



A MITEL
PRODUCT
GUIDE

Unify OpenScape 4000 Manager

PM Calculation Rules and Examples

Administrator Documentation

07/2024

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1 Introduction

This documentation describes the statistic figures of PM Reports and provides sufficient explanations of how the columns of the reports are calculated. The following table gives an overview of the reports that will be explained in this document:

Report Group	Report Name
Attendant Consoles – AC 2 Queue	First Calls – Recalls
Attendant Consoles – AC 2 Queue	General Statistics
Attendant Consoles – Common	Out of Service, Night Service, Jack Pulled, Jack Off
Attendant Consoles – Common	Jack On
Call Volumes	Answered, Not Answered, and Lost Because of No Answer

2 Performance Manager Calculation Rules

This section outlines the basic concept of PM calculations regarding the results of the reports to make it easier for the user to understand and adapt the PM figures as presented in the various report categories. In order to understand these calculations, the definitions of call type and call direction must be set first. These two parameters are defined when a new filter in PM is created.

[Call Types](#)

[Call Directions](#)

[Report Calculation Rules](#)

In order to understand the connection between the outcome of the following call scenarios and their results generated by the PM reports, a brief explanation of the filter usage must be provided. A filter can be modified in such a way that the results of the report depend upon the type and the direction of a call. There are three call types and two call directions presented below:

2.1 Call Types

A "call type" defines the scope of the call scenario. The different types can be defined as follows:

- **External:** A call can be considered as external if the initiator of the call does not belong to the same switch as the destination party. External calls are often divided into 2 categories (not visible in PM):
 - **TIE calls** are considered the calls that take place among OpenScape switches. In this case, the initiator and the destination party belong to two different OpenScape switches.
 - **Central Office (CO) calls** are originated from the external environment (e.g. public network), and the destination point belongs to an OpenScape switch.
- **Internal:** A call can be considered as internal if the initiator and the destination party of this call are situated within the same switch. Apart from this case, some customers also need to consider their TIE calls (that take place inside their network of OpenScape switches) as internal calls. This may happen in two phases:
 - Phase A: Open a telnet connection with the MANAGER. Transform all incoming TIE calls as internal (set YES in the environmental variable: NETWORK_CALLS_INTERNAL inside the file: /opt/pm/bin/ pm_col.sh). After this, restart pm_col process by entering: **procadmin -c pm_col**.
 - Phase A: Establish a comwin connection with the switch and modify the AMO-COMMAND **LDAT** by adding the parameter **INTCHARG** on all switches, then all outgoing TIE calls will be transformed to internal calls. With the above 2 steps all TIE calls are transformed into internal calls; consequently, customers can assume their entire switch network is a big internal environment. In this way the scope of "internal" is not the switch, but the entire network of switches.
- **Transit:** A call can be considered as transit call if it "passes through" a switch without reaching any party from this switch. This means that neither the call initiator nor the destination party of the call are physically attached

to that switch. This usually happens for routing reasons. For example, an initiator from switch A wants to speak with a destination party to switch C. If there is no direct connection, or the routing path via switch B is cheaper, the initiator dials the following digits in order to reach the latter: the access code of switch B plus the access code of switch C plus the destination number. In this scenario "switch B" has a transit call. The transit node has two data records: one **incoming** (Break In) and one **outgoing** (Break Out).

2.2 Call Directions

The direction of the call defines the "path" of the call. If for example "party A" makes a call to "party B", the following results are valid: Party A has made an **outgoing** call, and Party B has received an **incoming** call. A detailed analysis is outlined below, describing the combinations of call types and call directions.

- **Incoming:** Calls that have reached the filter items of PM.
 - **Internal:** If Internal and Incoming are checked, the report output will contain data where the extension(s) included in the filter were the destination parties of calls initiated from subscribers physically connected to the same switch.
 - **External:** If External and Incoming are checked, the report output will contain data where the extension(s) included in the filter were the destination parties of calls initiated from subscribers that are not physically connected to the same switch.
 - **Transit:** If Transit and Incoming are checked, the report output will contain data from the incoming part of calls that passed through the trunk group(s) belonging to an intermediate switch, situated between the initiator and the destination party.
- **Outgoing:** Calls that were initiated from the filter items of PM.
 - **Internal:** If Internal and Outgoing are checked, the report output will contain data where the extension(s) included in the filter were the initiators of calls the destination parties of which were subscribers physically connected to the same switch.
 - **External:** If External and Outgoing are checked, the report output will contain data where the extension(s) included in the filter were the initiators of calls the destination parties of which were subscribers that are not physically connected to the same switch.
 - **Transit:** If Transit and Outgoing are checked, the report output will contain data from the outgoing part of calls that passed through the trunk group(s) belonging to an intermediate switch, situated between the initiator and the destination party.

2.3 Report Calculation Rules

In Performance Management, a set of rules exists in order to calculate the reporting figures. Below the main calculation rules are explained:

- 1) **Increase calls when the calling party changes:** In PM a common error is to assume that in a single call scenario only one call should be counted. This sometimes is true, but in many cases is not valid. If the calling party changes within a call scenario, an additional call is counted in PM. This event means

that if a new party wants to initiate a call – within the same call scenario – this is counted as an extra call.

- 2) Calls between attendant consoles that belong to the same group of the same switch are not counted:** In general, it is preferred not to calculate calls that were made in order to acquire information on technical issues within the same team (Attendant Console Group). For this kind of calls, the attendant consoles that received the call did not actually serve a client, so it is not correct to count these calls within the number of calls for provision of client service.
- 3) Do not increase the number of calls when switch changes:** If a TIE call happens (e.g. between 2 OpenScape switches), and if both parties are included in the filter, then PM counts 1 call. If the scenario was internal, PM would also calculate one call. The reason is that in PM common calls among many switches are counted only once; therefore, the calculation of the same call scenario is not increased if we include filter items from different switches. Only one incoming or outgoing call information is kept when common incoming or common outgoing call scenarios exist. In a case where more than one switch has incoming or outgoing records, only one is kept (the record that is closer to the end of the call scenario). This check is done in order to keep only distinct information in case of tie call scenarios.
- 4) Transit calls are only counted when trunks or trunk groups are included in the report's filter:** As mentioned above, transit call types are important in case the report's filter items are trunks or trunk groups, since these are the filter items that actually participate in such kind of calls.
- 5) Increase calls when recalls happen:** If a recall occurs, a new request for call takes place for an attendant console. For this reason, additional calls are assumed when recalls occur (even if the calling party and the switch remain the same). The recall is either not answered (if the attendant console does not handle the calls) or is answered (if it receives the recall and tries to establish a new connection).
- 6) Speed dials are not counted as calls:** During a blind transfer by an attendant console (i.e. no ring duration and no conversation duration), the intermediate step that the attendant console performs by dialling the destination party does not count as a valid call.
- 7) Outgoing parts of Attendant call scenarios are not counted as calls:** In case of an attendant console scenario where an originator reaches an AC and the AC then connects the initiator with a destination party, the AC has been involved twice in this scenario: It has an incoming part (someone reaches the AC) and an outgoing part (the AC tries to reach a destination party in order to perform a connection). In this case PM calculates only one incoming call and the outgoing part of the call is not counted at all. The reason for this is that the attendant console's role is to serve incoming calls and not to initiate new (outgoing) ones.

3 Attendant Consoles

General Attendant Console Calculation Rules

Attendant consoles – AC 2 Queue

- 1) [First Calls – Recalls](#)
- 2) [General Statistics](#)
- 3) [Attendant Consoles – Common](#)

3.1 General Attendant Console Calculation Rules

- 1) **Speed dials are not counted as calls:** During a blind transfer by an attendant console (where no ring duration and no conversation duration happens), the intermediate step performed by the attendant console by dialling the destination party does not count as a valid call.
- 2) **Recall:** If a recall happens, this means that a new request for call takes place for an attendant console. For this reason, additional calls are assumed when recalls take place (even if the calling party and the switch remain the same). The recall is either not answered (if the attendant console does not handle the calls) or is answered (if it receives the recall and tries to establish a new connection).
- 3) **Conversation call:** Conversation calls are not counted as calls: In case of an attendant console scenario where an originator reaches an AC and the AC then connects the initiator with a destination party, the AC has been involved twice in this scenario: It has an incoming part (someone reaches the AC) and an outgoing part (the AC tries to reach a destination party in order to perform a connection). In this case PM calculates only one incoming call, and the outgoing part of the call is not counted at all. The reason for this is that for this call scenario the attendant console tries to serve an incoming call and not to create a new (outgoing) one.

3.2 Attendant consoles – AC 2 Queue

3.2.1 First Calls – Recalls

This PM report provides information regarding first call and recall figures for call scenarios where attendant activity is recorded. The output of this report is defined per interval, and all values are given in number of calls. The report provides two columns:

3.2.1.1 First Calls

This figure provides the number of First Calls per interval in call scenarios where the selected – in PM filter – AC group(s) / Console(s) participated. A first call is a call that the AC Group receives, so it is an incoming call that is always addressed to the Group, regardless of the source of the calling party. Therefore, the first call column counts calls that are coming from the public

network (Central Office calls – CO), or from a different (or the same) switch of customer network. The first calls are addressed only to the AC group.

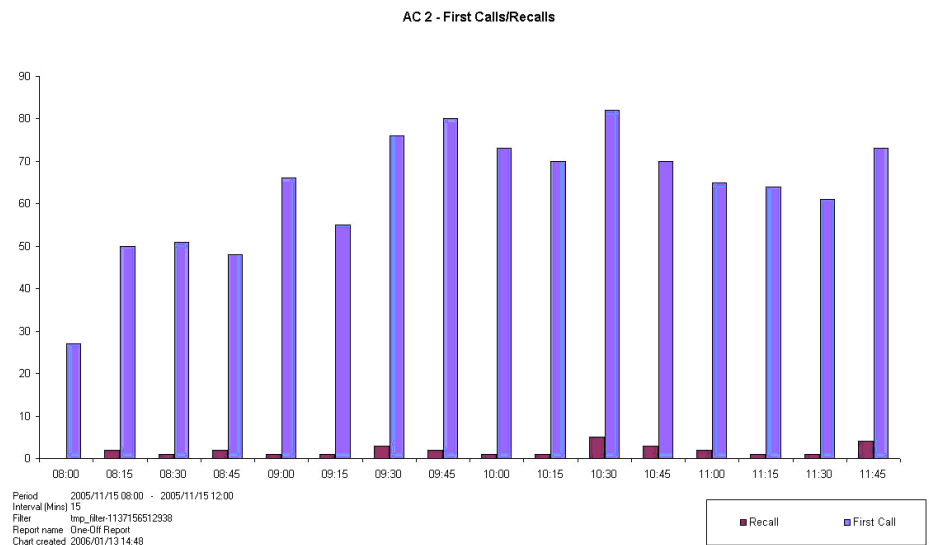
3.2.1.2 Recalls

This column provides the number of Recalls per interval. A recall happens when in a call scenario the party that initiated the call has reached an attendant (first call) and the AC has redirected the call to the desired destination. If the destination party does not answer the call before the timeout period (by default 30 seconds), a recall occurs which means that the call is returned to the attendant console in order to be served again. In case the attendant does not pickup the recall, then this recall is considered as **not answered**. On the other hand, if the attendant will receive (answer) the recall, then this recall is calculated as **answered** recall.

The following screenshot shows the Table Format of the report:

First Calls/Recalls					
Period	2005/11/15 08:00 - 2005/11/15 12:00				
Interval (Mins)	15				
Filter	tmp_filter-1137156540391				
Report name	One-Off Report				
Chart created	2006/01/13 14:49				
Time	Date	Recall	First Call		
8:00	15/11/2005	0	27		
8:15	15/11/2005	2	50		
8:30	15/11/2005	1	51		
8:45	15/11/2005	2	48		
9:00	15/11/2005	1	66		
9:15	15/11/2005	1	55		
9:30	15/11/2005	3	76		
9:45	15/11/2005	2	80		
10:00	15/11/2005	1	73		
10:15	15/11/2005	1	70		
10:30	15/11/2005	5	82		
10:45	15/11/2005	3	70		
11:00	15/11/2005	2	65		
11:15	15/11/2005	1	64		
11:30	15/11/2005	1	61		
11:45	15/11/2005	4	73		
Sum		30	1011		

The following screenshot shows the Column Chart Format of the report:



3.2.2 General Statistics

This PM report provides overall information regarding the AC functionality. It gives the "total picture" of AC activity, and it includes statistics that are provided also by the remaining 4 Reports of the category "AC2 Queue". The following facts and figures are shown in this report.

3.2.2.1 Column Figures in General Statistics

- 1) **Exchange Line:** This column shows the number of AC Calls in call scenarios where a call was initiated from external environment (outside the switch of the AC Group) and the call was addressed to an AC Group. These calls are initiated by *external* access points (either from the public network – CO call – or from another switch of customer network –TIE call).
- 2) **Attendant Line:** This column shows the number of AC Calls in call scenarios where a call was initiated from the same switch (*internal* access point) and the dialled number was an AC Group of this switch. These calls are addressed to the AC Group and are internal (from the same node).
- 3) **Personal Line:** This figure shows the number of Personal Calls in call scenarios where the initiator of the call executed a *direct call* to an AC attendant console (the exact attendant phone number was dialled). These calls are addressed directly to an attendant console *without* the participation of an AC Group. Since the AC-Group is not involved, first calls are not assigned to the personal line. The same applies for recalls.
- 4) **Outgoing Line:** This figure shows the number of Outgoing Calls that an attendant console conducted as initiator in a call scenario. We also do not count as outgoing calls the following scenario: An initiator calls an AC-Group; an AC receives the call and tries to establish connection with a destination party. In the second step of this scenario, we consider that the AC tries to make a connection with a destination party and therefore *this part of the call is not considered as outgoing call*. On the other hand, calls that are originated from an attendant console and are addressed to

a non-attendant destination party are counted. Additionally, if the outgoing call is addressed to another attendant console that does not belong to the same attendant console group in the same switch (see section [Section 2.3, "Report Calculation Rule"](#)) then this call is counted as outgoing, if only the calling party is in the filter. Also in this column, first calls cannot exist since the direction of the call is not incoming (as in first calls). The same applies for recalls.

- 5) **Incoming Lines:** This column shows the totals of the incoming figures:
(Exchange line) + (Attendant Line) + (Personal Line).
- 6) **All Lines:** This column shows the totals of:
(Incoming Lines) + (Outgoing Line).

3.2.2.2 Row Figures in General Statistics

Number of Calls

- 1) Calls Per Line: This figure shows the totals of calls that took place for every relevant column statistic.
- 2) Calls Answered: This figure shows the total answered calls (by the attendant console) that took place for every relevant measurement. Apart from these calls, the answered recalls are added to this figure as well. An answered recall happens in case the call is returned to the attendant and the attendant redirects the call again to a new (or the same) destination party.
- 3) Calls Not Answered (Total): This figure shows the total not answered calls that took place for every relevant column. This refers to call scenarios that reached either an attendant group only (queued calls that were not processed) or an attendant console that did not answer the call. Apart from these 2 cases, not answered recalls are also added here. A not answered recall happens in case the call is returned to the attendant and the attendant does not handle the call at all.
- 4) Calls Not Answered (Signalled at AC Group): This figure shows the not answered calls that were addressed at the AC Group and the call did not reach any attendant console (e.g. it remained in the queue of the AC-Group).
- 5) Calls Not Answered (Signalled at AC attendant console): This figure shows the not answered calls that reached the attendant console without being served.
- 6) First Calls: This figure shows the number of first calls in call scenarios where the selected – in PM filter – AC group(s) / Console(s) participated. A first call is a call that the AC Group receives, so it is an incoming call that is always addressed to the Group, regardless of the source of the calling party. Therefore, the first call column counts calls that are coming from the public network (Central Office calls – CO), or from a different (or the same) switch of customer network. The first calls are addressed only to the AC group.
- 7) Recalls: This column shows the number of recalls. A recall happens when in a call scenario the party that initiated the call has reached an attendant (first call) and the AC redirected the call to the desired destination. If the destination party does not answer the call before the timeout period (by default 30 seconds), a recall occurs which means that the call is returned to the attendant console in order to be served again. In case the attendant does not pickup the recall, this recall is considered as not answered. On the other hand, if the attendant will receive (answer) the recall, then this recall is calculated as answered recall.

Average Times (seconds)

In the General Statistics, the average time that an incoming party waited in the queue, waited while the attendant was ringing, and spent time in conversation is calculated. These average values are not based on all the calls handled but rather on the number of calls where the average-time-figure exists (is non-zero). The result is rounded in integer seconds.

1) Average Waiting

Sum of *queuing* time of calls

 Number of **calls** that *queued* at the AC Group **or/and**
 Number of **recalls** that *queued* at the attendant console

2) Average Ringing

Sum of *ringing* time of calls

 Number of calls that *rang* at an AC Group/AC

3) Average Waiting + Ringing

Sum of *queuing+ringing* time of calls

 Number of calls that *queued (and/or) rang* at an AC
 Group/AC

4) Average Placing Time (Conversation + Hold)

Sum of *conversation* time of calls

 Number of calls that were *answered* by an AC Group/AC

NOTICE: Conversation Time already includes the hold time;
 that is why the "hold time of calls" is not added.

5) Average Conversation Time

Sum of *conversation* time of calls

 Number of calls that were answered by an AC Group/AC

NOTICE: Conversation Time already includes the hold time;
 that is why the "hold time of calls" is not deducted.

6) Average Hold Time

Sum of *hold* time of calls

 Number of calls that were put in hold by an AC Group/AC

7) Total of Call Time (Wait + Ring + Conversation + Hold)

Sum of *queuing, ringing, conversation, hold* time of
 calls

 Number of calls that were *queued, rang, answered, put in
 hold* by an AC Group/AC

NOTICE: Conversation Time already includes the hold time; that is why the "hold time of calls" is not added.

NOTICE: The last column (Total of Call Time) actually shows the average total time for all call scenarios. This provides the amount of time that was spent in average for every call.

NOTICE: In a call scenario, hold duration is calculated after the call is being answered. This means that the calls that are put in hold are equal with the answered calls.

NOTICE: A call scenario is assigned a queue duration if the initiator calls the AC2Q-Group and enters at the queue of the group. Additionally, if an attendant console receives a recall while this AC is already busy with a new calling party, then the queue time is recorded. So, both filter items provide Average Waiting Statistics.

The following screenshot shows the Table Format of the report:

General Statistics						
Period		2005/11/15	8:00	-	2005/11/15	12:00
Filter		tmp_filters-1158134217362				
		Exchange Line	Attendant Line	Personal Line	Outgoing Line	Incoming Lines
Number of Calls						All Lines
Calls per Line		698	5	1	30	704
Calls Answered		642	2	0	13	657
Calls Not Answered	Total	56	3	1	17	77
	Signalled in call queue only	9	0			9
	Signalled at AC	47	3	1	17	68
First Calls		698	5			685
Recalls		18	0			18
Times (average - seconds)						
Waiting Time (call queue)	Total	14	0			14
	Calls Answered	15	0			15
	Calls Not Answered	4	0			4
Ringling Time	Total	5	4	1	70	8
	Calls Answered	5	9	0	11	5
	Calls Not Answered	6	1	1	114	37
Sum of Waiting and Ringling	Total	6	4			9
	Calls Answered	6	9			6
	Calls Not Answered	5	1			29
Placing Time (Conversation+Hold)		39		0		39
Conversation Time		23	39	0	30	23
Hold Time		31		0		31
Total of Call Time (Wait+Ring+Conversation+Hold)		42	24	1	83	42

3.2.2.3 Comparison of "First Calls/Recalls" and "General Statistics" PM reports

These 2 reports should be consistent in their total values. This means that if the same filter and the same reporting period are applied for both reports, the sum of each from the two columns in "First Calls/Recalls", should be the same with the relevant figures (First Calls, Recalls) in General Statistics, under column "Incoming Lines":

First Calls/Recalls General Statistics

Sum (First Calls) = Incoming Lines (First Calls)

Sum (Recalls) = Incoming Lines (Recalls)

3.2.3 Attendant Consoles – Common

3.2.3.1 Out Of service, Night Service, Jack Pulled, Active

This report shows the distribution of time in percentage regarding the Attendant Consoles (AC) activities. This means that all operating phases of a console (on/off, etc.) are presented in this report. An attendant console can have the following distinct phases:

- Out Of Order
- Night Service
- Jack Pulled
- Active

In order to run this report, the user has to add Attendant Consoles in the PM filter definition. The design of this report does not provide the user with the ability to see statistics related to Attendant Groups filters. Therefore, only Attendant Consoles can be selected for this report. The four different result categories that the report displays are explained below:

Out of Service (Out of Order)

The "Out of Service" report column displays the period of time in percentage that the AC was out of service (not functional). This can occur when the network cable is unplugged from the specified attendant console, when AC is disconnected from the system or if the AC was deactivated. In some cases, after the "out of service" indication the "Jack Pulled" signal follows as described later on.

