

**SINTEF Energy Research**

Address: NO-7465 Trondheim,
NORWAY
Reception: Sem Sælands vei 11
Telephone: +47 73 59 72 00
Telefax: +47 73 59 72 50

www.energy.sintef.no

Enterprise No.:
NO 939 350 675 MVA

TECHNICAL REPORT

SUBJECT/TASK (title)

ELCBAS/SEA Configuration Guide

CONTRIBUTOR(S)

Tormod Lund, Nils Eggen, Birger Stene

CLIENTS(S)

Joint project: ABB Kraft AS, Siemens AS,
Sintef Energy Research AS, Statnett SF

TR NO. TR A5834	DATE 2003-12-18	CLIENT'S REF.	PROJECT NO. 12X246
ELECTRONIC FILE CODE 030620bs133553		RESPONSIBLE (NAME, SIGN.) Ove Grande	CLASSIFICATION Unrestricted
ISBN NO. 82-594-2507-6	REPORT TYPE	RESEARCH DIRECTOR (NAME, SIGN.) Petter Støa	COPIES PAGES 10 37
DIVISION Energy Systems	LOCATION Sem Sælandsv. 11	LOCAL FAX +47 73 59 72 50	

RESULT (summary)

This document describes the configuration of the Elcbas/SEA system using the Elcbas Configuration Tool.

Please see SINTEF's homepage at: <http://www.sintef.no/ELCOM-90>. From here you can download the latest version of all relevant documents as pdf-files for free.

Copyright: Reproduction of this document is prohibited without permission from one of the owners: ABB, Siemens or SINTEF Energy Research

KEYWORDS

SELECTED BY AUTHOR(S)	Data Communication	Communication Protocols
	Control Centres	ELCOM-90

Document Identity: TR A5834

Revision: 04

Technical Reference:

Approved by:

Attested by:

Date	Revision	Synopsis
2003-09-17	01	New Document (pre-release)
2003-12-18	02	First Official Release
2004-03-02	03	Change to front page
2011-01-10	04	Updated for Elcbas V6.5

Table of Contents

PREFACE	6
Purpose.....	6
Intended Audience	6
Structure of the Document	6
Associated Documents	6
Acronyms	6
Trademarks.....	6
1. INTRODUCTION	7
1.1 An introduction to the Elcom Protocol	7
1.2 A Sample Scenario.....	7
1.3 Key Terms, Basic Rules.....	8
1.3.1 Clients	8
1.3.2 Partners.....	8
1.3.3 Groups, Objects and Data Types	8
1.3.4 Object Directories, Object Names and Object Sets	8
1.3.5 Transfer Methods	9
2. OVERVIEW OF THE ELCBAS CONFIGURATION TOOL	10
2.1 Description of Window and Panes.....	10
2.2 Navigation and Operation	11
3. HOW TO: CONFIGURE AN INITIATOR	12
3.1 Server Configuration.....	12
3.2 Client Configuration.....	12
3.3 Partner Configuration.....	12
3.4 Group Configuration	13
3.5 Verifying Operation	13
4. HOW TO: CONFIGURE A RESPONDER	15
4.1 Server Configuration.....	15
4.2 Client Configuration.....	15
4.3 Partner Configuration.....	16
4.4 Object X-ref Configuration	17
4.5 Verifying Configuration.....	17
5. REFERENCE INFORMATION	18
5.1 Menus.....	18
5.1.1 The File Menu	18
5.1.2 The Edit Menu.....	19
5.1.3 The View Menu.....	19
5.1.4 The Tools Menu	19
5.1.5 The Window Menu.....	19
5.1.6 The Help Menu.....	19
5.1.7 The Context Menu.....	19
5.1.8 The Grid Context Menu	20
5.2 Dialogs	20

5.2.1	The Server Properties Dialog	20
5.2.1.1	The Identity Page	20
5.2.1.2	The Addresses Page	21
5.2.1.3	The Timers Page	22
5.2.1.4	The Suffices Page	23
5.2.1.5	The Logging Page	24
5.2.2	The Client Properties Dialog	24
5.2.2.1	The Attributes Page	24
5.2.3	The Partner Properties Dialog	25
5.2.3.1	The Main Page	25
5.2.3.2	The Addresses Page	27
5.2.3.3	The Suffices Page	28
5.2.3.4	The Advanced Page	29
5.2.4	The Group Properties Dialog	29
5.2.4.1	The Attributes Page	30
5.2.4.2	The Members Page	31
5.2.4.3	The Cycles Page	32
5.2.5	The Object Set Properties Dialog	32
5.2.5.1	The Directories Page	33
5.2.5.2	The Object Pages	34
5.2.6	The Add/modify Cycle Dialog	34
5.2.6.1	The Requested Values Page	35
5.2.6.2	The Objects Page	35
5.2.6.3	The Execution Page	36
5.2.7	The Fetch Data Wizard	36

Table of Figures

Figure 1 Sample Elcbas Scenario.....	7
Figure 2 Elcbas Configuration Tool Main Window.....	10
Figure 3 Sample Version 1/2 responder Suffix Configuration	16
Figure 4 Server Properties: Identity	20
Figure 5 Server Properties: Addresses.....	21
Figure 6 Address Details.....	22
Figure 7 Server Properties: Timers	22
Figure 8 Server Properties: Suffices	23
Figure 9 Server Properties: Suffix Details	23
Figure 10 Server Properties: Logging.....	24
Figure 11 Client Properties	24
Figure 12 Partner Properties: Main (Initiator).....	25
Figure 13 Partner Properties: Main (Responder)	26
Figure 14 Partner Properties: Addresses	27
Figure 15 Partner Properties: Suffices.....	28
Figure 16 Suffix Details (Partner)	28
Figure 17 Partner Properties: Advanced	29
Figure 18 Group Properties: Attributes	30
Figure 19 Group Properties: Members.....	31
Figure 20 Group Properties: Cycles.....	32
Figure 21 Object Set Properties: Directories Page	33
Figure 22 Object Set Properties: Object Pages.....	34
Figure 23 Cycle Dialog: Request Values Page	35
Figure 24 Cycle Properties: Objects Page.....	36
Figure 25 Cycle Properties: Execution Page.....	36
Figure 26 Fetch Data Wizard: Requested Values	37
Figure 27 Fetch Data Wizard: Objects.....	37

Preface

Purpose

The purpose of this document is to describe how to configure the Elcbas/SEA system using the Elcbas Configuration Tool (ElcCfg)

Intended Audience

This is a technical document. Some knowledge of Elcom and Elcom configuration rules is assumed.

Structure of the Document

This document starts with an overview and two how-to chapters, followed by reference information for all menus and dialogs.

Associated Documents

1. TR A5835 – Elcbas/SEA for Windows Administrators Guide
2. TR A5833 – Elcbas/SEA Programmers Guide
3. TR A3825 – Elcom User Element Conventions
4. TR A4124 Elcom-90 Application Service Element, User's Manual.

Consult [3] for a more extensive list of Elcom documentation.

Acronyms

SEA	Simplified Elcom API
API	Application Programming Interface
SEAIN	The initiator in the Elcbas/SEA system
SEARS	The responder in the Elcbas/SEA system

Trademarks

None.

1. Introduction

1.1 An introduction to the Elcom Protocol

The Elcom Protocol allows transfer of point data of various formats as current data or time series, as well as supervisory control.

Please refer to the standard Elcom-90 documentation for further information.

1.2 A Sample Scenario

A system with one partner and one client could look like this:

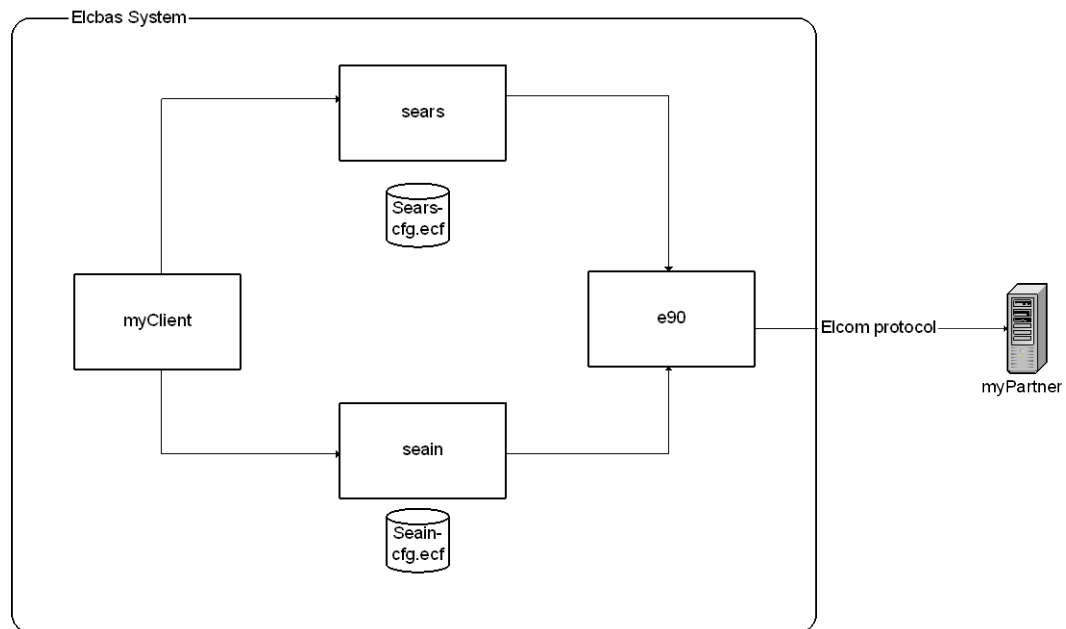


Figure 1 Sample Elcbas Scenario

In this figure:

- sears, seain and e90 are processes that comprise the elcbas run-time system.
- myClient is a client application for both initiator and responder, which forms the interface with whatever system actually uses/supplies the Elcom data for this scenario.
- myPartner is a remote Elcom partner (may run Elcbas or other Elcom implementations).
- sears-cfg.ecf and seain-cfg.ecf are the configuration files for the responder and initiator processes (sears and seain).

1.3 Key Terms, Basic Rules

1.3.1 Clients

The term client is used to define programs interacting with the Elcbas system through the Simplified Elcom API (SEAPI) to deliver data, receive data or both. A functional Elcbas system has at least one client, but may have several. The relationships between clients and data are configurable.

