

SICE 2011

RT-Middleware Tutorial

Date: 2011/9/13 10:00~16:30

Place: SICE 2011



RT-Middleware tutorial



10:00 - 10:45	Part 1: Introducing RT-Middleware
	Tetsuo Kotoku (AIST)
	An introduction to RT-Middleware, RT-Systems and RT-Components.
11:00 - 12:30	Part 2: Building RT-Systems using RT-Middleware
	Geoffrey Biggs (AIST)
	Hands-on practice using small samples to construct complete RT-Systems.
13:30 - 15:00	Part 3: Creating RT-Components
	Geoffrey Biggs (AIST)
	Hands-on practice creating RT-Components.
15:15 - 16:00	Part 4: Human interaction with OpenHRI
	Yosuke Matsusaka (AIST)
	A demonstration of RT-Components for human-robot interaction.
16:00 - 16:30	Part 5: Discussion

Part 5: Useful features

Geoffrey Biggs (AIST)

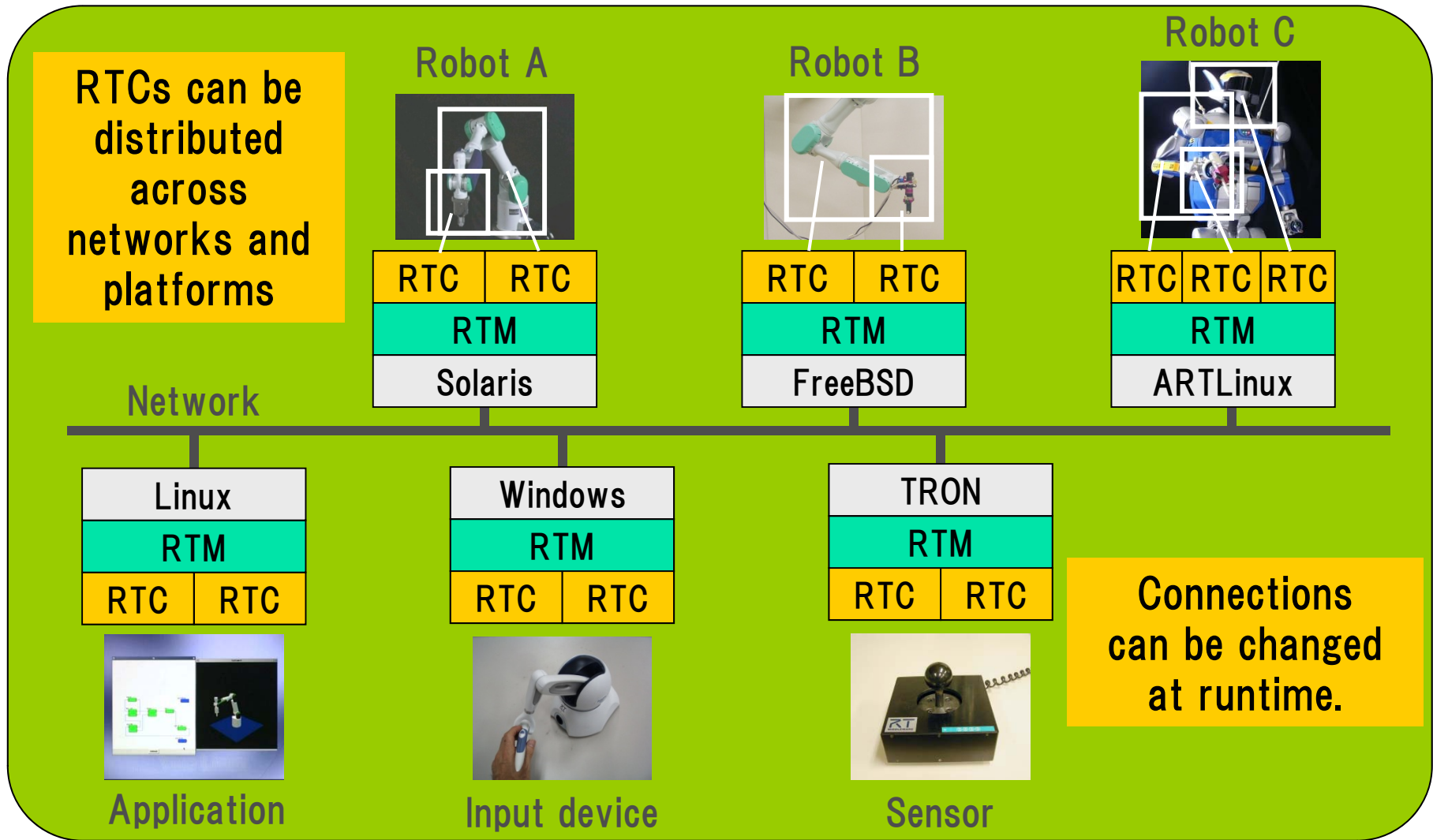


Outline

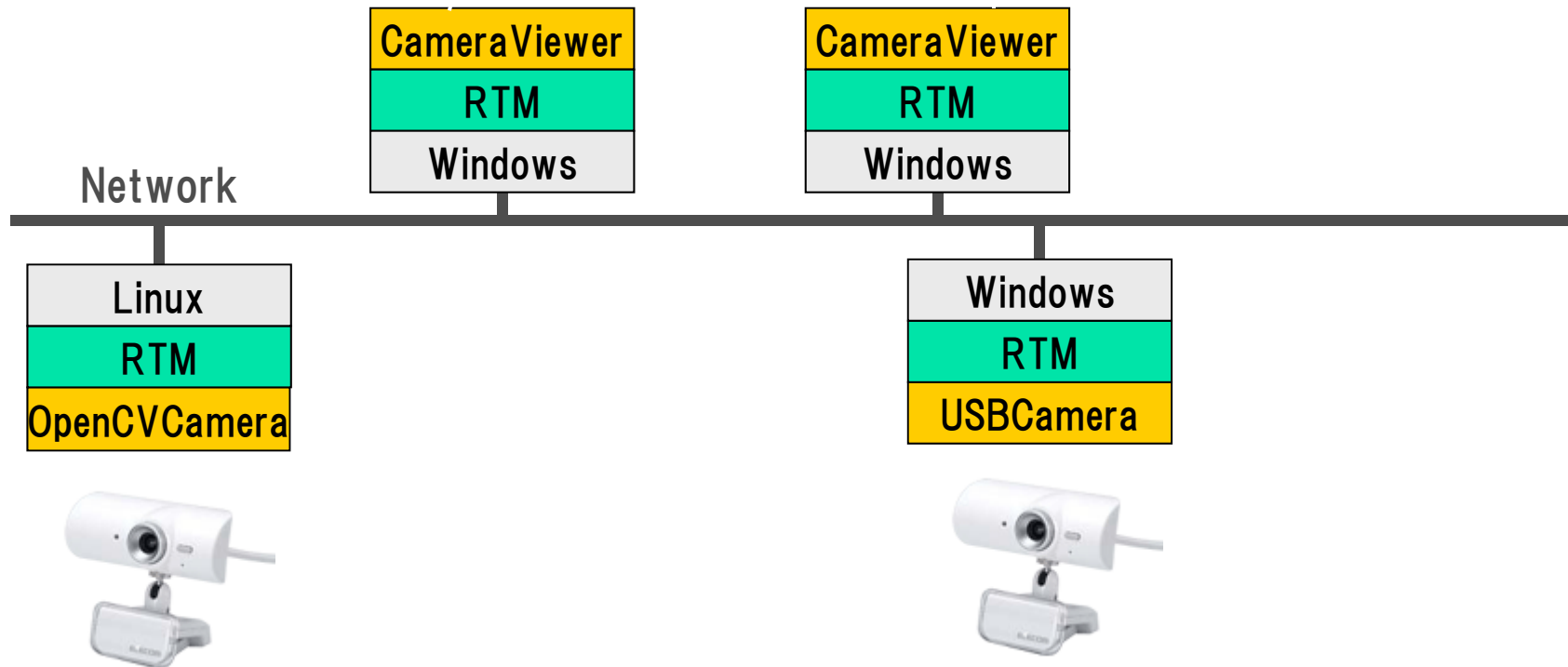
- **Connecting components over a network**
- **Starting components from RTSystemEditor**
- **Reusing RT-Components**