Night Key (Night Service)

The "Night Key" report column displays the period of time in percentage that a specified attendant console was in Night Service mode. This can happen when the operator has finished his shift and in order to serve some "night calls" activates the ability to forward calls to another destination point. During the Night Service the calls are signalled at one or more night stations, thus the calls to the AC are diverted to another operational AC or a simple phone device (extension). This period of time begins starts when the user activates the Night Service mode (by pressing the Night Service Key on the attendant console) and finishes when the user deactivates the Service. Therefore, this statistic is often seen during night hours if this configuration exists.

Jack Pulled

The "Jack Pulled" report column displays the period of time in percentage that the handset (or headset) cable was unplugged from a specified attendant console. In other words, this statistic measurement shows how much time the operator of the AC was not able to serve calls.

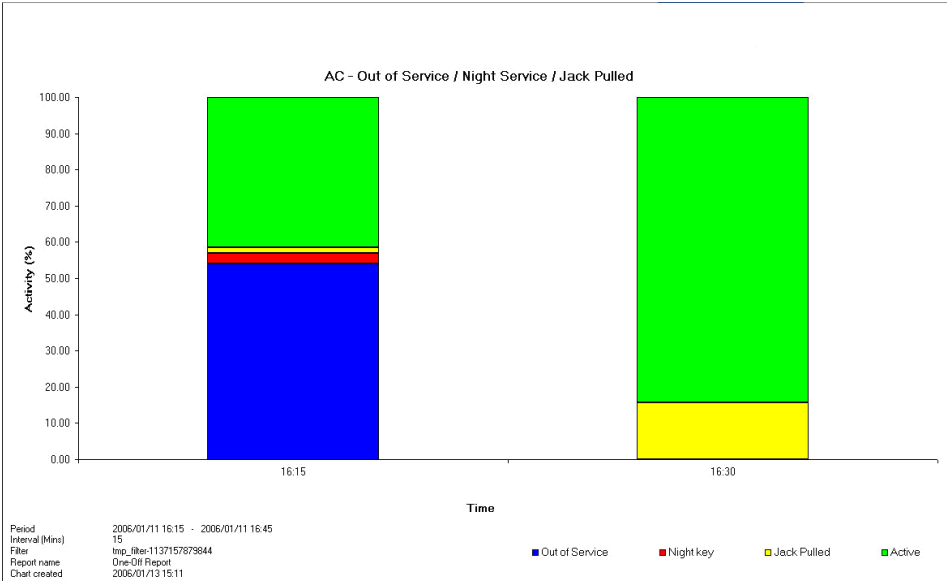
Active

The "Active" report column displays the period of time that the attendant console is fully functional: Nothing interrupted the normal operation of the attendant, and it was able to receive and serve calls. This measurement provides the portion of time that the attendant actually works.

The following screenshot shows the Table Format of the report:

AC - Out of Service / Night Service / Jack Pulled					
Period	2006/01/11 16:15 - 2006/01/11 16:45				
Interval (Mins)	15				
Filter	tmp_filter-1137157840126				
Report name	One-Off Report				
Chart created	2006/01/13 15:10				
Time	Date	Out of Service	Night Key	Jack pulled	Active
16:15	11/01/2006	54.00	2.89	1.56	41.56
16:30	11/01/2006	0.00	0.00	15.78	84.22

The following screenshot shows the Column Chart Format of the report:



3.2.3.2 Jack On

This report shows the distribution of time in percentage regarding the Attendant Consoles (AC) state of "Jack On". In other words it refers to the percentage of time that the jack was plugged (handset was plugged in) for a specified attendant console. This state does not have any trigger event by itself, contrary to the previous 4 states (referred to Report "Out Of Service, Night Service, Jack pulled, Active"). The attendant console does not provide any direct signal that the "Jack" is on (active). This column (Jack On) is calculated by adding another 2 states:

- Active

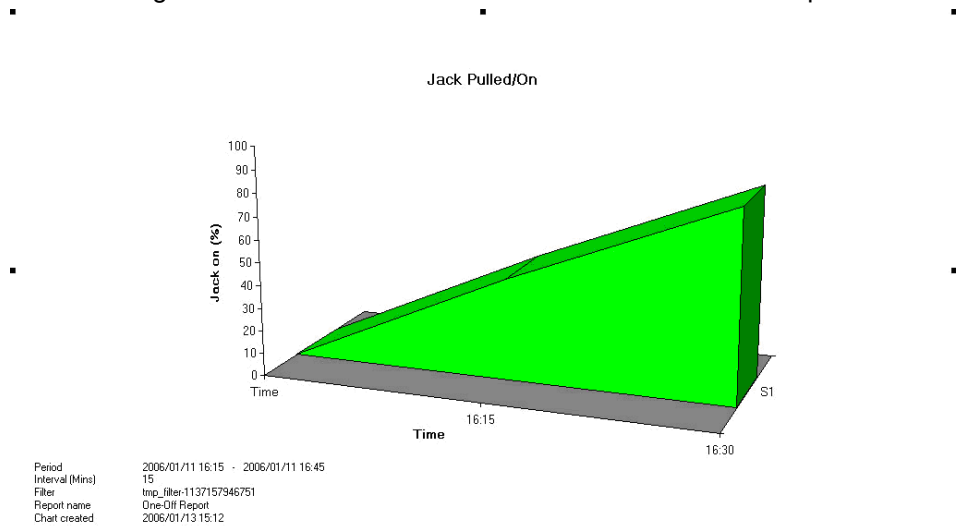
- Night Key

Therefore, this figure actually shows the portion of time that the attendant was able to operate in either a full functional mode (Active) or either by the Night Key option.

The following screenshot shows the Table Format of the report:

Jack Pulled/On					
Period	2006/01/11 16:15 - 2006/01/11 16:45				
Interval (Mins)	15				
Filter	tmp_filter-1137157914876				
Report name	One-Off Report				
Chart created	2006/01/13 15:12				
Time	Date	Jack on (%)			
16:15	11/01/2006	44.44			
16:30	11/01/2006	84.22			

The following screenshot shows the 3D Area Chart Format of the report:



3.2.3.3 Comparison of "Jack On" and "Out Of service, Night Service, Jack pulled, Active" PM reports

The consistency between the results given by these two similar reports is going to be explained below with the use of a simple example. In the following example a specific attendant console has been unplugged, by pulling out the network cable. Then the cable was plugged in again and the Night Service feature was activated by pressing the night key mode of the attendant console. The results of the two reports for the specific period of time that the testing occurred are shown in the screenshots below:

Jack Pulled/On					
Period	2006/01/11 16:23 - 2006/01/11 16:38				
Interval (Mins)	15				
Filter	tmp_filter-1136992890132				
Report name	One-Off Report				
Chart created	2006/01/11 17:21				
Time	Date	Jack on (%)			
16:23	11/01/2006	82.22			

The "Jack on (%)" result of the **Jack On** report must be equal to the sum of the "Active" and "Night key" results of the **Out Of service, Night Service, Jack pulled, Active** report, which can be seen in the screenshot below ($79.33 + 2.89 = 82.22$).

Thus the following rule applies:

Jack On = Active + Night Key

Furthermore, the addition of the "Out of Service" and the "Jack pulled" results of the **Out Of service, Night Service, Jack pulled, Active** report and the "Jack on (%)" result of the Jack On report must be equal to 100%. ($0.67 + 17.11 + 82.22 = 100$).

As a result:

100% - Jack On = Jack Pulled + Out Of Service

AC - Out of Service / Night Service / Jack Pulled					
Period	2006/01/11 16:23 - 2006/01/11 16:38				
Interval (Mins)	15				
Filter	tmp_filter-1136992910632				
Report name	One-Off Report				
Chart created	2006/01/11 17:22				
Time	Date	Out of Service	Night Key	Jack pulled	Active
16:23	11/01/2006	0.67	2.89	17.11	79.33

4 Call Volumes

Answered, Not Answered and Lost because Busy

4.1 Answered, Not Answered and Lost because Busy

This specific report is used to calculate the number of answered, not answered and lost because busy calls.

Answered

This column of the report displays the sum of all the calls that were answered in a specific interval of the reporting period. A call can be considered as an answered call if the initiator of the call was able to speak with a destination party.

Not Answered

This column of the report displays the sum of all the calls that were not answered in a specific interval of the reporting period. A call can be considered as not answered if the initiator of the call was not able to have a conversation with another party.

Lost because Busy

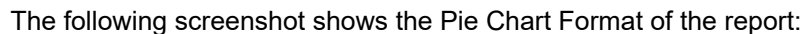
This specific column of the report displays the sum of all the calls that reached a destination party which was already busy with another call. In this case the destination party provides a signal that it is busy. For example if calling party A speaks with party B and another party (party C) tries to reach party A, then a busy indication will arise and the call will be terminated for party C.

NOTICE: For all of the above 3 columns the following behavior applies: Assuming that in the filter definition the user has selected one extension number: 4002. If both direction flags in the filter definition are all checked (incoming & outgoing), the results will return calls where the 4002 was either the initiator or the receiver in a call scenario. If only the incoming flag is checked, then calculations will be made for the cases where extension 4002 is the receiver of a call. The opposite happens if the outgoing flag is checked: Calculations are made only if this extension is the initiator of a call scenario.

The following screenshot shows the Table Format of the report:

20

The following screenshot shows the Column Chart Format of the report:



A31003-H34B0-M101-01-76A9, 07/2024

General Statistics

Period 2005/11/15 8:00 - 2005/11/15 12:00
 Filter tmp_filter-1158134217562

		Exchange Line	Attendant Line	Personal Line	Outgoing Line	Incoming Lines	All Lines
Number of Calls							
Calls per Line		698	5	1	30	704	734
Calls Answered		642	2	0	13	644	657
Calls Not Answered	Total	56	3	1	17	60	77
	Signalled in call queue only	9	0			9	9
	Signalled at AC	47	3	1	17	51	68
First Calls		680	5			685	
Recalls		18	0			18	
Times (average - seconds)							
Waiting Time (call queue)	Total	14	0			14	14
	Calls Answered	15	0			15	15
	Calls Not Answered	4	0			4	4
Ringing Time	Total	5	4	1	70	5	8
	Calls Answered	5	9	0	11	5	5
	Calls Not Answered	6	1	1	114	6	37
Sum of Waiting and Ringing	Total	6	4			6	9
	Calls Answered	6	9			6	6
	Calls Not Answered	5	1			4	29
Placing Time (Conversation+Hold)		39		0		39	39
Conversation Time		23	49	0	30	23	23
Hold Time		31		0		31	31
Total of Call Time (Wait+Ring+Conversation+Hold)		42	24	1	83	42	43

In order to compare the results that were taken from the General Statistics report with the results of the Answered Not Answered and Lost because Busy report, it is vital that the filter which was selected for the General Statistics report remains the same except from one small modification. This required modification is the de-selection of the "Outgoing calls" field from the filter. The specific field of the filter that needs to be unchecked can be seen inside a red circle in the screenshot below:

The screenshot shows the 'One-Off Reports' configuration window. The 'Set Parameters' tab is active. The 'Name' field is 'One-Off Report'. The 'Scale interval' is '240 minutes'. The 'Ignore Not Answered' section has 'Waiting time < 0 sec.' checked. The 'Service Level' section has 'Waiting time <= 0 sec.' and 'Line displayed at: 0 %'. The 'Report Mode' is set to 'Full'. The 'Period' is from 'Thursday, January 29, 2015 8:00 AM' to 'Thursday, January 29, 2015 12:00 PM'. The 'Import' section has 'use existing filter' checked. The 'Selected Items' table is empty. The 'Template' section on the right shows a tree view with 'Number of Answered Calls', 'Number of Calls per Call', 'AC Multiple Queue', 'Common', 'Call Timings', 'Call Tracking', 'Call Volumes', 'Answered, Not Answered at', 'Column Chart', 'Organisational Detailed', 'Pie Chart', 'Table', and 'Availability (%)'. The 'Type' section has 'Internal', 'External', and 'Transit' checked. The 'Direction' section has 'Incoming' checked and 'Outgoing' unchecked, with the 'Outgoing' checkbox circled in red.

After de-selecting the "Outgoing calls" filter field the Answered Not Answered and Lost because Busy report produces the following results:

Answered/Not Answered/Lost Because Busy				
Period	11/15/2005 08:00 AM - 11/15/2005 12:00 PM	Threshold	Upper No.	Lower No.
Interval (Mins)	240	Answered	N/A	N/A
Filter	tmp_filter-1158144145406	Not Answered	N/A	N/A
Report name	One-Off Report	Lost because busy	N/A	N/A
Chart created	09/13/2006 1:42 PM			
Time	Date	Answered	Not Answered	Lost because busy
8:00	15/11/2005	644	60	0
Sum		644	60	0

Comparing the results from the two reports you can see that the sum of the final results from all the three columns (Answered, Not Answered, Lost because busy) of the **"Answered Not Answered Lost because Busy"** report is equal to the "Total Incoming Calls Per Line" of the **"General Statistics"** report. This is the result of the following formula:

Answered + Not Answered + Lost because Busy = Total Incoming Calls

Therefore, in the example provided above, it will be:

644 + 60 + 0 = 704

The circle in the screenshot of the reports identifies the result.

5 Important Hints

- 1) The correlation of the report "Answered Not Answered Lost Because Busy" and General Statistics as it was outlined above also applies to the report "Total Number of Calls" in the report category "Call Volumes" (i.e. when the outgoing field is unchecked). This happens because the following rule applies:

Total Calls = Answered + Not Answered + Lost Because Busy

from which it can be conducted that: **Total Calls = Total Incoming Calls**

- 2) Mixed filter for AC Group/AC reports (AC Group + Attendant extension) are not allowed: The user can either select AC Group(s) or Attendant extension(s) separately in order to run an AC report. This rule applies for all reports.

Call Scenarios

PM Report: Answered / Not Answered / Lost / Because Busy

6 Call Scenarios

PM Report: Answered / Not Answered / Lost / Because Busy

Call Transfer

Busy Call

Combination of Call Transfer & Busy Call

Hunt Groups

Call Back

PM Report: AC 2 Queue General Statistics

Answered Call to the Attendant Line (Internal Call)

Personal Not Answered Call (Internal Call)

Answered Call to the Exchange Line (Tie Call)

Outgoing Answered Call (Internal Call)

Answered Calls to the Attendant Line & One Not Answered Call in queue (Internal Calls)

Answered Calls to the Exchange Line, One Not Answered Personal Call & One Not Answered Call in queue (Internal & External Calls)

One Answered Call to the Attendant Line, Speed Dial and Transfer (Internal Calls)

One Answered Call to the Personal Line and one Transfer (External & Internal Calls)

One Answered Call to the Attendant Line and Consultation Call before Transfer (Internal Calls)

One Answered Call to the Attendant Line, Call Transfers and One Answered Recall (Internal Calls)

One Answered Call to the Exchange Line, Call Transfer and One Not Answered Recall (Internal & External Calls)

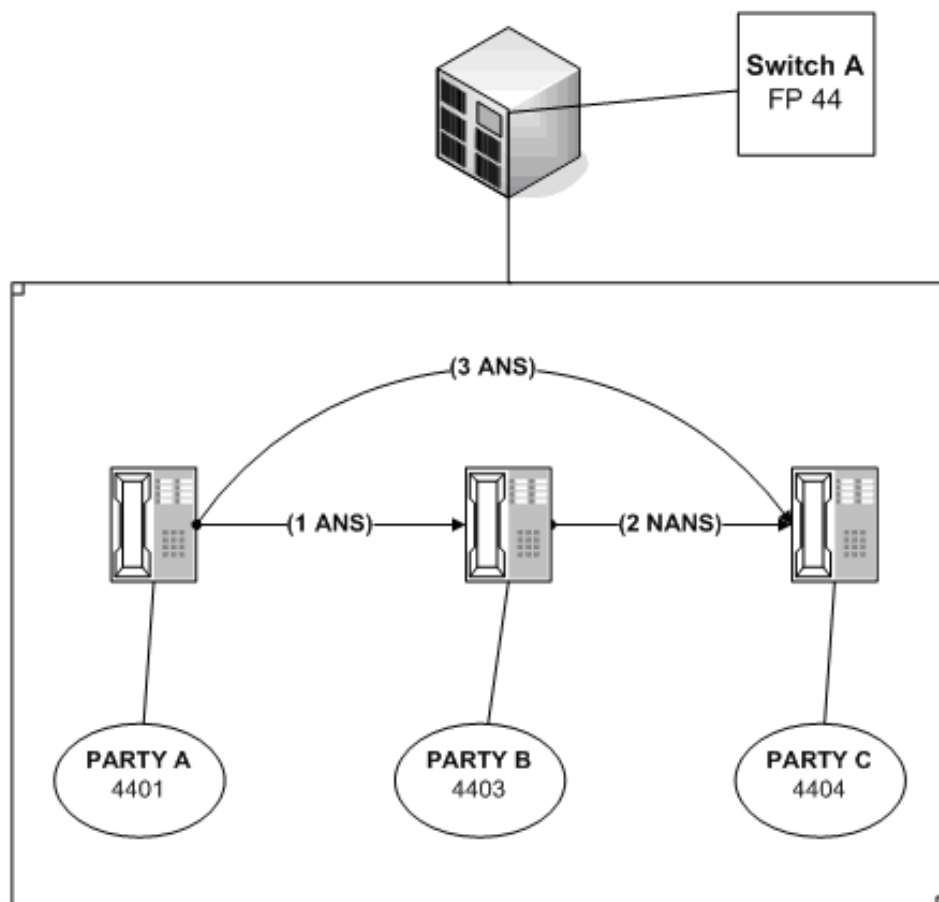
6.1 PM Report: Answered / Not Answered / Lost / Because Busy

For this PM report a series of features will be outlined below to show how the calculations are done in PM. For this reason a range of call scenarios will be performed and results will be described per case.

6.1.1 Call Transfer

6.1.1.1 Internal Calls

Simple Call Transfer



Configuration Settings

- 3 extensions configured on the same switch.

Call Steps

- 1) Party A calls Party B who answers the call.
- 2) Party B transfers the call (transfer on ringing) to Party C (Party B does not speak with Party C).
- 3) Finally, Party C answers the call and speaks with Party A.

Filter Items in PM

- Extensions

PM Calculations

The next table shows the results returned by the "Answered, Not Answered, Lost Because Busy" Report for various filter items.

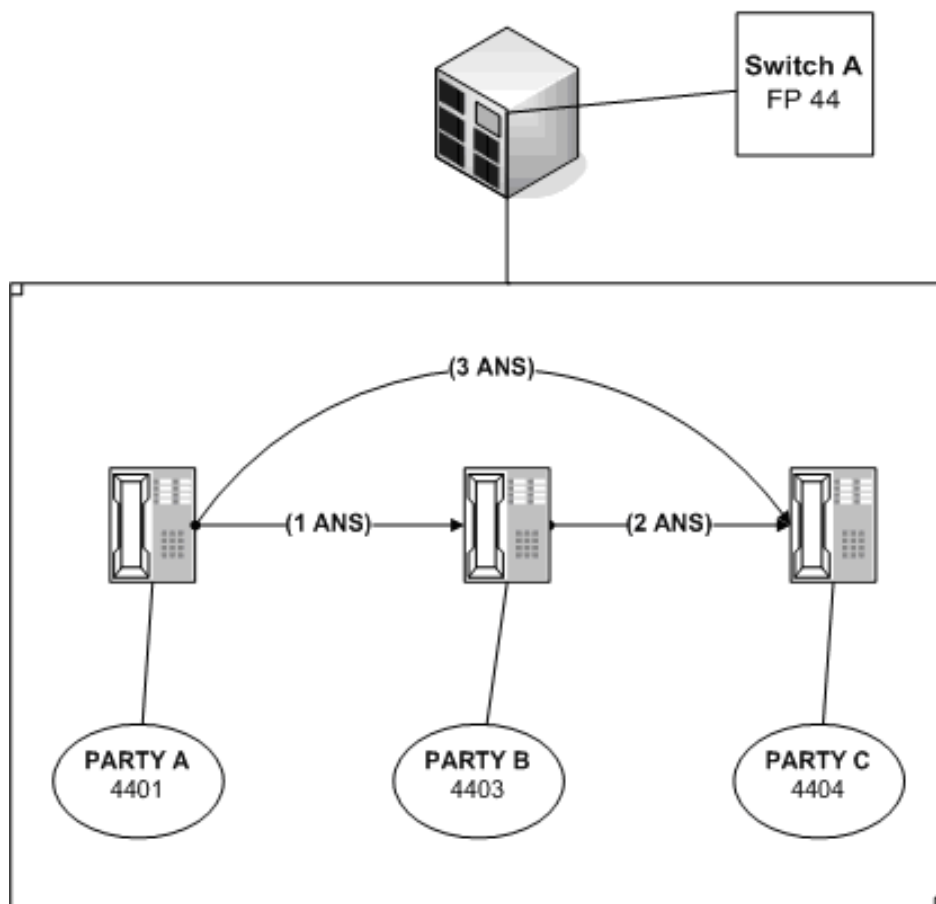
Filter Item(s)	Switch(es)	Answered	Not Answered	Lost
Party A	A	1	0	0

Filter Item(s)	Switch(es)	Answered	Not Answered	Lost Bec
Party B	A	1	1	0
Party C	A	1	1	0
All Parties	A	1	1	0

PM Remarks

- Although Party A has spoken both with Party B and Party C, only one answered call is returned by the report. In both call steps where Party A is involved he is the originator of the call. Since the number of the calls depends upon the number of the calls' initiators (calling parties), in this call scenario only one answered call is counted for Party A. See also [Section 6.2.3, "Answered Call to the Exchange Line \(Tie Call\)"](#).
- The report returns one answered call for Party B (step 1 – Party A has spoken with Party B) and one not answered call (step 2).
- Correspondingly for Party C the report displays one answered call (step 3 – Party A has spoken with Party C) and one not answered call (step 2).
- The report with the cumulative filter (Party A, Party B and Party C) returns one answered call (Party A managed to speak with a destination party) and one not answered call (step 2).

