# **Storm Cloud Development**

# **Project CM Function Points**

**Version 1.2** 

| Project CM      | Version: | 1.2         |
|-----------------|----------|-------------|
| Function Points | Date:    | 19/Jun/2014 |

# **Revision History**

| Date        | Version | Description                         | Author                  |
|-------------|---------|-------------------------------------|-------------------------|
| 09/Apr/2014 | 1.0     | Initial function points calculation | Storm Cloud Development |
| 15/Apr/2014 | 1.1     | Updated all calculations            | Storm Cloud Development |
| 19/Jun/2014 | 1.2     | Inserted new calculations           | Storm Cloud Development |
|             |         |                                     |                         |

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#### **Function Points**

#### 1. Function Point Calculation

#### 1.1 Brief Description

Function points are a measurement for the complexity of software. They are based on different factors like number of input and output of the user and they're not based on a special programming language. This document shows the calculations for different use cases.

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### 2. Use Cases

#### 2.1 Login

Function point calculation for the use case "login".

|   | Login |        |
|---|-------|--------|
| Domain Characteristic Table                               |       |        |
| Number of User Input                                      | 2     | Simple |
| Number of User Outputs                                    | 2     | Simple |
| Number of User Inquiries                                  | 0     | Simple |
| Number of Files   | 1     | Simple |
| Number of External Interfaces                             | 1     | Simple |
| Complexity Adjustment Table                               |       |        |
| Does the system require reliable backup and recovery?     |       | 4      |
| Are data communications required?                         |       | 3      |
| Are there distributed processing functions?               |       | 0      |
| Is performance critical?                                  |       | 1      |
| Will the system run in an existing, heavily utilized      |       | 0      |
| operational environment?                                  |       | 0      |
| Does the system require on-line data entry?               | 5     |        |
| Does the on-line data entry require the input             |       |        |
| transaction to be built over multiple screens or          |       | 5      |
| operations?   |       |        |
| Are the master files updated on-line?                     |       | 1      |
| Are the inputs, outputs, files or inquiries complex?      |       | 3      |
| Is the internal processing complex?                       |       | 2      |
| Is the code to be designed reusable?                      |       | 5      |
| Are conversion and installation included in the design?   |       | 0      |
| Is the system designed for multiple installations in      |       | 2      |
| different organizations?                                  |       | ۷      |
| Is the application designed to facilitate change and ease | 0     |        |
| of use by the user?                                       |       |        |
| Function Points   |       | 24,96  |

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### 2.2 Logout

Function point calculation for the use case "logout".

|   | Logout                                  |        |
|---|---|--------|
| Domain Characteristic Table                               |   |        |
| Number of User Input                                      | 1                                       | Simple |
| Number of User Outputs                                    | 1                                       | Simple |
| Number of User Inquiries                                  | 0                                       | Simple |
| Number of Files   | 1                                       | Simple |
| Number of External Interfaces                             | 1                                       | Simple |
| Complexity Adjustment Table                               |   |        |
| Does the system require reliable backup and recovery?     |   | 4      |
| Are data communications required?                         |   | 3      |
| Are there distributed processing functions?               |   | 0      |
| Is performance critical?                                  |   | 1      |
| Will the system run in an existing, heavily utilized      | 0                                       |        |
| operational environment?                                  |   |        |
| Does the system require on-line data entry?               | 5                                       |        |
| Does the on-line data entry require the input             |   |        |
| transaction to be built over multiple screens or          | 5                                       |        |
| operations?   |   |        |
| Are the master files updated on-line?                     | *************************************** | 1      |
| Are the inputs, outputs, files or inquiries complex?      |   | 3      |
| Is the internal processing complex?                       | *************************************** | 2      |
| Is the code to be designed reusable?                      |   | 5      |
| Are conversion and installation included in the design?   |   | 0      |
| Is the system designed for multiple installations in      |   | 2      |
| different organizations?                                  |   | 2      |
| Is the application designed to facilitate change and ease | 0                                       |        |
| of use by the user?                                       |   |        |
| Function Points   |   | 18,24  |

