

# Package ‘ErlangC’

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**Type** Package

**Title** Solve Erlang-C Model

**Version** 0.1.0

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**Description** Provides a set of functions to solve Erlang-C model. The Erlang C formula was invented by the Danish Mathematician A.K. Erlang and is used to calculate the number of advisors and the service level.

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**Encoding** UTF-8

**LazyData** true

**Imports** bsicons, bslib, DT, gmp, lubridate, shiny, tidy

**RoxygenNote** 7.3.2

**Depends** R (>= 2.10)

**Suggests** testthat (>= 3.0.0)

**Config/testthat/edition** 3

**NeedsCompilation** no

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calculate_agents	<i>Calculate Required Number of Agents This function calculates the required number of agents to achieve a specified service level and occupancy.</i>
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### Description

Calculate Required Number of Agents This function calculates the required number of agents to achieve a specified service level and occupancy.

### Usage

```
calculate_agents(
    call_count,
    call_period,
    avg_handle_time,
    target_anser_time,
    require_service_level,
    max_occupancy,
    shrinkage,
    max_agents = NULL
)
```

### Arguments

call_count	Numeric. The total number of incoming calls.
call_period	Duration. The time period over which calls are counted.
avg_handle_time	Duration. The average time taken to handle a call.
target_anser_time	Duration. The targeted time to answer a call.
require_service_level	Numeric. The required service level.
max_occupancy	Numeric. The maximum allowed occupancy level .
shrinkage	Numeric. The shrinkage factor to account for non-productive time .
max_agents	Integer. The maximum number of agents allowed.

### Value

A list containing the calculated metrics and the number of agents required.

**Examples**

```
calculate_agents(  
  call_count = 100,  
  call_period = lubridate::duration(30, "minutes"),  
  avg_handle_time = lubridate::duration(180, "seconds"),  
  target_anser_time = lubridate::duration(20, "seconds"),  
  require_service_level = 0.8,  
  max_occupancy = 0.85,  
  shrinkage = 0.3,  
  max_agents = 200  
)
```

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erlang\_c

*Erlang C*

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**Description**

Calculate the performance metrics of an Erlang C model with n agents.

**Usage**

```
erlang_c(call_count, call_period, avg_handle_time, target_anser_time, n)
```

**Arguments**

call_count	Numeric. The total number of incoming calls.
call_period	Duration. The time period over which calls are counted.
avg_handle_time	Duration. The average time taken to handle a call.
target_anser_time	Duration. The targeted time to answer a call.
n	Integer. The number of agents.

**Value**

A list containing the calculated metrics.

**Examples**

```
erlang_c(  
  call_count = 100,  
  call_period = lubridate::duration(30, "minutes"),  
  avg_handle_time = lubridate::duration(180, "seconds"),  
  target_anser_time = lubridate::duration(20, "seconds"),  
  n = 14  
)
```

`erlang_c_app`*Shiny App for Erlang C Calculator*

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**Description**

This function creates a Shiny app for calculating Erlang C metrics.

**Usage**

```
erlang_c_app(language = "en")
```

**Arguments**

`language` Character. The language to use for translations (default: "en").

**Value**

A Shiny app object.

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`translations`*Translations*

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**Description**

This dataset contains translations for all the strings used in the app. It is used to create a Shiny string translation interface.

**Usage**

```
translations
```

**Format**

A data frame with variables:

**key** The key of the string to translate

**en** The translation in English

**zh** The translation in Chinese

**Source**

Local

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