Connecting components over a network

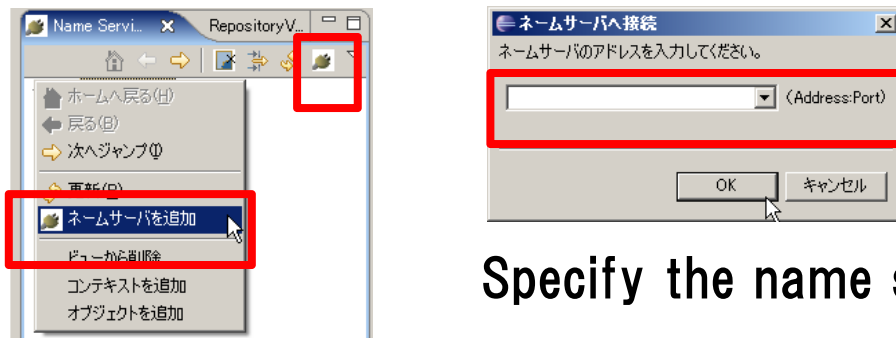




- Try connecting your CameraViewer component to the DirectShowCamera component on another computer



■ Connecting to a name server



Specify the name server's address

The components registered on the name server will be displayed.

■ Connect the components

Drag the DirectShowCamera component from the other computer into your system editor.

Connect it to your own CameraViewer and activate it.

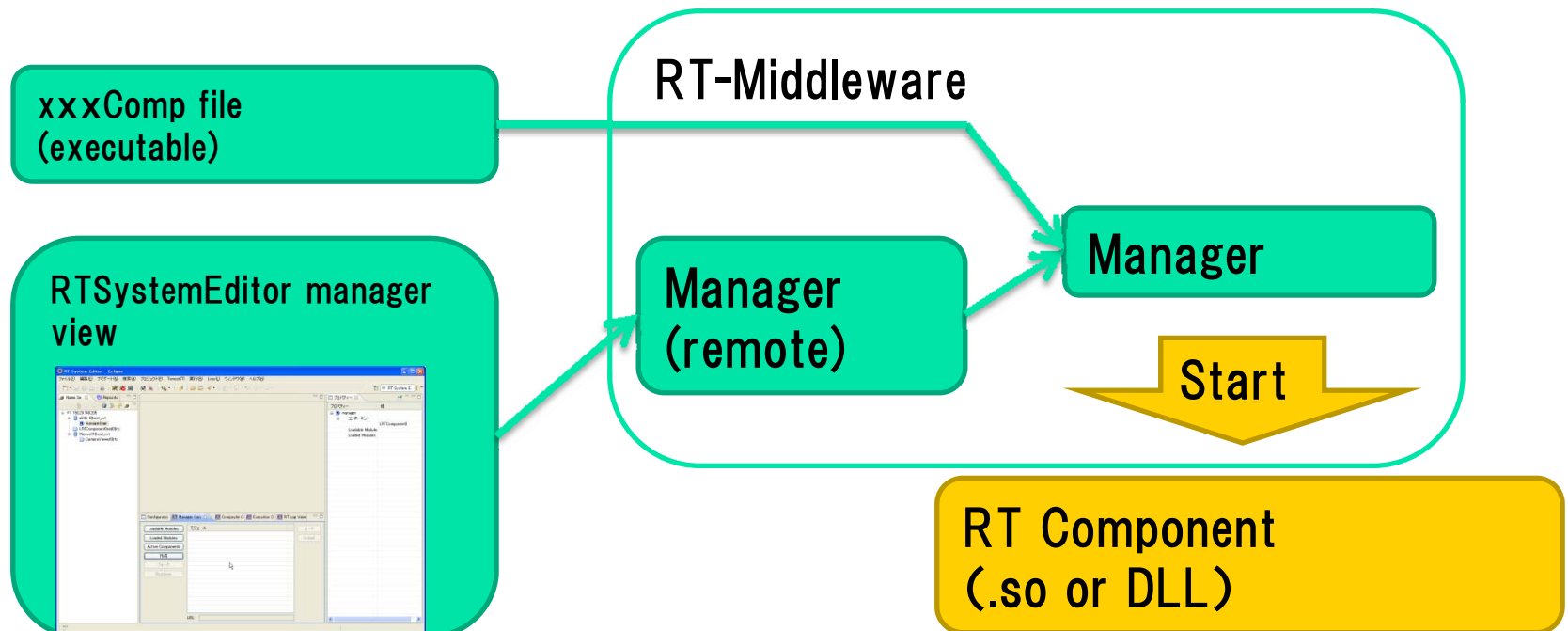
Starting components from RTSystemEditor



■ How components work

Components are shared libraries that can be loaded into RT-Middleware managers, where instances of them can be created.

Managers can be controlled remotely, allowing you to manage their components from RTSystemEditor.



