

Conference

DESCRIPTION



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SCOPE

The Conference feature allows a user to establish simultaneous speech connections of three or more parties. The operator, extensions, and external lines can participate in a conference, but only the operator or extension can initiate the conference, not the external lines.

For information on which extension types that can initiate a conference, see the description for *CAPACITIES*.

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GLOSSARY AND ACRONYMS

For a complete list of abbreviations and glossary, see the description for *ACRONYMS, ABBREVIATIONS AND GLOSSARY*.

3 FUNCTIONS

3.1 FUNCTIONAL OVERVIEW

A three-party conference is initiated when the extension user, who is in conversation with one party and has another party parked, requests Conference. The parked party is either from an inquiry call or an refer back (alternation) to/from a signaled call-waiting call.

An Operator conference is initiated when an Operator with idle console dials a prefix procedure feature code for Conference.

Initially there is a single (this is optional) 'Conference warning tone'. A tone message called "Conference Tone" is sent periodically to all participants to indicate conference status.

3.2 USER INTERFACE

3.2.1 ANALOG, REMOTE OR CORDLESS (DECT) EXTENSION

To initiate conference or add member to conference for single line access terminals, press or dial:

Suffix digit "n" (Market Dependent Parameter (MDP)) after an inquiry call or after an refer back.

3.2.2 IP EXTENSION OR DIGITAL EXTENSION

To initiate conference or add member to conference, press or dial:

Suffix digit "n" (MDP) after a new call with at least one parked call. The above is valid for proprietary IP extension and DTS. For IP clients or for non-proprietary IP extensions the user interface for Conference request is determined by the terminal, and cannot be specified here.

3.2.3 OPERATOR WORKSTATION

To initiate conference, press "*FC#" when both Operator right and left sides are idle.

3.3 INTERNAL FUNCTIONS

3.3.1 ALLOCATION OF MULTI-PARTY RESOURCES

3.3.1.1 *Extension Conference*

At initiation three multi-party resources are allocated. These resources are allocated from the Media Gateway.

Every time a new participant is added to conference one additional resource is allocated from the Media Gateway.

3.3.1.2 *Operator Conference*

At initiation as many multi-party resources as the maximum number of permitted participants in a conference are allocated from the Media Gateway. No additional resources is allocated when Operator adds new member to conference because all resources for that conference are already allocated.

3.3.2 CONFERENCE TONE MESSAGES

A conference 'warning' tone is provided to all participants whenever one of the following events happens:

- A conference is established.
- A new member is added to conference.
- A participant leaves the conference, except when only two parties remain after the participant leaves.
- The leader gets back in speech with conference from parking, refer back, or automatic recall.
- An IP extension or Operator member get back in speech with conference from parking or refer back.

A periodic (the timer is an MDP) conference tone can be during conference (this is optional).

With MDP and AS it can be controlled if the conference tone should be used.

3.3.3 CONFERENCE INITIATION

3.3.3.1 *Analog, remote or cordless (DECT) extension*

A single line access extension can initiate a three-party conference in two situations:

- After inquiry, when the extension is in speech connection with either the new third party or the original party.
- After accepting a call-waiting call by refer back, when the extension is in speech connection with either the call-waiting party or the original party.

Before establishing a conference the following requirements must be met:

- At least three free multi-party resources are available from the Media Gateway.
- Clear signal can be received from at least one participant.
- All participants are permitted to be interconnected according to the conference traffic group matrix, which represents the traffic group categories. Each participant is checked against all other participants. Traffic directions are not significant when using this matrix. The traffic group matrix is special for the conference.
- The maximum number of external lines in a conference is not exceeded (MDP).
- The maximum number of public trunk lines in a conference is not exceeded (MDP).
- The limit value indicating maximum number of participants is not exceeded (MDP).
- The limit value indicating maximum number of participants when public trunk lines are used is not exceeded (MDP).

The extension, who has initiated a conference, is appointed conference leader. The other parties are conference members.

If the conference request is rejected, then there is no change of status for any of the involved parties. This means that the speech status is maintained between the requesting party and the in-speech party, the parked party is still on hold, and no tone message is provided.