A client may serve both initiator and responder requests, but it must then be configured separately for each server.

Please refer to the Programmers Guide for details on how to develop clients.

1.3.2 Partners

The term partner is used to define a remote Elcom system that an Elcbas installation is communicating with. If both the initiator and responder are communicating with a partner, it must be configured separately for each.

1.3.3 Groups, Objects and Data Types

The term group is used to define a set of objects that has the same type, and which are transferred in the same manner. The Elcbas Configuration tool is used to define groups for the initiator, and can be used to inspect groups defined by remote partners for the responder.

The points in a group are called objects. Objects are identified by a name agreed upon between two partners. In addition, the Elcbas system may use a different name for an object when communicating with clients.

Objects within Elcbas may be of the following types:

- 32-bit (single precision) floating point
- 16-bit integer (discrete) values
- 2-bit status values (on, off, between)

The Elcom data types for command and setpoints are defined by setting the transfer mode of a group to command.

The Elcom data types Logical breaker and Text are not currently supported.

1.3.4 Object Directories, Object Names and Object Sets

The Elcbas/SEA system supports optional cross-referencing of object names, so that a different name may be used for any object towards a partner and a client (and towards different partners and clients, if relevant).

The implementation of this uses the concept of an object directory, or namespace. Each client and partner must be associated with a single namespace, but several partners and/or clients may use the same namespace. If a partner and a client use

the same namespace, there will be no cross-referencing between them, ie. the same object names are used.

Within a namespace, any name must uniquely identify one object, and one object may have one or two names. Two names are only allowed if one of the names is designated for command access, ie. it is possible to configure a command with a separate object for the resulting status value which share a name in another namespace.

An Object Set is a list of objects that exist in one or two object directories (with or without cross-referencing). Object Sets are used to provide access control and cross-referencing in the responder.

1.3.5 Transfer Methods

The Elcbas/SEA system supports the following methods for transferring data:

- Requested data transfer, including scheduled and manually requested data transfer in the initiator
- Periodic data transfer
- Unsolicited data transfer, including mixed data transfer
- Command transfer, or supervisory control (commands and setpoints)

2. Overview of the Elcbas Configuration Tool

The configuration for the initiator and responder in Elcbas/SEA is stored in separate XML files, with a file type of .ecf (Elcbas Configuration). The files are edited using the Elcbas Configuration Tool. You can start the tool by using the menus (a shortcut is installed under the group ‘Elcbas for Windows’), or by double-clicking a .ecf file. On a running system, the active configuration may also be retrieved directly from each of the servers.

2.1 Description of Window and Panes

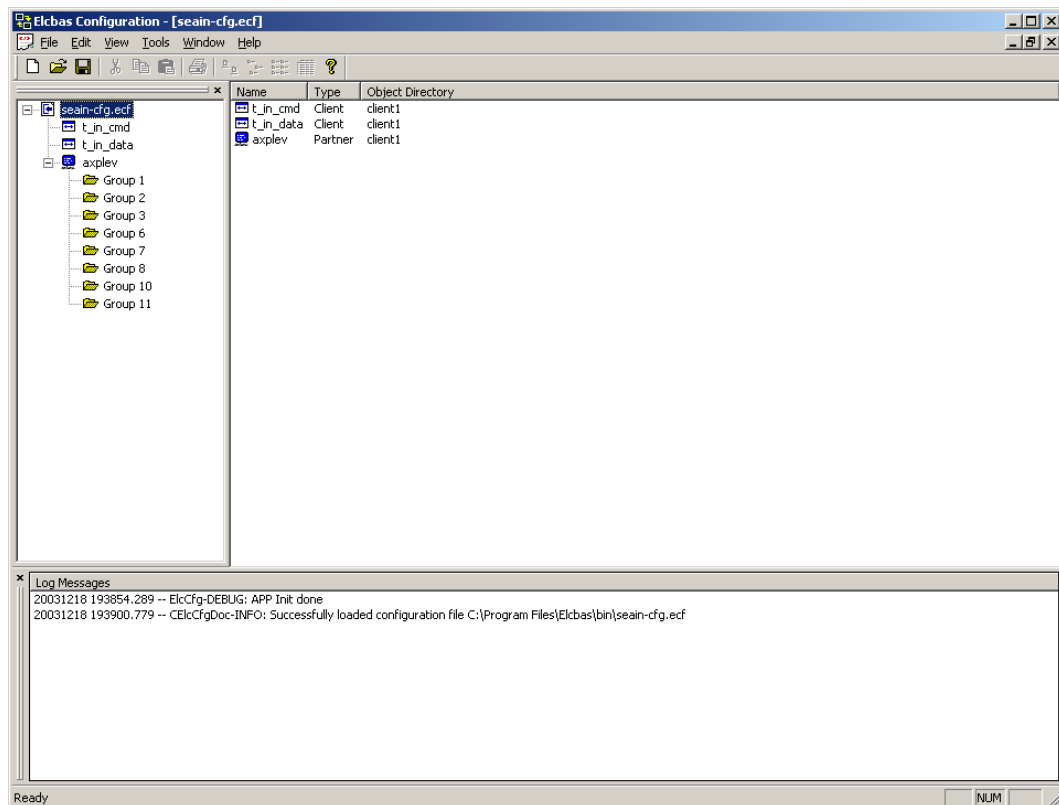


Figure 2 Elcbas Configuration Tool Main Window

The figure above shows the main window of the Elcbas Configuration Tool with some data. It consists of the following areas:

- The Menu Bar
- The Toolbar
- The Configuration Tree (to the left)
- The Log Window (at the bottom)
- The Status Bar

- The View Area (to the right)

The View menu allows control of the display of most of these, and the Window menu controls how data is displayed in the View Area.

The Toolbar, Configuration Tree and Log Window may be undocked or docked differently by grabbing at the double line at one edge and dragging.

Live configuration data may be read in from the initiator and/or responder on a running system, or configuration data may be read in from files, for offline editing.

As several files or live configurations are opened, each gets a node in the Configuration Tree, and a window in the View Area.

2.2 Navigation and Operation

The tree allows top-level navigation within a configuration, and access to commands for data manipulation. Select a node in the tree, and access commands from the menu bar, toolbar or press the right mouse button for a context menu.

Inapplicable commands are grayed out.

The view area shows content information on the different levels. It is not currently possible to invoke commands from the view area; this must be done from the tree.

Some common commands are:

- New xxx – different new commands are available, depending on the selected item. These commands are available from the File->New menu, and from the right-click context menu.
- Properties – invokes a properties editor of the relevant type. This command is available from the Edit menu and from the context menu.
- Delete – removes the selected item from the configuration, usually after some validation and/or with a confirmation prompt. This command is available from the Edit menu and from the context menu.

3. How To: Configure an Initiator

Start with an existing configuration, or create a new file with File->New Configuration, and then select Initiator from the resulting popup.

If creating a new file, a name like ElcCfg1 will be created, but to use in an Elcbas system, the filename must be seain-cfg.ecf. Note: do not attempt to overwrite the configuration of a running system.

If the initiator is running, you may also retrieve the active configuration for modification by using the File->Get Active Configuration->Initiator command.

If editing a live configuration, saving will send the updated configuration back to the initiator, and restart it to apply the changes.

3.1 Server Configuration

By selecting the node with the filename and invoking the Properties command (from the Edit menu or from the right-click context menu) you will get the property editor for the initiator server.

As a minimum, select the Addresses tab, and configure one or more addresses for the initiator. These must match addresses configured for this system in the remote responder.

You may also consider enabling the Elcom API log from the logging tab.

Other parameters may be left at their default values.

3.2 Client Configuration

To have a useful initiator system, at least one client must be configured. Select the command New Client from the File menu or context menu. For each client supply:

- A name, used in display and logs.
- An api name, used in communication with the seapi. This string must match the name used in the SEAOpen call for the program in question. This defaults to the displayed name, truncated as necessary.
- An object directory name. This also defaults to the client name.

If you use the same client for all partners, specify the mapping between Elcom suffices and client(s) on the suffices tab in the server configuration, otherwise do this configuration at the partner's suffices tab.

3.3 Partner Configuration

Create partners with the New Partner command, from the file menu or context menu, and then supply the following data:

In the main tab:

- If you want to have different object names for the partner and the client(s), use a different object directory names, otherwise use the object directory name you specified for the client(s).
- Ensure partner names are unique.
- Select the proper Elcom version (the default is usually appropriate).
- Add the partners certificate name (X.509 canonical name) if using TLS as the transport. Note: Use of this field requires the Elcom provider system to be properly configured for TLS, see [4].

In the addresses tab, add at least one address for the partner.

In the suffices tab you must set the unsolicited and/or periodic suffices to use a permanent connection if you are going to use these transfer methods.

3.4 Group Configuration

Select a partner, and use the New Group command from the File menu or context menu. On the Attributes tab, you must supply a unique group number (for the partner), select the desired data type, and specify a transfer method.

NOTE: If you are using cross-referenced object names, set these attributes, save by pressing OK, and reopen the editor by selecting the group in the tree and invoking the Properties command from the Edit menu or the context menu. This is necessary to get two columns in the Members tab.

Select the members tab and enter object names in one or two columns. You may move about the list using the cursor keys or the tab key. Avoid blank lines, as this will terminate the group.

Finally, you can use the Cycles tab to add schedules for requested data transfer (these will only be active if transfer mode is set to requested).

3.5 Verifying Operation

Save the file, either directly to seain-cfg.ecf in the runtime directory, or to any other name to work more later (again: do not save to a running system with this name).

Start or restart the Elcbas Initiator system, and use the log files or other means to verify operation.

As mentioned above, if the configuration was read from the initiator, save will write it back to it, and invoke a restart function.

Once the initiator is running, the configuration may be re-read to inspect the configuration status of the groups (displayed on the first page of the group editor). This should be OK if the group has configured successfully.

If working on an active configuration, you may retrieve a set of values for a group by selecting the Fetch Data function from the Tools menu or the context menu. The data will be sent to the client for the group.

4. How To: Configure a Responder

Start with an existing configuration, or create a new file with File->New Configuration, and then select Responder from the resulting popup.

If creating a new file, a name like ElcCfg1 will be created, but to use in an Elcbas system, the filename must be sears-cfg.ecf. Note: do not attempt to overwrite the configuration of a running system.