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#### 2.3 Manage calendars

Function point calculation for the use case "manage calendars".

|   | Manage Calendars |        |
|---|------------------|--------|
| Domain Characteristic Table                               |                  |        |
| Number of User Input                                      | 5                | Simple |
| Number of User Outputs                                    | 5                | Simple |
| Number of User Inquiries                                  | 3                | Simple |
| Number of Files   | 5                | Simple |
| Number of External Interfaces                             | 1                | Simple |
| Complexity Adjustment Table                               |                  |        |
| Does the system require reliable backup and recovery?     |                  | 4      |
| Are data communications required?                         |                  | 3      |
| Are there distributed processing functions?               |                  | 0      |
| Is performance critical?                                  |                  | 1      |
| Will the system run in an existing, heavily utilized      |                  | 0      |
| operational environment?                                  |                  |        |
| Does the system require on-line data entry?               | 5                |        |
| Does the on-line data entry require the input             |                  |        |
| transaction to be built over multiple screens or          | 5                |        |
| operations?   |                  |        |
| Are the master files updated on-line?                     |                  | 1      |
| Are the inputs, outputs, files or inquiries complex?      |                  | 3      |
| Is the internal processing complex?                       |                  | 2      |
| Is the code to be designed reusable?                      |                  | 5      |
| Are conversion and installation included in the design?   | 0                |        |
| Is the system designed for multiple installations in      | 2                |        |
| different organizations?                                  |                  | 2      |
| Is the application designed to facilitate change and ease | 0                |        |
| of use by the user?                                       |                  |        |
| Function Points   |                  | 80,64  |

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#### 2.4 Manage Mail Accounts

Function Point calculation for the Use Case "manage mail accounts"

|  | Manage Mail Accounts |        |
|--|----------------------|--------|
| Domain Characteristic Table                          |                      |        |
| Number of User Input                                 | 13                   | Simple |
| Number of User Outputs                               | 4                    | Simple |
| Number of User Inquiries                             | 5                    | Simple |
| Number of Files                                      | 3                    | Simple |
| Number of External Interfaces                        | 1                    | Simple |
| Complexity Adjustment Table                          |                      |        |
| Does the system require reliable backup and          |                      | 4      |
| recovery?  |                      | 4      |
| Are data communications required?                    |                      | 3      |
| Are there distributed processing functions?          |                      | 0      |
| Is performance critical?                             |                      | 1      |
| Will the system run in an existing, heavily utilized |                      | 0      |
| operational environment?                             |                      |        |
| Does the system require on-line data entry?          | 5                    |        |
| Does the on-line data entry require the input        |                      |        |
| transaction to be built over multiple screens or     |                      | 5      |
| operations?  |                      |        |
| Are the master files updated on-line?                |                      | 1      |
| Are the inputs, outputs, files or inquiries complex? |                      | 3      |
| Is the internal processing complex?                  |                      | 2      |
| Is the code to be designed reusable?                 |                      | 5      |
| Are conversion and installation included in the      |                      | Λ      |
| design?  | 0                    |        |
| Is the system designed for multiple installations in |                      | 2      |
| different organizations?                             |                      |        |
| Is the application designed to facilitate change and | 0                    |        |
| ease of use by the user?                             |                      |        |
| Function Points                                      | 6                    | 0,4    |

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### 2.5 Manage Rights

Function Point calculation for the Use Case "manage rights".