3.3.3.2

IP extension or Digital extension

An IP extension or DTS can initiate a three-party conference in the same situations, requirements and conditions as an analog extension with the following addition:

- Only the last parked party and the in- speech party are included in the conference connection.
- Certain IP extensions that are single line access terminals will function like the analog telephones.

Information about the number of participants in the conference is available for display, for IP extensions and DTS. Also the own role (leader or member) is available for display.

3.3.3.3

Operator Workstation

An Operator can initiate a conference only when the following two conditions are met:

- Both the Operator console left and right sides are idle
- The maximum number of available conference resources is equal to or greater than the maximum number of permitted conference participants that can be allocated.

Because no participants are connected yet at Operator conference initiation there are no checks on traffic group matrix, number of external lines and public trunk lines.

The Operator, who has initiated the conference, is appointed leader.

After initiation the conference occupies the Operator left side, and then the Operator can call one party at a time on the right side and add that party to conference by normal extending procedure.

When the Operator has added as many members to the conference as the maximum allowed, then the Operator is automatically released from the conference. Once the Operator is disconnected the conference is treated as an extension-initiated conference without leader.

3.3.4

ADDING NEW MEMBER TO CONFERENCE

3.3.4.1

Analog, remote or cordless (DECT) extension

An analog extension leader can add more members to conference either by making an inquiry call or by accepting a call-waiting call. The conditions and checks performed before permitting add-on of a new member are the same as when initiating a conference, 3.3.3.1 Analog, remote or cordless (DECT) extension on page 5 , except only one additional conference resources is required, and one more check is made on the maximum number of permitted participants.

The leader can add new member while in speech with the new party outside conference, or while in speech with conference and the new party is parked (called "Add parked party to conference").

3.3.4.2

IP extension or Digital extension

An IP extension or DTS conference leader can add new member to conference in the same situations, requirements and conditions as an analog extension with the following additions:

- Only the last parked party or the party in speech is added to the conference connection.
- Certain IP extensions that are single line access terminals will function like the analog telephones.

Information about the number of participants in the conference is available for display, for IP extensions and DTS. Also the own role (leader or member) is available for display.

3.3.4.3

Intruding new party adding itself to conference

An extension with a specific class of service that allows Intrusion on a conference leader can add itself as new member in conference in the same situations, requirements and conditions as an analog extension requesting add conference member, with the following procedure:

- Call the conference leader, and get a busy message. Intrude on the conference leader, i.e. on the conference call.
- Request a Transfer (which requires a special class of service), which will replace the requesting extension and instead add the parked party as new member of the conference. The conference leader remains in the conference.

3.3.4.4

Operator Workstation

An Operator leader with the conference on the Operator Workstation left side can add new members to conference by dialing a party on the right side, and then performing the extending procedure when speech is reached.

Checks on maximum number of public trunks and external lines are made.

Checks on maximum number of participants are made when public trunks are involved.

If the request to add member is rejected, then there is no change of status for the involved parties.

The information about the number of present members is available for display.

When the Operator has added as many members to the conference as the maximum allowed, then the Operator is automatically released from the conference. Once the Operator is disconnected the conference is treated as an extension-initiated conference without leader.

3.3.5

CONFERENCE LEADER

A conference leader has the following privileges over his/her conference:

- Park or put the conference on hold.

- Get back in speech with the conference from parking.
- Do inquiry to a new party.
- Receive call-waiting signal, not applicable for Operator Workstation.
- Alternate or refer back to/from an inquiry or call-waiting party.
- Add new member to conference.
- Intrude on his/her own conference member.
- Disconnect one on his/her own member.
- Be automatically recalled from parked conference, only for ATS and RXN.
- Disconnect itself from the conference.
- Park and enter account code for the whole conference, not applicable for operator.

3.3.6

CONFERENCE MEMBER

A conference member does not have any of the above privileges that the leader has. Exceptions are for IP extension and Operator members which can do the following:

- Park or put the conference on hold.
- Get back in speech with the conference from parking.
- Do inquiry to a new party.
- Disconnect itself from the conference.
- Alternate or refer back to/from a parked party.