If the initiator is running, you may also retrieve the active configuration for modification by using the File->Get Active Configuration->Responder command.

If editing a live configuration, saving will send the updated configuration back to the responder, and restart it to apply the changes.

4.1 Server Configuration

By selecting the node with the filename and invoking the Properties command (from the Edit menu or from the right-click context menu) you will get the property editor for the responder server.

The default values will provide an operational system, but you might want to consider the timer values on the timers tab, and also whether to enable the Elcom API log from the logging tab.

4.2 Client Configuration

At least one client must be configured for the responder to be useful.

Select the command New Client from the File menu or context menu. For each client supply:

- A name, used in display and logs.
- An api name, used in communication with the seapi. This string must match the name used in the SEAOpen call for the program in question.
- An object directory name.

If a client is used by all (or more than one) partner, consider mapping the client to suffices on the server suffices tab, otherwise clients may also be specified for each partner.

If you have SEAPI version 1 or 2 responder clients, the following fixed client names must be specified (according to the function mask(s) used by the client in SEAOpen):

- SEAUNS – for unsolicited data access
- SEAPER – for periodic data access
- SEAREQ – for requested data access

- SEACMD – for command access

These clients must also be mapped correctly to suffixes at either server or partner level, the following screen dump shows a correctly configured suffix list for all these:

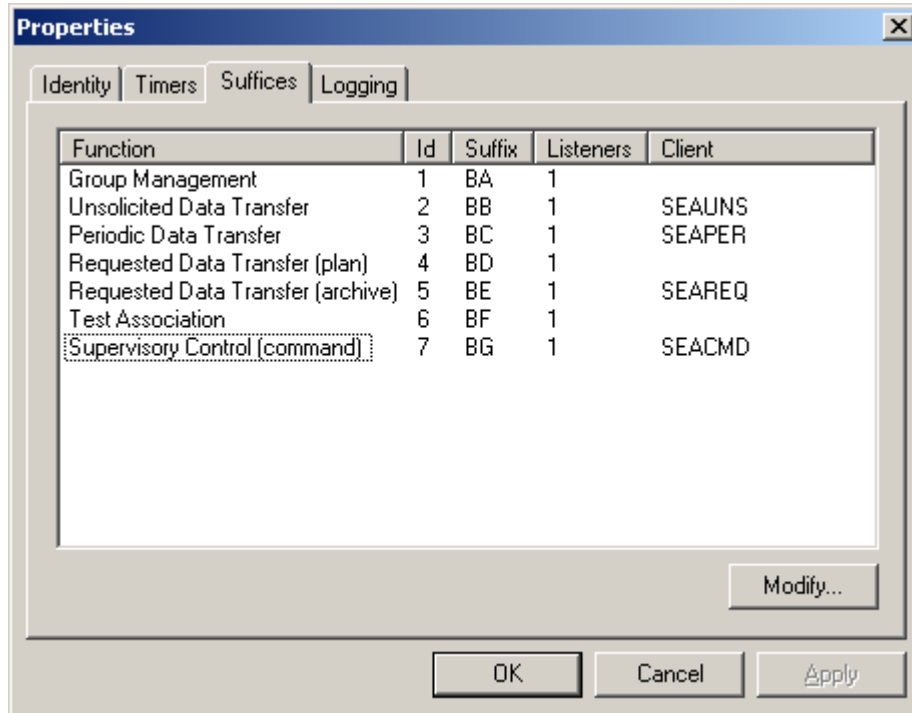


Figure 3 Sample Version 1/2 responder Suffix Configuration

4.3 Partner Configuration

Create partners with the New Partner command, from the file menu or context menu, then supply the following data:

In the main tab:

- If you want to have different object names for the partner and the client(s), use a different object directory names, otherwise use the object directory name you specified for the client(s).
- Ensure partner names are unique.
- Select the proper Elcom version (the default is usually appropriate).
- Select whether the partner may autoconfigure object names. In this mode you must have the same names for partner and client, and there is no access control for object configuration. On the other hand, you do not have to configure any object names.

- Add the partners certificate name (X.509 canonical name) if using TLS as the transport. Note: Use of this field requires the Elcom provider system to be properly configured for TLS, see [4].

In the addresses tab, add at least one address for the partner. This must match the address the remote partner uses to identify itself in the Elcom connect requests.

4.4 Object X-ref Configuration

If one or more partners have the autoconfigure option deselected, object sets must be created to define the allowable object names, possibly with a cross-reference to client names. Select the command New Object Set from the File menu or the context menu.

On the Directories tab, one or two object directory names must be provided. If you want access control, but no cross-reference, supply only one, otherwise supply two, for cross-reference and access control. The object directory names must match the settings for object directory on the partner(s) and client(s) that should use these objects.

You may now add objects in lists by selecting the tab according to type and command access or not. In an empty list, right-click in the gray area and select Insert Row to get started. Once in the list, using tab or the down arrow on the last row will insert a new, empty row. Use the delete row command on the right-click to delete empty rows prior to saving or moving to another tab.

4.5 Verifying Configuration

Save the file, either directly to sears-cfg.ecf in the runtime directory, or to any other name to work more later (again: do not save to a running system with this name).

Start or restart the Elcbas Responder system, and use the log files or other means to verify operation.

As mentioned above, if the configuration was read from the responder, save will write it back to it, and invoke a restart function.

Once the responder is running, the configuration may be re-read to inspect any groups created by remote partners.

5. Reference Information

5.1 Menus

5.1.1 The File Menu

The File menu contains the following

- The New submenu:
 - New Configuration – Create a blank configuration file. Select configuration type (Initiator or Responder) from the popup. Always available.
 - New Partner – Create a new partner. Available if the selected item is a file/configuration.
 - New Client – Create a new client. Available if the selected item is a file/configuration.
 - New Group – Create a new Group. Available if the selected item is a partner in an Initiator configuration.
 - New Object Set – Create a new object set. Available if the selected item is a Responder configuration/file.
- Open... – Open a configuration from a file.
- Close – Close the current configuration and view (will prompt if modified).
- Save – Save the current configuration. If configuration was read from a server (Initiator or Responder), send configuration restart request to the server.
- Save As... – Save the current configuration to a new file name. NOTE: Currently this does not work with an online configuration.
- The Get Active Configuration submenu:
 - Initiator – Get the current configuration from the initiator on the current computer.
 - Responder – Get the current configuration from the responder on the current computer.
- Exit – Exit the program. Prompt to save any changes.

In addition, the file menu has a list of the most recently opened configuration files.

5.1.2 The Edit Menu

The edit menu contains a number of standard commands that are currently grayed out. These are left in place for future use. The following active commands are available:

- Delete – Remove the selected item from the configuration, possibly with consistency checks and prompts.
- Properties – Invoke the property editor for the selected item.

5.1.3 The View Menu

The View menu enables selected components of the user interface to be turned on or off:

- Toolbar
- Status Bar
- Configuration Tree
- Log Window

5.1.4 The Tools Menu

The Tools menu contains the following command:

- Fetch Data – start a wizard to perform a manually requested data transfer. Available for groups in Initiator configurations if the configuration was read from the Initiator.

5.1.5 The Window Menu

The Window menu is a standard windows MDI window menu, which allows the views to be arranged within the View Area.

5.1.6 The Help Menu

The Help menu currently only has the About command.

5.1.7 The Context Menu

The context menu in the configuration tree has the following commands:

- New Partner
- New Client
- New Object Set
- New Group
- Fetch Data
- Delete

- Properties

These correspond to the same commands in the main menu system.

5.1.8 The Grid Context Menu

The Grid context menu is available when editing the object lists in the group editor or the object set editor. It has the following commands:

- Insert Row – insert a new row after the current row.
- Delete Row – delete the current row.

5.2 Dialogs

This section documents all the dialogs in the program, with the exception of simple error messages and yes/no dialogs.

5.2.1 The Server Properties Dialog

The Server Properties dialog is accessed by selecting the file name (or server name, for online configuration) in the tree, and invoking the properties command from the edit menu/popup menu.

This dialog is used to view and modify global parameters for either the initiator or responder part of Elcbas.

5.2.1.1 The Identity Page

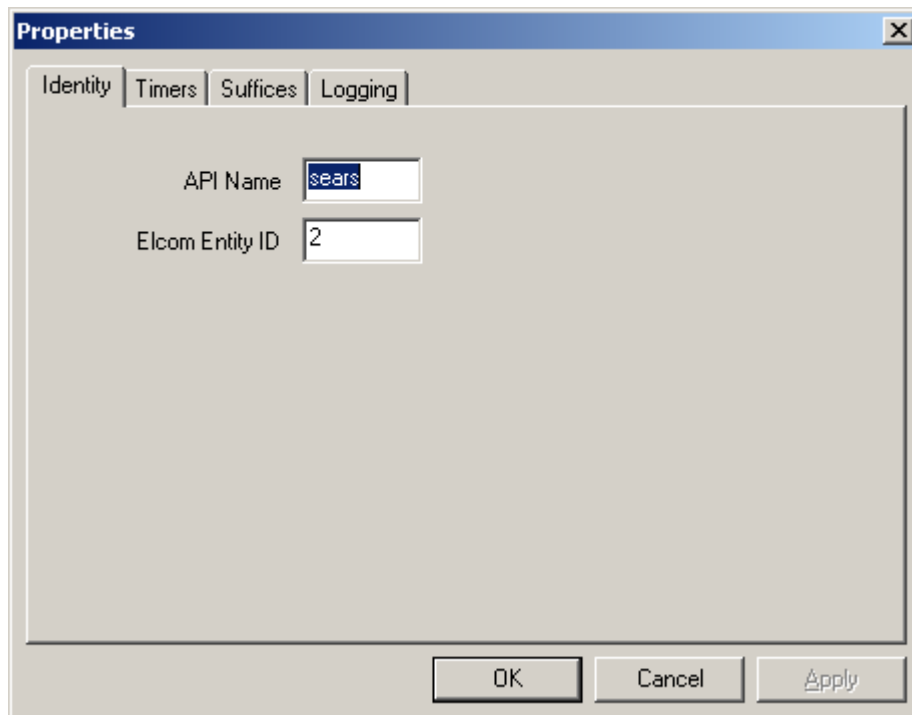


Figure 4 Server Properties: Identity

This page contains the api name used with SEAPI and the elcom entity ID used with Elcom alib for the server. These values should normally not be modified.