Call Transfer with Consultation



Configuration Settings

- 3 extensions configured on the same switch

Call Steps

- 1) Party A calls Party B who answers the call.
- 2) Party B calls Party C (consultation call) in order to check whether Party C is going to accept the call from Party A. Thus, Party B speaks with Party C.
- 3) Party C accepts the call from Party A and Party B connects them.

Filter Items in PM

- Extensions

PM Calculations

The next table shows the results returned by the "Answered, Not Answered, Lost Because Busy" Report for various filter items.

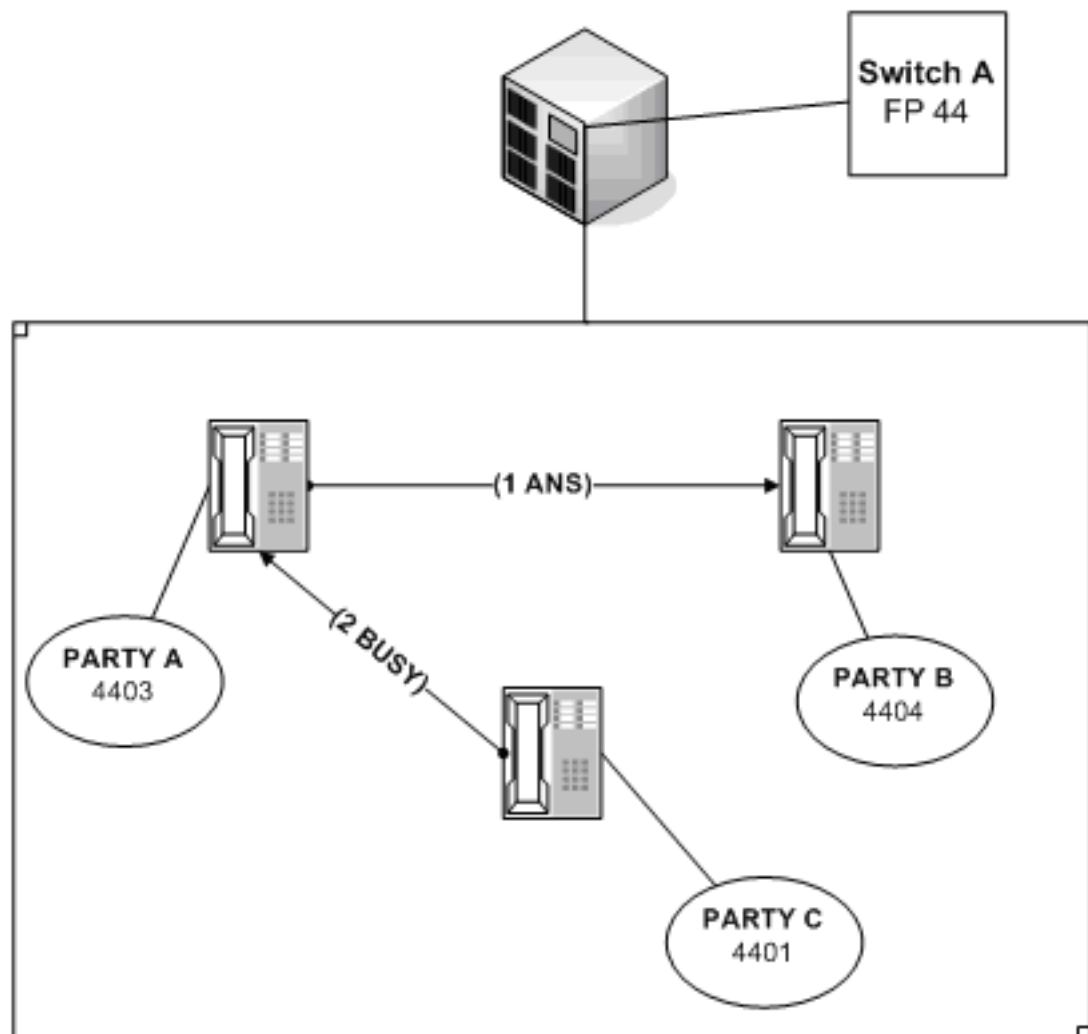
Filter Item(s)	Switch(es)	Answered	Not Answered	Lost
Party A	A	1	0	0
Party B	A	2	0	0
Party C	A	2	0	0
All Parties	A	2	0	0

PM Remarks

- Although Party A has spoken both with Party B and Party C, only one answered call is returned by the report. In both call steps where Party A is involved he is the originator of the call. Since the number of the calls depends upon the number of the calls' initiators (calling parties), in this call scenario only one answered call is counted for Party A. See also [Section 6.2.3, "Answered Call to the Exchange Line \(Tie Call\)"](#).
- The report returns two answered calls for Party B (steps 1 and 2 – Party A has spoken with Party B and Party B has spoken with Party C)
- Correspondingly for Party C the report displays two answered calls (steps 2 and 3 – Party B has spoken with Party C and Party A has also spoken with Party C).
- The report with the cumulative filter (Party A, Party B and Party C) returns two answered calls (Party A managed to speak with a destination party and Party B has been the initiator of the second answered call to Party C).

6.1.2 Busy Call

6.1.2.1 Internal Call



Configuration Settings

- 3 extensions configured on the same switch

Call Steps

- 1) Party A calls Party B who answers the call.
- 2) Party C calls Party A, but due to the fact that Party A is already speaking with another party, Party C gets a busy indication.

Filter Items in PM

- Extensions

PM Calculations

The next table shows the results returned by the "Answered, Not Answered, Lost Because Busy" Report for various filter items.

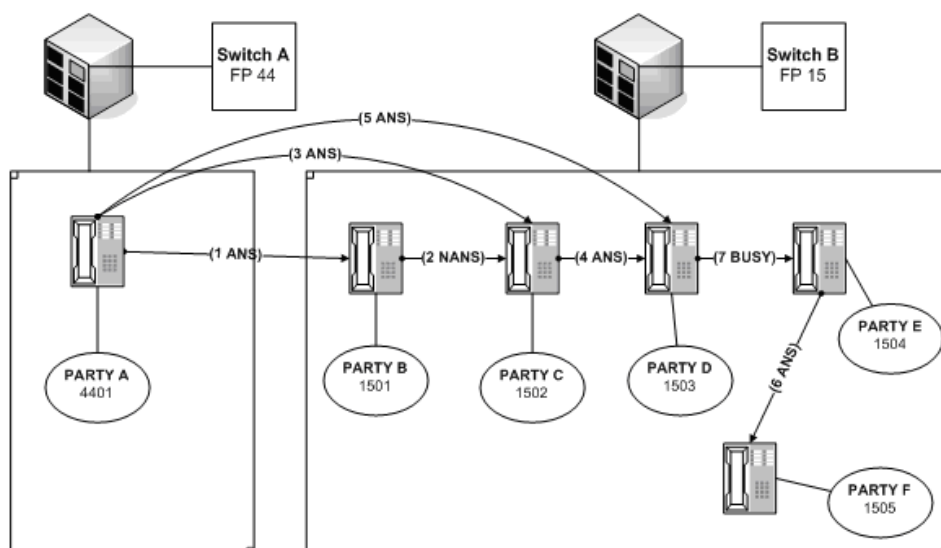
Filter Item(s)	Switch(es)	Answered	Not Answered	Lost
Party A	A	1	0	1
Party B	A	1	0	0
Party C	A	0	0	1
All Parties	A	1	0	1

PM Remarks

- The report returns one answered call for Party A (step 1 – Party A speaks with Party B) and one busy call (step 2 – Party C calls Party A while the latter is occupied).
- The report returns one answered call for Party B (step 1).
- Regarding Party C, one busy call is returned (step 2 – Party C calls Party A while the latter is occupied).
- The report with the cumulative filter (Party A, Party B and Party C) returns one answered call (step 1 – Party A speaks with Party B) and one busy call (step 2 – Party C calls Party A while the latter is occupied).

6.1.3 Combination of Call Transfer & Busy Call

6.1.3.1 Tie Call

**Configuration Settings**

- 2 physically connected OpenScape switches. One extension is configured on the first switch, while 5 extensions are configured on the second.

Call Steps

- 1) Party A from Switch A calls Party B of Switch B, who answers the call.

- 2) Party B transfers the call (transfer on ringing) to Party C, which resides on the same switch (Party B does not speak with Party C).
- 3) Party C answers the call and speaks with Party A of the other switch.
- 4) Party C calls Party D (consultation call) in order to check whether Party D is going to accept the call from Party A. Thus, Party C speaks with Party D.
- 5) Party D accepts the call from Party A and Party C connects them.
- 6) A new call is initiated and Party E calls Party F who answers the call.
- 7) Party D calls Party E in order to connect him with Party A, but due to the fact that Party E is already speaking (step 6), Party D gets a busy indication.

Filter Items in PM

- Extensions

PM Calculations

The next table shows the results returned by the "Answered, Not Answered, Lost Because Busy" Report for various filter items.

Filter Item(s)	Switch(es)	Answered	Not Answered	Lost
Party A	A	1	0	0
Party B	B	1	1	0
Party C	B	2	1	0
Party D	B	2	0	1
Party E	B	1	0	1
Party F	B	1	0	0
Switch B Parties (B, C, D, E, and F)	B	3	1	1
All Parties *	A & B	3	1	1

* Party A of Switch A and Parties B, C, D, E and F of Switch B.

PM Remarks

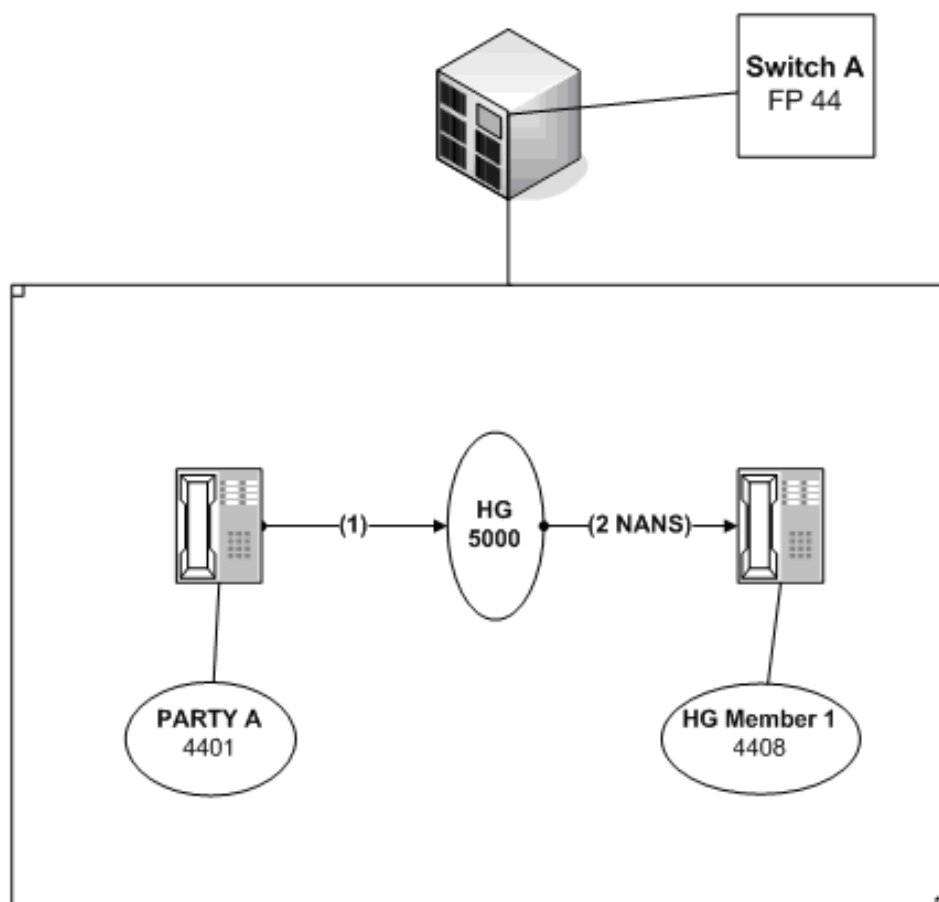
- Although Party A has spoken with three different destination parties (B, C and D) only one answered call is returned by the report. In both call steps where Party A is involved he is the originator of the call. Since the number of the calls depends upon the number of the calls' initiators (calling parties), in this call scenario only one answered call is counted for Party A. See also [Section 6.2.3, "Answered Call to the Exchange Line \(Tie Call\)"](#).
- The report returns one answered call for Party B (step 1 – Party A speaks with Party B) and one not answered call (step 2 – speed transfer).
- Regarding Party C, two answered calls are returned (steps 3 and 4 – Party A speaks with Party C and Party C consults Party D). Additionally, one not answered is displayed (step 2).
- The report returns two answered calls for Party D (steps 4 and 5 – Party C consults Party D and Party A speaks with Party D). Moreover, one busy call is returned (step 7 – Party D calls Party E while the latter is occupied).
- The report displays one answered call for Party E (step 6 – Party E speaks with Party F). Furthermore, one busy call is presented (step 7).

- One answered call is returned for Party F (step 6).
- The cumulative filter for the extensions of Switch B produces one not answered (step 2) and one busy call (step 7). Moreover, three answered calls are presented in the report. Steps 4, 6 produce the two answered calls and the third one is the outcome of steps 1, 3 and 5. Although there are three different destination parties, which are involved in these steps, they all have the same initiator (Party A from Switch A). Thus, only one answered call is counted.
- The report with the cumulative filter from both switches (Party A from Switch A and Parties B, C, D E and F from Switch B) returns three answered, one not answered (step 2), and one busy call (step 7). Even if both switches are included in the filter, no additional call is counted for the first switch because common calls among many switches are counted only once. See also [Section 6.2.3, "Answered Call to the Exchange Line \(Tie Call\)"](#).

6.1.4 Hunt Groups

6.1.4.1 Internal Calls

Not Answered Call to a Hunt Group



Configuration Settings

- Two extensions configured on the switch. One of the two extensions belongs to a hunt group (HG). The hunt group is configured as a master hunt group (not station) with cyclic functionality (the calls are distributed to each hunt group member cyclically) and queuing capacity of one.

Call Steps

- 1) Party A calls the HG by dialling its access code (5000).
- 2) The call is directed to HG member 1, who does not answer the call and Party A hangs up after a short period of time.

Filter Items in PM

- Extensions
- Hunt Group

PM Calculations

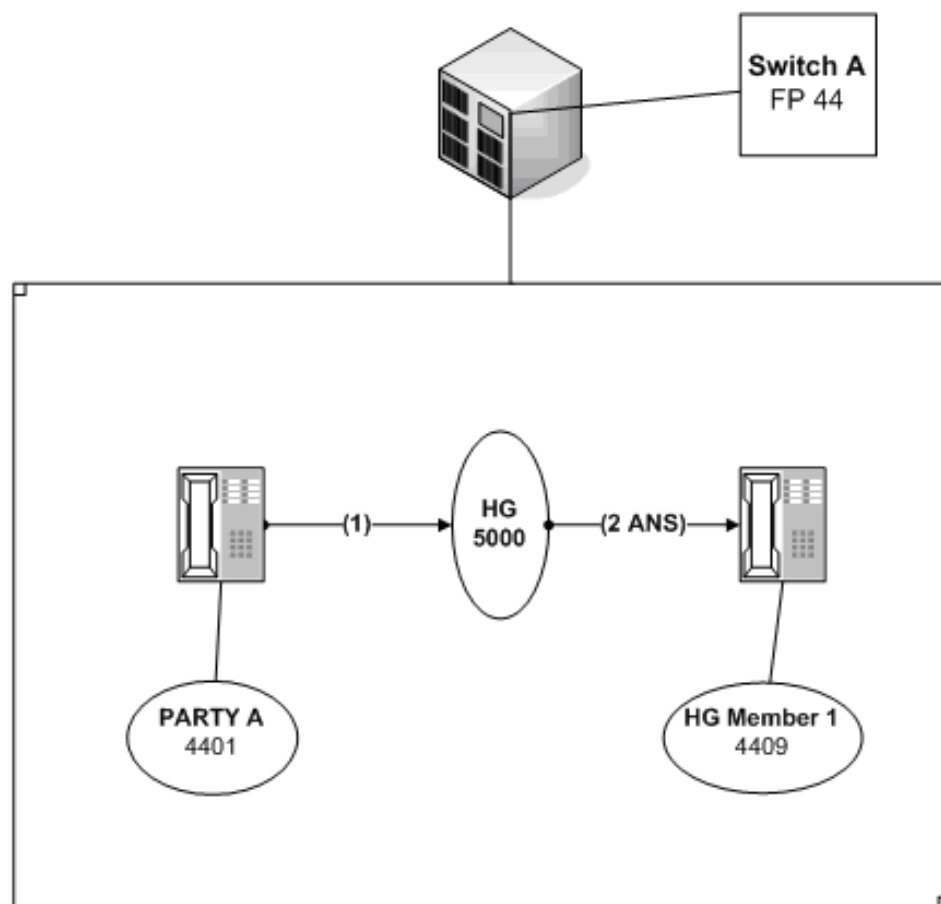
The next table shows the results returned by the "Answered, Not Answered, Lost Because Busy" Report for various filter items.

Filter Item(s)	Switch(es)	Answered	Not Answered	Lost
Party A	A	0	1	0
HG Member 1	A	0	1	0
Hunt Group (5000)	A	0	1	0
Party A & HG	A	0	1	0

PM Remarks

- The report returns one not answered call for Party A (step 2 – Party A did not manage to speak with a hunt group member).
- The report returns one not answered call for HG Member 1 (step 2 – Party A did not speak with HG Member 1).
- Regarding Hunt Group 5000, one not answered call is returned (step 2 – No hunt group member served the call from Party A).
- The cumulative filter for Party A and the HG 5000 produces one not answered call (step 2). Only one not answered call is counted due to the fact that there is only one call initiator (Party A). See also [Section 6.2.3, "Answered Call to the Exchange Line \(Tie Call\)"](#).

NOTICE: It makes no sense to have a filter with the HG and the members of the HG, since the HG calculates also the activity of its members.

Answered Call to a Hunt Group**Configuration Settings**

- Two extensions configured on the switch. One of the two extensions belongs to a hunt group (HG). The hunt group is configured as a master hunt group (not station) with cyclic functionality (the calls are distributed to each hunt group member cyclically) and queuing capacity of one.

Call Steps

- 1) Party A calls the HG by dialling its access code (5000).
- 2) The call is directed to HG member 1 who answers the call made by Party A.

Filter Items in PM

- Extensions
- Hunt Group

PM Calculations

The next table shows the results returned by the "Answered, Not Answered, Lost Because Busy" Report for various filter items.