3.3.7

RELEASE FROM CONFERENCE

A participant can leave the conference permanently by going on-hook or giving a clear signal, and the associated multi-party resources is released. When a clear signal is received from a participant, a check is made to ensure that at least one of the remaining participants can send a clear signal. If not, then all participants are disconnected and the conference is released.

There is also an option (I/O) to select how to treat the conference and the remaining parties when the leader or another party in the conference clears. The four options are:

- Clearing party is released, while the call continues (normal case).
- All is released if only external lines remain.
- If the traffic matrix prohibits the two remaining parties to be connected, the entire call can be released (I/O). If the traffic matrix prohibits the two remaining parties to be connected, the entire call can be released (I/O).
- All is released when an extension conference leader clears.

3.3.7.1

Extension initiated Conference

Whenever a participant is released, a check is made on the number of participants left in conference. If only two are remaining, a two-party connection is set up, and when successful the conference resources are released. If only one is left, the conference resources are released and that participant is disconnected.

CONFERENCE

The conference resources are released only if the conference is not parked by the leader.

When the leader is released from his/her conference, it will become a conference without leader.

3.3.7.2

Operator initiated Conference

There is no check on the number of participants left in Operator conference, when any member leaves, because conference resources are not released as long as the Operator leader is still connected to it.

When the Operator leader is released from his/her conference, it will become an extension-initiated conference without leader if there are more than two parties remaining. If only two are remaining, a two-party connection is set up, and when successful the conference resources are released.

3.3.8

CONFERENCE WITHOUT LEADER

Any member of a conference without leader will become the new leader when he/she is the first to do one of the following:

- Park or put the conference on hold.
- Attempt to make an inquiry.
- Park and enter account code for the whole conference.

The new leader will assume all conference privileges of the original leader.

3.3.9

PARKING OF CONFERENCE

3.3.9.1

Analog, remote or cordless (DECT) extension

Only the conference leader can park the conference.

3.3.9.2

IP extension or Digital extension

Both conference leader and members can park the conference.

3.3.9.3

Operator Workstation

An Operator can park the conference as conference leader or as member of the conference. The Operator parking of a conference is not time supervised. The parked conference cannot be monitored. When the Operator retrieves the conference as a leader the information about the number of present members is available for display.

3.3.10

CONFERENCE LEADER RECALL

When a conference leader, who has the conference parked, goes on-hook he/she will be recalled automatically by the conference. Upon answering the recall the leader will be put back in speech with the conference.

The recall ringing on leader is time-supervised by a market dependent parameter (I/O). At time-out on recall ringing the leader is released from conference, and it becomes a conference without leader.

Conference leader recall is only applicable for analog or remote extension conference leaders, not for IP extension and Operator leaders, because there are (probably) visual indications on respective consoles to remind them of the parked conference.

A remote extension leader which is recalled could be not-available, i.e out of range, when the recall attempt is done. In that case the recall will be abandoned, and the conference will continue without any leader, or be ended if only two other parties remained.

3.3.11

INTRUSION AND FORCED DISCONNECTION OF CONFERENCE MEMBER

3.3.11.1

Extension Conference

A conference leader can intrude on his/her own member, i.e. isolate or talk privately with one of the members, if that member is an extension, by following the below sequences:

- Park the conference.
- Make an inquiry to the member to be intruded upon, which is busy.
- Invoke the intrusion procedure.

The leader and intruded member will be connected outside conference. The conference connection is not affected by this intrusion event. There will be no intrusion tone or conference tone to any participants because this intrusion involves only two parties in speech.

After intrusion the leader has four options that he/she can select to do:

- Include himself/herself and the intruded member back to conference by doing the add new member procedure.
- Return to speech with conference by using the alternate procedure. This will lead to disconnection of the intruded member.
- Release intrusion by Clearing procedure to the intruded member. A conference leader recall will take place if it is an analog or remote extension. The recall could fail for the remote extension, e.g. because it has become not-available, and then the conference will continue without leader.
- Make an inquiry. This will lead to disconnection of the intruded member.