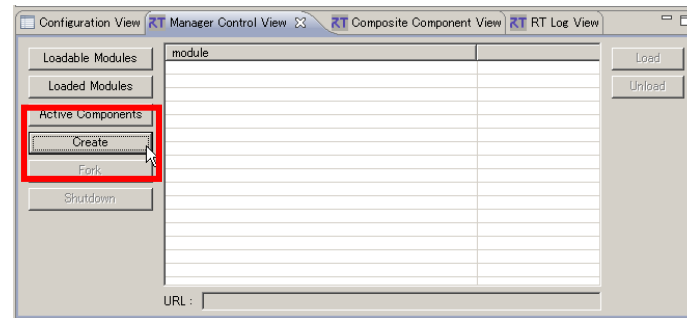
■ Stand-alone RT-Component manager

[All Programs]→[OpenRTM-aist 1.1]→[C++]→[tools]
→[Start RTC daemon]

■ To control a manager remotely, do one of:

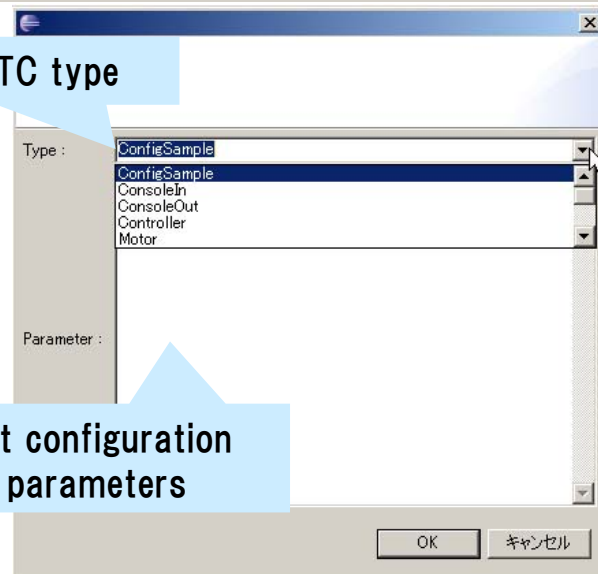
- Start it with the -d option
- In rtc.conf , set manager.corba_servant to YES

- Creating components from RTSystemEditor.
Click the “Create” button in the Manager View.



Select the RTC type

Set configuration parameters



How to reuse RT-Components



- Register projects at <http://openrtm.org>
 - You can search for tools and components.
 - Register to upload your own tools and components for RT-Middleware, allowing others to download and use them.
- Four project categories are available:
 - RT-Components
 - RT-Middleware: Implementations of the middleware itself, such as OpenRTM-aist, as well as extension modules.
 - Tools: Tools for use with the middleware, such as RTSystemEditor and rtshell (the command-line tools).
 - Documents: Various documents to do with RT-Middleware, such as component interface specifications.

● <http://www.openrtm.org/openrtm/en/content/projects>



The screenshot shows the OpenRTM-aist website interface. At the top, there is a navigation bar with the OpenRTM-aist logo and the tagline "The power to connect". The main content area is titled "Projects" and contains the following sections:

- ナビゲーション (Navigation):** A sidebar menu with links to Home, Downloads, Documents, Community, Research/Development, and Projects. The Projects link is highlighted.
- リンク (Links):** A list of links to various OpenRTM-aist projects: OpenHRP3 (Dynamic Simulation), OpenHRI (Dialog Control Component Group), OpenRTP (Integrated Development Platform), and OpenINVENT (Mobile Robot Component Group).
- Extended RT-Middleware:** A section for DAQ-Middleware, described as a network-distributed environment for data collection and software construction.
- プロジェクト (Projects):** The main content area, titled "Home >> Projects". It explains that users can explore software releases and create their own component or tool pages. It lists four categories:
 - RTコンポーネント (RT Component):** One or more components or groups of components registered.
 - RTミドルウェア (RT Middleware):** OpenRTM-aist or other middleware, expansion modules, etc.
 - ツール (Tool):** Various tools (including RTSystemEditor and rtslib) in this category.
 - 関連ドキュメント (Related Documents):** Documents related to interfaces, manuals, etc.
- RTコンポーネント (RT Component):** A detailed section explaining that users can register their own components with a description, screenshots, and source code. It also mentions that the site features results from the NEDO Next-Generation Robot Intelligence Technology Development Project (H19-H23) and past RT middleware contests.
- RTミドルウェア (RT Middleware):** A section explaining that the site features other OpenRTM-aist middleware and expansion modules.

Additional features visible include a search bar, a user login form, and social media sharing options.

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