The ICPC Presentation Admin

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An ICPC Tool

Introduction

The *Presentation Admin* is one of the components comprising the ICPC *Presentation System*. The other major components of the Presentation System are the *Presentation Client* and a collection of *presentations*.

The ICPC Presentation System defines a large number of built-in "presentations", each of which displays programming contest-related data in some fashion. For example, one presentation shows the *current contest scoreboard*, scrolling it automatically from the current leaders down through all contenders and then repeating. Other presentations show data such as the languages being used, the current number of solutions to each contest problem, notifications that a particular team has just solved a particular problem, and so forth, all updating in real time based on input from a Contest Control System (CCS). There are also pre-defined presentations for showing a variety of user-selected data such as team photographs, contest logos and related images, local sites of interest, fireworks for the end of the contest, and so forth.

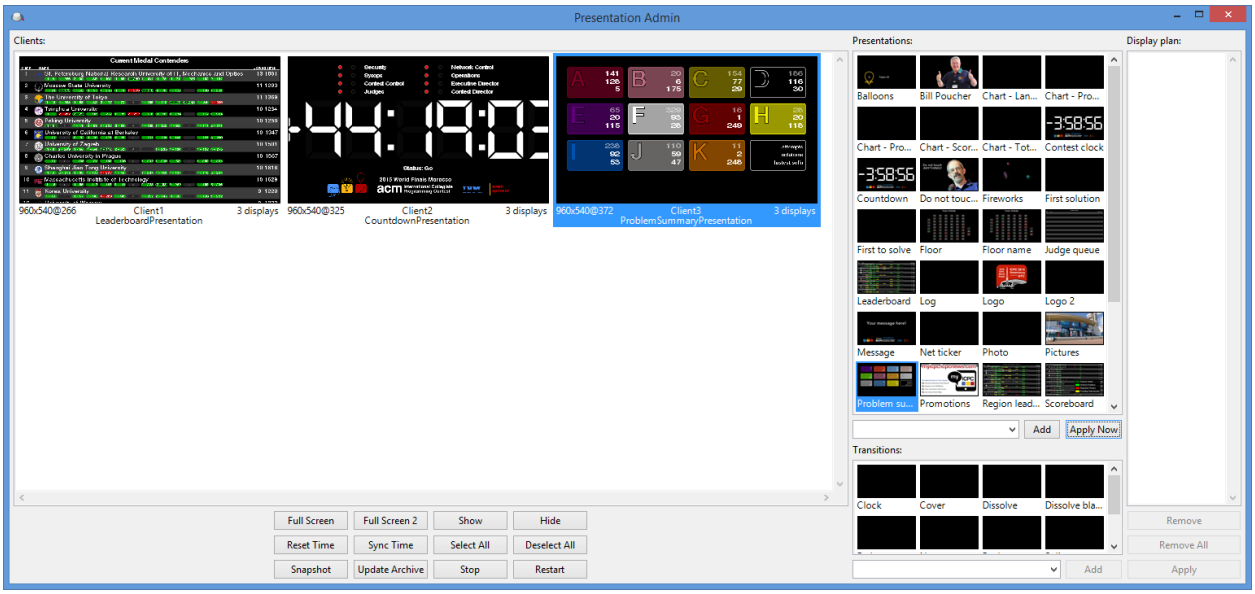
The ICPC Presentation System will work with any CCS that produces an event feed which is compliant with the Contest API. Systems known to produce compliant event feeds include PC-Squared and Kattis; other Contest Control Systems may also produce compatible event feeds and hence work with the Presentation System.

Presentations are bundled together in a *jar* file, with several presentations in any particular jar. The Presentation System includes *Presentation Clients* which are able to accept presentation jar files and display any presentation on its screen. Clients can be started in "stand-alone" mode by giving them a list of presentations, which are then automatically bundled into a jar and provided to the client. (See the separate documentation on the Presentation Client for more information about running a Client in stand-alone mode.)