3.3.11.2

Operator Conference

An Operator leader can intrude on his/her own member, if that member is an extension, by following the below sequences:

- Make a call to the member to be intruded upon on right side.
- Invoke the intrusion procedure.

The leader and intruded member will be connected outside conference. The conference connection is not affected by this intrusion event. There will be no intrusion tone or conference tone to any participants because this intrusion involves only two parties in speech.

After intrusion the leader has three options that he/she can select to do:

- Include himself/herself and the intruded member back to conference by extending procedure.
- Alternate speech between conference and the intruded member. This will not disconnect the intruded member.
- Release intrusion by Clearing procedure to the right side.

3.3.12

CALL INFORMATION LOGGING (CIL)

The leader is accounted for all call logging records in his/her conference that he/she has initiated even after he/she leaves the conference.

A new leader is only accounted for subsequent call logging records.

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CONFIGURATIONS

The MDPs for conference are:

- Suffix Digit to be used by an extension to Initiate a Conference and to Add New Member to Conference.
Range: 0-9, 15
Recommended value: 3
- Feature Code to be used by an Operator to initiate a conference.
 The MDP is changeable by means of I/O command.
Range: 0-999
Recommended value: 3
- Maximum Number of Participants in a Conference when public trunk lines are used
Range: 3-8
Recommended value: 8
- Maximum Number of External Lines in a Conference
 This value can be changed by I/O command
Range: 0-8
Recommended value: 6
- Maximum Number of Public Trunk Lines in a Conference
Range: 0-8
Recommended value: 1
- Ringing Time for Conference Leader Recall.
 This value can be changed by I/O command.
Range: 0-120 seconds
Recommended value: 30 seconds

- Multi-Party Tone Control.

The parameter provides the control over conference tone and intrusion tone function to be used.

This value can be changed by I/O command.

Range: 6-124

Recommended value: 7

5 CAPACITIES AND LIMITATIONS

5.1 CAPACITIES

The following are capacities and limitations for conference feature, including the conference established during route optimization:

- Maximum Number of Participants in a Conference = 8.
- Maximum Number of External Lines in a Conference = 8.
- Maximum Number of Public Trunks in a Conference = 8.
- Number of Virtual Multi-Party Board, "MPU" per Media Gateway = 4.
- Maximum Number of Participants in a Multi-Party connection in a Media Gateway = 96.
- Number of multi-party individuals on one TMU = 24.
- The conference circuit is a common system resource for calls to Emergency extensions, conference calls, intrusion, route optimization calls and PBX-operator calls. Emergency extension requires eight resources and intrusion occupies three resources and each Operator requires four resources. The number of available resources per device board at any given time is:

$$= (q - u - nx8 - mx4 - kx3)$$
 - with q=** number of multi-party resources on the device board,
 - u=** number of resources used for conference including conferences established due to route optimization,
 - n=** number of Emergency extensions,
 - m=** number of Operators initiated in the Media Gateway,
 - k=** number of intrusion calls.
- All participants in a conference must be connected to resources of the same device board or media gateway.
- Conference is only applicable for **voice calls**.

5.2 LIMITATIONS (SOME SPECIFIC SERVICE INTERACTIONS)

5.2.1 CALL DEFLECTION (WITH MAINTAINED QUEUE)

Conference is not permitted to establish (or expand) if the call has been deflected with maintained ACD/CTI queue.

5.2.2 CORDLESS EXTENSION (DECT) HANDOVER

Conference establishment (or expansion) will be temporarily delayed if a DECT Handover is in progress when the request comes.

5.2.3

INTRUSION

Conference establishment (or expansion) will be rejected in Intrusion states, i.e. if the extension is already in an intrusion state when the conference request is received.

5.2.4

VOICE MAIL PORTS

Conference establishment (or expansion) involving a Voice Mail port, is not allowed, i.e. the conference request will be rejected. The Traffic Group Matrix category shall be appropriately set for the port.