5.2.1.2 The Addresses Page

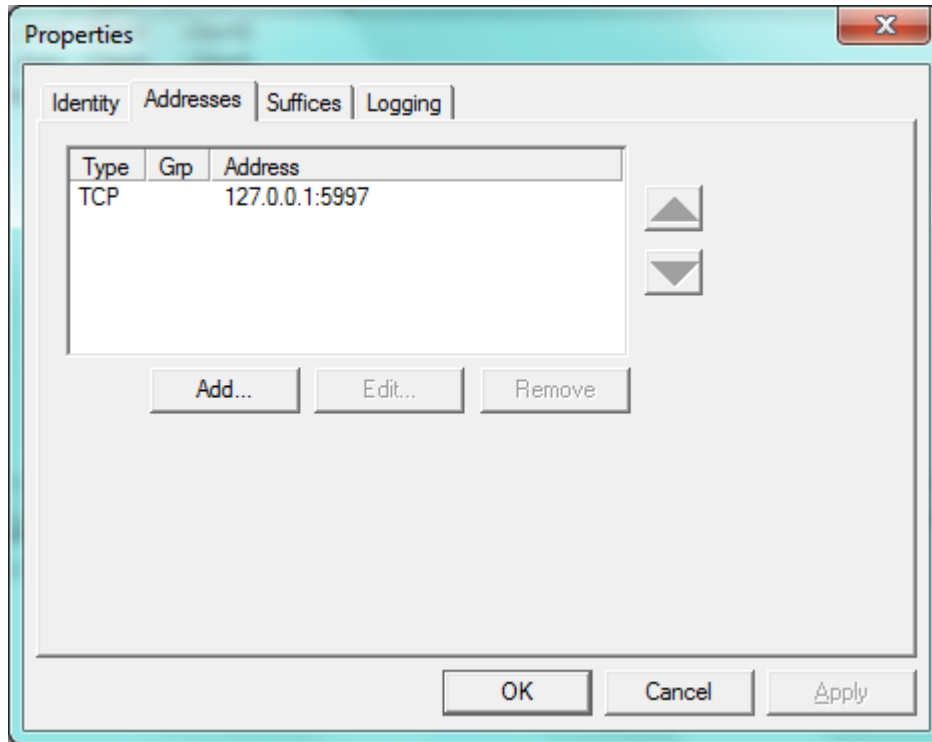


Figure 5 Server Properties: Addresses

This page is only available for the Initiator. It contains the Initiators own addresses which will be used in connect requests.

To add a new address, press Add..., to modify or delete an address, click in the list to select an address, and press Edit... or Remove. Also, with an address selected, the arrow buttons can be used to change the order of addresses in the list.

For add and edit, the following dialog is used:

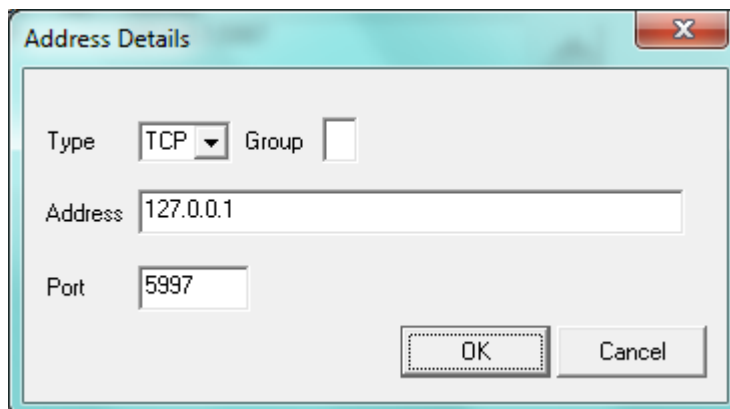


Figure 6 Address Details

The group field is a single character which may be used to create different sets of matching addresses, so that a certain initiator address is used for a certain partner address. This may be needed to communicate through firewalls that do address translation.

Note also, that if TLS is used as the transport protocol, the address type is still specified as TCP in this dialog. The use of TLS is triggered by specifying a value in the Certificate name field for the relevant partners.

5.2.1.3 The Timers Page

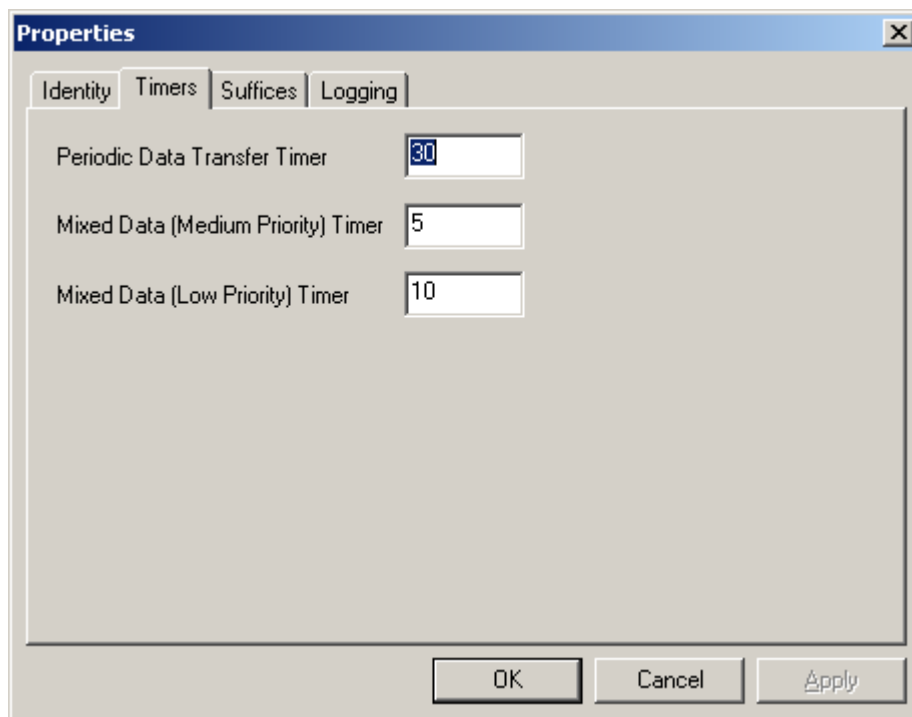


Figure 7 Server Properties: Timers

This page is only available for the responder. It sets the timers (in seconds) for the following functions:

- Periodic Data Transfer – do not set this to more than 50 seconds.
- Mixed Data (Medium Priority) Timer – used for priority class > 1 and <> 0.
- Mixed Data (Low Priority) Timer – used for priority class = 0

5.2.1.4 The Suffices Page

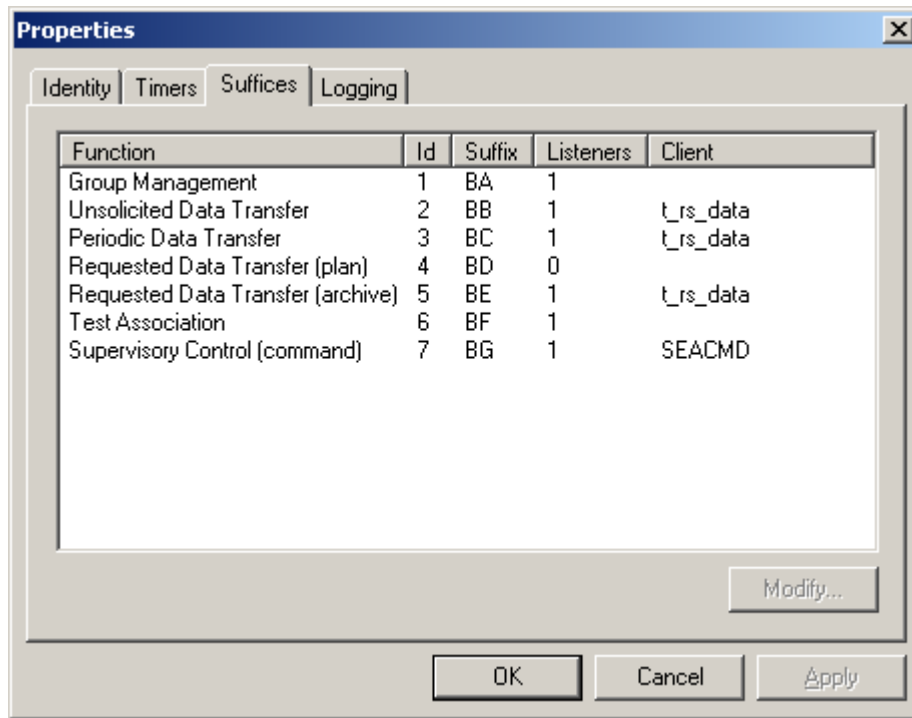


Figure 8 Server Properties: Suffices

This page shows the server's own suffices, with additional information. The Listeners column is only used for the responder. Double click or select and press Modify... to change information for a suffix. You will then get this dialog:

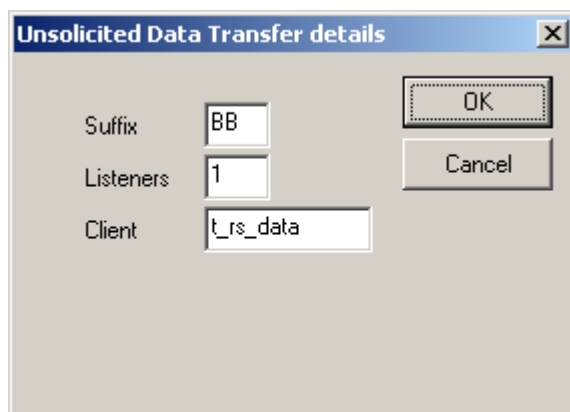


Figure 9 Server Properties: Suffix Details

Here you may change:

- The suffix string (usually not done).
- (Responder Only) The number of listeners for this suffix (set to 0 to disable the function).
- The client to use for this suffix (unless specified for partner).