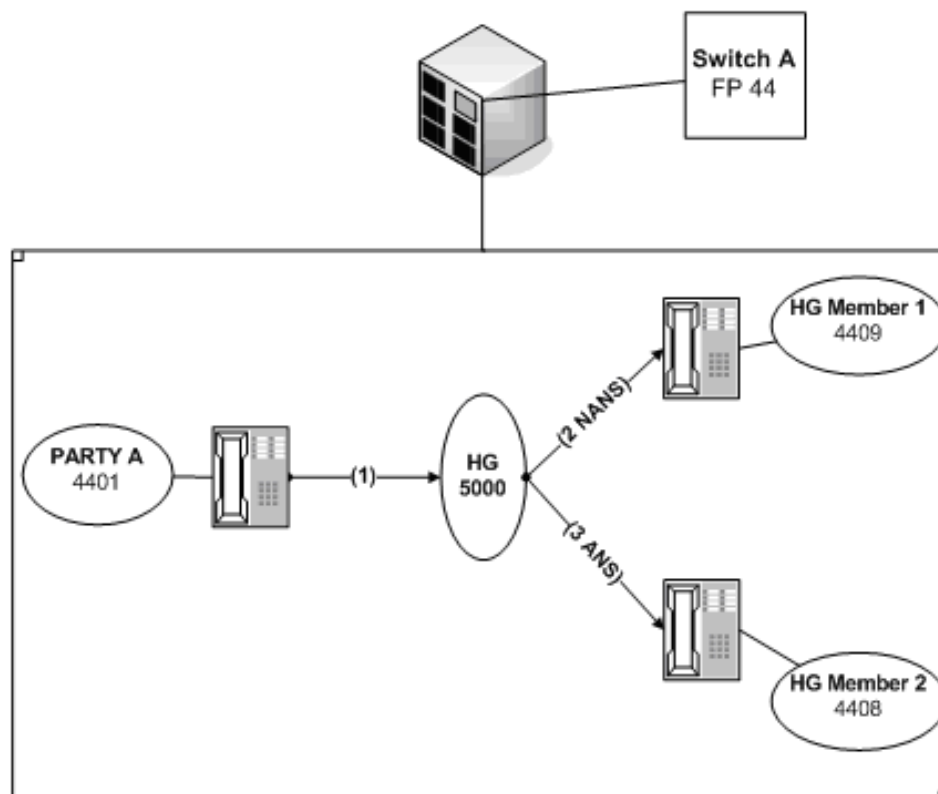
Filter Item(s)	Switch(es)	Answered	Not Answered
Party A	A	1	0
HG Member 1	A	1	0

Filter Item(s)	Switch(es)	Answered	Not Answered	Lost
Hunt Group (5000)	A	1	0	0
Party A & HG	A	1	0	0

PM Remarks

- The report returns one answered call for Party A (step 2 – Party A managed to speak with a hunt group member).
- The report returns one answered call for HG Member 1 (step 2 – Party A spoke with HG Member 1).
- Regarding Hunt Group 5000, one answered call is returned (step 2 – a hunt group member served the call from Party A).
- The cumulative filter for Party A and the HG 5000 produces one answered call (step 2). Only one answered call is counted due to the fact that there is only one call initiator (Party A).

Answered Call after timeout to a Hunt Group



Configuration Settings

Three extensions configured on the switch. Two of the extensions belong to a hunt group (HG). The hunt group is configured as a master hunt group (not station) with cyclic functionality (the calls are distributed to each hunt group member cyclically) and queuing capacity of one.

Call Steps

- 1) Party A calls the HG by dialling its access code (5000).

- 2) The call is directed to HG member 1 who does not answer the call made by Party A.
- 3) After a short period of time, the call timeouts and it is redistributed to the next free HG member. Thus, HG Member 2 answers the call made by Party A.

Filter Items in PM

- Extensions
- Hunt Group

PM Calculations

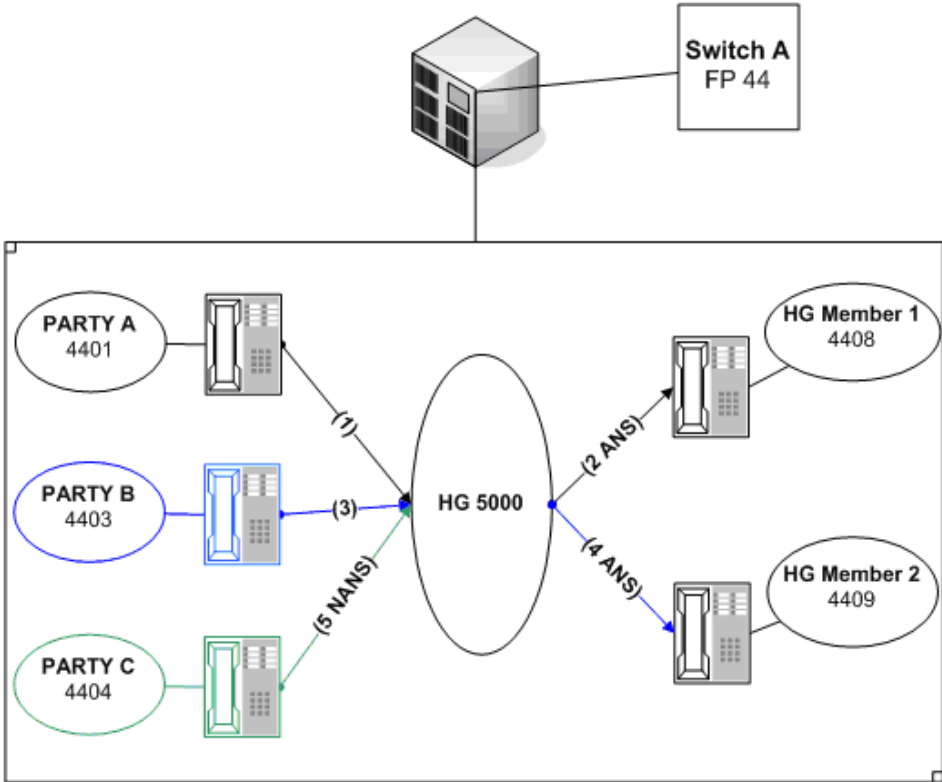
The next table shows the results returned by the "Answered, Not Answered, Lost Because Busy" Report for various filter items.

Filter Item(s)	Switch(es)	Answered	Not Answered
Party A	A	1	0
HG Member 1	A	0	1
HG Member 2	A	1	0
Hunt Group (5000)	A	1	0
Party A & HG	A	1	0

PM Remarks

- The report returns one answered call for Party A (step 3 – Party A managed to speak with a hunt group member, HG member 2). Although the call made by Party A was not initially served by HG Member 1, it managed to be served by the other HG Member (HG Member 2). Thus, the call made by Party A is considered to be an answered call.
- The report returns one not answered call for HG Member 1 (step 2 – Party A did not speak with HG Member 1).
- The report returns one answered call for HG Member 2 (step 3 – Party A managed to speak with HG Member 2).
- Regarding Hunt Group 5000, one answered call is returned (step 3 – a hunt group member finally served the call from Party A).
- The cumulative filter for Party A and the HG 5000 produces one answered call (step 3). Only one answered call is counted due to the fact that there is only one call initiator (Party A).

Answered Calls to a Hunt Group & Call hangs up while in queue



Configuration Settings

- Five extensions configured on the switch. Two of the extensions belong to a hunt group (HG). The hunt group is configured as a master hunt group (not station) with cyclic functionality (the calls are distributed to each hunt group member cyclically) and queuing capacity of one.

Call Steps

- 1) Party A calls the HG by dialling its access code (5000).
- 2) The call is directed to HG member 1 who answers the call made by Party A.
- 3) Party B calls the HG by dialling its access code (5000).
- 4) The call is directed to HG member 2 who answers the call made by Party B.
- 5) Party C calls the HG by dialling its access code (5000). Due to the fact that all HG members are currently occupied, the call from Party C is placed in the HG queue. Finally, while Party C is in queue, hangs up.

Filter Items in PM

- Extensions
- Hunt Group

PM Calculations

The next table shows the results returned by the "Answered, Not Answered, Lost Because Busy" Report for various filter items.

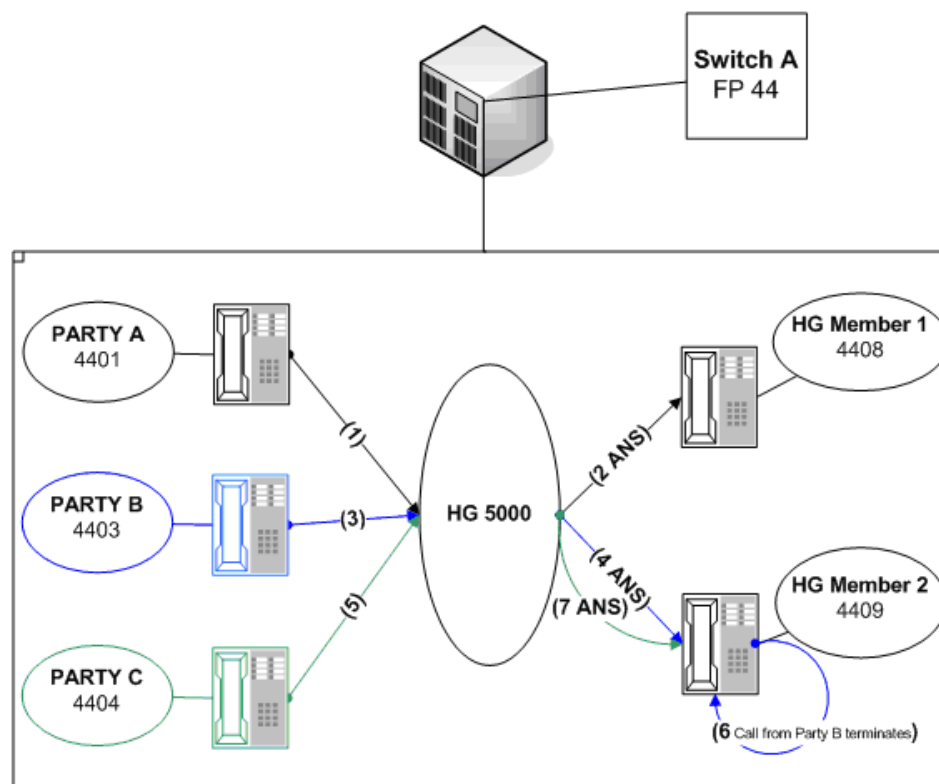
Filter Item(s)	Switch(es)	Answered	Not Answered	Lost
Party A	A	1	0	0

Filter Item(s)	Switch(es)	Answered	Not Answered
Party B	A	1	0
Party C	A	0	1
HG Member 1	A	1	0
HG Member 2	A	1	0
Hunt Group (5000)	A	2	1
Parties A, B, C & HG	A	2	1

PM Remarks

- The report returns one answered call for Party A (step 2 – Party A managed to speak with a hunt group member, HG member 1).
- The report returns one answered call for Party B (step 4 – Party B managed to speak with a hunt group member, HG member 2).
- The report returns one not answered call for Party C (step 5 – Party C was not served by a HG member, because it hunged up while it was in queue).
- One answered call is displayed for HG Member 1 (step 2 – Party A spoke with HG Member 1).
- One answered call is displayed for HG Member 2 (step 4 – Party B managed to speak with HG Member 2).
- The report returns two answered calls for the hunt group (steps 2 and 4 – hunt group members served the calls from Party A and B) and one not answered call (step 5 – Party C was not served by a HG member, because it hunged up while it was in queue).
- The cumulative filter for Parties A, B, C and the HG 5000 produces two answered calls (steps 2 and 4) and one not answered call (step 5). Two answered calls are counted due to the fact that there are two call initiators (Parties A and B), whom calls were answered by HG members. Furthermore, one not answered call is counted, due to the fact that there is only one call initiator (Party C), whom call was not served by a HG member, since Party C hunged up while in the HG queue.

Answered Calls to a Hunt Group & Call is served after being in queue



Configuration Settings

- Five extensions configured on the switch. Two of the extensions belong to a hunt group (HG). The hunt group is configured as a master hunt group (not station) with cyclic functionality (the calls are distributed to each hunt group member cyclically) and queuing capacity of one.

Call Steps

- 1) Party A calls the HG by dialling its access code (5000).
- 2) The call is directed to HG member 1 who answers the call made by Party A.
- 3) Party B calls the HG by dialling its access code (5000).
- 4) The call is directed to HG member 2 who answers the call made by Party B.
- 5) Party C calls the HG by dialling its access code (5000). Due to the fact that all HG members are currently occupied, the call from Party C is placed in the HG queue.
- 6) The call from Party B to the HG is terminated. Thus, HG member 2 becomes available for any new incoming calls to the HG.
- 7) Finally, the queuing of Party C ends and HG member 2 serves the call.

Filter Items in PM

- Extensions
- Hunt Group

PM Calculations

The next table shows the results returned by the "Answered, Not Answered, Lost Because Busy" Report for various filter items.

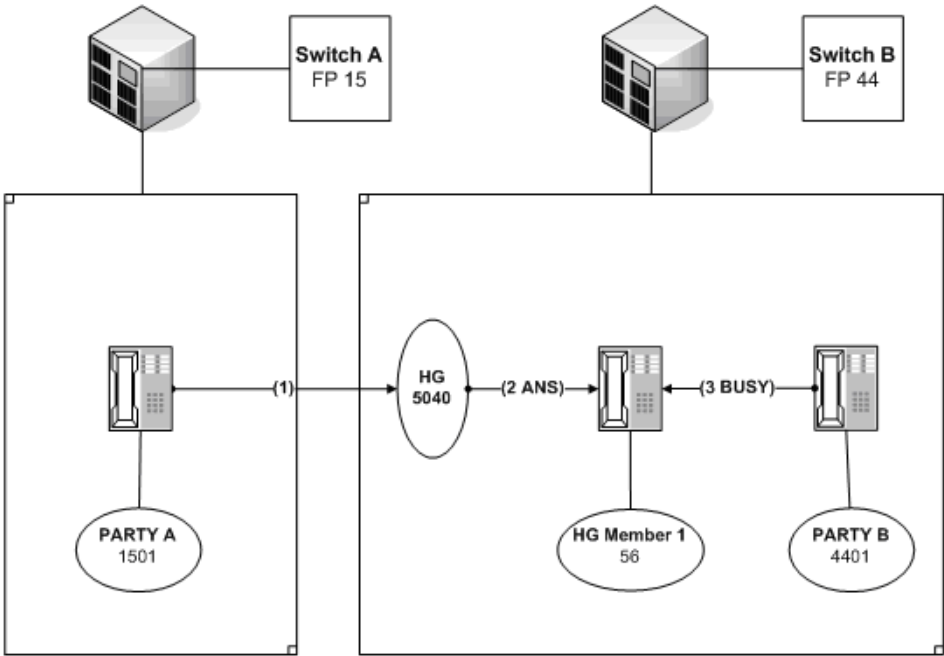
Filter Item(s)	Switch(es)	Answered	Not Answered
Party A	A	1	0
Party B	A	1	0
Party C	A	1	0
HG Member 1	A	1	0
HG Member 2	A	2	0
Hunt Group (5000)	A	3	0
Parties A, B, C & HG	A	3	0

PM Remarks

- The report returns one answered call for Party A (step 2 – Party A managed to speak with a hunt group member, HG member 1).
- The report returns one answered call for Party B (step 4 – Party B managed to speak with a hunt group member, HG member 2).
- The report returns one answered call for Party C (step 7 – Party C was served by a HG member, after waiting in the HG queue).
- One answered call is displayed for HG Member 1 (step 2 – Party A spoke with HG Member 1).
- Two answered calls are displayed for HG Member 2 (steps 4 and 7 – Party B and C were served by HG Member 2).
- The report returns three answered calls for the hunt group (steps 2, 4 and 7 – hunt group members served the calls from Party A, B and C).
- The cumulative filter for Parties A, B, C and the HG 5000 produces three answered calls (steps 2, 4 and 7). Three answered calls are counted due to the fact that there are three call initiators (Parties A, B and C), whom calls were answered by HG members.

6.1.4.2 Tie Call

Answered Call to a Hunt Group & Busy Call to its member



Configuration Settings

- Three extensions configured on two physically connected OpenScape switches. One of the two extensions of the second switch belongs to a hunt group (HG). The hunt group is configured as a master hunt group (not station) with cyclic functionality (the calls are distributed to each hunt group member cyclically).

Call Steps

- 1) Party A of Switch A calls the HG of Switch B by dialling the appropriate prefix (open numbering) plus the HG's access code (5040).
- 2) The call is directed to HG member 1 who answers the call made by Party A.
- 3) Party B calls the HG member 1 by dialling its number (56) directly. HG member 1 is occupied and Party B receives a busy indication.

Filter Items in PM

- Extensions
- Hunt Group

PM Calculations

The next table shows the results returned by the "Answered, Not Answered, Lost Because Busy" Report for various filter items.

Filter Item(s)	Switch(es)	Answered	Not Answered	Lost
Party A	A	1	0	0
Party B	B	0	0	1

Filter Item(s)	Switch(es)	Answered	Not Answered
HG Member 1	B	1	0
Hunt Group (5040)	B	1	0
Parties A, B & HG	A, B	1	0

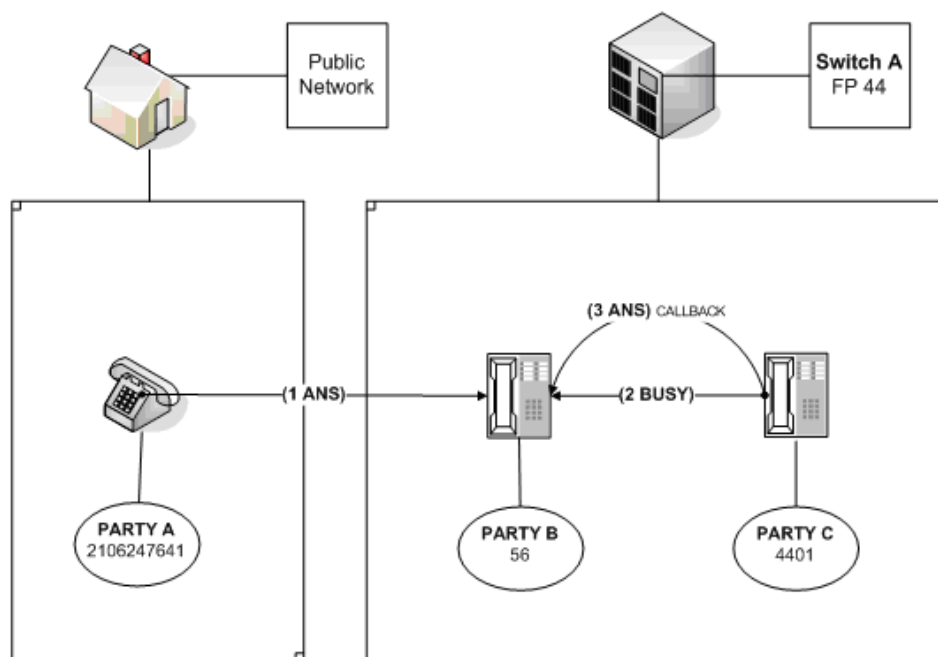
* Party A of Switch A and Party B and HG 5040 of Switch B.

PM Remarks

- The report returns one answered call for Party A (step 2 – Party A managed to speak with a hunt group member, HG member 1).
- The report returns one busy call for Party B (step 3 – Party B did not manage to speak with HG member 1 who was occupied). In this case, Party B tried to communicate with HG member 1 without using the HG access code but directly by dialling the number of the destination party (extension 56).
- One answered call is displayed for HG Member 1 (step 2 – Party A spoke with HG Member 1). Additionally, one busy call is returned (step 3 - Party B tried to reach HG member 1 while it was serving a call for the hunt group).
- The report returns one answered call for hunt group 5040 (step 2 – a hunt group member served the call from Party A). The busy call to HG member 1 is not displayed in the report, due to the fact that HG member 1 was not reached through the hunt group, but as a single extension.
- The cumulative filter for Party A of Switch A, and Party B and HG 5040 of Switch B produces one busy call (step 3) and one answered call. Even if both switches are included in the filter, only one call is counted because common calls among many switches are counted only once. See also [Section 6.2.3, "Answered Call to the Exchange Line \(Tie Call\)"](#).

6.1.5 Call Back

6.1.5.1 CO Call



Configuration Settings

- Two extensions configured on an OpenScape switch. Also, the switch should be accordingly configured in order to be able to receive calls from an external operator (CO – Central Office calls). The Call Back feature should also be supported by the switch.

Call Steps

- 1) Party A from an external operator (public network) calls Party B of Switch A, who answers the call.
- 2) Party C of Switch A calls Party B who is occupied, so Party C receives a busy indication.
- 3) Party C wants to speak with Party B when he becomes available. Thus, he activates the 'call back' feature on his phone device. When Party B finishes the call with Party A, Party C is notified and a new call is initiated towards Party B, who answers the call. Thus, finally Party C manages to speak with Party B.

Filter Items in PM

- Extensions

PM Calculations

The next table shows the results that are returned by the "Answered, Not Answered, Lost Because Busy" Report for various filter items.