The Presentation Admin knows what presentations are currently defined in the Presentation System, and also knows what Presentation Clients are currently connected and available to be given a presentation set (jar). The Admin allows the user to select any subset of the available presentations and "assign them" dynamically to any selected set of clients. This makes it particularly easy for one person to control a variety of different displays during a contest.

Presentation Clients and the Presentation Admin communicate through a server called the *Contest Data Server (CDS)*; there must be a CDS running in order to use the Presentation Admin to control Presentation Clients. (See the separate Contest Data Server tool documentation for further information on how to set up and run a CDS.) Presentation Clients connect to the CDS and wait for instructions; the Presentation Admin connects to the same CDS and issues commands which control the display contents of the clients.

The following image shows the Presentation Admin GUI. On the left appear the presentation clients (of which there are three in the example); toward the right appear thumbnail sketches representing available presentations. Client 1 in the example is currently showing a presentation called Leaderboard; Client 2 is showing a Countdown clock presentation; and Client 3 is showing a Problem Summary presentation which gives details of solutions per problem. Each of these clients would typically be running on a separate machine whose display output drives a large monitor or projector made accessible to an audience.



(Note: the above screen shot is a bit out of date and needs to be updated...)

Using the Presentation Admin

Installation

To install the Presentation Admin, download the Presentation Admin distribution package from the ICPCTools website and unzip it to any convenient location. The Presentation Admin 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 Admin (Java version 1.8 or higher must also be installed on the machine).

Configuration

When the Presentation Admin starts (see below), it requests from a CDS (Contest Data Server) a list of available ICPC Presentations for distribution to running Presentation Clients. This means of course that there must be a CDS running in order for the Presentation Admin to connect; see the separate documentation on the ICPC CDS tool for further information.

Startup

The Presentation Admin distribution includes a set of scripts which can be used to launch the program, presAdmin.bat for Windows platforms and presAdmin.sh for macOS and Linux. To start the Presentation

Admin, open a terminal window (command shell), change to the folder where you unzipped the distribution, and type the name of the appropriate script.

The scripts expect three parameters. The first parameter is the HTTPS URL of the Contest Data Server which the Admin should contact. The second and third parameters contains the user login name and password for the CDS.

Specifying a "--help" parameter will generate a short usage message.

Interactive Operation

Once the Presentation Admin is started, it displays a screen similar to the one above, showing the available clients on the left and the available presentations on the right. Note: clients must be started separately in order for them to be recognized by the Admin; see the separate documentation on the Presentation Client for details on how to start a client which will register with the Admin; in particular, refer to the section on the "client.bat" script in the Presentation Client tool documentation.

Once the Admin has a list of clients and presentations, the following operations are available.

Basic Operations

- Assign a presentation to one or more clients:
  - Select a client (in the "Clients:" panel on the left) by clicking on it with the mouse. Holding down CTRL while clicking adds clients to the selection; the *Select All* and *Deselect All* buttons can also be used for selection control.
  - Select a presentation from the "Presentations:" list on the right by clicking on it (note that only one presentation can be selected at a time; see *Display Plans*, below for details on assigning multiple presentations to a client).
  - Click *Apply Now* to apply the selected presentation to the selected client(s). This will cause the selected clients to begin displaying the selected presentation.
- Temporarily disable a client presentation:
  - Select one or more clients, then click *Hide*. This causes the selected client(s) to switch to a blank screen. Client presentations can be changed on the Admin while the client is in "hide" mode. Click *Show* to cause the selected client(s) to begin showing their assigned displays again.
- The additional buttons in the panel below the client list allow you to perform various actions on the currently selected clients:
  - *Full Screen* causes the client (which typically starts in a window) to expand to full screen exclusive mode.
  - *Full Screen 2* expands clients on a second/external display to full screen. Does nothing if you only have one screen.
  - *Sync time*: By default, all clients are initially synced to the system clock time on the CDS on startup. If client machines drift out of time sync, this can be used to force them back in sync with the CDS.
  - *Reset Time*: resets the client's clock to their local system clock.
  - *Snapshot* obtains a screen-grab from the selected client(s) and displays them each in separate windows on the Presentation Admin machine. This allows you to see the client presentation in detail without having to actually go look at the client machine.
  - *Stop* instructs the JVM running the presentation on the selected client(s) to exit (which terminates the presentation client).
  - *Restart* instructs the JVM running the presentation to restart. This causes the client to lose its current presentation and re-register with the Presentation Admin.