5.2.1.5 The Logging Page

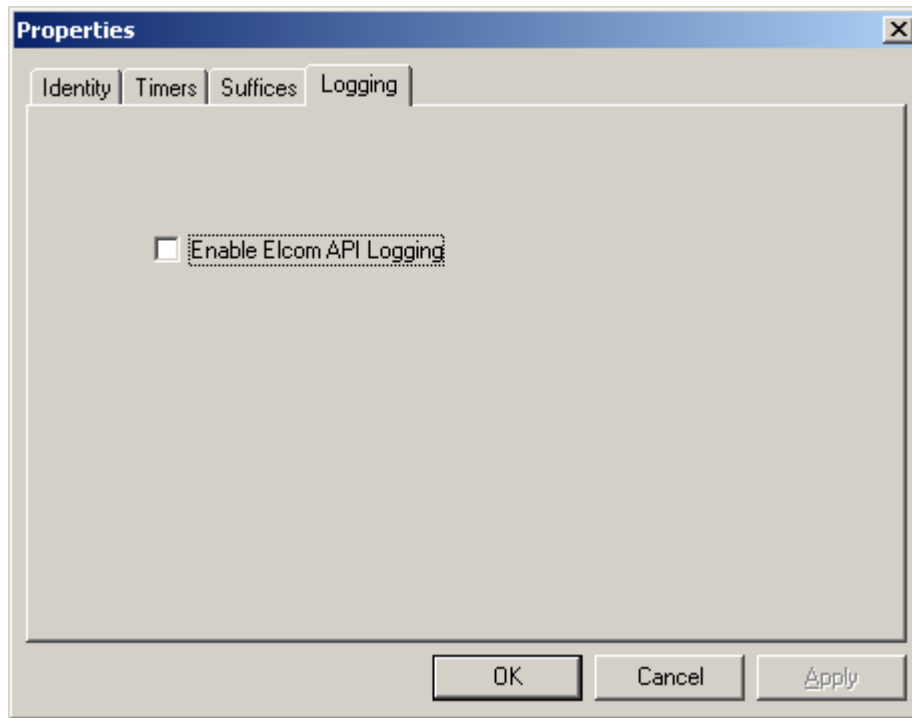


Figure 10 Server Properties: Logging

Here you may enable/disable the detailed Elcom API log.

5.2.2 The Client Properties Dialog

The Client Properties page is accessed either after the New Client command is invoked, or by invoking the Properties command for an existing client. It currently consists of a single property page.

5.2.2.1 The Attributes Page

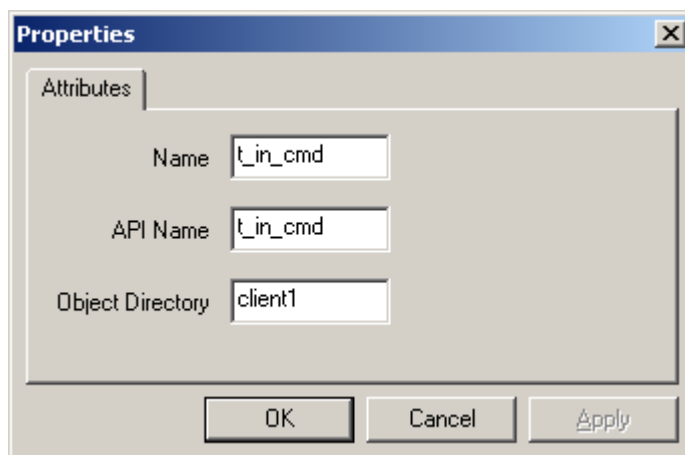


Figure 11 Client Properties

Here you supply the attributes for a client:

- The name, used for display and logs.
- The API name, which must match the name used in SEAOpen in the client code.
- The object directory, which defines which set of object names is used for this client.

5.2.3 The Partner Properties Dialog

The Partner Properties page is accessed either after the New Partner command is invoked, or by invoking the Properties command for an existing partner. It consists of the following pages, with some content different for initiator and responder partners.

5.2.3.1 The Main Page

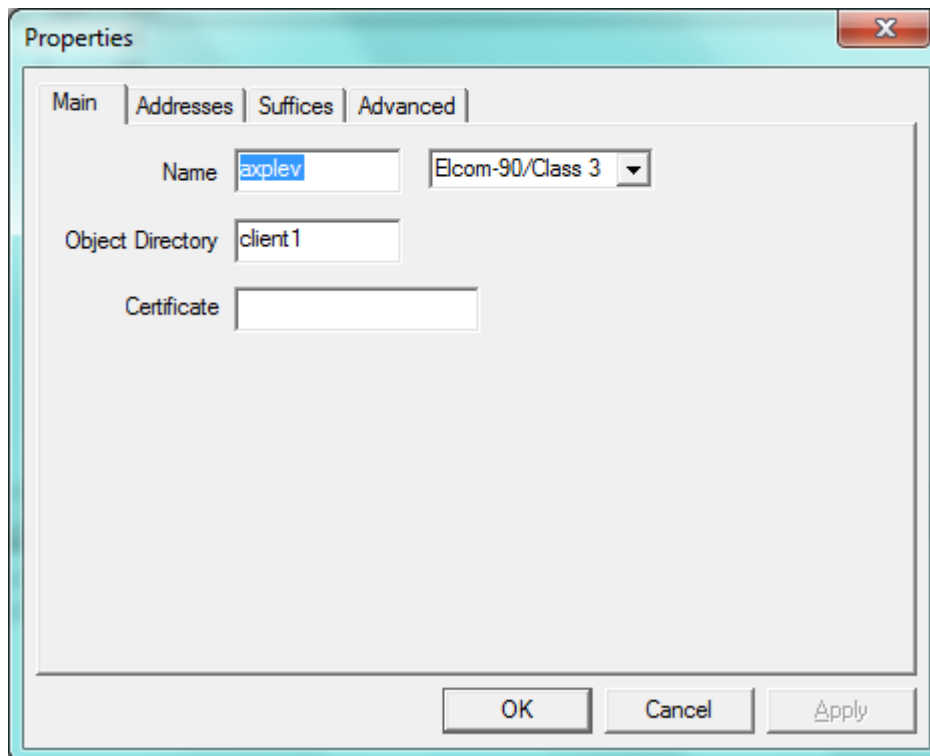


Figure 12 Partner Properties: Main (Initiator)

For initiator partners, the main page contains the following fields:

- The name of the partner, used for display and logging. Note: The name should be unique.
- The Elcom version/class to be used for this partner.
- The Object Directory to be used for object names towards this partner.

- The Certificate name for this partner if TLS is used for this connection (the certificate name is the 'Canonical Name' field of an X.509 certificate).

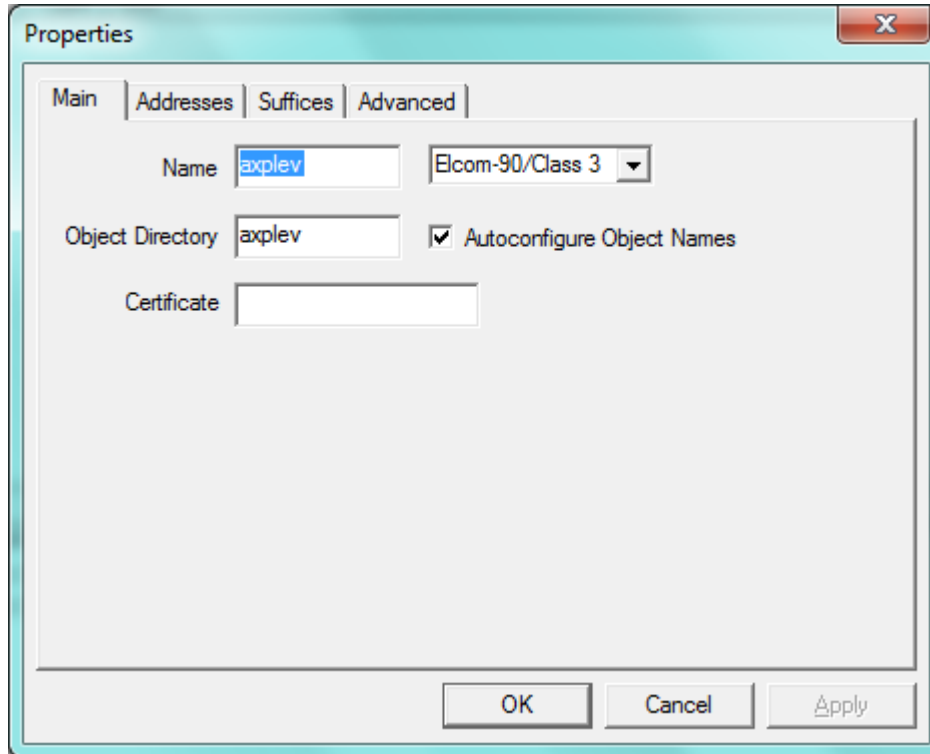


Figure 13 Partner Properties: Main (Responder)

For responder partners, an additional flag for automatic configuration of object names is available. Setting this means that any object name supplied by a partner will be allowed at group configuration, thus simplifying configuration in some scenarios. It also has the following implications:

- There is no access control on objects, at least not within Elcbas.
- There is no cross-referencing between the partner names and client names, thus any clients serving such a partner must be configured with the same Object Directory name.

5.2.3.2 The Addresses Page

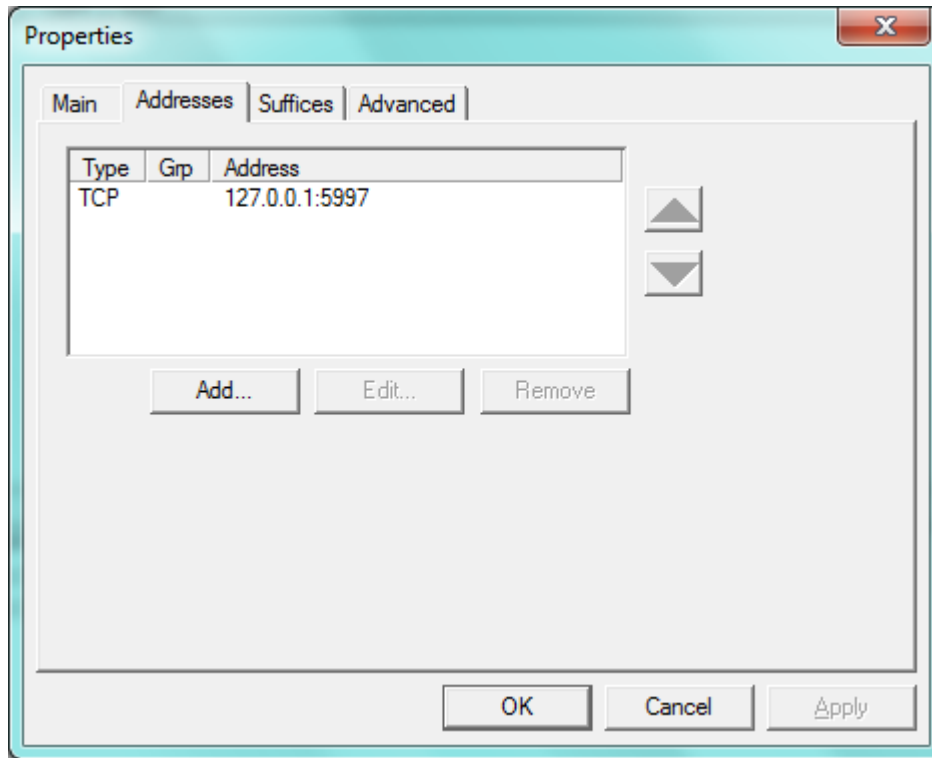


Figure 14 Partner Properties: Addresses

The addresses page allows up to four addresses to be specified for a partner.