Filter Item(s)	Switch(es)	Answered	Not Answered	Lost
Party B	A	1	0	1
Party C	A	1	0	1

Filter Item(s)	Switch(es)	Answered	Not Answered
Parties B & C	A	2	0

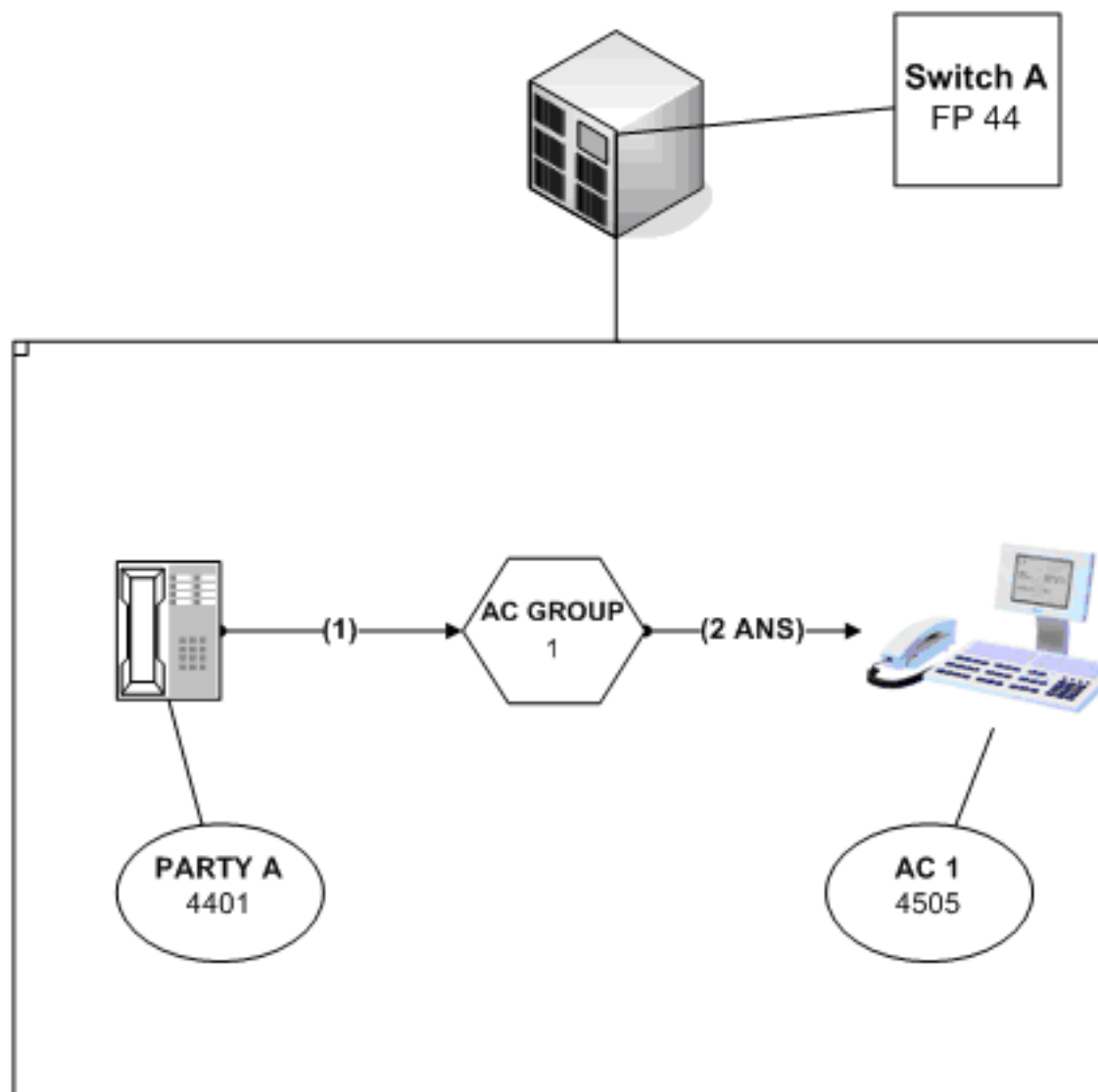
PM Remarks

- The report returns two answered calls for Party B (steps 1 and 3 – Party A and C both spoke with Party B) and one busy call (step 2 – Party C tried to reach Party B while he was occupied).
- The report returns one busy call for Party C (step 2) and one answered (step 3 – Party C had activated the "call back" feature and managed to speak with Party B).
- The cumulative filter for Party B and Party C produces one busy call (step 2) and two answered calls (steps 1 and 3).

6.2 PM Report: AC 2 Queue General Statistics

For this PM report a series of call scenarios will be outlined below to show how the calculations are done in PM.

6.2.1 Answered Call to the Attendant Line (Internal Call)



Configuration Settings

- One extension, one two queue attendant console group and two attendant consoles (AC 2 Queue) are configured on an OpenScope switch. The two attendant consoles belong to the configured attendant console group.

Call Steps

- 1) Party A makes a call to the attendant console group 1 by dialling its access code (4550).
- 2) The call is directed to the next available attendant console (AC 1 – 4505), who answers it.

Filter Items in PM

- Attendant consoles
- Attendant console group

PM Calculations

The following figures show the results returned by the "General Statistics" Report for various filter items.

Filter item: **AC 1**

		Exchange Line	Attendant Line	Personal Line	Outgoing Line
Number of Calls					
Calls per Line		0	1	0	0
Calls Answered		0	1	0	0
Calls Not Answered	Total	0	0	0	0
	Signalled in call queue only	0	0		
	Signalled at AC	0	0	0	0
First Calls		0	1		
Recalles		0	0		
Times (average - seconds)					
Waiting Time (call queue)	Total	0	0		
	Calls Answered	0	0		
	Calls Not Answered	0	0		
Ringing Time	Total	0	7	0	0
	Calls Answered	0	7	0	0
	Calls Not Answered	0	0	0	0
Sum of Waiting and Ringing	Total	0	7		
	Calls Answered	0	7		
	Calls Not Answered	0	0		
Placing Time (Conversation + Hold)		0		0	
Conversation Time		0	5	0	0
Hold Time		0		0	
Total of Call Time (Wait + Ring + Conversation + Hold)		0	12	0	0

PM Remarks

- The report returns one incoming answered call for AC 1 (step 2 - Party A spoke with AC 1). Due to the fact that this call was internal and accessed the

AC group, it is counted in the attendant line. Since this call was addressed to the AC group, it is also considered as a first call.

Filter item: **AC Group 1**

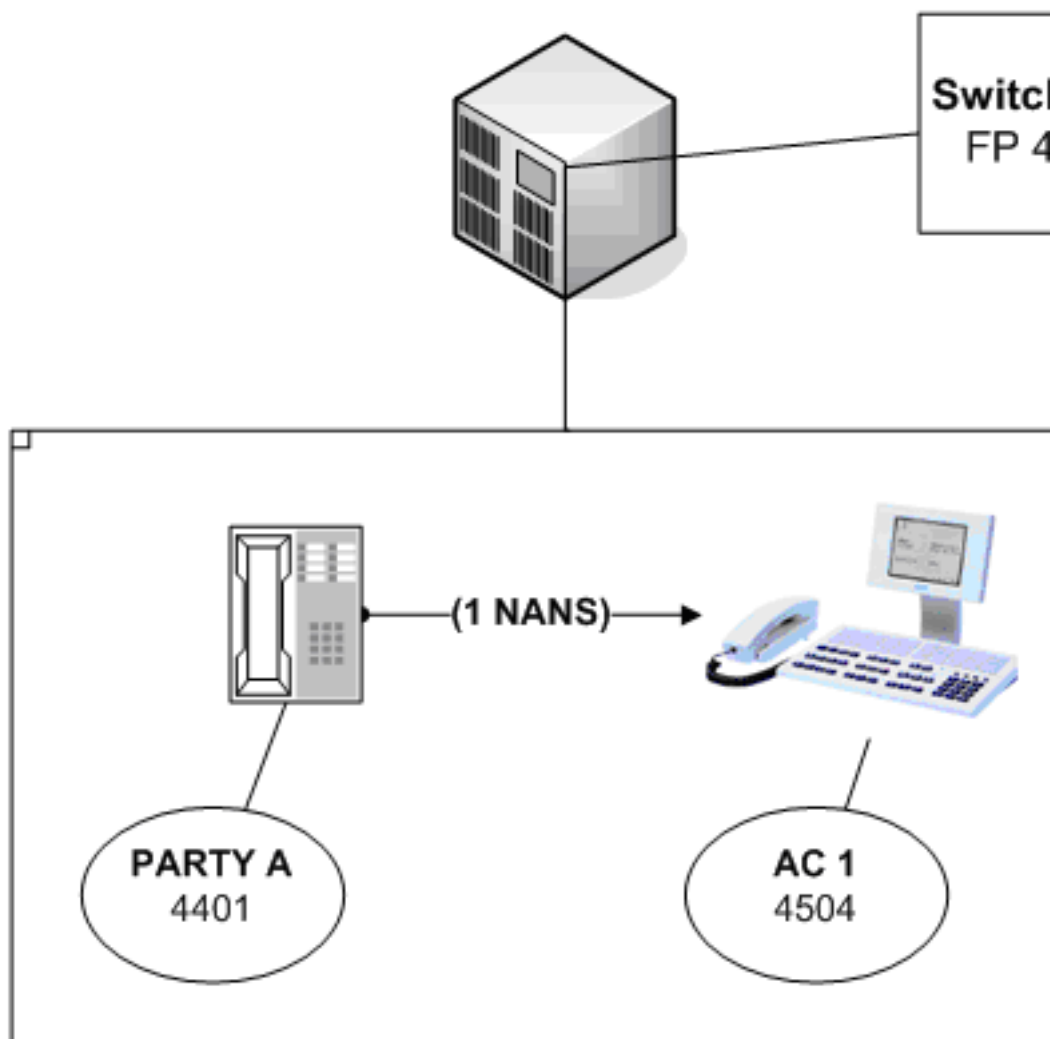
		Exchange Line	Attendant Line	Personal Line	Outgoing Line	
Number of Calls						
Calls per Line		0	1	0	0	1
Calls Answered		0	1	0	0	1
Calls Not Answered	Total	0	0	0	0	0
	Signalled in call queue only	0	0			0
	Signalled at AC	0	0	0	0	0
First Calls		0	1			1
Recalles		0	0			0
Times (average - seconds)						
Waiting Time (call queue)	Total	0	0			0
	Calls Answered	0	0			0
	Calls Not Answered	0	0			0
Ringing Time	Total	0	7	0	0	7
	Calls Answered	0	7	0	0	7
	Calls Not Answered	0	0	0	0	0
Sum of Waiting and Ringing	Total	0	7			7
	Calls Answered	0	7			7
	Calls Not Answered	0	0			0
Placing Time (Conversation + Hold)		0		0		5
Conversation Time		0	5	0	0	5
Hold Time		0		0		0
Total of Call Time (Wait + Ring + Conversation + Hold)		0	12	0	0	12

PM Remarks

- Correspondingly, the report returns one incoming answered call for AC Group 1 (step 2 – Party A spoke with an attendant console of the group). Due to the fact that this call was internal and accessed the AC group, it is

counted in the attendant line. Since this call was addressed to the AC group, it is also considered as a first call.

6.2.2 Personal Not Answered Call (Internal Call)



Configuration Settings

- One extension, one two queue attendant console group and two attendant consoles (AC 2 Queue) are configured on an OpenScape switch. The two attendant consoles belong to the configured attendant console group.

Call Steps

- 1) Party A makes a call to an attendant console (AC 1) by dialling its personal number (4504). The call is not answered by the attendant console.

Filter Items in PM

- Attendant consoles
- Attendant console group

PM Calculations

The following figures show the results returned by the "General Statistics" Report for various filter items.

Filter item: **AC 1**

		Exchange Line	Attendant Line	Personal Line	Outgoing Line	
Number of Calls						
Calls per Line		0	0	1	0	1
Calls Answered		0	0	0	0	0
Calls Not Answered	Total	0	0	1	0	1
	Signalled in call queue only	0	0			0
	Signalled at AC	0	0	1	0	1
First Calls		0	0			0
Recalles		0	0			0
Times (average - seconds)						
Waiting Time (call queue)	Total	0	0			0
	Calls Answered	0	0			0
	Calls Not Answered	0	0			0
Ringing Time	Total	0	0	11	0	1
	Calls Answered	0	0	0	0	0
	Calls Not Answered	0	0	11	0	1
Sum of Waiting and Ringing	Total	0	0			1
	Calls Answered	0	0			0
	Calls Not Answered	0	0			1
Placing Time (Conversation + Hold)		0		0		0
Conversation Time		0	0	0	0	0
Hold Time		0		0		0
Total of Call Time (Wait + Ring + Conversation + Hold)		0	0	11	0	1

PM Remarks

- The report returns one incoming not answered call for AC 1 (step 1 – Party A did not speak with AC 1). Due to the fact that this call was addressed directly to the AC 1 (signalled at AC), it is also considered as a personal call.

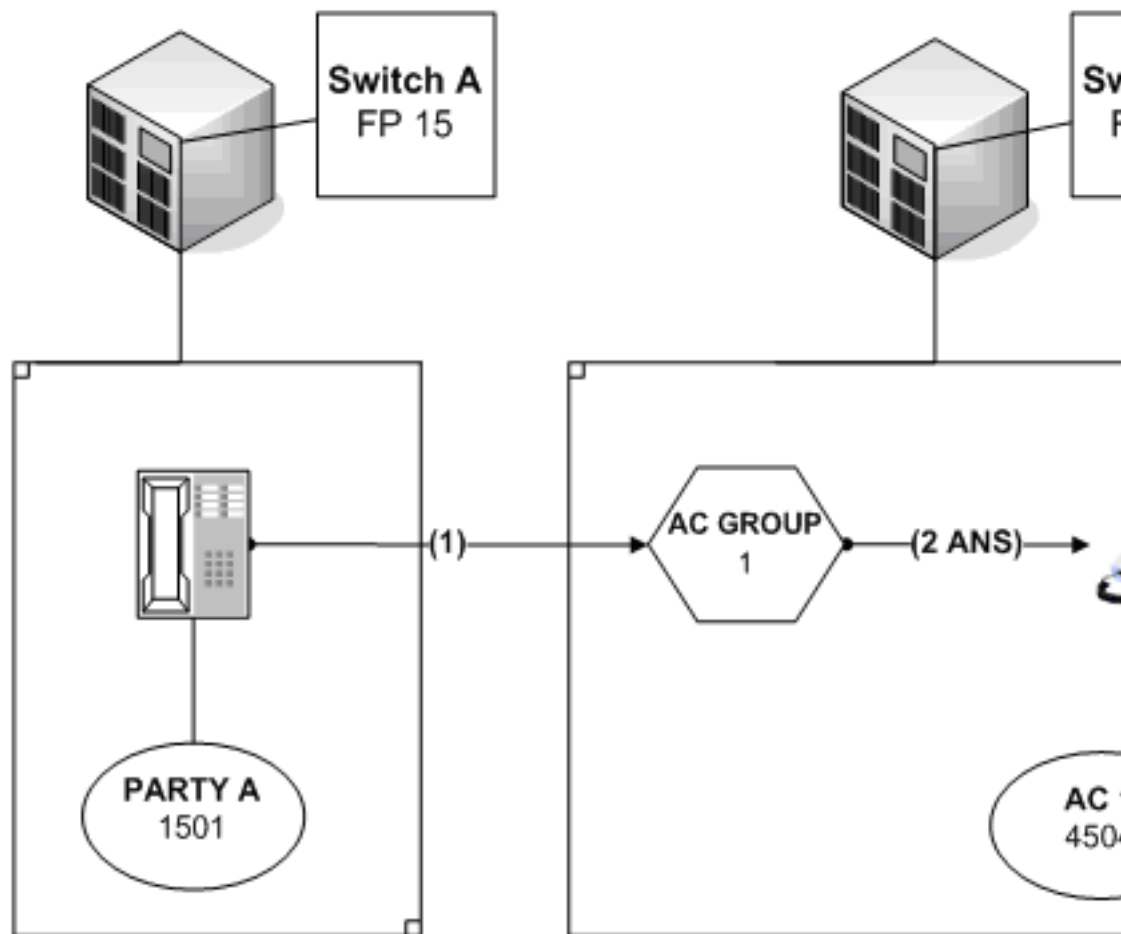
Filter item: **AC Group 1**

		Exchange Line	Attendant Line	Personal Line	Outgo Line
Number of Calls					
Calls per Line		0	0	1	0
Calls Answered		0	0	0	0
Calls Not Answered	Total	0	0	1	0
	Signalled in call queue only	0	0		
	Signalled at AC	0	0	1	0
First Calls		0	0		
Recalles		0	0		
Times (average - seconds)					
Waiting Time (call queue)	Total	0	0		
	Calls Answered	0	0		
	Calls Not Answered	0	0		
Ringing Time	Total	0	0	11	0
	Calls Answered	0	0	0	0
	Calls Not Answered	0	0	11	0
Sum of Waiting and Ringing	Total	0	0		
	Calls Answered	0	0		
	Calls Not Answered	0	0		
Placing Time (Conversation + Hold)		0		0	
Conversation Time		0	0	0	0
Hold Time		0		0	
Total of Call Time (Wait + Ring + Conversation + Hold)		0	0	11	0

PM Remarks

- Correspondingly, the report returns one incoming not answered call for AC Group 1 (step 1 – Party A did not speak with an attendant console). Due to the fact that this call was addressed directly to an AC (signalled at AC), it is also considered as a personal call.

6.2.3 Answered Call to the Exchange Line (Tie Call)



Configuration Settings

- One extension, one two queue attendant console group and two attendant consoles (AC 2 Queue) are configured on two physically connected OpenScape switches. The two attendant consoles are set up within an attendant console group (AC Group 1) of Switch B.

Call Steps

- Party A of Switch A makes a call to the attendant console group 1 of Switch B by dialling the appropriate prefix of Switch B (open numbering) plus the AC group's access code (4550).
- The call is directed to the next available attendant console (AC 1 – 4504), who answers it.

Filter Items in PM

- Attendant consoles
- Attendant console group

PM Calculations

The following figures show the results returned by the "General Statistics" Report for various filter items.

Filter item: **AC 1**

		Exchange Line	Attendant Line	Personal Line	Outgo Line
Number of Calls					
Calls per Line		1	0	0	0
Calls Answered		1	0	0	0
Calls Not Answered	Total	0	0	0	0
	Signalled in call queue only	0	0		
	Signalled at AC	0	0	0	0
First Calls		1	0		
Recalles		0	0		
Times (average - seconds)					
Waiting Time (call queue)	Total	0	0		
	Calls Answered	0	0		
	Calls Not Answered	0	0		
Ringing Time	Total	12	0	0	0
	Calls Answered	12	0	0	0
	Calls Not Answered	0	0	0	0
Sum of Waiting and Ringing	Total	12	0		
	Calls Answered	12	0		
	Calls Not Answered	0	0		
Placing Time (Conversation + Hold)		15		0	
Conversation Time		15	0	0	0
Hold Time		0		0	
Total of Call Time (Wait + Ring + Conversation + Hold)		26	0	0	0

PM Remarks

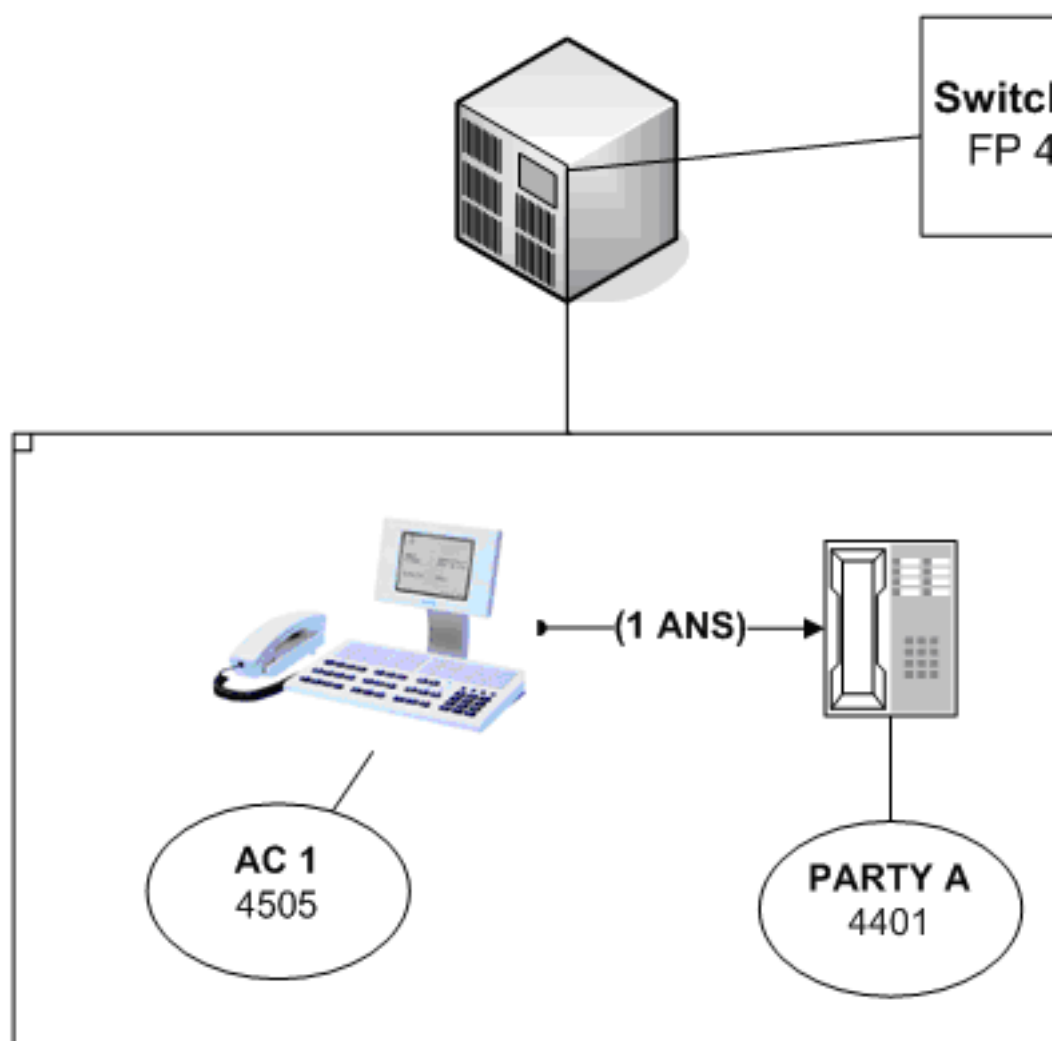
- The report returns one incoming answered call for AC 1 (step 2 – Party A spoke with AC 1). Due to the fact that this call was external (coming from another switch) and accessed the AC group, it is counted in the exchange line. Since this call was addressed to the AC group, it is also considered as a first call.

