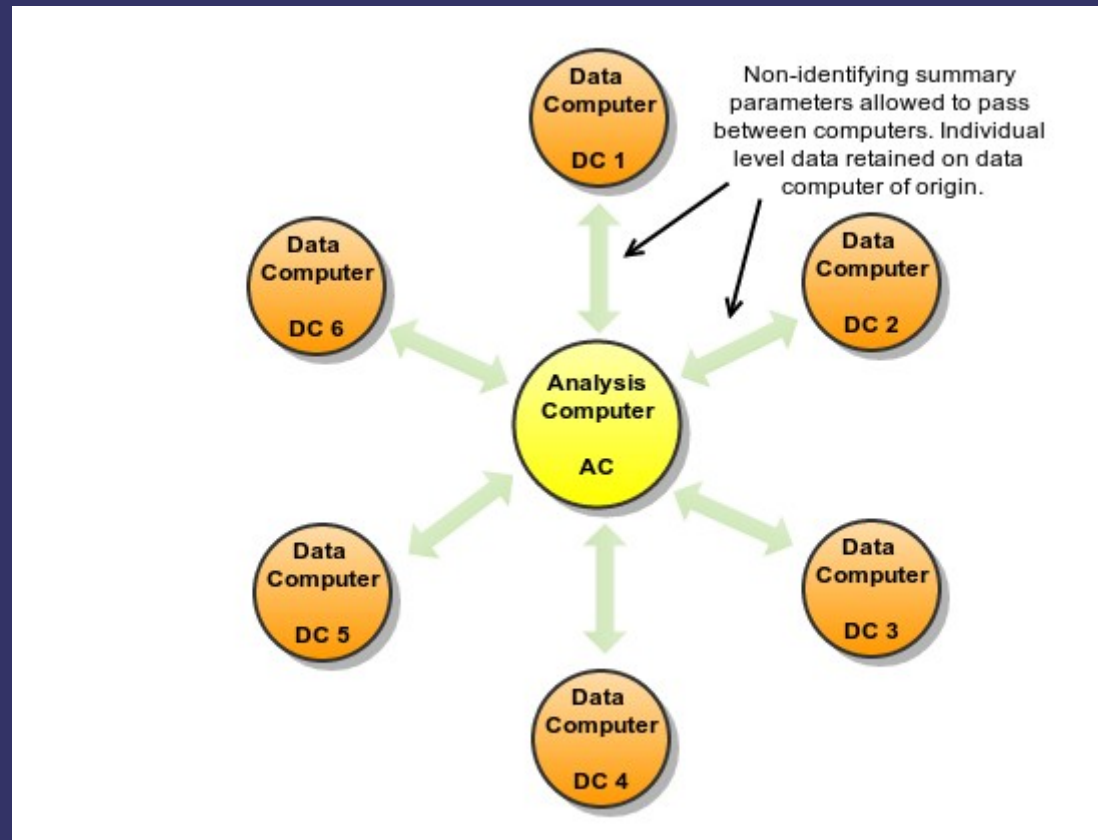# *DataSHIELD BioSHaRE*

DataSHIELD IT infrastructure
for BioSHaRE
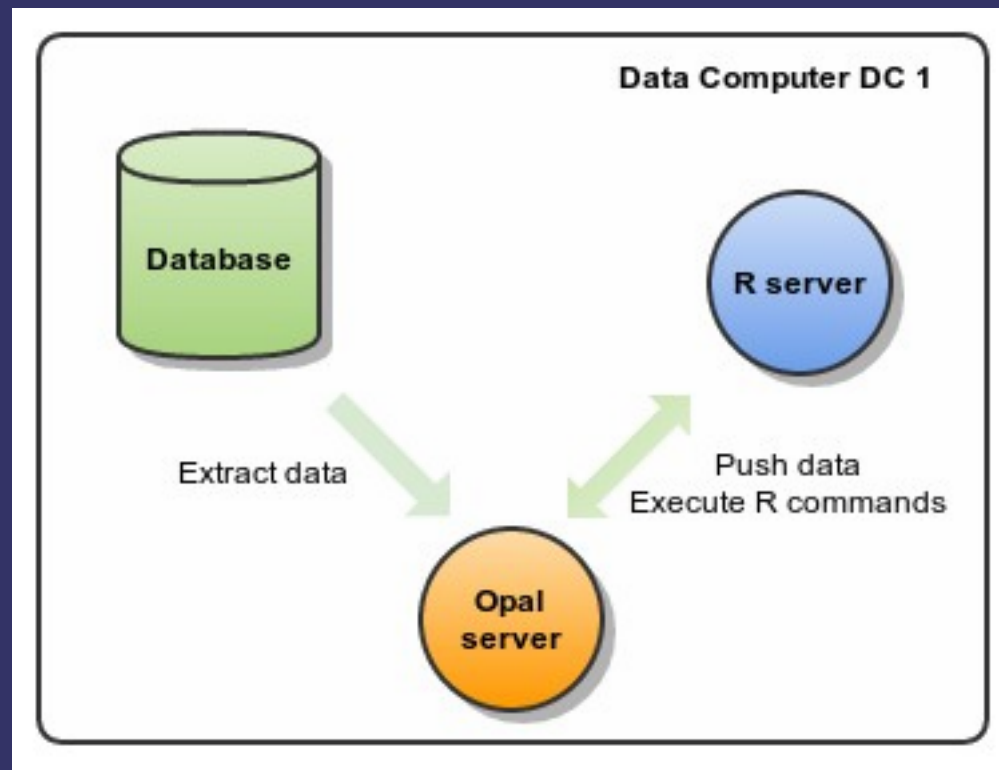
DataSHIELD IT

