

PROTOCOL DOCUMENT

P-16

Mincut. Basics

GOALS

Learn the basic concepts to configure at least for a mincut to work. Also get the answer of some questions about common possible problems.

DESCRIPTION

Installation

- It is necessary to have the 'pgrouting' EXTENSION installed.

Previous configuration

- **MACRO-EXPLOITATION** – as there is the possibility that the networks of two municipalities are linked, when a mincut is done it takes into account the **macro-exploitation** to which the section planned to cut belongs. For this reason it is very important that each macro-exploitation, **except those with interconnected networks**, have its own macro-exploitation. For the exceptions, the different interconnected macro-exploitation must be part of the same macro-exploitation so that the mincut is able to cut the network in several exploitations if necessary.
- **EXPLOITATIONS AND DEPOSITS** – Fill the table 'config_graf_inlet'. Here the nodes of each exploitation that serve as 'inlets' (usually deposits or catchments) must be configured. TANK elements will be automatically inserted.
- **VALVE TYPES** – In 'config_graf_valve' table, the different types of valve which the mincut should take into account must be configured. To be selected from the existing valve types in the 'cat_feature_node' table.
- **RETENTION VALVES** – In 'config_graf_checkvalve' table it is possible to **optionally** configure retention valves that only allow water to pass in one direction. To establish this direction of water, the id of the section to which the water circulates must be reported in the column 'to_arc'.

Inventory

- The elements of the network (arc / node) must have a value for state_type and only those that will be taken into account for the mincut which have is_operative = TRUE (in the value_state_type table).
- Have the topology in order. All sections must have value for node_1 and node_2.
- Valves **cannot** have NULL values for **closed** and **broken** fields.

FAQS

I have done a mincut and it has extra-exploitations problems. What can happen?

Verify that the 'config_graf_inlet' table is properly configured. It is possible that an exploitation does not have a water inlet (inlet) configured and is supplied by *inlets* from other exploitations.

I have done a mincut and it stops midway with a visually incorrect result. What can happen?

There is topological inconsistency. Check the node1 and node2 of the sections where the mincut stops.

It could also be originated because the valve types are incorrectly configured in the 'config_graf_valve' table and some value is missing.

PROTOCOL DOCUMENT

Mincut. Basics

P-16

Why mincut ignores some specific valves?

Check that the *closed* and *broken* fields are NOT NULL for these valves.

I have made a mincut that should affect a network section in the planned state and it does not go well. What can have happened?

The planned alternatives topology is complex. It may happen that, due to the error of the planning user, there is a duplicate node (in different states) that disconnects the network even though it appears visually correct. You have to check that: in the cut zone we are only viewing an alternative of the *psector* or that the *arc-node* topology and the state topology are correct.

How does to_arc work act and which are the configuration differences related to mapzones and go2epa?

Unfortunately the configuration is not unified for now. That is why the following table details depending on the analysis process that is needed where the configuration must be carried out:

TO ARC CONFIG (SENSE OF FLOW)					
FEATURE			ANALYSIS OPTION		
ELEMENT	CAT-FEATURE	SYS-FEATURE	MAPZONES	MINCUT	GO2EPA
Inlet	tank	tank	sector / presszone dqa / dma	config_graf_inlet	
	reservoir	reservoir			
	waterwell	waterwell			
	source	source			
check-valve	check-valve	valve		config_graf_checkvalve	inp_shortpipe
Pressure regulator	pressure regulator valve	valve	presszone		inp_valve
	register	register			inp_valve
	pressure sustain valve	valve			inp_valve
Flow meter	meter	meter	dma		
Flow regulator	flow regulator valve	valve			inp_valve
pump	pump	pump	presszone		inp_pump
chlorinator	chlorinator	netelement	dqa		
samplepoint	netsamplepoint	netsamplepoint			

REVIEWS

Action	User	Date
Created	Xavier Torret	09/11/2018
Modified	Albert Bofill	23/04/2020
Modified	Albert Bofill	28/01/2022