Filter item: **AC Group 1**

		Exchange Line	Attendant Line	Personal Line	Outgoing Line
Number of Calls					
Calls per Line		1	0	0	0
Calls Answered		1	0	0	0
Calls Not Answered	Total	0	0	0	0
	Signalled in call queue only	0	0		
	Signalled at AC	0	0	0	0
First Calls		1	0		
Recalles		0	0		
Times (average - seconds)					
Waiting Time (call queue)	Total	0	0		
	Calls Answered	0	0		
	Calls Not Answered	0	0		
Ringing Time	Total	12	0	0	0
	Calls Answered	12	0	0	0
	Calls Not Answered	0	0	0	0
Sum of Waiting and Ringing	Total	12	0		
	Calls Answered	12	0		
	Calls Not Answered	0	0		
Placing Time (Conversation + Hold)		15		0	
Conversation Time		15	0	0	0
Hold Time		0		0	
Total of Call Time (Wait + Ring + Conversation + Hold)		26	0	0	0

PM Remarks

- Correspondingly, the report returns one incoming answered call for AC Group 1 (step 2 – Party A spoke with an attendant console of the group). Due to the fact that this call was external (coming from another switch) and accessed the AC group, it is counted in the exchange line. Since this call was addressed to the AC group, it is also considered as a first call.

6.2.4 Outgoing Answered Call (Internal Call)**Configuration Settings**

- One extension, one two queue attendant console group and two attendant consoles (AC 2 Queue) are configured on an OpenScape switch. The two attendant consoles belong to the configured attendant console group.

Call Steps

- 1) AC 1 makes a call to Party A. The call is answered by the extension.

Filter Items in PM

- Attendant consoles
- Attendant console group

PM Calculations

The following figures show the results returned by the "General Statistics" Report for various filter items.

Filter item: **AC 1**

		Exchange Line	Attendant Line	Personal Line	Outgoing Line
Number of Calls					
Calls per Line		0	0	0	1
Calls Answered		0	0	0	1
Calls Not Answered	Total	0	0	0	0
	Signalled in call queue only	0	0		
	Signalled at AC	0	0	0	0
First Calls		0	0		
Recalles		0	0		
Times (average - seconds)					
Waiting Time (call queue)	Total	0	0		
	Calls Answered	0	0		
	Calls Not Answered	0	0		
Ringing Time	Total	0	0	0	6
	Calls Answered	0	0	0	6
	Calls Not Answered	0	0	0	0
Sum of Waiting and Ringing	Total	0	0		
	Calls Answered	0	0		
	Calls Not Answered	0	0		
Placing Time (Conversation + Hold)		0		0	
Conversation Time		0	0	0	7
Hold Time		0		0	
Total of Call Time (Wait + Ring + Conversation + Hold)		0	0	0	14

PM Remarks

- The report returns one outgoing answered call for AC 1 (step 1 – AC 1 spoke with Party A).

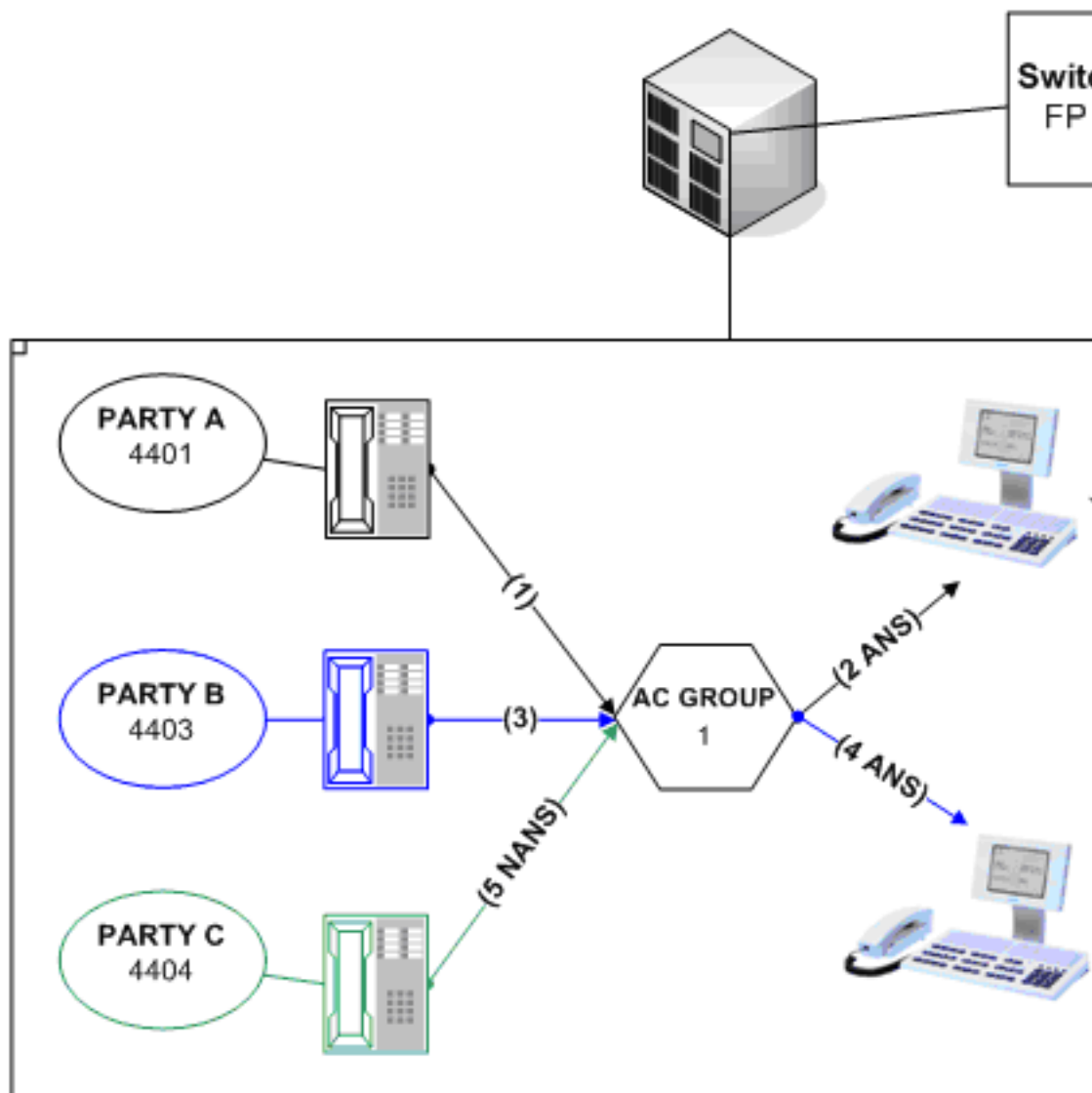
Filter item: **AC Group 1**

		Exchange Line	Attendant Line	Personal Line	Outgo Line
Number of Calls					
Calls per Line		0	0	0	1
Calls Answered		0	0	0	1
Calls Not Answered	Total	0	0	0	0
	Signalled in call queue only	0	0		
	Signalled at AC	0	0	0	0
First Calls		0	0		
Recalles		0	0		
Times (average - seconds)					
Waiting Time (call queue)	Total	0	0		
	Calls Answered	0	0		
	Calls Not Answered	0	0		
Ringing Time	Total	0	0	0	6
	Calls Answered	0	0	0	6
	Calls Not Answered	0	0	0	0
Sum of Waiting and Ringing	Total	0	0		
	Calls Answered	0	0		
	Calls Not Answered	0	0		
Placing Time (Conversation + Hold)		0		0	
Conversation Time		0	0	0	7
Hold Time		0		0	
Total of Call Time (Wait + Ring + Conversation + Hold)		0	0	0	14

PM Remarks

- Correspondingly, the report returns one outgoing answered call for AC Group 1 (step 1 – an AC of the AC Group 1 spoke with Party A).

6.2.5 Answered Calls to the Attendant Line & One Not Answered Call in queue (Internal Calls)



Configuration Settings

- Three extensions, one two queue attendant console group and two attendant consoles (AC 2 Queue) are configured on an OpenScope switch. The two attendant consoles belong to the configured attendant console group.

Call Steps

- 1) Party A makes a call to the attendant console group 1 by dialling its access code (4550).
- 2) The call is directed to the next available attendant console (AC 1 – 4505), who answers it.
- 3) Party B makes another call to the attendant console group 1 by dialling its access code (4550).

- 4) The call is directed to the next available attendant console (AC 2 – 4504), who answers it.
- 5) Party C makes a call to the attendant console group 1 by dialling its access code (4550). Due to the fact that all attendant group members are currently occupied, the call from Party C is placed in the AC group's queue. Finally, while Party C is in queue, he hangs up.

Filter Items in PM

- Attendant consoles
- Attendant console group

PM Calculations

The following figures show the results returned by the "General Statistics" Report for various filter items.

Filter item: **AC 1**

		Exchange Line	Attendant Line	Personal Line	Outgo Line
Number of Calls					
Calls per Line		0	1	0	0
Calls Answered		0	1	0	0
Calls Not Answered	Total	0	0	0	0
	Signalled in call queue only	0	0		
	Signalled at AC	0	0	0	0
First Calls		0	1		
Recalles		0	0		
Times (average - seconds)					
Waiting Time (call queue)	Total	0	0		
	Calls Answered	0	0		
	Calls Not Answered	0	0		
Ringing Time	Total	0	10	0	0
	Calls Answered	0	10	0	0
	Calls Not Answered	0	0	0	0
Sum of Waiting and Ringing	Total	0	10		
	Calls Answered	0	10		
	Calls Not Answered	0	0		

	Exchange Line	Attendant Line	Personal Line	Outgoing Line	
Placing Time (Conversation + Hold)	0		0		3
Conversation Time	0	31	0	0	3
Hold Time	0		0		0
Total of Call Time (Wait + Ring + Conversation + Hold)	0	41	0	0	4

PM Remarks

- The report returns one incoming answered call for AC 1 (step 2 – Party A spoke with AC 1). Due to the fact that this call was internal and accessed the AC group, it is counted in the attendant line. Since this call was addressed to the AC group, it is also considered as a first call.

Filter item: **AC 2**

		Exchange Line	Attendant Line	Personal Line	Outgoing Line
Number of Calls					
Calls per Line		0	1	0	0
Calls Answered		0	1	0	0
Calls Not Answered	Total	0	0	0	0
	Signalled in call queue only	0	0		
	Signalled at AC	0	0	0	0
First Calls		0	1		
Recalles		0	0		
Times (average - seconds)					
Waiting Time (call queue)	Total	0	0		
	Calls Answered	0	0		
	Calls Not Answered	0	0		
Ringing Time	Total	0	11	0	0
	Calls Answered	0	11	0	0
	Calls Not Answered	0	0	0	0
Sum of Waiting and Ringing	Total	0	11		
	Calls Answered	0	11		

		Exchange Line	Attendant Line	Personal Line	Outgo Line
	Calls Not Answered	0	0		
Placing Time (Conversation + Hold)		0		0	
Conversation Time		0	26	0	0
Hold Time		0		0	
Total of Call Time (Wait + Ring + Conversation + Hold)		0	36	0	0

PM Remarks

- Correspondingly, the report returns one incoming answered call for AC 2 (step 4 – Party B spoke with AC 2). Due to the fact that this call was internal and accessed the AC group, it is counted in the attendant line. Since this call was addressed to the AC group, it is also considered as a first call.

Filter item: **All attendant consoles of AC Group 1 (AC 1 & AC 2)**

		Exchange Line	Attendant Line	Personal Line	Outgo Line
Number of Calls					
Calls per Line		0	2	0	0
Calls Answered		0	2	0	0
Calls Not Answered	Total	0	0	0	0
	Signalled in call queue only	0	0		
	Signalled at AC	0	0	0	0
First Calls		0	2		
Recalles		0	0		
Times (average - seconds)					
Waiting Time (call queue)	Total	0	0		
	Calls Answered	0	0		
	Calls Not Answered	0	0		
Ringing Time	Total	0	10	0	0
	Calls Answered	0	10	0	0
	Calls Not Answered	0	0	0	0

		Exchange Line	Attendant Line	Personal Line	Outgoing Line	
Sum of Waiting and Ringing	Total	0	10			1
	Calls Answered	0	10			1
	Calls Not Answered	0	0			0
Placing Time (Conversation + Hold)		0		0		2
Conversation Time		0	28	0	0	2
Hold Time		0		0		0
Total of Call Time (Wait + Ring + Conversation + Hold)		0	39	0	0	3

PM Remarks

- The cumulative filter for both attendant consoles, displays two incoming answered calls (steps 2 and 4, Parties A and B spoke with AC 1 and 2 respectively). These two calls were internal and accessed the AC group, so are both counted in the attendant line. Since, both calls were addressed to the AC group, they are also considered to be first calls.

Filter item: **AC Group 1**

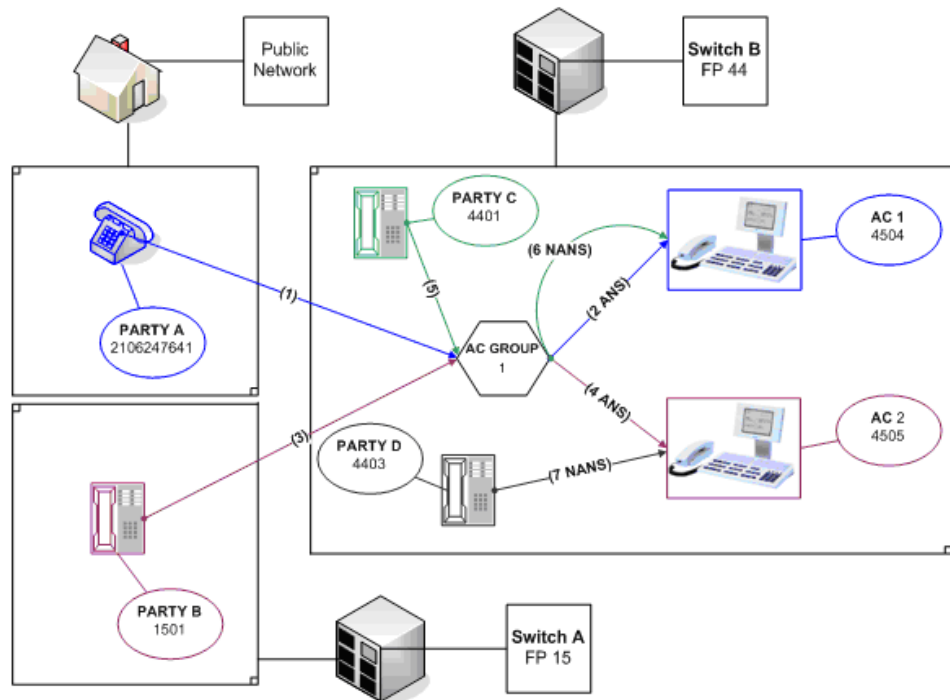
		Exchange Line	Attendant Line	Personal Line	Outgoing Line	
Number of Calls						
Calls per Line		0	3	0	0	
Calls Answered		0	2	0	0	
Calls Not Answered	Total	0	1	0	0	
	Signalled in call queue only	0	1			
	Signalled at AC	0	0	0	0	
First Calls		0	3			
Recalles		0	0			
Times (average - seconds)						
Waiting Time (call queue)	Total	0	12			
	Calls Answered	0	0			
	Calls Not Answered	0	12			
Ringing Time	Total	0	10	0	0	
	Calls Answered	0	10	0	0	

		Exchange Line	Attendant Line	Personal Line	Outgoing Line
	Calls Not Answered	0	0	0	0
Sum of Waiting and Ringing	Total	0	11		
	Calls Answered	0	10		
	Calls Not Answered	0	12		
Placing Time (Conversation + Hold)		0		0	
Conversation Time		0	28	0	0
Hold Time		0		0	
Total of Call Time (Wait + Ring + Conversation + Hold)		0	30	0	0

PM Remarks

- Finally, the report returns two incoming answered calls (steps 2 and 4) and one incoming not answered call (step 5 – Party C called the AC group and hanged up while he was on queue) for the AC group. Due to the fact that all calls were internal and accessed the AC group, they are all counted in the attendant line. Since all the calls were addressed to the AC group, they are also considered to be first calls. The not answered call is also displayed in the "Signalled in call queue only" field of the report, since it remained in the attendant group's queue without reaching an attendant console.
- The not answered call of the last displayed report is not presented in the cumulative report, which contains the attendant consoles as filter items. This happens because this specific call was able to reach the AC group, but it did not manage to reach any of its attendant consoles.

6.2.6 Answered Calls to the Exchange Line, One Not Answered Personal Call & One Not Answered Call in queue (Internal & External Calls)



Configuration Settings

- Three extensions, one two queue attendant console group and two attendant consoles (AC 2 Queue) are configured on two physically connected OpenScope switches (Switches A and B). The two attendant consoles of Switch B belong to the configured attendant console group of the switch. Also, Switch B should be accordingly configured in order to be able to receive calls from an external operator (CO – Central Office calls).

Call Steps

- 1) Party A from an external operator (public network), makes a call to the attendant console group 1 by dialling its external access code.
- 2) The call is directed to the next available attendant console (AC 1 – 4504), who answers it.
- 3) Party B of Switch A calls the attendant console group 1 of Switch B by dialling the appropriate prefix (open numbering) plus the AC group's access code (4550).
- 4) The call is directed to the next available attendant console (AC 2 – 4505), who answers it.
- 5) Party C of Switch B makes another call to the attendant console group 1 by dialling its access code (4550).
- 6) The call from Party C reaches AC 1 (4504), who is occupied and unavailable to answer the call.
- 7) Party D of Switch B makes another call to AC 2 (4505) by dialling directly its personal number (4505). AC 2 is occupied, so the call is not served.

Filter Items in PM

- Attendant consoles
- Attendant console group

PM Calculations

The following figures show the results returned by the "General Statistics" Report for various filter items.

Filter item: **AC 1**

		Exchange Line	Attendant Line	Personal Line	Outgo Line
Number of Calls					
Calls per Line		1	1	0	0
Calls Answered		1	0	0	0
Calls Not Answered	Total	0	1	0	0
	Signalled in call queue only	0	0		
	Signalled at AC	0	1	0	0
First Calls		1	1		
Recalles		0	0		
Times (average - seconds)					
Waiting Time (call queue)	Total	0	0		
	Calls Answered	0	0		
	Calls Not Answered	0	0		
Ringing Time	Total	5	19	0	0
	Calls Answered	5	0	0	0
	Calls Not Answered	0	19	0	0
Sum of Waiting and Ringing	Total	5	19		
	Calls Answered	5	0		
	Calls Not Answered	0	19		
Placing Time (Conversation + Hold)		47		0	
Conversation Time		47	0	0	0
Hold Time		0		0	
Total of Call Time (Wait + Ring + Conversation + Hold)		52	19	0	0

PM Remarks

- The report for AC 1 returns one incoming answered call (step 2 - Party A spoke with AC 1) and one incoming not answered call (step 6 - Party C was not served by AC 1). Due to the fact that the answered call was an external call (CO call) and accessed the AC group, it is counted in the exchange line. On the other hand, the not answered call was an internal call, so it is counted in the attendant line. Both calls were addressed to the AC group. Thus, they are both considered as first calls. Additionally, the not answered call managed to reach the AC 1 without being served. So, it is displayed in the 'Signalled at AC' field of the report.