Display Plans The Presentation Admin supports the ability to define *display plans*. Display plans are organized sequences of presentations and transitions. Users can build arbitrary display plans and then assign them to selected clients. The clients will then cycle from one presentation to the next one (in the order in which they appear in the display plan), applying each successive transition (also in the order in which they appear in the display plan) between each presentation.

The rightmost panel on the Presentation Admin shows the "current display plan" (which is initially empty). The following operations are available for defining and applying a display plan.

- Add a presentation to the current display plan by selecting (clicking on) it and then clicking the "Add" button below the list of presentations. The selected presentation will appear in the Display Plan panel. Multiple presentations may be added to a display plan, but they must be selected and added individually.
- Add a transition to the display plan by clicking on one of the predefined transitions shown in the Transitions panel (below the presentations list) and then clicking the "Add" button at the bottom of the Transitions panel.
- Remove a presentation from the display plan by selecting it in the Display Plan panel and then clicking "Remove" (or "Remove All") at the bottom of the Display Plan panel.
- Apply the current display plan to the currently selected client(s) by clicking "Apply" at the bottom of the Display Plan panel. This causes the sequence of presentations and transitions in the display plan to become the content of the selected client(s).

The relative positions of presentations and transitions in the Display Plan doesn't matter; the client will cycle through all the presentations, in the order in which they appear in the display plan, applying transitions between presentations in the order in which the transitions appear in the display plan. If there are more transitions than presentations then the last few transitions are ignored (that is, the client starts again at the beginning of the ordered list of transitions when it cycles back to the beginning of the ordered list of presentations). If there are fewer transitions than presentations in the display plan then the client cycles through the transitions again as it continues with the presentations.

Properties Some presentations and transitions have *properties* which affect how they appear. For example, the "Message" presentation has a property defining the message (text) which will be displayed. Similarly, the "Cover" transition has a property which defines the direction in which the next presentation will cover the previous presentation during a display plan transition. Certain properties can be changed by the user, allowing dynamic alteration of presentation content and transition operation.

To change a presentation property, select the presentation and then click the drop-down "Presentation Properties" list at the bottom of the Presentations panel, which will show the properties associated with the currently selected presentation. Entering a new value for the property will then cause that value to be assigned as the corresponding property value for the presentation.

Similarly, to change a transition property, select the transition and then click the drop-down "Transition Properties" list at the bottom of the Transitions panel, which will show the properties associated with the currently selected transition. Entering a new value for the property will then cause that value to be assigned as the corresponding property value for the transition.

(Note: the "Presentation Properties" and "Transition Properties" drop-down lists are actually *unlabeled* in the current version of the Presentation Admin GUI. They are the drop-down lists just below the corresponding Presentations and Transition display lists, just to the left of the *Apply Now* and *Add* buttons respectively.)

To alter a property for a component of a display plan, select the presentation or transition and set the corresponding property *before* clicking Add to add the item to the display plan. To apply a property to a presentation that's already running (e.g. change the text in the "Message" presentation), select the client(s), select the presentation, enter the text, and hit Enter.

Command Line Usage

```
presAdmin cdsURL user password
```

where

```
cdsURL is an HTTPS CDS URL
user and password authenticate the connection to the CDS
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Example

```
presAdmin https://myCDS user pwd
```

The above command starts the Presentation Admin and instructs it to connect to a Contest Data Server at the URL "https://myCDS", logging in with account name "user" and password "pwd". The Admin will request a list of available presentations from the CDS, will connect with any running Presentation Clients which have registered with the CDS, and will wait for the user to assign sets of presentations to the clients. If any new Presentation Client subsequently register with the CDS the Presentation Admin will be notified and will add them to its client display.