For the responder, the address is used to identify the partner at connect, thus addresses must be unique (please note that the gui currently does not check this).

For the initiator, the addresses supplied are used in turn when attempting to connect to a remote system, thus providing support for redundant remote partners.

To add a new address, press Add..., to modify or delete an address, click in the list to select an address, and press Edit... or Remove. Also, with an address selected, the arrow buttons can be used to change the order of addresses in the list.

Add or edit brings up the address details window, shown in Figure 6 Address Details.

5.2.3.3 The Suffices Page

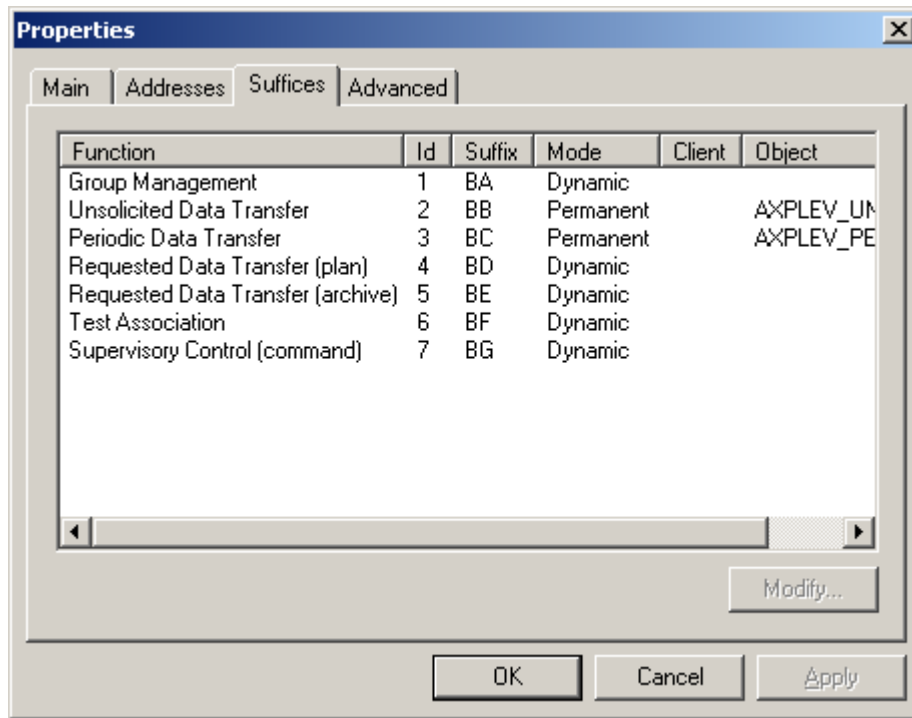


Figure 15 Partner Properties: Suffices

The suffices page for a partner is used to specify configuration at the suffix level for a partner. To modify this information, either double-click on the function text, or select a line and press the Modify button. You will get the suffix details window:

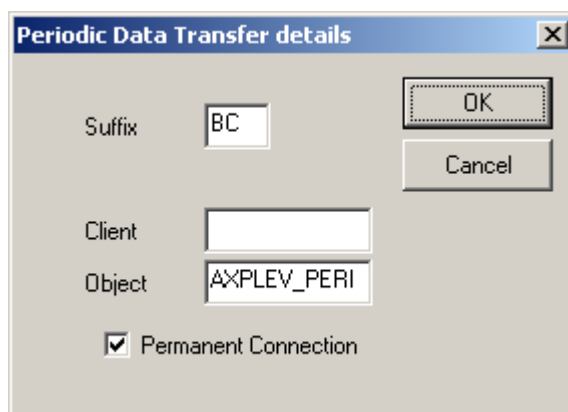


Figure 16 Suffix Details (Partner)

The following fields can be set:

- The Suffix code itself (usually not done; only for initiator partners).
- The client that will handle requests/data for this suffix. If unspecified, the client specified at server level will be used.

- The object to use for signaling connection transitions. This is mainly useful for permanent connections. An object with the name specified will be sent as an indication to the client specified for the Test Connection suffix.
- The Permanent Connection flag (initiator only) means that the initiator will attempt to maintain this connection, providing the associated client program is active. This may be used for any connection, and must be used for periodic and unsolicited data transfer connections.

5.2.3.4 The Advanced Page

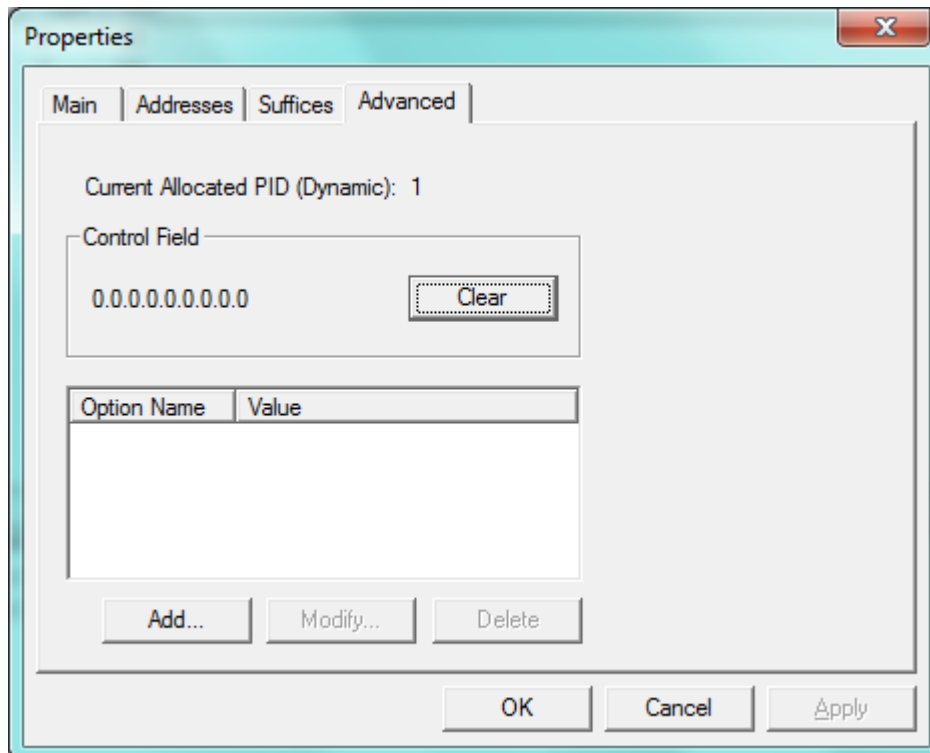


Figure 17 Partner Properties: Advanced

The advanced page in the partner editor shows the PID currently allocated to this partner (may be useful for reading some logs), and gives the option to clear the control field for the partner, thus forcing a reconfiguration at next restart.

It also allows special configuration options to be set as named properties, using the Add/Modify/delete buttons. Such options should be documented in the release notes.

5.2.4 The Group Properties Dialog

The Group Properties page is accessed either after the New Group command is invoked, or by invoking the Properties command for an existing group. For the responder, this is a read-only dialog (save is disabled).

5.2.4.1 The Attributes Page

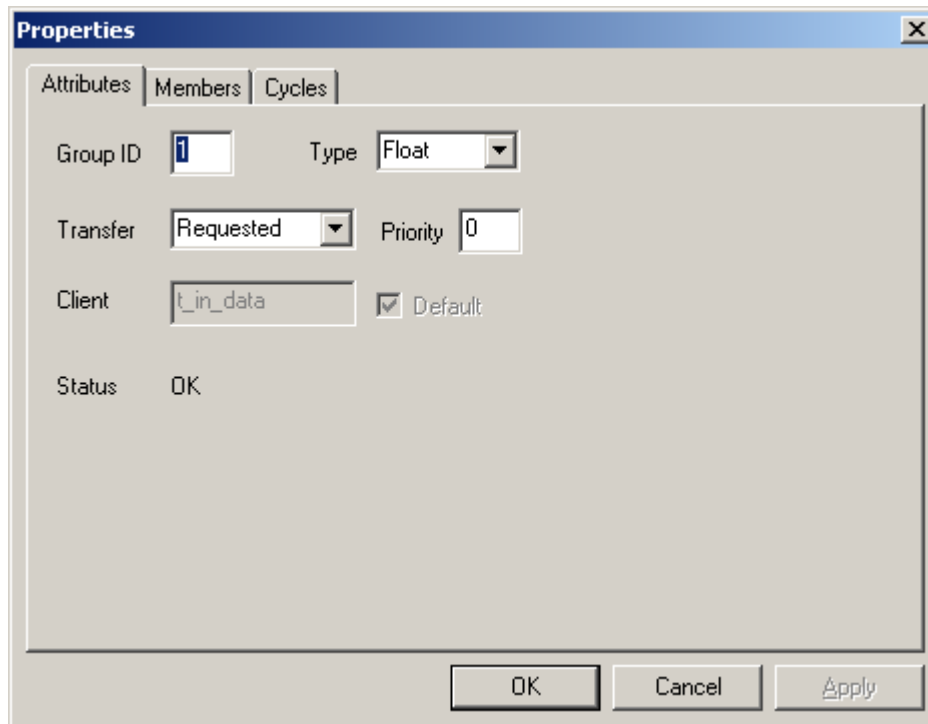


Figure 18 Group Properties: Attributes

The attributes page contains the following fields:

- The Group ID should be selected so that it is unique for each partner. It must be a positive partner, and the remote partner may impose limits on the range.
- The type is one of:
 - Float – single precision floating point
 - Integer – 16 bit signed integer
 - Status – two bit status value (on, off, between)
- The transfer is one of:
 - Local – group will not be configured
 - None – group will be configured, but no transfer started
 - Unsolicited – group will be started for unsolicited data transfer
 - Periodic – group will be started for periodic data transfer
 - Command – group will be configured for command/setpoint (according to type) data transfer.