|  | Manage Rights |         |  |
|--|---------------|---------|--|
| Domain Characteristic Table                          |               |         |  |
| Number of User Input                                 | 5             | Simple  |  |
| Number of User Outputs                               | 3             | Simple  |  |
| Number of User Inquiries                             | 1             | Simple  |  |
| Number of Files                                      | 2             | Simple  |  |
| Number of External Interfaces                        | 1             | Simple  |  |
| Complexity Adjustment Table                          |               |         |  |
| Does the system require reliable backup and          |               | 4       |  |
| recovery?  |               | 4       |  |
| Are data communications required?                    |               | 3       |  |
| Are there distributed processing functions?          |               | 0       |  |
| Is performance critical?                             |               | 1       |  |
| Will the system run in an existing, heavily utilized | 0             |         |  |
| operational environment?                             |               |         |  |
| Does the system require on-line data entry?          | 5             |         |  |
| Does the on-line data entry require the input        |               |         |  |
| transaction to be built over multiple screens or     |               | 5       |  |
| operations?  |               |         |  |
| Are the master files updated on-line?                |               | 1       |  |
|  |               | 3       |  |
| Are the inputs, outputs, files or inquiries complex? |               | 3       |  |
| Is the internal processing complex?                  |               | 2       |  |
| Is the code to be designed reusable?                 | 5             |         |  |
| Are conversion and installation included in the      |               | 0       |  |
| design?  |               |         |  |
| Is the system designed for multiple installations in |               | 2       |  |
| different organizations?                             |               | <u></u> |  |
| Is the application designed to facilitate change and | 0             | 0       |  |
| ease of use by the user?                             |               | 0       |  |
| Function Points                                      |               | 31,85   |  |

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## 2.4 Manage Address Book

Function Point calculation for the Use Case "manage address book".

|  | Manage Address Book |                                       |  |
|--|---------------------|---------------------------------------|--|
| Domain Characteristic Table                          |                     |                                       |  |
| Number of User Input                                 | 10                  | Simple                                |  |
| Number of User Outputs                               | 5                   | Simple                                |  |
| Number of User Inquiries                             | 2                   | Simple                                |  |
| Number of Files                                      | 2                   | Simple                                |  |
| Number of External Interfaces                        | 1                   | Simple                                |  |
| Complexity Adjustment Table                          |                     |                                       |  |
| Does the system require reliable backup and          |                     | 4                                     |  |
| recovery?  |                     | 4                                     |  |
| Are data communications required?                    |                     | 3                                     |  |
| Are there distributed processing functions?          |                     | 0                                     |  |
| Is performance critical?                             |                     | 1                                     |  |
| Will the system run in an existing, heavily utilized |                     | 0                                     |  |
| operational environment?                             |                     |                                       |  |
| Does the system require on-line data entry?          |                     | 5                                     |  |
| Does the on-line data entry require the input        |                     |                                       |  |
| transaction to be built over multiple screens or     |                     | 5                                     |  |
| operations?  |                     |                                       |  |
| Are the master files updated on-line?                |                     | 1                                     |  |
| Are the inputs, outputs, files or inquiries complex? |                     | 3                                     |  |
| Is the internal processing complex?                  |                     | 2                                     |  |
| Is the code to be designed reusable?                 |                     | 5                                     |  |
| Are conversion and installation included in the      |                     | 0                                     |  |
| design?  |                     | · · · · · · · · · · · · · · · · · · · |  |
| Is the system designed for multiple installations in |                     | 2                                     |  |
| different organizations?                             |                     |                                       |  |
| Is the application designed to facilitate change and | 0                   |                                       |  |
| ease of use by the user?                             |                     |                                       |  |
| Function Points                                      |                     | 72                                    |  |

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### 2.5 Manage Appointments

Function Point calculation for the Use Case "manage appointments".