➲ DataSHIELD basics
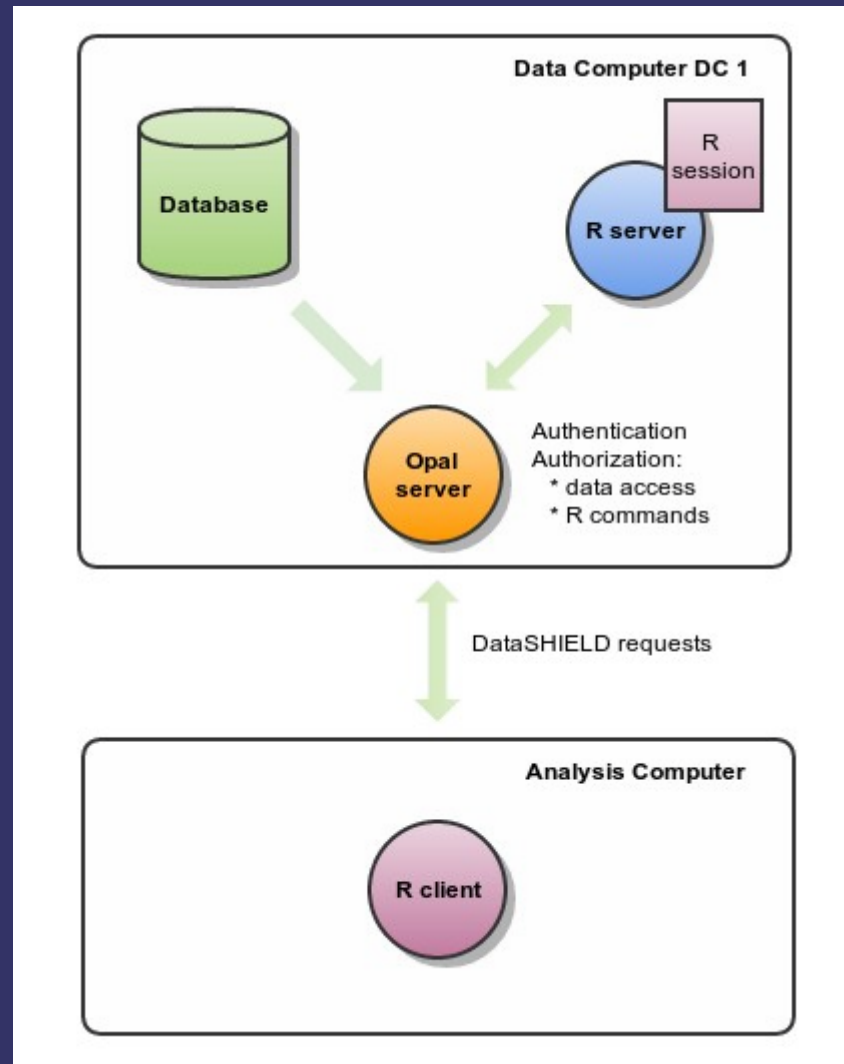
DataSHIELD IT

➲ Data Computer = Opal + R
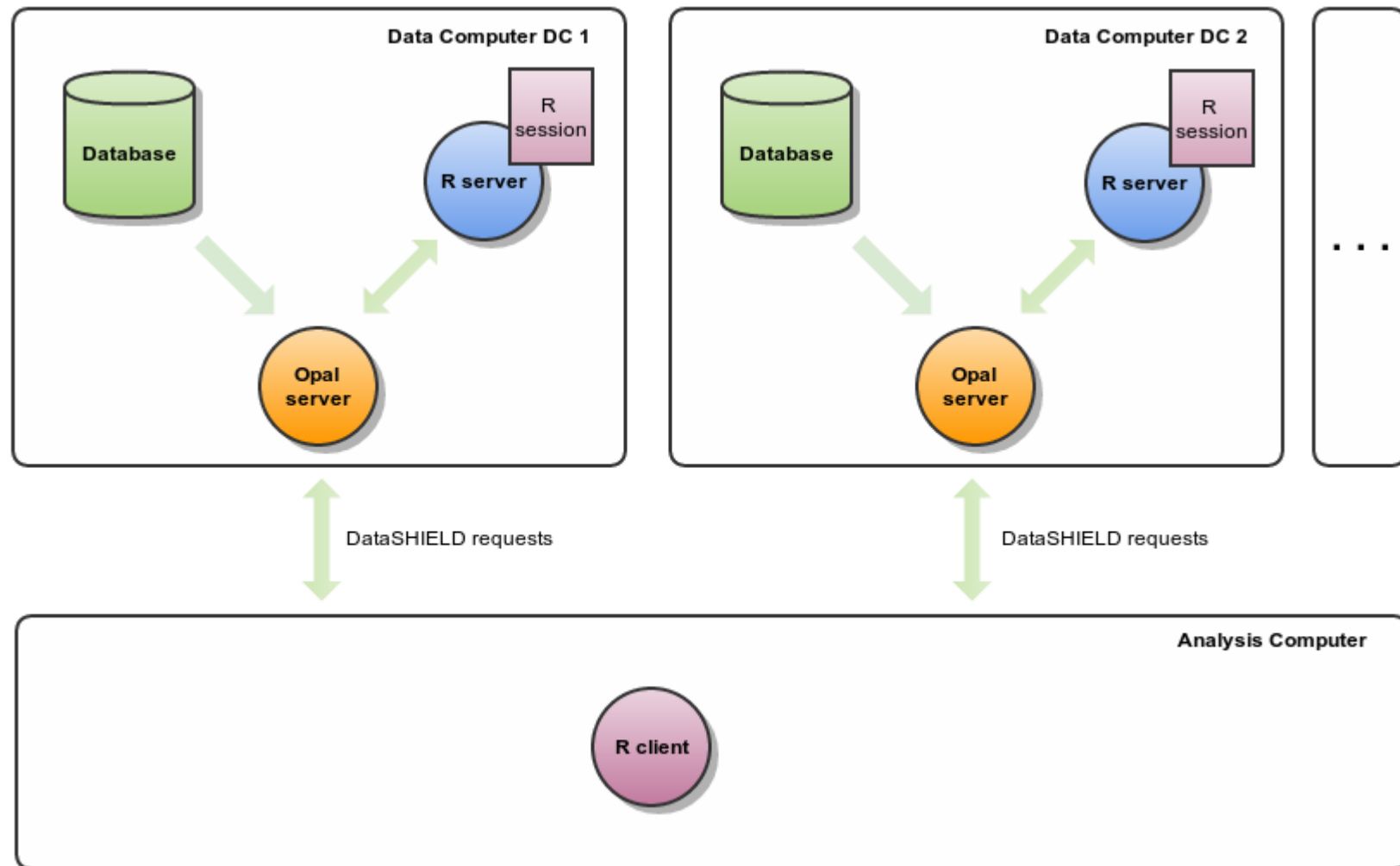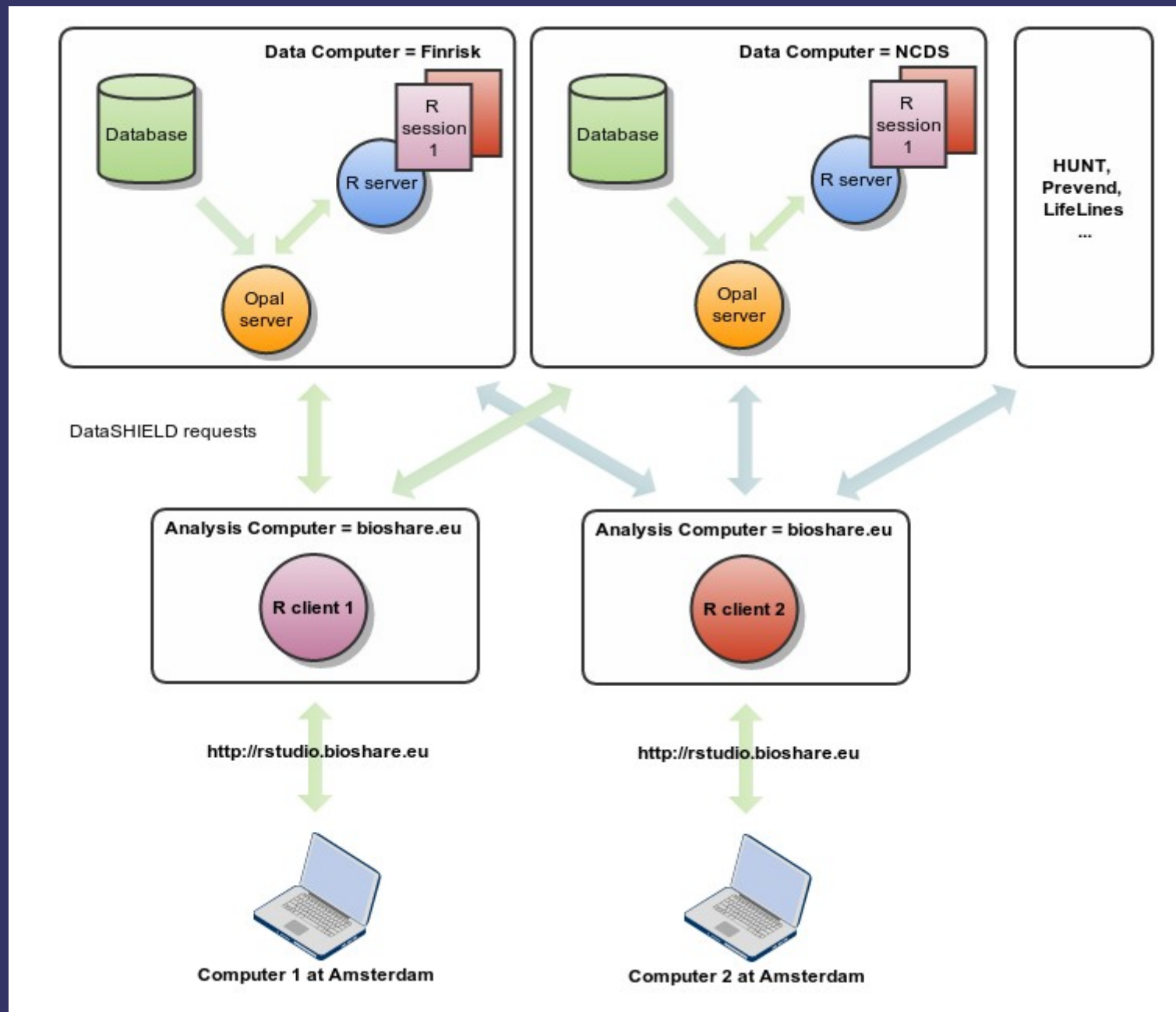
DataSHIELD IT

➲ Data Computer + Analysis Computer

DataSHIELD IT

⮑ *n* Data Computers + Analysis Computer

DataSHIELD BioSHaRE IT

BioSHaRE Rstudio

Opal Data Structure

➲ Table

- Column = variable (name, type, categories...)
- Row = data of a participant

Datasource1.Table1				
	VAR1	VAR2	...	VARn
1	11	a		x
2	23	g		y
...				

DataSHIELD Opal API

⮫ Opal R package: *opal functions*

- *opal.login* : opal connection
- *opal.datasources* : list the datasources
- *opal.datasource* : description of a datasource
- *opal.tables* : list the tables of a datasource
- *opal.table* : description of a table
- *opal.variables* : list the variables of a table
- *opal.variable* : description of a variable
- ...

DataSHIELD Opal API

- ➲ Opal R package: *datashield functions*
  - *datashield.assign* : assign a data (from Opal or result of a R expression) to a R symbol
  - *datashield.symbols* : list all R symbols on server
  - *datashield.aggregate* : returns result of an aggregation
  - *datashield.methods* : list authorized aggregate and assign methods
  - ...