Filter item: **AC 2**

		Exchange Line	Attendant Line	Personal Line	Outgoing Line	
Number of Calls						
Calls per Line		1	0	1	0	2
Calls Answered		1	0	0	0	1
Calls Not Answered	Total	0	0	1	0	1
	Signalled in call queue only	0	0			0
	Signalled at AC	0	0	1	0	1
First Calls		1	0			1
Recalles		0	0			0
Times (average - seconds)						
Waiting Time (call queue)	Total	0	0			0
	Calls Answered	0	0			0
	Calls Not Answered	0	0			0
Ringing Time	Total	7	0	11	0	9
	Calls Answered	7	0	0	0	7
	Calls Not Answered	0	0	11	0	11
Sum of Waiting and Ringing	Total	7	0			9
	Calls Answered	7	0			7
	Calls Not Answered	0	0			11
Placing Time (Conversation + Hold)		36		0		36
Conversation Time		36	0	0	0	36
Hold Time		0		0		0

	Exchange Line	Attendant Line	Personal Line	Outgo Line
Total of Call Time (Wait + Ring + Conversation + Hold)	43	0	11	0

PM Remarks

- The report for AC 2 returns one incoming answered call (step 4 - Party B spoke with AC 2) and one incoming not answered call (step 7 - Party D was not served by AC 2). Due to the fact that the answered call was an external call (TIE call) and accessed the AC group, it is counted in the exchange line. Moreover, this call was addressed to the AC group. Thus, it is considered to be a first call. On the other hand, the not answered call was addressed directly to the AC 2 ("Signalled at AC"), so it is also considered as a personal call.

Filter item: **All attendant consoles of AC Group 1 (AC 1 & AC 2)**

		Exchange Line	Attendant Line	Personal Line	Outgo Line
Number of Calls					
Calls per Line		2	1	1	0
Calls Answered		2	0	0	0
Calls Not Answered	Total	0	1	1	0
	Signalled in call queue only	0	0		
	Signalled at AC	0	1	1	0
First Calls		2	1		
Recalles		0	0		
Times (average - seconds)					
Waiting Time (call queue)	Total	0	0		
	Calls Answered	0	0		
	Calls Not Answered	0	0		
Ringing Time	Total	6	19	11	0
	Calls Answered	6	0	0	0
	Calls Not Answered	0	19	11	0
Sum of Waiting and Ringing	Total	6	19		
	Calls Answered	6	0		
	Calls Not Answered	0	19		

	Exchange Line	Attendant Line	Personal Line	Outgoing Line	
Placing Time (Conversation + Hold)	42		0		4
Conversation Time	42	0	0	0	4
Hold Time	0		0		0
Total of Call Time (Wait + Ring + Conversation + Hold)	48	19	11	0	3

PM Remarks

- Correspondingly, the cumulative filter for both attendant consoles, displays two incoming answered calls (steps 2 and 4, Parties A and B spoke with AC 1 and 2 respectively) and two incoming not answered calls (steps 6 and 7 – Parties C and D did not manage to be served by the attendant consoles). The two answered calls were external (CO and TIE) and accessed the AC group, so are both counted in the exchange line. Since both calls were addressed to the AC group, they are also considered to be first calls. The not answered call from Party C (step 6) was an internal call, so it is counted in the attendant line. Initially, it was addressed to the AC group, so it is considered to be a first call, but then it reached an attendant console without being served ("Signalled at AC"). The not answered call from Party D (step 7) was addressed directly to the AC 2 ("Signalled at AC"), so it is also considered as a personal call.

Filter item: **AC Group 1**

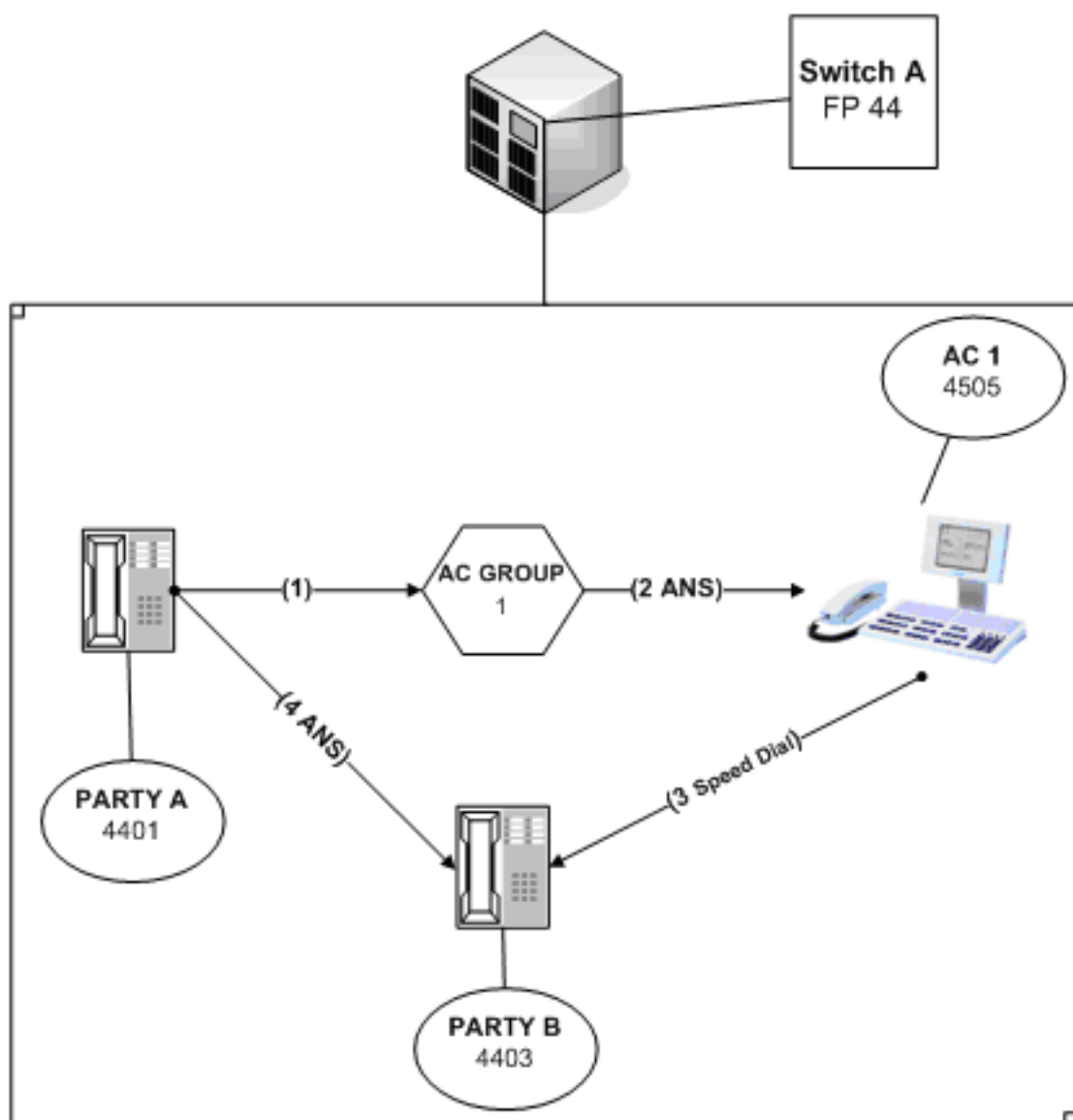
		Exchange Line	Attendant Line	Personal Line	Outgoing Line	
Number of Calls						
Calls per Line		2	1	1	0	4
Calls Answered		2	0	0	0	2
Calls Not Answered	Total	0	1	1	0	2
	Signalled in call queue only	0	0			0
	Signalled at AC	0	1	1	0	2
First Calls		2	1			3
Recalles		0	0			0
Times (average - seconds)						
Waiting Time (call queue)	Total	0	0			0
	Calls Answered	0	0			0
	Calls Not Answered	0	0			0

		Exchange Line	Attendant Line	Personal Line	Outgoing Line
Ringing Time	Total	6	19	11	0
	Calls Answered	6	0	0	0
	Calls Not Answered	0	19	11	0
Sum of Waiting and Ringing	Total	6	19		
	Calls Answered	6	0		
	Calls Not Answered	0	19		
Placing Time (Conversation + Hold)		42		0	
Conversation Time		42	0	0	0
Hold Time		0		0	
Total of Call Time (Wait + Ring + Conversation + Hold)		48	19	11	0

PM Remarks

- Correspondingly, the report of the AC group returns exactly the same statistics with the report, which contains as a filter, all the attendant consoles.
- Although the two attendant consoles were occupied by the calls from Party A and B, the next call to the attendant group did not enter the AC group's queue. It was directed to AC 1 because it was a different type of call (internal) from the answered call (CO call) that was occupying AC 1. If the calls that were served by both attendant consoles were of the same type (e.g. internal calls) and one more call of the same type addressed the AC group, then this call would be placed in the AC group's queue (see call scenario in [Section 6.2.5, "Answered Calls to the Attendant Line & One Not Answered Call in queue \(Internal Calls\)"](#)).

6.2.7 One Answered Call to the Attendant Line, Speed Dial and Transfer (Internal Calls)



Configuration Settings

- Two extensions, one two queue attendant console group and two attendant consoles (AC 2 Queue) are configured on an OpenScope switch. The two attendant consoles belong to the configured attendant console group.

Call Steps

- 1) Party A makes a call to the attendant console group 1 by dialling its access code (4550).
- 2) The call is directed to the next available attendant console (AC 1 – 4505), who answers it.
- 3) The attendant console (AC 1 – 4505) performs a speed dial (see also [Section 6.2.3, "Answered Call to the Exchange Line \(Tie Call\)"](#)) to Party B.
- 4) Thus, AC 1 connects Party A with Party B who have a conversation.

Filter Items in PM

- Attendant consoles

- Attendant console group

PM Calculations

The following figures show the results returned by the "General Statistics" Report for various filter items.

Filter item: **AC 1**

		Exchange Line	Attendant Line	Personal Line	Outgo Line
Number of Calls					
Calls per Line		0	1	0	0
Calls Answered		0	1	0	0
Calls Not Answered	Total	0	0	0	0
	Signalled in call queue only	0	0		
	Signalled at AC	0	0	0	0
First Calls		0	1		
Recalles		0	0		
Times (average - seconds)					
Waiting Time (call queue)	Total	0	0		
	Calls Answered	0	0		
	Calls Not Answered	0	0		
Ringing Time	Total	0	9	0	0
	Calls Answered	0	9	0	0
	Calls Not Answered	0	0	0	0
Sum of Waiting and Ringing	Total	0	9		
	Calls Answered	0	9		
	Calls Not Answered	0	0		
Placing Time (Conversation + Hold)		0		0	
Conversation Time		0	4	0	0
Hold Time		0		0	
Total of Call Time (Wait + Ring + Conversation + Hold)		0	13	0	0

PM Remarks

- The report returns one incoming answered call for AC 1 (step 2 – Party A spoke with AC 1). Due to the fact that this call was internal and accessed the AC group, it is counted in the attendant line. Since this call was addressed to the AC group, it is also considered as a first call.

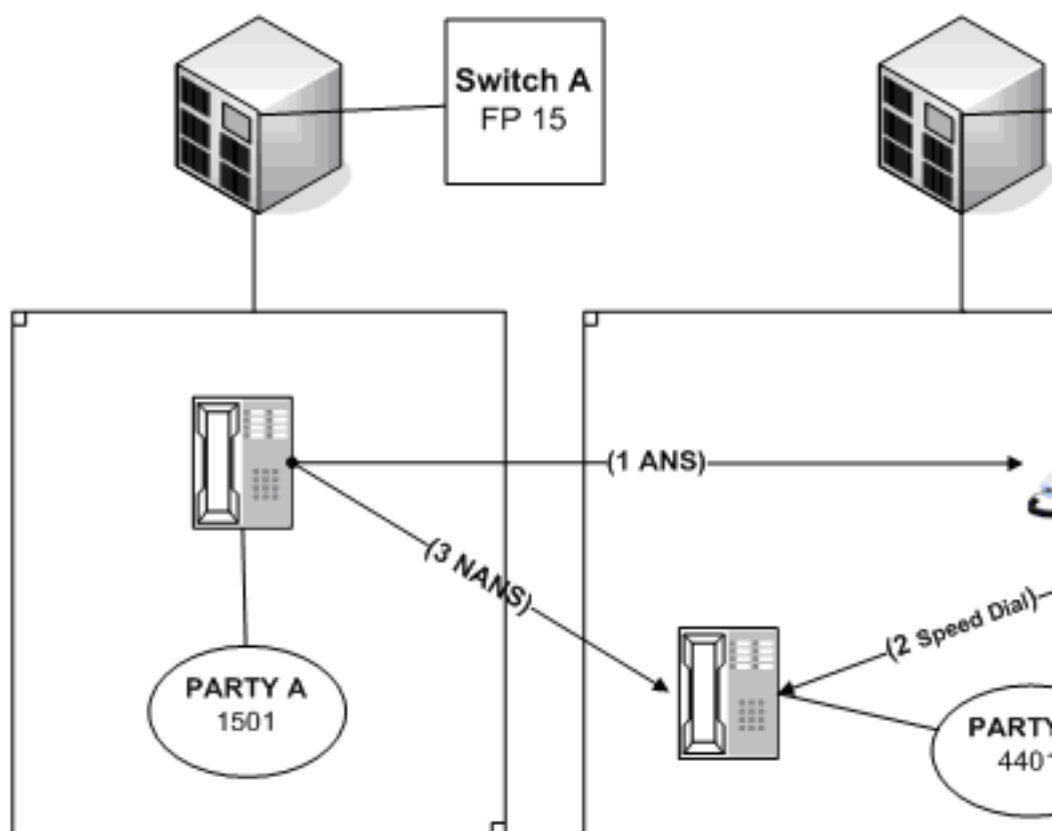
Filter item: **AC Group 1**

		Exchange Line	Attendant Line	Personal Line	Outgoing Line	
Number of Calls						
Calls per Line		0	1	0	0	1
Calls Answered		0	1	0	0	1
Calls Not Answered	Total	0	0	0	0	0
	Signalled in call queue only	0	0			0
	Signalled at AC	0	0	0	0	0
First Calls		0	1			1
Recalles		0	0			0
Times (average - seconds)						
Waiting Time (call queue)	Total	0	0			0
	Calls Answered	0	0			0
	Calls Not Answered	0	0			0
Ringing Time	Total	0	9	0	0	9
	Calls Answered	0	9	0	0	9
	Calls Not Answered	0	0	0	0	0
Sum of Waiting and Ringing	Total	0	9			9
	Calls Answered	0	9			9
	Calls Not Answered	0	0			0
Placing Time (Conversation + Hold)		0		0		4
Conversation Time		0	4	0	0	4
Hold Time		0		0		0
Total of Call Time (Wait + Ring + Conversation + Hold)		0	13	0	0	13

PM Remarks

- Correspondingly, the report returns one incoming answered call for AC Group 1 (step 2 – Party A spoke with an attendant console of the group). Due to the fact that this call was internal and accessed the AC group, it is counted in the attendant line. Since this call was addressed to the AC group, it is also considered as a first call.

6.2.8 One Answered Call to the Personal Line and one Transfer (External & Internal Calls)

**Configuration Settings**

- Two extensions, one two queue attendant console group and two attendant consoles (AC 2 Queue) configured on two physically connected OpenScape switches. The two attendant consoles belong to the configured attendant console group.

Call Steps

- Party A of Switch A makes a direct call to the attendant console (AC 1 – 4504) of Switch B, by dialling directly the appropriate prefix (open numbering) plus the personal number of the attendant console (4504).
- The attendant console (AC 1 – 4504) performs a speed dial (see also [Section 6.2.3, "Answered Call to the Exchange Line \(Tie Call\)"](#)) to Party B of Switch B.

- 3) Thus, AC 1 connects Party A with Party B. The destination party (Party B) does not answer the call.

Filter Items in PM

- Attendant consoles
- Attendant console group

PM Calculations

The following figures show the results returned by the "General Statistics" Report for various filter items.

Filter item: **AC 1**

		Exchange Line	Attendant Line	Personal Line	Outgoing Line	
Number of Calls						
Calls per Line		0	0	1	0	1
Calls Answered		0	0	1	0	1
Calls Not Answered	Total	0	0	0	0	0
	Signalled in call queue only	0	0			0
	Signalled at AC	0	0	0	0	0
First Calls		0	0			0
Recalles		0	0			0
Times (average - seconds)						
Waiting Time (call queue)	Total	0	0			0
	Calls Answered	0	0			0
	Calls Not Answered	0	0			0
Ringing Time	Total	0	0	11	0	11
	Calls Answered	0	0	11	0	11
	Calls Not Answered	0	0	0	0	0
Sum of Waiting and Ringing	Total	0	0			11
	Calls Answered	0	0			11
	Calls Not Answered	0	0			0
Placing Time (Conversation + Hold)		0		30		30
Conversation Time		0	0	30	0	30
Hold Time		0		0		0

	Exchange Line	Attendant Line	Personal Line	Outgoing Line
Total of Call Time (Wait + Ring + Conversation + Hold)	0	0	40	0

PM Remarks

- The report returns one incoming answered call for AC 1 (step 1 –Party A spoke with AC 1). Due to the fact that this call was addressed directly to the AC 1, it is also considered as a personal call.

Filter item: **AC Group 1**

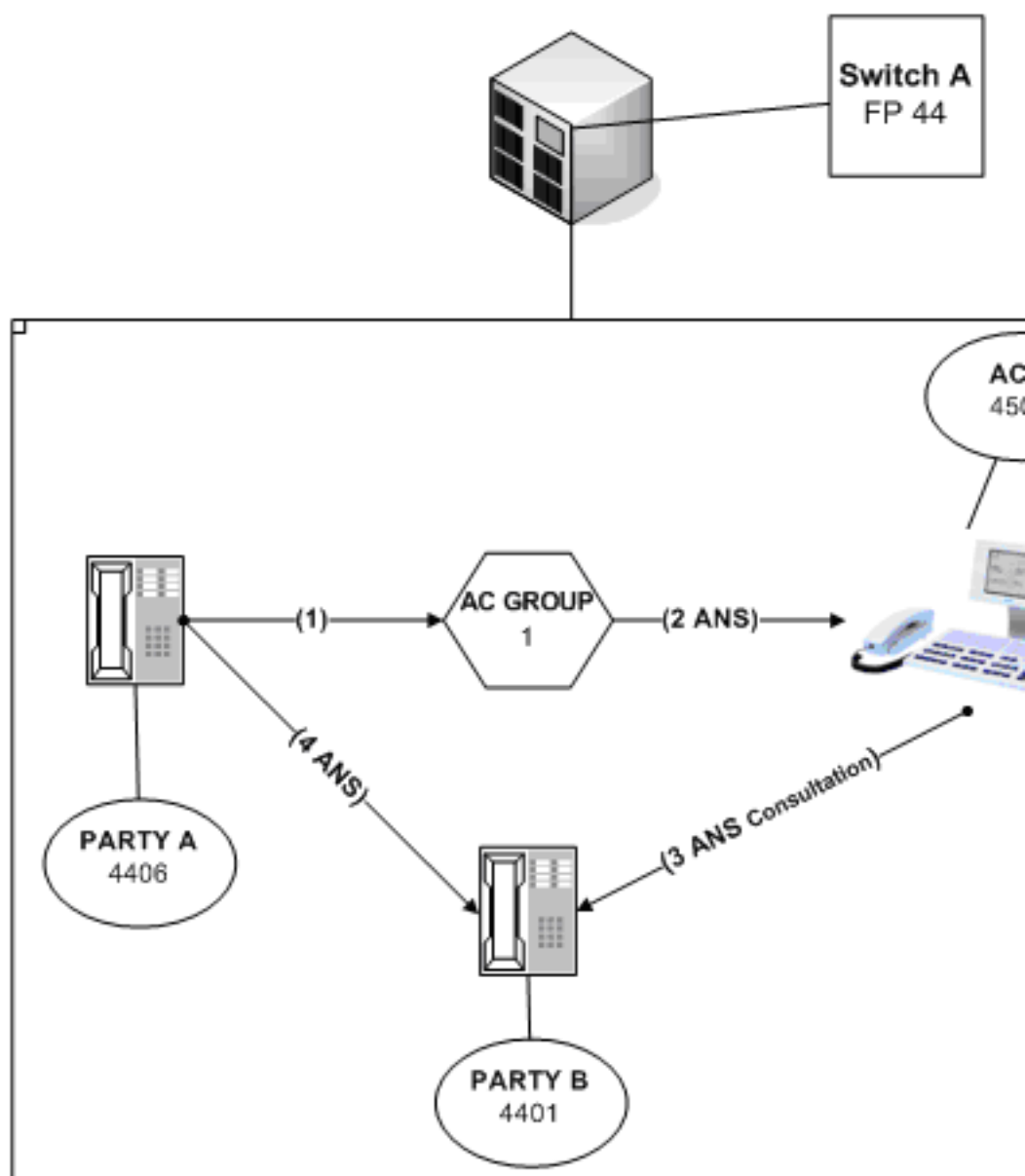
		Exchange Line	Attendant Line	Personal Line	Outgoing Line
Number of Calls					
Calls per Line		0	0	1	0
Calls Answered		0	0	1	0
Calls Not Answered	Total	0	0	0	0
	Signalled in call queue only	0	0		
	Signalled at AC	0	0	0	0
First Calls		0	0		
Recalles		0	0		
Times (average - seconds)					
Waiting Time (call queue)	Total	0	0		
	Calls Answered	0	0		
	Calls Not Answered	0	0		
Ringing Time	Total	0	0	11	0
	Calls Answered	0	0	11	0
	Calls Not Answered	0	0	0	0
Sum of Waiting and Ringing	Total	0	0		
	Calls Answered	0	0		
	Calls Not Answered	0	0		
Placing Time (Conversation + Hold)		0		30	
Conversation Time		0	0	30	0
Hold Time		0		0	

	Exchange Line	Attendant Line	Personal Line	Outgoing Line	
Total of Call Time (Wait + Ring + Conversation + Hold)	0	0	40	0	4

PM Remarks

- Correspondingly, the report returns one incoming answered call for AC Group 1 (step 1 – Party A spoke with an attendant console of the group). Due to the fact that this call was addressed directly to the AC 1, it is also considered as a personal call.