- Note that when viewing responder groups, transfer will show up (somewhat misleading) as 'Local', unless this is a command/setpoint group, in which case transfer will be shown as Command.
- The priority field is the configured priority class (see Elcom documentation for usage).
- The client field shows the client that will be used, assuming transfer is set to something other than Local or None. Currently this is read-only, as the group here is depending on configuration done for the partner and server. A future release will allow this to be set explicitly for each group (in the initiator).
- The status field is only valid for the initiator. It shows 'Unknown' if the group was never configured, OK if the group was configured successfully, and Error if there was a configuration error.

5.2.4.2 The Members Page

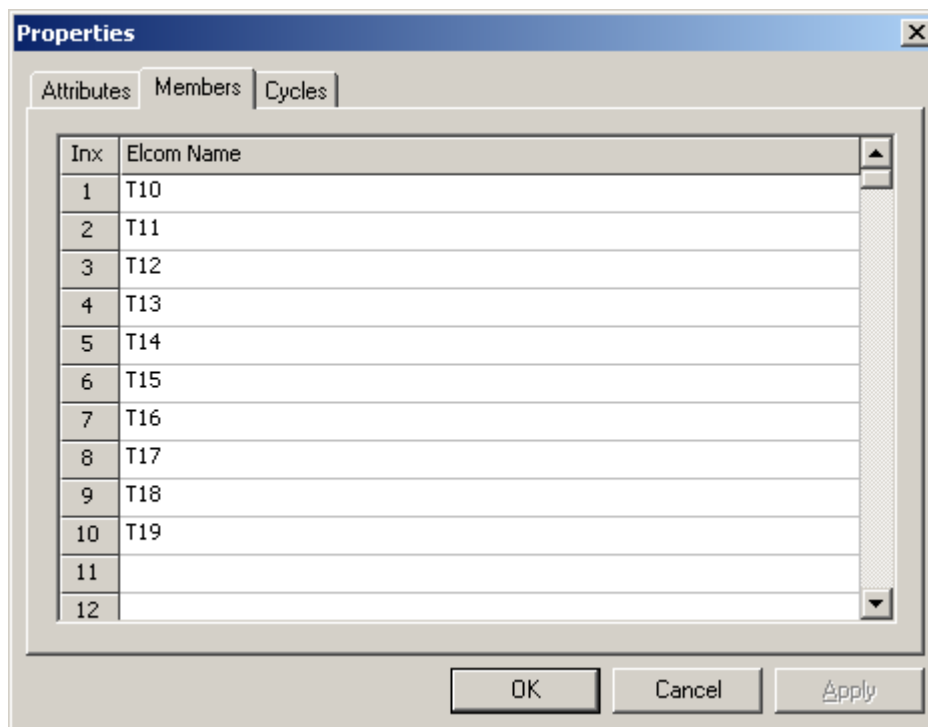


Figure 19 Group Properties: Members

The members page allow display and modification (in the initiator) of the objects comprising a group. It consist of an editable grid with one or two columns depending on whether cross-referencing is used.

Move around in the grid using arrow keys and/or tab. Note that a blank row will terminate the group.

You can paste in a column of names e.g. from excel.

Note that the responder configuration shows only the Elcom names, even if cross-referencing is used, as the local names depends on the client, which is indeterminate when inspecting the configuration.

5.2.4.3 The Cycles Page

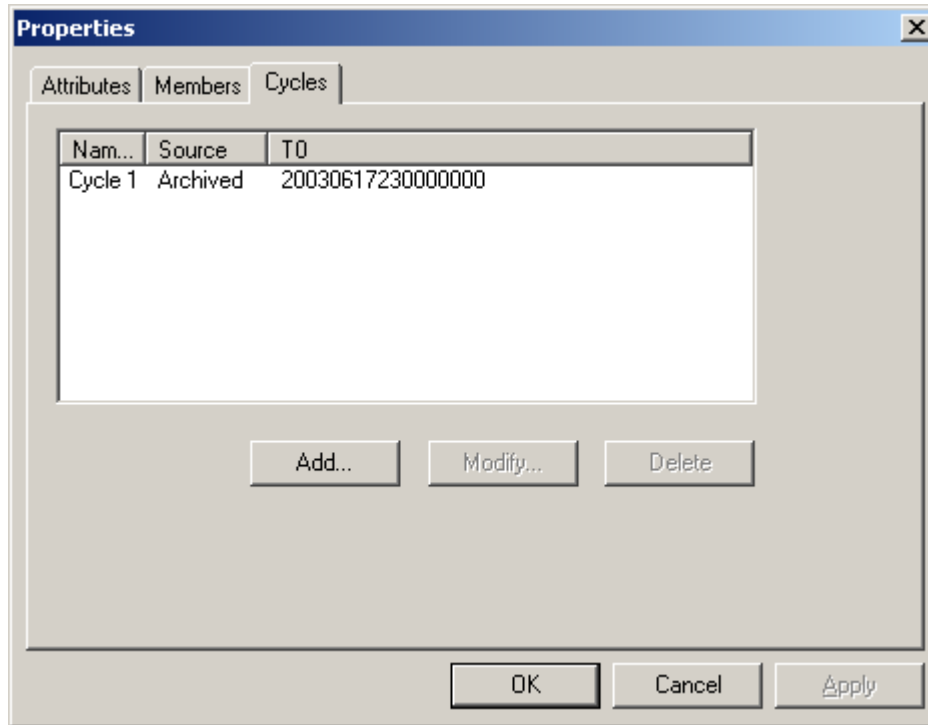


Figure 20 Group Properties: Cycles

The cycles page (initiator only) allows up to six timed transfer schedules to be specified for a group (using the requested transfer mode). When adding or modifying a cycle, the cycle editor is shown. The details of this are described later in this chapter.

Delete a cycle by selecting it and pressing the delete button.

5.2.5 The Object Set Properties Dialog

The Object Set Properties dialog is accessed by invoking the New Object Set command, or by selecting an existing Object Set and invoking the Properties command. The Object Set provides access control and optional cross-referencing between one or more partners and one or more clients. Object Sets are only used in responder configuration.

5.2.5.1 The Directories Page

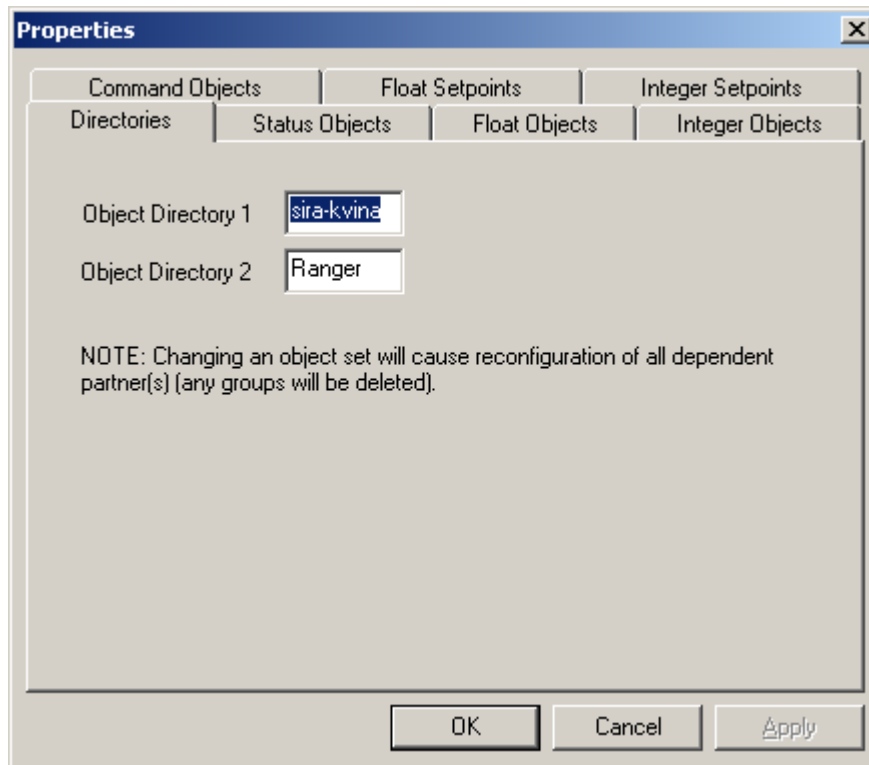


Figure 21 Object Set Properties: Directories Page

The directories page is used to specify the Object Directories comprising this Object Set. The first one must always be specified, and cannot be changed. The second one may, in principle, be changed, but this is not recommended once objects have been added to the Object Set.

