| 22 | Commentary            | .commentary    |  | Displays contest co |
| 23 | Fading Logos          | .org.logo.fade |  | Shows the logos of  |



| #  | Name              | Id               | Thumbnails   | Description              |
|----|-------------------|------------------|--|--------------------------|
| 24 | Logo Wall         | .org.logo.wall   |    | Shows all organizations  |
| 25 | Person            | .person          |    | Highlight a person       |
| 26 | Photo and caption | .single.photo    |    | The photo at CDP         |
| 27 | Photos            | .photos          |   | A rotating set of photos |
| 28 | Problem Colours   | .problems.colors | <br> | The problem colors       |
| 29 | Problem summary   | .problem.summary |  |                          |
| 30 | Single Team       | .team            |  | A team photo and         |

| #  | Name                                | Id              | Thumbnails   | Description         |
|----|-------------------------------------|-----------------|--|---------------------|
| 31 | Sliding Logos<br>Logos and Messages | .org.logo.slide |    | Slides the logos of |
| 32 | CCS                                 | .ccs            |  <br>Contest Control System      Shadow Verification | The primary (and    |
| 33 | ICPC Tools                          | .icpc.tools     |   | The ICPC Tools lo   |
| 34 | Image progression                   | .imagebuild     |    | Fades through a se  |
| 35 | Logo A                              | .logo           |    | Displays the contes |
| 36 | Logo B                              | .logo2          |    | Displays the contes |

| #  | Name               | Id                   | Thumbnails  | Description         |
|----|--------------------|----------------------|---|---------------------|
| 37 | Message            | .message             |       | A message and con   |
| 38 | Promotions<br>Maps | .promo               |   | A rotating set of p |
| 39 | Group              | .map.group           |    | Shows where group   |
| 40 | Submissions        | .map.balloon         |   | A world map with    |
| 41 | Team Intro         | .map.team            |   | Steps through all t |
| 42 | World<br>Resolver  | .map.world           |   | Map of the world.   |
| 43 | Award Detail       | .resolver.team.award |   |                     |
| 44 | Judge Queue        | .resolver.judge      |   |                     |
| 45 | List Award         | .resolver.team.list  |   |                     |

| #  | Name                   | Id                     | Thumbnails   | Description               |
|----|------------------------|------------------------|--|---------------------------|
| 46 | Orgs Remaining         | .resolver.orgs         |  |                           |
| 47 | Splash                 | .resolver.splash       |  |                           |
| 48 | Team Logo              | .resolver.team.logo    |  |                           |
|    | <b>Scoreboard</b>      |                        |  |                           |
| 49 | All Groups leaderboard | .leaderboard.group.all |    |                           |
| 50 | First solution         | .first.solution        |    | Tracks the first solution |
| 51 | First to solve         | .first.to.solve        |   | Shows which team          |
| 52 | Group leaderboard      | .leaderboard.group     |  |                           |
| 53 | Judge queue            | .judge                 |  | The judgement queue       |
| 54 | Leaderboard            | .leaderboard           |  |                           |

| #  | Name            | Id                   | Thumbnails   | Description            |
|----|-----------------|----------------------|--|------------------------|
| 55 | Scoreboard      | .scoreboard          |    | The current contest    |
| 56 | Team Judgements | .judge.team          |    | A team judgement       |
| 57 | Timeline        | .scoreboard.timeline |    |                        |
| 58 | <b>Team</b>     |                      |  |                        |
| 59 | Desktop         | .icpc.team           |  | Team machine desktop   |
| 60 | Logo            | .icpc.logo           |  | The ICPC identifier    |
| 61 | Snake           | .icpc.team.snake     |  | Wave based on team     |
| 62 | Sync            | .icpc.sync           |  | Flashing ICPC in sync  |
| 63 | Video test      | .icpc.team.video     |  | A tool to verify video |
| 64 | Wave            | .icpc.team.wave      |  | Do the wave!           |
| 65 | <b>Test</b>     |                      |  |                        |
| 64 | Alignment       | .test.align          |  | A grid to help with    |
| 65 | BSoD            | .test.bsod           |  | A special hello from   |

| #  | Name                                       | Id                    | Thumbnails   | Description                  |
|----|--|-----------------------|--|------------------------------|
| 66 | Chart                                      | .test.chart           |    | A test chart                 |
| 67 | Clock                                      | .test.clock           |    | The current system           |
| 68 | FPS  | .test.fps             |    | A frame rate gauge           |
| 69 | Synchronization                            | .test.sync            |   | A moving ball to test        |
| 70 | <b>Tile Scoreboards</b><br>Team scoreboard | .tile.team            |  | Team picture with scoreboard |
| 71 | Tile list                                  | .tile.scoreboard.list |  | A contest scoreboard         |
| 72 | Tile rank                                  | .tile.scoreboard.rank |  | A ranked contest scoreboard  |

| #  | Name  | Id               | Thumbnails   | Description         |
|----|-------|------------------|--|---------------------|
| 73 | Tiles | .tile.scoreboard |  | The current contest |