6.2.9 One Answered Call to the Attendant Line and Consultation Call before Transfer (Internal Calls)



Configuration Settings

- Two extensions, one two queue attendant console group and two attendant consoles (AC 2 Queue) are configured on an OpenScape switch. The two attendant consoles belong to the configured attendant console group.

Call Steps

- 1) Party A makes a call to the attendant console group 1 by dialling its access code (4550).
- 2) The call is directed to the next available attendant console (AC 1 – 4505), who answers it.
- 3) The attendant console (AC 1 – 4505) performs a consultation call to Party B. In other words, the AC speaks with Party B in order to verify whether Party B is going to accept the call from Party A.
- 4) Party B accepts the call, and AC 1 connects Party A with Party B (transfer) and they have a conversation.

Filter Items in PM

- Attendant consoles
- Attendant console group

PM Calculations

The following figures show the results returned by the "General Statistics" Report for various filter items.

Filter item: **AC 1**

		Exchange Line	Attendant Line	Personal Line	Outgoing Line	
Number of Calls						
Calls per Line		0	1	0	0	1
Calls Answered		0	1	0	0	1
Calls Not Answered	Total	0	0	0	0	0
	Signalled in call queue only	0	0			0
	Signalled at AC	0	0	0	0	0
First Calls		0	1			1
Recalles		0	0			0
Times (average - seconds)						
Waiting Time (call queue)	Total	0	0			0
	Calls Answered	0	0			0
	Calls Not Answered	0	0			0
Ringing Time	Total	0	4	0	0	4
	Calls Answered	0	4	0	0	4
	Calls Not Answered	0	0	0	0	0
Sum of Waiting and Ringing	Total	0	4			4
	Calls Answered	0	4			4
	Calls Not Answered	0	0			0
Placing Time (Conversation + Hold)		0		0		1
Conversation Time		0	17	0	0	1
Hold Time		0		0		0
Total of Call Time (Wait + Ring + Conversation + Hold)		0	20	0	0	2

PM Remarks

- The report returns one incoming answered call for AC 1 (step 2 – Party A spoke with AC 1). Due to the fact that this call was internal and accessed the AC group, it is counted in the attendant line. Since this call was addressed to the AC group, is also considered as a first call. In this call scenario the AC before making a transfer had a conversation with the destination party. Thus, apart from incoming activity to the AC (Party A called the AC group and reached an AC) there was outgoing activity from the AC (AC consulted Party B). Nevertheless, the report displays only one answered call (the incoming part) due to the fact the outgoing part was not an individual call from the AC but a consultation call entirely connected (succeeding) with the incoming part (see also [Chapter 2, "Report Calculation Rule"](#)).

Filter item: **AC Group 1**

		Exchange Line	Attendant Line	Personal Line	Outgoing Line
Number of Calls					
Calls per Line		0	1	0	0
Calls Answered		0	1	0	0
Calls Not Answered	Total	0	0	0	0
	Signalled in call queue only	0	0		
	Signalled at AC	0	0	0	0
First Calls		0	1		
Recalles		0	0		
Times (average - seconds)					
Waiting Time (call queue)	Total	0	0		
	Calls Answered	0	0		
	Calls Not Answered	0	0		
Ringing Time	Total	0	4	0	0
	Calls Answered	0	4	0	0
	Calls Not Answered	0	0	0	0
Sum of Waiting and Ringing	Total	0	4		
	Calls Answered	0	4		
	Calls Not Answered	0	0		
Placing Time (Conversation + Hold)		0		0	
Conversation Time		0	17	0	0

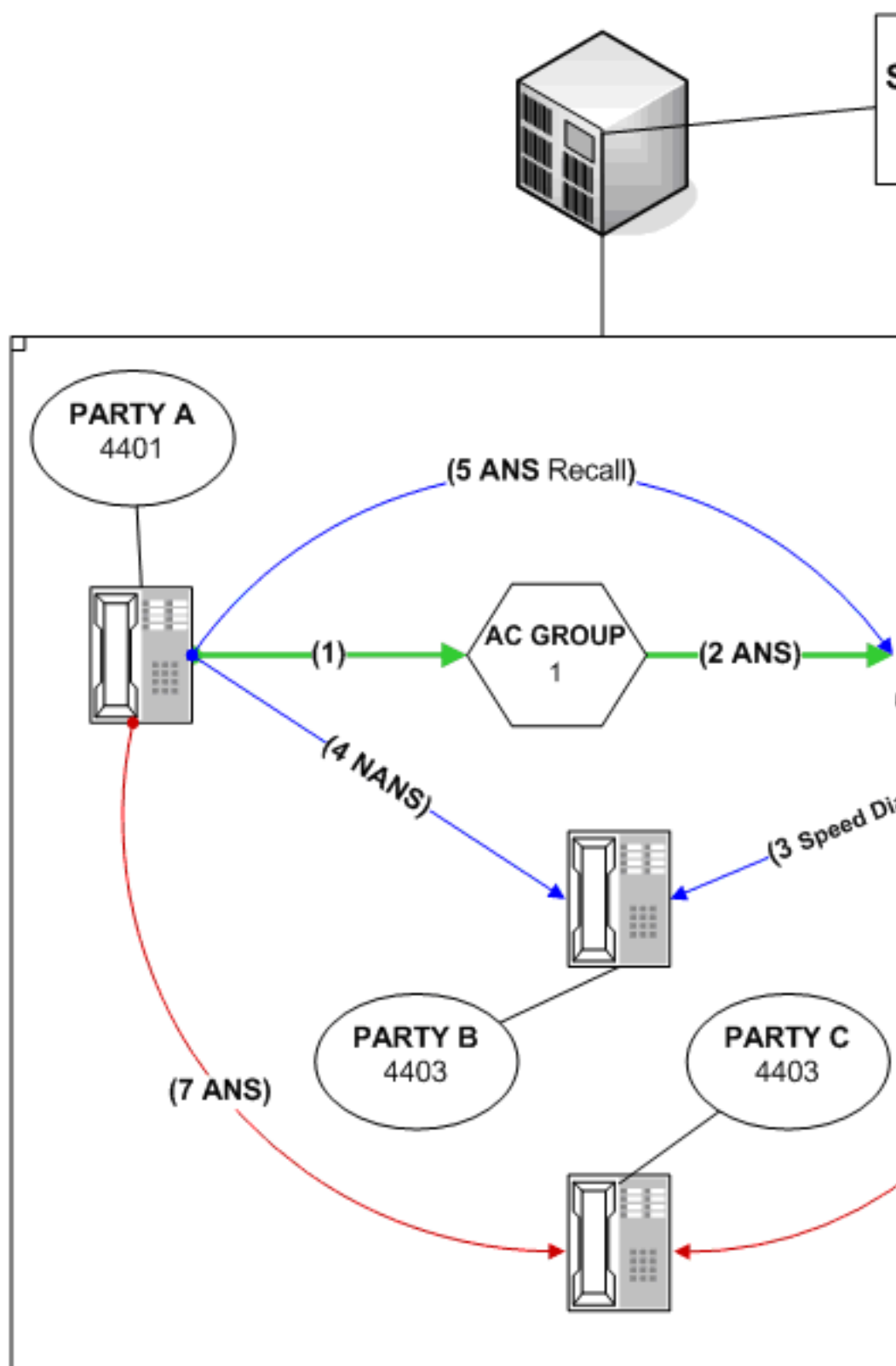
Call Scenarios

	Exchange Line	Attendant Line	Personal Line	Outgoing Line
Hold Time	0		0	
Total of Call Time (Wait + Ring + Conversation + Hold)	0	20	0	0

PM Remarks

- Correspondingly, the report returns one incoming answered call for AC Group 1 (step 2 – Party A spoke with an attendant console of the group). Due to the fact that this call was internal and accessed the AC group, it is counted in the attendant line. Since this call was addressed to the AC group, it is also considered as a first call.

6.2.10 One Answered Call to the Attendant Line, Call Transfers and One Answered Recall (Internal Calls)



Configuration Settings

- Three extensions, one two queue attendant console group and two attendant consoles (AC 2 Queue) are configured on an OpenScape switch. The two attendant consoles belong to the configured attendant console group.

Call Steps

- 1) Party A makes a call to the attendant console group 1 by dialling its access code (4550).
- 2) The call is directed to the next available attendant console (AC 1 – 4505), who answers it.
- 3) The attendant console (AC 1 – 4505) performs a speed dial (see also [Section 6.2.3, "Answered Call to the Exchange Line \(Tie Call\)"](#)) to Party B.
- 4) Thus, AC 1 connects Party A with Party B. The destination party (Party B) does not answer the call.
- 5) After a short period of time (by default 30 seconds of ringing time) the connection that was made between Party A and Party B terminates and the call from Party A returns to the AC that initially served the call (AC 1). Thus, a recall occurs to the AC who answers it (Party A is connected again with AC 1).
- 6) The AC decides to connect Party A with a different destination party, performing a speed dial to Party C.
- 7) Thus, AC 1 connects Party A with Party C, who have a conversation.

Filter Items in PM

- Attendant consoles
- Attendant console group

PM Calculations

The following figures show the results returned by the "General Statistics" Report for various filter items.

Filter item: **AC 1**

		Exchange Line	Attendant Line	Personal Line	Outgoing Line
Number of Calls					
Calls per Line		0	2	0	0
Calls Answered		0	2	0	0
Calls Not Answered	Total	0	0	0	0
	Signalled in call queue only	0	0		
	Signalled at AC	0	0	0	0
First Calls		0	1		
Recalles		0	1		
Times (average - seconds)					
Waiting Time (call queue)	Total	0	0		
	Calls Answered	0	0		
	Calls Not Answered	0	0		

		Exchange Line	Attendant Line	Personal Line	Outgo Line
Ringing Time	Total	0	3	0	0
	Calls Answered	0	3	0	0
	Calls Not Answered	0	0	0	0
Sum of Waiting and Ringing	Total	0	3		
	Calls Answered	0	3		
	Calls Not Answered	0	0		
Placing Time (Conversation + Hold)		0		0	
Conversation Time		0	14	0	0
Hold Time		0		0	
Total of Call Time (Wait + Ring + Conversation + Hold)		0	17	0	0

PM Remarks

- The report returns two incoming answered calls for AC 1 (steps 2 and 5 – Party A spoke with AC 1 twice). Due to the fact that both calls were internal and accessed the AC group, they are counted in the attendant line. Since the initial call (step 2) was addressed to the AC group, it is also considered as a first call. On the other hand, the second call (step 5) was a recall (answered), so it is displayed in the recall field (the call was not addressed to the AC group but returned to the AC that initially served the "first" call). In this call scenario there is an exception regarding the way that a call is counted. Although there is only one call initiator (Party A), two calls are counted. This happens because recall scenarios are counted independently, in order to emphasize whether the initiator of the call was re-served by an AC (see also [Section 2.3, "Report Calculation Rule"](#)).

Filter item: **AC Group 1**

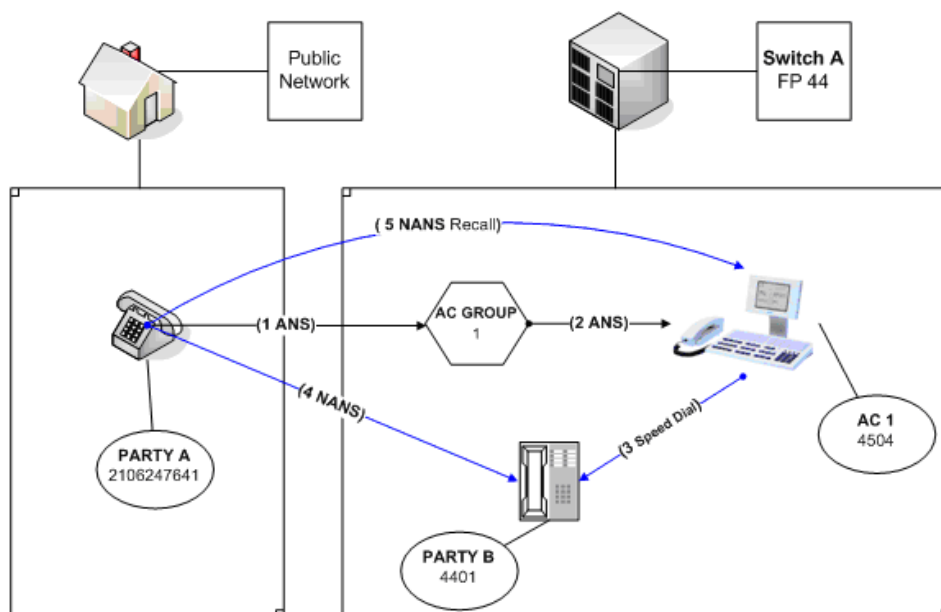
		Exchange Line	Attendant Line	Personal Line	Outgo Line
Number of Calls					
Calls per Line		0	2	0	0
Calls Answered		0	2	0	0
Calls Not Answered	Total	0	0	0	0
	Signalled in call queue only	0	0		
	Signalled at AC	0	0	0	0
First Calls		0	1		

		Exchange Line	Attendant Line	Personal Line	Outgoing Line	
Recalles		0	1			1
Times (average - seconds)						
Waiting Time (call queue)	Total	0	0			0
	Calls Answered	0	0			0
	Calls Not Answered	0	0			0
Ringing Time	Total	0	3	0	0	3
	Calls Answered	0	3	0	0	3
	Calls Not Answered	0	0	0	0	0
Sum of Waiting and Ringing	Total	0	3			3
	Calls Answered	0	3			3
	Calls Not Answered	0	0			0
Placing Time (Conversation + Hold)		0		0		1
Conversation Time		0	14	0	0	1
Hold Time		0		0		0
Total of Call Time (Wait + Ring + Conversation + Hold)		0	17	0	0	1

PM Remarks

- Correspondingly, the report returns two incoming answered calls for AC Group 1 (steps 2 and 5). Due to the fact that these calls were internal and accessed the AC group, they are both counted in the attendant line. Since the initial call (step 2) was addressed to the AC group, it is also considered as a first call. On the other hand, the second call (step 5) was a recall (answered), so it is displayed in the recall field.

6.2.11 One Answered Call to the Exchange Line, Call Transfer and One Not Answered Recall (Internal & External Calls)



Configuration Settings

- One extension, one two queue attendant console group and two attendant consoles (AC 2 Queue) are configured on an OpenScope switch. The two attendant consoles belong to the configured attendant console group. Also, Switch A should be accordingly configured in order to be able to receive calls from an external operator (CO - Central Office calls).

Call Steps

- 1) Party A from an external operator (public network), makes a call to the attendant console group 1 by dialling its external access code.
- 2) The call is directed to the next available attendant console (AC 1 – 4504), who answers it.
- 3) The attendant console (AC 1 – 4504) performs a speed dial (see also [Section 6.2.3, "Answered Call to the Exchange Line \(Tie Call\)"](#)) to Party B.
- 4) Thus, AC 1 connects Party A with Party B. The destination party (Party B) does not answer the call.
- 5) After a short period of time (by default 30 seconds of ringing time) the connection that was made between Party A and Party B terminates and the call from Party A returns to the AC that initially served the call (AC 1). Thus, a recall occurs to the AC who does not answer it.

Filter Items in PM

- Attendant consoles
- Attendant console group

PM Calculations

The following figures show the results returned by the "General Statistics" Report for various filter items.

Filter item: **AC 1**

		Exchange Line	Attendant Line	Personal Line	Outgoing Line	
Number of Calls						
Calls per Line		2	0	0	0	2
Calls Answered		1	0	0	0	1
Calls Not Answered	Total	1	0	0	0	1
	Signalled in call queue only	0	0			0
	Signalled at AC	1	0	0	0	1
First Calls		1	0			1
Recalles		1	0			1
Times (average - seconds)						
Waiting Time (call queue)	Total	0	0			0
	Calls Answered	0	0			0
	Calls Not Answered	0	0			0
Ringing Time	Total	3	0	0	0	3
	Calls Answered	5	0	0	0	5
	Calls Not Answered	0	0	0	0	0
Sum of Waiting and Ringing	Total	3	0			3
	Calls Answered	5	0			5
	Calls Not Answered	0	0			0
Placing Time (Conversation + Hold)		23		0		23
Conversation Time		23	0	0	0	23
Hold Time		0		0		0
Total of Call Time (Wait + Ring + Conversation + Hold)		14	0	0	0	14

PM Remarks

- The report returns one incoming answered call (step 2 – Party A spoke with AC 1) and one incoming not answered call (step 5 – AC 1 did not answer the recall from Party A). Due to the fact that both calls were external calls (CO) and accessed the AC group, they are counted in the exchange line. Since the initial call (step 2) was addressed to the AC group, it is also considered as a first call. On the other hand, the second call (step 5) was a recall (not

answered), so it is displayed in the recall field (the call was not addressed to the AC group but returned to the AC – "Signalled at AC" – that initially served the "first" call). In this call scenario there is an exception regarding the way that a call is counted. Although there is only one call initiator (Party A), two calls are counted. This happens because recall scenarios are counted independently, in order to emphasize whether the initiator of the call was re-served by an AC (see also [Section 2.3, "Report Calculation Rule"](#)).

Filter item: **AC Group 1**

		Exchange Line	Attendant Line	Personal Line	Outgo Line
Number of Calls					
Calls per Line		2	0	0	0
Calls Answered		1	0	0	0
Calls Not Answered	Total	1	0	0	0
	Signalled in call queue only	0	0		
	Signalled at AC	1	0	0	0
First Calls		1	0		
Recalles		1	0		
Times (average - seconds)					
Waiting Time (call queue)	Total	0	0		
	Calls Answered	0	0		
	Calls Not Answered	0	0		
Ringing Time	Total	3	0	0	0
	Calls Answered	5	0	0	0
	Calls Not Answered	0	0	0	0
Sum of Waiting and Ringing	Total	3	0		
	Calls Answered	5	0		
	Calls Not Answered	0	0		
Placing Time (Conversation + Hold)		23		0	
Conversation Time		23	0	0	0
Hold Time		0		0	
Total of Call Time (Wait + Ring + Conversation + Hold)		14	0	0	0

PM Remarks

- Correspondingly, the report returns one incoming answered call (step 2 – Party A spoke with an AC of the AC group) and one incoming not answered call (step 5 – AC 1 of the AC group did not answer the recall from Party A). Due to the fact that both calls were external calls (CO) and accessed the AC group, they are counted in the exchange line. Since the initial call (step 2) was addressed to the AC group, it is also considered as a first call. On the other hand, the second call (step 5) was a recall (not answered), so it is displayed in the recall field (the call was not addressed to the AC group but returned to the AC – "Signalled at AC" – that initially served the "first" call).

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