5.2.5.2 The Object Pages

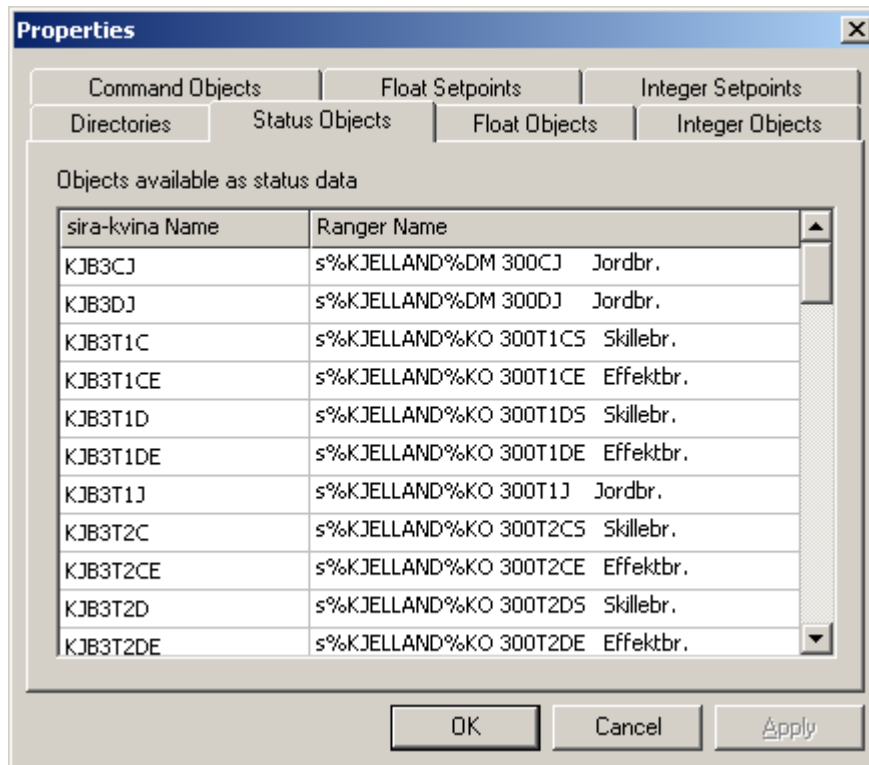


Figure 22 Object Set Properties: Object Pages

The object set dialog contains is split into a number of pages, grouping objects of the same type. Each page contains one or two columns according to the number of object directories used.

The first line in each page is inserted using the popup menu on the right mouse-button, and selecting insert row. Extra rows are inserted when tabbing or using the down arrow. Note that surplus blank rows must be deleted prior to saving.

5.2.6 The Add/modify Cycle Dialog

The Add/Modify Cycle dialog is accessed from the cycles page in the Group Properties dialog.

5.2.6.1 The Requested Values Page

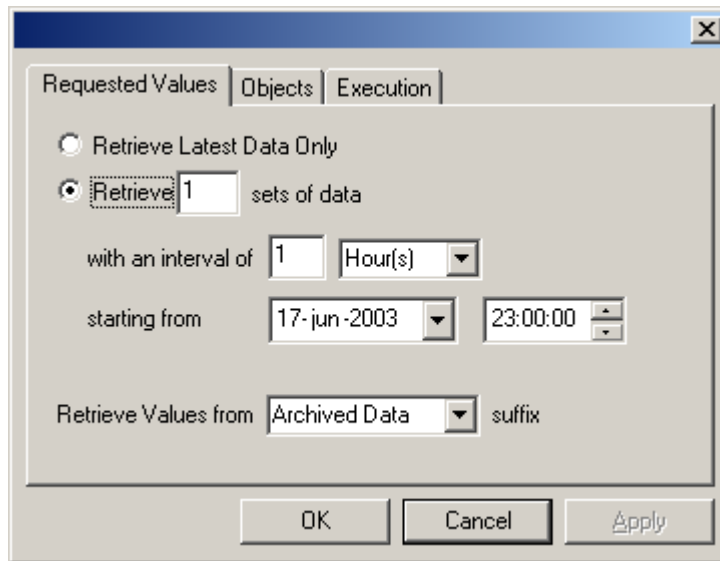


Figure 23 Cycle Dialog: Request Values Page

This page specifies the time and amount of data that will be requested, and the source:

- Select 'Retrieve Latest Data Only' to retrieve one set of data, with T0 set to -1, indication that the latest data available is requested.
- Otherwise, select the number of data incarnations to request, the interval between incarnations, and the time for the first incarnation (T0).
- You can also select whether to request data from the archived data suffix or the plan data suffix at the remote system.

5.2.6.2 The Objects Page

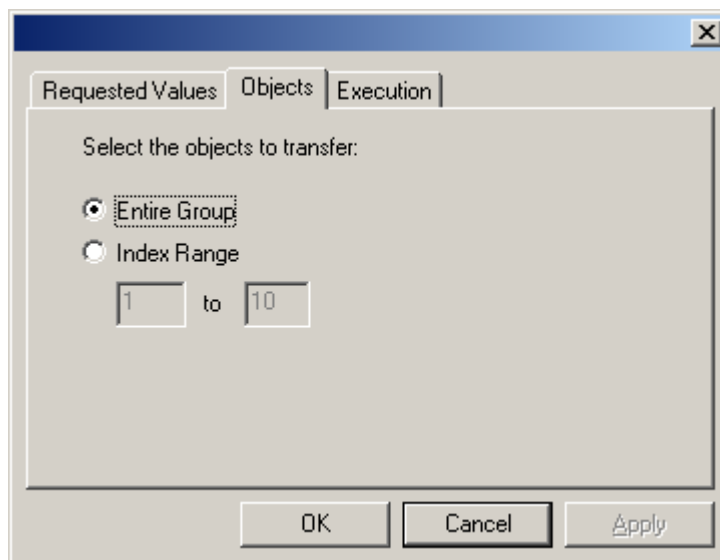


Figure 24 Cycle Properties: Objects Page

This page allows you to specify whether to request the entire group, or a contiguous subset, using index numbers (tip: indices are displayed in the main view when a group is selected in the tree).

5.2.6.3 The Execution Page

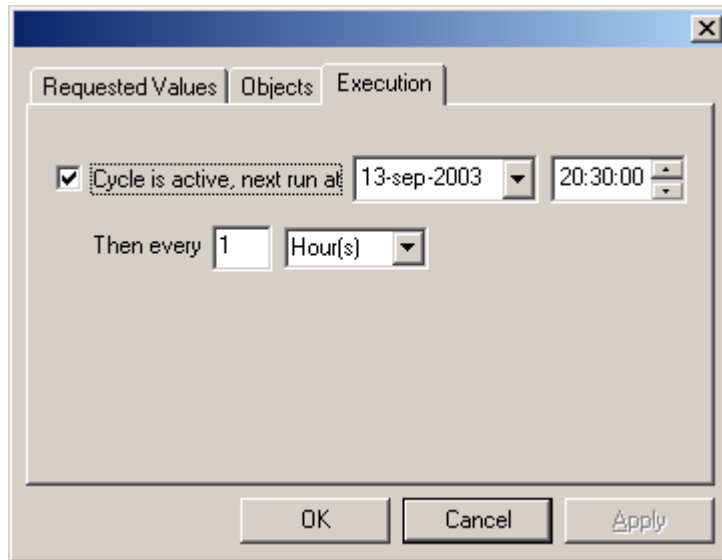


Figure 25 Cycle Properties: Execution Page

The execution page allows you to enable/disable a cycle, as well as specifying when it should be run, and the interval between invocations.

5.2.7 The Fetch Data Wizard

The fetch data wizard is used to run a requested data transfer manually. It is available only when the initiator configuration is accessed from the server (i.e. loaded using the 'Get Active Configuration' menu). Basically, it consists of the first two pages from the Cycle Properties dialog, presented in a wizard form:

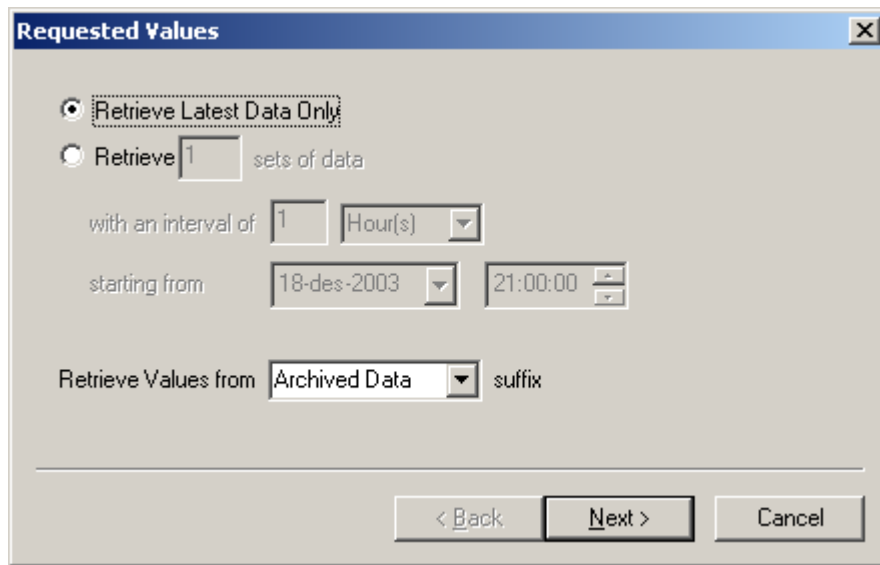


Figure 26 Fetch Data Wizard: Requested Values

Pressing next gives:

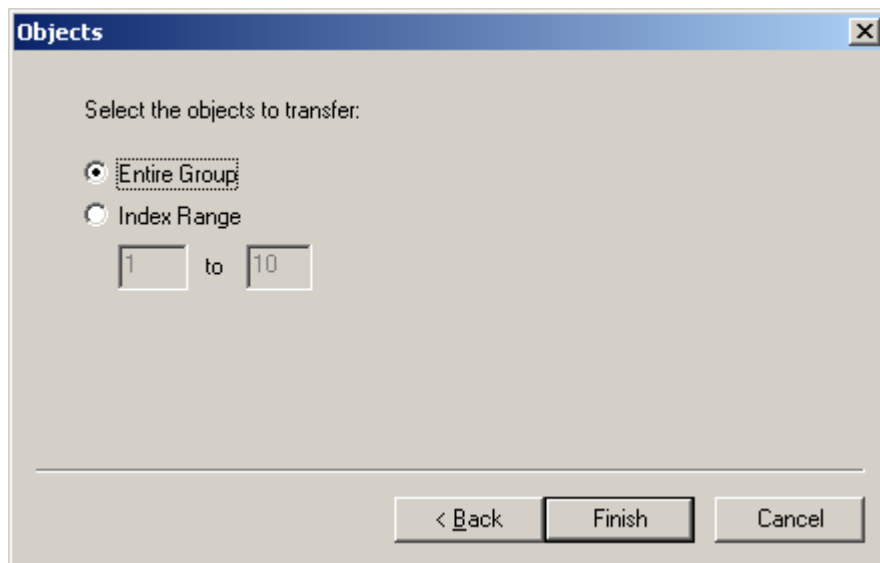


Figure 27 Fetch Data Wizard: Objects

Pressing Finish will send a request to the initiator, waiting up to five minutes for its completion. The resulting data is sent to the client configured for the selected suffix for this partner. (A future version will provide display of data and explicit specification of client).