|  | Manage Appointments |          |  |
|--|---------------------|----------|--|
| Domain Characteristic Table                          |                     |          |  |
| Number of User Input                                 | 6                   | Simple   |  |
| Number of User Outputs                               | 5                   | Simple   |  |
| Number of User Inquiries                             | 5                   | Simple   |  |
| Number of Files                                      | 5                   | Simple   |  |
| Number of External Interfaces                        | 1                   | Simple   |  |
| Complexity Adjustment Table                          |                     |          |  |
| Does the system require reliable backup and          |                     | 4        |  |
| recovery?  |                     | +        |  |
| Are data communications required?                    |                     | 3        |  |
| Are there distributed processing functions?          |                     | 0        |  |
| Is performance critical?                             | 1                   |          |  |
| Will the system run in an existing, heavily utilized |                     | 0        |  |
| operational environment?                             |                     | <u> </u> |  |
| Does the system require on-line data entry?          |                     | 5        |  |
| Does the on-line data entry require the input        |                     |          |  |
| transaction to be built over multiple screens or     |                     | 5        |  |
| operations?  |                     |          |  |
| Are the master files updated on-line?                |                     | 1        |  |
| Are the inputs, outputs, files or inquiries complex? |                     | 3        |  |
| Is the internal processing complex?                  |                     | 2        |  |
| Is the code to be designed reusable?                 | 5                   |          |  |
| Are conversion and installation included in the      |                     | 0        |  |
| design?  | 0                   |          |  |
| Is the system designed for multiple installations in |                     | 2        |  |
| different organizations?                             |                     |          |  |
| Is the application designed to facilitate change and | 0                   |          |  |
| ease of use by the user?                             |                     |          |  |
| Function Points                                      |                     | 60,45    |  |

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#### 2.6 Book Meeting Rooms

Function Point calculation for the Use Case "book meeting rooms".

Estimated needed time based on this calculation: 18 hours

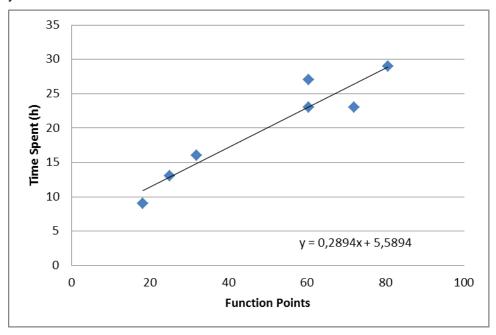
|  | Book Meeting Rooms |        |
|--|--------------------|--------|
| Domain Characteristic Table                          |                    |        |
| Number of User Input                                 | 6                  | Simple |
| Number of User Outputs                               | 4                  | Simple |
| Number of User Inquiries                             | 5                  | Simple |
| Number of Files                                      | 3                  | Simple |
| Number of External Interfaces                        | 1                  | Simple |
| Complexity Adjustment Table                          |                    |        |
| Does the system require reliable backup and          |                    | 4      |
| recovery?  |                    | 4      |
| Are data communications required?                    |                    | 3      |
| Are there distributed processing functions?          |                    | 0      |
| Is performance critical?                             |                    | 1      |
| Will the system run in an existing, heavily utilized | 0                  |        |
| operational environment?                             |                    |        |
| Does the system require on-line data entry?          | 5                  |        |
| Does the on-line data entry require the input        |                    |        |
| transaction to be built over multiple screens or     |                    | 5      |
| operations?  |                    |        |
| Are the master files updated on-line?                | 1                  |        |
| Are the inputs, outputs, files or inquiries complex? |                    | 3      |
| Is the internal processing complex?                  | 2                  |        |
| Is the code to be designed reusable?                 | 5                  |        |
| Are conversion and installation included in the      |                    | 0      |
| design?  | 0                  |        |
| Is the system designed for multiple installations in |                    | 2      |
| different organizations?                             | 2                  |        |
| Is the application designed to facilitate change and | 0                  |        |
| ease of use by the user?                             |                    |        |
| Function Points                                      |                    | 48,75  |

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#### 3. Calculation Diagram

Below you can see the function point calculation diagram. It can be used to estimate the time which has to be spent to implement further use cases, based on the time spent of implemented use cases and their function points.

If you calculate the function points of a new use case, it is possible for you to check the time you probably need to implement this use case. This provides you a tool to enhance your planning of your future work.



1 Function points in relation to time spent